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Tax depletion problems of the Tri-State District

Glenn A. Dooley

TAX DEPLETION PROBLEMS OF THE TRI-STATE DISTRICT

by

Glenn A. Dooley

A

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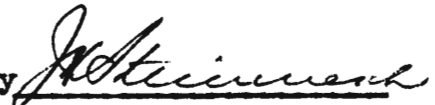
Approved by 

Professor of Mining

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TAX DEPLETION PROBLEMS OF THE TRI-STATE DISTRICT

The passage of the Internal Revenue Act of 1918, with it's articles affecting mines and mining, ushered in a new field of activity for the mining engineer. With the final adoption of the Act in February 1919, it became evident that an immediate valuation would be required; not as of the present date but, in the case of older mines, as of a date six years before. This retroactive legislation brought confusion to the operator and taxed the ingenuity of the engineer. The law provided that the value of the property could be subtracted from the income tax returns, as a depletion allowance, until the value of the mine as of March, 1913 had been reached, after which no further allowances would be made unless a new mine was discovered. Most of the mines in the Oklahoma-Kansas district were not in existence in March 1913.

In an effort to gain a full understanding of the laws and to standardize methods of making the necessary estimates, the operators of the Tri-State District met with representatives of the Department of Internal Revenue and agreed upon the policy to be followed. The writer was engaged in this particular phase of work in the Tri-State District and was present when most of these discussions were carried on. This thesis is designed to give the student a clearer understanding of the methods of meeting depletion problems.

A very concise statement of the theory of mine depletion is given by E. A. Salier's "Accountants Hand book".

"THEORY:

1. That gradual exhaustion of the ore body is an element of expense which should be taken up in each and every fiscal period during which minerals continue to be won from the mine, at a more or less constant rate per ton.

2. That the total expense of this character to be absorbed in the operating accounts is the intrinsic value of the mine content (in place en bloc) which existed from the beginning, although much of it may have been latent and determined only by "extension in depth".

3. That by the term "intrinsic value of the mine content" as used above is meant the product of two factors:

(a) The tonnage of mine content as finally ascertained.

(b) A unit price per ton representing the bedrock value of the average grade of ore, in place en bloc including proved ore, probable ore, and prospective ore; estimated mine content is calculated at some figure between "basic" and "normal"; cost of production and selling is calculated at maximum probability; the rate of mining and the life of the property must be estimated; from these factors a discounted or present value at true rate of interest is obtained; and this capital value is then reduced by a

substantial value due to the element of risk".

In order to avoid paying an unnecessary tax upon the net income, the operator makes an effort to deplete all the allowable value before the mine is exhausted. The development work should be done so that a maximum value can be placed upon the ore bodies, and the rate adjusted so that the value is evenly distributed throughout the life of the mine.

DEFINITION OF TERMS AND FACTORS USED

All tax depletion problems fall into one of two categories: (1) when the operator has purchased a property was already developed, (2) when the mine was discovered and developed by the operator.

DEPLETION OF PURCHASE PRICE:-

In the first instance, the purchase price of the property, plus any capital investments necessary to the proper operation of the mine, becomes, as a rule, the "fair market value". A fair market value is defined as the price at which a willing buyer and a willing seller would meet and effect an exchange. If each of the parties concerned is in possession of all the facts, and are equally capable of judging these facts, a sale should establish a "fair market value".

However a sale does not always do this. An outstanding example is illustrated in the two sales of a well known property in Oklahoma in 1915. Early in September this property was sold for $137,000.00 and in less than one month it was again sold for $650,000.00., in the exact condition it was in at the time of the first sale. The disparity in these two figures is, without doubt, due to widely different judgments of the mine's possibilities. If it is assumed that both parties were fully posted on the developments of the property, and that no desperate reason forced the first owner to sell, it is obvious that no "true market value" can

be ascertained from these sales.

A tonnage estimate should be made at the time of the purchase and used as the basis for computing the depletion rate. If, as often happens, the ore body proves larger than was first estimated, extensions may be added to the original tonnage estimate and the depletion factor reduced accordingly. The original value cannot be increased unless a new discovery is made.

DISCOVERY OF A MINE:-

Article (219), section of the Revenue Act of 1918, (b), states: "For the purpose of these sections of the Act a mine may be said to be discovered when (1) there is found a natural deposit of mineral, or (2) there is disclosed by drilling or exploration conducted above or below ground, a mineral deposit not previously known to exist and so improbable that it had not, and could not have been, included in any previous valuation for the purpose of depletion, and which in either case exists in grade and quantity sufficient to justify commercial exploitation. The discovery must add a new mine to those previously known to exist and cannot be made within a previously known proven tract". A proven tract is in turn defined, "The mineral deposits known to exist in any known mine at the date as of which such mine was valued for purposes of depletion, and all extensions thereof, including "probable" and "prospective" ores considered as a factor in the determination of

the value or cost".

A definition of the words "mine" and "ore" is not given, but it is naturally assumed that since the act was written to apply to going concerns, presumably making a profit from their operations, the word "mine" means a body of ore of such quality and extent, favorably located and under such physical conditions as to warrant immediate or future mining operations for profit.

The term "ore" cannot be definitely defined. For each mine, at a given metal price, the line between successful (profit making) operation, and failure, depends chiefly on the grade of ore mined, but this grade may have a wide variation in individual cases. A great number of conditions enter into the operation of a mine that cannot be foreseen. It is sufficient to say that ore should be considered as a commercial commodity, and that the amount the ore may be sold for, should exceed the cost of production.

In the Tri-State area the minerals occur in limestone-chert formation overlain by shale to depths in excess of one hundred feet. Neither the ore bodies, nor the formation in which they occur, are exposed anywhere at the surface. Discovery is by drilling test holes, or by sinking shafts and driving cross-cuts; all expensive operations which the value of the ore discovered must support in addition to mill and machinery costs. Many operators who would benefit by discovery depletion are unable to do so because they have lost or failed to keep complete records

of expenditures made in prospecting.

The discovery of a mine in the Tri-State field is the determination of a block of ore, by drilling or other methods, which at the time of discovery is thought to be of sufficient extent and quality to return in course of mining, an amount equal to all cost of exploration, operating costs, and investment for mill and machinery with interest on the investment and a fair operator's profit. An extension of a known ore body into undeveloped ground by ordinary mining methods does not constitute a discovery.

Two or more discoveries can be made on a small tract of land providing they are developed individually and have proved barren ground between the ore bodies. While these two discoveries may, and probably will, be treated by the same mill each must be equal to, and charged with, the cost of an individual mill. This condition is fully illustrated on the enclosed map. Two discoveries, one as of January 12, 1923, and one as of February 15, 1924, were claimed and allowed with the edges of the second area within four hundred feet of the first. Drill holes between the two indicate barren ground. This is substantiated by the mined area, which shows only a narrow prospect drift going into this area. A discoverer may not benefit by the work of a former prospector who has discovered an ore body, but who has abandoned work before sufficient development was done to determine its commercial

quality, except so far as the prior work serves only as a guide to further exploration wherein a mine is discovered.

If two areas are prospected simultaneously and neither of them prove to qualify as a discovery along they may be combined and computed as one area. This is illustrated in the accompanying report in the "Discovery as of January 12, 1923".

DATE OF DISCOVERY:-

The location and development of an ore body ordinarily results after a long period of work and expenditures. It is not always easy to pick an exact date of discovery. Clearly this matter would vary with each case, and the law gives to the Commissioner of Internal Revenue the authority to determine the date as well as the fact of discovery after examining the "Peculiar circumstances" of each case. Ordinarily the discovery of a mine is immediately followed by the erection of a mill. However, construction is sometimes started before development is complete. In either case it is fair to assume that the making of the investment incidental to mill erection is proof enough of the operator's opinion that a mine has been discovered. Rarely should the date of discovery be postponed after the time of starting mill construction. This should not, however, bar the operator from the benefits of discovery on ore bodies not known nor included in the estimate at the time of mill erection.

TONNAGE ESTIMATE:-

The process of arriving at an estimate of the quantity of recoverable ore in any ore body necessarily entails dealing with a number of variable factors peculiar to each district and even to each individual mine. These factors are most equitable when defined by records of long past performances, but when, in the case of the Tri-State field, a new district is opened, conclusions must be based on concurrent evidence. The factors thus determined are subject to frequent changes as experience is gained thru operation.

QUALITY OR MINERAL CONTENT OF ORES:-

Since nearly all ore bodies in this area are found by drilling test holes, the best knowledge of the quality of the ore penetrated is gained from the assays of the cuttings from these holes. Unless some exceptional element enters into the drilling these assays are fairly dependable and can be used directly. Quite frequently in the early days of the field no assays were made, and only the drillers log is available. These give the driller's opinion of the ore penetrated in terms developed locally and are quite variable in their reliability. The writer spent considerable time, by authority of the Department, examining several thousand driller's logs of holes subsequently mined and comparing them to the records of the mine operations in that area.

The following table gives the values determined for the various descriptive terms used. This scale was henceforth used to interpret similar conditions, providing the proper conditions were present in the drill hole at the proper level.

Shines - 3%		ZnS
Fair Shines	5%	ZnS
Good shines	5%	ZnS
Ore	6%	ZnS
Fair ore	7%	ZnS
Good ore	8% to 12%.	ZnS

It has been discovered, after many investigations, that where cuttings were lost due to openings, with shines or ore on either or both sides of the opening, from 8% to 12% could be allowed with safety. All holes within the mineralized area should be given their proper weighting relative to assay and height of face. Estimating assays for values greater than 12% is not considered safe practice, unless a very unusual local condition exists.

EXPECTED RECOVERY:-

From past records of the district it was found that the average mill extraction efficiency was approximately 80% for zinc ores and 90% for lead ores. This factor was considerably lowered by the rush of war time production but would no doubt be much higher for the last five years.

AREA PROVEN BY TEST HOLE:-

Due to the narrow "runs" of ore common to the Tri-State field, considerable question arose as to the value of a hole in ore.

There is no equitable method of determining this factor but a nominal figure of fifty feet on either side of a hole showing good ore was selected as commensurate with actual experience. When the ore body has been extensively prospected and the edges clearly defined the percentage of error is greatly reduced but this condition rarely exists.

VOLUME:-

Twelve and one-half cubic feet is assumed to equal one ton of rock. This factor was computed from the specific gravity of average ores of the district. This figure may be reduced in cases of exceptionally good ores or where the nature of the rock varies from the normal.

PILLAR ALLOWANCE:-

The writer spent several months measuring pillars in "worked out" mines. Results varied considerably in different types of ore bodies, but in 1924 a standard of 15% was accepted for this factor. In ground where the ore was rich enough to warrant the risk, and the surrounding rock conditions favorable, this factor could be reduced to 10%. Later (1927) this figure was reduced to 7½% when it was found that old pillars could, with safety, be reduced in size. The valuing engineer can best judge which factor to use by examining the immediately surrounding operations.

FUTURE EXPECTED PRICE:-

One of the most difficult problems upon which to reach

an agreement is the price an operator may expect to receive for his product. The market quotation for concentrates at the time the valuation is made, is known, and fair prediction may be made for a few months in advance. What to expect two, three, or four years later may only be guessed. The average level of the preceeding years is the best assumption to make as to the future but this assumption can readily be upset. A mine beginning production in 1913 or early 1914 using the method just stated would have found their predictions far too low after the sudden rise of zinc from $45.00 to $120.00 per ton during the World War. By the same rule the assumed price would have been much too high for a mine started just before recent depression.

When the Department of Revenue attempted to set the price to be used in making tax valuation in 1919, the average price was taken for the years 1900 to 1918, with the years 1915, 1916, and 1917 excluded. This price has been changed at intervals since that time. The engineer should devote considerable thought to this phase of the work. Because his sympathies are usually with the mining company, the average engineer is inclined to be more liberal in this respect when making tax valuation than when valuing a mine for sale or purchase.

EXPECTED LIFE OF ORE BODY:-

The operating life of a given ore body is determined by the capacity of the mill over which the ore is to be treated.

Assuming that the mill operates a certain number of shifts each year, and that all the ore milled is taken from the ore body in question, the operating life can be quickly computed. In computing the value of a discovery it should be assumed that the area will be mined continuously to the full capacity of the mill even if in actual operation its life is extended by mining concurrently with other areas. The method just given for finding the life of a mine should be tempered with judgment if the life proves to be exceptionally long. The operation of a mine is much more hazardous than investments in other forms of property, and figuring into the future a much more uncertain element. Mr. G. A. Denny, in speaking of the Rand properties in the Mining Journal says: "Mining, even of the safest character is hedged around with many and various uncertanties, and even if the value of the ore is regular, and the deposit unaffected, extraneous conditions and events such as wars, strikes, etc; may cause heavy gains or losses ---. To insure himself against such possibilities, the mining investor should satisfy himself that the life of the mine is computed by responsible technical advisors --- in no case should he permit the capital replacement fund to accrue over a longer period than ten years".

If a long life is indicated by the tonnage estimate, it should be reduced by increasing the operation so that the same value may be had in a shorter period of time.

OPERATING COST:-

The cost of producing a unit of concentrates can best be estimated from the past records of the mine or of other mines in the same district working under similar conditions. As mining and milling methods improve, this factor should be reduced but individual conditions may cause a variation from the normal in either direction. The operating cost for mining and milling is fairly uniform throughout the Tri-State District and does not often average less than $1.50 nor more than $2.00 per ton of rock handled. This compares with about $1.00 per ton for the pre-war period operating on sheet ground in the Webb City-Carterville district east of Joplin.

ROYALTY:-

The rate of royalty paid to the fee owner is about the only factor used that is fixed. Inasmuch as royalty is based on the value of concentrates the amount of royalty is affected by the price at which they are sold. Nearly all the mines in the Tri-State district are operated on the lease system with a percentage of the gross values of the ores sold going to the fee owner. It is not uncommon to have one or more parties holding a royalty interest between the land owner and the operator. Royalties vary from 5% to 25%. The average royalty paid by 115 mines examined in in 1928 was 16.8%. This is a very heavy tax to place upon any

mining operation, particularily irksome when examination of these same 115 leases shows that an average of only 8.2% goes to the owner of the land.

FUTURE ORE DEVELOPMENT:-

After an ore body has been blocked out and its size and content fairly well defined, there is still considerable work to be done to make the ore available. Shafts must be sunk and cross-cuts made into the ore body. This type of development is estimated to cost not more than ten cents per ton of rock developed. In the Tri-State District this factor is not easily defined because the development is done as the mining progresses and not as a separate operation.

PRESENT WORTH:-

The calculated value of a mine is merely an estimation of the sum on which it will earn a given interest plus return of capital. The first interest of the operator is the return of his investment, with interest, and the second, to the amount of profit he may expect in return for risking his money. Having calculated the whole amount of the expected net earnings and divided that amount by the expected life the expected annual income is found. From the earnings of each year a portion must be set aside to return capital. For example, if the life is estimated at three years, one-third of the original investment should be retired each year. This is called a "sinking fund". If the amount

thus retired is invested at compound interest the payments each year may be reduced by the amount of interest accumulated by this sinking fund. In all sinking fund investments, the principal factor should be the safety of the principal, therefore, the interest calculated should not be more than the rate paid for government bonds. Most authorities agree that sinking funds should not depend on earning more than 3% but 4% is permissible.

Having made provision for the return of capital, the remainder of the income comprises interest on investment and operator's profit. With the ore body developed and a plant installed the profits for the next few months or a year may be fairly determined but the estimate of the second year's earnings is hazardous, and each succeeding year it becomes more hazardous. The earnings of a mine only partially developed have still less certainty. Therefore, in calculation of earnings as a basis of investment, the operator discounts the sum of calculated probable earnings by an amount proportioned to the uncertainty of realization. This discount for hazards is necessarily high for any mining venture but not the same for all types of mines. A well developed gold mine would not be subject to the same risk as an equally well developed zinc mine because of the greater flucuation in the price of the latter product. In either case the investor is entitled to a much larger percentage of profit than if his money were placed in bonds which have real estate as a back ground. No

one would buy a mine unless he expected to make a much larger return for his money than he would gain by investment in many other enterprises. In the Tri-State district this operator's profit or "risk-rate" is calculated anywhere between 12% and 20% depending upon the life of the mine and the individual hazards entering into each case. Ordinarily 12% or 14% is used on well developed mines located inside the proven limits of the field.

The discounts for hazard, interest, and operator's profit may be calculated separately and deducted from the yearly earnings to determine the net present worth, or the estimated yearly earnings may be discounted separately and the several discounted sums added to reach the same result. The calculations may be refined and complicated to great extent by introducing different hazard and interest rates for individual years or portions of the earning period. But in practice the problem is treated as one of determining the present worth of an annuity, and annuity tables, giving present worth of a stated income at the end of each year for the period involved, are used for the factors.

A further computation is sometimes required when payments are to be deferred for a period after the investment is made. After a mine has been discovered it may be at least a year before the operator can build a mill and begin to have an income from his investment. This time interval should also be introduced into the present worth computations. Little is to be gained by

applying refined methods of calculation to a value based on factors which are at best only roughly estimated.

DEPLETION RATE:-

The rate of depletion is found by dividing the total present worth by the total tons of concentrates in the tonnage estimate. This rate is then multiplied by the total tons of ore produced each year to find the total amount of depletion to be taken each year.

If a rate has been set up for the original purchase price or for the original discovery, that rate can only be changed by additions to the original tonnage estimate and not by addition to the original value. Depletion rates for additional discoveries on the same property are treated as separate mines and never combined with other areas to make a common rate even though the ore is all treated by the same mill. To determine the amount of depletion from each of several areas the mine records should be so kept as to give the proportionate extracted tonnage from each.

SAMPLE MINE VALUATION

On the following pages is a typical case which shows nearly all the possible methods of arriving at depletion rates.

The mine was purchased in 1917 for a price of $250,000.000. A tonnage estimate (block "A") was made as of the day of purchase and, with the purchase price as the fair market value, a depletion rate was defined for production that year. At the close of 1917 it became evident that the tonnage was much greater than was originally shown and in 1918 an extension was added to the original developed area (block "B")

As drilling was carried on to develop the rest of the property an area was discovered (block "C") which was not large enough to constitute a discovery but which warranted the sinking of a shaft. As no other areas had been found at that time, the tonnage contained in block "C" was added to the original tonnage, as an extension, and the old depletion rate changed accordingly.

By January 1923 there were two widely separated areas developed which had the same date of discovery. These two areas were combined and valued as one, since neither of them was large enough to support individual discovery costs.

Exploration was continued and in February 1924 a new area was developed which was large enough to constitute a new discovery.

The method of arriving at the figure for each block is given in the following sheets. Factors and methods used are analogous to those described heretofore as acceptable to the Department of Revenue.

BLOCK "A"

Block "A"

DRILL HOLE ANALYSIS
TONNAGE ESTIMATE AS
OF AUGUST 1917

Hole No. 2			ZnS		PbS
Depth	Feet	Assay ZnS	Assay Ft.	Assay PbS	Assay Ft.
235-240	5	6.15	30.75	0.00	0.00
240-245	5	5.85	29.25	0.00	0.00
235-245	10	6.00	60.00	0.00	0.00
Hole No. 3					
175-180	5	0.00	0.00	26.25	131.25
180-185	5	0.00	0.00	34.15	170.75
185-190	5	0.00	0.00	25.40	127.00
190-195	5	7.50	37.50	15.35	76.75
195-205	10	7.45	74.50	7.30	73.00
175-205	30	3.73	112.00	19.29	578.75
Hole No. 22					
180-182½	2½	13.70	34.25	0.00	0.00
182½-185	2½	6.30	15.75	0.00	0.00
185-191	6	6.30	37.80	0.00	0.00
191-195	4	4.70	18.80	0.00	0.00
180-195	15	7.11	106.60	0.00	0.00
Hole No. 23					
160-170	10	0.00	0.00	22.50	225.00
170-175	5	0.00	0.00	15.00	75.00
175-180	5	0.00	0.00	11.25	56.25
180-188	8	3.00	24.00	9.55	76.40
188-203	15	3.00	45.00	1.00	15.00
203-208	5	14.15	70.75	2.90	14.50
208-213	5	16.70	83.50	6.15	30.75
213-219	6	19.20	115.20	3.10	18.60
219-229	10	9.95	99.50	4.95	49.50
160-229	69	6.35	437.95	8.13	561.00
Hole No. 18					
168-173	5	7.95	39.75	0.00	0.00
173-178	5	6.70	33.50	0.00	0.00
178-185	7	4.35	30.45	0.00	0.00
185-190	5	13.30	66.50	0.00	0.00
190-195	5	4.95	24.75	0.00	0.00
168-195	27	7.22	194.95	0.00	0.00

DRILL HOLE ANALYSIS (Cont'd)
BLOCK "A"

Depth	Feet	Assay ZnS	ZnS Assay Ft.	Assay PbS	PbS Assay Ft.
Hole No. 13					
195-200	5	20.80	104.00	3.80	19.00
200-204	4	22.50	90.00	1.72	6.88
204-208	4	14.15	56.60	1.20	4.80
208-212	4	28.35	113.40	2.25	9.00
212-216	4	28.80	115.20	3.08	12.32
195-216	21	22.82	479.20	2.48	52.00
Hole No. 15					
189-192	3	31.70	95.10	0.00	0.00
192-197	5	28.30	141.50	0.00	0.00
197-202	5	18.67	93.35	0.00	0.00
202-206	4	10.60	42.40	0.00	0.00
189-206	17	21.90	372.35	0.00	0.00
Hole No. 16					
189-203	14	31.17	436.38	0.00	0.00
203-206	3	18.45	55.35	0.00	0.00
206-210	4	12.50	50.00	0.00	0.00
210-215	5	15.00	75.00	0.00	0.00
215-220	5	7.10	35.50	0.00	0.00
189-220	31	21.04	652.23	0.00	0.00
Hole No. 12					
190-195	5	27.20	136.00	0.00	0.00
195-200	5	5.35	26.75	0.00	0.00
190-200	10	16.27	162.75	0.00	0.00

AREA ANALYSIS
TONNAGE ESTIMATE AUG. 1917
BLOCK "A"

Hole	Feet	Assay Ft. ZnS	Assay Ft. PbS
2	10	60.00	0.00
3	30	112.00	578.75
22	15	106.60	0.00
23	69	437.95	561.00
18	27	194.95	0.00
13	21	479.20	52.00
15	17	372.35	0.00
16	31	652.23	0.00
12	10	162.75	0.00
9-Holes	9(230	230(2578.03	230(1191.75
	25.55 Ft. Avg. Face	11.208% ZnS	5.181% PbS

TONNAGE ESTIMATE
AS OF AUGUST 1917
BLOCK "A"

Developed

Area in ore	58,400 sq ft.
Average thickness	25.55 ft.
Cubic feet	1,492,120 cu.ft.
Tons of rock at 12½ cu. ft./ ton	119,370 tons
Less 7½% pillar allowance	110,417 tons
11.208% ZnS recovery	12,375 tons
80% mill efficiency	9,900 tons
5.181% PbS recovery	5,721 tons
90% Mill efficiency	5,149 tons

Probable

Area in ore	67,300 sq. ft.
Average thickness	25.55 ft.
Cubic feet	1,719,515 cu. ft.
Tons of rock at 12½ cu. ft./ton	137,561 tons
Less 7½% Pillar allowance	127,244 tons
11.208% ZnS recovery	14,261 tons
80% Mill efficiency	11,409 tons
5.181% PbS recovery	6,592 tons
90% Mill efficiency	5,933 tons

	Rock	Concentrates ZnS	PbS	Total
Developed	110,417	9,900	5,149	15,049
Probable	127,244	11,409	5,933	17,342
Total	237,661	21,309	11,082	32,391

Total Recovery 13.629%.

BLOCK "B"

DRILL HOLE ANALYSIS
EXTENSION 1918
BLOCK "B"

Hole No. W-53 Depth	Feet	Assay ZnS	ZnS Assay Ft.	Assay PbS	PbS Assay Ft.
170-175	5	3.85	19.25	0.00	0.00
175-180	5	10.85	54.25	0.00	0.00
170-180	10	7.35	73.50	0.00	0.00
Hole No. W-56					
180-185	5	5.60	28.00	0.00	0.00
185-190	5	5.75	28.75	0.00	0.00
190-195	5	4.10	20.50	0.00	0.00
180-195	15	5.15	77.25	0.00	0.00
Hole No. W-62					
160-165	5	5.90	29.50	0.19	0.95
165-170	5	4.40	22.00	0.19	0.95
170-175	5	2.50	12.50	0.10	0.50
175-180	5	2.30	11.50	0.10	0.50
180-185	5	12.50	62.50	0.27	1.35
185-190	5	2.20	11.00	0.00	0.00
190-192	2	13.90	27.80	0.00	0.00
192-195	3	12.40	37.20	0.00	0.00
160-195	35	6.11	214.00	0.12	4.25
Hole No. W-67					
175-180	5	7.75	38.75	0.00	0.00
180-195	15	7.00	105.00	0.29	4.35
195-200	5	1.78	8.90	1.08	5.40
175-200	25	6.11	152.65	0.39	9.75
Hole No. W-105					
160-165	5	0.48	2.40	4.20	21.00
165-170	5	0.25	1.25	3.15	15.75
170-175	5	1.85	9.25	0.00	0.00
175-180	5	4.70	23.50	0.00	0.00
180-185	5	8.05	40.25	0.00	0.00
160-185	25	3.07	76.65	1.47	36.75

AREA ANALYSIS
EXTENSION 1918
BLOCK "B"

Hole	Feet	Assay Ft. ZnS	Assay Ft. PbS
W-53	10	73.50	0.00
W-56	15	77.25	0.00
W-62	35	214.00	4.25
W-67	25	152.65	9.75
W-105	25	76.65	36.75
5-Holes	5(110	110(594.05	11(50.75
	22 ft.	5.400% ZnS	0.461% PbS
	Avg. face		

TONNAGE ESTIMATE
EXTENSION 1918
BLOCK "B"

Extension "A"

Area in ore	86,000 sq.ft.
Average thickness	22 ft.
Cubic feet	1,892,000 cu.ft.
Tons of rock at 12½ cu. ft./ton	151,360 tons
Less 7½% pillar allowance	140,008 tons
5.40% ZnS recovery	7,560 tons
80% Mill efficiency	6,048 tons
0.46% PbS recovery	644 tons
90% Mill efficiency	580 tons

Extension "B"

Area in ore	57,000 sq.ft.
Average thickness	25 ft.
Cubic feet	1,425,000 cu.ft.
Tons of rock at 12½ cu.ft./ton	114,000 tons
Less 7½% Pillar allowance	105,450 tons
5.625% ZnS recovery	5,931 tons
80% Mill efficiency	4,745 tons

BLOCK "C"

DRILL HOLE ANALYSIS
TONNAGE ESTIMATE AS OF
FEBRUARY 1919.
BLOCK "C"

Hole No. W-88 Depth	Feet	Assay ZnS	Assay Ft. ZnS
125-130	5	24.05	120.25
130-132	2	9.07	18.14
132-136	4	10.50	42.00
136-139	3	38.30	114.90
139-142	3	37.45	112.35
142-144	2	13.72	27.44
125-144	19	22.90	435.08

Hole No. W-89			
157-163	6	4.52	27.12
163-168	5	4.12	20.60
168-177	9	14.50	130.50
177-180	3	16.20	48.60
180-183	3	7.60	22.80
183-194	11	6.68	73.48
157-194	37	8.73	323.10

Hole No. W-90 Good formation with shines.

Hole No. W-91			
230-235	5	3.15	15.75
235-239	4	3.22	12.88
239-243	4	12.40	49.60
230-243	13	6.02	78.23

Hole No. W-92			
235-240	5	5.80	29.00
240-242	2	4.70	9.40
235-242	7	5.48	38.40

DRILL HOLE ANALYSIS (Cont'd)
BLOCK "C"

Hole No. W-95

Depth	Feet	Assay ZnS	Assay Ft. ZnS
230-235	5	3.15	15.75
235-240	5	3.22	16.10
240-245	5	4.35	21.75
230-245	15	3.57	53.60

Hole No. W-97

230-235	5	3.64	18.20
235-240	5	3.12	15.60
240-245	5	4.35	21.75
230-245	15	3.70	55.55

AREA ANALYSIS
TONNAGE ESTIMATE FEB. 1919
BLOCK "C"

Hole No.	Feet	Assay Ft. ZnS
W-88	19	435.08
W-89	37	323.10
W-91	13	78.23
W-92	7	38.40
W-95	15	53.60
W-97	15	55.55
6-Holes	6(106	106(983.96
	17.666 ft. Avg. face	9.283% ZnS

TONNAGE ESTIMATE
AS OF FEB. 1919

Area in ore	67,000 sq.ft.
Average thickness	17,666 ft.
Cubic feet	1,183,622 cu.ft.
Tons of rock at 12½ cu. ft./ton	94,690 tons
Less 7½% Pillar allowance	87,588 tons
9.283% ZnS recovery	8,131 tons
80% Mill efficiency	6,505 tons

BLOCK "D"

DRILL HOLE ANALYSIS
DISCOVERY NO. 1
AS OF JANUARY, 1923
BLOCK "D"

Hole No. W-80 Depth	Feet	Assay ZnS	ZnS Assay Ft.	PbS Assay	PbS Assay Ft.
197-202	5	4.70	23.50	0.86	4.30
202-207	5	3.75	18.75	0.57	2.85
197-207	10	4.22	42.25	0.71	7.15
Hole No. W-181					
170-190	20	0.00	0.00	8.90	178.00
190-195	5	4.77	23.85	2.40	12.00
195-200	5	4.17	20.85	0.50	2.50
200-210	10	5.07	50.70	0.00	0.00
210-215	5	5.52	27.60	0.00	0.00
170-215	45	2.73	123.00	4.28	192.50
Hole No. W-188					
188-190	2	0.16	0.32	2.53	5.06
190-195	5	0.89	4.45	3.10	15.50
195-200	5	0.90	4.50	1.50	7.50
200-205	5	1.64	8.20	6.21	31.05
205-210	5	10.13	50.65	6.90	34.50
210-213	3	9.69	29.07	6.21	18.63
213-216	3	13.25	39.75	2.07	6.21
216-220	4	5.52	22.08	1.15	4.60
188-220	32	4.97	159.02	3.84	123.05
Hole No. W-191					
190-195	5	10.29	51.45	0.00	0.00
195-200	5	5.81	29.05	0.00	0.00
190-200	10	8.05	80.50	0.00	0.00
Hole No. W-192					
190-195	5	10.01	50.05	1.73	8.65
195-197	2	2.38	4.76	0.00	0.00
190-197	7	7.83	54.81	1.23	8.65

DRILL HOLE ANALYSIS (Cont'd)
DISCOVERY NO. 1
BLOCK "D"

Hole No. W-193 Good formation and fair ore.

Hole No. W-194	Feet	Assay ZnS	ZnS Assay Ft.	PbS Assay	PbS Assay Ft.
180-190	10	4.76	47.60	1.73	17.30
190-195	5	3.87	19.35	0.59	2.95
195-200	5	4.62	23.10	0.00	0.00
180-200	20	4.50	90.05	1.01	20.25
Hole No. W-196					
180-190	10	0.00	0.00	4.72	47.20
180-190	10	0.00	0.00	4.72	47.20
Hole No. W-197					
190-195	5	16.40	82.00	0.34	1.70
195-200	5	24.60	123.00	0.23	1.15
200-205	5	13.70	68.50	0.29	1.45
205-208	3	10.00	30.00	0.00	0.00
190-208	18	16.86	303.50	0.24	4.30
Hole No. W-201					
190-195	5	1.04	5.20	2.18	10.90
195-197½	2½	12.21	30.52	3.68	9.20
197½-200	2½	22.80	57.00	1.96	4.90
200-202½	2½	12.00	30.00	0.70	1.75
202½-205	2½	12.38	30.95	0.69	1.72
205-207½	2½	10.00	25.00	0.60	1.50
190-207½	17½	10.21	178.67	1.71	29.97

Hole No. W-204 Good formation - openings with shines above and below.

Hole No. W-205 Good formation and fair ore.

DRILL HOLE ANALYSIS (Cont'd)
DISCOVERY NO. 1
BLOCK "D"

Hole No. W-208 Depth	Feet	Assay ZnS	ZnS Assay Ft.	PbS Assay	PbS Assay Ft.
190-195	5	8.79	43.95	0.00	0.00
195-200	5	4.92	24.60	0.00	0.00
190-200	10	6.85	68.55	0.00	0.00

Hole No. W-210 Good formation with fair ore.

Hole No. W-211					
180-190	10	4.47	44.70	0.00	0.00
190-192½	2½	3.88	9.70	0.00	0.00
192½-195	2½	5.22	13.05	0.00	0.00
195-197½	2½	5.51	13.77	0.00	0.00
197½-200	2½	5.66	14.15	0.00	0.00
180-200	20	4.77	95.37	0.00	0.00

Hole No. W-212					
175-185	10	7.90	79.00	0.00	0.00
185-187½	2½	8.49	21.22	0.00	0.00
187½-190	2½	15.05	37.62	0.00	0.00
190-192½	2½	14.00	35.00	0.00	0.00
192½-195	2½	9.39	23.47	0.00	0.00
195-197½	2½	8.50	21.25	0.00	0.00
175-197½	22½	9.67	217.57	0.00	0.00

AREA ANALYSIS
DISCOVERY NO. 1
AS OF JANUARY 12, 1923
BLOCK "D"

Hole	Feet	Assay Ft. ZnS	Assay Ft. PbS
W-80	10	42.25	7.15
W-181	45	123.00	192.50
W-188	32	159.02	123.05
W-191	10	80.50	0.00
W-192	7	54.81	8.65
W-194	20	90.05	20.25
W-196	10	0.00	47.20
W-197	18	303.50	4.30
W-201	17½	178.67	29.97
W-208	10	68.55	0.00
W-211	20	95.37	0.00
W-212	22½	217.57	0.00
12-Holes	12(222	222 (1,413.29	222(433.07
	18.5 ft. Avg. Face.	6.366% ZnS	1.951% PbS

TONNAGE ESTIMATE
DISCOVERY NO. 1
AS OF JAN. 12, 1923
BLOCK "D"

Developed

Area in ore	93,000	sq.ft.
Average thickness	18.5	ft.
Cubic feet	1,720,500	cu.ft.
Tons of rock at 12½ cu.ft./ton	137,640	tons
Less 7½% Pillar allowance	127,317	tons
6.366% ZnS recovery	8,105	tons
90% Mill efficiency	7,294	tons
1.951% PbS recovery	2,484	tons
95% Mill efficiency	2,360	tons

Probable

Area in ore	56,000	sq. ft.
Average thickness	18.5	ft.
Cubic feet	1,036,000	cu. ft.
Tons of rock at 12½ cu.ft./ton	82,880	tons
Less 7½% Pillar allowance	76,664	tons
6.366% ZnS recovery	4,880	tons
90% Mill efficiency	4,392	tons
1.951% PbS recovery	1,496	tons
95% Mill efficiency	1,421	tons

		Concentrate Tons		
	Tons Rock	ZnS	PbS	Total
Developed	127,317	7,294	2,360	9,654
Probable	76,664	4,392	1,421	5,813
Total	203,981	11,686	3,781	15,467

Total Recovery 7.582%.

BLOCK "E"

DRILL HOLE ANALYSIS
DISCOVERY NO. 2
AS OF JAN. 1923
BLOCK "E"

Hole No. W-63			ZnS		PbS
Depth	Feet	Assay ZnS	Assay Ft.	Assay PbS	Assay Ft.
165-170	5	5.90	29.50	0.19	0.95
170-175	5	4.40	22.00	0.19	0.95
175-180	5	2.50	12.50	0.10	0.50
180-190	10	12.50	125.00	0.27	2.70
165-190	25	7.56	189.00	0.20	5.10

Hole No. W-64 Good formation with fair ore.

Hole No. W-65					
165-170	5	3.22	16.10	2.01	10.05
170-175	5	3.00	15.00	2.09	10.45
175-180	5	1.10	5.50	0.75	3.75
180-185	5	2.40	12.00	1.03	5.15
165-185	20	2.43	48.60	1.47	29.40

Hole No. W-66					
170-175	5	2.32	11.60	1.82	9.10
175-180	5	3.02	15.10	1.28	6.40
170-180	10	2.67	26.70	1.55	15.50

Hole No. W-70					
190-195	5	10.70	53.50	5.52	27.60
195-200	5	13.90	69.50	1.75	8.75
200-205	5	1.50	7.50	0.00	0.00
205-210	5	5.70	28.50	0.00	0.00
190-210	20	7.95	159.00	1.82	36.35

DRILL HOLE ANALYSIS (Cont'd)
DISCOVERY NO. 2
BLOCK "E"

Hole No. W-71 Depth	Feet	ZnS Assay ZnS	ZnS Assay Ft.	PbS Assay PbS	PbS Assay Ft.
180-185	5	0.00	0.00	4.20	21.00
185-190	5	0.00	0.00	1.70	8.50
190-195	5	0.00	0.00	2.70	13.50
195-200	5	3.04	15.20	2.10	10.50
200-205	5	6.02	30.10	0.00	0.00
205-207½	2½	9.00	22.50	0.00	0.00
207½-210	2½	6.90	17.25	0.00	0.00
180-210	30	2.83	85.05	1.78	53.50
Hole No. W-136					
185-190	5	0.30	1.50	5.56	27.80
190-195	5	3.58	17.90	0.69	3.45
195-200	5	8.04	40.20	0.35	1.75
200-205	5	5.96	29.80	0.38	1.90
205-210	5	12.10	60.50	0.34	1.70
185-210	25	6.00	149.90	1.46	36.60
Hole No. W-138					
175-180	5	3.73	18.65	1.27	6.35
180-185	5	12.50	62.50	5.18	25.90
185-190	5	8.95	44.75	3.80	19.00
190-195	5	3.88	19.40	1.38	6.90
175-195	20	7.26	145.30	2.91	58.15
Hole No. W-148					
173-175	2	0.00	0.00	1.50	3.00
175-180	5	6.00	30.00	4.77	23.85
173-180	7	4.28	30.00	3.83	26.85
Hole No. W-158					
195-200	5	8.50	42.50	0.00	0.00
200-205	5	10.42	52.10	0.00	0.00
205-210	5	17.15	85.75	0.00	0.00
210-215	5	8.05	40.25	0.00	0.00
195-215	20	11.03	220.60	0.00	0.00

DRILL HOLE ANALYSIS (Cont'd)
DISCOVERY NO. 2
BLOCK "E"

Hole No. W-166			ZnS		PbS
Depth	Feet	Assay ZnS	Assay Ft.	Assay PbS	Assay Ft.
205-210	5	8.34	41.70	0.00	0.00
210-212	2	1.64	3.28	0.00	0.00
205-212	7	6.42	44.98	0.00	0.00
Hole No. W-179					
195-200	5	6.57	32.85	0.00	0.00
200-202	2	2.98	5.96	0.00	0.00
195-202	7	5.54	38.81	0.00	0.00
Hole No. W-185					
180-185	5	4.62	23.10	0.00	0.00
185-190	5	4.17	20.85	0.00	0.00
180-190	10	4.39	43.95	0.00	0.00

AREA ANALYSIS
DISCOVERY NO. 2
AS OF JANUARY 12, 1923
BLOCK "E"

Hole	Feet	Assay Ft. ZnS	Assay Ft. PbS
W-63	25	189.00	5.10
W-65	20	48.60	29.40
W-66	10	26.70	15.50
W-70	20	159.00	36.35
W-71	30	85.05	53.50
W-136	25	149.90	36.60
W-138	20	145.30	58.15
W-148	7	30.00	26.85
W-158	20	220.60	0.00
W-166	7	44.98	0.00
W-179	7	38.81	0.00
W-185	10	43.95	0.00
12-Holes	12(201	201(1181.89	201(261.45
	16.75 ft.	5.880% ZnS	1.300% PbS
	Avg. face.		

TONNAGE ESTIMATE
DISCOVERY NO. 2
JANUARY 12, 1923
BLOCK "E"

Developed

Area in ore	130,000	sq ft.
Average thickness	16.75	ft.
Cubic feet	2,177,500	cu.ft.
Tons of rock at 12½ cu.ft./ton	174,200	tons
Less 7½% Pillar Allowance	161,135	tons
5.880% ZnS recovery	9,475	tons
90% Mill efficiency	8,527	tons
1,300% PbS recovery	2,095	tons
95% Mill efficiency	1,990	tons

Probable

Area in ore	37,000	sq. ft.
Average thickness	16.75	ft.
Cubic feet	619,750	cu.ft.
Tons of rock at 12½ cu.ft./ton	49,580	tons
Less 7½% Pillar allowance	45,861	tons
5.880% ZnS recovery	2,697	tons
90% Mill efficiency	2,427	tons
1.300% PbS recovery	596	tons
95% Mill efficiency	566	tons

	Tons Rock	Tons Concentrates ZnS	PbS	Total
Developed	161,135	8,527	1,990	10,517
Probable	45,861	2,427	566	2,993
Total	206,996	10,954	2,556	13,510

BLOCK "D" & "E"

VALUATION
DISCOVERY AS OF JAN. 1923
BLOCK "D" & "E"

Tons recoverable rock		410,977	tons
Tons recoverable concts. Zinc		22,640	tons
Tons recoverable concts. Lead		6,337	tons
Tons recoverable concts.		28,977	tons
Expected price concts. Zinc		$45.07	
Expected price concts. Lead		80.00	
Risk rate deferred one year	12% & 4%		
Rock cost per ton		1.80	
Development cost 10¢ per rock ton			
Estimated life based on 200,000 tons of rock treated per year		2 years	
Royalty paid		11½%.	
Gross expected receipts			
22,640 x $45.07		$1,020,385.00	
6,337 x $80.00		506,960.00	
		$1,527,345.00	
11½% Royalty	$ 175,645.00		
Cost Mng. and Milg. 410,977 x $1.80	739,758.00		
Cost of Future Dev. 10¢ x 410,977	41,098.00	956,501.00	
Estimated Operating Profit		$ 570,844.00	
Present worth of 2 annuities of @ 12% & 4% deferred 1 year		$ 285,422.00	
$285,422 x 1.4632298		$ 417,638.00	
Cost of Mill		100,000.00	
Net Present Worth		$ 317,638.00	

Depletion factor = $\frac{\$\ 317,638.00}{28977}$ = $10.962 per ton.

BLOCK "F"

DRILL HOLE ANALYSIS
DISCOVERY FEB. 1924.
BLOCK "F"

Hole No. 8 Depth	Feet	ZnS. Assay Zn.	ZnS. Assay Ft.	PbS. Assay PbS.	PbS. Assay Ft.
185-195	10	0.00	0.00	1.75	17.50
195-205	10	0.00	0.00	2.40	24.00
205-210	5	4.80	24.00	0.00	0.00
210-215	5	6.50	32.50	0.00	0.00
215-220	5	4.50	22.50	0.00	0.00
185-220	35	2.26	79.00	1.18	41.50

Hole No. 9

Open hole with shines.

Hole No. 277					
195-200	5	16.52	82.60	0.00	0.00
200-210	10	10.00	100.00	0.00	0.00
195-210	15	12.17	182.60	0.00	0.00

Hole No. 279					
185-190	5	3.75	18.75	4.32	21.60
190-195	5	4.76	23.80	0.73	3.65
195-200	5	16.65	83.25	0.21	1.05
200-205	5	8.10	40.50	0.02	0.10
205-215	10	3.86	38.60	0.10	1.00
215-220	5	15.75	78.75	0.05	0.25
185-220	35	8.10	283.65	0.79	27.65

Hole No. 274

Good formation, openings with fair ore.

Hole No. 270					
175-180	5	5.25	26.25	1.75	8.75
180-185	5	21.50	107.50	0.98	4.90
185-190	5	6.50	32.50	0.65	3.25
190-195	5	47.30	236.50	4.20	21.00
195-200	5	21.00	105.00	6.25	31.75
200-205	5	15.20	76.00	0.47	2.35
205-210	5	9.90	49.50	0.50	2.50
175-210	35	18.09	633.25	2.11	74.00

DRILL HOLE ANALYSIS (Cont'd)
BLOCK "F"

Hole No. 268			ZnS		PbS.
Depth	Feet	Assay Zn.	Assay Ft.	Assay PbS	Assay Ft.
185-190	5	12.15	60.75	2.80	14.00
190-195	5	3.75	18.75	0.78	3.90
195-200	5	3.77	18.85	1.70	8.50
200-205	5	22.57	112.85	1.50	7.50
205-210	5	10.67	53.35	0.30	1.50
185-210	25	10.58	264.55	1.42	35.40
Hole No. 266					
195-200	5	24.75	123.75	0.28	1.40
200-205	5	7.05	35.25	0.15	0.75
195-205	10	15.90	159.00	0.21	2.15
Hole No. 263					
130-135	5	7.07	35.35	6.90	34.50
135-140	5	2.47	12.35	2.80	14.00
140-145	5	5.20	26.00	0.65	3.25
210-215	5	6.00	30.00	0.00	0.00
215-220	5	4.72	23.60	0.00	0.00
130-145					
210-220	25	5.09	127.30	2.07	51.75
Hole No. 261					
210-215	5	3.40	17.00	0.02	0.10
215-220	5	10.00	50.00	0.05	0.25
210-220	10	6.70	67.00	0.03	0.35
Hole No. 258					
210-215	5	10.38	51.90	0.00	0.00
215-220	5	5.13	25.65	0.00	0.00
210-220	10	7.75	77.55	0.00	0.00
Hole No. 231					
205-220	15	6.95	104.25	0.28	4.20
220-222½	2½	7.00	17.50	0.20	0.50
205-222½	17½	6.96	121.75	0.27	4.70

AREA ANALYSIS
DISCOVERY FEBRUARY 1924
BLOCK "F"

Hole	Feet	Assay Ft. ZnS	Assay Ft. PbS.
8	35	79.00	41.50
W-277	15	182.60	0.00
W-279	35	283.65	27.65
W-270	35	633.25	74.00
W-268	25	264.55	35.40
W-266	10	159.00	2.15
W-263	25	127.30	51.75
W-261	10	67.00	0.35
W-258	10	77.55	0.00
W-231	$17\frac{1}{2}$	121.75	4.70
10-Holes	$10(\frac{217\frac{1}{2}}{21.75}$ ft.	$217\frac{1}{2}(\frac{1995.65}{9.175\%}$ ZnS	$217\frac{1}{2}(\frac{237.50}{1.092\%}$ PbS.

Average face.

TONNAGE ESTIMATE
DISCOVERY AS OF FEB. 1924
BLOCK "F"

Developed

Area in ore	175,600	sq. ft.
Average thickness	21.75	ft.
Cubic Feet	3,819,300	cu.ft.
Tons of rock at 12½ cu. ft./ton	305,544	tons
Less 7½% Pillar allowance	282,628	tons
9.175% ZnS Recovery	25,931	tons
90% Mill efficiency	23,338	tons
1.092% PbS recovery	3,086	tons
95% Mill efficiency	2,932	tons

Probable

Area in ore	95,500	sq. ft.
Average thickness	21.75	ft.
Cubic feet	3,077,125	cu. ft.
Tons of rock at 12½ cu. ft./ton	166,170	tons
Less 7½% Pillar allowance	153,707	tons
9.175% ZnS Recovery	14,103	tons
90% Mill efficiency	12,693	tons
1.092% PbS recovery	1,678	tons
95% Mill efficiency	1,594	tons

		Tons Concentrates		
	Tons Rock	ZnS	PbS	Total
Developed	282,628	23,338	2,932	26,270
Probable	153,707	12,693	1,594	14,287
Total	435.335	36,031	4,526	40,557

Total Recovery 9.316%

VALUATION
DISCOVERY AS OF FEBRUARY 1924.
BLOCK "F"

Tons recoverable rock		435,355 tons
Tons recoverable concts. zinc		36,031 tons
Tons recoverable concts. Lead		4,526 tons
Tons recoverable concts. Total		40,557 tons
Expected price Concts.		
Zinc Concts. $47.50	Lead Concts. $90.00	
Risk Rate Deferred 1 year	12% & 4%	
Rock Cost per ton		$ 1.70
Development cost per rock ton		.10
Estimated life based on 200,000 tons of rock treated per year		2 years
Royalty paid		12½%.

Total Expected Receipts:		
36,031 x $47.50	$1,711,472.00	
4,526 x $90.00	407,340.00	
		$2,118,812.00
12½% Royalty	$ 264,851.00	
Cost Mng. & Mllg.		
435,335 x $1.70	$ 740,070.00	
Cost future Development		
435,335 x 10¢	$ 43,534.00	1,048,455.00
Estimated Operating Profit ----------		$ 1,070,357.00

Present worth of 2 annuities of $535,178.00

Deferred 1 year @ 12% & 4%		
$535,178.00 x 1.4632298 =		$ 783,088.00
Cost of Mill		$ 125,000.00
Net Present Worth----------		$ 658,088.00

$$\text{Depletion factor} = \frac{\$658,088.00}{40,557} = \$16.226 \text{ Per ton.}$$

TONNAGE RESERVE STATEMENT

TONNAGE RESERVES

	Tons ZnS	
Tonnage Estimate Aug. 1917 - Block "A"	32,391	1917
Tons Produced 1917	2,243	
Tons recoverable concentrates in ground 1/1/18	30,148	
Extensions 1918 - Block "B"	11,373	
	41,521	1918
Tons Produced 1918	5,937	
Tons Rec. Concts. in ground Jan. 1, 1919	35,584	
Extensions 1919 - Block "C"	6,505	
	42,089	1919
Tons Produced 1919	2,350	
Tons Rec. Concts. in ground Jan. 1, 1920	39,739	
Extensions 1920	None	
	39,739	1920
Tons Produced 1920	5,711	
Tons Rec. Concts. in ground Jan. 1, 1921	34,028	
Extensions 1921	None	
	34,028	1921
Tons Produced 1921	1,717	
Tons Rec. Concts. in ground Jan. 1, 1922	32,311	
Extensions 1922	None	
	32,311	1922
Tons Produced 1922	None	
Tons Rec. Concts. in ground Jan. 1, 1923	32,311	
Extensions 1923	None	
Discovery Jan. 1923 - Block "D"	15,467	
Discovery Jan. 1923 - Block "E"	13,510	
	61,288	1923
Tons Produced 1923	10,992	
Tons Rec. Concts. in ground Jan. 1, 1924	50,296	
Extensions 1924	None	
Discovery Feb. 1924 - Block "F"	40,557	
	90,853	1924
Tons Produced 1924	20,495	
Tons Rec. Concts. in ground Jan. 1, 1925	70,358	

TONNAGE RESERVES

Extensions 1925	None	
Discovery Feb. 1925	17,581	
Discovery Nov. 1925	12,684	
	100,623	1925
Tons Produced 1925	29,709	
Tons Rec. Concts. in ground Jan. 1, 1925	70,914	

DEPLETION STATEMENT

DEPLETION STATEMENT

1917

Purchase price	$250,000.00	
Tonnage estimate at time of purchase, Block "A"	32,391	tons
Depletion rate, $\frac{\$\ 250,000.00}{32,391}$	$ 7.7182	
Tons sold during year	2,243	tons
Total depletion 2,243 x $7.7182	$ 17,311.92	

1918

Balance left from original value	$ 232,688.08	
Balance left from original tonnage	30,148	tons
Extension added Block "B"	11,373	
Total tonnage reserve	41,521	
Depletion rate $\frac{232,688.08}{41,521}$	$ 5.6041	
Tons sold during year	5,937	
Total depletion 5937 x $5.6041	$ 33,271.54	

1919

Balance left from original value	$ 199,416.54	
Balance left from 1918 tonnage reserve	35,584	
Extensions added Block "C"	6,505	
Total tonnage	42,089	
Depletion rate $\frac{\$\ 199,416.54}{42,089}$	$ 4.738	
Tons sold during year	2,350	
Total depletion 2350 x $4.738	$ 11,134.30	

DEPLETION STATEMENT
(Cont'd)

1920

Balance left from original value	$ 188,282.24
Balance left from 1919 tonnage reserve	39,739
No extensions so depletion rate unchanged	$ 4.738
Tons sold during year	5,711
Total depletion 5,711 x 4.738	$ 27,058.72

1921

Balance left from original value	$ 161,223.52
Balance left from 1920 tonnage reserve	34,028
No extensions so depletion rate unchanged	$ 4.738
Tons sold during year	1,717
Total depletion 1717 x $ 4.738	$ 8,135.15

1922

Balance left from original value	$ 153,088.37
Balance left from 1921 tonnage	32,311
No extensions so depletion rate unchanged	$ 4.738
Tons sold during year	None
Total depletion	None

1923

Balance left from original value	$ 153,088.37
Balance left from 1922 tonnage	32,311
No extensions so depletion rage unchanged	$ 4.738
Tons sold during year	10,992
Total depletion 10,992 x $ 4.738	$ 52,080.10

A discovery was claimed and allowed in Jan. 1923 Blocks "D" & "E" but production was deferred one year so no depletion is allowable in 1923.

1924

1.	Balance left from original value	$ 101,008.27
	Balance left from 1923 tonnage	21,319
	No extensions so depletion rate unchanged	$ 4.738
	*Tons sold from original estimate	6,832
	Total depletion from original value 6832 x 4.738	$ 32,370.02
2.	A new discovery, claimed in 1923 becomes productive during 1924. Blocks "D" and "E" Total value allowed	$ 317,638.00
	Depletion rate (from valuation of blocks "D" and "E")	$ 10.962
	*Tons sold from blocks "D" and "E"	13,663

Total depletion from discovery 13,663 x$10.962-- $149,773.81

Total depletion for year, original plus discovery $ 182,143.83

Depletion continues in this manner until the tonnage is worked out or the value totally depleted.

* Tons produced from each block was estimated in this case. In practice this distribution should be available from the mine records.

CONCLUSION.

No given set of rules or specifications can be made for any valuation work because no two cases will be exactly the same. The premises outlined in this article should be applied in a very general way. Each individual case must be studied and judged according to its own peculiar circumstances. The greatest asset to any engineer is a thorough working knowledge of the past performance of the district. The next important asset is the ability to exercise sound judgement when examining the evidence presented.

It is the duty of the engineer to see that the operator receives full benefit of the allowances made by the income tax rulings. Development should be watched to see that all of an area is developed before discovery is claimed so that the maximum tonnage will be available for the valuation. This is well illustrated in the sample discovery, claimed as of February 1924 (block F). On the map (exhibit 1) the mined area shows a large portion of the orebody lying outside the discovery area. This portion should have been included in the original area but could not because it is not indicated by a single drill hole.

It is also the duty of the engineer to see that the laws are not abused. Like many laws the Revenue Act is so written that unscrupulous engineers and operators found

loopholes by which they could "beat" the law. It is not uncommon practice to arrange the dates of discoveries in order to make the high depletion rates fall in the years of high profit. Operators often rush production and take high depletion during good years only to find that many years of operation are left in which no relief from income tax can be gained through depletion. It is always safer practice to take matters in thier natural sequence and arrange an intelligent schedule which will cover the entire life of the mine.

Before starting on any tax depletion work the engineer should be certain that he is in position of the latest rulings of the Revenue Department. Rulings are constantly being changed and what is good practice today may be obselete tomorrow. After the original laws of 1918 were adopted there have been several minor changes and a few major ones. The first major change was a ruling to the effect that no depletion allowance could exceed fifty percent of the total profit. At present the entire system has been suspended and all mines placed on a cost depletion basis but the laws for discovery depletion are now under revision and will no doubt be again placed in effect when perfected.

DRILL HOLE LOGS

DRILL HOLE LOGS

Hole No. 1 Finished 11-27-14

0- 3	Soil
3- 20	Yellow clay and soapstone
20- 60	Soapstone and broken flint
60-100	Mixed flint and line
100-115	Lime
115-145	White flint
145-185	Lime and gray flint
185-200	Blue and gray flint
200-212	Hard gray flint
212-315	Lime and flint

Hole No. 2 Finished 12-24-14

0-65	Soil and soap
65-200	Lime
200-250	Flint
250-301	Lime and flint

Hole No. 3 Finished 1-29-16

0-35	Clay
35-65	Slate and clay
65-160	Lime and flint
160-165	Flint with a showing of lead
165-195	Dark limestone
195-225	Mineral bearing flint, containing zinc about 15' good stuff
225-275	Lime and flint
275-300	Limestone mixed with dark flint

Hole No.4 Finished 3-8-16

0-35	Clay
35-65	Slate
65-120	Lime and gray flint
120-165	Dark flint
165-195	Dark lime
195-225	Black flint
225-265	Gray lime and flint
265-285	White flint
285-300	Gray lime and flint

Hole No. 5 Finished 3-22-16
0-65 Clay and slate
65-200 Lime and flint
200-240 Dark flint
240-300 White flint
300-318 Dark lime and flint

Hole No. 6
0-65 Clay and soapstone
65-165 Lime and flint
165-200 Flint and dark lime
200-205 Flint with two foot opening
205-250 Flint
250-310 Gray limestone and flint

Hole No. 7
0-67 Clay and soapstone
67-150 Limestone
150-205 Cotton rock and limestone
205-260 White flint
260-306 Lime and flint

Hole No. 8
0-67 Clay, soapstone and slate
67-165 Limestone and flint
165-175 Hogchaw and water flint
175-200 Limestone
200-215 Flint bearing ore zinc
215-280 White flint
280-285 Lime and flint

Hole No. 9 Finished 5-19-16
0-65 Clay and soapstone, slate
65-165 Lime and flint
165-171 Dark flint bearing zinc ore
171-185 Hogchaw flint
185-205 Dark limestone
205-290 Flint bearing some ore
290-316 Gray limestone

Hole No. 10 Finished 5-20-16
0-67 Soapstone and slate
67-110 Lime and flint
110-140 Flint boulders and clay
140-165 Limestone and flint
165-175 Hogchaw flint, flint with ore shines zinc
175-205 Lime and flint
205-260 Gray lime
260-290 Gray limestone and flint

Hole No. 11 Finished 6-10-16

0-65	Clay, soapstone and slate
65-160	Limestone
160-165	Hogchaw flint with ore
165-170	Limestone formation with zinc
170-183	Limestone and flint with lead and zinc ore
183-196	Limestone and cotton rock
196-250	White flint
250-285	Limestone
285-290	Dark flint

Hole No. 12 Finished 6-24-16

0-65	Soapstone and slate
65-130	Flint and lime
130-145	Flint with lead shines
145-165	Flint dark
165-180	Flint with zinc ore
180-185	Dark flint
185-190	Flint with zinc ore
190-200	Good ore
200-255	Gray flint no ore

Assay	60% Zn.
185-190	Shines
190-195	27.20
195-200	5.35

Hole No. 13 Finished 7-8-16

0-67	Soap and slate
67-100	Limestone
100-105	Brown flint
105-110	Lime and flint
110-115	Lime and flint
115-130	White flint
130-147	Hogchaw flint
147-150	White flint with zinc shines
150-165	Dark flint with better zinc shines
165-185	Dark flint with lead and zinc
185-195	Dark flint with lead and zinc
195-211	Dark flint very good lead and zinc
211-245	White flint with some ore
245-258	Lime

Assay	Zinc 60%	Lead 80%
200	20.80	3.80
204	22.50	1.72
208	14.15	1.20
212	28.35	2.25
216	28.80	3.08

Hole No. 14 Finished 7-25-16

0-70 Clay and soapstone slate
70-125 Limestone and flint, lots of openings
125-160 Flint hogchaw showing some ore
160-200 Dark flint showing ore
200-225 White flint
225-247 White flint, no ore

Hole No. 15 Finished 8-2-16

0-70 Slate soap and clay
70-110 Limestone
110-135 White flint
135-175 Dark flint with zinc shines
175-189 Dark flint
189-203 Good ore in dark flint formation
203-210 White flint with fair ore
210-260 White flint

Assay	60% zinc
189-192	31.70
192-197	28.30
197-202	18.67
202-206	10.60

Hole No. 16 Finished 8-12-16

0-69 Clay, soapstone and slate
69-125 Limestone
125-135 Limestone and flint
135-151 White flint
151-189 White flint with ore
189-200 Limestone flint
200-210 Good ore, dark flint large crevice
210-225 Good ore, with white flint
225-240 Ore falling in from crevice
240-251 Lime and flint, shines falling in

155½-168½	4.70 zinc 60%
168½-171	3.40
171-174	2.95
174-179	3.25
179-183	3.15
183-189	1.35
189-203	31.17
203-206	18.45
206-210	12.50
210-215	15.00
215-220	7.10

Hole No. 17 Finished 8-19-16

0-69	Soapstone and slate
69-115	Limestone
115-135	White dark flint with shines
135-138	White flint, shines
138-160	White flint, shines
160-180	Down flint, fair ore
180-195	Limestone
195-205	Limestone and flint
205-207	Hogchaw flint
227-240	Cavey ground flint
240-257	White flint

Hole No. 18 Finished 8-26-16

0-67	Clay, soapstone and flint
67-125	Limestone
125-140	White flint and limestone
140-155	Brown flint, shines
155-168	Black flint, lead shines
168-178	Brown flint, ore
178-185	Black flint, ore
185-206	White flint, ore
206-225	White flint, shines
225-240	Caving flint, ground
240-244	Large openings
244-249	Flint

Assay	60% Zinc
168-173	7.95
173-178	6.70
178-185	4.35
187-190	13.30
190-195	4.95

Hole No. 19 Finished 9-9-16

0-68	Clay, soapstone and slate
68-130	Limestone and slate
130-160	Dark flint
160-189	Brown flint and shines
189-206	Dark, limestone and flint shines
206-210	White flint shines
210-225	White flint, large openings, caving
225-263	White flint

Hole No. 20 Finished 9-11-16

0-70 Clay, soapstone and slate
70-115 Limestone and slate
115-135 White flint
135-165 Brown flint
165-180 White flint, limestone
189-190 Black flint, very little ore, shines
190-230 Open ground, no cuttings, boulders caving
230-240 White flint

Hole No. 21 Finished 9-30-16

0-70 Clay, soapstone and slate
70-120 Limestone
120-140 Limestone and white flint
140-185 Hogchaw, caving dark flint, lead and zinc shines
185-191 Water black flint, caving black flint, lead shines
200-220 Black flint and limestone
220-240 White flint

Hole No. 22 Finished 9-30-16

0-70 Clay, soapstone and slate
70-135 Limestone and flint
135-170 White flint shines
170-185 Brown flint, good ore
185-197 Dark brown flint, good ore
197-205 Black flint, limestone, fair ore
205-210 White and black flint
210-229 White flint

Assay	60% Zinc
170-180	3.00
180-182½	13.70
182½-185	6.30
185-191	6.30
191-195	4.70
195-205	1.85

Hole No. 23 Finished 12-6-16

0-68 Soapstone and slate
68-135 Limestone
135-160 Limestone and flint
160-170 Limestone and flint showing of lead
170-175 No cuttings
175-180 White flint some ore
180-185 Black flint lead and zinc ore
185-201 Brown flint caving ore still good
201-229 Black and white flint ore
229-236 Black and white flint some ore shines
236-241 White flint

Hole No. 23 Finished 12-6-16 (Cont'd)

Assay	60% Zn.	80% Pb.
160-170		22.50
170-175	Missing	
175-180		11.25
180-188	Shines	9.55
188-193	Shines	Shines
193-203	Shines	Shines
203-208	14.15	2.90
203-213	16.70	6.15
213-219	19.20	3.10
219-229	9.95	4.95

Hole No. 24 Finished 12-20-16

0-66 Clay, soapstone and slate
66-130 Limestone
130-185 Flint with shines of lead
185-195 Hogchaw with shines of lead and zinc
195-220 Flint and with shines of lead and zinc
220-250 Gray flint with shines; think it falling in
250-260 White flint

Hole No. 25 Finished 1-8-17

0-72 Clay, soapstone and slate
72-130 Limestone
130-175 Caving flint, shines
175-200 Gray flint shines
200-210 Gray flint and limestone
210-230 Brown and white flint
230-269 White flint

Hole No. 1 Finished 10-11-16

0-70	Clay, soapstone, boulders and slate
70-115	White limestone
115-120	Yellow limestone
120-130	Limestone, white flint
140-162	Black flint and brown flint
162-180	Gray flint, shines
180-200	Gray and white flint shines
200-240	Dark gray flint, shines
240-255	White flint

Hole No. 2

0-70	Clay, soapstone and slate
70-110	Limestone
110-155	Cotton rock and flint
155-190	Black flint, shines
190-210	Brown flint, shines
210-235	Gray flint, shines
235-245	Gray flint, fair ore
245-250	White flint, shines
250-260	White flint

Assay	60% Zn.
235-240	6.15
240-245	5.85

Hole No. 3

0-70	Clay, soapstone and slate
70-115	Limestone
115-175	Limestone and flint
175-190	Flint, lead ore
190-205	Flint, lead and zinc ore
205-235	Black flint, shines
235-260	Limestone and flint
260-265	Black flint
265-271	White flint

Assay	60% Zinc	Lead 80%
175-180		26.25
180-185		34.15
185-190	Shines	25.40
190-195	7.50	15.35
195-205	7.45	7.30

Hole No. 4

0-70	Clay , soapstone and slate
70-165	Limestone and flint

Hole No. 4 (Cont'd)
165-185 Brown flint and lead shines
185-200 Black flint
200-215 Black flint and limestone
215-235 Gray limestone
235-240 White and black flint
240-246 White flint

Hole No. 5
0-88 Surface and soapstone
88-120
120-138 Flint and tar
138-153 Blue and white flint
153-165 Blue flint and thin shines of lead and zinc
165-168 Fair shines of zinc
168-171 Thin shines of zinc
171-200 White flint blue
200-221 White flint
221-224 Thin shines of lead
224-245 White flint
245-258 Flint and black lime

Hole No. 6
0-52 Clay, soapstone and slate
52-56 Limestone and boulders
56-80 Soapstone and slate
80-135 Limestone
135-185 Limestone and flint
185-215 Brown flint
215-240 Black and white flint
240-267 White flint, some limestone in last run no shines

Hole No. 7 0 - 9
0-90 Clay, soapstone and limestone boulders
90-140 Limestone
140-145 Soft limestone boulders
145-185 Limestone and flint
185-240 Loose limestone and flint caving
240-250 Black limestone and flint
250-262 Gray flint, limestone (not a shine)

Hole No. 8
0-100 Clay, soapstone slate
100-125 Soapstone boulders
125-145 Limestone
145-185 Black and white flint
185-200 Black and white flint, lead ore
200-218 Brown flint, lead and zinc

Hole No. 8 (Cont'd)
218-225 Crevice and hogchaw ore shines
225-230 White flint ore falling in
230-260 White flint

Assay	ZnS	PbS.
185-195		1.75
195-205		2.40
205-210	4.80	Shines
210-215	6.50	
215-220	4.50	
220-225	3.85	
225-230	Shines	

Hole No. 9
0-100 Clay, soap and slate
100-150 Limestone
150-185 Flint and lime
185-205 Dark flint and lead shines
205-236 Brown flint
236-250 White and blue calico flint
250-268 White flint

Hole No. 10
0-100 Clay, soap and slate
100-150 Limestone
150-170 Dark brown flint
170-185 Brown and blue flint, lead and zinc shines
185-210 Dark flint
210-244 Blue and white flint

Hole No. 11 Finished 3-31-17
0-90 Soil, clay and soapstone
90-120 Limestone
120-160 White lime and flint
160-200 Brown lime and flint
200-225 Blue flint
225-230 Blue and white flint

Hole No. 1

This hole drilled by Picher Co.,
No Log.

Hole No. 2

0-125	Clay, soap and slate
125-135	Limestone
135-200	White and blue flint, shines
200-230	Dark flint, shines
230-235	White flint, shines

Hole No. 3

0-80	Soil, soap and stone
80-93	Mundic, lime and flint
162-205	Dark flint and lead shines
205-235	Dark flint with fair lead shines
235-240	Dark brown flint
240-250	White flint

Assay	PbS.
220-225	0.30

Hole No. 4 Finished 4-21-17

0-28	Clay
28-90	Soapstone
90-160	White lime and flint
160-185	Blue flint and lime
185-190	Lead shines and flint
190-195	Lead and zinc shines
195-210	White flint and zinc shines
210-235	Brown flint
235-245	Brown flint and lime
245-251	Brown flint

Hole No. 5 Finished 5-25-18

0-28	Clay
28-90	Soapstone
90-160	White lime and flint
160-185	Blue flint and lime
185-190	Lead shines and flint
190-195	Lead shines and zinc shines
195-210	White flint and zinc shines
210-235	Brown flint
235-245	Brown flint and lime
245-251	Brown flint

Hole No. 5 (Continued)

Assay	PbS.
190-195	0.15
195-200	0.10
200-205	0.06
205-210	0.75

Hole No. 6 Finished 5-1-18

0-28	Clay
28-85	Soapstone
85-110	Gray lime
110-120	White flint and lime
120-130	Blue flint and lime
130-170	Gray lime
170-178	Gray lime and flint
178-205	Brown lime and flint
205-210	Sand spar; fair lead and zinc shines
210-215	Brown flint
215-240	Brown flint and rosin zinc
240-245	Brown flint
245-252	Brown flint and lime

Assay	ZnS.	PbS.
220-225	0.75	0.10
225-230	2.60	
230-235	3.50	
235-240	1.70	
240-245	0.60	

Hole No. 7 Finished 5-10-17

0-30	Soil, clay and gravel
30-90	Soapstone
90-95	Gray lime and selvage
95-129	Brown lime and white flint
129-145	Gray lime and white flint
145-166	Gray lime and blue flint
166-211	Brown lime
211-215	White and blue flint
215-224	White and blue flint and zinc shines
224-233	Blue and white flint
233-237	Lime and flint
237-242	Brown flint
242-244	Brown lime

Assay	ZnS.
217-219	4.60
219-221	1.10
221-224	1.00
224-227	0.07

Hole No. 8 Finished 5-9-17

0-28	Clay
28-93	Soapstone
93-130	Gray lime
130-135	White flint and fair zinc
135-155	White flint and gray lime
155-175	White lime and flint
175-210	Brown lime and flint
210-215	Spar and zinc shines
215-225	Flint and zinc shines
225-235	White flint
235-245	Brown flint
245-253	Water flint

Assay	ZnS.
125-130	0.52
215-220	0.72

Hole No. 9 Finished 5-11-17

0-30	Clay
30-88	Soapstone
88-120	Gray lime
120-135	Brown flint and zinc shines
135-150	White flint
150-175	Blue flint and lime
175-205	Brown lime

(Toole lost on account of tar; impossible to drill further)

Hole No. 10 Finished 5-22-17

0-30	Soil and clay
30-90	Soapstone
90-95	Gray lime and selvage
95-129	Brown lime
129-145	Lime and blue flint
145-165	Lime and white flint
165-200	Brown lime
200-203	White and blue flint, zinc shines
203-224	White and blue flint
224-233	Lime and gray flint
233-242	Brown flint and lime
242-253	Gray lime and blue flint

Assay	ZnS.
200-203	2.70

Hole No. 11 Finished 5-18-17

0-28	Clay
28-85	Soapstone
85-100	Gray lime

Hole No. 11 Finished 5-18-17 (Cont'd)
100-120 Blue flint and lime
120-125 White flint and zinc shines
125-175 White flint and gray lime
175-190 Brown lime and flint
190-210 Brown lime
210-220 Brown flint and lime
220-245 Water flint

Hole No. 12
107 ft. struck tar and had to quit

Hole No. 13 Finished 5-29-17
0-28 Clay
28-83 Soapstone
83-110 Gray lime
110-130 Gray lime and blue flint
130-185 Brown flint and lime
185-210 Brown lime
210-245 Water flint
245-253 Brown flint

Hole No. 14 Finished 6-2-17
0-28 Clay
28-85 Soapstone
85-110 Gray lime
110-125 Blue flint
125-145 Gray lime and flint
145-150 White lime
150-180 Brown flint
180-205 Brown lime
205-210 White & Brown flint
210-226 Brown flint and jack shines
226-235 Brown flint
235-240 Brown flint and lime

Assay	ZnS.
210-215	1.17
215-220	1.4
220-223	5.3

Hole No. 15 Finished 6-3-17
0-30 Soil and clay
30-90 Soapstone
90-125 Gray lime and sludge
125-145 Gray lime and blue flint
145-165 Brown lime and white flint
165-200 Brown lime and blue flint
200-215 Dark brown lime and blue flint

Hole No. 15 Finished 6-3-17 (Cont'd)
215-223 Blue and white flint
223-225 Crevice showing zinc shines
225-246 Gray flint and lime

Hole No. 16 Finished 6-12-17
0-28 Clay
28-80 Soapstone
80-95 Gray lime
95-115 Gray lime
115-160 Gray lime and white flint
160-205 Brown lime and white flint
205-215 White flint
215-250 Brown flint

Hole No. 17 Finished 6-12-17
0-30 Clay
30-85 Soapstone
85-120 Gray lime
120-160 Gray lime and blue flint
160-170 White lime and flint
170-185 Brown flint and gray lime
185-210 Brown lime and Selvage
210-240 White flint
240-247 Brown lime and flint

Hole No. 18 Finished 6-9-17
0-30 Soil and clay
30-90 Soapstone
90-129 Gray lime and selvage
129-150 Brown and white flint
150-170 Brown and blue flint
170-212 Brown and blue flint
212-215 White and blue flint
215-252 White and blue flint

Hole No. 19 Finished 6-11-17
0-30 Soil and clay
30-85 Soapstone
85-105 Brown lime
105-113 Gray lime and white flint
113-163 Brown lime and white flint
163-205 Gray lime and blue flint
205-209 Gray lime and blue and white flint
209-227 Blue and white flint
227-230 Blue and white flint, zinc shines
230-238 Gray lime and blue flint
238-250 Brown lime and blue flint

Hole No. 20 Finished 6-21-17

0-30	Clay
30-85	Soapstone
85-100	Gray lime
100-135	Blue flint and gray lime
135-170	White lime
170-205	Blue flint, lime selvage
205-235	Brown flint
235-250	White flint and lime

Hole No. W-21

0-30	Clay
30-110	Soapstone
110-125	Gray lime
125-155	White flint and lime
155-190	Blue flint
190-195	Spar and flint
195-200	Spar and jack shines
200-210	Spar and fair jack
210-215	Flint and jack shines
215-235	Shelly flint
235-252	Brown flint

Assay	ZnS.
200-204	2.20
204-207	1.8
207-210	1.5
210-212	0.9

Hole No. W-22 Finished 6-15-17

0-45	Clay
45-130	Soapstone
130-150	Gray lime
150-225	White lime and blue flint
225-257	Brown lime, and flint

Hole No. W-23 Finished 6-23-17

0-39	Clay
39-128	Soapstone
128-150	Gray lime
150-210	White flint and blue flint
210-240	Brown flint

Hole No. W-24 Finished 6-26-17

0-30	Soil and clay
30-109	Soapstone
109-124	Brown lime and selvage
124-136	Brown lime and white flint
136-191	Shelly flint and mud seams

Hole No. W-24 Finished 6-26-17 (Cont'd)

191-200 Spar and flint
200-208 Spar and flint good zinc ore
208-212 White lime and good zinc shines
212-238 White and blue flint

Assay	ZnS.
200-204	.5

Hole No. W-25 Finished 6-24-17

0-30 Clay
30-110 Soapstone
110-125 Gray lime
125-140 Gray lime and flint
205-210 Spar and flint jack shines
210-226 Shelly flint

Hole No. W-26 Finished 5-28-17

0-30 Clay
30-82 Soapstone
82-95 Lime
95-210 Lime and gray and blue flint
210-230 White flint
230-240 Gray and white flint
240-245 Lime and blue and gray flint
245-254 Lime and blue flint

Hole No. W-27 Finished 7-7-17

0-30 Clay
30-93 Soapstone
93-120 Gray lime and blue flint
120-160 Brown flint
160-190 Brown flint and lead shines
190-217 Brown sand, flint, lead shines
217-224 Brown flint

Hole No. W-28 Finished 7-23-17

0-20 Clay
20-86 Soapstone
86-125 Shelly flint
125-135 Shelly flint, jack shines
135-195 Shelly flint
195-200 Spar and flint, jack shines
200-235 Brown flint

Hole No. W-29

0-30 Soil and clay
30-108 Soapstone
108-119 Brown lime, sandstone

Hole No. W-29 (Cont'd)

119-124 Gray lime and flint
124-185 Shelly flint and mud seams
185-201 Black flint and lead shines, soft lime
201-205 Blue flint, good zinc and some lead
205-210 Blue flint, lead and zinc shines
210-213 Blue and white flint
213-216 Brown flint
216-222 White and blue flint

Hole No. W-30 Finished 7-9-17

0-30 Clay
30-82 Soap
82-95 Lime
95-130 Lime and blue flint
130-175 Lime, gray and blue flint
175-190 Lime, gray spar and blue flint
190-195 Lime and gray spar
195-200 Gray spar
200-205 Gray spar with jack
205-210 Gray and white flint
210-229 Gray and white flint

Hole No. W-31 Finished 7-11-17

0-30 Clay
30-115 Soapstone
115-130 Gray lime
130-200 Shelly flint
200-215 Blue and white flint
215-230 Water flint
230-240 Brown flint

Hole No. W-32 Finished 7-9-17

0-30 Soil and clay
30-105 Soapstone
105-118 Gray lime and selvage
118-127 Gray lime and selvage
127-184 Shelly flint and mud
184-192 Gray lime and flint
192-200 Gray lime and blue flint, good zinc, some lead
200-204 Blue flint, good zinc
204-208 Blue and white flint, good zinc
208-219 Blue and white flint

Assay	ZnS.
192-196	7.35
196-200	13.4
200-204	28.8
204-208	13.0

Hole No. W-33 Finished 7-19-17

0-30	Clay
30-95	Soapstone
95-130	Gray lime and white flint
130-150	Brown flint
150-185	Brown flint and lead shines
185-197	Brown flint and fair lead

Assay	PbS.
185-190	1.44
190-194	1.62
194-197	2.05

Hole No. W-34 Finished 7-16-17

0-30	Clay
30-82	Soap
82-100	Lime
100-155	Lime and blue flint
155-165	Lime and gray flint
165-175	Brown and blue flint
175-200	Lime and blue flint
200-205	Gray flint
205-246	Gray and white flint

Hole No. W-35 S. Finished 7-14-17

0-30	Clay
30-105	Soapstone
105-190	Shelly flint
190-205	Blue flint and lead shines
205-210	Blue and flint and lime
210-220	Water flint
220-229	Brown flint

Hole No. W-36 Finished 7-27-17

0-30	Clay
30-130	Soapstone
130-145	Gray lime
145-155	Gray lime and flint
155-165	Shelly flint and lead shines
165-169	Shelly flint

Hole No. W-37 Finished 7-20-17

0-30	Clay
30-105	Soap
105-110	Lime
110-205	Hogchaw flint
205-210	Gray and blue flint with jack shines
210-237	White and gray flint

Hole W-38

Hole was abandoned at 119', driller moving off without furnishing log of hole

Assay	PbS.
100-105	6.10
105-110	30.20
110-115	22.20
115-119	11.25

Hole No. W-39 Finished 7-25-17

0-30	Clay
30-105	Soapstone
105-120	Lime
120-135	Lime and blue flint
135-205	Shelly flint
205-217	Blue flint and jack
217-222	Water flint

Assay	ZnS.
205-210	2.88
210-215	2.20
215-217	1.50

Hole No. W-40 Finished 8-2-17

0-35	Clay
35-100	Soapstone
100-115	Lime
115-135	Lime, gray and blue flint
135-195	Gray and blue flint
195-235	White and gray flint
235-245	White Lime and Brown flint

Hole No. W-41 Finished 8-24-17

0-30	Soil and clay
30-70	Soapstone
70-137	Brown lime and flint
137-142	Shelly flint, good lead shines
142-145	Shelly flint, some lead shines
145-180	Brown flint and openings
180-188	Brown flint
188-215	Brown and black flint, few scattering lead shines
215-225	White flint, shelly

Hole No. W-42 Finished 8-3-17

0-35	Clay
35-130	Soapstone
130-145	Gray lime
145-165	Gray lime and flint
165-190	Brown flint

Hole No. W-42 Finished 8-3-17 (Cont'd)

190-200 Shelly flint
200-212 Brown flint

Hole No. W-43

1-5 Surface
5-20 Yellow clay
20-25 Blue flint
25-30 Yellow clay
30-110 Soap and shale
110-165 Brown flint
165-200 White blue and brown flint very few zinc shines
200-215 Blue flint, white flint, few lead shines
215-240 Brown, blue and white flint
240-252 White flint and lime

Hole No. W-44 Finished 8-8-17

0-30 Soil and clay
30-100 Soapstone
100-130 Brown lime
130-150 Brown lime and white flint
150-180 Blue flint, mud seams and some lime
180-185 Blue flint zinc shines
185-220 Blue and white flint
220-230 Blue and white flint, some lime
230-260 Blue and white flint
260-270 Shelly flint or hogchaw

Hole No. W-45

1-5 Surface
5-20 Yellow clay
20-115 Soapstone and shale
115-185 White and brown flint
185-215 Lime, few zinc shines 200 to 205
215-225 Brown, blue flint, few zinc shines
225-245 Brown, and white flint, blue flint

Assay	ZnS.
210-215	1.31
215-220	1.50
220-225	6.05
225-230	1.80

Hole No. W-46 Finished 8-11-17

0-20 Soil
20-115 Shale
115-180 Shelly flint
180-210 Flint and lime
210-245 Flint, jack and lead

Hole No. W-46 Finished 8-11-17 (Cont'd)

245-250 Shelly flint
260-270 Flint and lime

Hole No. W-47 Finished 8-21-17

1-5 Surface
5-30 Yellow clay
30-50 Soap and shale
50-110 Soap and shale boulders, mundic
110-135 Lime and flint
135-150 Shelly and white and brown flint
150-165 Flint and lime
165-180 White, brown and blue flint, lead shines
180-190 Brown and blue flint, lead and zinc shines
190-210 Black lime
210-230 Blue, brown and white flint, zinc shines
230-250 White, blue and water flint
250-260 Lime and flint

Assay	ZnS.
215-220	2.61
220-225	2.83
225-230	6.90

Hole No. W-48

0-30 Clay
30-96 Soapstone
96-111 Lime and flint
115-145 Blue and white flint
145-161 Blue flint
161-176 Blue and white flint, lead shines
176-192 Blue and white flint
192-197 White flint, brown lime, trace of lead
197-202 White flint

Assay	PbS.
161-166	1.58
166-172	1.45
172-178	1.15

Hole No. W-49 Finished 8-23-17

0-87 Clay and soapstone
87-112 Lime
112-180 Lime and flint
180-192 Brown lime and flint
192-210 Dark gray lime
210-214 Shale
214-215 White flint
215-217 Shale
217-220 White flint

Hole No. W-49 Finished 8-23-17 (Cont'd)

220-222 Shale
222-237 Gray lime and white flint
237-261 White flint

Hole No. W-50 Finished 8-23-17

0-20 Soil and clay
20-90 Shale
90-110 Lime, sand, mundic
110-165 Shelly flint
165-185 Shelly flint and lead shines
185-210 Lime and flint
210-215 Flint and jack shines
215-220 Flint and good jack
220-225 Flint and jack shines
225-252 Hard flint

Hole No. W-51 Finished 8-23-17

0-30 Clay
30-105 Soapstone
105-127 Blue flint
127-176 White flint, trace of lead
176-204 Brown flint
204-212 Lime and flint
212-215 Brown flint, lead shines
215-226 Brown flint, lead and jack shines
226-240 Brown flint
240-244 White flint

Assay	ZnS.
215-219	1.32
219-223	0.90

Hole No. W-52 Finished 8-22-17

0-30 Soil and clay
30-65 Soapstone
65-140 Limestone
140-150 Cotton rock
150-162 Cotton rock and blue flint
162-166 Brown flint and lead shines
166-175 Brown flint good lead
175-177 Brown flint good lead some zinc
177-180 Crevice
180-190 Brown flint, zinc and lead

Hole No. W-52 Finished 8-22-17 (Cont'd)

Assay	ZnS.	PbS.
166-170	4.84	
170-173	24.20	
173-175	14.40	
175-177	13.00	
180-183	2.12	3.95
183-186	1.95	4.43

Hole No. W-53 Finished 8-30-17

0-20	Clay
20-55	Soapstone
55-75	Gray lime
75-90	Gray lime and blue flint
90-100	Gray lime and blue flint
100-155	Same
155-165	Blue and white flint
165-170	Same
170-180	Blue and white flint Jack shines
180-195	Brown flint, jack shines
195-215	Same
215-295	Gray lime blue flint no shines

Assay	ZnS.	PbS.
170-175	1.65	3.65
175-180	9.60	10.85
180-185	1.12	
185-190	1.05	
190-195	1.58	1.60
195-200	1.55	
200-205	1.60	
205-210	3.50	
210-220	1.30	

Hole No. W-54

1-5	Surface
5-20	Yellow clay
20-95	Soaps and shale
95-130	Flint, lime, few lead shale
130-160	White and brown flint
160-180	Blue, black and brown flint, few lead shines
180-215	Black lime
215-240	Blue, brown and white water flint

Hole No. W-55 Finished 9-3-17

110-145	Light flint
145-154	Light flint, lead shines
154-157	Light flint

Hole No. W-55 Finished 9-3-17 (Cont'd)

157-160 Dark flint
160-191 Light flint
191-196 Dark flint, lead shines
196-200 Black flint
200-215 Light flint, lead shines
215-224 Light flint, lead and jack shines
224-230 Dark flint
230-234 Dark flint

Hole No. W-56 Finished 9-25-17

0-20 Clay
20-55 Soapstone
55-90 Gray lime and blue flint
90-125 Gray lime and white flint
135-155 Brown flint
155-160 Gray flint
160-165 Lost
165-170 Gray flint, blue flint, jack shines
170-180 Lost
180-195 Gray and blue flint jack shines

Assay	ZnS.	PbS.
180-185	5.60	trace
185-190	5.75	.30
190-195	4.10	.86

Hole No. W-57 Finished 9-18-17

0-30 Clay
30-122 Soapstone
122-130 Dark flint
130-190 Light flint
190-195 Dark flint, lead shines
195-215 Blue flint
215-230 Brown flint lead and jack shines
230-235 Light flint

Assay	ZnS.	PbS.
215-220	Trace	.30
220-225	Trace	1.30
225-250	.98	.67

Hole No. W-58 Finished 9-21-17

0-40 Clay
40-125 Soapstone
125-140 Dark flint
140-155 Light flint
155-160 Dark flint
160-180 Light flint
180-190 Brown flint

Hole No. W-58 Finished 9-21-17 (Cont'd)
190-200 Brown flint, lead shines
200-234 Lime and flint
234-235 Dark sand

Hole No. W-59 Finished 9-28-17
0-30 Clay
30-120 Soap
120-180 Light flint
180-190 Dark flint
190-210 Light flint, lead shines
210-230 Brown flint

Hole No. W-60 Finished 10-4-17
0-30 Clay
30-70 Red clay
70-148 Soapstone
148-165 Lime
165-180 Brown flint
180-186 Cave flint

Hole No. W-61 Finished 10-10-17
0-35 Yellow clay
35-155 Soapstone
155-160 Lime
160-180 Dark flint
180-185 Blue flint, lead shines
185-195 Blue flint
195-200 Brown flint jack shines
200-207 Light flint

Hole No. W-62
0-20 Surface
20-55 Soapstone
55-75 Lime and flint
75-80 White flint
80-85 Dark flint and lime
85-110 Lime and white flint
110-115 White flint
115-139 White flint and lime
139-142 Dark flint and lime trace of lead and jack
142-160 Flint
160-165 Open ground
165-170 Flint
170-197 Flint

Assay	ZnS.	PbS.
165-170	5.90	Shines
170-175	4.40	Shines

Hole No. W-62 (Cont'd)

Assay	ZnS.	PbS.
175-180	2.50(2.50)	Shines
180-185	2.30	Shines
185-190	2.50	
192-195	13.80	
195-197	12.40	

Hole No. W-63

0-20	Yellow clay
20-80	Soapstone
80-95	Lime
95-100	Gray flint and lime
100-110	Gray flint
110-115	Dark flint
115-120	Light flint
120-130	Brown flint
130-145	Blue flint, lead shines
145-150	Blue flint
150-165	Brown flint and lime
165-175	Brown lime
175-185	Lime and flint lead shines
185-195	Blue flint, jack shines
195-205	Gray lime, good jack
205-207	Brown flint, fair jack
207-210	White flint, jack shines
210-215	White and gray flint

Assay	ZnS.	PbS.
138-142	Trace	.89
165-170	5.90	.19
170-175	4.40	.19
175-180	2.50	.10
185-190	12.50	.27
190-195	1.20	.40
195-205	2.50	.43

Hole No. W-64

0-20	Yellow clay
20-25	White clay
25-35	Soapstone
35-83	Lime and flint
83-90	Gray lime
90-100	Lime and flint
100-110	Dark flint
110-130	Brown lime and white flint
130-150	Brown flint
150-155	Brown flint and lead shines
155-165	Lime and flint, lead shines

Hole No. W-64 (Cont'd)

165-180 Lime and flint, good lead shines
180-184 Lime and flint lead and jack shines
184-190 Light flint, lead and jack shines
190-214 Black and white flint, good jack
214-220 White flint

Assay	ZnS.	PbS.
180-184	0.85	0.19
184-186	1.15	1.97
186-190	0.20	0.48
190-195	2.08	nil
195-200	1.7	tr.
200-205	3.74	nil
205-210	0.63	
210-215	nil	nil

Hole No. W-65

0-30 Yellow clay
30-80 Soapstone
80-95 Gray lime
95-110 Brown flint
110-115 Black flint, with fair lead
115-130 Brown flint, lead shines
130-140 Light flint
140-150 Brown flint
150-155 White and dark flint lead and jack shines
155-165 Light flint
165-180 Lime and flint fair jack and lead
185-205 Light flint, good jack
205-210 White flint
210-214 Brown flint

Assay	ZnS.	PbS.
160-165	Trace	0.57
165-170	3.22	2.01
170-175	3.00	2.09
175-180	1.10	0.75
180-185	2.90	1.03
185-190	2.38	0.35
190-192	2.30	Trace
192-195	2.25	nil
195-200	5.50	nil
200-205	1.92	nil

Hole No. W-66 Finished 11-10-17

0-35 Clay
35-80 Soapstone
80-95 Lime
95-125 Brown and white flint

Hole No. W-66 Finished 11-10-17 (Cont'd)

125-130 White flint
130-140 Brown flint
140-150 Black flint
150-160 Lime and black flint
160-165 Lime and flint, lead shines
165-170 Black lime
170-175 Lime and flint, jack shines
175-180 Lime and flint, fair jack
180-185 White flint good jack
185-190 White and brown flint, fair jack
190-195 White flint, jack shines
195-200 White flint
200-219 Cavy wh. flint

Assay	ZnS.	PbS.
170-175		1.19
175-180	2.32	1.82
180-185	3.02	1.28
185-190	Trace	0.45
190-195	Trace	Trace

Hole No. W-67

0-55 Soapstone
55-95 Lime
95-130 Lime and flint
130-135 Lime
135-140 Dark lime and flint
140-150 Dark lime and flint
150-160 Dark lime and flint lead shines, good
160-170 Dark flint
170-180 Dark flint zinc shines
180-195 Open ground, no cuttings
195-205 Gray flint, zinc shines
205-210 Gray flint

Hole No. W-68 Finished 11-19-17

0-30 Yellow clay
30-76 Soapstone
76-90 Lime
90-150 Lime and flint
150-170 Dark lime and flint
170-175 Blue flint
175-190 White and black flint, lead shines
190-195 White flint lead shines
195-200 White flint
200-210 Brown and white flint
210-215 Gray flint
215-228 Lime and flint

Hole No. W-68 Finished 11-19-17 (Cont'd)

Assay	PbS.
145-195	0.62

Hole No. W-69 Finished 11-23-17

0-35	Yellow clay
35-88	Soapstone
88-95	Gray lime
95-105	Lime and flint
105-160	Cotton rock
160-175	Lime and flint
175-180	White flint
180-185	White flint, lead shines
185-190	White flint, fair lead
190-195	White and black flint, lead shines, good jack
195-200	White flint, fair jack
200-205	White flint, jack shines
205-220	White flint

Assay	ZnS.	PbS.
180-185		0.45
185-190		0.45
190-195	3.84	0.39
195-200	0.68	0.21
200-205	Tr.	nil

Hole No. W-70 Finished 12-1-17

0-35	Clay
35-90	Black and brown soapstone
90-105	Lime
105-150	Lime and flint
150-160	Blue flint
160-165	Blue flint, lead shines
165-170	Blue flint, lead and jack shines
170-190	Lime and flint, fair lead
190-205	White and black flint, good lead and jack
205-210	White and black flint jack shines
210-216	White flint

Assay	Zns.	PbS.
170-190		0.7
190-195	10.7	5.52
195-200	13.9	1.75
200-205	1.5	tr.
205-210	5.7	

Hole No. W-71 Finished 12-17-17

0-35	Yellow clay
35-92	Soapstone
92-115	Limestone
115-125	Lime and flint
125-135	Cavey flint
135-175	Lime and flint
175-180	Lime and flint, lead shines
180-195	Lime and flint, good lead
195-200	Brown flint, good lead and jack
200-215	White flint, good jack, lead shines
215-220	Water flint

Assay	ZnS.	PbS.
180-185		4.2
185-190		1.7
190-195		2.7
195-200	3.4	2.1
200-205	6.2	
205-207½	9.0	
207½-210	6.9	
210-215	3.7	

Hole No. W-72 Finished 12-21-17

0-35	Yellow clay
35-92	White and black soapstone
92-105	Limestone
105-115	Lime and flint
115-125	Blue flint
125-135	Blue flint, fair jack, lead shines
135-160	Lime and flint, lead and jack shines
160-180	Lime and flint
180-185	White flint, lead shines
185-200	White flint, fair lead
200-205	White flint, lead shines
205-215	White flint

Assay	ZnS.	PbS.
125-130	2.25	1.05
130-135	1.68	0.92
185-190		2.58
190-195		4.02
195-200		1.72

Hole No. W-73 Finished 12-31-17

0-35	Clay
35-92	Soapstone
92-100	Limestone
100-120	Lime and flint

Hole No. W-73 Finished 12-31-17 (Cont'd)

120-135 Blue and gray flint fair jack
135-150 Blue and white flint
150-160 Blue flint, fair jack
160-165 Blue flint, lead and jack shines
165-170 Blue flint
170-175 Blue lime, and flint
175-200 White and brown flint
200-213 White water flint

Assay	ZnS.
120-125	2.32
125-130	3.25
150-155	1.5
155-160	4.2

Hole No. W-74 Finished 1-23-18

0-30 Clay
30-76 Soapstone
76-90 Lime
90-175 Lime and flint
175-195 Lime
195-215 Lime and flint
215-222½ White flint, good jack
222½-225 White flint, jack shines
225-232 White flint

Assay	AnS.
215-220	7.75

Hole No. W-75 Finished 2-4-18

0-35 Clay
35-77 Soapstone
77-90 Lime
90-185 Lime and flint
185-235 Flint

Hole No. W-76 Finished 2-16-18

0-30 Clay
30-77 Soapstone
77-93 Lime
93-190 Lime and flint
190-210 White flint
210-215 Blue flint, jack shines
215-220 Blue and black flint, fair jack
220-225 Clear and blue flint jack shines
225-230 Clear white flint
230-242½ Clear white flint

Hole No. W-77 Finished 2-27-18

0-28 Surface and clay
28-92 Soapstone
92-105 Lime
105-140 Lime and flint
140-168 White flint
168-185 Lime and flint
185-218 Black lime, some water
218-221 Blue flint
221-240 Clear white flint

Hole No. W-78 Finished 3-9-18

0-30 Clay
30-95 Soap
95-110 Gray lime
110-200 Blue flint and lime
200-215 Brown lime and flint
215-220 Flint and lead shines
220-237 White flint

Hole No. 79 Finished 3-26-18

0-30 Clay
30-90 Soapstone
90-200 Lime and white flint
200-210 White and blue flint
210-225 Brown flint and gray shale
225-234 Lime and brown flint

Hole No. W-80 Finished 4-10-18

0-30 Clay
30-80 Soapstone
80-120 Gray lime
120-180 Lime and flint
180-192 Gray lime
192-197 Gray lime, lead and jack shines
197-207 Dark flint, good jack and lead
207-217 Flint lead and jack shines
217-243 White and blue flint

Assay	ZnS.	PbS.
197-202	4.7	0.86
202-207	3.75	0.57
207-212	1.18	tr.

Hole No. W-81

0-30 Clay
30-78 Soapstone
78-105 Lime
105-185 Lime and flint

Hole No. W-81 (Cont'd)

185-196 Flint
196-210 Flint, jack and lead shines
210-229 Water flint

Assay	ZnS.	PbS.
196-201	1.08	Tr.

Hole No. W-82 Finished 4-26-18

0-30 Clay
30-78 Soapstone
78-105 Lime
105-172 Lime and flint
172-178 Gray lime
178-183 Flint, jack shines
183-188 Flint
188-193 Flint, flint lead
193-197 Water flint, lead shines
197-230 Water flint

Hole No. W-83 Finished 5-10-18

0-30 Clay
30-72 Soapstone
72-105 Lime
105-172 Lime and flint
172-180 Gray lime
180-197 Flint
197-202 Flint, trace of lead
202-229 Water flint

Hole No. W-84 Finished 5-21-18

0-25 Clay
25-73 Soapstone
73-100 Lime
100-166 Lime and flint
166-173 Gray lime
173-177 Flint and jack shines
177-205 Flint
205-239 Water flint

Hole No. W-85 Finished 5-25-18

0-30 Clay
30-74 Soapstone
74-105 Lime
105-170 Lime and flint
170-183 Gray lime
183-218 Flint
218-223 Water flint

Hole No. W-86 Finished 5-31-18

0-30	Clay
30-75	Soapstone
75-105	Lime
105-173	Lime and flint
173-185	Gray lime
185-215	G. flint
215-227	Water flint

Hole No. W-87 Finished 6-4-18

0-30	Clay
30-125	Soapstone
125-130	Gray flint
130-150	Gray flint, jack and lead shines
150-200	Brown and blue flint
200-265	White and blue flint

Assay	ZnS
130-135	0.70
135-140	0.60
140-145	0.30

Hole No. W-88 Finished 6-10-18

0-30	Clay
30-122	Soapstone
122-125	Selvage, good jack shines
125-144	Gray flint, good jack and lead shines

Assay	ZnS
125-130	24.05
130-132	9.07
132-136	10.50
136-139	38.30
139-142	37.45
142-144	13.72

Hole No. W-89 Finished 6-14-18

0-30	Clay
30-107	Soapstone
107-110	Gray flint, jack and lead shines
110-115	Gray flint, jack and lead shines
115-200	Gray and brown flint, jack and lead shines

Assay	ZnS
147-152	2.10
152-157	2.47
156-163	4.52
163-169	4.12
173-177	14.50
177-180	16.50

Hole No. W-89 Finished 6-14-18 (Cont'd)

Assay	ZnS.
180-183	7.60
183-187	5.68
187-194	4.12
194-200	3.70

Hole No. 90 Finished 6-19-18

0-30 Clay
30-115 Soapstone
115-135 Gray flint, jack and lead shines
135-160 Flint, boulders
160-165 Lime and flint

Fan Hole

0-35 Earth and clay
35-70 Soapstone
70-110 Dark lime
110-133 Gray lime and flint
133-156 Dark flint
156-174 Dark flint jack shines
174-182 Dark flint, jack and lead shines

Assay	ZnS.	PbS.
148-152	1.95	tr.
152-156	1.13	.
156-162	3.98	tr.
162-168	2.62	
168-174	4.00	tr.
174-178	3.40	
178-182	2.98	14.70

Hole No. 91 Finished 6-27-18

0-30 Clay
30-122 Soapstone
122-150 White and blue flint, trace of jack and lead shines
150-235 Blue and gray flint
235-247 Good jack, gray flint
247-254 Water flint

Assay	ZnS.
230-235	2.15
235-239	3.22
239-243	12.40
243-247	2.40

Hole No. W-92 Finished 7-3-18

0-30 Clay
30-114 Soapstone
114-140 Lime

Hole No. W-92 Finished 7-3-18 (Cont'd)

140-160 Lime, blue and white flint
160-210 Blue and white flint
210-225 Gray flint
225-242 Gray flint, jack shines
242-254 Water flint

Assay	ZnS.
225-230	0.52
230-235	1.71
235-240	5.80
240-242	4.70
242-245	6.00

Hole No. W-93 Finished 7-9-18

0-30 Clay
30-105 Soapstone
105-140 Lime
140-170 Lime, blue and white flint
170-210 White and blue flint
210-252 Gray and blue flint

Hole No. W-94 Finished 7-16-18

0-30 Clay
30-100 Soapstone
100-135 Lime
135-145 Lime and white flint
145-155 Blue and white flint
155-205 Lime, blue and white flint
205-220 Gray lime and flint
220-243 Blue and gray flint
243-258 Lime

Hole No. W-95 Finished 7-20-18

0-30 Clay
30-115 Soapstone
115-160 Blue and white flint
160-205 Lime, blue and white flint
205-225 Gray lime blue flint
225-230 Gray flint jack shines
230-235 Flint blue flint, jack shines
235-247 Light blue flint, good zinc and lead shines
247-262 Water flint

Assay	AnS.
225-230	0.36
230-235	3.15
235-240	3.22
240-245	4.35

Hole No. W-96 Finished 7-27-18

0-28	Clay
28-70	Soapstone
70-145	Lime
145-155	Flint
155-160	Flint, jack and lead shines
160-165	Same
165-185	Flint

Assay	ZnS.	PbS.
155-160	2.05	3.74
160-165	1.35	4.10

Hole No. W-97 Finished 8-7-18

0-30	Clay
30-145	Soapstone
145-160	Lime and flint
160-210	Blue flint
210-230	Brown flint
230-235	Flint, jack shines
235-240	Flint, fair jack shines
240-245	Flint & jack
245-251	Water flint

Assay	ZnS.
230-235	3.64
235-240	3.12
240-245	4.35

Hole No. W-98 Finished 8-13-18

0-30	Clay
30-80	Soapstone
80-100	Lime and flint
100-180	Gray flint
180-195	Gray flint and cavey

Hole No. W-99 Finished 8-16-18

0-30	Clay
30-130	Soapstone
130-160	Shelly flint, lead shines
160-220	Brown lime
220-230	Brown and w ite flint
230-235	Brown flint and jack
235-240	White flint, jack
240-245	Brown flint, jack
245-257	White flint

Assay	ZnS.
230-235	1.72
235-240	1.75
240-245	1.98

Hole No. W-100 Finished 8-25-18

0-30	Clay
30-90	Soapstone
90-230	Lime and flint
230-254	Brown lime

Hole No. W-101 Finished 9-5-18

0-30	Clay
30-100	Soapstone
100-200	Gray lime
200-215	Gray lime and blue flint
215-225	Brown lime and flint
225-230	Brown flint, lead shines
230-248	Brown flint

Hole No. W-102

0-30	Clay
30-90	Soapstone
90-210	Soft gray lime
210-250	Lime and flint
250-257	Lime

Hole No. W-103 Finished 9-17-18

0-30	Clay
30-89	Soapstone
90-220	Soft gray lime
220-245	Soapstone
245-257	Soapstone and white flint
257-267	Soapstone and white flint
267-275	White water flint

Hole No. W-104 Finished 9-24-18

0-30	Clay
30-90	Soapstone
90-200	Lime
200-215	Lime and Brown flint
215-225	Brown flint
225-252	Gray lime

Hole No. W-105 Finished 9-30-18

0-25	Clay
25-60	Soapstone
60-90	Lime
90-160	Brown flint
160-170	Brown flint, fair lead
170-180	Brown flint, fair lead and zinc
180-190	Brown flint, good jack
190-198	Water flint

Hole No. W-105 Finished 9-30-18 (Cont'd)

Assay	Zinc	PbS.
160-165	0.48	4.20
165-170	0.25	3.15
170-175	1.85	
175-180	4.70	
180-185	8.05	
185-190	2.15	

Hole No. W-106 Finished 10-10-18

0-25	Clay
25-90	Lime
90-185	Flint and lime
185-190	Blue flint jack shines
190-200	Blue flint
200-243	Blue flint and lime

Assay	ZnS.	PbS.
185-190	0.15	Trace.

Hole No. W-107 Finished 10-29-18

0-30	Clay
30-55	Soapstone
55-90	Lime
90-182	Brown flint and lime
182-197	Brown flint, fair jack shines
197-202	White flint
202-207	Brown flint, lead shines
207-227	Lime and flint

Assay	ZnS.	PbS.
182-187	3.22	Trace
187-192	3.00	1.34
192-197	0.88	
202-207	Trace	Trace

Hole No. W-108 Finished 10-31-18

0-35	Clay
35-110	Soapstone
110-135	Lime
135-140	Flint, open ground
140-210	Lime
210-215	Lime and flint
215-223	Lime and flint

Hole No. 109 Finished 1-3-19

0-30	Clay
30-60	Soapstone
60-140	Limestone
140-150	Lime and flint

Hole No. W-190 Finished 1-3-19 (Cont'd)

150-155 Brown flint and lead shines
155-160 Same
160-170 Same
170-160 Openings, no cuttings
180-185 Brown flint, lead shines
185-200 Brown flint and openings

Assay	ZnS.	PbS.
150-155	Trace	.75
155-160	.15	1.60
160-165	1.66	1.05
165-170	.13	.85
180-185	.23	.60

Hole No. W-110 Finished 6-28-19

0-30 Clay
30-100 Soapstone
100-120 Gray lime
120-175 Shelly flint
175-185 Brown flint
185-195 Brown flint, and jack shines
195-220 Gray lime
220-240 Brown lime
240-250 Flint and lime

Hole No. W-111 Finished 7-1-19

0-30 Clay
30-82 Soapstone
82-87 Gray lime
87-93 Flint and tar

Hole No. W-112 Finished 7-10-19

0-30 Clay
30-80 Soapstone
80-115 Gray lime
115-130 Flint and lime
130-140 Shelly flint
140-150 Blue flint and lime
150-160 Shelly flint
160-180 Blue and Brown flint, lead shines
180-200 Brown flint
200-210 Brown flint, jack and lead shines
210-230 Water flint
230-253 Brown flint and lime.

Hole No. W-113 Finished 7-23-19

0-25	Clay
25-66	Soapstone
66-90	Gray lime
90-130	Gray lime and flint
130-137	White and brown flint
137-146	Brown flint, jack and lead shines
146-150	Brown flint
150-160	Brown flint
160-165	Brown flint, jack shines and Lead S.
160-165	Brown
165-170	Brown flint, good jack
170-175	White flint, jack shines
175-180	Brown flint
180-200	White flint
200-225	White flint, lead and jack shines
225-235	Flint and lime
235-245	Lime
245-280	Lime and flint

Assay	ZnS.	PbS.
165-170	5.97	0.02

Hole No. W-114 Finished 8-7-19

0-25	Clay
25-75	Soapstone
75-100	Gray and white lime
100-115	Flint and lime
115-150	White lime and flint
150-205	Gray lime and brown flint
205-220	Water flint
220-235	White and Brown flint
235-240	White flint
240-250	Lime

Hole No. W-115 Finished 8-15-19

0-30	Clay
30-70	Soapstone
70-90	Gray lime
90-115	White lime
115-125	White flint and lime
125-140	Brown lime
140-147	White flint and lime
147-152	Brown flint and lead
152-172	Brown flint jack and lead
172-205	Brown lime
205-215	Water flint
215-220	Brown lime

Hole W-115 Finished 8-15-19 (Cont'd)

Assay	ZnS.	PbS.
147-152	0.37	9.42
152-157	0.80	6.32
157-162	0.24	2.05
162-167	0.11	2.41
167-172	Tr.	0.41

Hole No. W-116 Started 4-18-20 Finished 4-30-20

1-15	Clay and soap
15-55	Soapstone
55-90	Gray lime
90-150	Gray flint
150-168	Blue flint
168-190	Lead
190-196	Lead and jack

Assay	Zinc.
170-175	1.15
175-180	1.72

Hole No. W-117 Started 5-3-20 Finished 5-12-20

18-18	Clay and soapstone		
17-80	Soapstone		
80-100	Flint		
100-150	Brown flint		
150-170	Blue and white flint		
170-175	Blue flint and white J.S.	3.28	0.23
175-180	Same	3.28	0.23
180-185	Same	4.32	0.35
185-190	Same	1.79	0.23
190-196	Same	0.75	0.23
196-201	Same	1.34	1.83
201-206		1.94	5.18
206-211	Blue and white flint		

Hole No. W-118 Finished 6-1-20 Started 5-20-20

1-25	Clay
25-95	Soapstone
95-120	Blue lime
120-140	Blue flint
140-145	Jack
145-180	Brown flint
180-190	Lead
190-245	Gray flint

Assay	ZnS.	PbS.
140-145	0.90	0.23
180-185	1.79	0.34
185-190	0.45	0.34
190-200	0.30	0.34

Hole No. W-119 Started 5-27-20 Finished 6-3-20

1-15	Clay
15-67	Soap
67-95	Lime
95-145	Lime and flint
145-160	Open ground - lost cuttings
160-170	Jack and lead shines
170-190	Jack and lead
190-195	Shines
195-201	Flint

Assay	ZnS.	PbS.
160-165	0.74	0.34
165-170	0.45	0.46
170-175	0.90	0.46
175-180	1.19	0.58
180-185	1.79	0.46
185-190	1.19	0.23
190-200	0.60	0.34

Hole No. W-120 Started 6-4-20 Finished 6-9-20

0-20	Surface and clay		
20-61	Soapstone		
61-95	Lime		
95-145	Lime and flint		
145-155	Flint		
155-165	No cuttings		
165-170	Lead	.90	5.75
170-175	Lead	1.79	4.95
175-180	Same	2.23	3.34
180-185	Same	1.04	1.38
185-190	Same	6.70	.23
190-195	Same	1.40	.46
195-200	Same	1.79	.57
200-213	Flint		

Hole No. W-121 Started 6-1-20 Finished 6-16-20

0-25	Soil and clay		
25-140	Soapstone		
140-150	Blue lime		
150-195	Gray flint		
195-220	Lead shines	1.64	.23
220-224	Water flint		

Hole No. W-122 Started 6-12-20 Finished 6-16-20

0-20	Soil and clay		
20-91	Soapstone		
91-135	Lime		
135-140	Lead shines		
140-145	Jack and lead		
145-175	Lead		
175-180	Jack and lead	.59	1.95
180-185	Jack and lead	.29	1.49
185-190	Jack and lead	.45	1.15
190-195	Jack and lead	.29	.69
195-200	Jack and lead	.15	.46
200-205	Lead	.45	.34
205-210	Jack and lead	1.04	.46
210-225	Flint		

Hole No. W-123 Started 3-7-21 Finished 3-16-21

1-18	Clay		
18-115	Soapstone		
115-120	Lime		
120-122	Brown flint good jack Lead Shines	3.28	1.61
122-142	Brown and white flint jack and lead S	2.54	1.72
142-147	Good jack lead S. loose brown flint	8.20	2.30
147-152	Same	2.69	1.03
152-157	Jack and lead shines dry flint		
157-162	Good jack lead shines grey and brown F	2.54	1.26
162-177	Jack grey flint	1.04	1.15
177-187	Fairly good jack lead shines	.45	.29
187-202	Jack shines brown flint	.45	.11
202-212	Jack shines same		
212-227	Grey flint		
227-237	Brown flint		
237-242	Open ground no cuttings		
242-247	Good jack	1.94	.12
247-251	White water flint		

Hole No. W-124 Started 3-16-21 Finished 3-25-21

1-25	Clay		
25-57	Soapstone		
57-85	Lime		
85-150	White flint and lime		
150-165	Blue and white flint		
165-180	Blue flint and lime		
180-190	Blue and white flint jack shine	1.04	.69
190-192½	Brown and white flint lead	.45	1.15
192½-206	Water flint lead shines	.30	.65

Hole No. W-125 Started 3-17-21 Finished 3-26-21

0-16	Surface and clay		
16-102	Soapstone		
102-130	Lime		
130-140	Gray flint		
140-145	Brownish flint and tar		
145-160	Gray flint shot hole at 160' with 27 sticks powder		
160-175	Brownish flint loose		
175-190	White and brown loose flint		
190-210	White and brown loose flint		
210-220	White and brown loose flint		
220-235	Dark brown loose flint		
235-245	Soap and boulders and mundic		
245-253	Brown and white flint		

Hole No. W-126 Started 3-25-21 Finished 4-5-21

1-25	Clay		
25-60	Soapstone		
60-85	Gray lime		
85-125	White flint and lime		
125-135	White flint		
135-160	Blue and black loose flint, shot hole at 160 with 50 sticks powder 15-25-10		
160-180	Black flint		
180-187½	Blue and black flint jack	1.94	1.04
187½-195	Blue and white flint jack	4.32	2.76
195-200	White flint and lead	.19	1.61
200-207	White flint	.45	.35

Hole No. W-127 Started 3-30-21 Finished 4-7-21

0-18	Surface and clay		
18-105	Soapstone		
105-120	Lime and flint		
120-145	Brown flint		
145-170	Lead and jack shines	.45	.34
170-180	Same		
180-205	Same	.58	.35
205-225	Grey flint		
225-230	Open ground		
230-235	Brown flint few lead shines		
240-251	Brown flint		

Hole No. W-128 Started 4-6-21 Finished 4-10-21

1-25	Clay
25-62	Soapstone
62-70	Grey lime
70-110	Lime and soapstone
110-135	White lime

Hole No. W-128 Started 4-6-21 Finished 4-10-21 (Cont'd)

135-155 White flint and lime
155-160 Black and white flint
160-180 Black flint lead and jack
180-185 White and blue flint, lead and jack shines
185-202 White water flint

160-165	2.39	1.61
165-170	2.09	1.03
170-175	2.98	4.49
175-180	2.09	.92
180-185	2.68	.46

Hole No. W-129 Started 4-9-21 Finished 4-23-21

0-18 Soil and clay
18-122 Soapstone
122-150 Lime
150-180 Grey flint and lime
180-185 Brown flint, good lead
185-190 Brown flint, good lead .59 .23
190-195 Grey flint, lead shines .89 .35
195-205 Grey flint
205-220 Grey and brown flint
220-240 Brown and white flint
240-252 Brown flint

Hole No. W-130 Started 4-1-21 Finished 4-18-21

1-25 Soil and clay
25-58 Soapstone
58-90 Brown lime
90-105 White lime
105-130 White flint and lime
130-140 White flint and soapstone
140-160 Blue and white flint
160-180 Grey lime
180-185 White flint
185-190 Brown and white flint, lead shines
190-201 White and brown water flint

Hole No. W-131 Started 4-25-21 Finished 5-6-21

0-12 Soil and clay
12-115 Soapstone
115-120 Lime
120-130 Loose flint, fair jack
130-150 Hogchaw flint few jack shines
150-155 Good jack shines
155-160 Fair jack
160-165 Fair jack
165-185 Grey flint few jack shines

Hole No. W-131 Started 4-25-21 Finished 5-6-21 (Cont'd)

185-200 Jack shines
200-215 Brown flint boulders soapstone
215-217 Open, shot with 12 sticks powder
217-220 Brown loose flint
220-230 Brown loose flint
230-240 Brown water flint, Had a little tar at 125'.

125-130	5.65	.80
130-135	2.85	.34
135-155	.89	.23
155-160	1.34	.35
160-165	1.05	.35

Hole No. 132 Started 4-19-21 Finished 4-23-21

0-25 Soil and clay
25-62 Soapstone
62-85 Brown lime
85-100 Brown lime and flint
100-145 White lime and flint
145-165 Loose grey flint
165-175 Blue and grey flint few jack shines
175-180 Soapstone
180-185 Soapstone and jack 9.38 .23
185-190 Black and white flint jack shines
190-200 Water flint

Hole No. 133 Started 5-7-21 Finished 5-17-21

0-14 Surface and clay
14-90 Soapstone
90-125 Lime
125-150 White lime, white flint
150-180 White flint
180-190 White flint
190-200 Brown and white flint
200-210 Same
210-215 Loose brown flint, soft lime and brown selvage
215-220 Loose black flint, soft black lime and selvage
220-225 Lime and selvage
225-230 Brown loose flint, some black lime, and a little brown selvage some mundic
230-240 White flint
240-245 White and brown flint
245-250 Brown and white flint some mundic
250-255 White and brown flint
255-261 White flint

Hole No. 134 Started 4-26-21 Finished 5-9-21

0-15	Soil and clay
15-75	Soapstone
75-90	Grey lime
90-150	Loose white flint and lime
150-180	Blue and white flint and lime
180-185	Blue and white flint, jack shines
185-195	Blue and white flint
195-205	Blue and white flint lead
205-215	White flint
215-225	White flint and lime
225-270	Brown lime

195-200	.45	1.72
200-205	.29	.34

Hole No. W-135 Started 5-6-21 Finished 5-14-21

0-24	Soil and clay
24-67	Soapstone
67-80	Lime, selvage, mundic
80-95	Lime
95-120	Lime and white flint
120-130	White flint
130-150	Lime and white flint
150-170	White and blue flint
170-179	Brown flint

Hole was shot at 170' with 10 sticks of powder 172 with 14 sticks 175' with 20 sticks boulder formation and crevices from 170 to 179' unable to proceed with hole.

Hole No. W-136 Started 5-10-21 Finished 5-16-21

0-35	Soil and clay
35-90	Soapstone
90-115	White lime
115-150	White flint
155-185	Black and white flint
185-190	Blue and white flint, lead
190-215	Black and white flint, jack
215-223	White flint

185-190	.30	5.56
190-195	3.58	.69
195-200	8.04	.35
200-205	5.96	.38
205-210	12.10	.34
210-215	2.68	.23

Hole No. W-137 Started 5-14-21 Finished

0-30	Soil and yellow clay		
30-98	Soapstone		
98-105	Lime and selvage		
105-120	Lime		
120-135	Lime and white flint		
135-165	White		
165-170	White and blue flint lead shines	.59	.23
170-175	Same		
175-210	White and brown flint		
210-215	Blue and brown flint		
215-218	Blue and brown flint		
218-220	Blue and brown flint fair lead	.45	2.30
220-235	White and blue flint, brown lime	.30	.35
235-240	White and blue flint		
240-244	White flint		

Hole No. W-138 Started 5-17-21 Finished

1-25	Soil and clay		
25-75	Soapstone		
75-100	Grey lime		
100-125	White flint		
125-140	White flint and jack shines		
140-170	White and brown flint and jack shines	1.34	.29
170-175	White and blue flint-jack	2.09	.58
175-180	Blue flint and soapstone lead and jack	3.73	1.27
180-190	White and blue flint, tar and jack		
190-200	Brown flint and jack		

180-185	12.50 Zinc	5.18 Lead
185-190	8.95	3.80
190-195	3.88	1.38

Hole No. W-139 Started 5-18-21 to 27-21

0-22	Soil and clay
22-27	Soapstone
87-105	Lime
105-130	Lime and white flint
130-160	Same
160-185	Same
185-195	Blue lime and brown flint
195-210	Brown and white flint some blue lime
210-215	Same
215-230	White flint
230-245	Brown lime
245-251	Brown lime and white water flint found a little oil at 215

Hole No. 141 Started 5-30 to 6-6-21

1-20	Soil and clay		
20-95	Soapstone		
95-105	Lime		
105-135	Grey lime and flint		
135-140	Grey flint		
140-145	Grey flint and lime		
145-170	White flint and lime		
170-175	Grey and brown flint and a few lead shines		
175-185	Same		
185-195	Grey lime and white flint		
195-200	Loose brown flint		
200-205	Black and brown flint		
205-210	Grey and brown flint		
210-217	Brown and white flint		

Hole No. W-142 Started 6-6-21 Finished 6-11-21

1-25	Soil and clay		
25-85	Soapstone		
85-105	Grey lime		
105-130	White flint and lime		
130-150	White flint		
150-160	White and blue flint and jack shines	0.75	0.23
160-195	Blue and white flint shot hole with 10 sticks of 80% powder		
195-205	Black and white flint		
205-214	White water flint		

Hole No. W-143 Started 6-8-21 Finished 6-16-21

0-2	Soil		
2-32	Yellos clay		
32-125	Soapstone		
125-130	Selvage and Mundic		
130-140	Limestone		
140-155	Lime and white flint		
155-165	White flint		
165-170	White and blue flint		
170-175	White and blue flint Pb & Zn shines	0.30	0.14
175-180	Same very good lead	0.15	2.19
180-185	White flint - brown lime lead and jack shines	0.22	0.35
185-200	White and brown flint		
200-205	Same little lead		
205-210	Same fair	0.15	1.09
210-220	White and brown flint. Lost tools in hole at 200' and was unable to recover.		

Hole No. W-144 Started 6-14-21 Finished 6-20-21

1-25	Soil and clay		
25-80	Grey lime		
80-100	Grey lime		
100-110	White flint and lime		
110-115	White flint and lime		
115-120	White flint jack and lead shines		
120-125	White flint		
125-130	White flint jack and lead shines		
130-140	White flint		
140-145	White and brown flint jack shines		
145-160	White and brown flint		
160-165	Brown flint jack shines		
165-170	White and blue flint		
175-180	White and blue flint jack shines		
180-200	White and blue flint		
200-218	White water flint		

Shot hole at 135 to 140' with 15 sticks of 80% powder.

Hole No. W-145 Started 6-7-21 Finished 6-21-21

1-20	Surface and clay		
20-115	Soapstone		
115-120	Lime and flint		
120-130	Lime and white flint		
130-140	Lime grey and white flint		
140-155	Lime and grey and white flint		
155-160	Brown flint		
160-180	Grey flint and lime		
180-185	Brown flint and lime		
185-195	Grey and brown flint		
195-205	Brown and white flint		
205-212	Brown and white flint		

Shot hole at 155 to 160' with 8 sticks of 80% powder

Hole No. W-146 Started 6-16-21 Finished 6-25-21

0-35	Soil and yellow clay		
35-130	Soapstone		
130-145	Limestone		
145-155	White flint		
155-160	Limestone		
160-170	White flint		
170-175	White and blue flint		
175-180	White and brown flint-good lead	0.45	5.06
180-185	Same fair	0.22	1.84
185-205	Same		
205-225	Same		

Hole was shot at 200' with 14 sticks of 80% powder.

Hole No. W-147 Started 6-20-21 Finished 6-29-21

0-25	Soil and clay
25-85	Soapstone
85-105	White lime
105-140	White flint
140-160	Blue and white flint
160-180	White and brown flint
180-190	Blue and white flint
190-200	Black and white flint
200-205	Black and white flint
205-210	White and blue flint
210-223	White water flint

Note: Plannings showed considerable coarse lead.

145-175	0.29 zinc	1.49 lead
175-180	0.18	1.04
180-195	0.07	0.80
195-200	2.38	0.23

Hole No. 148 Started 6-22-21 Finished July 2, 1921

0-18	Surface and clay
18-80	Soapstone
80-95	Lime
95-105	Lime and flint
105-110	Brown flint, tar, good lead
110-115	Loose brown flint, tar good lead
115-150	Brown flint, tar some lead
150-160	White and brown flint
160-170	Lead shines
170-175	Good lead shines
175-180	Good lead lost most of the cuttings
180-190	Lead and jack shines
190-205	Lead and jack shines
205-212	White flint

Assay	Zinc	Lead
105-110	tr.	3.11
110-115	None	6.10
115-120		0.92
120-125	None	0.29
125-150	None	1.38
150-170	None	0.46
170-175	None	1.50
175-180	0.24	4.77
180-190	0.15	0.33
190-205	0.74	0.35

Hole No. W-149 Started 6-29-21 Finished 7-5-21

0-20	Soil and clay
20-90	Soapstone
90-115	Grey and white lime
115-145	White flint
145-160	Blue and white flint
160-205	White and brown flint lead
205-210	Black and white flint lead and jack
210-220	White water flint

Assay		
160-185		1.15
185-195		1.50
195-205		1.15
205-210	2.30	0.23

Hole No. W-150 Started 7-6-21 Finished 7-11-21

1-25	Soil and clay
25-105	Grey lime
105-120	White flint and lime and tar
120-125	White flint
125-140	White flint jack shines
140-155	White flint
155-170	Blue flint and lime
170-205	Blue flint and lime and selvage
205-210	Black flint
210-215	White water flint

The above hole was a black with the exception of a few jack shines.

Hole No. W-151 Started 6-27-21 Finished 7-12-21

0-2	Soil
2-40	Yellow clay
40-140	Soapstone
140-160	Lime
160-165	White flint
165-175	White and blue flint
175-180	White and blue flint, little lead
180-185	White and blue flint, little lead
185-190	Same fair lead
190-195	White and brown flint, trace of lead
195-200	Same lead shines
200-205	Same good lead
215-220	White and blue flint, little lead
220-225	Same
225-230	White and brown flint good lead shines of jack
230-235	White and brown flint, good ld. sh of jack
235-240	White and brown flint, lead and jack shines. Samples marked - did not show any jack on planning and were not

Hole No. W-151 Started 6-27-21 Finished 7-12-21 (Cont'd)
run from ZnS.

175-200		0.46
200-205		2.65
205-215		0.57
215-225		0.58
225-235	0.89	0.69

Hole shot continually from 208 to 235'. Open ground from 208 to 215, hole reduced to 4½ at 220'.

Hole No. W-152 Started 7-6-21 Finished 7-14-21

0-20	Fini. Surface and clay	
20-45	Soapstone	
45-70	Lime	
70-100	White flint and lime	
100-135	White flint and some lime	0.81
135-140	Lead shines	
140-145	A few lead shines	
145-160	Dead looking brown flint	
160-165	Same jack shines	7.90
165-170	Same	
170-175	Good jack	
175-180	Same	
180-185	No cuttings obtained Open ground	3.13
185-190	Good jack	2.24
190-195	White water flint	
195-198	White water flint	

The ground from 175 to 180 was open and the cuttings all washed away.

Hole No. W-153 Started 7-12-21 Finished 7-21-21

0-25	Soil and clay
25-85	Soapstone
85-110	Lime
110-145	White flint and lime
145-160	White flint
160-185	Blue and white flint
185-190	White and black flint
190-211	White flint

Hole shot from 35 to 145-45 sticks 80% powder.

Hole No. W-154 Started 7-13-21 Finished 7-22-21

0-40	Soil and yellow clay
40-155	Soapstone
155-165	Lime, selvage, and mundic trace of lead
165-170	Lime, white flint, and mundic lead shines

Hole No. W-154 Started 7-13-21 Finished 7-22-21 (Cont'd)

170-175	Loose white flint, little tarand lead			0.24
175-180	White flint little lead	175-185		1.38
180-185	White flint limespar lead shines	185-195	tr.	0.35
185-190	White flint trace of lead	195-207	0.15	0.34
190-195	Same			
195-200	White and brown flint lead and jack shines			
200-207	White and brown flint lead and jack shines			

Hole was shot 3 times from 195 to 205.
Crevices from 195 down unable to proceed with hole.

Hole No. W-155 Started 7-16-21 Finished 7-25-21

0-16	Surface and clay	
15-53	Soapstone	
53-65	Lime and mundic	
65-120	Grey flint	
120-135	Grey flint	
135-150	Dark brown flint lead shines	
150-155	Dark flint good jack	9.69
155-160	Dark flint good jack	7.45
160-165	Same	2.38
165-170	Same	7.45
170-175	Dark flint fair jack	3.88
175-180	Brown flint jack shines	1.64
180-185	Open ground no cuttings	1.64

Hole No. W-156 Started 7-23-21 Finished 7-30-21

0-40	Soil and yellow clay
40-120	Soapstone
120-122	Mundic and lead shines
122-130	Lime
130-135	Lime and a little white flint
135-145	Lime and white flint
145-155	White flint
155-190	White flint and lime
190-195	White flint
195-200	White and blue flint
200-210	White and brown flint
210-225	Brown lime and blue flint
225-235	White and brown flint
235-237	White flint

With the exception of a few shines of lead in the mundic under the soapstone this hole was a blank

Hole No. W-157 Started 7-25-21 Finished 8-3-21

0-16	Surface and clay
16-53	Soapstone
53-75	Lime

Hole No. W-157 Started 7-25-21 Finished 8-3-21 (Cont'd)

75-135	White flint		
135-145	Grey flint		
145-170	Brown and grey flint		
170-175	Brown flint, good jack open ground from		172-173
		6.10	0.23
175-180	Brown flint, good jack	15.20	0.23
180-185	Same	14.00	0.35
185-190	Same (also white flint)	1.79	0.69
190-195	Brown and white flint jack shines		
195-200	White water flint		

Hole No. W-158 Started 7-27-21 Finished 8-9-21

0-18	Soil clay	
18-80	Soapstone	
80-90	Soapstone and boulders	
90-100	Gray lime	
100-110	White lime	
110-120	Gray lime and brown flint	
120-130	Gray lime and white flint	
130-135	White and blue flint	
135-140	White and blue flint, few lead shines	
140-155	White and brown flint, few lead shines	
155-160	Same Pb and Zn shines	
160-166	White and black flint some Pb shines	
166-170	White and blue flint some Pb shines	
170-180	Gray lime	
180-185	Blue flint	
185-190	Blue flint, some Pb and Zn shines	
190-195	Blue and black flint good Pb & Zn shines	1.34
195-200	White and black flint, good Zn some Pb	8.50
200-205	White and black flint extra good Zn.	10.42
205-210	White and black flint good Zn.	17.15
210-215	White and black flint good Zn.	8.05
215-224	White flint	

Hole No. W-159-W Started 8-3-21 Finished 8-12-21

0-16	Surface and clay
16-57	Soapstone
57-80	Lime
80-105	Lime and gray flint
105-120	Grey flint
120-135	White flint
135-150	Grey flint
150-170	Dark brown flint
170-173	Dark brown flint
173-179	Open cave no cuttings
179-180	White loose flint

Hole No. W-159-W Started 8-3-21 Finished 8-12-21 (Cont'd)

180-190 Loose brown flint
190-195 White flint and a little brown flint
195-200 Above the same ground as 190-195 and a little better lead shines
200-205 White flint and a little brown flint, jack shines on last half of the run
205-210 About the same grounds as 200-215 with a few jack and lead shines
210-215 Brown lime with a little white flint

Hole No. W-160 Started 8-1-21 Finished 8-17-21

0-40 Soil and clay
40-120 Soapstone
120-137 Soapstone, mundic lead shines
137-145 Lime, flint boulders - tar
145-150 Lime and white flint
150-160 White flint
160-165 White and brown flint, lead shines
165-195 Same
195-205 White and brown flint
205-230 Blue and brown flint brown lime Pb shines
230-235 White flint
235-240 White flint mundic
Hole shot at 140' with 10 sticks of 80% powder.

Hole No. W-161 Started 8-10-21 Finished 8-19-21

0-18 Soil and clay
18-90 Soapstone
90-100 Lime
100-110 White flint
110-120 White and brown flint some lead shines tar
120-125 White flint, tar pocket
125-145 White flint
145-150 White and brown flint PbS and ZnS. shines
150-155 Same 3.58 3.45
155-170 Blue and brown flint fair Zns. scattering shines PbS. 1.49
170-175 White and brown flint fair sam.
175-180 White flint & spar fair ZnS Same
180-185 White and brown flint some ZnS Shines
185-200 Same
200-210 Same fair ZnS. 170-180 2.08
210-219 White flint 200-205 2.38
205-210 0.75

Hole No. W-162 Started 8-13-21 Finished 8-20-21

0-16	Surface and clay	
16-55	Soapstone	
55-70	Lime	
70-90	Lime and white flint	
90-130	White and brownish flint	
130-135	Dark brown flint and lead shines	
135-140	Good jack shines, few lead shines	
140-145	Good lead and jack shines	
145-150	Open ground-lost all cuttings but a handful showed good Pb and Zn shines	
150-155	Good Zn shines some Pb shines	
155-165	White flint	
165-170	Good jack few lead shines	2.83
170-175	Dark and white flint good Zn. Pb S.	3.13
175-180	White flint fair Zn. Pb shines	2.68
180-185	Dark flint good Zn. Pb shines	4.47
185-190	Same	6.11
190-195	Same	3.43
195-201	White flint	
	Samples were not run for lead but all showed a few lead shines	

Holes No. W-163 Started 8-17-21 Finished 8-24-21

0-40	Soil and yellow clay	
40-122	Soapstone	
122-145	Lime	
145-150	Lime and white flint	
150-165	White flint	
165-170	White and blue flint good Zn. little Pb	3.87
170-175	Same little Zn. Pb shines	2.53
175-180	White flint rest same	2.38
180-185	Same	1.19
185-190	Same PbS and ZnS. shines	
190-220	White and hogchaw flint	
220-235	White and blue flint	
235-238	White flint	
	Samples were not run for lead as pannings only showed a few shines	

Hole No. W-164 Started 8-22-21 Finished 8-30-21

0-16	Surface and clay
16-57	Soapstone
57-85	Lime
85-120	Lime and white flint
120-145	Grey flint
145-150	Hard white flint
150-170	Brown flint and lime

Hole No. W-164 Started 8-22-21 Finished 8-30-21 (Cont'd)

170-175	Open ground no cuttings	
175-185	Coarse brown flint	
185-190	Brown flint-mundic and few PbS shines	
190-195	Same	
195-200	White and brown flint mundic and few shines of PbS.	
200-204	White flint	

Hole No. W-165 Started 8-24-21 Finished 8-30-21

0-40	Soil and yellow clay	
40-120	Soapstone	
120-140	Lime	
140-150	Lime and white flint	
150-165	White flint	
165-170	White and blue flint, tar good ZnS shines	
170-175	White flint ZnS shines	
175-180	Same	
180-185	Same	
185-200	White hogchaw flint	
200-220	White and blue flint	
220-225	White and blue flint PbS shines	
225-230	White and blue flint Fair lead	1.38
230-233	White and blue flint PbS. shines	
233-241	White flint	

Hole No. W-166 W Started 8-20-21 Finished 9-1-21

0-18	Soil and clay	
18-90	Soapstone	
90-110	White flint	
110-130	White flint, tar at 120	
130-140	White and brown flint	
140-145	Brown flint fair jack shines	
145-155	Black and white flint Pb and ZnS shines	
155-160	White and brown flint	
160-180	Brown and blue flint PbS shines	
180-190	White and blue flint fair PbS shines	
190-200	White and blue flint fair PbS shines	
200-205	Same	8.34
205-210	Black flint good jack PbS shines	1.64
210-215	Same	
215-219	White flint	

Hole No. W-167 Started 9-2-21 Finished 9-7-21

0-40	Soil and yellow clay	
40-88	Soapstone	
88-110	Lime	
110-130	Lime and white flint	
130-135	White flint	

Hole No. W-167 Started 9-2-21 Finished 9-7-21 (Cont'd)

135-190	White hogchaw flint		
190-210	Brown lime and white flint		
210-215	White and blue flint		
215-225	White and brown flint		
225-231	White water flint		

Hole No. W-168 Started 9-8-21 Finished 9-21-21

0-30	Soil and yellow clay		
30-73	Soapstone		
73-95	Lime		
95-150	Lime and white flint		
150-160	White and blue flint		
160-165	White and blue flint and tar		
165-173	Blue and dark brown flint boulders and trace of lead Hole was shot 3 times at 170' boulder formation crevices, etc. unable to proceed.		

Hole No. W-169 Started 9-15-21 Finished 6-22-21

0-30	Surface and yellow clay		
30-75	Soapstone		
75-105	Lime		
105-130	Lime and white flint		
130-150	White flint		
150-160	White and blue flint		
160-165	White and blue flint and lime		
165-169	White and blue flint and lime		
169-171	Opening-No cuttings		
171-175	Brown and blue flint fair ZnS PbS shines	2.68	0.46
175-180	Brown and blue flint fair ZnS PbS shines	1.79	0.35
180-190	Same		
190-195	Same		
195-206	White and blue flint		
206-209	Black and blue flint		
209-215	Same ZnS. shines		
215-219	White and blue flint		

Hole No. W-170 Started 9-15-21 Finished 9-26-21

0-25	Soil and clay		
25-63	Soapstone		
63-75	Grey lime		
75-105	Grey lime and spar		
105-110	White flint and lime		
110-120	White flint		
120-125	White flint and tar		
125-135	White ravely flint		
135-140	Crevice no cuttings		
140-160	White ravely flint		

Hole No. W-170 Started 9-15-21 Finished 9-26-21 (Cont'd)

160-170	Grey and blue flint		
170-175	Mud openings PbS and ZnS shines	1.34	0.34
175-180	Mud, grey and blue flint PbS and ZnS shines	0.60	0.23
180-185	Grey and blue flint	0.45	0.12
185-195	White and blue flint PbS and ZnS shines caving in		
195-200	White flint		

Hole No. W-171 Started 11-2-21 Finished 11-12-21

0-15	Surface and red clay
15-30	Yellow clay
30-63	Soapstone
63-110	Lime
110-125	Lime and white flint
125-170	White and blue flint
170-182	White and blue flint
182-185	Brown flint-fair jack
185-190	Brown, white, and brown flint jack and lead shines
190-195	Blue, white, and brown flint jack and lead shines
195-200	Brown and white flint jack shines
200-205	Brown and white flint
205-211	White flint

Hole No. W-172 Started 11-3-21 Finished 11-16-21

0-16	Soil and clay
16-64	Soapstone
64-140	Gray lime
140-160	Gray lime and brown flint
160-175	Brown flint and spar
175-180	Lime
180-185	White and brown flint
185-190	White flint jack and lead shines
190-195	White and brown flint ZnS and PbS shines
195-203	White flint, PbS shines following.

Hole No. W-173 Started 9-2-21 Finished 9-13-21

0-16	Surface and clay		
15-67	Soapstone		
67-80	Brown flint		
80-120	Grey lime and a little flint		
120-140	Grey flint and a little lime		
140-170	Same		
170-185	Brown flint and some lime		
185-190	Brown flint good PbS ZnS shines	0.60	3.22
190-195	White and a little brown flint, a few PbS & ZnS. shines		
195-200	White flint		

Hole No. W-174 Started 9-14-21 Finished 9-14-21

0-18	Surface and clay
18-65	Soapstone
65-80	Lime
80-120	Lime and white flint
120-125	Brown flint
125-135	Grey flint and some lime
135-155	Grey flint
155-170	Dark loose flint
170-175	Tight grey flint
175-190	Grey flint
190-200	Brown and white flint
200-205	No cuttings opening at 204½ - 205
205-210	Fair jack dark flint 4.03
210-215	White and grey flint and some lime with a few J. S.
215-219	Grey flint

Hole No. W-175 Started 10-11-25 Finished 10-25-21

0-30	Surface and clay
20-60	Soapstone
60-100	Lime
100-140	Grey flint and lime
140-170	Grey flint and lime
170-200	Fl. same
200-205	No cuttings open ground
205-210	Loose brown flint good jack
210-214	Grey and blue flint jack shines
214-216	Same
216-222	Grey flint some lime white flint

Hole No. W-176 Started 10-11-21 Finished 10-25-21

0-18	Surface and clay
18-62	Soapstone
62-95	Lime
95-115	White flint and some lime
115-130	Grey flint
130-165	Grey flint and some lime
165-180	Brown flint and some lime
180-190	Grey flint
190-195	Brown and white flint few lead shines
195-200	Brown and white flint few lead shines
200-205	White flint

Hole No. W-177 Started 11-3-21 Finished 11-16-21

0-18	Surface and clay
18-62	Soapstone
62-80	Lime and some flint
80-145	Grey flint and lime ribs

Hole No. W-177 Started 11-3-21 Finished 11-16-21 (Cont'd)

145-165 Brown flint
165-175 Dark brown flint
175-190 Brown and grey flint
190-195 Brown and gray flint few jack shines
195-200 Dark brown flint good jack shines (1.94)
200-205 Brown and little white flint jack shines
205-210 White and a little brown flint jack shines
210-213 White flint and a little jack following

Hole No. W-178 Started 9-9-21 Finished 9-31-21

0-16 Soil and clay
16-76 Soapstone
92-105 Grey lime
105-110 Grey lime and flint
110-120 Spar mainly and flint
120-130 Spar and white flint few PbS shines
130-190 White ravely flint
190-210 White ravely flint and lime
210-225 White flint lime and spar
225-234 White flint

Hole No. W-179 Started 11-17-21 Finished 11-28-21

0-20 Soil and clay
20-65 Soapstone
85-110 Grey lime
110-115 White ravely flint
115-130 White ravely flint and tar
130-135 White and brown flint some Zn shines
135-140 White and brown flint, some Zn and PbS shines
140-150 Brown and white flint
150-170 White and blue ravely flint
170-180 White and blue ravely flint and soapstone
180-195 White flint 6.57
195-200 Brown flint good ZnS. 2.88
200-205 Brown flint fair ZnS.
205-210 Brown and white flint ZnS. shines
210-215 White flint

Hole No. W-180 Started 11-21-21 Finished 12-1-21

0-18 Surface and clay
18-55 Soapstone
55-85 Lime
85-120 Lime and flint
120-145 Flint and some lime
145-175 Dark dead flint and some lime
175-180 Dark flint jack shines
180-185 Dark flint jack shines tr. of lead 2.98
185-190 Dark flint jack shines

Hole No. W-180 Started 11-21-21 Finished 12-1-21 (Cont'd)

190-198 White flint
Hot shot at 85' with 20 sticks of 40% powder.

Hole No. W-181 Started 12-3-21 Finished 12-16-21

0-2	Surface		
2-15	Yellow clay		
15-34	Red clay		
34-87	Soapstone		
87-95	Dark flint and tar good jack PbS shines		7.30
95-100	Same PbS and ZnS shines		
100-115	White and blue flint and tar		
128-145	Same and lime		
145-160	Brown flint PbS shines		
160-170	Brown, white, and blue flint		
170-190	Sand same PbS shines		
190-195	Blue flint good PbS.		8.9
195-200	Blue flint fair lead and jack	4.77	
200-210	Blue flint large amount of tar	4.17	
210-215	Brown and white flint fair jack	5.07	
215-220	Brown and white flint fair jack	5.52	
220-225	Brown and white flint fair jack	3.43	
225-235	Brown and white flint fair shines		
235-240	White flint		
240-245	White flint		
245-251	White flint and brown lime		

Samples 200 to 210 contained so much tar it had to be cleaned with kerosene before it was possible to assay it.

Hole No. W-182 Started 12-2-21 Finished 12-9-21

0-17	Surface and clay
17-55	Soapstone
55-75	Limestone
75-110	Lime some flint
110-150	Grey flint
150-155	Grey and brown flint
155-170	Dark brown flint and lead shines
170-185	Dark brown flint Jack shines and a few lead shines
185-190	Brown and white flint and a few shines of lead and jack
190-200	White flint

Hole No. W-183 Started 11-30-21 Finished 12-9-21

0-25	Soil and clay
25-85	Soapstone
85-90	Soapstone and lime boulders
90-115	Grey lime
115-120	Brown flint good jack shines

Hole No. W-183 Started 11-30-21 Finished 12-9-21 (Cont'd)

120-135	Brown flint		
135-160	Brown and white flint		
160-180	Brown and black flint		
180-195	White flint		
195-205	Black and white flint some jack and ld shines		
205-223	White ravely flint		

Hole No. W-184 Started 12-11-21 Finished 12-21-21

0-17	Surface and clay		
17-55	Soapstone		
55-85	Lime		
85-110	Lime and flint		
110-140	White flint and some lime		
140-160	Grey flint		
160-175	Dark flint with soapstone and selvage		
175-185	Gray flint		2.30
185-190	Gray flint and fair PbS	1.34	.92
190-195	Gray flint jack and lead shines		
195-200	White and gray flint PbS and ZnS shines		
200-205	White and gray few PbS and ZnS shines		
205-220	Same		

Hole No. W-185 Started 12-10-21 Finished 12-27-21

0-25	Soil and clay		
25-53	Soapstone		
78-110	White and gray lime		
110-115	Gray lime and white flint		
115-145	White and brown flint, scattering PbS shines		
145-150	Black flint		
150-165	Brown and blue flint		
165-175	Brown and white flint-some ZnS shines		
175-180	Brown and white flint fair ZnS shines		
180-185	Same	4.62	
185-190	Same	4.17	
190-195	Same	1.79	
195-213	White water flint		

Hole No. W-186 Started 1-2-22 Finished 1-16-22

0-18	Surface and clay		
18-56	Soapstone		
56-190	Lime		
90-110	Lime and some flint		
110-145	White flint and some lime		
145-155	Same		
155-170	Gray flint and some lime		
170-190	Gray and brown flint		

Hole No. W-186 Started 1-2-22 Finished 1-16-22 (Cont'd)

190-195 Same and few PbS shines
195-200 White flint some brown flint
200-205 White flint
205-211 White flint

Hole No. W-187 Started 1-3-22 Finished 1-24-22

0-22 Soil and clay
22-80 Soapstone
80-105 White flint
105-115 White and brown flint
115-160 White and blue hogchaw flint
160-165 Open ground-not cuttings
165-180 White and gray ravely flint
180-185 White and brown flint fair jack shines and some ld. Sh.
185-191 Open ground no cuttings
191-192 White and brown flint fair jack shines and some ld. Sh.
192-195 White flint
Reduced size of hole at 160'.

Hole No. W-188 Started 1-3-22 Finished 1-16-22

0-2	Surface		
2-34	Clay		
34-84	Soapstone		
84-165	Lime and white flint		
165-184	Lime and white flint		
184-188	Open ground no cuttings		
188-190	Brown flint good lead	0.16	2.53
190-195	Same	0.89	3.10
195-200	Same	0.90	1.50
200-205	Blue flint good ld. & fair Jk.	1.64	6.21
205-210	Same Good jack	10.13	6.90
210-213	Same	9.69	6.21
213-216	Brown and white flint good jack fair lead	13.25	2.07
216-220	Same	5.52	1.15
220-225	Same Fair	1.94	0.35
225-230	White flint		
	Shot hole from 220-225 and lost most of cuttings		

Hole No. W-189 Started 1-17-22 Finished 1-28-22

0-25 Surface and clay
25-67 Soapstone
67-105 Lime
105-140 Lime and flint
140-150 Flint
150-160 Flint few shines of lead and jack

Hole No. W-189 Started 1-17-22 Finished 1-28-22 (Cont'd)

160-175 Loose flint few shines of lead and jack
175-200 Loose flint few shines of lead and jack
200-205 Gray and brown flint, few ZnS and PbS. shines
205-209 White and brown flint
209-210 Soapstone and selvage
210-221 White flint and lime

Hole No. W-190

0-2	Surface	
2-34	Clay	
34-85	Soapstone	
85-105	Tight lime and flint	
105-125	Tight blue and white flint	
125-165	Tight brown lime and blue flint	
165-180	Tight lime and flint	
180-185	Brown and blue flint - lead shines	
185-190	Same	
190-200	Same with PbS and ZnS shines	
200-210	White and blue flint ZnS shines	
210-220	White and brown flint ZnS shines	
220-225	White flint	
225-230	White flint	

Hole No. W-191 Started 1-30-22 Finished 2-10-22

0-18	Surface and clay	
18-81	Soapstone	
81-105	Lime	
105-135	Gray flint and lime	
135-145	Gray flint	
145-175	Gray and brown flint	
175-190	Dark brown flint	
190-195	Dark flint good jack opening from 193.5-194.5 Lost most of cuttings 190-195	10.29
195-200	Dark flint-good jack	5.81
200-205	White and dark flint fair jack	1.94
205-210	White flint fair jack	1.94
210-222	White flint	

All the jack ground showed a trace of lead.

Hole No. W-192 Started 2-10-22 Finished 2-20-22

0-16	Surface and clay
16-78	Soapstone
78-100	Lime
100-155	Lime and gray flint
155-175	Brown flint
175-185	Dark flint few shines of PbS and ZnS.

Hole No. W-192 Started 2-10-22 Finished 2-20-22 (Cont'd)

185-190	Dark flint few shines of PbS and ZnS	Tr.	0.23
190-195	Dark flint good ZnS. Fair PbS.	10.01	1.73
195-200	Dark flint good ZnS	2.38	
200-203	Same	3.88	
203-206	Same flint, Fair ZnS	1.04	
206-231	Brown and white flint		

Hole No. W-193 Started 2-21-22 Finished 3-17-22

0-18	Surface and clay		
18-75	Soapstone		
75-100	Lime		
100-125	Lime and flint		
125-150	Gray flint and some lime		
150-175	Dark gray flint		
175-190	Gray flint	0.15	1.38
190-195	Dark gray flint good PbS shines	0.90	0.34
195-200	Dark gray flint ZnS and PbS shines	1.04	
200-205	Dark gray flint shines	0.90	
205-209	Dark gray flint shines		
209-212	Lost bit in hole		
	Shot hole at 212' with 20 sticks of 80% powder after losing bit in the hole at this point.		

Hole No. W-194 Started 3-16-22 Finished 3-28-22

0-20	Surface and clay		
20-76	Soapstone		
76-95	Lime		
95-130	Gray flint and some lime		
130-155	Gray flint		
155-180	Brown flint		
180-190	Gray and white flint	4.76	1.73
190-195	Dark loose flint	3.87	0.09
195-200	Dark loose flint	4.62	
200-205	Dark loose flint	3.72	
205-210	White and brown flint		
210-231	White flint		

Hole No. W-195 Started 3-28-22 Finished 4-6-22

0-25	Surface and clay
25-78	Soapstone
78-95	Lime
95-135	Gray flint and some lime
135-160	Gray flint and some lime
160-195	Dark brown flint
195-200	Dark flint and PbS shines
200-210	Hogchaw flint and few PbS shines
210-230	Tight white flint

Hole No. W-196 Started 4-7-22 Finished 2-28-22

0-18	Surface and clay		
18-78	Soapstone		
78-100	Lime		
100-125	Lime and flint		
125-155	Gray flint and lime		
155-160	Gray flint		
160-180	Brown flint		
180-190	Dark flint few lead shines	none	4.72
190-195	Dark flint good lead	1.64	0.81
195-200	Dark flint jack and lead sh.	2.83	0.23
200-205	Dark flint same	1.05	0.23
205-210	Same		
210-227	White flint		

Hole No. W-197 Started 4-29-22 Finished 5-13-22

0-18	Surface and clay		
18-76	Soapstone		
76-100	Lime		
100-130	Gray flint and some lime		
130-165	Gray flint		
165-170	Dark flint lead shines	2.98	2.30
170-175	Dark flint jack and lead sh.		
175-180	No cuttings	0.60	0.23
180-185	Dark and white flint PbS and ZnS S.	0.29	0.13
185-190	Same		
190-196	No cuttings	16.40	0.23
196-200	Dark flint good ZnS and PbS shines	24.60	0.23
200-205	Dark flint same	13.70	0.29
205-206½	Same		
206½-208	No cuttings		
208-211	Dark and white flint ZnS & PbS sh.	2.53	0.23
211-213	White flint	1.04	0.58

Openings were encountered from 195 to 195 to 198 and from 201-203 ft. Depth from which probably not cuttings were derived in screws 195-200 and 200-205 The bottom of the ore is in all probability 208' depth.

Hole No. W-198 Started 5-15-22 Finished 5-24-22

0-25	Surface and clay
25-75	Soapstone
75-100	Lime
100-160	Gray and white flint
160-180	Gray and dark brown flint
180-195	White rotten flint
195-200	White and gray flint
200-210	White and gray flint
210-215	Gray and blue flint, few jack shines

Hole No. W-198 Started 5-15-22 Finished 5-24-22 (Cont'd)

215-225 White flint
225-230 Gray and white flint
230-238 White flint

Hole No. W-199 Started 5-25-22 Finished 6-2-22

0-25 Surface and clay
25-75 Soapstone
75-95 Lime
95-130 Gray flint and some lime
130-160 Gray flint
160-185 Dark and light gray flint
185-195 White rotten flint
195-205 Hogchaw flint (some dark flint)
205-210 Hogchaw flint (some dark flint)
210-215 White and blue flint
215-225 White flint

Hole No. W-200 Completed 5-31-22

0-85 Clay and soapstone
85-95 Gray lime
95-140 Blue and white flint and brown lime
140-165 Same white lime
165-205 Blue and brown flint
205-215 Blue flint and mud seams
215-220 Blue and white glassy flint zinc shines and trace of lead.
220-225 Gray glassy flint trace of lead
225-265 Brown and white glassy flint
265-270 Brown lime and brown flint
270-278 Gray lime and some gray flint

Log of hole furnished by Eagle Picher Company.

Hole No. W-201 Started 5-5-22 Finished 6-14-22

0-25 Surface and clay
25-77 Soapstone
77-95 Lime
95-100 Lime and flint
100-130 Gray flint and some lime
130-160 Gray flint and some lime
160-175 Brown lime and flint
175-185 Brown flint and lime
185-190 Gray and brown flint and lime
190-195 Gray flint 1.04 2.18
195-197½ Brown and Gray flint 12.21 3.68
197½-200½ No cuttings open cave 22.80 1.96
200-202½ Same
202½-205 Brown flint 12.38 0.69

Hole No. W-201 Started 5-5-22 Finished 6-14-22 (Cont'd)

205-207½	No cuttings open cave		
207½-210	Loose brown flint	1.34	0.58
210-212½	Loose gray and white flint few S.		
212½-215	Gray and white flint		
215-219	White flint		

Hole No. W-202 Started 6-14-22 Finished 6-21-22

0-28	Surface and clay
28-70	Soapstone
70-100	Lime and flint
100-120	Gray flint and lime
120-125	Lime and flint and some tar
125-140	Gray and blue flint and lime
140-145	Lime
145-165	Lime and flint
165-185	Lime and selvage and dark flint
185-190	Lime, dark foint and soapstone
190-205	Brown and gray flint
205-210	Brown and gray flint and few jack shines
210-220	Brown and gray flint
220-230	White flint

Hole No. W-203 Started 6-22-22 Finished 6-28-22

0-28	Surface and clay
28-80	Soapstone
80-100	Lime
100-110	Lime and flint
110-120	Flint and lime
120-125	Lime
125-145	Lime and flint
145-170	Gray flint and some lime
170-190	Gray and brown flint
190-210	Hogchaw flint
210-220	Gray and brown flint and few shines of jack
220-225	White flint

Hole No. W-204 Started 6-29-22 Finished 7-8-22

0-26	Surface and clay		
26-80	Soapstone		
80-100	Lime		
100-135	Lime and flint		
135-160	White flint and lime		
160-175	Gray flint and some lime		
175-185	Gray flint and some lime		
185-190	Brown flint and some little lime, few shines PbS.		
190-197½	Crevice-Open ground no cuttings	1.19	0.3
197½-200	Loose flint-jack and lead	1.19	0.92

Hole No. W-204 Started 6-29-22 Finished 7-8-22 (Cont'd)

200-201½	Same	
201½-202½	Open ground no cuttings	1.49 0.69
202½-205	Loose black and white flint	1.34 0.35
205-207½	Same	0.75 0.35
207½-210	Same	
210-215	White hogchaw flint	
215-221	White flint	
	Ore Ground showed large percentage or iron pyrites	

Hole No. W-205 Started 7-10-22 Finished 7-22-22

0-24	Surface and clay	
24-80	Soapstone	
80-95	Lime	
95-100	Lime and flint	
100-125	White flint and lime	
125-160	Gray flint and lime	
160-180	Brown and gray flint	
180-185	Gray flint and lime	
185-190	Gray flint and lime lead shines	
190-192½	Gray and brown flint	Tr. 1.61
192½-195	Dark brown flint	1.19 2.18
195-197½	Dark brown flint	0.14 0.23
197½-205	Dark flint	
205-210	Dark flint	
210-215	Dark and white flint few shines jack	
215-229	White flint	

Hole No. W-206 Started 7-24-22 Finished 8-3-22

0-28	Surface and clay
28-75	Soapstone
75-90	Lime
90-95	Gray flint and lime
95-150	Gray flint and lime
150-160	Gray and brown flint and lime
160-175	Brown flint and lime
175-180	Gray and brown flint
180-200	White flint and lime
200-205	Gray and brown flint
205-210	White flint
210-220	White and brown flint
220-230	White flint

Hole No. W-207 Started 8-3-22 Finished 8-25-22

0-25	Surface and clay
25-75	Soapstone
75-95	Lime
95-120	Lime and flint

Hole No. W-207 Started 8-3-22 Finished 8-25-22 (Cont'd)

120-160 Gray flint and lime
160-165 Gray flint and brown lime
165-170 Brown lime and gray flint
170-180 Greenish limestone marker
180-185 White flint and greenish limestone
185-190 White flint
190-210 White flint and lime
210-220 Lime
220-230 White and gray flint and lime
230-240 White and gray flint
240-245 Gray and black flint
245-260 Gray flint and lime
260-270 White flint and lime
270-280 Dark gray flint and black lime
280-285 Tight gray flint and lime
285-305 Gray flint and brown lime
from 175 to 180 showed oolitic limestone

Hole No. W-208 Started 8-29-22 Finished 9-7-22

0-22 Surface and clay
22-76 Soapstone
76-95 Gray lime
95-110 White flint and lime
110-130 Gray and white flint and lime
130-145 Gray and white flint and lime
145-155 Gray flint and some lime
155-165 Brown lime and some gray flint
165-175 Greenish limestone marker
175-190 White and dark gray flint

190-195 Tight white flint	8.79	None
195-200 Brown flint good jack	4.92	None
200-202½ Brown flint fair jack	1.04	0.34

202½-205 Brown flint jack shines
205-207½ White flint few jack shines
207-210 White flint
210-220 White flint
From 170 to 175 showed oolitic limestone

Hole No. W-209 Started 9-8-22 Finished 9-22-22

0-22 Surface and clay
22-76 Soapstone
76-106 Limestone
106-120 Limestone and white flint
120-135 White flint and some lime
135-165 White flint and limestone
165-170 Light dark flint and limestone
170-175 Brown slaby lime and dark flint

Hole No. W-209 Started 9-8-22 Finished 9-22-22 (Cont'd)

175-185	Greenish limestone "marker"		
185-190	Greenish limestone dark flint and soap		
190-210	Light and dark flint trace of ZnS and PbS shines		
210-220	White flint and soapstone		
220-230	Tight white flint		
230-235	Light and dark flint	1.64	
235-240	Light and dark flint	2.24	
240-250	Light and dark flint and lime jack shines		
250-320	Dark flint and lime		

Hole No. W-210 Started 9-23-22 Finished 10-3-22

0-22	Surface and clay		
22-76	Limestone		
76-105	Soapstone		
105-160	Light flint and limestone		
160-170	Gray flint and brown limestone		
170-175	Greenish limestone "marker"	1.49	None
175-180	Dark flint		
180-185	White flint		
185-190	Light and dark flint		
190-195	Light and dark flint few shines ZnS	1.19	Tr.
195-197½	Dark flint	2.24	Tr.
197½-200	Same	3.43	0.46
200-202½	Same	2.98	Tr.
202½-205	Dark flint		
205-210	White flint		
210-230	Light flint		
230-240	Dark flint and limestone		

Hole No. W-211-W Started 10-4-22 Finished 10-13-22

0-21	Surface and clay	
21-76	Soapstone	
76-100	Lime	
100-110	Gray lime and flint	
110-155	Gray flint and lime	
155-165	Gray flint and lime	
165-175	Greenish limestone "marker"	
175-180	Gray and white flint jack shines	
180-190	White flint	4.47
190-192½	Brown flint good jack	3.88
192½-195	Brown and gray flint	5.22
195-197½	Brown and white flint	5.51
197½-200	Gray and white flint	5.66
200-202½	Brown flint lost most of the cuttings	2.24
202½-205	Brown flint few lead shines	
205-215	White flint	

Hole No. W-212 Started 10-14-22 Finished 10-19-22

0-20	Surface and clay	
20-73	Soapstone	
73-100	Lime	
100-110	Gray lime and flint	
110-145	Gray flint and lime	
145-160	Brown and gray flint and lime	
160-170	Greenish limestone "marker"	
170-175	Gray flint and lime few jack shines	
175-185	White flint	7.90
185-187½	Gray and white flint	8.49
187½-190	Brown flint	15.05
190-192½	Same	14.00
192½-195	Same	9.39
195-197	Same	8.50
197½-200	Same	2.39
200-202½	Brown and white flint	2.39
202½-205	Brown and white flint	
205-210	White and brown flint	
210-222	White flint	

Hole No. W-213 Started 10-21-22 Finished 10-27-22

0-18	Surface and clay
18-71	Soapstone
71-95	Lime
95-145	Lime and flint
145-150	Tight gray lime and flint
150-170	Gray and brown flint and lime
170-175	Brown flint and lime
175-180	Brown and gray flint and lime
180-185	Gray and brown flint lead shines
185-190	Same
190-200	Brown flint jack shines
200-205	White and gray flint jack shines
205-223	White flint

Hole No. W-214 Started 10-28-22 Finished 11-10-22

0-18	Surface and clay
18-71	Soapstone
71-85	Lime
85-100	Gray lime and flint
100-115	Gray lime and flint
115-150	Brown and gray flint and lime
150-170	Brown flint and some lime
170-180	Brown and white flint
180-185	White rotten flint
185-200	White, brown blue flint
200-217	White flint

Hole No. W-215 Started 11-15-22 Finished 11-21-22

0-16	Surface and clay		
16-86	Soapstone		
86-100	Brown and white flint		
100-150	Loose white and brown flint		
150-170	Brown and gray flint		
170-175	Gray flint lead shines		
175-180	Light gray flint good lead shines and few jack shines		
180-185	Gray flint lead and jack shines		
185-190	Dark flint fair jack and some lead shines		

Hole No. W-216 Started 11-23-22 Finished 11-25-22

0-16	Surface and clay		
16-80	Soapstone		
80-95	Brown flint and brown lime		
95-115	Brown and gray flint and lime		
115-125	Brown loose flint		
125-135	Brown and white loose flint		
135-150	Brown and white flint		
150-180	Gray flint and lime		
180-185	Gray and brown flint lead shines		Sh.
185-190	Brown flint		3.45
190-195	Gray and brown flint		5.87
195-200	Same	2.53	3.68
200-205	White flint (few shines J and L)		
205-210	White flint		

Hole No. W-217 Started 11-26-22 Finished 11-28-22

0-16	Surface and clay	
16-82	Soapstone	
82-95	Brown flint and lime	
95-110	Brown and white flint	
110-125	Brown and gray flint	
125-135	White and gray flint	
135-145	Brown and white loose flint	
145-160	Brown flint and lime	
160-165	Brown flint and lime few lead shines	
165-170	Brown flint and lime	
170-175	Gray flint	
175-180	Gray flint lime	
180-185	Brown flint selvage and lime	
185-190	Gray flint lime and few lead shines	Pb.
190-195	Brown flint	2.42
195-200	Brown and white flint	1.03
200-214	White flint	

Hole No. W-218 Started 11-28-22 Finished 12-1-22

0-16	Surface and clay		
16-75	Soapstone		
75-90	Dark brown flint and lime		
90-95	Dark brown and white flint		
95-150	Gray and brown flint		
150-175	Gray and brown flint and lime		
175-180	Gray flint lime and few lead shines		
180-185	Gray flint, selvage lead and jack shines		
185-190	Gray flint and mundic	Sh.	Pb
190-195	Gray flint		2.99
195-200	Gray flint		1.50
200-205	White flint		1.49
205-210	White flint lead shines		
210-220	White flint		

Hole No. W-219 Started 12-2-22 Finished 12-11-22

0-16	Surface and clay	
16-73	Soapstone	
73-80	Gray flint and lime	
80-85	Open tar pocket no cuttings	
85-90	Flint boulders and tar	
90-100	Gray and white flint and tar	
100-135	Gray and white flint	
135-140	Loose white and brown flint	
140-145	Gray and white flint	
145-175	Gray flint and lime	
175-180	Gray flint and lime, few shines of lead	ZnS.
180-185	Gray flint and good jack	8.20
185-190	Gray flint, selvage and good jack	2.38
190-195	Gray flint good jack shines few lead sh.	
195-200	Gray and white flint few jack shines and ld. sh.	
200-209	White flint	

Hole No. W-220 Started 12-15-22 Finished 12-28-22

0-15	Sand and clay		
15-70	Soapstone		
70-80	Brown lime		
80-85	Brown lime and flint		
85-100	Gray lime and some flint		
100-145	Gray lime and flint		
145-155	Brown lime and flint		
155-175	Brown flint and some lime		
175-190	Brown flint		
190-195	Brown flint selvage and heavy iron		
195-200	Brown and white loose flint jack shines & some iron		
200-205	Brown flint good lead some iron	0.10	0.26
205-210	Brown and white flint lead shines		

Hole No. W-220 Started 12-15-22 Finished 12-28-22 (Cont'd)
210-212½ White and some brown few lead shines
212½-215 White flint

Hole No. W-221 Started 12-9-23 Finished 1-6-23
0-20 Surface and clay
20-70 Soapstone
70-105 Brown lime
105-150 Gray lime and some flint
150-165 Gray flint and lime
165-175 Gray and brown flint and lime
175-185 Brown flint some lime and mundic
185-195 Gray brown and white flint a little lime, a few lead shines
195-200 Brown and white flint, a few shines lead some mundic
200-210 White and some brown flint, few lead shines
210-215 White flint a few jack and lead shines
215-222 White flint and some lime

Hole No. W-222 Started 1-9-23 Finished 1-13-23
0-19 Surface and clay
19-101 Soapstone
101-125 Gray lime
125-165 Brown and white loose flint
165-180 Brown and gray flint and some lime
180-190 Gray and brown flint a little lime and a few lead shines
190-200 Brown and white flint and a few lead shines
200-205 Loose brown flint, good lead 0.07 1.12
205-210 Brown and white flint good lead and few jack shines 0.16 0.60
210-215 Brown and white flint good lead and few jack shines 0.43 0.16
215-220 White and brown flint jack and lead shines
220-222 A crevice
222-225 Brown and white flint jack and lead shines 0.43 0.10
225-230 White and brown flint a few shines of jack and lead
230-233 Brown and some brown flint a few shines of jack and lead
233-235 Crevice

Hole No. W-223 Started 1-15-23 Finished 1-24-23
0-22 Surface and clay
22-100 Soapstone
100-115 Lime
115-125 Gray lime and flint
125-155 Gray flint
155-175 Loose blue and white flint
175-180 Gray and blue flint and lime
180-195 Gray flint and lime
195-200 Blue and gray flint and some lime

Hole No. W-223 Started 1-15-23 Finished 1-24-23 (Cont'd)

200-205 Gray and blue flint fair lead shines
205-220 Gray and blue flint, fair lead shines, a few jack shines
220-225 Gray and white flint lead shines & a few jack shines
225-230 Open crevice ground, no cuttings
230-235 Blue and gray flint, good jack shines & a few lead shines
235-250 Blue and gray loose flint good jack shines & a few L. Sh.
250-255 White flint

Hole No. W-224 Started 1-25-23 Finished 2-5-23

0-22 Surface and clay
22-110 Soapstone
110-125 Lime
125-130 Gray lime and flint a few jack shines and iron
130-140 Gray flint good jack and lead shines 130-135 0.04 1.12
140-150 Gray brown and white flint jack & lead shines
135-140 0.02 0.66
150-170 White and gray flint a few jack and lead shines
170-200 Loose gray, white & blue flint jack and lead shines, some iron
200-215 Gray flint
215-220 Gray and brown flint
220-225 White and blue flint a few jack shines
225-230 Brown and white flint, fair jack & a few lead shines
230-235 Brown flint good jack and a few lead shines
235-250 Brown and white flint a few jack and lead shines
250-258 (I think shines were falling in) struck sulphur water at 240. Brown and white flint, a few jack and lead shines.

Hole No. W-225 Started 2-7-23 Finished 2-14-23

0-3 Sand
3-38 Surface and clay
38-106 Soapstone
106-110 Lime
110-130 Gray flint and lime, jack shines
130-180 Loose gray flint jack and lead shines
180-210 GrayGray and some blue flint, jack and lead shines
210-220 White and gray flint jack and lead shines
220-232 White and gray flint and just a few shines of lead

Hole No. W-226 Started 2-15-23 Finished 2-22-23

0-3 Sand
3-28 Surface and clay
28-93 Soapstone
93-130 Gray flint, lime and tar

Hole No. W-226 Started 2-15-23 Finished 2-22-23 (Cont'd)

130-135	Loose gray and white flint		
135-165	Gray flint and lime		
165-180	Gray and brown flint and lime		
180-183	Gray and brown flint and lime		
183-185	Soapstone and mundic opening		
185-195	Gray and brown flint and lime		
195-200	Dark brown flint, good lead and jack shines	0.22	0.68
200-205	Brown and white flint, good lead shines & jack shines	0.15	0.06
205-210	Brown and white flint lead and jack shines		
210-228	White flint		

Hole No. W-227 Started 2-22-23 Finished 3-8-23

0-2	Sand		
2-24	Surface and clay		
24-75	Soapstone		
75-95	Lime		
95-140	Gray flint and lime		
140-170	Gray brown flint and lime		
170-190	Brown and gray flint and some lime		
190-195	Gray and brown flint mundic lead and jack shines		
195-205	Gray and brown flint jack and lead shines		
205-210	Gray flint jack and lead shines		
210-220	Brown and gray flint		
220-225	Brown white and black flint good lead and jack shines	.64	1.
225-230	Brown gray and black flint good lead and good jack shines	1.21	2.68
230-235	Brown and white flint		
235-243	White flint		
	Got a little sulphur water, from 230-243		

Hole No. W-228 Started 3-9-23 Finished 3-21-23

0-25	Surface and clay		
25-82	Soapstone		
82-100	Lime		
100-110	Gray and flint		
110-120	Gray flint and tar		
120-135	Gray flint lime		
135-140	Brown flint and tar		
140-155	Gray flint and lime		
155-170	Brown and gray flint and lime		
170-185	Gray flint and lime		
185-190	Loose gray flint		
190-200	Gray and brown flint		
200-205	No cuttings		
205-207	Opening lost a bit shot the hole		
207-210	Brown and white flint and good jack	3.91	Nil.

Hole No. W-228 Started 3-9-23 Finished 3-21-23 (Cont'd)

210-215	Brown and black flint good jack	4.50	Nil
215-220	Brown black and gray flint good jack	1.85	
220-223	Gray flint and some jack		

Hole No. W-229 Started 3-31-23 Finished 4-14-23

		Assay	PbS.	ZnS.
0-28	Ft. surface and clay			
28-47	Soap	250-225	0.03	1.80
47-57	Lime and sand rock	255-260	0.02	0.75
57-92	Soap			
92-95	Lime and selvage			
95-110	Lime			
110-140	Gray lime and flint			
140-150	Gray and brown flint and some lime			
150-160	Gray and brown flint			
160-170	Brown flint and lead shines			
170-180	Brown and white flint a few shines of lead and mundic			
180-200	Brown flint and mundic			
200-205	Gray and white flint			
205-235	Gray, white and brown flint			
235-240	Gray white flint			
240-250	Gray and white flint			
250-260	Brown flint some black flint and jack shines			
260-270	White flint			

Hole No. W-230 Started 4-17-23 Finished 4-26-23

0-28	Ft. surface and clay		
28-45	Soapstone		
45-55	Sand and lime		
55-90	Soapstone		
90-115	Lime		
115-135	Gray lime and flint		
135-165	Gray flint and lime		
165-170	Gray and brown flint a few lead shines		
170-175	Brown flint lead shines		
175-180	Brown and gray flint, lead and a few jack shines		
180-190	Gray and brown flint lead and a few jack shines		
190-195	Gray and brown flint, good jack shines & few lead shines		
195-200	Same	0.30	1.0
200-205	Brown and black flint, good jack & few lead shines	3.42	0.5
205-210	White, brown and black flint, good jack and few lead shines	1.87	0.1
210-215	Brown, white and black flint good jack	3.05	0.0
215-220	Gray and white flint good jack	0.75	0.0
220-230	Gray and white flint a few shines of jack		
230-240	White and gray flint a few shines of jack		
240-246	White flint		

Hole No. W-231 Started 4-27-23 Finished 5-12-23

0-24	Ft. surface and clay		
24-40	Soapstone		
40-45	Lime and sand rock		
45-85	Soapstone		
85-110	Lime		
110-150	Gray flint and lime		
150-155	Gray flint		
155-165	Brown flint and lead shines		
165-170	Brown flint fair jack shines & some lead shines		
170-175	Brown flint good jack, a few lead shines	2.40	1.17
175-185	Brown flint good jack, a few lead shines	2.60	0.62
185-190	Brown flint good jack, a few lead shines	1.56	0.18
190-205	Brown and blue flint jack shines & few lead shines		
205-220	White and blue flint, a few shines of jack and lead	.95	0.28
220-222½	Crevice shot the hole at 221		
222½-225	White flint, a few jack shines		
225-227½	White flint & crevice		
227½-230	Gray and white flint, good jack shines		
230-245	Gray and white flint few jack and lead shines		
245-255	Gray and white flint		

Hole No. W-232 Started 5-14-23 Finished 5-18-23

0-26	Ft. surface and clay
26-42	Soapstone
42-47	Sandrock
47-85	Soapstone
85-100	Lime
100-120	Gray flint and lime
120-160	Gray and blue flint
160-185	Gray and blue flint and some lime
185-195	Gray and brown flint a few shines of jack and lead
195-215	Brown flint jack and lead shines
215-230	Gray flint a few jack and lead shines
230-250	Gray flint and lime
250-265	Gray and brown flint a few jack and lead shines
265-270	Gray and blue flint and some lime

Hole No. W-233 Started 5-21-23 Finished 6-1-23

0-26	Ft. surface and clay
26-46	Soapstone
46-50	Sandrock and lime
50-80	Soapstone
80-110	Lime
110-150	Gray flint and lime
150-154	Open tiff cave, shot hole at 150 and 165
154-165	Gray flint

Hole No. W-233 Started 5-21-23 Finished 6-1-23 (Cont'd)

165-175 Loose gray flint and a few shines of jack
175-205 Gray and blue flint a few shines of jack and lead
205-210 White flint
210-240 Gray and white flint a few shines of jack and lead
240-250 Gray and blue flint
250-303 Gray lime and some blue flint

Hole No. W-234 Started 6-2-23 Finished 6-15-23

0-30 Ft. surface and clay
30-130 Soapstone
130-150 Soapstone and boulders
150-155 Gray and brown flint good jack
155-160 Brown and gray flint good jack shines
160-165 Brown and black flint a crack shot the hole at 160 & 163
165-170 Brown and gray flint
170-175 Brown and gray flint shot the hole at 173
175-185 Gray and white flint
185-195 Loose brown and white flint
195-215 White and brown flint
215-225 Brown and white flint
225-235 Brown flint and some jack
235-240 Brown flint and some jack
240-245 Brown flint soap and selvage good jack
245-250 Brown flint a little soap and selvage and fairly good J.
250-260 Brown and gray flint and jack shines
260-267 Brown and gray flint

Assay	ZnS.	PbS.
240-245	2.53	0.44
245-250	1.93	0.28
250-255	1.78	0.44

Hole No. W-235 Started 6-16-23 Finished 6-22-23

0-28 Ft. surface and clay
28-145 Soapstone
145-160 Loose brown and white flint and good jack
160-200 Gray flint and lime
200-210 Gray and brown flint jack shines
210-215 Gray flint good jack and a few lead shines 2.24 4.26
215-220 Gray and white flint good jack shines & some lead 1.34 15.0
220-225 Gray and white flint good jack shines 0.90 0.11
225-230 Same
230-235 Gray flint good jack
235-240 Gray flint good jack 3.72 0.11
240-245 Same 1.19 0.23
245-250 Gray and brown flint and good jack shines

Hole No. W-235 Started 6-16-23 Finished 6-22-23 (Cont'd)
250-255 Gray flint a few jack shines
255-260 Gray and white flint a few jack shines
260-263 White and gray flint

Hole No. W-236 Started 6-23-23 Finished 6-27-23
0-26 St. surface and clay
26-117 Soapstone
117-130 Lime
130-180 Gray flint and some lime
180-190 Gray and brown flint
190-210 Gray and brown flint a few jack shines
210-235 Brown gray flint, flint and good jack shines
235-240 Brown flint and a few jack shines
240-245 Brown flint and fairly good jack shines
245-250 Brown and white flint and a few jack shines
250-255 Dead brown flint

Hole No. W-237 Started 6-28-23 Finished 7-12-23
0-26 Ft. surface and clay
26-122 Soapstone
122-125 Gray lime and some jack
125-145 Brown flint tar pockets and good jack shines
shot the hole at 145
145-185 Gray and white flint and some lime
Lost string of tools at 185'.

Hole No. W-238 Started 7-12-23 Finished 7-17-23
0-22 Ft. surface and clay
22-85 Soapstone
85-100 Lime
100-115 Gray lime and flint
115-125 Brown and white flint and tar
125-160 Gray flint and some lime
160-180 Gray lime and flint
180-185 Gray and brown flint jack and lead shines
185-190 Brown flint lead and jack shines
190-205 Gray flint a few shines of lead and mundic
205-230 Brown and gray flint and mundic
230-237 Gray and white flint

Hole No. W-239 Started 7-17-23 Finished 7-24-23
0-23 Ft. surface and clay
23-82 Soapstone
82-95 Lime
95-110 Gray lime and flint
110-120 Soap selvage and boulders
120-180 Gray flint and some lime

Hole No. W-239 Started 7-17-23 Finished 7-24-23 (Cont'd)

180-190	Gray and brown flint		
190-200	Gray brown and blue flint some lime and a few shines of jack		
200-210	White and gray flint some lime and mundic		
210-225	Brown and gray flint		
225-235	White and gray flint		
235-244	White flint		

Hole No. W-240 Started 7-24-23 Finished 7-27-23

0-21	Ft. surface and clay		
21-80	Soapstone		
80-100	Lime		
100-115	Gray lime and flint		
115-130	Gray and brown flint and lime		
130-165	Gray flint and lime		
165-180	Same		
180-185	Gray brown flint some lime		
185-190	Brown gray flint mundic, and a few shines of jack blende		
190-195	Brown blue and gray flint good jack and lots of mundic 3.		
195-200	Gray brown flint some lime jack shines & a few lead sh.		
200-210	Gray white and blue flint a few shines of jack & mundic		
210-225	Gray white and brown flint		
225-230	White flint		

Hole No. W-241 Started 7-24-23 Finished 8-2-23

0-20	Ft. surface and clay		
20-77	Soapstone		
77-95	Lime		
95-120	Gray flint and lime		
120-145	Gray and brown flint and lime		
145-155	Gray and white flint and lime		
155-170	Brown and gray flint and lime		
170-180	Brown flint some greenish and mundic		
180-185	Brown flint good jack	9.60	0.02
185-190	Brown and white flint good jack	3.50	0.03
190-195	Brown black and white flint good jack S.	1.65	0.04
195-200	Brown and gray flint jack shines & few lead shines	0.52	0.10
200-205	Gray and brown flint jack shines & few lead shines		
205-215	Gray and white flint and a few jack shines		
215-220	Gray and white flint		
220-230	White and gray flint		
230-245	Loose brown and black flint		
245-254	Brown and black flint		

Hole No. W-242 Started 8-15-23 Finished 8-22-23

0-21	Feet Surface and clay
21-84	Soapstone
84-105	Lime
105-120	Brown and white flint and tar
120-150	Loose brown and white flint and tar
150-175	Brown and gray flint tar and a few lead shines
175-180	Brown and black flint good lead and jack
180-185	Brown and black flint good jack and lead
185-195	Brown and black flint good jack and a few lead shines
195-200	Gray and brown, white flint jack and lead shines
200-210	Gray and white flint a few shines of jack and lead
210-217	White and gray flint and a few shines of lead and jack

Assay	ZnS.	PbS.
175-180	6.90	18.50
180-185	8.40	10.50
185-190	7.50	1.50
190-195	7.90	0.90
195-210	1.50	0.10

Hole No. W-243 Started 8-3-23 Finished 8-14-23

0-20	Ft. surface and clay		
20-74	Soapstone		
74-90	Lime		
90-125	Gray flint and lime		
125-150	Gray brown flint and lime		
150-155	Brown blue flint greenish lime and good jack		2.60
155-160	Gray and brown flint some lime and jack shines		
160-170	Brown and gray flint some lime good jack shines		2.30
170-175	Brown and black flint good jack		3.20
175-180	Brown black gray flint jack shines		
185-200	Brown black gray flint and a few lead shines and jack	1.05	0.2
200-220	Gray and white flint and a few lead shines		
220-230	Gray white and brown flint a few shines of lead and mundic		
230-245	Loose brown and black flint		
245-254	Brown and black flint		

Hole No. W-244 Started 8-22-23 Finished 8-31-23

0-20	Surface and clay
20-90	Soapstone
90-115	Lime
115-120	Gray and brown flint, tar and jack shines
120-125	Brown and gray flint some tar and good jack
125-130	Gray and brown flint and a few shines of jack
130-145	Gray flint
145-165	Gray, white, and brown flint
165-180	Gray, brown and white flint

Hole No. W-244 Started 8-22-23 Finished 8-31-23 (Cont'd)
180-205 Gray, white & brown flint just a few lead & jack shines
205-220 White flint
220-230 Gray and white flint
230-235 Gray, white and brown flint and a few shines of jack
235-244 Gray and white flint

Hole No. W-245 Started 9-3-23 Finished 9-11-23
0-23 Surface and clay
23-90 Soapstone
90-105 Lime
105-120 Gray lime and flint
120-140 Gray flint, lime and tar
140-160 Gray flint some lime and tar
160-165 Blue and gray flint
165-170 Loose blue flint
170-175 Blue and gray flint good lead shines trace .88
175-180 Blue and gray flint good lead shines trace .28
180-195 Blue, gray and white flint just a few shines of jack
195-200 Soapstone and flint boulders
200-210 Blue and gray flint just a few shines of jack
210-223 Blue white hogchaw flint

Hole No. W-246 Started 9-12-23 Finished 9-26-23
0-27 Surface and clay
27-91 Soapstone
91-115 Lime
115-130 Gray lime and flint
130-145 Gray and brown flint and tar
145-150 Blue gray flint good lead shines
150-160 Brown and gray flint and lead shines
160-180 Brown and white flint, some lime, a few lead shines
180-185 Brown and white flint, some lime, a few lead shines
185-195 Gray and white flint and a few lead shines
195-215 Gray and brown flint
215-222½ Gray flint and some lime
222½-230 Gray flint and jack shines
230-235 Blue flint, tiff and a few shines of jack
235-237 Open cave
237-240 Blue flint, tiff and a few shines of jack
240-245 Gray flint and a few shines of jack
245-250 Brown and blue flint and a few shines of jack
250-265 Gray and brown flint
265-270 Brown and blue flint and a few jack shines
270-275 Gray and white flint

Hole No. W-247 Started 9-27-23 Finished 10-4-23
0-21 Surface and clay

Hole No. W-247 Started 9-27-23 Finished 10-4-23 (Cont'd)

21-88 Soapstone
88-115 Lime
115-130 Gray lime and flint
130-135 Gray flint and lime
135-145 Brown and white flint, good jack shines
145-150 Brown and white flint, a little lime and a few shines of jack
150-165 White and gray flint
165-170 Brown and white flint
170-180 Brown and white flint and some tiff
180-195 Brown and blue flint some lime & tiff, few shines of lead
195-200 Brown flint and some lime and tiff
200-210 Brown flint lime some tiff and few shines of jack
210-225 Brown and white flint some tiff few shines of jack
225-230 Brown and white flint
230-240 White flint

Hole No. W-248 Started 10-3-23 Finished 10-10-23

1-25 Clay
25-89 Soapstone
89-120 Lime
120-135 Gray and white flint
135-145 Gray flint trace of lead
145-160 Lime and flint
160-180 Gray and blue flint
180-190 Brown and gray flint trace of lead
190-200 Brown and gray flint
200-210 Soapstone and flint boulders
210-217 Gray and brown flint jack shines
217-240 White flint
240-244 Gray flint

Hole No. W-249 Started 10-11-23 Finished 10-18-23

0-25 Clay
25-86 Soapstone
86-135 Lime
135-145 Lime and white flint jack shines
145-160 Gray flint
160-190 Gray flint lead shines
190-220 Brown flint
220-239 White flint

Hole No. W-250 Started 10-19-23 Finished 10-23-23

0-30 Clay
30-70 Soapstone
70-74 Chester sand
74-118 Soapstone

Hole No. W-250 Started 10-19-23 Finished 10-23-23 (Cont'd)

118-120 Lime
120-165 Lime
165-210 Shelly blue and gray flint and lime
210-220 White and gray flint
220-236 White flint

Hole No. W-251 Started 10-25-23 Finished 10-30-23

0-18 Clay
18-60 Soapstone
60-80 Lime
80-115 Lime and flint
115-130 Gray and white flint, lead and jack shines
130-145 Gray and white flint
145-170 Graylime and blue flint
170-175 Blue and gray flint, fair jack and good lead 2.32 2.0
175-187 Open ground, no cuttings
187-197 White flint

Hole No. W-252 Started 10-31-23 Finished 11-2-23

0-19 Clay
19-65 Soapstone
65-75 Lime
75-115 Shelly flint
115-120 Gray flint - fair jack
120-140 Gray flint good jack
140-145 Blue flint jack shines
145-175 Gray lime and blue flint
175-185 Gray flint fair jack
185-190 White and gray flint jack shines
190-207 White flint

Assay	115-120	6.60 ZnS.	0.65 PbS.
	120-125	8.10	0.50
	125-130	8.77	0.40
	130-135	6.75	0.45
	135-140	5.70	0.25
	140-145	3.97	0.20
	175-180	6.15	0.15
	180-185	6.15	0.15

Hole No. W-253 Started 10-23-23 Finished 11-2-23

0-30 Surface and clay
30-116 Soapstone
116-125 Brown and white lime mundic and lead shines
125-150 Brown, white and blue flint
150-160 Loose blue and white flint
160-190 Brown and blue flint

Hole No. W-253 Started 10-23-23 Finished 11-2-23 (Cont'd)

190-210 Brown flint, some lime few shines of jack and lead
210-220 Brown, white and black flint
220-225 White, black and blue flint
225-230 Open ground, no cuttings
230-235 White, blue and black flint-tiff jack and lead (Loose open ground)
235-239 Black and white flint jack, lead and tiff
Stopped the hole because it was caving so badly

Assay	ZnS.	PbS.	
225-235	2.55	0.68	cave dirt
230-235	1.72	1.80	

Hole No. W-254 Started 11-2-23 Finished 11-19-23

0-25	Clay		
25-65	Soapstone		
65-100	Lime		
100-135	Lime and white flint		
135-160	Lime and gray flint		
160-170	Gray lime and flint		
170-175	White flint		
175-195	Gray and white flint, good shines of lead	0.10	0.71
195-204	White flint		

Hole No. W-255 Started 11-5-23 Finished 11-23-23

0-28	Surface and clay
28-88	Soapstone
88-105	Lime
105-125	Gray lime and flint
125-130	Gray lime and flint crevices, shot the hole at 129
130-170	Gray flint and lime
170-190	Blue and gray flint and lime
190-195	Gray blue and brown flint a little lime, mundic and a few jack shines and tiff.
195-205	Brown and gray flint, lime and a few jack shines
205-220	Gray and white flint & lime
220-230	White and brown flint, lime, tiff, open ground
230-235	White and brown flint and some lime
235-245	White and blue flint, lime, tiff and open ground
245-259	White and brown flint and some lime

Hole No. W-256 Started 11-12-23 Finished 11-19-23

0-25	Clay
25-69	Soapstone
69-90	Lime
90-110	Lime and white flint
110-120	Brown and gray flint jack and lead shines

Hole No. W-256 Started 11-12-23 Finished 11-19-23 (Cont'd)

120-135	White flint, hard brown and gray flint		
135-175	Brown and gray flint		
175-195	Gray flint hard		
195-223	White flint		

Hole No. W-257 Started 11-19-23 Finished 11-24-23

0-25	Clay		
25-67	Soapstone		
67-85	Lime		
85-100	Lime and white flint		
100-120	Gray flint, open ground		
120-130	Lime and gray flint		
130-140	Brown and gray flint, jack and lead shines		
140-170	Gray lime and blue flint		
170-185	Gray and brown flint, jack and lead shines	1.35	.75
185-190	Gray and brown flint good shines of lead	.75	1.60
190-200	Brown and gray flint, good jack and lead	10.80	17.69
200-207	White flint		

Hole No. W-258 Started 11-17-23 Finished 11-27-23

0-30	Surface and clay		
30-45	Soapstone		
45-48	Sandstone boulders		
48-96	Soapstone		
96-110	Lime		
110-130	Gray lime and flint		
130-145	Brown flint and gray lime		
145-180	Gray flint & lime		
180-185	Brown lime and flint		
185-190	Gray and brown flint, lime, lead and jack shines	.53	.0
190-195	Brown flint, some lime good lead and jack shines	.27	.5
195-205	Brown and gray flint good lead and jack	.48	.4
205-210	Gray flint, jack shines	.97	.0
210-215	Gray and Brown flint, good jack	10.38	.0
215-220	Gray brown and black flint good jack	5.13	.0
220-225	White and gray flint and some tiff		
225-234	White flint		

Hole No. W-259 Started 11-25-23 Finished 11-28-23

0-25	Clay		
25-68	Soapstone		
68-85	Lime		
85-95	Lime and white flint		
95-165	Gray and white flint open ground		

Hole No. W-259 Started 11-25-23 Finished 11-28-23 (Cont'd)

165-180	Gray lime and blue flint	1.12	1.07
180-185	Gray flint fair lead and jack shines		
185-190	Open ground no cuttings	17.70	.02
190-201	Brown and gray flint good jack		
201-210	White flint		

Hole No. W-260 Started 11-29-23 Finished 12-6-23

0-25	Clay		
25-69	Soapstone		
69-105	Lime		
105-165	Lime and white flint		
165-180	Gray lime and blue flint		
180-190	White flint, open ground		
190-200	No cuttings		
200-210	Gray and brown flint, good jack, lead shines		
210-215	Gray and brown flint, fair jack	5.12	.02
215-225	White flint	3.75	.35

Hole No. W-261 Started 11-30-23 Finished 12-7-23

0-30	Surface and clay		
30-53	Soapstone		
53-63	Sandstone		
63-101	Soapstone		
101-120	Lime		
120-175	Gray lime and flint		
175-200	Brown flint and gray lime		
200-210	Brown white flint and lime		
210-215	Brown, black and white flint good jack	3.40	.02
215-220	White gray and black flint, good jack	10.00	.05
220-230	White flint		

Hole No. W-262 Started 12-6-23 Finished 12-14-23

0-25	Clay		
25-81	Soapstone		
81-105	White flint, gray sand and tar		
105-160	Gray flint		
160-175	Gray lime and blue flint		
175-180	Gray lime and trace of jack		
180-190	Gray lime and soapstone		
190-195	Gray flint and soapstone		
195-203	Gray flint and lead shines		
203-209	White flint		

Hole No. W-263 Started 12-8-23 Finished 12-18-23

0-28	Surface and clay		
28-52	Soapstone		
52-60	Sandstone boulders and soapstone		

Hole No. W-263 Started 12-8-23 Finished 12-18-23 (Cont'd)

60-102	Soapstone		
102-120	Lime		
120-125	Gray flint and lime		
125-130	Gray and brown flint, lime and tar pockets shot the hole at 130 feet		
130-135	Brown flint, tar, and good jack	7.07	6.90
135-140	Brown flint, tar, good jack	2.47	2.80
140-145	Gray and brown flint, good jack	5.20	.65
145-160	Brown and gray flint, jack shines a few lead shines		
160-175	Gray and white flint, a few jack and lead shines		
175-190	Gray and brown flint mundic, a few jack and lead shines		
190-210	Gray and white flint mundic a few lead and jack shines		
210-215	Gray, black and white flint spar, tiff good jack		
215-220	Gray, white and black flint good jack	4.72	.10
220-233	White flint		

Hole No. W-264 Started 12-15-23 Finished 12-19-23

0-25	Clay
25-89	Soapstone
89-95	Lime
95-110	Lime and white flint
110-120	Gray and white flint
120-175	Gray and brown flint
175-185	Gray and brown flint and soapstone
185-205	Gray flint soapstone and trace of lead
205-215	Gray and brownflint and soapstone
215-225	White flint

Hole No. W-265 Started 12-19-23 Finished 12-24-23

0-25	Clay		
25-84	Soapstone		
84-95	Lime and white flint		
95-105	Brown flint		
105-125	Blue and gray flint		
125-175	Blue flint and lime		
175-185	Gray flint		
185-190	Gray and white flint		
190-195	Gray and white flint		
195-200	Dark gray flint jack shines & trace of lead	3.22	.02
200-205	Gray flint and lead shines		
205-215	Gray and white flint		
215-224	White flint		

Hole No. W-266 Started 12-20-23 Finished 12-27-23

0-25	Surface and clay
25-50	Soapstone

Hole No. W-266 Started 12-20-23 Finished 12-27-23 (Cont'd)

50-63	Soapstone and sandrock		
63-95	Soapstone		
95-115	Lime		
115-125	Gray flint and lime		
125-130	Brown flint, tar and a few shines of jack		
130-135	White gray flint, jack shines		
135-155	White and brown flint		
155-175	Gray and white flint and a few shines of jack		
175-185	Gray and brown flint and lime		
185-195	Gray and white flint spar lime, and a few shines lead		
195-200	Gray and white flint extra good jack a few lead	24.75	.28
200-205	Gray, white, brown and black flint, good jack	7.05	.15
205-210	Gray, white brown and black flint	3.00	.05
210-215	White and gray flint, jack shines		
215-224	White flint		

Hole No. W-267 Started 12-30-23 Finished 1-5-24

0-25	Clay		
25-108	Soapstone		
108-120	Lime		
120-145	Lime and white flint		
145-160	Blue and gray flint		
160-165	Gray flint, trace of jack		
165-192	Gray flint		
192-215	White lime and blue flint		
215-230	Gray and blue flint, lead shines	.77	.15
230-245	White flint		

Hole No. W-268 Started 12-28-23 Finished 1-8-24

0-28	Surface and clay
28-50	Soapstone
50-65	Soapstone and boulders
65-97	Soapstone
97-120	Lime
120-155	Gray lime and flint
155-160	Gray and brown flint and lime
160-170	Blue and gray flint, lime a few shines of jack and lead
170-180	Blue and gray flint, lime a few shines of jack and lead
180-190	Brown, black and blue flint, good jack and a few shines of lead and some mundic
190-200	Blue, black, and gray flint, mundic, good jack and a few shines of lead
200-205	Gray and blue flint good jack
205-210	Gray and white flint, good jack and a few lead shines
210-215	Gray, white and black flint a few jack shines

Hole No. W-268 Started 12-28-23 Finished 1-8-24 (Cont'd)

215-221 White flint

Assay	ZnS	PbS
180-185	3.22	.35
185-190	12.15	2.80
190-195	3.75	.78
195-200	3.77	1.70
200-205	22.57	1.50
205-210	10.67	.30

Hole No. W-269 Started 1-5-24 Finished 1-11-24

0-30	Clay		
30-85	Soapstone		
85-130	Brown and gray flint		
130-165	Brown flint and lead shines		
165-175	Gray lime, blue and brown flint		
165-175	Gray lime and gray flint, (good lead shines) brown flint		
175-180	Gray lime and gray flint good lead shines	.45	.75
180-190	Gray flint and lead shines		
190-200	Dark gray flint jack shines		
200-210	Gray and light brown flint		
210-225	White flint		

Hole No. W-270 Started 1-2-24 Finished 1-22-24

0-28	Surface and clay		
28-50	Soapstone		
50-65	Soapstone and boulders		
65-90	Soapstone		
90-120	Lime		
120-160	Lime gray, and flint		
160-165	Gray and brown flint		
165-170	Black and brown hogchaw flint		
170-175	Brown and black flint and some lime		
175-180	Gray and brown flint-good jack and lead	5.25	1.75
180-185	Brown and gray flint extra good jack and lead shines	21.50	.98
185-190	Gray and brown flint good jack	6.50	.65
190-195	Brown and gray flint-extra good jack	47.30	4.20
195-200	Gray, white, and black flint-good jack	21.00	6.25
200-205	Black and white flint good jack shines and mundic	15.20	.47
205-210	Black and white flint jack shines	9.90	.50
210-215	White and black flint some jack shines		
215-218	White flint		

Hole No. W-271 Started 1-11-24 Finished 1-14-24

0-20	Clay

Hole No. W-271 Started 1-11-24 Finished 1-14-24 (Cont'd)

20-75	Soapstone		
75-85	Lime		
85-125	Blue and gray flint		
125-157	Brown and gray flint, trace of lead		
157-165	Gray lime and flint and lead shines		
165-200	Gray flint, jack and lead shines		
200-210	Gray flint		
210-226	White flint		

Hole No. W-272 Started 1-15-24 Finished 1-18-24

0-30	Clay		
30-85	Soapstone		
85-95	Lime		
95-140	Lime and blue flint		
140-160	Lime and light gray flint		
160-175	Gray lime		
175-185	Gray flint		
185-190	Gray flint, trace of lead		
190-195	Gray flint, trace of lead and jack		
195-200	Gray and black flint, fair jack and trace of lead	4.95	.10
200-205	Gray flint, jack shines		
205-210	Gray flint, lead shines		
210-225	White flint		
225-230	White and brown flint and lime		

Hole No. W-273 Started 1-22-24 Finished 1-29-24

0-25	Clay		
25-87	Soapstone		
87-100	Lime		
100-125	Gray lime and white flint		
125-160	Lime and gray flint		
160-175	Brown lime		
175-185	Black lime, blue and gray flint-fair lead	.75	2.80
185-200	Gray flint good shines of jack	2.32	.12
200-205	Gray flint and soapstone fair jack		
205-210	Gray flint		
210-235	White flint		

Hole No. W-274 Started 1-23-24 Finished 2-9-24

0-30	Surface
30-55	Soapstone
55-63	Soapstone and boulders
63-90	Soapstone
90-120	Lime
120-150	Gray lime and flint
150-155	Gray flint and some lime and some jack shines
155-160	Crevice no cuttings
160-170	Black and brown flint-lead and jack shines

Hole No. W-274 Started 1-23-24 Finished 2-9-24 (Cont'd)

170-190	Black and brown flint jack and lead shines		
190-195	Crevices-no cuttings	1.35	.09
195-200	Black and gray flint-good jack shines		
200-205	Gray and black flint- jack shines		
205-210	Gray, white and black flint good jack shines	4.50	.05
210-215	White, gray and brown flint jack shines		
215-221	White flint		

Hole No. W-275 Started 1-29-24 Finished 2-12-24

0-8	Chat
8-25	Clay
25-93	Soapstone
93-115	Lime
115-180	Gray lime and blue flint
180-215	Gray flint-jack shines and lead
215-235	Water flint
235-256	Gray lime and flint

Hole No. W-276 Started 2-8-24 Finished 2-22-24

0-25	Clay
25-58	Soapstone
58-85	Gray lime
85-120	Gray flint, lime
120-135	Opening no cuttings
135-165	Gray flint lime
165-195	Blue gray flint, lime

Hole No. W-277 Started 2-10-24 Finished 2-15-24

0-30	Surface and clay
30-55	Soapstone
55-63	Soapstone and boulders
63-98	Soapstone
98-115	Lime
115-125	Gray lime and flint
125-155	Gray flint and lime
155-160	Gray and brown flint and lime
160-165	Gray and brown flint and lime good jack
165-175	Brown and gray flint lime good jack
175-180	Gray lime and flint jack shines
180-190	Gray lime and brown flint few shines of jack
190-195	Gray lime and brown flint few lead shines
195-200	Brown and gray flint good jack
200-205	Open cave
205-210	No cuttings
210-215	Brown and white flint jack shines
215-220	Brown and white flint and few jack shines
220-228	White and some brown flint

Hole No. W-277 Started 2-10-24 Finished 2-15-24 (Cont'd)

Assay	ZnS.	PbS.
160-165	3.60	trace
165-170	3.75	trace
170-175	7.12	trace
175-195	0.52	trace
195-200	16.52	trace
200-215	3.22	trace

Hole No. W-278 Started 2-17-24 Finished 2-21-24

0-25	Clay		
25-85	Soapstone		
85-105	Lime		
105-165	Lime, blue and gray flint		
165-175	Gray lime and blue flint		
175-185	Gray lime and blue flint		
185-190	Gray lime, blue flint, fair jack and lead shines		
190-195	Gray flint fair jack and lead shines	6.15	.25
195-200	Gray flint fair jack and lead shines	5.00	.02
200-205	Gray flint jack shines	3.00	.01
205-223	Water flint	2.80	.01

Hole No. W-279 Started 2-17-24 Finished 2-27-24

0-28	Surface and clay		
28-60	Soapstone		
60-65	Soapstone and boulders		
65-105	Soapstone		
105-120	Lime		
120-135	Gray flint and lime		
135-140	Brown flint good jack	3.75	0.07
140-150	Brown flint, jack shines	1.40	0.13
150-155	Brown flint good jack	2.10	0.91
155-165	Gray and brown flint		
165-185	Gray and brown flint a few shines of jack and lead		
185-190	Brown flint, good lead and jack	3.75	4.32
190-195	Brown and blue flint, good jack and lead shines	4.76	0.73
195-200	White brown and blue flint good jack	16.65	0.21
200-205	Brown flint good jack	8.10	0.02
205-215	Gray and brown flint good jack	3.86	0.10
215-220	Brown and white flint jack shines	15.75	0.05
220-225	Gray and white flint jack shines	3.90	0.02
225-228	No cuttings		
	Lost bit in hole		

Hole No. W-280 Started 2-23-24 Finished 2-28-24

0-25	Clay
25-65	Soapstone

Hole No. W-280 Started 2-23-24 Finished 2-28-24 (Cont'd)

65-85 Gray lime
85-135 Gray lime, flint
135-140 Blue flint
140-160 Brown flint, shines of jack and trace of lead
160-170 Brown gray lime
170-180 Brown blue flint, lime
180-183 No cuttings
183-191 Brown dark gray flint, fair jack
191-203 White flint

Assay	Blende	Galena
140-145	1.35	.01
145-150	3.07	.015
150-155	1.12	.03
183-187	1.35	.02
187-191	1.65	.01

Hole No. W-281 Started 2-28-24 Finished 3-6-24

0-30 Surface and clay
30-99 Soapstone
99-115 Lime boulders and soapstone
115-130 Lime
130-145 Gray lime and flint
145-150 Gray flint some lime and lead shines
150-165 Gray and brown flint
165-185 Gray and brown flint
185-218 Lime boulders & soapstone lead shines mundic and lead jack shines
218-240 Brown flint-lead shines & a few jack shines mundic
240-260 Brown and gray flint lead shines, mundic and a few jack shines
260-264 White flint

Hole No. W-282 Started 2-29-24 Finished 3-4-24

0-30 Clay
30-87 Soapstone
87-100 Lime
100-165 Lime, blue and gray flint
165-185 Gray lime
185-200 Gray and blue flint
200-205 Open ground no cuttings
205-220 Gray flint fair lead and jack shines
220-228 Gray flint fair lead and trace of jack
228-232 Water flint

Assay		
205-210	1.04	.23
210-215	1.19	.58
215-220	.90	1.72
220-225	.45	1.15

Hole No. W-282 Assay (Cont'd)

225-228	.15	.93

Hole No. W-283 Started 2-29-24 Finished 3-6-24

0-25	Clay
25-64	Soapstone
64-85	Lime
85-110	Gray flint lime
110-120	No cuttings
120-150	Blue gray flint
150-195	Blue brown flint
195-210	White flint

EXHIBIT NUMBER I

A map showing the location of all the drill holes, the areas used in the foregoing estimate and the area mined to the date of the last discovery. A study of this map and the drill hole logs will show how the development was carried on and how the various discoveries were made.

EXHIBIT NUMBER II

A chart showing depletion rate;given the net present value and the total number of tons of concentrates.

Example:-

Given a net present worth of $150,000.00 and total concentrates of 12,500 tons.

Find the amount $150,000.00 along the upper edge of the graph. Follow the curved line until it crosses the vertical line designating 12,500 tons. From this intersection go to the left along the horizontal line to the rate of depletion, which is $12.00 per ton.

EXHIBIT NUMBER III.

A chart showing the rate of depreciation when given the value and the amount of developed ore.

Example:-

A mill and equipment valued at $100,000.00 with a reserve developed of 150,000 tons.

Find the amount $100,000.00 along the upper edge of the graph. Follow the curved line to where it intersects with the vertical line designating 150,000 tons. Follow to the left along the horizontal line to the rate per ton which is, in this case, $0.66-2/3 per ton.

EXHIBIT NUMBER IV

A chart showing price of 60% zinc concentrates in dollars per ton; the price of slab zinc in dollars per 100 pounds and the smeltic spread in dollars per ton of concentrates. In computing the smeltic spread a constant of 85% recovery efficiency, for smelting, was assumed.

Example:-

In June 1915, the price of slab zinc was 22 cents per pound and 60% zinc concentrates were selling for $100.00 per ton. A ton of 60% zinc concentrates produces 1020 pounds (2000 x .60 x .85) of slab zinc. The smelter receives 1020 x 22 = $224.00 for zinc purchased for $100.00 or a difference of $124.00 per ton. This difference is known as the smeltic spread. It will be noted after a glance at the chart that this spread is not constant. An effort is being made by the mine operators to maintain an even spread.

EXHIBIT NUMBER V

A chart showing profit or loss per ton of concentrates produced at a given ore recovery and a given price. The rock cost is assumed to be $2.00 per ton.

Example:-

At a price of $40.00 per ton for concentrates a mine making a 8% recovery. Find $40.00 along the top edge of the sheet. Follow the vertical line down to where it intercepts the oblique line designating 8% recovery. Follow left along the horizontal line to the profit per ton. In this case, $15.00.

Example:-

A price of $40.00 for concentrates and a recovery of 5%. Going left from the intersection of the $40.00 vertical line and the 5% recovery line, the profit is zero.

EXHIBIT NUMBER VI

A chart showing the cost per ton of concentrates with a given rock ton cost and a given recovery.

Example:-

Given a rock cost of $1.50 per ton and a recovery of 6%. Find $1.50 at the upper left of the chart and follow the curved line to where it intercepts the horizontal line designating 6%. Follow down the vertical line to cost per ton of concentrates; in this case $25.00.

EXHIBIT NUMBER VII

A photostat copy of the table showing:

1. Annual payment which, with interest, will amount to $1.00 at the end of a given time.

2. Present or discounted value of each $1.00 of total income receivable in equal annual amounts, Hoskold Sinking Fund Valuation Premises, 4% sinking fund rate of interest.

Both tables are from "Principles of Valuation" by Hoskold.

Table III.—Annual Payment Which, with Interest, Will Amount to 1.00 at the End of a Given Time.

Year	2%	2½%	3%	3½%	4%	4½%	5%	5½%	6%	6½%	7%	8%	9%	10%
1	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000	1.000000
2	.495050	.493827	.492611	.491400	.490196	.488998	.487805	.486618	.485437	.484262	.483092	.480769	.478469	.476190
3	.326755	.325137	.323530	.321934	.320349	.318773	.317209	.315654	.314110	.312576	.311052	.308034	.305055	.302115
4	.242624	.240818	.239027	.237251	.235490	.233744	.232012	.230295	.228591	.226903	.225228	.221921	.218669	.215471
5	.192158	.190247	.188355	.186481	.184627	.182792	.180975	.179176	.177396	.175635	.173891	.170456	.167092	.163797
6	.158526	.156550	.154597	.152668	.150762	.148878	.147017	.145179	.143363	.141568	.139796	.136315	.132920	.129607
7	.134512	.132495	.130506	.128545	.126610	.124701	.122820	.120964	.119135	.117331	.115553	.112072	.108691	.105405
8	.116510	.114467	.112456	.110477	.108528	.106610	.104722	.102864	.101036	.099237	.097468	.094015	.090674	.087444
9	.102515	.100457	.098434	.096446	.094493	.092574	.090690	.088839	.087022	.085238	.083486	.080080	.076799	.073641
10	.091327	.089259	.087231	.085241	.083291	.081379	.079505	.077668	.075868	.074105	.072378	.069029	.065820	.062745
11	.082178	.080106	.078077	.076092	.074149	.072248	.070389	.068571	.066793	.065055	.063357	.060076	.056947	.053963
12	.074560	.072487	.070462	.068484	.066552	.064666	.062825	.061029	.059277	.057568	.055902	.052695	.049651	.046763
13	.068118	.066048	.064030	.062062	.060144	.058275	.056456	.054684	.052960	.051283	.049651	.046522	.043567	.040779
14	.062602	.060537	.058526	.056571	.054669	.052820	.051024	.049279	.047585	.045940	.044345	.041297	.038433	.035746
15	.057825	.055766	.053767	.051825	.049941	.048114	.046342	.044626	.042963	.041353	.039795	.036830	.034059	.031474
16	.053650	.051599	.049611	.047685	.045820	.044015	.042270	.040583	.038952	.037378	.035858	.032977	.030300	.027817
17	.049970	.047928	.045953	.044043	.042199	.040418	.038699	.037042	.035445	.033906	.032425	.029629	.027046	.024664
18	.046702	.044670	.042709	.040817	.038993	.037237	.035546	.033920	.032357	.030855	.029413	.026702	.024212	.021930
19	.043782	.041761	.039814	.037940	.036139	.034407	.032745	.031150	.029621	.028156	.026753	.024128	.021730	.019547
20	.041157	.039147	.037216	.035361	.033582	.031876	.030243	.028679	.027185	.025756	.024393	.021852	.019546	.017460
21	.038785	.036787	.034872	.033037	.031280	.029601	.027996	.026465	.025005	.023613	.022289	.019832	.017617	.015624
22	.036631	.034647	.032747	.030932	.029199	.027546	.025971	.024471	.023046	.021691	.020406	.018032	.015905	.014005
23	.034668	.032696	.030814	.029019	.027309	.025682	.024137	.022670	.021278	.019961	.018714	.016422	.014382	.012572
24	.032871	.030913	.029047	.027273	.025587	.023987	.022471	.021036	.019679	.018398	.017189	.014978	.013023	.011300
25	.031220	.029276	.027428	.025674	.024012	.022439	.020952	.019549	.018227	.016981	.015811	.013679	.011806	.010168
26	.029699	.027769	.025938	.024205	.022567	.021021	.019564	.018193	.016904	.015695	.014561	.012507	.010715	.009159
27	.028293	.026377	.024564	.022852	.021239	.019719	.018292	.016952	.015697	.014523	.013426	.011448	.009735	.008258
28	.026990	.025088	.023293	.021603	.020013	.018521	.017123	.015814	.014593	.013453	.012392	.010489	.008852	.007451
29	.025778	.023891	.022115	.020445	.018880	.017414	.016046	.014679	.013580	.012474	.011449	.009619	.008056	.006728
30	.024650	.022778	.021019	.019371	.017830	.016392	.015051	.013805	.012649	.011577	.010586	.008827	.007336	.006079
31	.023596	.021739	.019999	.018372	.016855	.015443	.014132	.012917	.011792	.010754	.009797	.008107	.006686	.005496
32	.022611	.020768	.019047	.017442	.015949	.014563	.013280	.012095	.011002	.009997	.009073	.007451	.006096	.004972
33	.021687	.019859	.018156	.016572	.015104	.013745	.012490	.011335	.010273	.009299	.008408	.006852	.005562	.004459
34	.020819	.019007	.017322	.015760	.014315	.012982	.011755	.010630	.009598	.008656	.007797	.006304	.005077	.004074
35	.020002	.018206	.016539	.014998	.013577	.012270	.011072	.009975	.008974	.008062	.007234	.005803	.004636	.003690
36	.019233	.017452	.015804	.014284	.012887	.011606	.010434	.009366	.008395	.007513	.006715	.005345	.004235	.003
37	.018507	.016741	.015112	.013613	.012240	.010984	.009840	.008800	.007857	.007005	.006237	.004924	.003870	.00
38	.017821	.016070	.014459	.012982	.011632	.010402	.009284	.008272	.007358	.006535	.005795	.004539	.003538	
39	.017171	.015436	.013844	.012388	.011061	.009856	.008765	.007780	.006894	.006099	.005387	.004185	.003236	
40	.016556	.014836	.013262	.011827	.010523	.009343	.008278	.007320	.006462	.005694	.005009	.003860	.002960	
41	.015972	.014268	.012712	.011298	.010017	.008862	.007822	.006891	.006059	.005318	.004660	.003562	.002	
42	.015417	.013729	.012192	.010798	.009540	.008409	.007395	.006489	.005683	.004968	.004336	.003287	.00	
43	.014890	.013217	.011698	.010325	.009090	.007982	.006993	.006113	.005333	.004644	.004036	.003034		
44	.014388	.012730	.011230	.009878	.008665	.007581	.006616	.005761	.005006	.004341	.003758	.002802		
45	.013910	.012268	.010785	.009453	.008262	.007202	.006262	.005431	.004700	.004060	.003500	.002587		
46	.013453	.011827	.010363	.009051	.007882	.006845	.005928	.005122	.004415	.003797	.003260	.002390		
47	.013015	.011407	.009961	.008669	.007522	.006507	.005614	.004831	.004148	.003553	.003037	.002208		
48	.012602	.011006	.009578	.008306	.007181	.006189	.005318	.004559	.003898	.003325	.002831	.002040		
49	.012209	.010623	.009213	.007962	.006857	.005887	.005040	.004302	.003664	.003112	.002639	.001886		
50	.011833	.010258	.008865	.007634	.006550	.005602	.004777	.004061	.003444	.002914	.002460	.001743		

Table VI.—Present or Discounted Value of Each 1.00 of Total Income Receivable in Equal Annual Amounts, Hoskold Sinking Fund Valuation Premises, 4% Sinking Fund Rate of Interest.

Year	4%	5%	6%	7%	8%	9%	10%	11%	12%	13%	14%	15%	16%	17%	18%	19%	20%	Years
1	.961538	.952381	.943396	.934579	.925926	.917431	.909091	.900901	.892857	.884956	.877193	.869565	.862069	.854701	.847458	.840336	.833333	1
2	.943047	.925590	.908767	.892545	.876891	.861778	.847176	.833061	.819409	.806197	.793404	.781011	.768999	.757351	.746050	.735082	.724432	2
3	.925030	.900053	.876389	.853938	.832608	.812318	.792993	.774566	.756976	.740167	.724089	.708694	.693941	.679789	.666202	.653148	.640596	3
4	.907474	.875687	.846052	.818357	.792418	.768073	.745179	.723610	.703255	.684013	.665791	.648525	.632127	.616538	.601699	.587558	.574066	4
5	.890364	.852416	.817571	.785462	.755780	.728260	.702674	.678824	.656540	.635673	.616091	.597680	.580337	.563973	.548506	.533864	.519984	5
6	.873689	.830171	.790778	.754961	.722245	.692247	.664641	.639153	.615547	.593623	.573207	.554148	.536316	.519596	.503887	.489100	.475166	6
7	.857436	.808887	.765540	.726603	.691435	.659514	.630411	.603767	.579285	.556710	.535829	.516458	.498438	.481634	.465925	.451209	.437394	7
8	.841593	.788505	.741717	.700171	.663032	.629635	.599440	.572010	.546979	.524048	.502962	.483507	.465501	.448788	.433234	.418721	.405150	8
9	.826148	.768972	.719198	.675476	.636765	.602251	.571286	.543349	.518017	.494942	.473836	.454455	.436598	.420091	.404787	.390558	.377296	9
10	.811090	.750239	.697881	.652354	.612404	.577064	.545581	.517355	.491906	.468843	.447846	.428649	.411051	.394803	.379808	.366910	.352994	10
11	.796407	.732258	.677672	.630660	.589748	.553820	.522019	.493671	.468244	.445307	.424513	.405574	.388253	.372351	.357700	.344168	.331605	11
12	.782089	.714987	.658490	.610267	.568626	.532304	.500344	.472004	.446703	.423976	.403449	.384819	.367833	.352283	.337995	.324820	.312634	12
13	.768127	.698388	.640259	.591062	.548887	.512330	.480338	.452106	.427009	.404552	.384339	.366050	.349422	.334239	.320321	.307516	.295695	13
14	.754509	.682424	.622911	.572946	.530401	.493738	.461816	.433771	.408937	.386792	.366923	.348996	.332738	.317928	.304380	.291940	.280476	14
15	.741226	.667060	.606385	.555828	.513053	.476391	.444619	.416820	.392293	.370492	.350986	.333432	.317549	.303111	.289929	.277846	.266730	15
16	.728268	.652265	.590626	.539630	.496741	.460168	.428511	.401104	.376915	.355477	.336347	.319171	.303663	.289593	.276769	.265033	.254251	16
17	.715628	.638009	.575581	.524281	.481377	.444964	.413672	.386492	.362664	.341603	.322854	.306056	.290920	.277210	.264734	.253333	.242873	17
18	.703294	.624267	.561205	.509715	.466880	.430685	.399699	.372873	.349421	.328744	.310378	.293955	.279183	.265825	.253686	.242608	.232457	18
19	.691260	.611010	.547455	.495876	.453179	.417252	.386603	.360148	.337083	.316793	.298808	.282755	.268339	.255321	.243508	.232740	.222884	19
20	.679516	.598217	.534292	.482711	.440212	.404590	.374303	.348234	.325560	.305658	.288049	.272358	.258289	.245601	.234102	.223632	.214068	20
21	.668055	.585864	.521680	.470172	.427921	.392637	.362729	.337054	.314774	.295257	.278019	.262682	.248949	.236581	.225383	.215198	.205893	21
22	.656869	.573930	.509587	.458217	.416255	.381334	.351819	.326544	.304658	.285521	.268646	.253654	.240248	.228186	.217279	.207366	.198319	22
23	.645950	.562395	.497981	.446806	.405169	.370630	.341517	.316645	.295150	.276388	.259868	.245212	.232120	.220356	.209727	.200076	.191274	23
24	.635290	.551242	.486835	.435904	.394620	.360479	.331776	.307306	.286198	.267803	.251630	.237299	.224513	.213034	.202672	.193271	.184703	24
25	.624883	.540453	.476123	.425478	.384571	.350840	.322550	.298481	.277755	.259720	.243885	.229869	.217377	.206173	.196067	.186905	.178562	25
26	.614722	.530011	.465820	.415498	.374988	.341676	.313799	.290128	.269778	.252095	.236588	.222878	.210670	.199730	.189870	.180938	.172809	26
27	.604799	.519902	.455905	.405936	.365839	.332951	.305489	.282212	.262230	.244899	.229703	.216289	.204355	.193669	.184045	.175333	.167408	27
28	.595109	.510110	.446356	.396768	.357097	.324637	.297587	.274698	.255078	.238075	.223196	.210068	.198398	.187957	.178560	.170058	.162328	28
29	.585645	.500621	.437155	.387970	.348734	.316704	.290064	.267557	.248292	.231615	.217037	.204185	.192770	.182564	.173385	.165084	.157542	29
30	.576401	.491424	.428283	.379521	.340727	.309128	.282893	.260763	.241844	.225484	.211198	.198614	.187445	.177465	.168496	.160387	.153024	30
31	.567371	.482505	.419724	.371400	.333054	.301885	.276051	.254290	.235709	.219659	.205655	.193330	.182398	.172637	.163867	.155945	.148754	31
32	.558548	.473854	.411463	.363589	.325695	.294954	.269516	.248117	.229866	.214116	.200387	.188311	.177609	.168057	.159481	.151737	.144710	32
33	.549929	.465459	.403483	.356072	.318632	.288316	.263268	.242224	.224295	.208837	.195373	.183540	.173058	.163709	.155318	.147745	.140876	33
34	.541506	.457310	.395773	.348833	.311847	.281952	.257288	.236591	.218976	.203803	.190596	.178996	.168728	.159574	.151361	.143953	.137256	34
35	.533275	.449397	.388318	.341856	.305324	.275846	.251559	.231203	.213894	.198997	.186039	.174666	.164603	.155637	.147597	.140347	.133776	35
36	.525230	.441710	.381108	.335129	.299050	.269984	.246067	.226043	.209033	.194404	.181688	.170534	.160670	.151885	.144011	.136913	.130481	36
37	.517367	.434242	.374131	.328638	.293009	.264350	.240798	.221099	.204379	.190011	.177530	.166587	.156915	.148305	.140590	.133639	.127	37
38	.509681	.426983	.367375	.322371	.287190	.258932	.235737	.216356	.199920	.185804	.173550	.162813	.153327	.144885	.137325	.130514	.1	38
39	.502166	.419926	.360832	.316318	.281581	.253719	.230874	.211803	.195642	.181773	.169740	.159201	.149894	.141616	.134203	.127529		39
40	.494819	.413063	.354492	.310468	.276171	.248698	.226196	.207428	.191536	.177906	.166087	.155740	.146607	.138486	.131217	.124674		40
41	.487635	.406386	.348346	.304812	.270950	.243860	.221694	.203223	.187592	.174194	.162583	.152422	.143457	.135488	.128358	.12197		41
42	.480610	.399890	.342385	.299339	.265909	.239195	.217359	.199176	.183800	.170628	.159218	.149238	.140436	.132614	.125617	.11		42
43	.473739	.393567	.336602	.294043	.261038	.234694	.213180	.195280	.180152	.167200	.155985	.146180	.137535	.129856	.122988			43
44	.467019	.387411	.330990	.288914	.256329	.230349	.209148	.191525	.176640	.163901	.152876	.143241	.134748	.127206	.120464			44
45	.460445	.381416	.325541	.283945	.251774	.226152	.205262	.187906	.173256	.160725	.149884	.140414	.132069	.124660	.118039			45
46	.454014	.375576	.320249	.279129	.247367	.222095	.201508	.184414	.169995	.157665	.147003	.137692	.129491	.122211	.115706			46
47	.447705	.369887	.315107	.274459	.243100	.218173	.197882	.181044	.166847	.154714	.144227	.135071	.127008	.119853	.113462			47
48	.441565	.364342	.310109	.269929	.238967	.214377	.194376	.177788	.163809	.151868	.141549	.132544	.124616	.117582	.111301			48
49	.43554	.358938	.305250	.265534	.234962	.210704	.190986	.174642	.160875	.149120	.138966	.130107	.122309	.115394	.109218			49
50	.42964	.353668	.300525	.261266	.231080	.207146	.187705	.171600	.158040	.146466	.136472	.127755	.120084	.113282	.107210			50

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2. Sailer's "Account Handbook"

3. Hoskold's "Principles of Valuation"

The following charts are not entirely original by the writer, but were drawn at the suggestion of various organizations in the Tri-State District in an effort to solve some of their depletion problems.