

Chapter E

Fundamentals of Non-Conventional Cadastral Surveys

E1

The Mining Laws - Historical Background

The Land Ordinance passed by the Continental Congress on May 20, 1785, contains a proviso reserving from the townships "...one-third part of all gold, silver, lead and copper mines, to be sold, or otherwise disposed of as Congress shall hereafter direct."

Except for a somewhat unsuccessful attempt to lease the lead mines in Missouri, Illinois and Wisconsin, Congress did very little "hereafter directing" until 1866. Early day surveyors of the public lands were required to make note of mineral and salt deposits, among other things, but there is little evidence that this information was used to any extent in the disposal of the minerals. Large iron and copper deposits were known to exist in Michigan, Wisconsin and Minnesota, yet most of these lands were disposed of on the same cash-entry basis as the normal agricultural lands. The usual price of \$5 per acre hardly reflected the value of the minerals contained on and under these lands.

Though some small deposits of placer gold were discovered and mined near Los Angeles in 1820, and near Gold Hill, North Carolina, in 1842, the first great mining activity in this country was the 1849 Gold Rush to the placer mines in California.

The thousands of American and foreign citizens who flocked to the gold fields in hope of becoming rich were all trespassers on the public domain. Since Congress had enacted no laws preventing the taking of gold from the public lands, those engaged in mining took the silence on the matter as acquiescence, or even tacit approval.

In the absence of statutory mining laws, and the absence of law enforcement officers, the miners made their own laws. They formed vigilante committees and enforced their rules with ropes and gun powder. Their methods proved, generally, to be effective.

Under these "miner's laws," which were based primarily on the "right of possession" and the Spanish laws of discovery and development, the first person to discover and stake claim to a mine, and then proceed to work that mine, was in possession. To the miners, possession was nine-tenths of the law.

If a miner abandoned his claim by failure to actively work it, the claim could be re-staked by someone else. This led to claim jumping and other problems. In order to deal with these problems, the miners formed "mining districts." They elected officials who accepted claims, kept records, made rules and heard disputes. Although the rules sometimes varied from one district to another they soon came to be much the same as the miners moved rapidly from one district to another in search for greater riches.

As states came into the Union or territories were created by Congress, the respective legislatures passed mining laws and regulations. In 1850, California passed a "Possessory Act," which regulated mining on agricultural lands in possession of someone other than the miner. Regardless of the Possessory Act or who held "possession," the lands were still part of the public domain of the United States.

Placer Mines and Lode Mines

Placer mines are those in which the mineral is found in free form, such as nuggets or flakes, in superficial sand or gravel deposits. Placer mines require large amounts of water to operate sluice boxes and other washing or panning apparatus used by miners to retrieve precious mineral from dirt, sand or gravel.

The placer miners dug ditches and canals along the mountain sides to bring the required water to their claims even though these early mining ditches were dug in trespass on the public domain.

Placer mining was predominant until the discovery, in 1859, of the silver-rich Comstock Lode at Virginia City, Nevada.

A lode claim is located on a vein of hard rock in place. Lode mines require tunnels and mills to reach, extract and process the ore.

Lode mining presented problems different from those of placer mining. For example: What if a miner discovered other veins of valuable mineral not previously known to exist while drilling a tunnel to his own vein? And if a miner should build a mill on top of a vein of ore, who would own that vein? By comparison the placer mining problems were few due to the fact that those workings were usually on the surface. Lode mines were such a different matter that their operation required many more laws and regulations.

1866 -The First Congressional Statutes

Congress disposed of the lead mines in the State of Arkansas and Illinois and the Territories of Iowa and Wisconsin in 1846 (9 Stat. 37) and then, for all practical purposes, was silent on the subject of mining for 20 years. Although there were many heated debates over the mineral lands and how they should be leased or sold, nothing significant materialized from all the discussion until July 25, 1866. On that date Congress passed an act entitled, "An Act Granting to A. Sutro the Right of Way, and Granting Other Privileges to Aid in the Construction of a Draining and Exploring Tunnel to the Comstock Lode, in the State of Nevada" (14 Stat. 242).

Under the terms of this Act, Sutro was granted the right to drill a tunnel and claim up to two sections of non-mineral land, not in the possession of others, near the entrance of the tunnel. He was also granted the right to purchase the mineral veins and lodes within 2000 feet of each side of the tunnel, at prices from \$1.25 to \$5 per acre. Subject to the various stipulations and provisions of the act, a patent was to be issued for the lodes and veins.

The day after passage of this act, July 26, 1866, Congress passed "An Act granting Right of Way to Ditch and Canal Owners over the Public Land, and for other purposes" (14 Stat. 251). Section 9 of the Act does grant such a right of way. Section 1, however, declared its main purpose; "...the mineral lands of the public domain, both surveyed and unsurveyed, are...free and open to exploration and occupation..." Regardless of its title, it was unquestionably a Lode Mining Act.

Section 3 set forth the procedures to be followed in making proper application for patent and pointed out that "...it shall be the duty of the surveyor-general, upon application of the party, to survey the premises and make a plat thereof..."

In no case was the plat, surveyor description, or the patent, to cover more than one vein or lode.

The fourth section of the Act limits the length of a lode claim filed after passage of the Act to 200 ft; no minimum or maximum width is mentioned. All lode claims made prior to July 26, 1866, were to be in conformity, as to size, shape, etc., with the customs of the miners and local laws and rules. Each person could make only one location on a lode or vein. An association of persons was limited to 3000 feet (15 locations) along a single vein or lode.

Section 10 of this Act provided for agricultural entry on lands previously withdrawn as mineral lands on which no "valuable mines" had been discovered.

No mention of placer claims was made in the 1866 Mining Act. The prolonged silence of Congress in regard to placer claims was broken four years later.

1870 -Placer Claims Added

On July 9, 1870 (16 Stat. 217), the lode Claim Act of 1866 was amended by the addition of sections 12 through 17.

Section 12 made placer claims, which included "...all forms of deposit, excepting veins of quartz or other rock in place...", subject to entry and patent. Where the lands were previously surveyed according to the rectangular system, the entry was to conform to legal subdivisions and was limited to 160 acres for each claimant or association of claimants. This section also provided "that the legal subdivision of forty acres may be subdivided into ten-acre tracts." No specific mention is made of how the claim was to be made on unsurveyed lands and there was no requirement that the deposit be valuable.

Section 13 provides that placer claims must meet requirements of State or Territory statutes concerning limitations for mining claims. Presumably placer claims made prior to July 9, 1870, would come under the local laws and customs mentioned throughout the first 11 sections of the Act.

It took less than two years for some of the obvious deficiencies of the Placer Act to be corrected.

1872 -The Mining Act

The Act adopted by Congress on May 10, 1872 (17 Stat. 91) is still the basic mining law of the United States. There have been amendments pertaining to coal, oil and gas (minerals which are now leased), but insofar as the Act pertains to lodes and placers, it is still in effect. Most of the mining claims requiring resurvey by the cadastral surveyors of the Bureau of Land Management were patented after the passage of this 100 year old statute.

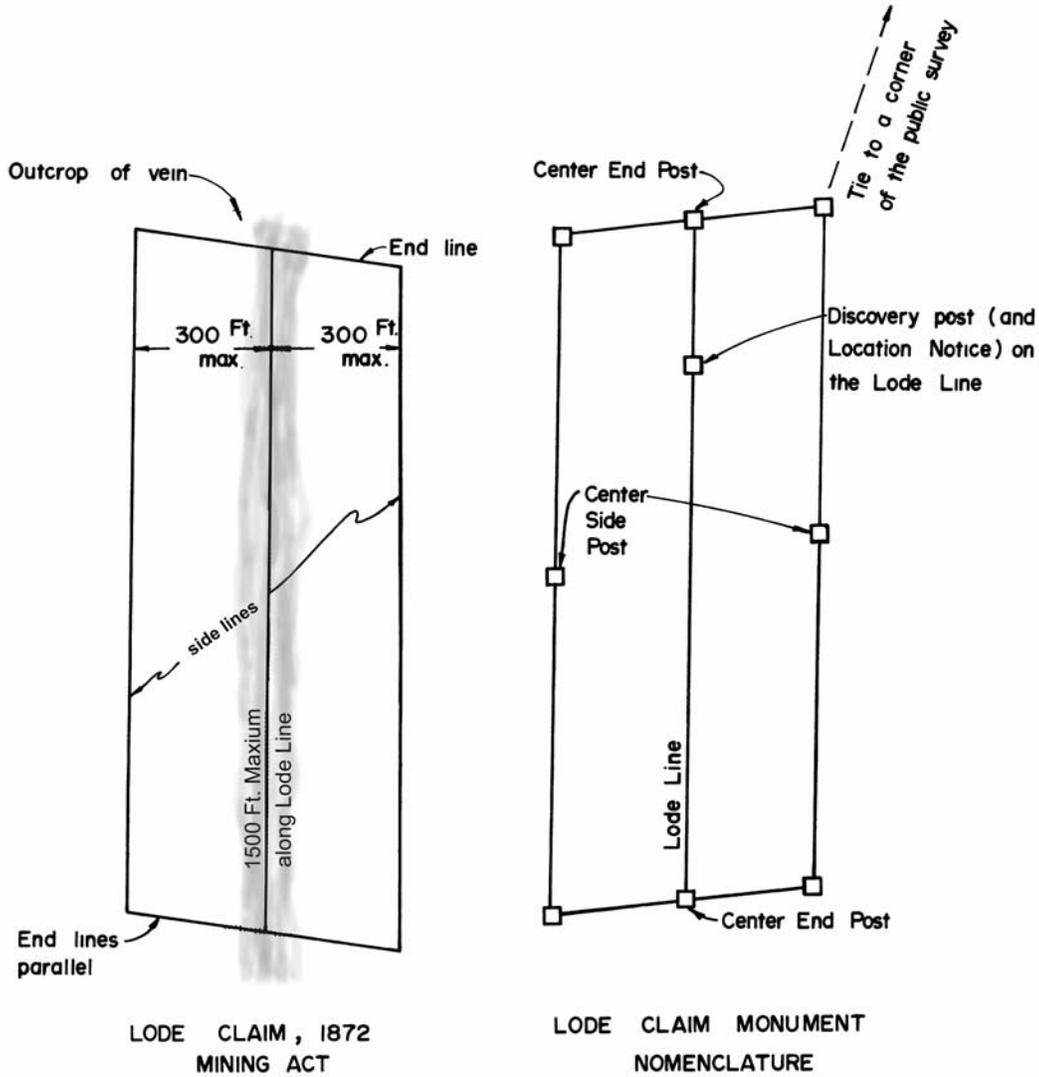
Probably no other law of the land has created more litigation or has been interpreted more by lawyers and the courts. Few of these legal cases have had direct connection with the dependent resurvey of a mining claim. A cadastral

surveyor must, however, have a basic understanding of the mining laws and the various decisions regarding them in order to resurvey a patented claim. Such knowledge is also required when surveyors must restore the corners of patented mining claims in order to segregate them from the remaining public lands.

This discussion is limited to the fundamentals of the laws concerned with mining in the United States. For a more complete treatment of the subject, refer to the 1872 Mining Act, 17 Stat. 91; U.S. Code, Title 30, and the numerous books that have been written on mining claims and mining laws.

Lode Claims

An individual may make a claim upon "...veins or lodes of quartz or other rock in place bearing gold, silver, cinnabar, lead, tin, copper, or other valuable deposits..." The lode claim is limited to 1500 feet in length along the vein and 600 feet in width (300 feet each side of the vein) as measured at right angles to the vein or "lode line." The end lines of a lode claim must be parallel.



When a prospector finds a vein or lode which he believes to contain valuable mineral, he follows a more or less basic process in establishing his claim. He places a post at his discovery point and traces out the vein, as nearly as is possible, to determine the lode line. By whatever means he has available, he places posts at the four corners of his claim. He places a notice and description of his claim in a suitable container (usually a can or jar) on his discovery post.

Claims may be located in the following states: Alaska, Arizona, Arkansas, California, Colorado, Florida, Idaho, Louisiana, Mississippi, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oregon, South Dakota, Utah, Washington, and Wyoming.

The prospector must comply with varying state laws as well as the Federal statutes. Some states require center end posts, that is, posts on the lode line at the end of his claim. Other states require center side posts. North Dakota is the only state that restricts the maximum of 600 feet in width.

After he has made his discovery and staked his claim, the claimant files a location notice with the county clerk or recorder in the county in which the claim is located. Before the counties were formed, such notices were filed with the mining district recorder. A notice of location must contain a description of the claim and a tie to a permanent land monument such as a section or ¼ section corner, or a location monument, or a tie to natural features which make it possible for the claim to be identified.

There are three things the locator must watch out for. He must not stake his claim on lands withdrawn by the BIM from mineral entry. He must not stake his claim on lands already patented in fee to someone else. He must be careful not to place his discovery point on a claim location already staked by and in possession of a prior locator. He may stake his claim in conflict with a prior claim but, if he does so, he should show the prior claim and where the claims overlap.

Survey Not Required

The claimant need not have the claim surveyed. To hold possession he must do at least \$100 worth of "assessment" work on the claim each year. As long as he remains in possession and works the mine as a paying operation, he does not need to have the claim surveyed and he does not need to make application for patent. Many multi-million dollar mines operate on unpatented mining claims.

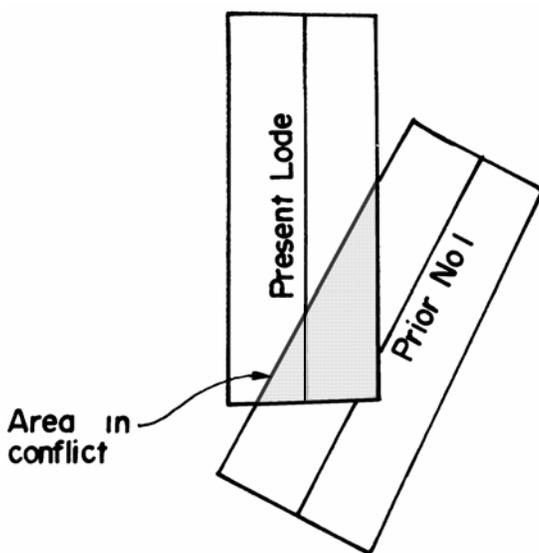
U.S. Mineral Survey

If a mining claimant does wish to patent his claim, he must first have it surveyed. The claimant must pay the cost of the survey and the attendant expenses of field note and plat preparation, application fees, etc. The Bureau of Land Management asserts rigid control over the manner in which the mineral surveys are conducted and reported. The Bureau examines and appoints qualified mineral surveyors. These surveyors, ordinarily private practitioners, occupy a peculiar position in that during the execution of the surveys they are technically Government employees even though their fees are paid by the claimants who employ them.

A claimant who wishes to arrange for a mineral survey should first request an official list of appointed mineral surveyors from the Bureau of Land Management. He may then select a surveyor from the list and make financial arrangements with him. The claimant may then make application for a mineral survey.

Instructions are written which, among other things, direct the mineral surveyor to execute the survey, inform him of other known U.S. Mineral Surveys in the area and assign a U.S. Mineral Survey number. Usually claimants also give their lode claims a name, such as "Nellie lode," or "Black Jack No.1." The names are for identification purposes and they simplify reference to specific lode claims.

A claimant has the right at any time to fire the mineral surveyor and choose his successor. The Bureau of Land Management, however, tells the surveyor how his survey is to be conducted.



Once an application for survey has been made the claimant is precluded from amending his location. If he did not have the assistance of a surveyor when he staked the location, his location may not have parallel endlines or may be oversize, undersize or the like. If there are no other locations adjacent to or in conflict with his claim he may choose, prior to applying for a survey, to amend his location to correct the defects. However, if he does amend his location, his location rights start on the date the location is amended. Once the Order for Mineral Survey is issued, the surveyor must make the survey within the lines as marked by the location posts. He must make the endlines of lode claims parallel and the lode must not exceed the length and width restrictions.

In making the mineral survey the surveyor must show any conflicts with patented land, prior mineral surveys and any conflicts with claims within the same group of claims when there is a group-claim survey. Known conflicts with prior locations, even if they are unsurveyed, should also be shown if they are to be excluded. The surveyor must

tie Corner Number One of each claim to, preferably, the nearest identified corner of the rectangular survey system within a two mile distance or to a location monument within the limiting distance.

When the required field work is completed the mineral surveyor must submit his field notes and a plat of the survey to the BLM, along with an estimated value of all improvements and expenditures found within his survey. The field notes are checked for correctness and the mineral survey plat is prepared by the BLM, with costs charged to the claimant.

Mineral surveyors are now appointed by the Washington Office (43 CFR 3861.5), but mineral surveys are not submitted to the Washington Office as is the case with other public land surveys. Instead, when all is in proper order, a mineral survey is approved at the State Office level. Once approved, the mineral survey becomes an official government survey with all the attendant restrictions and regulations pertaining thereto.

A mineral survey by itself confers no rights to the claimant that he did not have under his original location. It is more of a pre-requisite to patent than anything else at this point. After the survey is approved the claimant may apply for patent, though he is not required to do so.

Field Examination Prior to Patent

If a claimant applies for a patent, an examination is made of his claim by a qualified mineral examiner, a government employee, who determines whether or not the claim is valid under the law. To be a bona fide claim it must contain "valuable" minerals. This has long been defined as minerals sufficient in quantity and quality and of such character as to encourage a prudent person to expend time, labor and money to extract those minerals with a reasonable degree of expectancy of making a profit from the endeavor. Almost any vein or lode in the mining areas of the country will contain traces of metals. A mere trace or mineral of low quality would not, however, constitute a valid claim (U.S. v. Coleman, 88 S. Ct. 1327; 20 LEd. 2d 170).

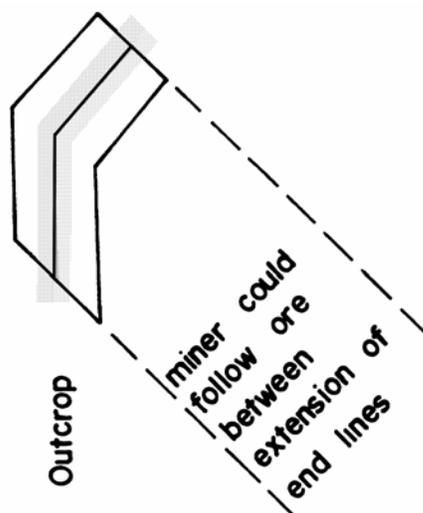
If found valid and free of adverse claims after the required posting and advertising, the claim will go to patent, with payment at the rate of \$5 per acre.

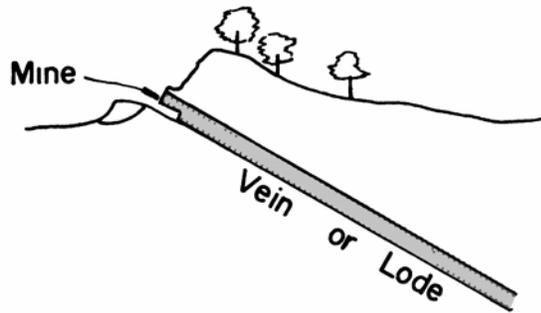
Conflicts with prior patents or other claims within a group or with valid lode locations held by other claimants, and which are excluded from the patent description, are the cause of most of the cadastral surveyor's problems when he is executing a resurvey to define the boundaries of the public lands.

The Surveyor and the Provisions of the 1872 Mining Law

Section 2 of the 1872 Mining Act limits a lode claim to 1500 feet in length along the vein and 300 feet in width on each side of the vein. These dimensions may be reduced by local statutes or mining regulations but cannot be reduced in width by such rules to less than 25 feet each side of the vein. The end lines of the claim must be parallel. No minimum length is specified.

In early mining practice many claims were much less than 1500 feet long and as little as the minimum 50 feet in width. Since the side lines do not have to be parallel the claims often had two, three or more courses along a side line, but never a dog-leg in the end line. The end lines were required to have a "substantial" length (34 L.D. 470, 35 L.D. 22). Claims made prior to the 1872 Mining Act, under the provisions of the 1866 Mining Act, could be made by up to 15 locators but could later be surveyed as one claim. This resulted, on occasion, in a patent for a mineral survey which is up to 3000 feet long and only 50 or 100 feet wide.





Apex at an outcrop

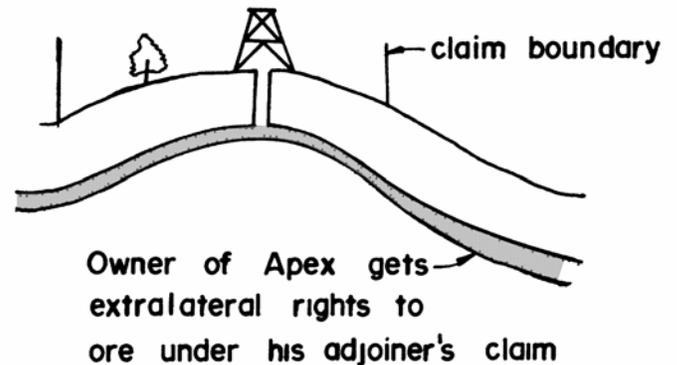
Section 3 of the Mining Act grants extralateral rights to persons who hold lode claims in which the apex or top of a vein is located. Under this provision a claimant with extralateral rights could follow a vein which "apexed" within his claim in its downward dip, outside the side lines of the claim but only within the vertical plane drawn through the end lines. He could mine a vein apexing on his claim and under the surface of adjoining property belonging to someone else. He had no right to the adjoining surface, however.

Extralateral rights were granted only if the end lines of the claim were parallel. A claim without parallel end lines would be allowed, but without extralateral rights. If a mineral survey returned parallel end lines and the monuments on the ground

revealed that the end lines were not in fact precisely parallel, this would not deprive the claimant of his extralateral rights if the end lines were substantially parallel (Grant v. Pilgrim, C.C.A. Alaska 95 F. 2d 562; Note 157J30 U.S.C.A. 26).

Because of the parallel end line requirement claims were often staked and later surveyed in conflict with adjoining mineral surveys or patented lands. The trespass was legally allowed so long as it was done "peaceably." The areas in conflict were excluded from the claim which left it a fraction of a full claim. These claims were often called "fractions," such as "Standard Fraction" or "Alpine Fraction."

Although not specifically mentioned in the 1872 Mining Act, it has also been ruled that mining claims receive riparian rights if one line of the claim is shown by the survey of the claim as being a meander line along a meanderable body of water (45 L.D. 330, Alaska, 1916).



Section 4 of the Mining Act granted the right of possession to veins and lodes discovered in tunnels, and prevented locations on the surface along the line of the tunnel so long as the tunnel remained valid.

Section 5 of the Mining Act deals with recording requirements, annual assessment work requirements and other factors not directly connected with the surveys.

Section 6 provides for patenting claims. One of the requirements under this section is "...a plat and field notes of the claim or claims in common, made by or under the direction of the United States surveyor-general, showing accurately the boundaries of the claim or claims, which shall be distinctly marked by monuments on the ground,..." shall be filed with the application for patent.

The surveyor-general was to certify that \$500 worth of labor had been expended on the claim, that the plat was correct and contained a full description of the claim by "...reference to natural objects or permanent monuments as shall identify the claim..." The term "permanent monuments" has been adjudicated to include just about anything but it usually means a corner of the rectangular surveyor a location monument within two miles of the claim.

Section 7 of the Mining Act describes adverse claims and authorizes a "court of competent jurisdiction" to settle the dispute or decide who gets the claim. The land Office could not be the final judge unless the adverse claim was waived.

Section 8 of the 1872 Mining Act is probably the cause of more problems for the present day surveyor than any other part of the Act. Keep in mind that resurveys, except where specified by law, were not authorized until the Act of March 3, 1909 (35 Stat. 845) as you read this section, which follows in its single-sentence entirety:

Sec. 8. That the description of vein or lode claims, upon surveyed lands, shall designate the location of the claim with reference to the lines of the public surveys, but need not conform therewith; but where a patent shall be issued as aforesaid for claims upon unsurveyed lands, the surveyor-general, in extending the surveys, shall adjust the same to the boundaries of such patented claim, according to the plat of description thereof, but so as in no case to interfere with or change the location of any such patented claim.

Of course, the "rectangular" sections in a township are very often far from being rectangular. They may be a misshapen figure with eight or more sides. The requirement in this section of the Mining Act that the surveyor-general was to segregate the mining claims from the rectangular survey system according to the mineral survey plat was interpreted as meaning that no change could be made in the dimensions of the claim as shown on the plat.

Segregation diagrams were made of a township, portions of a township or individual sections, depending on the mining activities and number of mineral surveys. When a mineral survey was made and tied to a section corner the claim was plotted on the diagram according to the bearings and distances returned in the mineral survey. There was no problem as long as there was only one claim or as long as the claims were far apart. These ties, which were supposed to be made from corner number one of the claim to the nearest identified sections or quarter section corner were not, however, always accurately made. The exterior boundaries of a section were drawn, usually nice and square on the rectangular record. As more claims were surveyed and tied to different corners, conflict with previously plotted claims would appear even if they did not exist in fact on the ground. A mineral surveyor might show a conflict with a prior (and perhaps patented) mineral survey though, when it was plotted on the segregation diagram, no such conflict would appear.

The surveyors-general were, or thought they were, in an impossible situation. They had no statutory authority and no funds with which to perform resurveys of the section lines. They couldn't resurvey the previously surveyed claims, the claimant had to pay for the present mineral survey and the surveyors-general had to make their segregation diagram strictly on the basis of the survey records.

Some surveyors-general forced their mineral surveyors to show conflicts where in fact there were none, and in other instances to not show conflicts which did exist.

These segregation diagrams usually were not "official" records of the General Land Office. They were signed by the surveyor-general of a particular state or territory but were not approved by the Surveyor General of the United States in Washington.

As mining claims were added a new sheet protracting the legal subdivision, segregating the mineral survey and assigning lot numbers to the remaining fractional areas was sometimes made. Many times, when new sheets were prepared, lot numbers were kept the same but the area was reduced. Sometimes they were repeated in a different place on the diagram. An agricultural entry patent was sometimes issued for certain lots and/or legal subdivisions, but the lot's location, and the area of the lot, might depend on which diagram was being used.

The Mary Darling Placer Claim, 31 I.D. 64, is an example of the problems created before these practices ended with the passage of the Act of April 28, 1904. This Act amends Section 2327 of the Revised Statutes (33 Stat. 545; 30 USC 34) and declares that the monuments on the ground shall control over erroneous or inconsistent descriptions or calls and the surveyors-general are bound to recognize them.

Though the situation was improved, the surveyors-general still did not have a resurvey law, so they "passed the buck" to the mineral surveyors. Sections 43 through 49 of the Manual of Surveying Instructions for the Survey of the Mineral Lands of the United States, 1909 (prepared in 1908), provide that if a mineral surveyor reports an error in a previous (unpatented) mineral survey, the first surveyor must go out, correct the error and amend his survey. If however, he says the second surveyor is the one in error, they must make a joint survey and resolve the dispute. It is not hard to visualize the risk the second surveyor would run if he reported the first surveyor to be in error; it could be costly in time and money and might lead to some rather hard feelings between surveyors. Most "amended surveys" are due to these requirements.

Segregation diagrams are no longer made. They have long since been replaced by the familiar supplemental plats and connected sheets.

The problem of non-existent conflicts excluded from a mineral claim patent was dealt with in 45 L.D. 10. The decision in that case was: If a patent calls for an exclusion because of a conflict with a senior claim, and that conflict does not exist on the ground as shown by the monuments, the excluded area belongs to the patentee of the Junior claim. The basis for the decision was that, had it been known at the time of the patent that no conflict existed, no exclusion would have been made.

Whether such an exclusion might remain public land subject to surveyor might instead have passed to the patentee of the mineral claim, would be subject to close examination of the circumstances causing the exclusion and the wording and intent of the patent. In general, where the patents described the Junior claim by metes and bounds to exclude the conflict, the area in conflict would remain Public Lands. Where the Junior claim patent described the entire claim "less its conflict with.." the Senior claim, the situation fits 45 L.D. 10, and title would pass to the Junior claim patentee.

Section 9 of the Mining Act repeals portions of the Lode Mining Act of 1866, and provides for the patenting of claims made under that Act.

Section 10 retains the Placer Claim Act of 1870, but provides that placer claims are limited to 20 acres for anyone placer location. Under this section, a group claim was still not to exceed 160 acres. The placer claim was to be in conformity with the legal subdivisions "as near as practicable," if located on surveyed lands, and no further survey was required. If the claim was on unsurveyed lands, or could not be made to conform with the rectangular system, a survey and plat were required. The last provision in this section of the Act directs "... that where by segregation of mineral land in any legal subdivision a quantity of agricultural land less than 40 acres remains, said fractional portion of agricultural land may be entered...for homestead purposes."

The provision that all placer claims conform to the legal subdivisions of a section made it possible for the claimant to receive patent by an aliquot part(s) description without the expense of a mineral survey and plat. The provision that it must conform "as near as practicable," however, caused the legal subdivision method to be widely ignored. Gold placer claims were often made along a mountain stream in ravines that sometimes caused them to assume rather wild shapes. Below Tincup, Colorado, there were "gulch placers" that were as little as five feet in width and stretched for 18 miles along the creek (6 L.D. 227). These claims were rejected by the local land office, but the rejection was overruled and patent was granted. Resurveys of such placer claims today could be quite a task.

For a full discussion of placer claims, see also Snow Flake Fraction Placer, 37 L.D. 250.

Some state statutes or local regulations, and even some surveyors-general, required that the corners of a placer claim be staked even if taken by legal subdivision. Such surveys often take the form of a stairstep pattern of allegedly aliquot parts, because the sections were not always properly subdivided. The surveyor sometimes started from a section or quarter-section corner and, for example, ran West, 10 chains; North, 20 chains; West, 10 chains, and then indicated he was at the SE1/16 section corner. That could be true only if the section was a perfect 80 chain square and the surveyor's work was precise.

A dependent resurvey and subdivision of section may, however, reveal a distorted section. The cadastral surveyor may find the placer claim monumented on the ground, but he may also find that the monuments do not conform to the positions described by aliquot parts in the patent.

If the patent described the placer using the aliquot parts, the practice followed by the BLM would be to honor the aliquot parts of the distorted section. This would be dependent on the ownership pattern and the local usage regarding the claim corner monuments.

Had the patent been issued by reference to a plat of the mineral survey which showed the cardinal courses, the BLM would then honor the monuments as found on the ground.

The last provision of this section of the Mining Act results in what is known as a "mineral segregation survey." If a mineral survey of a lode claim has been made in a section and there is good reason to believe there is distortion in the section lines, a supplemental plat based on the survey records could lead to a misrepresentation of the true acreage remaining in the section. A resurvey is made of the section boundaries and the mineral claim for the purpose of segregating the mineral land from the agricultural land. The fractional parts are given lot numbers and areas. These "segregation surveys" are now infrequent. They may be made to segregate either an official mineral surveyor a valid, but unsurveyed, mineral location in which the lode claimant has a valid possessory title. See section 3-71 of the Manual of Surveying Instructions, 1973, which, generally, requires retracement of claims to provide accurate lotting of remaining public lands.

Section 11 of the Mining Act deals with lode claims within placer claims. If a known lode exists within a placer claim the claimant must file separately on the placer and on the minimum lode claim, 1500 feet in length and 50 feet in width. The lode is deducted from the placer for determining the price to be paid. If one claimant locates a lode claim and another locates a placer claim encompassing the prior lode location, the prior location (if valid) must be segregated from the placer. In this situation, a cadastral surveyor may be called upon to execute a segregation survey.

Sections 12, 13 and 14 deals with the appointment of and rules regarding mineral surveyors, land office regulations and handling of contests, and the ownership of intersecting lode veins, respectively.

Section 15 of the Mining Act provides for patent to be issued for up to 5 acres for a millsite. The millsite must be on non-mineral land and it may not be contiguous to the vein or lode. This was long held to mean that a millsite could not be contiguous to the lode claim. From this came instances where millsites were surveyed on non-mineral bearing land with only a foot or so of space between the side line of a lode claim, and the side line of the millsite. It is now acceptable for the millsite to have a common boundary with the side line of the lode claim (Yankee Millsite, 37 L.D. 674).

The millsite can be located across the end line of such a lode claim, but the area within the millsite must be shown to be non-mineral bearing in character (Montana-Illinois Copper Mining Co., 42 L.D. 434).

There is no mention of how many millsites may be taken up, but each one must be actually used for milling or mining purposes.

Mining Laws Codified

The preceding discussion is primarily directed toward an understanding of what happened in the past in order to give the cadastral surveyor some idea of what he may find when surveying an old mining claim. For that reason, the provisions of the mining law discussed are those of the 1872 Mining Act as written in the United States Statutes at Large.

In 1874, the Statutes at Large were re-written and codified under the Revised Statutes. In some cases the Revised Statutes had slightly different wording than the corresponding section of the original.

In 1926 the mining laws were broken down into sections and codified in Title 30 of the United States Code. The present wording of the mining laws is that contained in the United States Code, Title 30.

Mineral-Land Laws Since 1872

Since 1872, Congress has passed many laws pertaining to mineral lands. Most of them have been for specific purposes. Some of them are of possible interest to cadastral surveyors.

1897 The Act of February 11, (29 Stat. 526), placed the public lands that were chiefly valuable for petroleum under the placer mining laws. The oil lands were taken up as a placer claim under the provisions of this Act.

1899 -The Appropriations Act of February 3 (30 Stat. 1095), authorized the survey of irregular homestead entries in the Black Hills Forest (Reserve) in South Dakota.

1904 -The Act of April 28 (33 Stat. 545), declared (as noted previously) that the monuments on the ground control over the field notes and plat.

1905 -The Act of February 1 (33 Stat. 628), transferred the administration of the National Forest Reserves to the U.S. Forest Service. The Act, however, provides that the administration of the minerals and land laws remained under direction of the General Land Office. Although the Forest Service does the administrative work (validity, etc.) of mining claims within the national forests, the mineral survey, patent, etc., are still under the jurisdiction of the Bureau of Land Management.

1906 -The coal lands were withdrawn from entry.

1909 -The Act of March 3 (35 Stat. 845), authorized the resurvey of the public lands and also authorized patents on coal lands. The coal itself, however, was reserved to the United States.

1914 -The Act of July 17 (38 Stat. 509), permitted the entry of mineral lands containing nitrate, phosphate, potash, oil, gas and asphalt. These minerals, however, were reserved to the Government.

1920 -The Mineral Leasing Act (41 Stat. 437), provided for the leasing of oil, gas, coal, phosphate, sodium and other minerals. The Mineral Leasing Act affects the cadastral surveyor because he may be called upon to survey the surface of patented lands in order to determine where the Government retained the minerals. In this connection the surveyor could come increasingly under state laws, state court decisions, and local conditions affecting the execution of a resurvey, because the boundaries of the sub-surface rights follow the surface boundaries.

1960 -The Act of March 18 (74 Stat. 7), authorized the locating and patenting of millsites adjoining placer mining claims.

1962 -Public Law 87-851, enacted October 23, 1962, is also known as the Mining Claim Occupancy Act (MCOA). This law provided that the occupant of a mining claim which was not valid could receive that part of the claim actually used by him for a residence. The occupant was required to have been a resident on the claim for seven years prior to July 23, 1962. He was required to pay for the survey of his tract, which could be up to, but not exceeding 5 acres in size. Payment for the tract was to be at the current valuation rate. This law expired on June 30, 1971.

Other Metes and Bounds Surveys

Many other non-conventional, metes and bounds type surveys have been executed in the past. Some, other than those in Alaska, are currently being made. The cadastral surveyor may have occasion to resurvey any of them. In all of them the corner restoration principles are very much alike. The following is a description of some, but not all, of these older surveys.

Donation Land Claim (DLC)

Donation land claims were authorized in Florida, New Mexico and Oregon by the Acts of August 4, 1842 (5 Stat. 502), September 27, 1850 (9 Stat. 496), March 2, 1853 (10 Stat. 172) and July 22, 1854 (10 Stat. 308).

For the most part, DLC's were surveyed in a rectangular form with north-south lines and east-west lines. Nevertheless, many were irregular in shape and some were bordered on one or more sides by a meanderable body of water. In the latter instance the DLC attained riparian rights. New plats of rectangular surveys followed DLC surveys and fractional portions remaining in a section were given lot numbers. DLC's were numbered beginning with DLC No. 37 in each township in which they appeared.

Soldiers' Additional Homestead

The Act of April 4, 1872 (17 Stat. 49), as amended by the Act of June 8, 1872 (17 Stat. 333), granted an additional homestead to veterans of the Civil War. The Act of March 3, 1909 (32 Stat. 1028), extended the provisions of the previous Acts to Alaska. Under the terms of these Acts, a soldier could take an additional entry which, when added to his original homestead entry, would not exceed 160 acres. These additional entries could be preempted. Sometimes they were for only a few acres and were seldom in rectangular form.

Indian Allotments

Indian allotments were surveyed under various laws and provisions. On reservations they normally were about 20 acre tracts which conformed, more or less, to the rectangular subdivision of a section. In other places they would run as much as 160 acres. Sometimes they were rectangular in form but not in cardinal directions. The variations in Indian allotments are so great that it is impossible to be specific. They were identified by name and/or number in such a widely differing system (or lack of system) that the surveyor must examine each situation in itself.

National Forest Homestead Entry Surveys (H.E.S.)

The Act of June 11, 1906 (34 Stat. 233), provided for agricultural homestead entry, within the national forests, of public lands that had been classified by the Forest Service as more suitable for agricultural than for forestry purposes. These Homestead Entry surveys were usually made by a Forest Service surveyor under Special Instructions issued by the General Land Office. These surveys were, more often than not, a many sided figure with 20 or more corners or angle points. They were generally well executed and their restoration seldom poses any serious problem. In each of these

surveys the plat was made by the G LO and the field notes and plats were approved by the G LO prior to the issuance of patent by the land office.

The National Forest Homestead Entry Survey Act was repealed on October 23, 1962 (76 Stat. 1157), and these surveys are no longer executed.

Exchange surveys

The exchange surveys were authorized by the Act of March 20, 1922 (42 Stat. 465), and amendments thereto. Under this act, the Forest Service is authorized to exchange an area of public land for an area of privately owned (patented) land elsewhere in a national forest. The purpose of the exchange is to provide for a consolidation of lands in order to facilitate administration of the forests. Originally, most of the exchange surveys were made by the Forest Service with Special Instructions, plats and patents issuing from the General land Office in much the same manner as usual for homestead entry surveys within the national forests. The Act anticipated that exchanges were to be made by aliquot parts or lot numbers from a supplemental plat, but irregular metes and bounds tracts are far more usual in exchange surveys. Many of the tract surveys being made by BLM surveyors on lands administered by the Forest Service are made for the purpose of effecting exchanges.

Small Holding Claims

The Small Holding Claim (SHC) surveys were made pursuant to the Act of March 3, 1891 (26 Stat. 854), the Act of June 15, 1922 (42 Stat. 650) and the Act of June 8, 1926 (44 Stat. 709). Most of these were in New Mexico and Arizona. They were surveyed so that patent might be granted to the claimants of small tracts. They were usually in a group due to the settlement of a village. A special court verified the claims and the survey was made in accordance with the lands awarded to the bona fide claimant. Most surveys of these small holding claims were well executed.

Unless there has been extensive obliteration of the original corners and angle points, few serious problems are encountered in their restoration.

Spanish and Mexican land Grants

Most of the Spanish and Mexican land grants are in southern California, Arizona and New Mexico. The Federal Government acquired title to the lands that make up these States by treaty with or purchase from Spain and Mexico. The bona-fide rights of the owners of lands which had been granted by Spain or Mexico were honored by the United States. A court-of-claims verified title upon proofs. The grants were then surveyed and verifying patents were issued.

Sometimes the grants adjoined each other and a "dividing" survey was not executed. This left the boundary between contiguous grants described but not surveyed on the ground. In these instances the division line between grants is open to interpretation and may require a great deal of research and investigation before a dividing line may be fixed by survey.

These land grants may contain only a few acres up to thousands of acres in area and have from as few as four corners up to hundreds. The original surveys were often poorly executed, poorly monumented and vaguely described. Restoration of a grant boundary may, therefore, be extremely complex. Resort may be made to all types of collateral evidence, including topographic calls, in order to fit the original survey to the shape of the natural terrain features. If the boundary of the grant is along a meandered river or the ocean, the boundary is riparian.

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