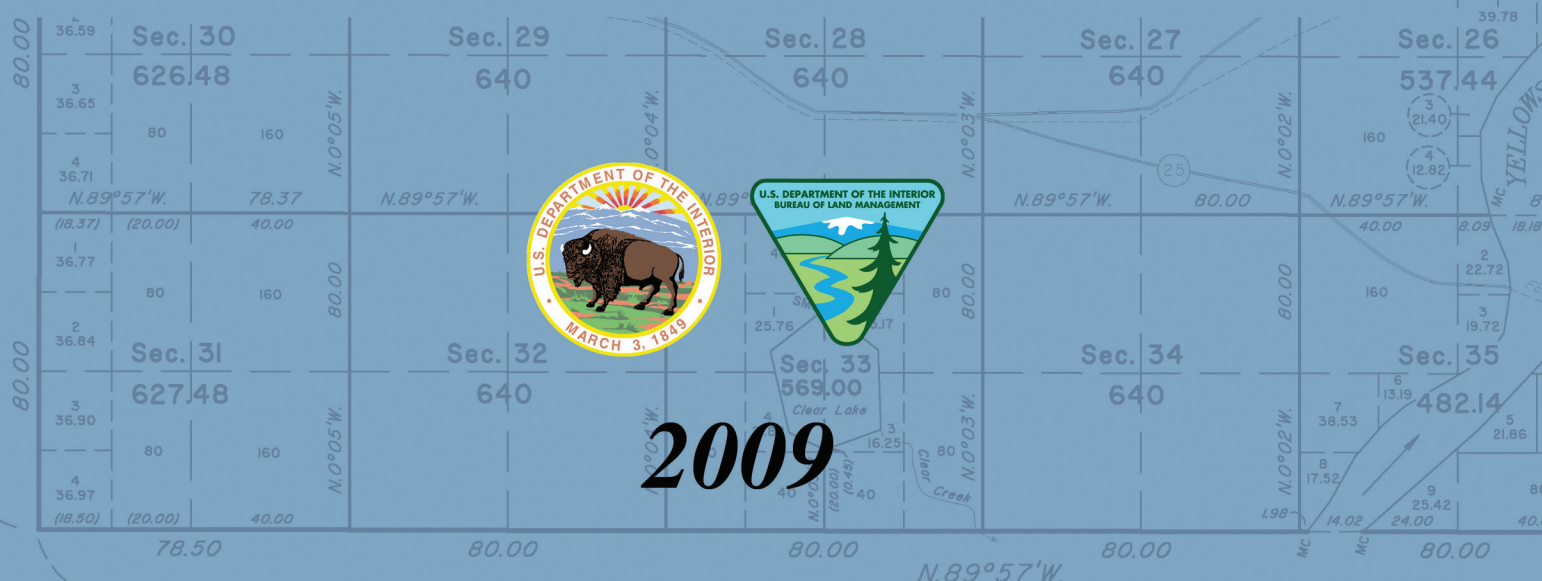


Surveyed by Thomas Acres in 2007
NORTH

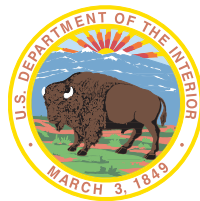


Manual of Surveying Instructions



Manual of Surveying Instructions

For the Survey of the Public Lands of the United States



**Prepared by the
United States Department of the Interior
Bureau of Land Management
Cadastral Survey**

2009

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Chapter X

Special Surveys and Mineral Surveys



(2) Where unsurveyed mining claims require segregation from land embraced in a pending administrative action. The field work consists of surveys of the mining claims, with connections to corners of the rectangular net, and the resurvey of section boundaries.

10-96. Where regular conditions are found, the mineral segregation survey consists only in running not less than two connecting lines from identified corners of the rectangular survey to a corner or corners of the mineral location survey, followed by a survey of the outboundaries of the mining claim or group of claims.

Monuments are placed at the angle points or at intersections of mineral location boundaries, between controlling mineral location corners, along the boundary of the mining claim or outboundaries of a group of claims as needed to mark the limits of the nonmineral land. The angle points of the claim are numbered in accordance with the practice in mineral surveys and the intersection points may be marked as witness points. Each monument is marked with the initials of the name of the claim or claims and the angle point number. If the monument at the corner of the mineral location survey is in proper position, constructed of durable material, and suitably marked, the monument may be adopted without any alterations, and its description entered in the field notes.

Mineral Segregation Surveys

10-94. A mineral segregation survey is a survey made to define the limits of nonmineral Federal interest land adjoining one or more mining claims and to supply data for lotting the nonmineral land against the claims. Although a necessary part of the survey is to ascertain the boundaries and position of the mining claims, it is not a mineral survey and confers no permanent rights upon the mining claimant. If the subsisting records furnish the information necessary for a proposed segregation of mining claims from the nonmineral Federal interest lands, no mineral segregation survey is required. Prior to the 1947 edition of the Manual, a plat for these surveys was subtitled "Supplemental Plat" (see sections 9-105 through 9-107).

10-95. Mineral segregation surveys fall into two classes:

(1) Where the record of official mineral surveys is faulty or fails to locate the mining claims accurately with respect to the rectangular net. Proper segregation usually requires the resurvey of section boundaries with connections to the mineral surveys.

10-97. In townships where there appears to be an extensive obliteration of monuments or where the condition of the lines does not conform to the original plat and field notes, the survey will consist of such retracements and restoration of the corners of the section lines as may be necessary to define the nonmineral land or pending transaction. If the distortion of the section lines is so great as to warrant the subdivision of one or more sections, the work authorized should be described in the special instructions or supplemental special instructions.

10-98. The retracement of the lines of the mineral location survey should be made with the same degree of accuracy as a mineral survey. The laws and regulations that govern locating mining claims or sites include provisions for how locations should be described and marked. Therefore, when a surveyor conducts a mineral segregation survey, it is essential that the surveyor observe the requirements regarding the legal length and width of the mining claims, including parallelism of end lines. That is, the surveyor should ensure the claim is confined to the legal length along the mineral lode,

the side lines are placed within the legal width, and the end lines of each claim are parallel. The mining claim, as returned in a mineral segregation survey, should conform to the regulatory specifications for mining claims boundaries. If the mining claim, as returned by the mineral segregation survey, is not identical to (or embraced within) the boundaries of the location survey, the surveyor should give the bearing, distance, and description from each established corner of the mineral segregation survey to the corresponding corner of the location survey.

10-99. The rectification of any boundary of unsurveyed mining claims or millsites to meet legal requirements is a complex mixture of mining law, legal principles, policy, and mineral survey judgment. The surveyor cannot change a mineral location boundary outward or in a way that interferes with an intervening right. The Federal authority surveyor conducting the mineral segregation survey under special instructions, typically in concert with the BLM mineral examiner and the Office of the Solicitor, will mark the boundary of the Federal interest lands adjoining the mining claims. The surveyor will examine the history of surveys and titles of all affected claims, alienated lands, and Federal lands to make necessary but lawful adjustments to minimize unmanageable slivers of Federal interest lands.

Because the mineral segregation survey is not a mineral survey, the surveyor does not need to be concerned with potential boundary changes because of changed conditions since the mining claim was located, such as contiguous prior location claims subsequently becoming abandoned or forfeited.

The types of boundary rectification the surveyor is mostly concerned with are parallelism and casting off excess area. The discussion of what is substantial parallelism is in section 10-193. The surveyor is controlled by the record of the location certificate and the markings on the ground. The latter is controlling where there is a variation between the descriptive calls of the record and the monuments (30 U.S.C. 34). For a lode mining claim, if the difference between the location description and the location survey monuments is slight, and casting off excess area is not applicable, the corner with the shortest move distance to obtain parallelism will be moved along the side line and inward.

10-100. In cases of casting off excess area, the intent should be to cure defects in the location claim and to put the locator, where no other rights have intervened, in the same position that he or she would have occupied

if no such defect had occurred. Some methods that have been adopted include:

- (1) Where the area to which a location claim can be determined by measurements following the calls for distances from the discovery contained in the location notice, the surveyor may measure out the location and then locate and cast off the excess.
- (2) The location notice specifies the linear distance claimed from the discovery point.
- (3) When the location notice does not specify the linear distance claimed from the discovery point, the locator can only claim 750 feet along the vein on each side of the discovery notice.
- (4) Where the locator mistakes the course of the vein and locates across instead of along it, an excess of lateral side line surface results and should be cast off. The surface rights would be defined by lines drawn 300 feet on each side of the center of the vein as it actually ran. However, a material deviation of the vein from the center line is of no consequence to the Government in a patent proceeding, as long as the claim was located in good faith for mining purposes, and the side lines may exceed 300 feet from the center line on one side in such cases.
- (5) Where a placer claim or millsite is located on unsurveyed land, is in a square or rectangular form, and is oversized, the excess area has to be cast-off; the intent will be to change each boundary inward, by an equal amount, to obtain regularity and legal area.

The locator is entitled to possession of the mining claim as located until he or she readjusts the lines voluntarily or is called upon to do so by the BLM. The locator should be asked to select the portion he or she intends to hold and be afforded a reasonable time to comply. In any case the surveyor will coordinate boundary rectification with the BLM mineral examiner.

In the cases of significant differences between the location certificate and the mineral or location survey monuments, significant corner movement for parallelism, significant excess area, or other complexities, the authorized officer of the BLM will be contacted for further instructions.

Mineral Surveys

10-101. These sections set out the field and office procedure to be followed in the execution of *mineral surveys*, and the filing of the returns. These surveys are made to mark the legal boundaries of mining claims or mill or tunnel sites on the Federal interest lands. In the cases where the boundaries of the mineral surveys are determined by legal subdivisions, survey procedures for the location of such legal subdivisions are identical to those set forth in the proceeding chapters of this Manual.

10-102. The early discoveries of free gold were made far in advance of settlement, mainly in the stream beds of the western territories that included the Black Hills, the Rocky Mountains, and the Pacific Slope. Mineral deposits in these regions were appropriated and their values extracted under varied local camp or mining district rules with the tacit approval but without any regulations by the Federal Government.

The functions of a mining district were to provide rules governing the size of claims, manner of location and discovery requirements, recording of location notice, descriptions, and surveys, work required to hold a claim, and period of absence constituting abandonment.

The miners were not without precedents in establishing their rules. In Europe, Germanic or Prussian laws similarly provided for the discovery and location of mineral deposits.

Finally, with the spread and development of the mining industry, Congress adopted legislation not only recognizing the possessory right of citizens of the United States to minerals on public lands but also providing for their disposition. Present procedures are derived from this legislation, which was based in large part on the regulations of the old mining districts.

Today, mining districts exist in name only. As county governments were set up (recording districts in Alaska), the mining districts turned their records over to the county recorders and left the making and enforcement of local mining laws to State or county governments.

10-103. Originally, almost all minerals were disposed of through the mining claim location system under the Mining Laws of 1866, 1870, and 1872. Over the years, Congress removed certain minerals from the purview of these Mining Laws. Today, there are three basic ways of appropriating minerals on Federal interest lands through location, lease, and sale. The minerals subject to each

of these methods of disposition have been defined by Federal laws, regulations, policies, and legal decisions, with which the surveyor must gain familiarity.

10-104. Mining claims may only be located on Federal lands that are open to the operation of the Mining Law of 1872. When Federal lands are open to the operation of the Mining Law, the Mining Law allows citizens to enter the lands, explore for and discover certain valuable mineral deposits, and purchase the lands containing those deposits. The most significant Federal laws governing mineral lands pertinent to surveying are:

- Lode Law of 1866, as amended (Act of July 26, 1866; 14 Stat. 251), 30 U.S.C. 35, 36, 38, 43, 44 note, 45 note, 46, 47, 51, 52, and 43 U.S.C. 661, covering locatable minerals;
- Placer Law of 1870, as amended (Act of July 9, 1870; 16 Stat. 217), 30 U.S.C. 35, 36, 38, 47, 52, and 43 U.S.C. 661, 766, covering locatable placer claims;
- General Mining Law of 1872, as amended (Act of May 10, 1872; 17 Stat. 91), 30 U.S.C. 22-24, 26-30, 33-35, 37, 39-42, 47, covering locatable minerals;
- Act of May 17, 1884 (23 Stat. 24), as amended by 31 Stat. 321 (June 6, 1900), 48 Stat. 663 (May 4, 1934), 52 Stat. 588 (May 31, 1938), and 61 Stat. 916 (August 8, 1947), found in 30 U.S.C. 49a, 49b, 49c, 49d, extending the Mining Law to Alaska;
- Act of April 28, 1904 (33 Stat. 545), 30 U.S.C. 34, requiring that, if inconsistent, the monumented location will control over the description location;
- Mineral Leasing Act of 1920, as amended (Act of February 25, 1920; 41 Stat. 437), 30 U.S.C. 22, 48, 49, 171, 181-193, 194 note, 201-203, 204 note, 205-214, 221 note, 223-229a, 241, 251, 261-263, withdrawing oil, gas, and other minerals from mining claim location, and disposing of them through leases;
- Materials Act of 1947, as amended (Act of July 31, 1947; 61 Stat. 681), July 23, 1955 (69 Stat. 367), 30 U.S.C. 601, covering saleable minerals;
- Surface Resources Act of 1955 (Act of July 23, 1955; 69 Stat. 367), 30 U.S.C. 601, 603, 611-615, withdrawing common variety mineral materials from mining claim location;

- Millsite Act of March 18, 1960 (74 Stat. 7), 30 U.S.C. 42, authorizing millsites for placer mining claims;
- Federal Land Policy and Management Act of 1976, as amended (Act of October 21, 1976; 90 Stat. 2743), 43 U.S.C. 1732, 1744, amending the Mining Law to impose assessment work filing requirements, an environmental regulation standard, and mandatory requirements that all mining claims, or mill or tunnel sites located on or after October 21, 1976, be recorded within 90 days of their location, and that all mining claims, or mill or tunnel sites located prior to October 21, 1976, be recorded by October 22, 1979, with the proper BLM State Office and maintained according to this law;
- Hardrock Mining Claim Maintenance Fee Act of 1993, as amended (Act of August 10, 1993; 107 Stat. 312, 405), 30 U.S.C. 28f to 28l, establishing an annual per-claim maintenance fee and a one-time location fee for all unpatented mining claims, mill-sites, and tunnel sites.

10-105. The Federal mining laws are supplemented by State laws. There are State statutes that govern locating, recording, discovery, and surveying mining claims. Each mineral surveyor should obtain a copy of the State mining laws upon receiving an order for survey in a given State. Mining claimants must comply with State law requirements if those requirements do not conflict with the United States mining laws (*South Dakota v. Madill*, 53 Interior Dec. 195 (1930)). Surveyors may obtain information about State laws and pertinent local regulations from State officials.

10-106. The holder of a valid mining claim or millsite is not required to seek patent; a valid unpatented mining claim or millsite remains a fully recognized property right. Under the Mining Law, a mining claimant with a valid mining claim or millsite may seek and, upon satisfaction of the requirements in 30 U.S.C. 29 and all other pertinent laws, obtain a patent, which is a conveyance of full legal title to the claimant. The mineral survey is part of the patent application process. Since 1994, Congress has prohibited the filing of new mineral patent applications.

10-107. Mineral patent application surveys, commonly called mineral surveys, are under the direction of the Chief Cadastral Surveyor having jurisdiction within the State in which the mining claim lies.

Special instructions, often called orders, are prepared and issued to the U.S. Mineral Surveyor. Mineral surveys are official surveys. The work that mineral surveyors do is the work of the Federal Government, and the surveys that they make are its surveys (*Waskey v. Hammer*, 223 U.S. 85, 92 (1912)).

When necessary for the orderly administration of the Federal interest land, the BLM conducts a mineral segregation survey (section 10-94). However, such a mineral segregation survey is entirely distinct from a mineral survey, and no permanent rights confer upon the mining claimant as a result of the mineral segregation survey.

Distinguishing Features of the Mineral Survey

10-108. Mineral surveys are required for lode claims and when a placer claim or millsite cannot be conformed to the public land survey or when the land itself is unsurveyed.

Under 30 U.S.C. 35 (Rev. Stat. 2331) “all placer-mining claims located after the 10th day of May 1872, shall conform as near as practicable with the United States system of public-land surveys, and the rectangular subdivision of such surveys, and no such location shall include more than twenty acres for each individual claimant.” An “association” placer mining claim may be located by an association of two or more locators, with up to 20 acres each. In other words, two locators may locate a single mining claim up to 40 acres, three locators up to 60 acres, and so on. The statutory limit for an association placer mining claim is 160 acres, which requires a minimum association of eight locators. A company or other business entity is considered a single locator.

Surveys of placer claims are conformed to the legal subdivisions of the public land survey, unless they are located on unsurveyed land or the configuration of the mineral deposit makes conformation impracticable. Consequently, the mineral survey procedures apply especially to lode claims, although those procedures are also followed in appropriate circumstances when surveying placer claims (sections 10-139 and 10-140).

Millsites that embrace nonmineral land not contiguous to the vein or lode and that are occupied for milling purposes or used incidental to mining operations may be located, surveyed, and patented in a manner similar to lode claims. The Act of March 18, 1960 (74 Stat. 7), 30 U.S.C. 42, provides for the location of mill-sites in conjunction with placer claims, and for their

description to be in the same manner as the placer mining claim. State law may require monumentation, even when described by legal subdivisions.

10-109. A U.S. mineral surveyor is appointed under the authority of 30 U.S.C. 39, and as such, is included within the term “officers, clerks, and employees” of the BLM as that term is used in 43 U.S.C. 11 and construed in *Waskey v. Hammer*, 223 U.S. 85 (1912). Mineral surveyors are also considered to be special government employees (43 CFR 20. 401(c)(1)(ii)).

The appointment of mineral surveyors, and the renewal, suspension, or revocation of their appointments, is the responsibility of the BLM Chief Cadastral Surveyor. Rules for these administrative procedures and also the procedures for locating, maintaining, and obtaining patent to mining claims and millsites are contained in the Code of Federal Regulations, Title 43, Chapter II, Subchapter C.

10-110. The special instructions or mineral survey order for a mineral survey issues from the BLM office administering the Federal interest lands where the mining claim or millsite is located. Estimating the cost of the office work associated with the mineral survey, approving the mineral survey, and refunding any unused funds on deposit is the responsibility of the respective State Office Chief Cadastral Surveyor.

The selection of a particular mineral surveyor from the list of mineral surveyors provided by BLM, payment for his or her services, and the cost of the office work associated with the mineral survey is the responsibility of the claimant.

Surveyor—Claimant Interrelationships

10-111. The mineral surveyor or cadastral surveyor responsible for processing mineral surveys, and the cadastral surveyor when processing mineral segregation surveys, must be thoroughly familiar with both Federal and State laws relating to the appropriation of minerals on Federal lands.

If the location of the mining claim does not meet the requirements set forth by law, the mineral surveyor should advise the mining claimant that corrective steps are necessary, including that it may be necessary for the claimant to amend the location. If the location certificate is too vague, an amended certificate is in order. If corrective measures concerning mining claim location and boundaries are not completed, the surveyor should

then ask the State Office Chief Cadastral Surveyor for further instructions on how to proceed.

As the mineral surveyor is required to prepare the certificate of the value of the improvements (section 10-168), if the development work includes improvements that may not count as patent expenditures or if common improvements may not meet the tests set forth in the regulations, policies, and instructions, the mineral surveyor should bring this to the attention of the mining claimant.

The matter of what constitutes a valid discovery or sufficient mineralization to satisfy the legal requirements for patent is complex and is a matter for the mineral examiner and adjudicators to determine.

Requirements of Field Work

Location Survey

10-112. The mineral surveyor and the cadastral surveyor need to be familiar with certain activities that have preceded their involvement with a particular mining claim or site, and upon which their work is dependent, including, but not limited to, the location survey. To be valid, mining claims or sites must satisfy four basic elements, which are (1) discovery of a valuable mineral deposit, (2) proper location, (3) timely recordation, and (4) ongoing maintenance of the mining claim or millsite.

10-113. In a group of claims, a discovery of a valuable mineral deposit must be present on each mining claim. If a vein or deposit extends across several claims and the mining claimant has exposed the valuable mineral in the vein or deposit within the limits of each mining claim, then one of the requirements for a discovery is demonstrated for each mining claim.

With respect to a block of contiguous mining claims, located on the same mineral deposit, a valuable mineral deposit exists where the quality and quantity of mineralization on each claim is sufficient to justify a reasonable person in the expenditure of his or her labor and means with a reasonable prospect of success in developing a paying mine. In the case of a group of claims, it is not necessary to show that the deposit on each claim is likely to support a profitable operation were it to be worked by itself. Rather, it may be demonstrated that, were all of the claims to be worked together, sharing the costs of operation, they are likely to support a profitable operation.

10-114. The Mining Law, 30 U.S.C. 28 (Rev. Stat. 2324), expressly provides that: “The location must be distinctly marked on the ground so that its boundaries can be readily traced. All records of mining claims made after May 10, 1872, shall contain the name or names of the locators, the date of the location, and such a description of the claim or claims located by reference to some natural object or permanent monument as will identify the claim.” Each location notice or location certificate must include the name or number, or both, of the mining claim or site.

The object of the law in requiring the mining claim location to be marked on the ground is to fix its position and provide notice to other prospectors that the land has been appropriated. It also prevents floating or swinging of the claim, unless amended. Marking the mining claim in this manner, that is performing a location survey, enables those who, in good faith, are looking for unoccupied ground in the vicinity of previous mining claim locations to ascertain exactly what has been appropriated and make their mining claim location on the remainder.

Some States have enacted laws defining the character of monuments or marks to be placed on the ground by the locator. In the absence of such State legislation or local regulation, what constitutes a sufficient marking is determined according to the circumstances in any particular case. The general rule is that the requirement is fulfilled when a person accustomed to tracing the lines of mining claims can, after reading the description of the claim in the posted location notice, by a reasonable and bona fide effort to do so, find all of the monuments or marks, and thereby can retrace all of the lines. It is necessary to mark the locus in a way that the boundary may be readily traced (*United States v. Webb*, 132 IBLA 152 (1995)).

10-115. Surveyors must comply strictly with the provisions of law regarding location, recording, and maintenance because of the importance of a mineral survey in the patenting process. If the surveyor is able to ascertain that the mining claimant has not complied with location, recording, or maintenance requirements, the surveyor must decline to make the mineral survey and report the facts to the respective State Office Chief Cadastral Surveyor for further instruction (*Philip Dephanger*, 1 Pub. Lands Dec. 581 (1882)).

The location survey is typically done by or under the supervision of the mining claimant. Even when the location survey happens to have been performed by the

mineral surveyor, such survey cannot be substituted for the actual mineral survey.

The difficulties surrounding the location and location survey frequently render it impossible to accurately mark the location boundary. The locator is generally permitted to rectify and readjust the location boundaries, if it can be done without impairing the intervening rights of others. The rectification of such boundaries is often handled by a second location survey, and the recording of an amended location notice, prior to applying for an order for mineral survey.

10-116. In lode mining claim adverse proceedings, it has been found that a locator should not be permitted to hold an excess of ground, and subsequent locators may be governed by the statement in the notice and not by monuments and marks that include and excess of surface ground within their boundary.

For placer mining claims and millsites containing excess area, the rule is that the locator must not be deprived of the right to select the part of the mining claim or mill-site that is to be cast off. This right of selection is to be exercised within a reasonable time after the locator has been notified that the location as marked on the ground is excessive.

In the case of placer mining claims and millsites located by legal subdivisions, and containing excess area by more than the rule of approximation (section 10-197), the excess would have to be cast off by survey. If, however, the excess is negligible, the locations would be permitted.

10-117. There is a distinction between amending an original location claim by moving boundaries and rectifying errors, and the inclusion of new ground or the relocation of abandoned ground. The amendment, if properly made and no other rights have intervened, takes effect back to the date of the original location claims, whereas the relocation becomes operative only from the date of the new location claim or relocation.

Mineral Patent Application Survey

10-118. The mineral survey is performed after recordation of the location notice or amended location notice as required by State law. It must be completed and officially filed before filing the patent application. The survey includes the usual technical procedure of permanently monumenting and witnessing the location on the ground, identifying all conflicts with prior mineral surveys, fee

lands with or without Federal mineral interests, lands withdrawn from mineral entry, and prior locations that the mining claimant wishes to exclude. Also included is the examination required for preparing affidavits of the value of expenditures for development purposes and any other reports to be made by the mineral surveyor. The survey itself does not confer legal title; legal title is conveyed by the final certificate and patent.

10-119. The duties of the mineral surveyor begin with special instructions or an order for survey and cease with the expiration of the period of publication of the mineral patent survey. After receipt of the special instructions or survey order, the mineral surveyor should obtain, among other items, copies of:

- (1) the relevant legal descriptions of the mining claim and of the surrounding mining claims documented in the location and amended location certificate(s), contest file(s), quiet title action judgment roll(s), or mining claim recordation file(s), adverse proceedings judgment roll(s), or patent file(s), final certificates, and patents;
- (2) relevant survey information of the mining claim and of the surrounding land, including official public land and mineral land surveys, canceled mineral surveys, mining claim location maps or diagrams, plats or maps included in contests, quiet title actions or adverse proceedings, and local surveys;
- (3) Federal and non-Federal land ownership and mineral status records;
- (4) Federal survey records such as National Forest Homestead Entry Surveys, General Forest Exchange Surveys and Small Tract Surveys on National Forest System Lands, Small Holding Claims, Small Tracts, Townsites, U.S. Surveys, Rights-of-Way and withdrawals, special use areas, etc.;
- (5) the reports as to the condition of corners and survey discrepancies contained within other corner descriptions and supplemental data of approved mineral surveys; and
- (6) connecting sheets, if available, that show in outline all approved mineral surveys, which should be examined for conflicts with prior mineral surveys. The BLM record of unsurveyed locations should also be searched.

10-120. The mineral survey must be an actual survey on the ground, made by the mineral surveyor in person after the receipt of the order. It must be made without reference to or reliance upon any knowledge previously acquired by having made the location survey or otherwise. The record must show the actual facts existing at the time of the survey. This precludes a calculation of the connections to corners of the public land survey and to mineral or location monuments, or of any other lines of the survey, through prior surveys, unless it is satisfactorily shown in the report that he or she has retraced such lines and found them to be correct as approved and filed (*Veta Grande Lode*, 6 Pub. Lands Dec. 718 (1888); *Lincoln Placer*, 7 Pub. Lands Dec. 81 (1888); *Walter Bartol*, 19 IBLA 82 (1975)).

The survey may include several contiguous locations owned in common, but such survey must, in conformity with statutory requirements, distinguish the several locations and exhibit the boundaries of each (*S.F. Mackie*, 5 Pub. Lands Dec. 199 (1886); *Golden Sun Mining Co.*, 6 Pub. Lands Dec. 808 (1888); *Argillite Ornamental Stone Co.*, 29 Pub. Lands Dec. 585 (1900)).

10-121. The patenting provisions of the Mining Law, 30 U.S.C. 29 (Rev. Stat. 2325), expressly provide that the mineral survey shall show the boundaries of the claim or claims, which, pursuant to 30 U.S.C. 28, the claimant should have distinctly marked by monuments on the ground with reference to natural objects or permanent monuments as will identify the claim(s).

Lengths of lines are returned as their true horizontal equivalents in the *foot unit* (U.S. Survey Foot). The degree of accuracy required in making mineral surveys calls for careful use of all direct or indirect measuring devices. These measuring devices should be compared to a known base line prior to commencing the survey.

Mineral surveys must be made with an instrument by which the meridian may be determined independently of the magnetic needle, and the directions of lines must be referred to the true meridian. The true course of at least one line of each survey is to be ascertained at the time of the survey through the use of satellite based geodetic positioning system, by observation of the sun, Polaris, an equatorial star, or equivalent, with proper verification of the time and latitude.

The direction of each line is reported in bearings. Bearings are stated in terms of angular measure referred to the true meridian. The basis for reporting directions is called mean bearing referenced to the true meridian

at the point of record (sections 2-3 and 2-5). The methods employed and the results are recorded in the field notes of the survey. The mean magnetic declination of the survey, when observed, is to be recorded in the field notes. Specimen field notes of a mineral survey will be found in appendix III.

10-122. For lines of any east-west extent, the true meridians passing through each end point of the line are not parallel, and thus, the basis of bearing is not orthogonal with reference to a plane surface (section 2-11). Therefore, reference meridians are not parallel but converge towards the pole, and parallel lines, in mineral surveys, are two lines a constant distance apart, such as the end lines of a lode claim. Thus, parallel lines that are not true east and west will have different bearings (section 10-193).

10-123. The survey must be made in strict conformity with, or be embraced within, the lines of the location survey upon which the order is based. If the lands to be surveyed and the location survey are identical, the field notes will clearly state that fact and the description of the corners of the location survey entered in the field notes. If not identical, a bearing, distance, and description of the corners of the location survey are to be given in the field notes from each established corner of the survey to the corresponding corner of the location. The lines of the location as found upon the ground should be laid down upon the preliminary plat only in such manner as to contrast and show their relation to the lines of survey (*Philip Dephanger*, 1 Pub. Lands Dec. 581 (1882)).

10-124. The mineral survey is given a single number. A location claim under the mining laws can legally be made only of a tract or piece of land embraced within one set of boundary lines. Two or more tracts merely cornering with each other cannot legally be embraced in a single location claim (*Tomera Placer Claim*, 33 Pub. Lands Dec. 560 (1905); *Hidden Treasure Mine*, 35 Pub. Lands Dec. 485 (1907)). An owner of several unpatented mining claims who has received patent for certain contiguous mining claims in the group may apply for patent to the remainder in one application, even though the unpatented claims are not contiguous to each other, if each is contiguous to the body of land embraced in the patented claims (*Wagner Assets Realization Corp.*, 53 Interior Dec. 614 (1932)).

10-125. In accordance with the principle that courses and distances must give way when in conflict with fixed objects and monuments, the mineral surveyor may not change the corners of the location survey for the

purpose of making them conform to the description in the record. If the difference from the location certificate is slight, it may be explained in the field notes.

10-126. If after having obtained an order for survey the surveyor finds that the record of location does not practically describe the location as marked upon the ground, the applicant should file a certified copy of an amended location certificate, correctly describing the claim, and obtain an amended order for survey. In fact, any change in the original order including the addition or dropping of locations or designation of a different surveyor calls for an amended survey order.

10-127. If the mining claim or site to be surveyed was located prior to May 10, 1872 (see 30 U.S.C. 22-24, 26-30, 33-35, 37, 39-42, 47; Rev. Stat. 2319-2328, 2331), the mineral surveyor is governed by the special instructions accompanying the order for survey.

10-128. No lode claim located subsequent to May 10, 1872, shall exceed the statutory limit of 300 feet in width on each side of the center of the vein, or 1,500 feet in length. All surveys must close within 0.25 feet in 1,000 feet, and the error must not be such as to make the mining claim exceed the statutory limit. Stricter limits of closure will be specified in the survey order where higher precision is indicated by the values involved. No placer claim may exceed 20 acres for each locator up to the statutory limit of 160 acres in an association placer claim, and millsites may not exceed 5 acres. The per-claim limit of 20 acres for each placer claim locator and the 5-acre limit for each mill-site will be governed by the rule of approximation (section 10-197).

10-129. Corner No. 1 of each claim and site will be tied to a section or quarter section corner or a corner of record. If a corner of the PLSS cannot be recovered or if the township is unsurveyed, corner No. 1 of each mining claim or site will be tied to a permanent monument. The geographic position of the mineral survey will be determined by a tie to a geodetic monument or determined directly.

Lode Lines and End Lines

10-130. In the absence of proof to the contrary, the discovery point is held to be the center of the vein on the surface. In the case of a mineral deposit that is not in vein or lode form, the discovery point is presumed to lie at the center of the lode mining claim. The course and length of the lode line or presumed course of the vein

will be marked upon the plat and specifically described in the field notes. The record of the intersections of the end lines with the lode line are given in the field notes from the lowest numbered corner on each end line running toward the next higher numbered corner. Where conditions permit, the distances are shown on the plat.

10-131. In a mineral survey, slight variation from the lines as originally located is acceptable. The surveyor may draw in the end lines to make them parallel and is permitted to cast off the area in excess of the statutory limit. The requirement of the statute as to end line parallelism is satisfied with a reasonable compliance. Substantial parallelism is acceptable.

It was held in *Belligerent and Other Lode Mining Claims*, 35 Pub. Lands Dec. 22 (1906), (syllabus), that:

There is no warrant in the mining laws for extending, arbitrarily and without any basis of fact therefor, the vein or lode line of a location in an irregular and zigzag manner for the purpose of controlling the length or situation of the exterior lines of the location to suit the convenience, real or imagined, of the locator.

The end lines of a lode location must be straight and parallel to each other, and when at right angles with the side lines may not exceed six hundred feet in length.

The mining laws contemplate that the end lines of a lode claim shall have substantial existence in fact, and in length shall reasonably comport with the width of the claim as located.

10-132. Except in jurisdictions where State law requires differently, in the case of blanket veins that are essentially horizontal or mineral deposits where the valuable mineral is in disseminated form, a presumed lode line or center line need not be shown, and the discovery working may be anywhere on the mining claim. In such cases, the tie to the discovery point should be given from the nearest corner of the survey and included in the description of that corner, or a right angle tie may be given from a point on the nearest end line. For such claims the centerline is considered to be equidistant between the sidelines.

For horizontal or disseminated mineral deposits, if a subsurface point where a hole drilled on an angle intersects the ore body is designated as the discovery point, such point will be tied to the surface hole by bearing and

distance, and the tie to the surface hole should be given from the nearest corner of the survey. The description of the hole will include the vertical angle and the slope distance. The description of the drill hole will include the direction drilled, the dip angle as measured from the horizontal, and the downhole slope distance as drilled.

Method and Order of Procedure

10-133. The position of the official survey upon the ground is fixed by connecting it by course and distance either to the nearest corner of the public land survey, or to a mineral monument (section 10-152). In either case the connecting line may not exceed a length of 2 miles. If both a corner of the public land survey and a mineral monument are within the limiting distance, the connection should be made to the public land survey corner. Each location claim of a survey embracing two or more location claims must be so connected.

When a mining claim is situated within the limits of a township the survey of which is in good standing, but where no corner of the survey can be found within 2 miles of the claim, after diligent search, connection may be made with a mineral monument, which must be connected with an established public land survey corner. The full particulars must be described in the field notes.

As a matter of convenience in the preparation of subsequent metes-and-bounds descriptions, it is preferable that the corner of each location from which the connection is made be established as corner No. 1.

The three preceding paragraphs are intended to permit the surveyor to obtain connections in a practicable manner based upon existing field conditions. Any unusual conditions that may be encountered in obtaining connections should be explained in the field notes. When the corner tied to is not the nearest record corner, the field notes will state that it is the nearest corner that could be found after diligent search.

10-134. From corner No. 1 the successive boundaries of each location are run in regular manner, numbering the remaining corners in consecutive order. When a boundary line of a mining claim or millsite intersects a section line, give courses and distances from the point of intersection to the corners of the public land survey at each end of the segment of section line so intersected. When the corners tied to do not include the nearest record corner, or when a record corner in one direction is not found, the field notes will state that, after diligent

search, no evidence of nearer corner position(s) could be found.

10-135. A lode or placer claim, and a millsite embraced in one survey are distinguished by the letters A and B, respectively, following the number of the survey. The corners of the millsite are numbered independently of those of the lode or placer. A corner of the millsite, preferably corner No. 1, is connected with the nearest corner of the public land survey or mineral monument, and a corner of the millsite is connected with a corner of the lode or placer claim.

10-136. When a placer claim includes one or more lodes, or when several contiguous placer or lode locations are included as one claim in one survey, the corners of each location are given a separate consecutive numerical designation, beginning with corner No. 1 in each case. The placer claim should be described in the field notes before describing the lodes.

When a placer claim includes one or more lodes, and the lode is claimed by the placer claimant, the lode claims will be surveyed in the same manner as if they were elsewhere situated, although the plats of the placer and lode surveys may be combined and constitute but one plat.

10-137. In all cases, whether the lode is claimed or excluded, the lode(s) and invaded legal subdivisions must be surveyed and marked upon the plat. The field notes and plat are to indicate the area of the lode and the area of the placer separately.

10-138. In the case of a subsequently located lode claim within an existing placer claim, the extent of surface ground may be the minimum, i.e., 25 feet on each side of the vein unless the lode is less than 25 feet from the nearest boundary of the placer. The 25-foot rule applies whether the placer is owned by the applicant or a third party.

10-139. Nonrectangular placers are permissible where use of a description by legal subdivisions would result in conflicts with other mining claims. In such cases, the placer claim must be surveyed around existing claims, so that no conflict is created.

10-140. Placer claims that do not conform to the legal subdivisions of the public land survey require a mineral survey. When such claims are on unsurveyed land, they should be conformed as nearly as practicable to the protraction diagram.

10-141. For nonrectangular placer mining claims and millsites, in applying the 10-acre rule for placers or the 2½-acre rule for millsites, each claim or site must be subdivided along the axis in which it was laid out on the ground. The 10-acre rule for placer claims or the 2½-acre rule for millsites is properly applied by subdividing a claim or site into lots as nearly square as possible (*United States v. Lara (On Reconsideration)*, 80 IBLA 215 (1984), *aff'd.*, *Lara v. Secretary of the Interior*, 820 F.2d 1535 (9th Cir. 1987)).

If the placer claims consist of a bench or gulch placer, they must be contained within the required number of 40-acre legal subdivisions, according to the rules given in *Snow Flake Fraction Placer*, 37 Pub. Lands Dec. 250 (1908); 43 C.F.R. 3832.12(c)(3).

10-142. If a mineral examination determines that certain portions of a nonrectangular placer claim or millsite do not qualify for a patent, then the following procedures must be applied to subdivide the placer claim or millsite per *United States v. Lara (On Reconsideration)*, 80 IBLA 215 (1984), *aff'd.*, *Lara v. Secretary of the Interior*, 820 F.2d 1535 (9th Cir. 1987):

Where the placer claim is in a rectangular form, and a portion of it is found to be nonmineral in character, then the claim must be subdivided to exclude the nonmineral land. The mineral examiner will establish a baseline and, along the long axis of the claim, mark off 10-acre parcels perpendicular to the long axis. The surveyor will then subdivide the claim pursuant to the mineral examiner's map and report.

Where the millsite is in a rectangular form, and a portion of it is not being used or occupied for mining or mineral purposes, then the millsite must be subdivided to exclude the unused or unoccupied land. The mineral examiner will establish a baseline and, along the long axis of the millsite, mark off 2½-acre parcels perpendicular to the long axis. The surveyor will then subdivide the millsite pursuant to the mineral examiner's map and report.

If the placer claim or millsite is in square form, the surveyor will then subdivide the placer claim or millsite pursuant to the mineral examiner's map and report.

10-143. The field notes of a placer claim must contain a descriptive report describing:

- (1) the quality and composition of the soil;
- (2) the character, extent, and position of all surface and underground workings for mining purposes;
- (3) the proximity of centers of trade or residence;
- (4) the proximity of well known systems of lode deposits or of individual lodes;
- (5) the use or adaptability of the claim for placer mining, including the availability of water in sufficient quantity for practical operations. Streams should be fully described as to their course, amount of water carried, and the vertical drop in elevation of the stream within the claim;
- (6) works or expenditures made by the claimant or his or her grantors for the development of the claim;
- (7) the true position of all known mines, salt licks, salt springs, and millsites. When none is known to exist on the claim, that fact will be so stated;
- (8) the natural features of the claim; and
- (9) the kind and amount of timber and other vegetation thereon, and adaptability to mining or other uses.

In the case of placer claims taken by legal subdivisions, no such descriptive report by a mineral surveyor is required.

Conflicts

10-144. When an exterior line of a claim intersects the surveyed line of another claim, the field notes must show (1) the distance to the point of intersection and (2) the course and distances from the point of intersection along the intersected line of the conflicting claim to the corners at the endpoints of the intersected line. When the same line of a conflict is intersected by two lines of the survey being executed, the tie is given to the opposite corner of the conflicting survey at each point of intersection.

It is necessary to search diligently for each corner controlling a line in conflict. If the necessary corners cannot be found, the boundaries shall be reestablished.

10-145. When the lines of two locations of the survey intersect, the point of intersection is given on the line being described, including the course and distances along the intersected line to the nearest corners.

10-146. Conflicts with unsurveyed locations may not be reported unless it is the wish of the claimant to exclude them from the area claimed.

If there are prior locations, it may be well to report conflicts in order to avoid an adverse suit. Conflicts with unsurveyed locations, owned by the claimant and not a part of the survey, need not be shown nor excluded unless the area of conflict contains the discovery of the unsurveyed location. In cases where two claims of the survey are in conflict, the area of conflict may not contain both discovery points.

10-147. Surveyed claims owned by the applicant that are in conflict with or contiguous to the survey being executed must be reported in the field notes.

10-148. If surface fee lands are in conflict as to boundary, whether or not the mineral estate was reserved to the United States, a subdivision of the section(s) should be done. Special surveys such as town-sites, Forest Homestead Entry Surveys and, in Alaska, U.S. Surveys and Coal Surveys are treated as prior mineral surveys.

10-149. A connecting line should be run from a corner of the survey to a corner of each conflicting survey and to a corner of each conflicting unsurveyed location to be excluded, unless a connection can be identified by virtue of intersect ties developed during the survey.

10-150. Connection is also made to any survey, the record position of which is within 100 feet of the lines of the survey being executed; also to any other neighboring survey, the position of which is not definitely fixed by the record. Such connections should be made and conflicts shown according to the boundaries of the neighboring or conflicting claims as each is marked, defined, and actually established upon the ground.

10-151. The field notes must fully and specifically state how and by what visible evidence the several conflicting surveys were identified on the ground, as well as those that appear to conflict, according to their returned tie or boundary lines, and report all material errors or discrepancies found in such surveys. In the survey of a group of contiguous claims where any corner is common to two or more claims of the group, bearings should be mentioned but once, and such corner should be described

as a common corner in the claim first mentioned in the field notes.

Mineral Monuments

10-152. In previous practice, if a survey was situated in a district where there were no public land survey corners and no mineral or location monuments within 2 miles, a mineral or location monument was established. The site, when practicable, was to be some prominent point, visible from every direction, where the permanency of the monument would not be endangered by snow, rock, or land movements or other natural causes. The geographic position of the monument, determined as accurately as the known data and the instruments used would permit, was recorded in the field notes.

However, in subsequent surveys the current geographic position of the mineral monument will be determined within a positional tolerance defined by the office issuing the special instructions or mineral order.

There was a period of time when such monuments were called “Location Monuments” and were designated “USLM.”

10-153. In the event a mineral monument is to be established the mineral monument should consist of a regulation post similar to the type used for rectangular surveys, set three-fourths of its length in the ground, with a magnetic memorial beneath, and with a conical mound of stone 4 feet high and having a 6-foot base alongside. The letters “USMM” followed by the number of the survey are marked on the brass cap. The exact reference point is indicated on the top of the monument by a cross. Any necessary departure from the prescribed material and size of monument is to be explained in the returns.

10-154. From the monument the precise course and distance is to be taken to two or more bearing trees or rocks, and to any well-known and permanent objects in the vicinity, such as buildings, shafts, mouths of adits, prominent rocks, or the confluence of streams. Bearing trees are scribed “XBT” and the bearing rocks chiseled “XBO” together with the number of the mineral monument. A detailed description of the mineral monument, including its geographic position, approximate distance, and direction to the nearest town, is to be furnished in the record of the survey.

Corner Monuments

10-155. Corner monuments will consist of the types described in chapter IV. If it is necessary to vary

from these instructions, the returns should contain an explanation.

The field notes shall fully and specifically describe every corner monument. These are generally completely described on the first survey line, tie line, or connecting line. The monument at any given corner needs to be completely described only once in the field notes.

All corners must be monumented in a permanent and workmanlike manner, constructed as prescribed in sections 4-11 through 4-15. The distinguishing initial letter or letters, corner numbers, and survey numbers will be stamped on the cap of the monument. The precise corner point is permanently indicated on the monument. When a rock in place is used, its dimensions above ground should be stated, and a brass tablet set at the corner point. If a brass tablet at the corner point is impracticable, a cross should be chiseled at the corner point and a reference monument set. Corners common to two or more locations are marked with the initial letter and corner number of each location.

10-156. In case the point for the corner is inaccessible or unsuitable, a witness corner is established, which will bear the letters “WC” in addition to the regular markings. When practicable the witness corner should be located as near as possible to the true corner point, with which it must be connected by course and distance. The reason for the establishment of a witness corner should be stated in the field notes (sections 4-16 and 6-27).

10-157. The position of each corner will be recorded by course and distance to bearing trees, rocks, and other permanent objects, as prescribed in chapter IV, and when no objects are available the field notes should so state. A magnetic memorial, if practicable, should be deposited at the corner and described in the field notes.

10-158. In contrast to the method of measuring the distance to bearing trees of the public land survey corners (to the center of the tree at its root crown), the distance is taken to the point indicated by a scribed X located immediately above the scribe marks BT. If the distance is taken to a point other than the X then the field notes will state the point to which the distance is measured.

Topography

10-159. The topographic features of mining claims and millsites should be noted carefully. Distances on the lines are shown to intersections with significant streams, gulches, ditches, ravines, roads, trails, etc., with their

widths, courses, and other data required for mapping. If the claim or site lies within a townsite, all important municipal improvements, and the street and block system within the claim or site should also be located for mapping purposes.

Field Notes and Preliminary Plat

10-160. Field notes and other reports must be upon the proper forms and/or in the proper format, which are furnished with the order for survey or upon application. No interlineations or erasures are permissible, and no abbreviations or symbols may be used excepting those shown in section 9-20 and as employed in the specimen mineral survey field notes in appendix III.

10-161. The mineral surveyor prepares and files a preliminary plat, drawn on a scale of 200 feet to an inch, if practicable, in conformity with specimen plat no. 4, the lines of the claim surveyed being shown heavier in contrast with conflicting claims. The geographic position of a corner of the survey will also be furnished (see section 9-103). It should clearly state that it is a “PRELIMINARY PLAT SUBJECT TO CORRECTION.”

10-162. In order that the results of the survey may be reported in a uniform manner, the field notes and preliminary plat are to be prepared in strict conformity with the specimen field notes and plat. These are designed to furnish all needed information concerning the manner of describing the boundaries, corners, lode lines, connections, intersections, conflicts, and improvements, and of stating the geographic position, magnetic declination, area, location, and other data connected with the survey of mineral claims, and to prescribe certain forms of certificates for the surveyor, and for listing his or her assistants.

10-163. Throughout the description of the survey, after each reference to the lines or corners of a claim or site location, give the name thereof, and if unsurveyed, state the fact. If reference is made to a claim or site location included in a prior official survey, the survey number is given, followed by the name of the claim or site.

10-164. The total area of each mining claim or mill-site in a group embraced by its exterior boundaries, and also the area in conflict with each intersecting survey or claim, will be stated. When mining claims or mill-sites of the survey conflict with each other, such conflicts should be stated only in connection with the mining claim or millsite from which the conflicting area is excluded.

10-165. The field notes and plat of survey should not show exclusions, or attempt to specify the net area of the claim. These are matters for the applicant to state in connection with an application for patent, and the notices posted and published. The field notes should merely show the total and net areas of conflict, so that any exclusion desired may be made readily.

10-166. The field notes will state specifically whether the claim is upon surveyed or unsurveyed Federal lands, giving in the former case the quarter-quarter-section, township, range, meridian, and state in which it is located, and in the latter the township and range as nearly as can be determined by the protraction diagram or, if not protracted, the information at hand. When upon surveyed lands, the section boundaries should be indicated by full lines and protracted legal subdivision boundaries by broken lines.

10-167. The title page should contain the mailing address of the claimant or authorized agent.

Improvements

10-168. In 30 U.S.C. 29 (Rev. Stat. 2325), it is directed that at least \$500 shall be expended upon a mining claim as a prerequisite to obtaining a patent.

In preparing the certificate of the value of the improvements, the form shown in the specimen mineral survey field notes in appendix III is followed.

Only actual expenditures and mining improvements made by the patent applicant or the applicant's grantors, and having a direct relation to the development of the claim, are to be included in the estimate. The expenditures required may be made on the surface or in running a tunnel, drifts, crosscuts, or drill holes for the development of the claim. Improvements of any other character, such as buildings, machinery, or roadways are excluded from the estimate unless it is clearly shown that they are associated with actual excavations, such as cuts, tunnels, and shafts, and are essential to the practical development and to actually facilitate the extraction of mineral. Mills for ore treatment, or roadways, tramways, or trails built for transporting the extracted ore from the mine, are not to be included in the estimate.

10-169. All mining and other improvements on the claim are located by course and distance from corners of the survey, or from points on the indicated lode line, specifying with particularity the dimensions and character of each. The improvements upon each location

should be numbered consecutively, the point of discovery always being No. 1. Improvements such as cabins, ore bins, roads, bridges, etc., that do not develop the claim and improvements made by a former locator who has abandoned the claim are not to be included in the estimate but should be described by separate statement in the field notes and shown on the plat.

The field notes should show in detail the value of all improvements included in the estimate of expenditures. When a tunnel or other improvement has been made for the development of other claims in connection with the one for which survey is made, the name, ownership, and survey number, if any, of each claim to be credited, and the value of the interest credited to each should be stated.

10-170. When a lode or placer claim, and millsite are included in the same survey, an expenditure of \$500 at the time of application for patent is required upon the lode or placer claim only.

10-171. When a survey embraces several mining claims held in common, constituting one contiguous block of mining claims, whether lode or placer, an expenditure of \$500 at the time of application for patent for each mining claim embraced in the group is required.

10-172. The Secretary's decision in *James Carretto and Other Lode Claims*, 35 Pub. Lands Dec. 361 (1907) (syllabus), has been summarized as follows:

Where several contiguous mining claims are held in common and expenditures are made upon an improvement intended to aid in the common development of all of the claims so held, and which is of such character as to redound to the benefit of all, such improvement is properly called a common improvement.

Each of a group of contiguous mining claims held in common and developed by a common improvement has an equal, undivided interest in such improvement, which is to be determined by a calculation based upon the number of claims in the group and the value of the common improvement.

There is no authority in law for an unequal assignment of credits out of the cost of an improvement made for the common benefit of a number of mining claims, or the apportionment of a physical segment of an improvement of

that character to any particular claim or claims of the number, such an arbitrary adjustment of credits, as the exigencies of the case may seem to require, being utterly at variance with the essential idea inherent in the term a common improvement.

In any patent proceedings where a part of a group of mining claims is applied for and reliance is had upon a common improvement, the land department should be fully advised as to the total number of claims embraced in the group, as to their ownership, and as to their relative situations, properly delineated upon an authenticated map or diagram. Such information should always be furnished in connection with the first proceeding involving an application of credit from the common improvement, and should be referred to and properly supplemented in each subsequent patent application in which a like credit is sought to be applied.

10-173. The Deputy Solicitor's decision in *United States v. Smith*, 66 Interior Dec. 169 (1959) (syllabus), has been summarized as follows:

While it is permissible to allocate among a group of contiguous claims the value of improvements placed on one of the claims in the group, this can only be done where there is a showing that the labor performed or the improvements made on that claim were intended to aid in the development of all the claims and that the labor and improvements are of such a character as to redound to the benefit of all.

10-174. The IBLA's decision in *Brattain Contractors, Inc.*, 37 IBLA 233 (1978) (syllabus), for common off-site improvements, has been summarized as follows:

Where in a patent application for a group of claims, prorate credit for the value of a common, off-site improvement is to be attributed to each claim, it must be shown that the improvement was subsequent to the location of each claim so credited, and that the improvement is essential to the practical development and actually facilitates the extraction of ore from each claim.

The explanatory statement in such cases should be given in the field notes or affidavit at the conclusion of the description of the improvements included in

the estimate of expenditure, and should be as full and explicit as the facts in the case warrant, dealing only with improvements, conditions, and circumstances as they actually existed at the time of survey or subsequent field examination.

10-175. If the value of the improvements upon a mining claim is less than \$500 at the time of survey, authority is given to file thereafter supplemental proof showing \$500 expenditure made prior to the expiration of the period of publication for patent. The information on which to base this proof must be derived by the mineral surveyor, who makes the actual survey, from a careful examination upon the premises.

10-176. Only improvements made by the patent applicant or the applicant's grantors subsequent to the location of the claim are counted under the statutes toward patent expenditure. The BLM Cadastral Survey Office certifies to this fact according to the record, and, as the certificate is based on the report of the mineral surveyor, the latter should exercise special care to see that only such improvements are reported.

10-177. The expenditure for the mineral survey may not be accredited as labor or improvement as a prerequisite to patent, nor as annual assessment work upon the claim (*Cost of Official Survey of a Mining Claim Not Acceptable as Annual Assessment Work*, 52 Pub. Lands Dec. 561 (1929)).

Millsite

10-178. A millsite may be dependent, encompassing nonmineral land not contiguous to a vein or lode, if used or occupied by the owner of the vein or lode for mining or milling purposes as of the date of the BLM mineral examination or withdrawal, whichever is earlier. The millsite may be independent, encompassing "a quartz mill or reduction works" (30 U.S.C. 42(a)), if not dependent on a particular mining claim and the owner not necessarily the owner or claimant of a claim. A millsite claim may also encompass nonmineral land used or occupied by the owner of a placer deposit for mining or milling purposes (30 U.S.C. 42(b)).

10-179. The maximum size of each individual millsite is 5 acres, governed by the rule of approximation (section 10-197). Only that amount of millsite acreage that is reasonably necessary to be used or occupied for efficient and reasonably compact mining or milling operations is locatable (43 CFR 2832.32). Each 2½-acre portion of a millsite must be used or occupied in order for

that portion of the millsite to be valid (43 CFR 3832.33 (a)(2)).

All improvements and projected improvements should be shown. If the ground is to be used for a tailings or evaporation pond, the dam should be shown with its ultimate height and the high water line of the pond delineated by the survey.

Amended Orders

10-180. An amended (supplemental) order is based on an amended application from the claimant. It is usually occasioned by the filing of amended location certificates. The amended application is processed exactly the same as the original application.

If amended location certificates are filed for record, it will be necessary to make an amended application for survey based on the amended certificates, and receive an amended order for survey.

An amended order is also called for if there is an addition or deletion of claims from the survey.

A change in mineral surveyor will call for an amended order, and the order to the original mineral surveyor must be cancelled.

If the claimant sells the claims, an amended order will be required to show the new claimant.

An amended order may be used to authorize the survey of additional expenditures if the survey was approved without the necessary expenditures made.

An amended location notice prior to applying for an order for patent survey can be used when it is found necessary to change location claim boundaries.

Amended Surveys

10-181. Amended surveys are ordered in the same manner as original mineral surveys. The conditions and circumstances peculiar to each separate case and the object sought by the required amendment are set forth in the special instructions, order, or amended order, and alone govern all special matters relative to the manner of making such surveys and the form and subject matter to be embraced in the field notes.

10-182. An amended survey must be made in strict conformity with, or be embraced within, the lines of the

original survey. If a portion of the amended and original surveys is identical, that fact must be distinctly stated in the field notes. If not identical, the bearing and distance are given from each established corner of the amended survey to the corresponding corner of the original survey. The lines of the original survey, as found upon the ground, are laid down upon the preliminary plat in such manner as to contrast and show their relation to the lines of the amended survey.

10-183. The field notes of the amended survey are prepared on the same size and same forms as are required for the field notes of the original survey, and the abbreviation “Am.” will be used after the survey number wherever it occurs.

10-184. A new mineral survey is required if the claim boundaries are changed by amendment after the original survey is approved. A new survey is also required where the claim has been abandoned and relocated by another.

Cancellation of Mineral Surveys

10-185. A mineral survey may be cancelled only after the claim has been relinquished by the claimant, declared forfeited, or determined null and void. It can be cancelled only by the BLM Chief Cadastral Surveyor authorized to approve mineral surveys within the administrative jurisdiction.

When it becomes necessary to cancel a mineral survey, the plat is clearly marked “Canceled” but is not removed from the official records. No notations are made on the field notes. The survey corner monuments normally are not removed. Monuments should be removed only for clearly advantageous reasons and only in connection with an official survey where the positions of the old monuments are tied in before destruction.

If the mineral survey is canceled, it is still available for other uses. If the mineral survey and corner monuments could be used for future disposal or administrative purposes, they are incorporated in an official survey or supplemental plat. This is done by assigning lot numbers to the area within the canceled mineral survey. Where the survey is retained, the field notes of the canceled survey may become the basis for the new lot designation and support the new plat.

Tunnel Sites

10-186. A tunnel site is a subsurface right-of-way under Federal land open to mineral entry. It is used for access

to lode mining claims or to explore for blind or undiscovered veins, lodes, or ledges not currently claimed or known to exist on the surface. A tunnel site is a possessory right only and cannot be patented (30 U.S.C. 27; Rev. Stat. 2323; Act of May 10, 1872, ch. 152, sec. 4; 17 Stat. 92).

Tunnel sites are a possessory right to any blind veins, ledges, or lodes cut by the line of the tunnel, not previously known to exist, for a distance of 3,000 feet from the face of such tunnel. The term “face” is held to mean the first working face formed in the tunnel. It is the point at which the tunnel enters cover. The face is the point from which the 3,000 feet are to be measured. The line of the tunnel, within the meaning of 30 U.S.C. 27, is theoretically a cylinder that is 3,000 feet long and with a radius of 1,500 feet from the tunnel axis.

To take advantage of the benefits of this provision of law, the proprietors of a tunnel site shall give proper notice of their tunnel location by erecting a substantial post, board, or monument at the face or point of commencement. In order to provide notice to others whether or not they are within the boundary lines of the tunnel site, the proprietors must also establish the boundary lines of the tunnel sites. It is customary to monument and mark the line of the tunnel at such interval so that each succeeding monument or mark is visible from the last, beginning at the face or point of commencement of the tunnel and continuing a maximum of 3,000 feet to the end. From the end points, the four corners of the tunnel site should also be monumented, up to 1,500 feet each side.

10-187. Upon discovery, a mining claimant may use a tunnel site to acquire the mineral rights by locating a lode mining claim. The location date of the lode claim relates back to the location date of the tunnel site.

The right to a tunnel site location is lost by failure to develop the tunnel for a period in excess of 6 months or the failure to otherwise diligently prosecute (*United States v. Swanson*, 98 Interior Dec. 185 (1991)).

10-188. Where an exterior line of a claim intersects the boundary of a tunnel site, give the course and distances from the point of intersection to the corners of the site at each end of the segment of the boundary so intersected. If the corner tied to is not the nearest record corner or a record corner in a direction is not found, a statement will be made that a diligent search had been made but no evidence of the corner position was recovered.

Extralateral Rights

10-189. The doctrine of extralateral rights allows a lode mining claimant to follow a vein beyond the vertical planes drawn through the side lines of the claim (30 U.S.C. 26). As such, the owner of a mining claim may develop “all veins, lodes and ledges throughout their entire depth, the top or apex of which lies” within the boundary lines extended downward vertically, even though the veins, lodes, or ledges extend outside the boundaries of the claim (*Del Monte Mining and Milling Co. v. Last Chance Mining and Milling Co.*, 171 U.S. 55 (1898)).

10-190. A mining claim location entitles the claimant to occupy the surface for mining purposes and to possess the underlying valuable mineral deposit, be it vein, lode, ledge, or disseminated in nature. The surface location is made to locate the rights beneath the surface. The end lines place the limits of the locator’s appropriation of any vein or veins along their course or strike, which illustrates the importance of the end lines parallelism concept when compared to the purposes of the side lines. The side lines measure the surface extent of the claim on each side of the middle of the vein at the surface (*Del Monte Mining and Milling Co. v. Last Chance Mining and Milling Co.*, 171 U.S. 55 (1898)).

In practice, during the location process, the best survey methods are frequently not used because of a desire to save both time and money. Indeed, it has been and was to be expected that such location surveys and markings would be made by the miners themselves, inexperienced in the matter of surveying. The result has been innumerable difficulties. For the mineral surveyor, the question is not what equity is, but what is the law, policy, and good survey judgment. The U.S. Supreme Court explained in *Iron Silver Mining Co. v. Elgin Mining & Smelting Co.*, 118 U.S. 196, 207 (1886), that:

If the first locator will not or cannot make the explorations necessary to ascertain the true course of the vein, and draws his end lines ignorantly, he must bear the consequences. He can only assert a lateral right to so much of the vein as lies between vertical planes drawn through those end lines.

10-191. Every vein having a top or apex lying inside the surface boundary lines of a lode mining claim extended downward belongs to the locator and may be pursued to any depth beyond the vertical side lines, even though in doing so, the locator may enter beneath the surface of another mining claim, or Federal or non-Federal lands

where the mineral estate was open to mineral location at the time of the location date. Conditions upon which extralateral rights may be acquired by locators of mining claims have been prescribed by Congress in 30 U.S.C. 26. Mining claimants shall satisfy those conditions when locating and developing their claims, or else be limited to minerals beneath the surface of their territories (*Del Monte Mining & Milling Co. v. Last Chance Mining & Milling Co.*, 171 U.S. 55 (1898)).

The existence of an apex within a given lode mining claim is not essential to the validity of the lode mining claim, but only to the mining claimant’s ability to assert an extralateral right derived from that mining claim.

Extralateral rights do not include the right of the lode claimant to trespass upon the surface of adjacent lands claimed or owned by others. However, location lines of a lode mining claim are used only to describe, define, and limit property rights in the claim. The location lines may be laid within, upon, or across the surface of patented or unpatented mining claims for the purpose of claiming the free and unappropriated ground within such lines and the veins apexing in such. The location lines serve in defining and securing extralateral underground rights upon all such veins, where such lines, (1) are established openly and peaceably and (2) do not embrace any larger area of surface, claimed and unclaimed, than the law permits (*The Hidee Gold Mining Co.*, 30 Pub. Lands Dec. 420 (1901)).

10-192. The primary consequence of a locator’s failure to locate his or her claim boundaries according to the actual course of the lode, whether by lack of care or lack of data, is that the claimant may be limited in his or her extralateral rights.

The actual course of a vein may materially deviate from the center line of a lode claim without adversely affecting the validity of the claim. The relationship between the actual course of the lode and the position of the mining claim’s lateral boundaries and center line does not affect the validity of the claim. Originally marked claim boundaries need not be adjusted to comport with the actual course of the vein, so long as the claim has been located in good faith for mining purposes. No portion of a lode mining claim shall be considered excessive where the statutory dimensions of 1,500 feet by 600 feet and, 300 feet on each side of the middle of the vein at the surface, are not exceeded.

The statute intends to prescribe the limit of the extent along the course of the lode that locators may claim,

and does not prescribe that they shall locate so that the greatest dimension of their claim shall coincide with the course of the lode. It is provided that the extreme extent along the lode shall not exceed 1,500 feet. It may be less and if the claimants, in making their locations, should mistake the direction of the lode upon which they locate, and thus make the extreme dimensions of the claim in a direction other than that of the lode, that fact does not invalidate their claims. It only operates to diminish the extent of the lode within the boundaries of the claim. The only result of so locating is that locators get less, in extent of the lode, than they would have otherwise. And that if the side lines, instead of the end lines, cross the course of the lode, in order to define the locators' rights to pursue the lode on its dip, the side lines will be treated as end lines (*Apex & Extralateral Rights Issues Raised by the Stillwater Mineral Patent*, M-36955, 93 Interior Dec. 369 (1986)).

10-193. Since the Act of May 10, 1872, parallelism in the end lines is essential to the existence of any extralateral rights. End lines mean such lines as are crossed by the lode on its course. Side lines may become end lines, sometimes called side-end lines.

The principle of the parallelism doctrine is that parallel means substantially parallel, not a mathematical precision, not exact (*Grant v. Pilgrim*, 95 F.2d. 562 (9th Cir. 1938)). A reasonable compliance with the law is all that is required. In a case where the end lines converge in the direction of the dip, the locator is entitled to the extralateral right between the converging planes. In a case where the end lines diverge in the direction of the dip, the locator is without extralateral rights. Where the location claim as originally marked upon the ground has nonparallel end lines, it may be rectified at any time, if such rectification does not interfere with intervening rights.

Legal Subdivisions

10-194. Where placer claims or millsites are upon surveyed lands and conform to legal subdivisions, and properly executed and monumented, the official surveys are as permanent and fixed as is practicable. It is not required that the claim or site corners and boundaries be further marked on the ground. However, the object of the law is to inform other miners as to what portion of the ground is already occupied, which may not be satisfied in those surveyed areas where:

- (1) complicated conditions involve a double set of corners, both of which may be regarded as authentic;

- (2) there are no existing corners in one or more directions for an excessive distance;

- (3) existing marks are improperly related to an extraordinary degree; or

- (4) all evidences of the original survey that have been adopted by the claimant as a basis for his or her location have been lost before the subsequent claim is made.

10-195. The mere reference to the legal subdivision, in these latter areas, while providing a valid land description, in fact may not inform other miners as to what portion of the ground is within the claim, and the claim may, in fact, float or swing until the legal subdivision lines are definitely located on the ground by a survey or resurvey. Also, State law may require marking of the legal subdivision boundaries and monumentation of claim or site corners.

10-196. For location of placer claims or millsites that conform to the legal subdivisions, or for the segregation of mineral land from agricultural land by legal subdivisions, per 43 U.S.C. 766 (Rev. Stat. 2406; Act of July 9, 1870, ch. 235, secs. 12, 16; 16 Stat. 217), the subdividing may be done by county or other local surveyors at the expense of the claimants and under the direction and control of the Chief Cadastral Surveyor (30 U.S.C. 35; Rev. Stat. 2329; Act of July 9, 1870, ch. 235, sec. 12; 16 Stat. 217, and Rev. Stat. 2331; Act of May 10, 1872, ch. 152, sec. 10; 17 Stat. 94).

10-197. Where lots or irregular surveys of the PLSS are encountered, the rule of approximation may be applied to excess acreage. The rule is that the amount of excess may not exceed the amount of loss, if the smallest lot or legal subdivision of 10 acres for placers, or lot or legal subdivision of 5 acres for millsites, were eliminated. On the basis of 10-acre tracts for placers the allowable excess would be 4.99 acres, and on the basis of 5-acre tracts for millsites the allowable excess would be 2.49 acres (*Ventura Coast Oil Co.*, 42 Pub. Lands Dec. 453 (1913)).

10-198. When a mining claim or millsite cannot be described by legal subdivision, either because the land is unsurveyed or the claim or site does not conform to a legal subdivision, the BLM must reject a patent application when the applicant fails to survey the claim or site and submit the mineral survey along with his or her application (*Jack K. Carter*, 142 IBLA 1 (1997)).

When a mining claim or millsite cannot be described by legal subdivision, a nonrectangular description that fixes the position of the claim or site corners with respect to an official survey monument is required.

10-199. When a placer claim or millsite is on unsurveyed lands and cannot be described by legal subdivision, the claim or site should be described by the protraction diagram, if one is of record. If located by legal subdivision based upon a protraction diagram and the land is subsequently surveyed, an amended location certificate will be filed to properly fix the position of the claim or site on the ground.

Protraction diagrams are not official surveys. Therefore, the requirement that a placer mining claim or millsite patent application be accompanied by a mineral survey of the unsurveyed land is not waived when the unsurveyed land is covered by a protraction diagram (*Dennis J. Kitts*, 84 IBLA 338 (1985)).

10-200. Lots, whether those (1) on the north and west boundaries of a township, (2) created by segregation and patenting of lode mining claims, (3) created by meandered bodies of water, or (4) created by other special surveys, are a legal subdivision of official surveys. The subdivision of such lots into smaller legal subdivisions requires an official survey. A location certificate description “W $\frac{1}{2}$ of lot 1” does not conform and cannot be made to conform to the rectangular or legal subdivisions of the PLSS, and an official survey of the land located and claimed is necessary (*Holmes Placer*, 29 Pub. Lands Dec. 368 (1899)).

In many of the cases just described, a supplemental plat is prepared to show the modified legal subdivisions.

Riparian Rights—Mining Claims and Millsites

10-201. The United States acquired the title to the lands beneath navigable waters equally with the title to upland but held the lands beneath navigable waters only in trust for the future States that might be created out of that territory (see chapters III and VIII for discussions on navigable waters). This principle is not applicable, however, to lands beneath navigable waters that Congress clearly intended to include within a reservation or affirmatively intended to defeat with respect to future State title to such land (*Ownership of Submerged Lands in Northern Alaska in Light of Utah Division of State Lands v. United States*, M-36911 (Supp. I), 100 Interior Dec. 103 (April 20, 1992)).

Therefore, title to the lands beneath navigable waters passed to the State upon statehood, including the mineral estate, subject to certain recognized exceptions. The lands beneath navigable waters are subject to the laws of the State in which they are situated and are not locatable under the United States mining laws (*Charles B. Reynolds, Jr., et al.*, 56 Interior Dec. 60 (1937)). However, in some States, title to lands beneath navigable waters has been relinquished to riparian owners to varying degrees, some completely. The United States and a State may sometimes have a dispute over whether certain waters are navigable waters. In those circumstances, a determination of whether those waters qualify as navigable waters may be necessary before a State can assert ownership over the lands beneath those waters.

By the acts of 1849, 1850, and 1860, some States were granted swamp and overflowed lands. The United States did not retain the mineral estate to these lands.

10-202. When mining claims or millsites not described by legal subdivisions contain language in the location notice or claim map that clearly indicates that a line of the claim or site adjoins or overlaps lands beneath navigable waters, the ordinary high water mark for inland waters or the line of mean high tide for tidal waters becomes the boundary of the side line of the claim and of the millsite. The end line of the claim, for extralateral purposes, can be located out in the water body.

In such instances, it is proper to run a meander line as a boundary, and where this is done the field notes of the mineral survey or mineral segregation survey will state that it is a meander line of the ordinary high water mark or the line of mean high tide, and that the corners of such line are meander corners or angle points on the meander line. The situation is well stated in *Alaska United Gold Mining Co. v. Cincinnati-Alaska Mining Co.*, 45 Pub. Lands Dec. 330, 343 (1916):

The Department is clearly of the opinion that the rule as to meander lines is, both in principle and reason, as applicable to mining claims as to other classes of claims, and that where in the course of an official patent survey of a mining claim abutting upon a navigable body of water a meander line, which follows as nearly as practicable the shore line of such water, has been run, such shore line and not the meander line must be taken as a boundary of the claim when patented according to the plat and field notes of the survey of such claim.

If one entire end of a claim is delineated by a meander line, the end line is protracted parallel to the inland end line at the farthest waterward point of the meander line for the purpose of determining extralateral rights.

10-203. In States where title to lands beneath navigable waters has been relinquished to riparian owners and the mining claim or millsite contains language in the location notice or claim map that clearly indicates that a line of the claim or site adjoins or overlaps lands beneath navigable waters, the surveyor will consult with the BLM mineral adjudicator prior to the completion of the mineral survey.

10-204. Where one of the boundaries of a claim or site, not described by legal subdivisions, is a navigable body of water, all insubstantial land formed by accretion due to natural or artificial causes since the date of patent survey passes to the patentee, as do accretions formed after patent. The Department having no jurisdiction, such lands become the property of the riparian proprietor.

10-205. Federal lands open to the operation of the Mining Law of 1872 and lying beneath nonnavigable waters are subject to location under the United States mining laws. Meandered lands beneath nonnavigable waters are subject to location when the abutting upland is unappropriated, or patented with a mineral reservation.

When a mining claim or millsite, not described by legal subdivisions, adjoins, or is within meandered lands beneath nonnavigable waters, by current practice the field notes of the mineral survey or mineral segregation survey will state whether the boundary is, or is not, a meander line of the ordinary high water mark, and whether the corners of such line are meander corners and angle points on the meander line governed by the doctrine of accretion. If not clearly stated in the location notice or on a claim map, the presumption is that the boundary of the claim or site is a fixed boundary with no riparian rights.

10-206. For mining claims or millsites described by legal subdivisions, the doctrine of accretion governs the movement of boundaries of meandered lands adjoining nonnavigable waters. Movement of the boundaries of legal subdivisions resulting from accretion, erosion, reliction, or avulsion, after survey and prior to location of the claim or site, and thereafter, all govern the claim or site boundary of the riparian proprietor. This is subject to the standard exceptions where there is fraud, gross error shown in the survey, or an intention to limit

a grant, conveyance, claim, or site to the actual meander lines as disclosed in the facts or circumstances.

10-207. For mining claims or millsites described by legal subdivisions of meandered lands adjoining nonnavigable waters, the medial line of the body of water, that is, a line located midway between the opposite ordinary high water marks, is the boundary of the claim or site. In such instances, it is proper to run such a boundary as a claim or site boundary line, and the field notes of the mineral survey or mineral segregation survey will state that it is a survey of the medial line of the body of water, that it is ambulatory, and that the corners of such line are claim or site corners (see sections 8-21 through 8-31).

The principles described in sections 8-187 through 8-189 also apply to mineral lands surveys.

Resurveys—Mineral Lands

The Nature of Dependent Resurveys of Mineral Surveys

10-208. Dependent resurveys of mineral lands involve many of the same considerations and principles as dependent resurveys of rectangular public lands. In addition, the surveyor must know the processes governing mineral lands location, notice, survey, entry, and patent that vary from other public land laws, and how each could affect the position of the rights on and beneath the surface of the earth. There are three overlapping objects of such dependent resurveys: First is the adequate protection and marking of existing rights acquired under the original survey in the matter of position beneath the surface of the earth. Second is the adequate protection and marking of existing rights acquired under the original survey in the matter of position on the surface of the earth. Third is the proper marking of the boundaries of the remaining Federal interest lands.

10-209. A principle governing the physical location of boundary lines extending downward beneath the surface is that the end lines of lode claims are to be substantially parallel based upon the degree of precision accepted at the time of the original survey.

10-210. As to position on the surface of the earth, contiguous mining claims, not described by legal subdivisions, are either simultaneous or sequential grants with simultaneous or sequential surveys. This characteristic differs from rectangular grants and surveys, which are predominately simultaneous in character. This

distinction is fundamental to the work of the dependent resurveyor of mineral lands and mining claims.

10-211. Retracement principles of public land surveys are also applicable to mineral land surveys. The recognition of questions caused by significant discrepancies between survey or patent records, from the actual, found, on-the-ground-conditions, led to Congressional action. For mineral lands, acknowledgement and remedy appears at 30 U.S.C. 34 (Act of April 28, 1904; 33 Stat. 545), which states that monuments are to be the highest authority to which inconsistent descriptions shall give way, thereby making even more explicit this existing statutory and common law retracement principle. The statute reads as follows:

The description of vein or lode claims upon surveyed lands shall designate the location of the claims with reference to the lines of the public survey, but need not conform therewith; but where patents have been or shall be issued for claims upon unsurveyed lands, the Director of the Bureau of Land Management in extending the public survey, shall adjust the same to the boundaries of said patented claims so as in no case to interfere with or change the true location of such claims as they are officially established upon the ground. Where patents have issued for mineral lands, those lands only shall be segregated and shall be deemed to be patented which are bounded by the lines actually marked, defined, and established upon the ground by the monuments of the official survey upon which the patent grant is based, and the Director of the Bureau of Land Management in executing subsequent patent surveys, whether upon surveyed or unsurveyed lands, shall be governed accordingly. The said monuments shall at all times constitute the highest authority as to what land is patented, and in case of any conflict between the said monuments of such patented claims and the descriptions of said claims in the patents issued therefor the monuments on the ground shall govern, and erroneous or inconsistent descriptions or calls in the patent descriptions shall give way thereto.

The practical effect of this statute is that when the locus of a mining claim becomes uncertain, the surveyor shall locate the land embraced in the survey and bounded by the lines actually marked, defined, and established on the ground by monuments substantially within the requirements under the law and official regulations and

corresponding to the description thereof in the patent (*Sinnott v. Jewett*, 33 Pub. Lands Dec. 91 (1904)).

10-212. The standards of evidence governing existent, obliterated, and lost corners outlined in chapters V, VI, and VII are applicable to resurveys of mineral survey.

Lost Corners

10-213. There is no hard and fast rule for reestablishing lost corners of lode mining claims. The method should be selected that will give the best results, bearing in mind that end lines of lode claims should remain substantially parallel, if parallel by record. When the original surveys were made faithfully, the application of the principles of parallelism, record distances, record angular relationships, and record relationships between the claim and the workings on it, in combination with the presumption that the original intent was to be conformable with the statutes governing dimensions and area, should substantially meet the objectives stated above.

In restoring lost corners of irregular claims, such as nonrectangular placers or millsites, the secondary methods of broken boundary adjustments (sections 7-53 and 7-54) should be considered. These may also be applied to lode claims if application of the methods described in the previous section does not give adequate results.

In restoring lost corners of a block of claims, originally surveyed at the same time, the primary methods of proportionate measurement should be considered. The field notes and order should be consulted to determine if the basis for record directions deviates from the general plan (section 10-121).

As with all lost or obliterated corners, the position of a corner of a mineral survey must be determined from the best available evidence and in such a configuration that will place the lines as nearly as possible in their original positions.

10-214. Caution should be exercised in the use of any ties to or from adjoining surveys when the descriptions for the conflicting claim corners, PLSS corners, or mineral monuments are not mentioned in the field notes memorandum and may in fact have only been calculated and not surveyed on the ground. Such calculated ties, as a rule, should not be used.

Physical Location and Title Conflict

10-215. In cases where physical locations or titles of claims or sites are in conflict, the surveyor should be

familiar with critical actions in order to gather facts relevant for the deciding officer(s)'s determination of the physical limits of rights.

As a general rule, "first in time, first in right" will determine the priority of conflicting mining claims or sites. Determining the extent of rights to a mining claim or site typically depends on evidence gathered from prior sequential grants and surveys.

10-216. The date of a specific act, whether by the claimant, Government, or a third party, will often determine, or provide evidence of, the priority of physical location and ownership rights on or beneath the surface of the earth. Generally, (1) the date of the official filing of the mineral survey is the controlling event for survey and survey corners and boundary purposes, i.e., physical location or position, and (2) the date of the mineral patent is the controlling event for title purposes.

To determine if there is a physical location or title conflict, the following actions and dates must be known:

(1) Location Date – The location date is the date the claimant has attested that the corners and exterior lines of the claim were marked on the ground and the location notice was posted on the ground. The amended location date is the date the claimant has attested that the amended location notice was posted on the ground. To maintain the priority of either such date, the claimant shall subsequently comply with all appropriate Federal and State laws and regulations. The claimant shall record (file) the location certificate and amended location certificate (if the location is amended) with the BLM and the county within the allotted time. The location notice (and amended location notice, when necessary) shall include the name of the location (claim), type of location (claim), the location date, the name and address of the locator (claimant), and location (claim) description including legal subdivision within the quarter section. The location date and amended location date may determine:

- (a) the date of the possessory right,
- (b) the spatial relationship of the boundaries of the location (claim) and other lands held by the United States, and

- (c) the relative junior-senior title rights as to third party claimants.

(2) Mineral Survey Filing Date – The mineral survey filing date is the date the mineral survey plat and any adjustments, amended surveys, or supplemental plats thereto, approved upon signature by the BLM State Office Chief Cadastral Surveyor are officially filed. A bona fide right as to physical location (position) relates back to the filing date of the mineral survey.

(3) Final Certificate Date – By Departmental procedure applicable from 1866 to 1958, the Department issued a single "mineral entry final certificate" to patent applications before they received the patent to show that the applicant had complied with all of the "paperwork" requirements for obtaining a patent under the Mining Law. A patent application is subject to protest and appeal until the date of the patent. When the patent was ultimately issued, the date of the property interest related back to the location date. The position or physical location associated with this interest is fixed as of the filing date of the mineral survey of the mining claim. This is done in an effort to ensure any bona fide rights or claims of any claimant, entryman, or owner of lands are protected pursuant to 43 U.S.C. 772. The final certification date is also known as the mineral entry date.

If the Department verified that the applicant had a valid discovery of a valuable mineral deposit (or, in the case of a millsite, verified that the land was nonmineral in character and was being used and occupied in support of a previously or concurrently patented mining claim), and otherwise satisfied the requirements for patenting under the Mining Law, the Department issued a patent, which contained any applicable reservations, exceptions, and restrictions.

(4) First and Second Half Final Certificates – Under Departmental procedures in effect from 1958 until Congress imposed a moratorium in 1994 prohibiting the Department from processing new and nongrandfathered patent applications, the final certificate was issued in two parts. When the first half was signed, the signature date was called the date of mineral entry. From a resource management standpoint,

this meant that surveyors were to protect any physical position associated with this “mineral entry,” per 43 U.S.C. 772, in the event the claim ever went to patent.

The second half of the mineral entry final certificate was completed after the mineral examination, and listed only those claims or sites for which the Department had verified discovery of a mining claim or proper use and occupancy of a millsite. The second half of the mineral entry final certificate is generally signed at the same time as the patent, and it is the patent that transfers legal title to the claim to the applicant. The date of the property interest relates back to the signature date of the first half certificate and the physical position associated with the mining claims and millsites that are included in the patent is fixed as of the filing date of the mineral survey of the mining claim and millsites. This is done in an effort to ensure any bona fide rights or claims of any claimant, entryman, or owner of lands are protected pursuant to 43 U.S.C. 772.

(5) Post-Moratorium Patenting Procedures – In 1997, the Solicitor issued a legal opinion recommending that BLM discontinue using the two-part final certificate system and return to the previous procedure of issuing only one final certificate (see *Entitlement to a Mineral Patent Under the Mining Law of 1872*, M-36990 (November 12, 1997)). However, although grandfathered patent applications are still being processed, because of the Congressional moratorium on new patent processing, BLM has not revised its policies as to issuance of final certificates.

(6) Patent Date – The patent date is the date of the signature on the patent, i.e., the date when full and final legal title from the Federal Government is transferred to the applicant. The patentee’s property right as to title relates back to the location date, but the physical position associated with that right relates back to the filing date of the mineral survey. This is done in an effort to ensure any bona fide rights or claims of any claimant, entryman, or owner of lands are protected pursuant to 43 U.S.C. 772. The patent issuance is final, except in cases of fraud or mistake, which are subject to a statute of limitations.

These various dates and positions may be affected by a contest, quiet title action, adverse proceeding, mineral survey, amended mineral survey, supplemental plat, confirmation of a discovery of a valuable mineral deposit, protest, appeal, fraud, or mistake. The dates may also be affected by a new location, relocation, new mineral survey, or other causes.

10-217. The mining laws of the United States involve two classes of rights or titles: (1) mining claims, which, if valid, include a right of possession, and (2) patents, which convey title from the Federal Government to the extent permitted by the relevant authorizing legislation.

10-218. A patent from the United States vests in the grantee of the Government an indefeasible title to the mineral deposits (and, in most cases, the surface estate as well), whereas a mining claim may be defeated at any time by the failure of the claimant to, for example, properly maintain the mining claim or site, or perform the labor or make the annual improvements required by statute (see *Benson Mining & Smelting Co. v. Alta Mining & Smelting Co.*, 145 U.S. 428 (1892); *Am. Hill Quartz Mine*, Copp’s *U.S. Mineral Lands*, p. 254), or to prove discovery of a valuable, i.e., profitable, mineral deposit.

10-219. Legal title transfers from the Government immediately upon issuance of the patent.

10-220. The property right in a valid mining claim or site may continue for an indefinite term of years and can only be terminated by a failure of the claimant to comply with the terms of the statute or a successful assertion of claim to the land by another. There is nothing in the law, however, that requires the holder of a valid mining claim to patent or purchase the land from the Government. As long as the claimant complies with the applicable laws, his or her right to use and benefit from the land, for all practical purposes, is as good as though the land were secured by patent.

10-221. The previous discussion addresses rights to both the surface estate and the subsurface estate, including the extralateral estate. It can be inferred that similar rationale applies to the bona fide rights, for all classes and rights, as to position on the earth’s surface and beneath the earth’s surface. As to position, once the statutory requirements have been met, the claimants “shall have the exclusive right of possession and enjoyment of all the surface included *within the lines* of their location claims although the United States retains title to the land” (*California Coastal Commission v. Granite*

Rock Co., 480 U.S. 572, 575 (1987), emphasis added). The surveyor must be able to recognize when bona fide rights as to position of the surface estate are not identical with the bona fide rights as to position of the subsurface estate.

10-222. Therefore, in very general terms and by today's rules and regulations, the point at which the position on and beneath the earth's surface of a mining claim becomes fixed by survey, for each class of title, may be described as follows:

(1) Possessory Right – When a mining claimant locates a mining claim but the claim is not yet perfected, the physical position of the claim is, to a degree, floating on the location date. This is so because: (1) the position of the mineral patent survey corners may be positioned inward of the location survey corners in order to meet statutory size limitation requirements; (2) one or more 10-acre aliquot parts of a placer claim may be determined to be nonmineral, or (3) a 2½-acre aliquot part of a millsite may be determined mineral in character or not.

(2) Perfected Unpatented Mining Claim – When a mining claimant locates a mining claim and then perfects the claim, the position or physical location becomes fixed on the filing date of the mineral survey, amended mineral survey, or supplemental plat, subject to adverse proceedings and mineral examination validation. One survey plat may cover a portion of the patent description, and another plat with a different filing date may cover the remainder of the patent description.

(3) Patented Mining Claim – The position or physical location of a patented mining claim becomes fixed on the filing date of the mineral survey, and/or on the filing date of any amended mineral survey or supplemental plat. One survey plat may cover a portion of a patent description, and another plat with a different filing date may cover the remainder of the patent description. Upon issuance of the patent, the physical position of the claim boundaries becomes the full legal boundaries between the land held by the new legal owner of the patented land and the United States. The physical position of such boundaries is subject to preexisting boundary conflicts with previously alienated lands on one or more sides.

10-223. Before the date that title vests, as evidenced by the patent, the claimant's right as to position on the surface of the earth between the applicant and the United States is still to be determined. This is apparent, for example, if during the patent application survey, the mineral surveyor determines the location to be in excess of the statutory maximum area. This is also apparent where a portion of a placer claim is determined by adjudication to be nonmineral in character. In cases like these, the claim or site boundaries are adjusted without impairing bona fide rights as to position on the surface of the earth.

“Gaps and Overlaps” Not of Record

10-224. Patented and unpatented claims and sites were often surveyed as contiguous to each other by sequential surveys. When the record is clear that monuments were set to mark corners common to two claims, the presumption is that the claim line as marked is common to the two claims. Experienced surveyors know in the case of offset claim corners along a boundary between contiguous claims that, after monumentation, technical gaps or overlaps will exist. These are not legal or title conflicts. It is known that every measurement contains some error, and it is impossible to put a monument exactly on the straight line between two other monuments; slight variations in direction or distance are unavoidable and acceptable.

During the retracement, the extent of the falling of the intermediate monument from the straight line between the two other monuments is measured. An analysis of conditions will be conducted and a determination made as to whether the line is common to the claims or the error is so gross as to impair a legal right as to position so that the claims were never contiguous.

10-225. When the relationship between the monuments is substantially as approved, and there is no evidence of fraud, mistake, or gross error, the line running through the intermediate monument, as measured, will be returned as common to the claims.

When determining whether the conditions found during the retracement are substantially as approved, the surveyor shall be guided by law, rules, official policy, effect on extralateral rights, and survey principles thereof.

10-226. When duly authorized, the surveyor is acting under the authority of the Secretary of the Interior. Congress has empowered the Secretary, or such officer as he or she may designate, to perform all executive

duties appertaining to the survey of Federal lands, including mineral, lands.

It is also for the Secretary, acting through the Chief Cadastral Surveyor, to determine the boundary location of lands within Federal province. The surveyor is required to give effect to the conditions existing when the monument was established. The general surveying principle is applied: if the monumented position was valid at the time set, the surveyor is not at liberty to disapprove it by reason of a subsequent change in conditions. Furthermore, the extent of recognition given by neighboring claimants to a monument used for the control of the position of claims and patents very often carries with it the necessity for a consideration of its influence in the matter of the acceptability of such positions under the good faith location rule (section 6-35).

The intermediate monument in its original position, but not at its record position, was approved even though based on false assumptions. Unless set aside by direct proceedings, such a decision of approval, even with the technical error, will bind the Government except when fraud, mistake, or gross error can be proven. Questions respecting position are to be determined by the conditions existing at the time when all requirements necessary to approve the survey had been complied with, and no subsequent change in such conditions can affect this physical location.

Reviewing courts will hold unlawful and set aside agency action, findings, and conclusions found to be arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law or in excess of statutory authority. However, a reviewing court may not substitute its judgment for that of the agency. An agency's interpretation of its own regulations and of the statutes it administers is entitled to deference.

10-227. Once accepted, an official survey and the monumented positions thereof can affect title to private land, at least to the extent of giving rise to an apparent boundary conflict and establishing a cloud on title. The United States retains the power to make corrective adjustments for prior erroneous survey monument positions, and the BLM has the burden of proving that a monument position of an official survey is erroneous. Changing the position of duly authorized lines or monuments years after approval may result in calling into question title to narrow strips of land (*de minimis*). The courts have emphasized they are very reluctant to overturn long-established and accepted boundaries, as is Congress, as demonstrated by the limitation

of Government's authority to conduct resurveys once the physical position of a mining claim is fixed on the basis of an official survey (see 43 U.S.C. 772) (*State of Oregon v. Bureau of Land Management*, 876 F.2d 1419 (1989)).

Where questions arise which affect title to land it is of great importance to the public that when they are once decided they should no longer be considered doubtful. Such decisions become rules of property, and many titles may be injuriously affected by their change. Legislatures may alter or change their laws, without injury, as they affect the future only, but where courts vacillate and overrule their own decisions on the construction of statutes affecting title to real property, their decisions are retrospective and may affect titles purchased on the faith of their stability (*Minnesota Mining Co. v. National Mining Co.*, 70 U.S. 332 (1865)).

10-228. An official resurvey cannot impair any bona fide rights or claims of any claimant, entryman, or owner of lands affected by such resurvey (43 U.S.C. 772). In cases where gaps or overlaps are not in the official record, the subsequent identification of long narrow strips and isolated small plots of land by rigorous application of modern technology during a mineral dependent resurvey or retracement will ordinarily not be accepted as defining survey and title lines. The issue of good faith based upon stability and substantially as approved has been raised by the courts and the land department. The single line running through an intermediate monument will ordinarily be supported by returning, on the official resurvey plat and field notes, a single monument and a single line. This reflects the actual conditions and will be adopted unless there is an overwhelmingly compelling public policy or due process reason not to do so.

10-229. For claims described and surveyed as contiguous, the intent of the Federal Government is neither to retain unmanageable slivers of land nor to convey land described in a senior grant or conveyance.

By policy no longer in effect, monuments were set on existing lines without benefit of retracement. The reported intersection point was tied to only one corner of the existing line. In these cases where the monument is found to be not at the record position, the monument should determine the direction of the line but not its legal terminus. The true position is at the point determined by extending or terminating the line to intersect

with the fixed line (see section 7-45 for survey and monumentation procedures).

Where field notes report clearly that the monuments were set at intersection points and an obviously careful retracement of a line had been made, the monuments become the best available evidence of the position of both lines. In such a case, all monuments will exercise control for both measurement and alinement of the lines.

On rare occasions the second surveyor patently established a completely separate line, creating a hiatus or overlap. In this case, each set of corners would then control only its respective line. Where complications develop, the surveyor will report to the supervising office the identity and correlation of corners and other evidence.

Special Cases

10-230. Experience, thoroughness, and good judgment are indispensable for the successful retracement and recovery of any survey when it reaches a stage of extensive obliteration, there is manifest distortion, or there are years of unofficial boundary determinations resulting in confused and conflicting lines and corners. It is an axiom among experienced cadastral and mineral surveyors that the true location of the original lines and corners can be restored, if the original survey was made faithfully, and was supported by a reasonably good field-note record. That is the condition for which the basic principles have been outlined, and for which the

rules have been laid down. The rules cannot be elaborated to reconstruct a grossly erroneous survey or a survey having fictitious field notes. The methods applicable to dependent resurveys of mineral surveys and mineral segregation surveys are designed to rectify the conditions that are at variance with the representations of the official field notes and plat.

10-231. The records of official resurveys cover many special cases. The records in the BLM Cadastral Survey offices include special cases from all mineral-land States. These plats, field notes, reports of office and field examinations and investigations, office opinions, supplements to this Manual (section 1-12), Departmental decisions, opinions from the Interior Solicitor or Attorney General of the United States, court opinions and decrees, and administrative land law decisions are drawn upon when needed to assist the surveyor in the study of situations that are new to his or her own experience. In administrative appeals of official surveys and trials of boundary suits, the board or court will generally consider many additional questions besides the purely technical. The surveyor will likely find that the proper exercise of discretion lies in the realm where technical and nontechnical matters overlap. When the surveyor encounters unusual situations, or finds it difficult to apply the normal rules for good faith location and substantially as approved or for the restoration of lost corners, the surveyor will report the facts to the proper administrative office. If it is determined that additional retracements are necessary, these may be provided for by supplemental special instructions or order.