

# Land & Water Law Review

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Volume 13  
Issue 1 *The Geothermal Resources  
Development Institute*

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Article 11

1977

## Income Taxation of Geothermal Resources

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### Recommended Citation

Maxfield, Peter C. (1977) "Income Taxation of Geothermal Resources," *Land & Water Law Review*. Vol. 13 :  
Iss. 1 , pp. 217 - 258.

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# LAND AND WATER LAW REVIEW

VOLUME XIII

1977

NUMBER 1

The state of federal tax laws with regard to geothermal development is described by Professor Maxfield as "embryonic." In this paper he outlines the present state of this body of law, emphasizing the allowability of depletion *vel non* and the types of depletion allowable.

## INCOME TAXATION OF GEOHERMAL RESOURCES†

*Peter C. Maxfield\**

Electrical energy from the heat of the earth today is more than a gleam in the eye of an energy-hungry world but not substantially more. Presently, however, some four hundred megawatts are generated at the Geysers geothermal steam field in Northern California, with plans to more than double that capacity.<sup>1</sup> A high enthalpy hot water reservoir in the Imperial Valley of California is presently being researched for its energy producing potential.<sup>2</sup> Geothermally heated dry rocks hold the greatest potential for energy,<sup>3</sup> although unlike the cases of high enthalpy hot water and vapor systems, the technology is not yet up to the task of exploitation.

Just as the state of technology available to exploit geothermal resources could be described as embryonic, so also is the state of the federal tax laws applicable to some activities and transactions relating to geothermal resources. Although it is clear that the by-products associated with some geothermal exploitation, *e.g.*, sodium chloride, methane, and many

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1. Note, *The Application of Depletion to Geothermal Resources* 9 U. MICH. L. REF. 233, 234 n. 4 (1976).
2. Rex & Harnell, *Assessment of U.S. Geothermal Resources*, in *GEOHERMAL ENERGY: RESOURCES, PRODUCTION, STIMULATION* 59 (Kruger & Otte eds. 1973) [hereinafter cited as Kruger & Otte].
3. Kruger & Otte, 217; Armstead, *What is Geothermal Energy* in *GEOHERMAL ENERGY* 15, 18 (Armstead ed. 1973) [hereinafter cited as Armstead].

others, qualify for percentage depletion,<sup>4</sup> the allowability of depletion on the primary resource itself, *i.e.*, the steam, hot water, or heat, is in a considerable state of uncertainty.<sup>5</sup>

It is the goal of this paper to outline as precisely as possible the present state of the law with regard to this resource of such unlimited potential. Because the federal income tax laws relating to mineral exploration and development to a great extent turn at least indirectly on the specific depletion laws applicable to the various forms of geothermal energy and the type of depletion allowable, *i.e.*, statutory (percentage) and/or cost,<sup>6</sup> it appears necessary to eschew herein a transactional type of approach which would proceed from acquisition to exploration, to development, to operation, to disposition in favor of the keystone questions, *i.e.*, the allowability of depletion *vel non* and the type(s) of depletion allowable. These other subjects will then be examined primarily in so far as there are tax problems peculiar to the fledgling geothermal industry or in so far as there is uncertainty as to applicability of otherwise settled law.

### DEPLETION<sup>7</sup>

1. *General Requirements.* As general prerequisites to qualification for the depletion deduction, taxpayer must show among other things that the particular deposit of mineral being exploited contains an exhaustible supply.<sup>8</sup> In the case of steam or hot water reservoirs, heat from hot dry rock deposits, and mineral by-products of geothermal production,

4. I.R.C. §§ 613, 613A.

5. The Treasury Department has recommended that the Research and Development expense Section 174 be amended to permit the deduction for a limited period of the development expenses of geothermal projects certified by the Energy Research and Development Agency as being such. The Senate has approved a proposal which expands Section 263(c) relating to oil and gas intangibles to cover geothermal development expenses. However, the final form of any legislation in this area, if any is forthcoming at all, is still completely unsettled.

6. I.R.C. §§ 263(C), 617; I.T. 4006 1950-1 C.B. 48; Treas. Regs. §§ 1.612-4, 1.617-1 (1) (a).

7. Note, *The Application of Depletion to Geothermal Resources* 9 U. MICH. L. REF. 233 (1976) is a thoroughly researched study of this particular topic which this commentator has found helpful in the preparation of this paper.

8. I.R.C. § 613(b) (7) (B); Treas. Reg. § 1.611-1(d) (5); *Reich v. Commissioner*, 454 F.2d 1157 (9th Cir. 1972, *aff'g*, 52 T.C. 700 (1969) (geothermal steam); *United States v. Shurbet*, 347 F.2d 103 (5th Cir. 1965) (groundwater); *Flona Corp. v. United States*, 218 F. Supp. 354 (S.D. Fla. 1963) (sod); *A. Duda and Sons Inc. v. United States*, 383 F. Supp. 1303 (M.D. Fla. 1974) (peat); *John W. Meyers, Jr. v. Commissioner*, 66 T.C. No. 24 (1976) (sod); *Victory Sand & Gravel Inc.* 61 T.C. 407 (1974) (gravel); *Dewey v. Nesmith v. Commissioner*, 72,034 P-H Memo (groundwater); *Rev. Rul. 73-441*, 1973-2 C.B. 196 (gravel); *Rev. Rul. 65-7*, 1965-1 C.B. 254 (salt); *Rev. Rul. 55-251*, 1955-1 C.B. 288 (gravel).

what must be shown to qualify the deposit as exhaustible? Additionally, the taxpayer must show that the deposit is either a "natural deposit"<sup>9</sup> or depletable "waste or residue."<sup>10</sup> Does the production of hot water or steam qualify if the water was produced or purchased elsewhere and injected into the deposit? Does the reinjection of brines disqualify such reinjected minerals if they are later produced for sale? A third requirement that exists as a prerequisite to depletion is that the taxpayer must have an economic interest in the resource.<sup>11</sup>

(a). As to the requirement of exhaustibility, clearly the taxpayer will not prevail by pointing out the obvious that every earth-bound substance exists in finite quantities only and therefore is exhaustible. The 1954 Code provides, "For purposes of this paragraph, the term 'all other minerals' does not include . . . (B) minerals from sea water, the air, or similar inexhaustible sources; . . ."<sup>12</sup> For a substance to be exhaustible then, something more than its mathematical finite quantity must be shown.

However, the difference between such "inexhaustible sources" and exhaustible sources can clearly only be a difference in degree, not in kind. The cases and rulings above cited<sup>13</sup> give some indication of the nature of deposits that satisfy this requirement. The Revenue Service has taken the opportunity on at least three occasions to rule on this question. In two of the rulings involving sand and gravel, it was noted that if the deposit is replenished within a relatively short period of time then the deposit is not exhaustible.<sup>14</sup> This conclusion was drawn where taxpayer had a lease on a dry river bed to remove sand and gravel. Heavy rainstorms would cause floods to replenish the areas previously excavated by the taxpayer who then would return to exploit the redeposits. The third ruling involved the exhaustibility of saline materials in the Great Salt Lake.<sup>15</sup> The facts assumed in this ruling evidenced that

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9. I.R.C. § 611(a); Treas. Reg. § 1.611-1(a) (1); *Commissioner v. Claude C. Wood Co.*, 321 F.2d 207 (9th Cir. 1963); *Pacific Cement and Aggregates, Inc.*, 31 T.C. 136 (1958), Non-acq.
  10. I.R.C. § 611(a); Treas. Reg. § 1.613-4(i); *See also*, MAXFIELD, *THE INCOME TAXATION OF MINING OPERATIONS* 84 *et seq.* (2d ed. 1976) [hereinafter cited as Maxfield].
  11. *Palmer v. Bender*, 287 U.S. 551 (1933); Treas. Reg. § 1.611-1(b) (1).
  12. I.R.C. § 613(b) (7)
  13. *Supra* note 8.
  14. Rev. Rul. 55-251 1955-1 C.B. 288; Rev. Rul. 73-441, 1973-2 C.B. 196.
  15. Rev. Rul. 65-7, 1965-1 C.B. 254.

the amount of saline minerals in the Great Salt Lake was actually increasing rather than decreasing each year because of dissolved salts being carried in by streams. As a consequence such minerals were ruled inexhaustible for tax purposes. The court has concluded that a taxpayer has an inexhaustible supply of ground water if he cannot show a significant decline in the water table in his area.<sup>16</sup> Clearly, if the deposit is demonstrated to be a finite closed system with no replenishment, it will satisfy the exhaustibility requirement.<sup>17</sup>

The problem left unsettled by the decisions discussed above is the affect of replenishment where there is evidence of a significant decline in quality or quantity of the resource in the mineral property itself or in the source or both. If the source of the replenishment is being demonstrably and significantly depleted even though the depletion is not yet decreasing production from or quantities within the mineral property, surely the resource will still be considered exhaustible.<sup>18</sup> If such is not the case, one wonders how producers obtained a depletion deduction for production from oil wells on the east side of the East Texas Field until quantities of production within their own properties began to decline.<sup>19</sup> The tax court appears to have decided that evidence of exhaustion of minerals at the source is sufficient to satisfy this requirement for depletion<sup>20</sup> with the acquiescence of the Revenue Service.<sup>21</sup> The case involved river bed gravel deposits which taxpayer was dredging. The facts indicated that, although the virgin de-

16. Dewey V. Nesmith, 72,034 P-H Memo TC.

17. Reich v. Commissioner, 52 T.C. 700 (1969), *aff'd*, 454 F.2d 1157 (9th Cir. 1972) (geothermal steam).

18. Dewey V. Nesmith, *supra* note 16, leaves this question open inasmuch as the taxpayer there adduced evidence showing that the area in which he was farming overlay a much larger aquifer and that an older government study indicated an earlier substantial average drop in the water table level. However, the evidence failed to show a recent decline in the water table in his area and the tax court stated that it gave little weight to the older government study.

19. See General Crude Oil Co. v. Harris, 101 S.W.2d 1098 (Tex. 1937). It would seem that any upstructure oil and gas property would present the same question. In *United States v. Ludley*, 274 U.S. 295, 303 (1927), the court states:

It is argued that because oil is a fugacious mineral, it cannot be known that the reserve has been diminished by the operation of wells. Perhaps some land may be discovered which, like the Widow's curse, will afford an inexhaustible supply of oil. But the common experience of man has been that oil wells, and the territory in which they are sunk, become exhausted in time.

Here the court appears to be saying that if the reserve declines even though there is no decline in a quantity of production from the property itself as of yet, the deposit can still be considered exhaustible. Additionally, the court seems to be presuming that oil deposits are exhaustible. Clearly this presumption has not been made with regard to certain other minerals, *e.g.*, *supra* note 8.

20. Victory Sand & Concrete, Inc. v. Commissioner, 61 T.C. 407 (1974).

21. 1974-2 C.B. 4.

posits had been exhausted many years before, taxpayer for the years in question was claiming depletion for sand and gravel that had been imported into his mineral property by stream flow from deposits upstream and that because of dams constructed upstream the replenishment was decreasing in quantity and quality. The tax court stated:

[E]conomically, it should not be necessary that a mineral deposit be subject to complete physical exhaustion to qualify for the depletion allowance; if the mineral supply is being diminished in quantity or quality so as eventually to make it economically unfeasible to extract a marketable product, it will qualify as a wasting asset for depletion purposes.<sup>22</sup>

In any event partial replenishment would not appear to disqualify the resource for depletion as long as there is a decrease in quantity or quality.<sup>23</sup> Also, the fact that the amount of recharge is not declining in quantity or quality and that eventual long term complete replenishment may take place should not be disqualifying if taxpayer's rate of production is significantly greater than the rate of recharge.<sup>24</sup>

Although it is not clear whether for tax depletion purposes one is producing steam or hot water on the one hand or heat on the other, if heat is the resource being produced and constructively or actually sold for tax purposes, it would seem in the typical case that the depletion deduction would be unavailable because of the difficulty in demonstrating exhaustibility.<sup>25</sup> It may be feasible in a particular case in which a hot rock reservoir is charged with imported water to establish that the hot rock is heated less rapidly by deeper magma than the heat is withdrawn by the subsequent production of the injected water.<sup>26</sup> This of course assumes the depletability

22. *Victory Sand & Concrete Inc. v. Commissioner*, *supra* note 20, at 422.

23. *See United States v. Shurbet*, *supra* note 8, wherein the showing that the water table of an aquifer underlying 35,000 square miles of plateau land was declining entitled the taxpayer-owner of a 480 acre farm overlying the aquifer to cost depletion on the ground water produced therefrom. *See also* Don C. Day, 54 T.C. 1417 (1970). In both cases the evidence indicated a recharge at a relatively constant rate.

24. Rev. Rul. 73-441, *supra* note 14, is distinguishable because complete replenishment there took place within a relatively short period of time. This test, of course, is considerably more difficult to apply than to state.

25. *See Kruger & Otte*, *supra* note 2, at 163:

There is more than enough heat available in the earth to generate all the power we need for millions of years to come at the present rate of world-wide power consumption; assuming sole dependence on geothermal heat, it would take some 41 million years for man to reduce the temperature of the earth 1°F.

26. *Victory Sand & Concrete, Inc. v. Commissioner*, *supra* note 8.

otherwise of heat per se.<sup>27</sup> Original steam and hot water produced from a geothermal reservoir would be exhaustible if showings are made as in the cases discussed above.<sup>28</sup> In closed systems with heat exchangers and reinjection of the produced reservoir fluids probably the first cycle of use would be depletable if such reservoir can be shown to contain finite or exhaustible quantities.<sup>29</sup> As discussed immediately below, however, the production and reuse of already produced fluids would not qualify.<sup>30</sup> Obvious difficulties would exist in determining the relative proportions of original and pre-used fluids. Minerals in brines or geothermal liquids which are by-products certainly could be exhaustible but the burden would rest on the taxpayer to demonstrate it.<sup>31</sup>

(b). The second general requirement that must be satisfied in order to qualify for the depletion deduction is that the mineral must be either a "natural deposit" or depletable "waste or residue."<sup>32</sup> The production of original in-place steam, water, brine, or other fluid should constitute the production from a "natural deposit." This commentator knows of no challenge to depletion on the production of such resources. Depletion has been allowed for steam and ground water without challenge on such grounds.<sup>33</sup>

Problems arise because of the possible need or desire to produce water elsewhere and inject it into the hot-rock or depleted vapor or hot water dominated geothermal reservoir, to inject and reuse the water or steam originally produced, or to eventually extract for sale minerals from the hot water or steam produced after such have been injected back into the reservoir perhaps many times in a closed cycling system. Where the substance is naturally in place in the ground before

27. See below the text to which notes 75-77 are appended.

28. *United States v. Shurbet*, *supra* note 8. (groundwater); *Reich v. Commissioner*, *supra* note 8 (geothermal steam).

29. See *Kruger & Otte*, *supra* note 2, at 163-175, for a discussion of a vapor-turbine closed system.

30. See the text to which notes 32 *et seq. infra*, are appended.

31. Rev. Rul. 65-7 *supra* note 8, (salt in the Great Salt Lake); See, however *United States v. Ludley* *supra* note 19, (oil).

32. I.R.C. 1954, § 611(a):

In the case of mines, oil, and gas wells, other natural deposits and timber, there shall be allowed as a deduction in computing taxable income a reasonable allowance for depletion. . . ."

See also *supra* notes 9-10.

33. See generally cases cited note 8 *supra*; see also *Utah Salt Company Inc. v. Wise*, 370 F.2d 976 (10th Cir. 1967).

production and is produced for the first time, such substance should constitute a "natural deposit" which assuming satisfaction of the other requirements should be depletable. Where, however, a substance is produced and relocated to another situs, it probably will not qualify as the natural deposit in place in the new location. In two cases which involved the 1939 Code, but which should be applicable today, the Ninth and Tenth Circuits held that tailings or dump piles of ores left after mining did not constitute "natural deposits" and, therefore, the production therefrom was not depletable.<sup>34</sup> This is so whether or not the waste material is being reworked for the same mineral or worked for a new mineral.<sup>35</sup> On the other hand the Ninth Circuit and the tax court have held depletion allowable for gravel replaced in a stream bed after a gold dredging operation had taken place on the ground that the gravel remain a "natural deposit" even after the gold mining operation.<sup>36</sup> The Ninth Circuit appears to have prescribed three factors consistent with the tax court decision which must be demonstrated in order for such a "disturbed" deposit to qualify as a "natural deposit." First, the miner must show that the ore or mineral was returned as nearly to its natural location as possible. In these two cases, the gold dredging took place on the site of the natural deposit of the sand and gravel and caused the sand and gravel to be piled in substantially the same place from which it had been removed by the gold dredger. Second, there must be no change in the natural size and form of the ore or mineral as a result of the prior mining operation. The sand and gravel aggregates exploited by the miner-taxpayers in question were identical in size and form to the same placed in the ground by nature. No prior crushing or chemical treatment had taken place; however, in the prior gold dredging operation, the sand and gravel were washed. This requirement would seem to restrict qualification for the depletion allowance to inadhherent substances such as sand and gravel aggregates where prior mining by a third party stranger has occurred because any material con-

34. Consolidated Chollar Gould and Savage Mining Co. v. Commissioner, 133 F.2d 440 (9th Cir. 1943); Atlas Mining Co. v. Jones, 115 F.2d 61 (10th Cir. 1940). See also Soil Builders, Inc. v. United States, 277 F.2d 570 (5th Cir. 1960). The question whether such would constitute depletable waste or residue is discussed below in the text to which notes 39-41 are appended.

35. *Id.*

36. Commissioner v. Claude C. Wood Co., 321 F.2d 207 (9th Cir. 1963); Pacific Cement and Aggregates, Inc. v. Commissioner, 31 T.C. 136 (1958), non-acq. 1959-2 C. B. 8.



sisting of adherent substances would perforce lose its size or form by the prior mining operation. Third, the property in question must not have been previously mined for the same substance or substances. In the two cases, the prior mining operations had been for gold, not for the sand and gravel aggregates.

Thus, production of water from a geothermal deposit which water had been originally produced elsewhere and injected into the deposit or which had already been produced from the geothermal deposit and then reinjected would not qualify to the extent as production from a "natural deposit". It might be argued that taxpayer's production elsewhere from an admitted "natural deposit" and injection into and subsequent production from the geothermal reservoir is analogous to the situation of natural gas which is produced, stored in another reservoir, and then produced, sold, and depleted. However, the difference in purpose and in effect on the water seems to distinguish it. Therefore, depletion should not be allowable on such. If the requirements for depletion are otherwise met, depletion should be taken on the original production.<sup>37</sup> Problems of allocation exist if original water or steam is commingled with already produced water. However, having estimates of original quantity in place when injection takes place and knowing the mechanics of the geothermal reservoir in question, some reasonable method of allocation would seem calculable and should be accepted by the Revenue Service.

Any mineral by-products from the steam or hot water which are extracted and sold should constitute a "natural deposit" whether extracted upon original production or after being recycled back into the reservoir and extracted later. Such would seem to fit within the guidelines provided by the

37. If water is produced elsewhere by the taxpayer and injected into the geothermal deposit, it may be that the Service will say that there has been no constructive sale by the taxpayer to itself on the original production inasmuch as the water is used in the production process and therefore depletion is not allowable. See *Roundup Coal Mining Co. v. Commissioner*, 20 T.C. 388 (1953), wherein coal mined by taxpayer and used in its own boilers for power at the mine. The tax court citing *Helvering v. Mountain Producers Corp.*, 303 U.S. 376 (1938), held no sale and therefore no depletion. This is qualified where the resource is used by taxpayer in a manufacturing operation, see *Woodward Iron Co. v. Patterson*, 173 F. Supp. 251 (N.D. Ala. 1959), i.e., the court held that a constructive sale took place for purposes of depletion. However, taxpayer seeking depletion may be well advised to obtain the extra needed water from a separate tax entity.

Ninth Circuit and the tax court since they are being returned to their natural location, since there probably has been no change in their form, and since the property in question was not previously mined for such minerals, rather just the steam or hot water.<sup>38</sup>

If the substance produced is not a "natural deposit", it might be argued that it constitutes depletable "waste or residue."<sup>39</sup> "Waste or residue" qualifies for depletion if created by the miner as a result of his own prior mining or if acquired together with the mine from which it came in a tax-free exchange.<sup>40</sup> Also a lessee of minerals is entitled to depletion on the waste or residue therefrom after renewal of the lease even though the renewal was not effected pursuant to option if the taxpayer was entitled to depletion thereon before the renewal.<sup>41</sup> However, any water or steam produced, used in energy generation, reinjected, and then produced again would not constitute "waste or residue" of prior mining since it was not left over after the prior mining but rather the substance mined and constructively sold in the prior operation. In most cases mineral by-products as noted above would qualify as "natural deposits." Any substance not a "natural deposit" which constitutes "waste or residue of prior mining" and which meets the above requirements would clearly qualify for depletion if the other requirements are met.

(c). The revenue codes since 1913 have provided for depletion in recognition of the consumption that takes place in the exploitation of minerals. However, the Supreme Court in 1933, and not the Congress, prescribed the economic interest requirement which with some qualification is applicable today. In *Palmer v. Bender*<sup>42</sup> the Court stated that an economic interest exists in "every case in which the taxpayer has acquired, by investment, any interest in the . . . [mineral] in place, and secures, by any form of legal relationship, income derived from the extraction of the . . . [mineral] to which he must look for a return of his capital."<sup>43</sup>

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38. See the text to which note 35, *supra*, is appended.

39. See generally note 10 *supra*.

40. Treas. Reg. § 1.613-4(i).

41. Treas. Reg. § 1-613-4.

42. 287 U.S. 551 (1933).

43. *Id.* at 557. See also Treas. Reg. § 1.611-1(b) (1).

With regard to the first part of the definition, *i.e.*, "interest in place," if one owns the mineral fee or the lease hold, one satisfies the requirement.<sup>44</sup> In addition if one transfers such interest and retains non-operating interest such as a royalty or net profits interest the latter interests will qualify.<sup>45</sup> The Supreme Court in *Commissioner v. Southwest Exploration Co.*<sup>46</sup> applied a "chain of title to the operating interest" test in determining this interest in place question. "It is to be noted that in each of the prior cases where the taxpayer had a sufficient economic interest to entitle him to depletion, he has once had at least a fee or leasehold in the oil-producing properties themselves."<sup>47</sup>

The second part of the *Palmer v. Bender*<sup>48</sup> test essentially requires a dependence on production only as the means for capital recovery, *i.e.*, in effect, the taxpayer must have assumed the risk of production to qualify.<sup>49</sup> For example, if taxpayer has ostensibly been assigned all rights to certain minerals in place but the quantity has been guaranteed by assignor, assignor and not the taxpayer has the economic interest since the former still bears the risk of production.<sup>50</sup>

**2. Depletion Computation—In General.** For minerals specified in Section 613 and 613A either cost or percentage depletion (assuming the factors discussed hereinabove) is allowable depending on which results in the greater deduction.<sup>51</sup> However, in computing one's basis in the mineral property in question, the method, *i.e.*, cost or percentage, resulting in the greater allowance is mandatory.<sup>52</sup> The taxpayer does not

44. *Greensboro Gas Co. v. Commissioner*, 79 F.2d 701 (3rd Cir. 1935).

45. *Palmer v. Bender* *supra* note 42 (royalty); *1 Bankers Pocahontas Coal Co. v. Burnet*, 287 U.S. 308 (1932) (royalty); *Kirby Petroleum Co. v. Commissioner*, 326 U.S. 599 (1946) (net profits); *Burton-Sutton Oil Co. v. Commissioner*, 328 U.S. 25 (1946) (net profits); *Thomas v. Perkins*, 301 U.S. 655 (1937) (production payment); *United States v. Witte*, 306 F.2d 81 (5th Cir. 1962) (production payment). The treatment of production payments is now reversed by the 1969 Tax Reform Act, I.R.C. § 636; see *Maxfield*, *supra* note 10, at 195-209 for further discussion thereof.

46. 350 U.S. 308 (1956).

47. *Id.* at 314-315. The circumstances under which the owner of a non-operating interest who was not in the "chain of title to the operating interest" can have an economic interest is discussed in *Maxfield*, *supra* note 10, at 6-27.

48. *Supra* note 42.

49. *Anderson v. Helvering*, 310 U.S. 404 (1940); *H.W. Donnell v. Commissioner*, 48 T.C. 552 (1967); *Geo. H. Landreth v. Commissioner*, 50 T.C. 803 (1968); *Finley Holbrook*, 54 T.C. 1613 (1970); *Christie v. United States*, 436 F.2d 1216 (5th Cir. 1971).

50. See generally cases cited note 49 *supra*.

51. I.R.C. §§ 611, 613; Treas. Reg. § 1.611-1(a).

52. I.R.C. § 1016(a) (2); Treas. Reg. § 1.611-1(A) (1); *Producers Oil Corp.* 43 B.T.A. 9, Acq.

elect the method to be employed in determining depletion and the use of one method in one year does not preclude the use of the other in a subsequent year.<sup>53</sup> It is important to note that separate computations of depletion must be made for each separate mineral property or proper aggregation thereof.<sup>54</sup> Brines and geothermal steam, if not disqualified under the requirements discussed above should be entitled to either percentage or cost depletion.<sup>55</sup>

3. *Cost Depletion Computation.* It should be noted first that several courts have approved and the regulations appear to justify the taking of cost depletion even on substances such as ground water,<sup>56</sup> sod,<sup>57</sup> and peat,<sup>58</sup> which are excluded by Section 613 from percentage depletion.<sup>59</sup> Thus deposits of steam and hot water if natural and exhaustible should in any case qualify for cost depletion.

In computing cost depletion it is necessary to first determine the cost basis of the property in question. This will include all of the acquisition costs of the property<sup>60</sup> including abstract and attorney fees,<sup>61</sup> bonus paid,<sup>62</sup> payments for options,<sup>63</sup> delay rentals (assuming an election to capitalize),<sup>64</sup> and exploration costs allocable to the property which are included in the depletable basis for the year in question.<sup>65</sup> The regulations provide that where land is purchased which has a value for purposes other than mineral production, to the extent of such value, the purchase price must be reduced to determine the basis for cost depletion purposes.<sup>66</sup>

The adjusted cost basis of the property for depletion purposes, *i.e.*, the basis at the end of the tax year unadjusted by

53. Treas. Reg. § 1.611-1(a) (1).

54. Treas. Reg. § 1.611-(a) (1).

55. I.R.C. §§ 613, 613A(b) (1) (C); Treas. Reg. § 1.613-2(c) (2); Arthur E. Reich v. Commissioner, 52 T.C. 700 (1969), *aff'd*, 454 F.2d 1137 (9th Cir. 1972); Dow Chemical Co. v. Commissioner, 433 F.2d 283 (6th Cir. 1970).

56. *United States v. Shurbet*, *supra* note 8.

57. *Flona Corporation v. United States*, *supra* note 8.

58. *A. Duda & Sons, Inc. v. United States*, *supra* note 8.

59. Treas. Reg. § 1.611-1(d) (5).

60. I.R.C. § 1012; Treas. Reg. § 1.611-2(a).

61. *L.S. Munger v. Commissioner*, 14 T.C. 1236 (1950).

62. Treas. Reg. § 1.612-3(a) (3).

63. *Commissioner v. Pickard*, 401 F.2d 615 (10th Cir. 1968).

64. I.R.C. § 266; Treas. Reg. §§ 1.266-1(b), 1.612-3(c); Rev. Rul. 55-118, 1955-1 C.B. 320.

65. See the text, *infra*, to which notes 180-184, 229-240 are appended.

66. Treas. Reg. § 1.612-1(b). See, however, *Beaver Dam Coal Co. v. United States*, 370 F.2d 414 (6th Cir. 1966), for a holding that the present value of surface acreage which would have no value after the mineral operation need not reduce the amount of cost basis otherwise allocable to the mineral property.

the current years depletion, is divided by the estimated number of remaining units, *e.g.*, thousand cubic feet or tons of mineral at the end of the taxable year plus the number of units sold or constructively sold<sup>67</sup> during the tax year. Depletion on units sold in a later year is taken in that later year the timing thereof depending on taxpayer's accounting system.<sup>68</sup> This per-unit depletion figure is then multiplied by the number of units sold or constructively sold during the tax year.<sup>69</sup>

Otherwise depletable ground water which is produced elsewhere for injection into the geothermal reservoir by the taxpayer and which is not sold to the taxpayer would not appear depletable.<sup>70</sup> As a result for cost depletion purposes, none of the basis attributable to the mineral property containing such ground water as a natural deposit need, it would seem to be attributed to such water produced and used in a production process elsewhere, *i.e.*, in the geothermal reservoir. As noted above<sup>71</sup> it would appear desirable to have a separate tax entity producing such water and actually selling it to the geothermal producer even though the failure to do this will not result in a loss of ultimately obtainable deductions.

In subsequent tax years during production the cost basis of the mineral property must be adjusted by reducing it by the amount of depletion allowed or allowable<sup>72</sup> and the estimated reserve reduced by the amount of mineral previously recovered. And, if warranted by additional data, the basis

67. In *Woodward Iron Co. v. Patterson*, 173 F. Supp. 251 (N.D. Ala. 1959), it was held that extraction and use in a manufacturing process is a sale for purposes of depletion. See, however, *Roundup Coal Mining Co. v. Commissioner*, 20 T.C. 388 (1953), wherein it was held that extraction and use in a production process is not a sale, relying on *Helvering v. Mountain Producer's Corporation*, 303 U.S. 376 (1938). The latter case involved a gas processor who agreed to buy leaseholder's gas with the understanding that processor would not only process but also actually produce the gas paying leaseholder a portion of the amount processor received on its sales of the finished product. The taxpayer-leaseholder-seller sought to deplete not only the amount received from purchaser but also an amount added in which equaled the value added by purchaser's production efforts, *i.e.*, in effect the difference between the value of the gas in place and the value on the surface. The Court held that only the cash received was depletable (it is on this point that *Roundup Coal*, *supra*, was decided.) The problem with the case is that the court appears to be saying that the purchaser acquired no depletable economic interest in the property. Thus depletion was lost since the amount the court held constituted gross income from property for purposes of percentage depletion equaled the value of the gas in place in the ground. Clearly the *Woodward Iron* case, *supra*, diverges from the holding of *Mountain Producer* and *Roundup Coal*.

68. Treas. Reg. § 1.611-2(a) (2).

69. See generally note 67 *supra*.

70. *Supra* notes 34-35, 37, 39-41.

71. See note 37, *supra*.

72. I.R.C. § 1016(a) (2). See also the text below to which notes 117-120 are appended.

should be revised upward or downward, as the case may be.<sup>73</sup> If the previous estimate was based on the then best available information, no change should be made with respect to cost depletion taken in previous years because the original estimate is now determined to have been in error.<sup>74</sup>

4. *Percentage or Statutory Depletion Computation.* Assuming satisfaction of the exhaustibility requirement and assuming the deposit is a natural deposit, there should be no difficulty obtaining percentage depletion for mineral by-products of geothermal production. With regard to the form in which geothermal energy is produced and the substance for which depletion is sought, more difficulties exist. There are several possibilities, of course. First, it might be argued that it is the heat itself which is the mineral being produced. Heat, if it is the substance being produced for tax purposes, should qualify under Section 613(b) (7) for a fourteen percent rate under the "all other minerals" provision if the problem with demonstrating exhaustibility can be overcome.<sup>75</sup> A proposed Treasury regulation may arguably provide some support for this view that heat is a depletable mineral and the substance for which depletion is available when geothermal energy is exploited. The regulation provides that "a geothermal deposit is a geothermal reservoir consisting of heat, largely stored in rocks, and to a lesser extent, in aqueous fluids in the form of liquid or vapor."<sup>76</sup> If heat were the substance being produced for depletion purposes, then the fact that the vehicle for transporting the heat was not a natural deposit or depletable waste or residue would appear to make no difference. However, the proposed regulations quoted above simply define the term geothermal deposit for purposes of Section 613A (b) (1) (c) added by the Tax Reduction Act of 1975 wherein it is provided "any geothermal deposit in the United States or a possession of the United States which is determined to be a gas well within the meaning of Section 613(b) (1) (A), . . . ." The section does appear to contemplate that some deposits may be held to constitute gas wells while some may not. Since heat is common to all such deposits, it appears reasonable to

73. Treas. Reg. § 1.611-2(c) (2); *Wylie v. United States*, 281 F. Supp. 180 (D.C. Tex. 1968).

74. *Supra* note 73.

75. See the text to which noted 12-31 *supra*, are appended.

76. Proposed Treas. Regs. § 1.613A(7) (e), 40 Fed. Reg. 48695 (1975).

conclude that heat is not the depletable substance. Rather, it appears that it is the vehicle for the heat, *i.e.*, hot water or steam, to which the depletion question must be applied. This is borne out by the only two decisions extant on the question, both of which involving pre-1975 tax years; the courts in both cases decided that geothermal steam may constitute gas under Section 613(b) (1) of the Code before its amendment by the 1975 Tax Reduction Act.<sup>77</sup>

If heat is not the depletable substance, then the question must be answered as to whether hot water and steam qualify for percentage depletion. Hot water in the reservoir which is produced as such and not flashed to steam would not appear to qualify. Section 613(b) (7) appears to expressly exclude such.<sup>78</sup>

Steam, on the other hand, which is contained in the geothermal reservoir in such form may well qualify. Section 613A added by the Tax Reduction Act of 1975 and unchanged in pertinent parts by the Tax Reform Act of 1976 is quoted above. It provided in effect for a twenty-two percent rate for those geothermal deposits determined to constitute gas wells. The legislative history indicates that the intent of this provision is simply that "For geothermal steam, present law is unaffected, so that if steam is ultimately held by the courts to be a gas entitled to a twenty-two percent rate of depletion, this treatment will be continued."<sup>79</sup> The tax court on two occasions has held that geothermal steam is a gas for purposes of percentage depletion.<sup>80</sup> One of the decisions, *Arthur E. Reich*,<sup>81</sup> was affirmed by the Ninth Circuit.<sup>82</sup> In *Arthur E. Reich*, the Service conceded that the word "gas" in Section 613(b) was not limited to hydrocarbon gases; however, it contested taxpayer's assertion that geothermal steam quali-

77. *Reich v. Commissioner*, *supra* note 8; George D. Rowan 38 T.C.M. 858 (P-H 1969), *aff'd*, 454 F.2d 1157 (9th Cir. 1972).

78. The Statute provides, "For purposes of this paragraph, the term 'all other minerals' does not include—(A) soil, sod, dirt, turf, water, or mosses; . . ."

79. H.R. REP. 120, 94th Cong., 1st Sess. 67 (1975) *reprinted in* [1975] U.S. CODE CONG. & ADMIN. NEWS 132. If Congress meant to provide that geothermal steam wells *can* constitute gas wells and that it's up to the courts to determine whether a particular well qualifies, then there would appear to be no particular difficulty other than the fact question that is raised in every case. On the other hand, if Congress meant to delegate to the courts the power to determine whether a geothermal steam well *can* constitute a gas well, then a serious question of constitutionality appears to be raised, *i.e.* an unlawful delegation of legislative authority.

80. *Reich v. Commissioner*, *supra* note 8; George D. Rowan, *supra* note 77.

81. *Supra* note 80.

82. *Reich v. Commissioner*, *supra* note 8.

fied as a "gas". The geothermal reservoirs in question were shown to be steam rather than water and the taxpayer demonstrated a significant decline in pressure in the reservoir which was attributable to production. The tax court in a decision affirmed by the Ninth Circuit<sup>83</sup> held that the exclusion referred to above<sup>84</sup> of water from the list of minerals for which percentage depletion was allowable did not mean "water" in the chemical sense stating, "We think it refers to 'water' in the ordinary sense, or liquid H<sub>2</sub>O."<sup>85</sup> The second case, *George D. Rowan*,<sup>86</sup> involved simply the question whether the intangible option under Section 263(c) was available for expenses incurred in drilling for geothermal steam. Citing *Reich* the court concluded that such expenses were within the option in a decision affirmed by the Ninth Circuit.<sup>87</sup>

If the reservoir contains hot water which flashes into steam either in the reservoir, in the production tubing, or on the surface because of a reduction in pressure, the obvious question arises whether such steam also qualified as a "gas." The *Reich* case, discussed above, noted the obvious that the steam in question was originally in liquid form.<sup>88</sup> Thus, if the hot water flashes into steam in the reservoir because of pressure reduction due to production and this steam is in turn produced, it appears reasonably arguable that "gas" is being produced. If the hot water flashes into steam in the well bore or at the well head, the same, of course, might be argued, *i.e.*, the taxpayer is still producing steam. Section 613(b) provides, "The mines, wells, and other natural deposits, and the percentages, . . . are as follows: . . ." Then is provided the minerals and the appropriate rate. In addition Section 613A(b) (1) (C) provides, as quoted above, for a geothermal deposit to qualify for percentage depletion if it is determined to constitute a gas well.<sup>89</sup> If the well physically is set up to produce gas rather than liquid, then perhaps any steam produced should qualify regardless of the point prior to the well-head where it became steam. However, Section 613(b), quoted im-

83. 52 T.C. 700, *supra* note 8.

84. See the text to which notes 59, 78 *supra*, are appended.

85. *Reich v. Commissioner*, *supra* note 8, at 714.

86. 38 T.C.M. 858 (P-H 1969), *supra* note 77.

87. *Reich v. Commissioner*, *supra* note 77; see also the discussion on development expenses below in the text to which notes 185-222, 241-272 *infra*, are appended.

88. 52 T.C. 700, *supra* note 8, at 704-705.

89. See the text after that to which note 76 *infra*, is appended.



mediately above, appears to require that the deposit itself contain the very substance for which depletion is sought, thus disqualifying steam which enters the well bore in a liquid form. If the water is produced and flashed into steam beyond the well-head in the gathering system or at the power plant, percentage depletion would appear unallowable since even at the point of production, *i.e.*, the well-head, the substance is still liquid.

Statutory depletion is compiled by multiplying the gross income, which is discussed below, attributable to the taxpayer's interest from the particular mineral property or an aggregation thereof by the appropriate percentage depletion rate as set forth in Section 613. If the *Reich* and *Rowan* cases<sup>90</sup> are correct, then for steam the rate is twenty-two percent. For any mineral by-products, the rate would be determinable from Section 613's specifications. Statutory depletion cannot be taken on more than one hundred percent of production.<sup>91</sup> Accordingly, the operator must exclude from his gross income from property any proceeds paid to other holders of economic interest.<sup>92</sup> The holder of each economic interest computes statutory depletion with respect to his share of the proceeds.<sup>93</sup>

Gross income from property for purposes of percentage depletion is essentially either the actual sales proceeds or the constructive sales proceeds at the cut-off point whichever sooner occurs.<sup>94</sup> For a gas, the cut-off point is the vicinity of the well.<sup>95</sup> If the gas is not sold at that point, then the regulations prescribed that the taxpayer use the representative market on field price.<sup>96</sup> If no representative market on field price is available then reference should be made to the hierarchy of methods prescribed in the regulations for determining this constructive value, *i.e.*, proportionate profits, or some other method acceptable to the Service.<sup>97</sup> For geothermal steam production, if actual sales are made, they probably will be

90. 52 T.C. 700, *supra* note 8; 38 T.C.M. 858 *supra* note 77.

91. *See Helvering v. Twin Bell Oil Syndicate*, 293 U.S. 312 (1943).

92. For a discussion of the concept of economic interest, *see* the text, *supra*, to which notes 42-50 are appended and Maxfield, *supra* note 10, at 1-27.

93. *Helvering v. Twin Bell Oil Syndicate*, *supra* note 91.

94. *See Maxfield*, *supra* note 10, at 41 *et seq.*

95. Treas. Reg. § 1.613-3(a).

96. Treas. Reg. § 1.613-3(a).

97. Treas. Reg. § 1.613-4; Rev. Proc. 74-73, 1974-2 C.B. 496.

made and the steam used in the vicinity of the lease since the steam resource will rapidly lose its heat energy in transportation.<sup>98</sup> As a result the sales price will probably constitute the gross income from property. Gathering facilities from the wells to the on-site generating plant should not render sales at the plant beyond the cut-off point. The Service may take the position that the representative market or field price or, if none, then the proportionate profits method should be used in such case.<sup>99</sup> However, if the only expenditure or process that has been incurred or applied beyond the cut-off point is transportation, the tax court permitted the deduction of transportation costs from sales proceeds.<sup>100</sup> The above discussion with regard to statutory depletion is applicable to the production and sale of mineral by-products although the cut-off point will vary depending on the mineral in question.<sup>101</sup>

Statutory depletion cannot exceed fifty percent of the taxpayer's taxable income from the particular property.<sup>102</sup> In computing taxable income from property, gross income is the same gross income figure used in computing the depletion allowance.<sup>103</sup> Taxable income from property is derived by deducting therefrom all operating costs excluding depletion,<sup>104</sup> but including depreciation, *ad valorem* and severance taxes, interest on borrowed money,<sup>105</sup> and an allocated part of overhead.<sup>106</sup> Overhead which is attributable to mineral production and other activities must be allocated by any reasonable method.<sup>107</sup> Overhead attributable to several mineral properties or aggregations thereof must likewise be apportioned between them usually by taking into account their relative production.<sup>108</sup> Any exploration and development expenditures which are deducted for the taxable year should be deducted in computing taxable income from property.<sup>109</sup> Net operating

98. Kruger & Otte, *supra* note 2, at 130.

99. Treas. Reg. § 1.613-3, -4.

100. James P. Evans, Sr. v. Commissioner, 11 T.C. 726 (1948).

101. I.R.C. § 613(C) (4); Treas. Reg. § 1.613-4.

102. I.R.C. § 613(a); Treas. Reg. § 1.613-1, -2(C), -5.

103. Treas. Reg. § 1.613-5(a).

104. Treas. Reg. § 1.613-5(a).

105. St. Mary's Oil & Gas Co. v. Commissioner, 42 B.T.A. 270 (1940).

106. Treas. Reg. § 1.613-5(a).

107. Treas. Reg. § 1.613-5(a).

108. *Id.*: G.C.M. 22956, 1941-2 C.B. 103. For a discussion of mineral properties, see the text to which notes 143-177 *infra*, are appended.

109. See the text to which notes 178 *et seq. infra*, are appended for a discussion of exploration and development expenditures. As therein noted, whether the mineral in question for which such expenditures are incurred constitutes a "gas" and whether it qualifies for percentage depletions substantially determines the treatment of such expenditures for tax purposes and, thus for depletion purposes.

losses are probably not deductible in computing taxable income from property.<sup>110</sup> Although two tentative versions of the regulations promulgated in 1968 and 1969 indicated the intent of the Service to change this position.<sup>111</sup> The final version of the regulations promulgated in 1972 does not include this proposed change but rather perpetuates the prior position of the Service.<sup>112</sup>

Where taxpayer produces from a particular property two or more minerals which are entitled to different percentage depletion rates, the depletion deduction is the total of the results of the application of the applicable rate to the gross income from property of each such mineral.<sup>113</sup> However, taxable income from property is determined by lumping together the gross income from property of the various minerals in one computation.<sup>114</sup> From a planning point of view, it should be clear that the timing of deductible exploration and development expenditures can through the fifty percent limitation have an affect on the amount of allowable depletion. An accrual basis taxpayer, who contracts the mining work, might consider a contract permitting him to control the time at which the expenditures are incurred. The cash basis taxpayer can control expenditures to a certain extent also by timing. The Revenue Service has reversed itself<sup>115</sup> and now agrees with a court decision<sup>116</sup> which held that intangible costs accruing by contract may be deducted when they are incurred and not later when the services are performed. Effort should be made to mix deductions and production in a manner not resulting in reduced depletion since the depletion lost because of the fifty percent limitation is lost forever.

**5. Adjustments to Basis.** Whenever statutory or cost depletion is allowed or allowable, the taxpayer must reduce his cost basis in the mineral property by the greater of the amount allowed or allowable. If, however, the depletion allowed exceeds depletion allowable, the taxpayer's basis in the property does not have to be reduced by such excess if the excess

110. Rev. Rul. 60-164, 1960-1 C.B. 254.

111. Proposed Treas. Reg. § 1.613-4, 33 Fed. Reg. 10,692 (1968); Discussion Draft Treas. Reg. § 1.613-4, 34 Fed. Reg. 5728, 5738 (1969).

112. Treas. Reg. § 1.613-5.

113. Treas. Reg. § 1.613-2(c) (2).

114. Treas. Reg. § 1.613-2(c) (2).

115. Rev. Rul. 71-252, 1971-1 C.B. 146; Rev. Rul. 71-579, 1971-2 C.B. 225.

116. Pauley v. United States, 11 AFTR2d 955 (D.C. Cal. 1963).

previously allowed did not result in a tax benefit.<sup>117</sup> The taxpayer may take the statutory depletion deduction even if he has no cost basis in the property or if previous deductions have eliminated his cost basis entirely.<sup>118</sup> If the taxpayer's cost basis has been eliminated by previous depletion deductions, subsequent statutory depletion deductions do not reduce the basis to less than zero.<sup>119</sup> According to the Revenue Service, however, any capital costs includible in depletable basis which are incurred after the total depletion deductions exceed the basis of the property must be credited against such excess in computing the new basis in the property.<sup>120</sup>

6. *Bonus, Delay Rental and Minimum Royalty.* When the owner of a mineral fee or leasehold interest executes a lease, sublease or assignment and retains a nonoperating interest which will exist for the life of the interest transferred, e.g., royalty or net profits interest, any consideration received by such transferee from the transferee in the form of an initial payment for the transfer is generally described as bonus. Also, a cash payment made to a mineral fee owner for an option to lease has been held to be regarded for tax purposes as an additional form of bonus.<sup>121</sup> From payee's point of view, the bonus is depletable ordinary income despite the lack of any reasonable prospect of obtaining production.<sup>122</sup> If, however, the lease or sublease expires, terminates, or is abandoned in a subsequent tax year without any production, the recipient of the bonus must restore to income and to basis in the year of such termination or abandonment the depletion deduction taken.<sup>123</sup> The payee may take either cost or percentage depletion, whichever is greater, with respect to bonus income.<sup>124</sup> Cost depletion thereon is computed by multiplying the taxpayer's basis for depletion in the mineral property by a fraction the numerator of which is the amount of the bonus and the denominator of which is the sum of the bonus and the

117. I.R.C. § 1016(a) (2); Treas. Reg. § 1.1016-3(e).

118. Treas. Reg. § 1.611-2(h) (2); *Louisiana Iron & Supply Co., Inc. v. Commissioner*, 44 B.T.A. 1244 (1941), acq.

119. *Beulah B. Crane v. Commissioner*, 3 T.C. 585 (1944) Non-acq., *rev'd on other grounds*, 331 U.S. 1 (1947).

120. Rev. Rul. 75-451, 1975-42 I.R.B. 15.

121. *Commissioner v. Pickard*, 401 F.2d 615 (10th Cir. 1968).

122. *Burnet v. Harmel*, 287 U.S. 103 (1932); *Herring v. Commissioner*, 293 U.S. 322 (1934); Treas. Reg. § 1.612-3(a,d).

123. Treas. Reg. § 1.612-3(a) (2). See Maxfield *supra* note 10, at 101 *et seq.* for further discussion of payee's treatment of bonus.

124. Treas. Reg. § 1.612-3(a,d).

royalties expected to be received.<sup>125</sup> Percentage depletion is computed by simply multiplying the amount of the bonus by the appropriate percentage depletion rate which resulting amount cannot, as noted above, exceed fifty percent of taxable income from the property in question.<sup>126</sup>

For payor, in computing percentage depletion, a pro rata portion of the bonus must be excluded from gross income from property in each taxable year since bonus is depletable to payee and since inclusion would result *pro tanto* in double depletion.<sup>127</sup> The amount of exclusion in each tax year is determined by taking that percentage of the bonus that is the percentage of total estimated mineral reserves sold during the tax year.<sup>128</sup> The amount of bonus excluded in determining payer's gross income from property may not be added back in determining payer's taxable income from property for purposes of the fifty percent limitation.<sup>129</sup> On the other hand, for purposes of determining Section 63 taxable income, neither all nor an allocable portion of the bonus payment is deductible.<sup>130</sup> The regulations also provide that a payor must capitalize a bonus payment into the basis of the mineral property in question.<sup>131</sup> Thus, cost depletion will recover the bonus in due course in accordance with the computation of cost depletion described above. Where statutory depletion exceeds cost depletion there is no tax advantage, of course, to capitalizing.<sup>132</sup>

Delay rental is defined in the regulations as "an amount paid for the privilege of deferring development of the property and which could be avoided by abandonment of the lease or by commencement of development operations or by obtaining production."<sup>133</sup> The payee (lessor) receiving delay

125. Treas. Reg. § 1.612-3(a) (1).

126. Treas. Reg. § 1.612-3(d).

127. Treas. Reg. § 1.613-2(c) (5). See *Helvering v. Twin Bell Oil Syndicate*, 293 U.S. 312 (1934).

128. Treas. Reg. § 1.613-2(C) (5) (ii). See also, *Quintana Petroleum Co. v. Commissioner*.

129. Treas. Reg. §§ 1.613-5(a), 1.613-2(C) (5) (ii).

130. Treas. Reg. § 1.613-2(c) (5) (ii); *Shamrock Oil and Gas Corp. v. Commissioner*, 346 F.2d 377 (5th Cir. 1965); *Sunray Oil Co. v. Commissioner*, 147 F.2d 962 (10th Cir. 1945); *Murphy Corp. v. United States*, 230 F. Supp. 583 (D.C. Ark. 1964), *aff'd*, 337 F.2d 677 (8th Cir. 1964). See, however, *Jefferson Lake Sulphur Co. v. Lambert*, 133 F. Supp. 197 (D.C. La. 1955), *aff'd*, 236 F.2d 542 (5th Cir. 1956).

131. Treas. Reg. § 1.612-3(a) (3).

132. See Maxfield, *supra* note 10, 109 *et seq.* for a further discussion of payor's treatment.

133. Treas. Reg. § 1.612-3(c).

rentals must report such as ordinary income and cannot take depletion thereon.<sup>134</sup> The payor (lessee) incurring delay rental expense has the option to regard such as either current expense or capital cost recoverable through the depletion allowance. In order to capitalize delay rentals, the taxpayer must so elect in a statement filed with his return. A new election may be made each year and is available apparently as to each separate property.<sup>135</sup> Only where cost depletion will exceed percentage depletion by an amount greater than the amount of the delay rental payment made in a particular year on a particular mineral property will it not be more beneficial to expense such payments. Since usually cost depletion will not so exceed percentage depletion, where the latter is allowable, it is generally preferable to treat delay rental payments as current expense in as much as the rental payment is then recoverable from Section 61 gross income as an independent deduction and not by amortization through the statutory depletion allowance.

The Revenue Service in 1956 adopted the view that initial payments, even though labeled delay rental, which were made on competitive federal and state leases and on all private leases were to be given bonus treatment.<sup>136</sup> However, in 1967 the Revenue Service relented by concluding that first year delay rental payments on competitive federal and state leases and on private leases may be expensed or capitalized at the option of the lessee.<sup>137</sup> Payments which are rental in form but bonus in substance will be given bonus treatment according to the ruling. However, it should be possible to cast at least part of the consideration agreed upon as rental paid for deferring the development obligation under the lease. To accomplish this, the lease should provide for a first-year rental payment in advance which, like subsequent rental payments defers the obligation to commence operations for a period of twelve months. If the initial payment is disproportionate in amount to subsequent payments, the Revenue Service is likely to recast such payment as bonus.

134. Treas. Reg. § 1.612-3(C) (2); *Commissioner v. Wilson*, 76 F.2d 766 (5th Cir. 1935).

135. I.R.C. § 266; Treas. Reg. § 1.266-1(c); Treas. Reg. § 1.612-3(c) (2); Rev. Rul. 55-118, 1955-1 C.B. 320; Rev. Rul. 67-25, 1967-1 C.B. 157.

136. Rev. Rul. 56-252, 1956-1 C.B. 210; *see also*, *United States v. Dougan*, 214 F.2d 511 (10th Cir. 1954); *Olin F. Featherstone v. Commissioner*, 22 T.C. 763 (1954).

137. Rev. Rul. 67-25, 167-1 C.B. 156.

In the case of minimum royalty payments as prescribed by federal leases for geothermal resources<sup>138</sup> the payor deducts the amount of the payment from his Section 61 gross income and from his Section 613 gross income from property in the year of payment since such payments would be taxable as production income to a private, taxpaying payee.<sup>139</sup>

On federal leases, of course, bonus will be paid if the land leased is within a "known geothermal resources area."<sup>140</sup> Federal leases for geothermal resources also require as a condition of continuance of the lease during the primary term that lessee pay delay rental for the privilege of deferring development of the leasehold.<sup>141</sup> Additionally, lessee is required to pay the United States a two dollar per acre minimum royalty for each producing lease.<sup>142</sup> The tax treatment of these various payments should be as described above.

**7. Mineral Properties and Aggregation.** It is important for a number of tax purposes to determine what constitutes a separate mineral property. As previously noted, depletion is computed on a property by property basis. Additionally, questions of worthlessness losses, bonus restoration (as discussed above), and gain or loss on a sale require determination of what constitutes a separate mineral property.

Section 614(a) of the Code defines a separate mineral property as follows, "For purposes of computing the depletion allowance in the case of mines, wells, and other natural deposits, the term 'property' means each separate interest owned by the taxpayer in each mineral deposit in each separate tract or parcel of land." Thus, there must be three factors present in order for there to be one property, *i.e.*, a separate interest, a separate deposit, and a separate tract or parcel of land. Separate interest is defined in the regulations as an economic interest in a mineral deposit including working in-

138. See 30 U.S.C. § 1004(d) (1970).

139. See *Handelman v. United States*, 357 F.2d 694 (Ct. Cl. 1966). *Louisiana Land and Exploration Co. v. Donnelly*, 394 F.2d 273 (5th Cir. 1968). *John McClean v. Commissioner*, 54 T.C. 569 (1970). Rev. Rul. 64-91, 1964-1 C.B. 219, *modifying*, Rev. Rul. 16, 1953-1 C.B. 173; Rev. Rul. 75-182, 1975-1 C.B. 176. For a more extensive discussion of the tax treatment of minimum royalty payments, see Maxfield, *supra* note 10, at 115 *et seq.*

140. 30 U.S.C. § 1003 (1970).

141. 30 U.S.C. § 1004(d) (1970).

142. 30 U.S.C. § 1004(d) (1970).

terests, royalties, overriding royalties, production payments as qualified by Section 636, and net profits interests.<sup>143</sup> Each dissimilar interest constitutes a separate property.<sup>144</sup> Additionally, if the taxpayer acquires several undivided interests in one tract of land either at one time from separate owners or at different times from the same owner, the undivided interests will probably constitute separate properties<sup>145</sup> unless the primary motive for such is tax savings. In addition if taxpayer acquires similar interests in contiguous areas of land from separate owners at the same time or from one owner at different times, he will have separate properties.<sup>146</sup> The Service has indicated that individual federal leases on contiguous tracts acquired *on the same day* are separate mineral properties.<sup>147</sup> The ruling notes that the acquisition of each lease was completed independently of the acquisitions of the other.<sup>148</sup> Thus, under very limited circumstances, similar interests acquired on contiguous properties from the same owner at the same time still may constitute separate properties. The ruling has obvious importance to geothermal lessees who would desire to obtain large blocks of contiguous properties and yet obtain the tax flexibility or benefit of having a number of separate mineral properties.<sup>149</sup>

The term tract or parcel of land describes the physical scope of the land in which taxpayer has an interest and not the interest of the taxpayer in the land.<sup>150</sup> Even though areas of land are acquired from the same owner at the same time, if they are not contiguous, they are separate properties because they are separate tracts or parcels.<sup>151</sup> The regulations also provide that areas included in separate conveyances from separate owners whether or not at the same time are separate tracts.<sup>152</sup> In addition the tax court has held that areas of land

143. Treas. Reg. § 1.614-1(a) (2).

144. Treas. Reg. § 1.614-1(a) (3), -1(a) (5), Ex. 3. This is subject to exception where the separate interests are created solely for a tax savings purpose. See *Wiseman v. Barby*, 390 U.S. 339 (1968); *McAfee v. United States*, 26 AFTR 2d 70-5617 (10th Cir. 1970); *Lots Inc. v. Commissioner*, 49 T.C. 541 (1968), *aff'd per curiam*, 23 AFTR 2d 69-1246 (5th Cir. 1969); *O.W. Killam v. Commissioner*, 33 T.C. 345 (1959).

145. See *Ed Peterson v. Commissioner*, 25 B.T.A. 1364 (1932).

146. Treas. Reg. § 1.614-1(a) (3).

147. Rev. Rul. 68-566, 1968-2 C.B. 281.

148. Rev. Rul. 68-566, 1968-2 C.B. 281.

149. See *Kruger & Otte*, *supra* note 2, at 130 *et seq.* for a discussion of the planning for property acquisition and property development that must take place before an investment will be made in generating facilities.

150. Treas. Reg. § 1.614-1(a) (3).

151. Treas. Reg. § 1.614-1(a) (5) Ex. 4.

152. Treas. Reg. § 1.614-1(a) (3).



meeting at a corner are not contiguous and, therefore, are separate tracts or parcels.<sup>153</sup>

Each separate mineral deposit constitutes a separate property. This can be important for the taxpayer who is in the production stage at one level in the formation but who is exploring in deeper formations. The Revenue Service has ruled that a dry hole need not be attributed to a producing horizon for purposes of computing the depletion deduction and the fifty percent limitation if the intent of the operator was to discover other producing horizons and not to further explore or define the existing producing horizon.<sup>154</sup>

If the substance being exploited by the geothermal well is not depletable then the mineral property and aggregation provisions of the Code do not apply. If, however, such is depletable, then the determination must of course be made as to whether the substance qualifies as a "gas" or whether it is a natural deposit of mineral other than oil or gas. As discussed at length above, the determination is necessary for purposes of applying the proper type and rate of depletion. Also, as will be discussed below,<sup>155</sup> the way in which exploration and development expenses are recovered turns in part on the answer to this question. Additionally, the answer determines how aggregations of separate mineral properties can be made.<sup>156</sup>

The Code has long provided that mineral operators may make certain combinations of mineral properties. These combinations, called "aggregations," result in the treatment of separate properties as one property for all income tax purposes.<sup>157</sup> For oil and gas properties, the opportunity and flexibility for tax planning contained in the aggregation provisions is slight.<sup>158</sup> In effect the statute provides that all of operating mineral interests in a separate tract or parcel of land shall be

153. *Berkshire Oil Co. v. Commissioner*, 9 T.C. 903 (1947), Acq.; *Norman Freman v. Commissioner*, 48 T.C. 96 (1967).

154. Rev. Rul. 58-231, 1958-1 C.B. 247. *Accord*, *Central Oil Co. v. United States*, 27 AFTR 2d 71-410 (S.D. Miss. 1971).

155. See the text to which notes 180-184, 226-240 *infra*, are appended.

156. I.R.C. § 614(b) (c); Treas. Reg. §§ 1.614-3, 1.614-8.

157. Treas. Reg. § 1.614-3(a) (1), 1.614-3(a) (1). In the cases of minerals other than oil and gas in certain circumstances, the taxpayer may divide a separate mineral property into several; see I.R.C. § 614(c) (2). For further discussion of separate mineral properties and aggregations, see *Maxfield*, *supra* note 10, at 135 *et seq.*

158. I.R.C. § 614(b).

treated as one property unless the taxpayer elects to keep them separate.<sup>159</sup> However, the taxpayer may not have more than one combination in a single tract.<sup>160</sup> Additionally, each subsequently discovered or acquired operating mineral interest in a single tract shall be treated either as a separate property unless taxpayer elects otherwise if there is no aggregation in the tract or as combined unless taxpayer elects otherwise if there is an aggregation on the tract.<sup>161</sup> The election is properly made in the first taxable year in which any expenditure for development or operation is incurred by the taxpayer after the acquisition of the interest.<sup>162</sup> For oil and gas properties, voluntary and compulsory unitization can result in an aggregation.<sup>163</sup> The reasons justifying unitizations in the oil and gas context would appear about equally applicable in the geothermal steam context. In the context of oil and gas and therefore, as it now appears, geothermal steam, only by conveyance or unitization (or pooling) may the taxpayer separate into two a single mineral property.<sup>164</sup>

For depletable minerals other than oil and gas, there is considerably more flexibility provided in the statute.<sup>165</sup> The taxpayer may elect to aggregate separate operating mineral interests<sup>166</sup> which are part of the same operating unit<sup>167</sup> and which comprise any one or more mines.<sup>168</sup> Unlike the rules governing aggregations of oil and gas properties, in the case of other minerals, it is not necessary for aggregation that the mineral properties be in one tract or parcel but rather simply part of the same operating unit. Also, unlike oil and gas, more than one aggregation can be formed in an operating unit as long as all interests comprising a single mine are treated consistently, *i.e.*, aggregated or kept separate.

The election to aggregate is made at the same time as the oil and gas election, *i.e.*, in the first year when exploration or

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159. I.R.C. § 614(b); Treas. Reg. § 1.614-8.

160. I.R.C. § 614(b); Treas. Reg. § 1.614-8.

161. I.R.C. § 614(b); Treas. Reg. § 1.614-8.

162. I.R.C. § 614(b); Treas. Reg. § 1.614-8.

163. I.R.C. § 614(b); Treas. Reg. § 1.614-8.

164. *Id.* Treas. Reg. § 1.614-1(a) (5), Ex. 5.

165. I.R.C. § 614(c).

166. This interest is defined as the type with respect to which its owner would have to take costs of production into account in computing the fifty percent taxable income limitation. See Treas. Reg. § 1.614-2(b).

167. An operating unit includes those operating mineral interests operated together for the purpose of producing minerals, see Treas. Reg. § 1.614-2(c).

168. See Treas. Reg. § 1.614-3(c).

development expenditures have been incurred. If the taxpayer fails to make a timely election as to a particular operating interest, it will be treated as a separate property unless it is a part of a mine which has already been aggregated in which case it will be treated as part of the aggregation.<sup>169</sup> If the new interest is a part of a mine the component interests of which have been treated as separate properties, the new interest must be treated as a separate property. If the new interest is part of a mine which previously was a single interest and which has not been aggregated, as noted above, the new interest may either be kept separate or aggregated with such other previously held interest. If the additional interest is a whole mine, the taxpayer has three choices: (1) he may add the interest to any aggregation within the operating unit, (2) he may aggregate it with any other single interest which is an entire mine and which is in the same operating unit, or (3) he may treat it as a separate property.<sup>170</sup>

The regulations clearly proscribe the aggregation of non-operating and operating interests.<sup>171</sup> However, provision is made for the aggregation of non-operating interests under certain circumstances.<sup>172</sup> For minerals other than oil and gas, the taxpayer may also elect to divide a single mineral property into more than one if the mineral deposit will be extracted by more than one mine.<sup>173</sup> This election is made at the same time as the election described above.<sup>174</sup>

For both oil and gas and also other mineral property aggregations, the basis of an aggregated property is computed by adding together the unadjusted basis of the aggregated properties and subtracting therefrom all of the adjustments to the bases of the properties being aggregated as required by Section 1016.<sup>175</sup> The bases of newly formed separate properties is determined by apportioning the basis of the former single property between the two according to their relative fair market values on the date of separation.<sup>176</sup> For depletion purposes, taxpayer must allocate the mineral deposit.<sup>177</sup>

169. Treas. Reg. § 1.614-3(a) (2).

170. Treas. Reg. § 1.614-3(a) (2).

171. Treas. Reg. § 1.614-3(a) (1).

172. Treas. Reg. § 1.614-5.

173. Treas. Reg. § 1.614-3(b).

174. Treas. Reg. § 1.614-3(f).

175. Treas. Reg. § 1.614-6(a) (1). The service is thereby assured of the lowest possible combined basis.

176. Treas. Reg. § 1.614-3(b) (3).

177. Treas. Reg. § 1.614-3(b) (2).

## EXPLORATION AND DEVELOPMENT EXPENSES

There are three possible treatments for such intangible expenses with respect to geothermal resources: (1) they may be treated like oil and gas expenditures; (2) they may be treated like hard rock expenditures; (3) they may have to be capitalized. The treatment, as discussed below, depends on the nature of the resource for tax purposes.

1. *Geothermal Resource a "Gas"*. If, as discussed above,<sup>178</sup> geothermal steam is a gas under Sections 613 and 613A, then the provisions governing oil and gas exploration and development expenditures would be applicable.<sup>179</sup> The process of exploration for geothermal steam reservoirs can be in many respects similar to that involved in oil and gas exploration.<sup>180</sup> A 1950 revenue ruling remains the guide as to how oil and gas exploration expenditures are treated:

Advice is requested whether, for Federal income tax purposes, geological and geophysical exploration costs constitute capital expenditures or ordinary and necessary business expenses.

It has been held that exploration costs are capital expenditures and are not deductible as business expenses under section 23(a) (1) (A) of the Internal Revenue Code and corresponding provisions of prior revenue laws. Such costs are incurred for the purpose of obtaining and accumulating data which will serve as a basis for the acquisition or retention of property. Accordingly, if property is acquired or retained on the basis of data obtained from exploration, costs of exploration attributable to that property should be capitalized as part of the cost of such property.

It is customary in the search for mineral-producing properties for an explorer to conduct his exploration program by projects, each project covering only that territory which he has determined by analysis of certain variables, viz, the size and topography of the area to be explored, existing information with respect to that area and nearby areas, and the quantity of equipment, men, and money available, can be explored advantageously as a single integrated operation. After

178. See the text to which notes 77-86 *supra*, are appended.

179. I.R.C. § 263(c); Treas. Reg. § 1.612-4. See *Reich v. Commissioner*, *supra* note 8; George D. Rowan, *supra* note 77.

180. *Kruger & Otte*, *supra* note 2, at 98 *et seq.*; *Armstead*, *supra* note 3, at 33 *et seq.*

determination of its area, each project usually begins with a reconnaissance-type survey covering the entire area. The purpose of this relatively inexpensive survey is to locate those portions of the project area which have the greatest promise, thus enabling the explorer to most effectively concentrate the use of his money and equipment and the efforts of his men in those portions of the area. Each such separable, noncontiguous portion of the project area, identified by the reconnaissance-type survey as possession sufficient mineral-producing potential to merit further exploration, is an area of interest. Where an exploration project is conducted without a preliminary reconnaissance-type survey, the project area and the area of interest are coextensive.

When the areas of interest in an original project area have been located by the reconnaissance-type survey, for the purposes of allocating and capitalizing costs of further exploratory operations, the original project is considered subdivided into as many smaller projects as there are areas of interest. Since each area of interest thereafter constitutes a separate project, further exploratory operations conducted with respect to one area of interest are completely independent of those conducted with respect to a different area of interest also within the original project area.

By further exploratory operations (detailed surveys) conducted with respect to each area of interest, the explorer seeks to ascertain the presence or absence of a mineral deposit in that area of interest. For that purpose, he employs such geological and geophysical exploration methods as will obtain subsurface data sufficiently accurate to afford a basis for a decision to acquire or retain properties within or adjacent to a particular area of interest, or to abandon the entire area of interest as unworthy of development by mine or well.

If, from the data obtained from the reconnaissance-type survey, only one area of interest is located or identified within the original project area, the entire cost of the reconnaissance-type survey must be allocated to that one area of interest. If two or more areas of interest are located or identified within the original project area, the entire cost of the reconnaissance-type survey must be allocated equally among the various areas of interest.

Depending upon the final disposition of the area of interest to which it is allocated, each allocated part of the cost of the reconnaissance-type survey will be

treated as a capital expenditure under section 24(a) (2) of the Internal Revenue Code or as a loss under section 23(e) or (f) of the Code. If, from the data obtained by the reconnaissance-type survey, no areas of interest are located or identified within an original project area, the entire cost of the reconnaissance-type survey may be deducted as a loss under section 23(e) or (f) of the Code for the year of abandonment of that particular project.

Where a detailed (intensive) survey is conducted with respect to a particular area of interest, if a property is acquired or retained within or adjacent to that area on the basis of the data so obtained, the entire cost of that detailed survey plus that portion of the cost of the previous reconnaissance-type survey allocated to such area must be capitalized as part of the cost of the property so acquired or retained. Where more than one property is so acquired or retained within or adjacent to an area of interest, it is proper to allocate, on an acreage basis, the entire cost of the detailed survey plus that portion of the cost of the previous reconnaissance-type survey allocated to such area among the properties so acquired or retained. Where, on the basis of data obtained from exploration conducted with respect to an area of interest, no property is acquired or retained within or adjacent to that area, the costs of exploration, including that portion of the cost of the reconnaissance-type survey allocated to that area of interest, may be deducted as a loss for the year in which that area of interest is abandoned as a potential source of mineral production.<sup>181</sup>

“Core holes” on “Stratigraphic wells” which are drilled to locate and identify a geologic structure are exploratory in nature because of their purpose and the fact that geothermal steam is not intended to be produced therefrom.<sup>182</sup> Thus expenses for such wells would constitute detail survey costs and must be capitalized into the basis of the property or properties explored thereby.<sup>183</sup> Where several properties are involved the costs would be allocated among them on an acreage basis.<sup>184</sup>

Expenditures which are “incident to and necessary for the drilling of wells and the preparation of wells for produc-

181. I.T. 4006, 1950-1 C.B. 48.

182. See Linden, *Review Of Offshore Drilling—What Are Intangibles?*, 26 INST. ON OIL AND GAS LAW AND TAXATION 441, 446 (1975).

183. I.T. 4006, *supra* note 181.

184. *Id.*

tion of oil and gas”<sup>185</sup> are developmental in nature and fall within the intangible option of Section 263(c) if they are expenditures for items which do not have a salvage value.<sup>186</sup> Examples of expenditures which if developmental rather than exploratory or operating will qualify are set forth in the regulations:

Examples of items to which this option applies are, all amounts paid for labor, fuel, repairs, hauling, and supplies, on any of them, which are used—

- (1) In the drilling, shooting, and cleaning of wells,
- (2) In such clearing, road making, surveying, and geological works as are necessary in preparation for the drilling of wells, and
- (3) In the construction of such derricks, tanks, pipelines, and other physical structures as are necessary for the drilling of wells and the preparation of wells for the production of oil or gas.<sup>187</sup>

The Revenue Service has ruled that the fact that the expenditure is made for a particular physical item which will not have a salvage value is not determinative.<sup>188</sup> The question is whether the item *ordinarily* would have a salvage value.<sup>189</sup> Thus, it was ruled that even casing cemented in the well bore is not intangible and therefore costs are not within the option.<sup>190</sup> Of course costs for the physical items themselves, *i.e.*, items with a salvage value, must be capitalized and recovered through depreciation.<sup>191</sup> As to the beginning of the “developmental” stage and end of the “exploratory” stage on the one hand and the end of the “developmental” stage and the beginning of the operational or producing stage on the other, one must look at the specific nature of the particular item for which the expenditure is made. This inquiry must be made because before the developmental stage, all expenditures for intangible items will go either into the depletable basis of the mineral property<sup>192</sup> or into depreciable basis where represented by depreciable property. After the developmental stage, expenditures for intangible items will go either

185. Treas. Reg. § 1.612-4(a).

186. Treas. Reg. § 1.612-4(a).

187. Treas. Reg. § 1.612-4(a).

188. Rev. Rul. 70-414, 1970-2 C.B. 132.

189. Treas. Reg. § 1.612-4(c) (1).

190. *Supra* note 188.

191. Treas. Reg. § 1.612-4(c) (1).

192. I.T. 4006, *supra* note 180.

into depreciable basis of physical, depreciable property, the depletable basis of the mineral property, or they will constitute Section 162 "ordinary and necessary" business expenses. In any event the test of exploration versus development versus production is approached on a well by well basis rather than the larger basis used for hard rock expenditures, *i.e.*, has there been a commercial discovery.<sup>193</sup> Thus, there is an obvious tax advantage to qualifying under the oil and gas provisions if the field is not proven.

As noted above, detail surveys are exploratory in nature and thus must be capitalized into depletable basis.<sup>194</sup> On the other hand expenditures for surveys run to determine where to drill a well that would produce assuming an appropriate discovery are developmental in nature and fall within the option.<sup>195</sup> Certainly the fact that a well is "wildcat" and therefore in a real sense exploratory in nature should not disqualify it if it is a well that will produce if a discovery is made, *i.e.*, that its purpose or nature is not simply to determine the geology of the area in question.

On the other end, applying the text provided in the regulations<sup>196</sup> *i.e.*, expenditures necessary for drilling and preparation for production, the Service has taken a narrow view. A well is regarded as completed for production when the casing and the Christmas tree have been installed.<sup>197</sup> Expenditures for intangible items beyond that point are production in nature.<sup>198</sup> This would include costs for recycling and disposal wells.<sup>199</sup> Expenses incurred prior to actual production in shooting wells with nitroglycerin<sup>200</sup> and expenses incurred in redrilling and increasing the depth of previously drilled wells to a new horizon are within the option.<sup>201</sup> Expenses incurred

193. See the text to which notes 222 *et seq. infra*, are appended.

194. See the text to which note 181 *infra*, is appended.

195. Treas. Reg. § 1.612-4(a) (2). The Service is reported to take the position that it will not recognize surveys as being developmental unless: (1) the survey is conducted on property already acquired, (2) it is followed quickly by the drilling of a well, and (3) the survey is not large enough to determine the size and shape of a complete structure." Yarbrow, *Geological and Geophysical Exploration*, NAT. RESOURCES TAXES ¶ 2009, ¶ 2009.3 (P-H 1973). If the cost exceeds an amount considered by the service as appropriate for such a survey, then a challenge can be expected according to the above commentator.

196. See the text to which notes 185-187 *supra*, are appended.

197. Rev. Rul. 70-414, 1970-2 C.B. 132.

198. Rev. Rul. 70-414, 1970-2 C.B. 132.

199. Rev. Rul. 70-414, 1970-2 C.B. 132.

200. PMK Petroleum Co. v. Commissioner, 24 B.T.A. 360 (1931).

201. Monrovia Oil Co. v. Commissioner, 28 B.T.A. 335 (1933), *aff'd*, on another issue, 83 F.2d 417 (9th Cir. 1936); Consolidated Mutual Oil Co., 2 B.T.A. 1067 (1925).



in the sand-fracturing of older wells not producing in commercial quantities have been held within the option.<sup>202</sup> Also, costs incurred in drilling water input wells to obtain production in commercial quantities have been held within the option.<sup>203</sup> Costs incurred in converting existing non-commercial wells to input wells should also qualify. A key fact that must be shown is that the operation must precede commercial production or otherwise the operation in question is of a producing rather than developmental nature.<sup>204</sup> Many different proposals for the stimulation of geothermal reservoirs have been formulated including nuclear stimulation.<sup>205</sup> As long as what results is a "gas well" within Sections 613 and 613A and as long as the operation either precedes commercial production either entirely or after a decline in production to non-commercial quantities, the intangible expenses incurred in these operations should qualify.<sup>206</sup>

The regulations provide that the option can be exercised by an operator, *i.e.*, "one who holds a working or operating interest in any tract or parcel of land either as a fee owner or under a lease or any other form of contract granting working or operating rights."<sup>207</sup> It is apparent, therefore, that ordinarily the owner of a royalty, overriding royalty, production payment, and net profit interest cannot deduct intangibles. The owner of an operating interest can deduct intangibles if actually incurred by him and not by another prior to his acquisition of the interest<sup>208</sup> to the extent that such costs are attributable to his share of the total of all operating mineral interests.<sup>209</sup> The taxpayer, however, must be able to establish

202. *Producer Chemical Co. v. Commissioner*, 50 T.C. 940 (1968).

203. *Rev. Rul. 69-583*, 1969-2 C.B. 41; *Page Oil Co. v. Commissioner*, 41 B.T.A. 952 (1940), *aff'd*, 129 F. 2d 748 (2nd Cir. 1942), Non-acq.

204. *See James A. Lewis Engineering Co. v. Commissioner*, 339 F.2d 706 (5th Cir. 1964), *aff'd*, 39 T.C. 482.

205. *Kruger & Otte*, *supra* note 2, at 217 *et seq.*

206. Costs of maintenance of the property prior to production are not within the option. *Kenneth C. Davis*, ¶56,166 P-H Memo T.C. Amounts embezzled by an employee before the property is producing have been held not to be developmental. *New Quincy Mining Co. v. Commissioner*, 36 B.T.A. 376 (1937). Costs incurred to acquire a right of way which obstructed development have been ruled costs of acquisition and not developmental. *Rev. Rul. 66-170*, 1966-1 C.B. 159; *Rev. Rul. 67-35*, 1967-1 C.B. 159; *Rev. Rul. 74-282*, 1974-1 C.B. 150; *Geohegan and Mathis, Inc. v. Commissioner*, 55 T.C. 672 (1971), *aff'd*, 453 F.2d 1324 (6th Cir. 1972). *See, however, Kennecott Copper Corp. v. United States*, 347 F.2d 275 (Ct. Cl. 1965).

207. *Treas. Reg. § 1.612-4(a)*. *See also Maxfield, Right to Gross Production—Operating or Nonoperating for Federal Income Tax Purposes*, 22 OIL AND GAS TAX Q. 85 (1973).

208. *Erwin Haass v. Commissioner*, 55 T.C. 43 (1970). *Acq.*; *Phillips v. United States*, 233 F. Supp. 59 (E.D. Tex. 1964), *aff'd*, 16 AFTR 2d 6051 (5th Cir. 1965); *Rev. Rul. 75-304*, 1975-30 I.R.B. 9

209. *Rev. Rul. 70-657*, 1970-2 C.B. 70.

that the monies were spent as claimed.<sup>210</sup> The taxpayer should not be disqualified if the drilling is accomplished by a drilling contractor pursuant to a footage or turnkey contract.<sup>211</sup>

The election to deduct intangibles as a current expense must be made in the first return filed after incurring such expenses.<sup>212</sup> In the event the taxpayer fails to clearly elect, he will be held to have elected to capitalize<sup>213</sup> and the election once made is binding for all subsequent years for the taxpayer with respect to all properties.<sup>214</sup> A taxpayer who has elected to capitalize intangibles has an additional election as to whether to write off currently intangibles incurred in drilling a dry hole.<sup>215</sup> This additional election should be made in the tax return for the first taxable year in which a dry hole is drilled.<sup>216</sup> It also is binding for subsequent tax years and for all properties of the taxpayer.<sup>217</sup>

A corporation has an election in this respect distinct from that of its stockholders.<sup>218</sup> A trustee as such has an election distinct from his election as an individual.<sup>219</sup> Additionally, a partnership constitutes a distinct entity for this purpose and should make a separate election.<sup>220</sup> A taxpayer qualified to exercise the intangible option will rarely find it advantageous to capitalize. This is true because an election to expense permits not only an immediate write-off but also if such expenses are capitalized they are recoverable only by depletion unless they represent costs for installation of depreciable property. Percentage depletion is, of course, allowable regardless of basis.<sup>221</sup>

210. Donald L. Heberer, ¶ 74,139 P-H Memo T.C.

211. *Retsal Drilling Co. v. Commissioner*, 127 F.2d 355 (5th Cir. 1942); Treas. Reg. § 1.612-4(a). Amounts constituting profit to the turnkey contractor should not reduce the deductible amount even if the turnkey is one of the participants in the venture. *L. Lee Standon*, ¶ 67,039 P-H Memo TC; *G.F. Hedges, Jr. v. Commissioner*, 41 T.C. 695 (1964).

212. Treas. Reg. § 1.612-4(d).

213. Treas. Reg. § 1.612-4(d).

214. Treas. Reg. § 1.612-4(e). See, however, *Estate of Goodall v. Commissioner*, 391 F.2d 775 (8th Cir. 1968), for a qualification to the strict rule where taxpayer failed inadvertently to expense in the first year but indicated nothing inconsistent with the intent to expense.

215. Treas. Reg. § 1.612-4(b) (4).

216. Treas. Reg. § 1.612-4(b) (4).

217. Treas. Reg. § 1.612-4(b) (4).

218. Rev. Rul. 69-590, 1969-2 C.B. 170.

219. *Bessie Dye*, ¶ 42,563, P-H Memo TC.

220. I.R.C. § 703 (b); Rev. Rul. 54-42, 1954-1 C.B. 64.

221. See the text to which notes 118-120 *supra*, are appended.

The 1976 Tax Reform Act<sup>222</sup> adds a new Section 1254 to the code effective for tax years ending after December 31, 1975, which requires recapture in certain areas of intangible drilling and development costs, upon a disposition of the mineral property. The rules, similar to Section 1245, applying only to expenses incurred after the above date, require recapture of the total amount taken reduced by the amount by which the depletion allowable on the property disposed of would have been increased had the costs been capitalized. The gain realized on, if no gain, the excess of fair market value over the property's basis sets the ceiling for the amount to be recaptured.

All oil and gas properties of all taxpayers are subject to the provisions. If a portion of the property is transferred in severalty, all intangible costs attributable to the property are charged to that portion. If, however, the taxpayer can show that the costs do not relate to the portion transferred, recapture will not apply. Any excess not recaptured is allocated to the position retained. If on the other hand an undivided interest is transferred, then the intangible costs are allocated to that interest transferred in proportion to the fraction or percentage of the interest transferred. Transfers involved in unitization, pooling, and the exceptions listed in Section 1245 are exempted. However, intangible costs are treated as unrealized receivables under Section 751 in distributions from a partnership to a partner.

2. *Geothermal Resource Not a "Gas"*. Section 263(c) is only applicable to oil and gas. In the absence of other statutory authority exploration and development expenditures are capital in nature and thus must be capitalized into depletable and depreciable bases, respectively.<sup>223</sup> As has been discussed in detail above, except for any mineral by-products, geothermal resources appear either statutorily depletable under Section 613A(b) (1) (c) as a "gas" from a geothermal deposit gas well with the alternative of cost depletion or, if hot water is being produced, then only cost depletable because of the ex-

222. Act of Oct. 4, 1976, Pub. L. No. 94-455, § 205, 90 Stat. 1533. (codified at 26 U.S.C.A. § 1254 (1976)).

223. *F.H.E. Oil Co. v. Commissioner*, 147 F.2d 1002 (5th Cir. 1945), *rehearing*, 149 F.2d 238, *rehearing*, 150 F.2d 857; *Rialto Mining Corp.* ¶ 46,148 P-H Memo. TC.

clusion in Section 613(b) (7).<sup>224</sup> It does not appear that heat alone is a depletable resource under the percentage depletion provisions.<sup>225</sup>

The question then to be answered is whether Sections 616 and 617, relating primarily to hard rock development and exploration expenditures, respectively, are applicable to hot water. With regard to exploration expenditures, it appears clear from Section 617(a) (1) that the special treatment provided for therein would not be allowable for exploration expenditures relating to hot water. The statute provides:

In no case shall this subsection apply with respect to amounts paid or incurred for the purpose of ascertaining the existence, location, extent, or quality of any deposit of oil or gas or of any mineral with respect to which a deduction for percentage depletion is not allowable under Section 613.<sup>226</sup>

Section 616, applicable to development expenses primarily for hard rock properties, may be viewed as a companion provision to Section 617. However, Section 616 contains no qualification or limitation to statutorily depletable minerals (other than oil and gas) such as is contained in Section 617 as quoted above. Section 616(a) provides in part as follows, “. . ., (There shall be allowed as a deduction in computing taxable income all expenditures paid or incurred during the taxable year for the development of a mine or other natural deposit other than an oil or gas well) . . .” Thus, it would appear that Section 616 would be applicable to hot water deposits.<sup>227</sup>

In any event the following is a brief description of exploration and a more extensive description of development provision as set forth in Sections 617 and 616.<sup>228</sup> Exploration expenditures for purposes of Section 617 are defined as those

224. See the text to which notes 59, 75-87 *supra*, are appended.

225. *Id.*, Arthur E. Reich v. Commissioner *supra* note 8, at 709.

226. I.R.C. § 613(a) (1). If geothermal steam is ultimately determined to not constitute a “gas” for percentage depletion purposes because chemically it is water, then it would be subject to this same disqualification.

227. It appears reasonable from the statute and regulation to conclude that Section 616 would be applicable to hot water deposit even if cost depletion were not allowable if the reason for the latter was the inability of the taxpayer to show exhaustibility of the deposit.

228. For a more extensive discussion of the treatment of section 617 explorations expenses see Maxfield, *supra* note 10, at 209-223.

incurred to ascertain the existence, location, extent or quality of any deposit of minerals before the beginning of the development stage.<sup>229</sup> The development stage is that point when a deposit of commercial quantity and quality has been discovered.<sup>230</sup> Expenditures for depreciable property are not exploration expenditures. However, the annual depreciation allowance on exploration equipment does fall within Section 617.<sup>231</sup> Expenses deductible without regard to Section 617 are not affected thereby.<sup>232</sup>

Section 617 provides two elections for qualified exploration expenditures. First, a taxpayer has the election to deduct them currently: and, if he fails to do so, he will be held to have elected to capitalize them. This election is made in the return for the first year in which such treatment is desired. Once the election to deduct it is binding on the taxpayer for all future years for all properties unless revoked with the permission of the Commissioner.<sup>233</sup> This election unlike the oil and gas intangibles election is made by the partners rather than the partnership.<sup>234</sup> Second, if taxpayer has elected to deduct currently his Section 617 exploration expenses, he must recapture them at least in part if and when the mine reaches the production stage.<sup>235</sup> At that time taxpayer may elect to recapture them all or taxpayer may elect to recapture ratably as the deposit is produced.<sup>236</sup> This election is available each year for all mines reaching the producing stage in that year.<sup>237</sup>

The production stage is essentially that point when a mine or natural deposit is being produced primarily rather than developed primarily.<sup>238</sup> There are provisions requiring recapture on certain dispositions<sup>239</sup> and limiting the amount to be recaptured to amounts which resulted, in effect, in a tax benefit in the year deducted and which otherwise would be includible in depletable basis.<sup>240</sup>

229. Treas. Reg. § 1.717-1(a); Rev. Rul. 74-67, 1974-1 C.B. 63.

230. Treas. Reg. § 1.717-1(a).

231. Treas. Reg. § 1.617-1(b) (2). Installation costs are probably deductible under section 617. See Rev. Rul. 75-60, 1975-8 I.R.B. 20; but compare Treas. Reg. § 1.612-4(a) with Treas. Reg. § 1.617(b) (2).

232. Treas. Reg. § 1.617-(b) (1).

233. Treas. Reg. § 1.617-(c) (3).

234. I.R.C. § 703(b).

235. Treas. Reg. § 1.617(b).

236. Treas. Reg. § 1.617-3(a).

237. Treas. Reg. § 1.617-3(b).

238. Treas. Reg. § 1.617-3(c) (2).

239. Treas. Reg. § 1.617-4.

240. Treas. Reg. § 1.617-3(d).

Once the mine reaches the development stage, *i.e.*, the time when under the facts and circumstances, deposits of mineral ore shown to exist in commercial quantities, taxpayer is allowed a deduction under Section 616 of the Code for expenditures incurred in the development of the mine or deposit.<sup>241</sup> Although a taxpayer by definition may not incur development expenses when the mine or deposit is in the exploration stage, development expenses may be incurred in both the development and production stage. The latter is defined as that time when the major portion of production is obtained from workings not in the developmental stage or when the principal activity is production rather than development.<sup>242</sup> The taxpayer as discussed below has an election to deduct currently such expenses or to defer and deduct them ratably as discussed below. Unlike intangible oil and gas expenses, development expenses under Section 616 may not be capitalized into depletable basis. Rather, if their deduction is deferred, they become a part of basis for all purposes other than depletion.<sup>243</sup>

The Revenue Service has defined development expenses as being those resulting directly from the mining process of making accessible for production the mineral through activities such as the driving of shafts, tunnels and galleries.<sup>244</sup> Additionally, activities to further delineate the extent and location of a commercial deposit have been ruled to be developmental efforts and therefore within Section 616.<sup>245</sup> Not all expenditures incurred in the development stage constitute development expenditures. If the miner is not engaged in development but rather mere maintenance of a mining property which he plans to develop at a future date, the expenses of maintenance are not deductible under Section 616 but rather Section 212.<sup>246</sup> Also the Tax Court has held that amounts embezzled from the taxpayer by an employee during the development stage were not development expenditures.<sup>247</sup> As

241. I.R.C. § 1.616-1(a). Taxpayers should be prepared to establish that monies were spent as claimed. Donald L. Heberer, ¶ 74,139 P-H Memo TC.

242. Treas. Reg. § 1.616-2(b).

243. I.R.C. § 616(c).

244. Rev. Rul. 66-170, 1966-1 C.B. 159; Rev. Rul. 67-35, 1967-1 C.B. 159; Rev. Rul. 69-540, 1969-2 C.B. 143.

245. Rev. Rul. 70-288, 1970-1 C.B. 146; *Alexia DeBie v. Commissioner*, 56 T.C. 876 (1971).

246. *Kenneth C. Davis*, ¶ 56,166 P-H Memo TC.

247. *New Quincy Mining Co. v. Commissioner*, 36 B.T.A. 376 (1937).

noted above expenses in the development stage must be directly related to the development of the property. Thus, a miner who owns the working interest in a deposit which is in the development stage but which is inaccessible either because of insufficient access or because of an overlying easement owned by someone else may not write off the expense of acquiring the right of access to his already owned deposit as a development expense because the expense is not directly the result of a mining activity for purposes of development according to the Revenue Service and the Tax Court.<sup>248</sup> The Court of Claims has held otherwise,<sup>249</sup> but the Revenue Service has made it clear that it will not follow that decision.<sup>250</sup> If, however, the expenditures to cure the circumstance inhibiting development are incurred for activities which are mining activities such as tubing and grouting a portion of a vertical shaft to seal it from a water bearing formation, such expenditures will be developmental.<sup>251</sup>

Expenditures for depreciable assets to be used in the development activities are not development expenditures; however, the annual depreciation allowance on such assets is considered a development expenditure to the extent such asset is used for development.<sup>252</sup> However, installation costs of such equipment may be deductible.<sup>253</sup> The Tax Court has held that the cost of day-to-day type repairs (and therefore non-capital type repairs) of depreciable development equipment falls within Section 616 and is development expense.<sup>254</sup> The cost incurred for assets which have no independent physical life of their own apart from the mineral deposit such as roads are development expenditures under Section 616 if constructed for development purposes.<sup>255</sup> The fact that the road will also be used for haulage during the production stage does not

248. Rev. Rul. 66-170, 1966-1 C.B. 159; Rev. Rul. 67-35, 1967-1 C.B. 159; *Geohegan & Mathis, Inc. v. Commissioner*, 55 T.C. 672 (1971), *aff'd*, 453 F.2d 1324, 29 AFTR 2d 72-498 (6th Cir. 1972).

249. *Kennecott Copper Corp. v. United States*, 347 F.2d 275 (Ct. Cl. 1965).

250. Rev. Rul. 67-35, 1967-1 C.B. 159. Also the purchase of land as a dumping site for overburden was ruled not developmental in Rev. Rul. 74-282, 1974-24 I.R.B. 11.

251. Rev. Rul. 69-540, 1969-2 C.B. 143.

252. Treas. Reg. § 1.616-1(b) (2).

253. See Rev. Rul. 75-60, 1975-8 I.R.B. 20 (by negative inference). But compare Treas. Reg. § 1.615-41(a) with Treas. Reg. § 1.617-1(b) (2). In *Amherst Coal Co.*, note 254, *infra*, the Court uses the intangible provisions relating to oil and gas as an aid in construing Section 616.

254. *Estate of Mary Z. Bryan*, ¶ 63,182, P-H Memo TC *aff'd in part and rev'd in part on other issues*, 364 F.2d 751 (4th Cir. 1966).

255. *Amherst Coal Co. v. United States*, 295 F. Supp. 421 (D.W.Va. 1969), *aff'd per curiam*, 27 AFTR 2d 71-460 (4th Cir. 1971).

disqualify it as a development asset according to a District Court just as the driving of slopes, drifts, and shafts can be development activities despite their obvious use during the production stage.<sup>256</sup> The Court noted plaintiff's argument that roads constructed in development of oil and gas properties have been within the intangible option of the property.<sup>257</sup>

Development expenditures can be incurred in both the development and production stages. The rate of write-off and the means of recovery of particular expenditures may depend on whether they are a development or production expenditure, *e.g.*, roads.<sup>258</sup> Thus, it may be preferable to be in the development stage as to such expenditures because of possible difficulties in establishing that they are development rather than production expenses if one is in the production stage.

Development expenses incurred by a taxpayer in connection with the acquisition of a fractional share of a working interest are only deductible to the extent of the fractional interest so acquired.<sup>259</sup> Unlike the regulations governing oil and gas intangibles,<sup>260</sup> the regulations interpreting Sections 615 through 617 (exploration and development expense) only refer to a necessity of ownership of a working interest in the context mentioned immediately above, *i.e.*, on acquisition of a fractional share. There is no express requirement of ownership of a working interest as a prerequisite to deductibility in all cases, *i.e.*, that the miner be an "operator" as in required for the deduction of oil and gas intangibles. If, however, ownership of a working interest were not a prerequisite to deductibility, the regulation discussed above would not be entirely meaningful. The basis for such prescription as to oil and gas intangibles is that since the owner of the working interest is the owner of the product of the expenditure, a contribution to the development costs by one other than such an owner to such costs is not one directly for the contributor's own benefit and therefore must be consideration for the interest owned or for some other benefit.<sup>261</sup> The same rationale would seem

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256. *Id.*

257. Treas. Reg. § 1.612-4(a).

258. Amherst Coal Co., *supra* note 255.

259. Treas. Reg. § 1.616-1(b) (3).

260. Treas. Reg. § 1.612-4.

261. See *Crossett Timber and Development Co. v. Commissioner*, 29 B.T.A. 705, 709 (1934).



to be as applicable to Section 616 development. Although Section 616 only applies to the costs incurred by the taxpayer, such costs may be incurred indirectly through a contractor.<sup>262</sup>

Taxpayer has an election to either deduct development expenditures when paid or incurred or to defer such expenditures as to each mine and deduct them ratably as the units of mineral benefited by such expenditures are sold.<sup>263</sup> The amount of the deduction is computed with the aid of the following formula set forth in the regulations:

- A equals amount of deduction
- B equals total development expense for the particular mine
- C equals the number of benefited units sold during taxable year
- D equals number of benefited units remaining as of taxable year

$$\frac{A}{B} \text{ equals } \frac{C}{D} \text{ } ^{264}$$

The number of units benefited by such expenditures is the number of units remaining at the end of the taxable year to be recovered plus the number of units sold during the taxable year. The election is made on a mine by mine basis and so the number of units benefited will not necessarily be the same as the estimated reserves for cost depletion purposes. However, the regulations point out that the principles involved in estimating reserves for purposes of cost depletion also apply here.<sup>265</sup> Where such expenses are paid or incurred in the development stage of the mine, the election only applies to the excess of development expenses over net receipts received from the sale of the mineral from the mine. Such expenses not in excess must be deducted currently.<sup>266</sup> The taxpayer is thereby prevented from timing the deduction of his expenditures to avoid the affects of the fifty percent limitation on the amount of the statutory depletion deduction.

262. Treas. Reg. § 1.616-1(a).

263. Treas. Reg. § 1.616-2(a).

264. Treas. Reg. § 1.616-2(f).

265. Treas. Reg. § 1.616-2(f).

266. Treas. Reg. § 1.616-2(a).

The election is made on a mine by mine basis and taxpayer in the same year may defer as to one mine and deduct currently as to another. However, taxpayer must treat consistently the development expenses attributable to a particular mine in a particular tax year.<sup>267</sup> The election only applies to the expenditures for the tax year for which made and is binding and irrevocable as to those expenditures.<sup>268</sup> It is made by clearly so indicating on the return or by a statement filed with the District Director with whom the return was filed no later than the time for filing the return (including extensions).<sup>269</sup>

A taxpayer who has elected to defer the deduction of development expenses and who later transfers his operating interest retaining a non-operating interest is required by the regulations to deduct such expenses ratably over the life of the interest retained. If a bonus or advanced royalty is also received a pro rata portion of the development expenditures should be allocated thereto in the ratio that the bonus or advanced royalty bears to the total of the same plus the total royalty expected to be received.<sup>270</sup> Where the taxpayer transfers a portion of the property when the transfer will be treated as the sale or exchange of a capital or Section 1231 asset (except Section 631(c) transactions), the deferred expenses should be allocated between the portion transferred and the portion retained based on relative fair market value. The expenses allocated to the portion transferred are not deductible but rather become a part of basis for purposes of determining gain or loss,<sup>271</sup> as noted above, deferred development expenditures become a part of basis for all purposes other than depletion and such basis is reduced as the deferred expenditures are recovered.<sup>272</sup>

**3. *Research and Experimental Expenditures.*** Section 174 of the Internal Revenue Code may provide an alternate means whereby certain expenses under the above category and thereby be deducted or amortized at the election of the taxpay-

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267. Treas. Reg. § 1.616-1(c).

268. Treas. Reg. § 1.616-2(c) (1).

269. Treas. Reg. § 1.616-2(e) (2).

270. Treas. Reg. § 1.616-2(c) (1).

271. Treas. Reg. § 1.616-2(c) (2).

272. I.R.C. § 616(c).

er.<sup>273</sup> However, the code and regulations are clear in disqualifying expenditures otherwise chargeable to depletable property or expenditures for the improvement of depletable property.<sup>274</sup>

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273. See Rev. Rul. 74-67, 1974-1 C.B. 63, dealing with expenses incurred in drilling core holes, in order to test a new mining method. Rev. Rul. 75-122, 1975-15 I.R.B. 10, dealt with expenses incurred in developing new mining equipment and a new metallurgical process. Rev. Rul. 73-324, 1973-2 C.B. 72, expenses incurred to develop a new coal gasification process.

274. I.R.C. § 174(c).