Publication Date: Friday, June 6th, 2025

OFFICIAL NOTICE OF PUBLIC MEETING

THE STATE MINING AND GEOLOGY BOARD

Will Conduct a Critical Minerals Committee Meeting on:

Thursday, June 19, 2025, at 10:00 a.m.

California Natural Resources Headquarters
715 P Street, First Floor Auditorium RM 1-302
Sacramento, California 95814

This meeting will be held in-person and via video conference and will be recorded.

To avoid any background noises while the meeting is in session, we ask that you mute your device. To join the meeting, please download the latest version of MS Teams by visiting their website at https://aka.ms/getteams or install the MS Teams app on your phone. After installing MS Teams on your device click on the Microsoft Teams Meeting link to join the meeting **Meeting ID: 291 206 368 976 1** and **Passcode: kG2ic7vB.** You may also join us by phone by dialing (916) 318-8892 and entering the **Phone Conference ID: 741 072 695#**

For questions or comments regarding this Agenda, please contact the Board by email at smgb@conservation.ca.gov. This Notice, the agenda, and all associated staff reports can be accessed at the SMGB's website at: https://www.conservation.ca.gov/smgb.


CALIFORNIA STATE MINING AND GEOLOGY BOARD
EUREKA
EST. 1885

PUBLIC MEETING AGENDA

1. **Call to Order (Kenline)**

2. **Pledge of Allegiance**

3. **Roll Call and Declaration of a Quorum**

4. **Review of the Agenda (Kenline)**

5. **Chair Report (Kenline)**

6. **Public Comment Period**
   This time is scheduled to provide the public with an opportunity to address non-agenda items. Those wishing to speak should do so at this time. Speaker testimony is limited to three minutes except by special consent of the Chair.

7. **Consent Items**
   All the items appearing under this section will be acted upon by the Board by one motion and without discussion; however, any Board member wishing to discuss any item may request the Chair to remove the item from the consent calendar and consider it separately.

8. **Discussion Items**
   A. Consideration of updating state mineral conservation policy to define "critical minerals" using the USGS definition as a baseline. Critical minerals could potentially be defined in the California Code of Regulations through the Administrative Procedures Act.
   B. Consideration of updating the Board's Mineral Classification and Designation Guidelines to reflect the inclusion of conserving critical minerals.

9. **Presentations, Reports, and Informational Items**

10. **Announcements and Future Meetings**

11. **Adjournment**

THE STATE MINING AND GEOLOGY BOARD

THE BOARD

The State Mining and Geology Board (Board) serves as a regulatory, policy, and appeals body representing the State's interests in the reclamation of mined lands, geology, geologic and seismologic hazards, and the conservation of mineral resources.

The Board was established in 1885 as the Board of Trustees to oversee the activities of the Sate Mineralogist and the California Division of Mines and Geology (now the California Geological Survey). It is second oldest Board in California. Today's Board has nine members appointed by the Governor and confirmed by the State Senate, for four-year terms. By statute, Board members must have specific professional backgrounds in geology, mining engineering, environmental protection, groundwater hydrology and rock chemistry, urban planning, landscape architecture, mineral resource conservation, and seismology, with one member representing the general public.

Mission Statement

The mission of the Board is to provide professional expertise and guidance, and to represent the State's interest in the development, utilization, and conservation of mineral resources, the reclamation of mined lands and the development and dissemination of geologic and seismic hazard information to protect the health and welfare of the people of California.

STATUTORY AND REGULATORY AUTHORITY

The Board is an independent entity within the Department of Conservation under the Natural Resources Agency and is granted responsibilities and obligations under the following acts:

Surface Mining and Reclamation Act of 1975

Under this Act, Public Resources Code Sections 2710 et seq. and its regulations at 14 California Code of Regulations Section 3500 et seq., the Board provides a comprehensive surface mining and reclamation policy to assure that adverse environmental impacts are minimized, and mined lands are reclaimed. SMARA also encourages the production, conservation, and protection of the State's mineral resources.

Alquist-Priolo Earthquake Fault Zoning Act

Under this Act, Public Resources Code Section 2621 through Section 2630, and its regulations at 14 California Code Regulations Section 3600 et seq., the Board is authorized to represent the State's interests in establishing guidelines and standards for geological and geophysical investigations and reports produced by the California Geological Survey, public sector agencies, and private practitioners. The Board is also authorized to develop specific criteria through regulations to be used by Lead Agencies in complying with the provisions of the Act to protect the health, safety, and welfare of the public.

Seismic Hazards Mapping Act

Under this Act, Public Resources Code Section 2690 through Section 2699.6 and its regulations at 14 California Code of Regulations Section 3720 et seq. the Board is authorized to provide policy and guidance through regulations for a statewide seismic hazard mapping and technical advisory program to assist cities, counties, and State agencies in fulfilling their responsibilities for protecting the public health and safety from the effects of strong ground shaking, liquefaction or other ground failure, landslides and other seismic hazards caused by earthquakes, including tsunami and seiche threats.

GENERAL PROCEDURAL INFORMATION ABOUT BOARD MEETINGS

The Board is governed by the Bagley-Keene Open Meeting Act that requires the Board to:

1) Publish an Agenda at least ten days in advance of any meeting
2) Describe in the Agenda specific items to be transacted or discussed
3) Refuse to add an item no later than ten days prior to any meeting and republishing of the agenda
4) Call a closed session by the Chair to discuss litigation and other matters
5) Make all testimony, files, and documents part of the administrative record

Other Agenda material and reports will be available approximately one week prior to the scheduled Board meeting. All Board related information is available at https://www.conservation.ca.gov/smgb.

The Board encourages the submittal of comments, written material, or technical reports thirty days prior to the applicable Board meeting. All such material concerning any matters on the agenda can be submitted to: smgb@conservation.ca.gov or addressed to:

State Mining and Geology Board
715 P Street, MS 1909
Sacramento, CA 95814

Following the Board meetings, links to presentations and meeting recordings will be available upon request: smgb@conservation.ca.gov

Agenda Item No. 8A

June 19th, 2025

Discussion Item: Consideration of updating state mineral conservation policy to define "critical minerals" using the USGS definition as a baseline. Critical minerals could potentially be defined in the California Code of Regulations through the Administrative Procedures Act.

BACKGROUND:

The State Mining and Geology Board (Board) represents the State's interest in the development, utilization, and conservation of the mineral resources of the State and the reclamation of mined lands. The Board determines, establishes, and maintains an adequate mineral conservation, surface mining, and reclamation policy for the State.

During the May 2025 Regular Board Meeting the Board established the Critical Minerals Committee. This committee will gather information, evaluate current regulations, critical minerals availability, vulnerabilities and consider interested parties, and as needed, make recommendations for consideration by the entire Board. The State Geologist provided an overview of California's Critical Minerals, and the California Geological Survey's efforts to evaluate additional critical minerals potential under collaborative grant agreements with United States Geological Survey (USGS).

The Governor and Legislature have recognized the value of critical minerals as California and the US consider policies for a cleaner energy transition. Just as important, California leaders see the need to build reliable supply chains for tomorrow. The energy transition will involve a number of strategic and critical minerals that exist throughout California. Local extraction will not only provide economic value but also reduce the state's vulnerability to pandemic and geopolitical hostilities abroad.

California has established the highest environmental standards for developing and reclaiming mine sites and the Board's role is to uphold and enforce California's reclamation standards. Locally beneficiated critical mineral resources can provide great value in California's transition to cleaner sources for energy. Whether it is re-processing former waste dumps or developing new deposits, the hard truth of transitioning to clean energy is that the demand for critical minerals will be exponentially greater. It will be necessary for the Board and State Geologist to step up and play a significant role.

Critical minerals such as copper, lithium, nickel, cobalt and rare earth elements are essential components of today's rapidly growing energy technologies – from wind turbines and electricity networks to electric vehicles. Recent demand for these minerals has accelerated, and the Board is responsible for ensuring responsible mineral resource development and environmental protection.

DEFINING CRITICAL MINERALS

In 2020, Congress passed legislation that addressed critical mineral policies, defined critical mineral in statute, and specified criteria for developing a critical minerals list.

The Energy Act of 2020 defines a **"critical mineral"** as:

Any mineral, element, substance, or material designated as critical by the Secretary of the Interior, acting through the director of the U.S. Geological Survey.

The definition of whether a mineral is considered critical or not varies from year to year, since this classification depends on not only the context and the interested parties' point of view but is also subject to change because the shifting techno-socio-economic paradigm largely defines the criticality level of minerals.

According to the U.S. Department of Energy (DOE), a generic supply chain—which includes extraction, processing, components, end-use technology, and recycling and reuse—provides a useful context to consider geologic, technical, environmental, political, and economic factors that impact supply risk.

REFERENCES:

- Critical Minerals in California Building the Supply Chain for Tomorrow
- What are Critical Materials and Critical Minerals?
- Global Critical Minerals Outlook 2024 Market Review
- What Are Critical Minerals, and Why Are They So Important?
- The Hard Math of Minerals

STATUTORY AUTHORITY:
PRC Section 672: The Board shall represent the state's interest in the development, utilization, and conservation of the mineral resources of the state and the reclamation of mined lands, as provided by law, and federal matters pertaining to mining, and shall determine, establish, and maintain an adequate surface mining and reclamation policy.

PRC Section 2759: The state policy shall be continuously reviewed and may be revised. During the formulation or revision of the policy, the Board shall consult with, and carefully evaluate the recommendations of, the supervisor, any district technical advisory committees, concerned federal, state, and local agencies, educational institutions, civic and public interest organizations, and private organizations and individuals.

DISCUSSION:
The Critical Minerals Committee will consider modifying or adding SMARA definitions for critical minerals. The committee will discuss:

- What is the purpose of adding definitions for critical minerals to regulations?
- What are the benefits of having them defined in regulations?
- What are potential economic and environmental impacts?

Respectfully submitted:

_____
Jeffrey Schmidt,
Executive Officer

Agenda Item No. 8B

June 19th, 2025

Discussion Item: Consideration of updating the Board's Mineral Classification and Designation Guidelines to reflect the inclusion of conserving critical minerals.

BACKGROUND:

The "Guidelines for Classification and Designation of Mineral Lands" were previously formalized in Special Publication 51 and last updated in January 2000. The purpose of the Mineral Classification and Designation guidelines is to help implement the Surface Mining and Reclamation Act (SMARA) by providing the State Geologist with direction in carrying out mineral resource classification of lands in California that are threatened by uses that would be incompatible with, or would preclude mining. In addition, these guidelines describe how the State Mining and Geology Board (Board) may elect to designate mineral areas of statewide or regional significance. Classification is the process of identifying lands containing significant mineral deposits. Designation is the formal recognition by the Board, after consultation with lead agencies and other interested parties, of areas containing mineral deposits of regional or statewide significance. The objective of classification and designation processes is to ensure, through appropriate lead agency policies and procedures, that mineral deposits of statewide or of regional significance are available when needed.

STATUTORY AND REGULATORY AUTHORITY:

Public Resources Code 2761(b) provides the State Geologist with the authority to classify mineral resources as being of regional or statewide significance upon guidelines adopted by the Board. This determination should be made following a petition requesting classification that has been accepted by the Board, or areas specified by the Office of Planning and Research or the Board requiring further evaluation. The State Geologist shall classify on the basis solely of geologic factors, and without regard to existing land use and land ownership.

Public Resources Code 2790 provides the Board with the authority to designate specific geologic areas of the state and specify the boundaries of those areas by regulation adopted after a public hearing. This designation process takes place when the Board receives a classification report from the State Geologist.

Public Resources Code 2791 requires the Board to seek and consider the recommendations of concerned federal, state, and local agencies, educational institutions, civic and public interest organizations, and private organizations and individuals in the identification and designation of areas of statewide and regional significance.

DISCUSSION:

The current Guidelines have not been updated since January 2000, and do not recognize or define "critical minerals." Updating the Guidelines may also allow for better alignment with federal standards for mineral resource assessments conducted by the State Geologist.

Respectfully submitted:

_____

Jeffrey Schmidt,
Executive Officer

Attachments:

1. – Special Publication 51

GUIDELINES FOR CLASSIFICATION AND DESIGNATION OF MINERAL LANDS

PREFACE

The Surface Mining and Reclamation Act of 1975 (SMARA) mandated the initiation by the State Geologist of mineral land classification in order to help identify and protect mineral resources in areas within the State subject to urban expansion or other irreversible land uses which would preclude mineral extraction. SMARA also allowed the State Mining and Geology Board (SMGB), after receiving classification information from the State Geologist, to designate lands containing mineral deposits of regional or statewide significance.

Construction aggregate was selected by the SMGB to be the initial commodity targeted for classification because of its importance to society, its unique economic characteristics, and the imminent threat that continuing urbanization poses to that resource.

In 1980, at the request of SMGB, SMARA was amended to provide for the classification of non-urban areas subject to land-use threats incompatible with mining. As a result, SMARA studies were begun during 1981 in the western Sierra Nevada foothills and in the California Desert Conservation Area, a large part of the desert in south-eastern California: studies in these regions focussed on all mineral resources other than aggregate, common clay, and dimension stone.

Currently, the State Geologist's SMARA classification activities are carried out under a single program for urban and non-urban areas of the state. Mineral lands are mapped according to jurisdictional boundaries (i.e., counties, groups of counties, or major parts of counties), mapping all mineral commodities at one time in the area, including aggregate, common clay, and dimension stone using the California Mineral Land Classification System. Priority is given to areas where future mineral resource extraction could be precluded by incompatible land use or to mineral resources likely to be mined during the 50-year period following their classification.

Maps showing the areas classified and designated to date are in Appendix B and the classification reports are listed in Appendix C. The SMGB and the State Geologist may be contacted at the addresses and telephone numbers below.

Department of Conservation
STATE MINING AND GEOLOGY BOARD
801 K Street, MS 24-05
Sacramento, CA 95814-3528
Telephone: (916) 322-1082
smgb@consrv.ca.gov

Department of Conservation
DIVISION OF MINES AND GEOLOGY
801 K Street, MS 08-38
Sacramento, CA 95814-3531
Telephone: (916) 327-0791
www.consrv.ca.gov

INTRODUCTION

The purpose of these guidelines is to help implement SMARA by providing the State Geologist with direction in carrying out mineral resource classification of lands in California that are threatened by uses that would be incompatible with, or would preclude mining. In addition, these guidelines describe how the SMGB may elect to designate mineral-bearing areas of statewide or regional significance.

Classification is the process of identifying lands containing significant mineral deposits. *Designation* is the formal recognition by the SMGB, after consultation with lead agencies and other interested parties, of areas containing mineral deposits of regional or statewide significance.

The objective of classification and designation processes is to ensure, through appropriate lead agency policies and procedures, that mineral deposits of statewide or of regional significance are available when needed.

SECTION I. GUIDELINES FOR CLASSIFICATION OF MINERAL LANDS

1. Classification Priorities

The SMGB, based on recommendations from the State Geologist and public input, prioritizes areas to be classified and/or designated. Areas which are generally given highest priority are those areas within the State which are subject to urban expansion or other irreversible land uses which would preclude mineral extraction. Areas where such threat is perceived to be most severe are given highest priority.

A schedule of current and planned mapping activities prioritized for classification is available on request from the SMGB.

2. Classification Criteria

Classification is completed by the State Geologist in accordance with the SMGB's priority list, into Mineral Resource Zones (MRZ), as defined in Section I. 3. Classification of these areas is based on geologic and economic factors without regard to existing land use and land ownership.

A. *Determination of Significance*—To be considered significant for the purpose of the classification of mineral lands, a mineral deposit (or a group of deposits that can be mined as a unit) must be actively mined under a valid permit or meet the following criteria of marketability and threshold value.

(1) *Marketability*—Deposits of mineral commodities must be minable, processable, and marketable under the technologic and economic conditions that exist at present or which can be estimated to exist in the next 50 years. Because some of the conditions affecting extraction and marketability cannot be accurately projected 50 years into the future, conservative estimates will be made in assessing whether a particular mineral resource can be mined, processed, and marketed within the next 50 years.

(2) *Threshold value*—For those deposits that meet the marketability criteria, only those estimated to exceed the following threshold values in 1998-equivalent dollars will be considered significant. The threshold value is based on the gross selling price of the first marketable product from an individual mineral deposit (or from a group of deposits that can be operated as a unit) after completion of extraction and any required mineral separation and processing. Threshold values will be adjusted annually using the annual average U.S. Consumer Price Index for the preceding year, as published by the U.S. Department of Labor, Bureau of Labor Statistics. These threshold values are intended to indicate in a general way the approximate minimum size of a mineral deposit that will be considered significant for classification and designation. They are not intended, nor in practice could they be, for use as precise cut-off values. For some deposits a larger threshold value would be required for a deposit or deposits to be marketable. For operating producing mines, the threshold value may be reduced by the SMGB as local circumstances dictate. If for technological or other reasons one or more parts of a mineral deposit cannot meet the marketability criteria, those parts are not to be considered in estimating whether the deposit exceeds the threshold value.

(i) *Construction materials* (1998 minimum threshold value $12,500,000) —Mineral materials capable of being used in construction which normally receive minimal processing, commonly washing and grading, and for which the ratio of transportation costs to value of the processed material at the mine is high. Examples of this category include:

Sand and gravel
Crushed rock

(ii) *Industrial and chemical mineral materials* (1998 minimum threshold value $2,500,000)—Non-metallic mineral materials that normally receive extensive processing, such as heat or chemical treatment or fine sizing, and for which the ratio of transportation costs to value of the material at the mine is moderate or low. Examples of this category include:

Limestone, dolomite, and marble except where used as construction aggregate
Specialty sands
Clays
Diatomite

Phosphate
Coal, lignite, or peat mined primarily as a raw material for chemicals such as montan wax
Salines and evaporites such as borates and gypsum
Feldspar
Talc
Building and dimension stone
Asbestos
Rock varieties producible into granules, rock flour, mineral wool, expanded shale, pozzolans, and other similar commodities.

(iii) *Metallic and rare minerals* (1998 minimum threshold value $1,250,000)—Metallic elements and minerals, gemstones, and minerals that possess special properties valuable to society and for which the ratio of transportation costs to the value of the material at the mine is low. Examples include ores, deposits, or crystals of:

Precious metals (gold, silver, platinum)
Iron and other ferro-alloy metals (tungsten, chromium, manganese)
Base metals (copper, lead, zinc)
Mercury
Uranium and thorium (except syngenetic deposits in shale)
Rare earths
Minor metals including rubidium, strontium, and cesium
Gemstones and semi-precious materials
Niobium and tantalum
Optical-grade calcite

(iv) *Non-fluid mineral fuels* (1998 minimum threshold value $2,500,000)—Non-hydrothermal mineral fuels occurring in sedimentary rocks. Examples include:

Coal
Lignite
Peat
Organic shale
Tar sand
Uranium and thorium (syngenetic deposits in shale)

B. *Determination of Mineral Resource Zones (MRZs)*—The establishment of MRZs is based on a geologic appraisal of the mineral resource potential of the land. This appraisal includes research of geologic and mining-related literature, compilation of geologic maps, and plotting of reported mines and prospects using publications and mine data of the Department of Conservation's Division of Mines and Geology (DMG), U.S. Geological Survey, the former U.S. Bureau of Mines, and the Bureau of Land Management. It also involves field work which includes site investigations of mines and mineral prospects, sampling of rocks for chemical and physical analyses and petrographic studies, geophysical surveys, and geologic mapping as appropriate.

Field and analytical data are integrated and evaluated for assigning Mineral Resource Zones to areas in accordance with the mineral classification guidelines adopted by the SMGB.

C. *The California Mineral Land Classification System*—To implement Article 4, Section 2761b of SMARA, the State Geologist developed the Mineral Resource Zone (MRZ) nomenclature and criteria based on what herein is referred to as the California Mineral Land Classification System.

The California Mineral Land Classification System is a modification of a mineral resource classification system developed by the U.S. Bureau of Mines and U.S. Geological Survey (1980) that represents the relationship between knowledge of mineral deposits and their economic characteristics (grade and size). The nomenclature used with the California Mineral Land Classification System is important in communicating mineral potential information in activities such as mineral land classification, and usage of these terms are incorporated into the criteria developed for assigning mineral resource zones. The horizontal axis of the California Mineral Land Classification System Diagram (Figure) represents degree of knowledge about mineral deposits while the vertical axis represents economic characteristics.

The four major divisions on the diagram are "Areas of Identified Mineral Resource Significance," "Areas of Undetermined Mineral Resource Significance," "Areas of Unknown Mineral Resource Significance," and "Areas of No Mineral Resource Significance." The divisions between these major "knowledge" categories marks the divisions between areas classified MRZ-2, MRZ-3, MRZ-4, and MRZ-1; wherein lands classified MRZ-2 are areas that contain identified mineral resources, lands classified MRZ-3 are areas of undetermined mineral resource significance, lands classified MRZ-4 are areas of unknown mineral resource potential, and lands classified MRZ-1 are areas where geologic information indicates no significant mineral deposits are present.

Following are definitions of the nomenclature associated with the State Geologist's criteria for mineral land classification and the California Mineral Land Classification System. It is important to refer to these definitions when studying the different resource categories used in classification of lands. Particular attention should be given to the distinction between a mineral deposit and a resource and how a mineral deposit may relate to resources.

(1) *Mineral deposit*—A naturally occurring concentration of minerals in amounts or arrangement that under certain conditions may constitute a mineral resource. The concentration may be of value for its chemical or physical characteristic or for both of these properties.

(2) *Economic*—This term implies that profitable extraction or production under defined investment assumptions have been established, analytically demonstrated, or assumed with reasonable certainty.

(3) *Resource*—A concentration of naturally occurring solid, liquid, or gaseous material in and/or on the Earth's crust in such form and amount that economic extraction of a commodity from the concentrations is currently potentially feasible.

(4) *Identified resources*—Resources whose location, grade, quality, and quantity are known or estimated from specific geologic evidence. Identified resources include economic, marginally economic, and sub-economic components. To reflect varying degrees of geologic certainty, these economic divisions can be subdivided into measured, indicated, and inferred.

(5) *Inferred resources*—Estimates are based on an assumed continuity beyond measured and/or indicated resources, for which there is geologic evidence. Inferred resources may or may not be supported by samples or measurements.

(6) *Reserves*—That part of the resource base which could be economically extracted or produced within the foreseeable future; usually used in reference to permitted resources. The term reserves need not signify that extraction facilities are in place and operative.

(7) *Measured reserves*—Quantity is computed from dimensions revealed in outcrops, trenches, workings, or drill holes; grade and/or quality are computed from the results of detailed sampling. The sites for inspection, sampling, and measurement are spaced so closely and the geologic character is so well defined that size, shape, depth, and mineral content of the resource are well established.

(8) *Indicated reserves*—Quantity and grade and/or quality are computed from information similar to that used for measured resources, but the sites for inspection, sampling, and measurement are farther apart or otherwise less adequately spaced. The degree of assurance, although lower than that for measured resources, is high enough to assume continuity between points of observation.

(9) *Demonstrated reserves*—A term for the sum of measured plus indicated reserves.

(10) *Marginal reserves*—That part of the reserve base which, at the time of determination, borders on being economically producible. The essential character here is economic uncertainty. Included are resources that would be producible, given postulated changes in economic or technologic factors.

3. Mineral Resource Zone Categories

The following MRZ categories are used by the State Geologist in classifying the State's lands. The geologic and economic data and the arguments upon which each unit MRZ assignment is based are presented in the mineral land classification report transmitted by the State Geologist to the SMGB.

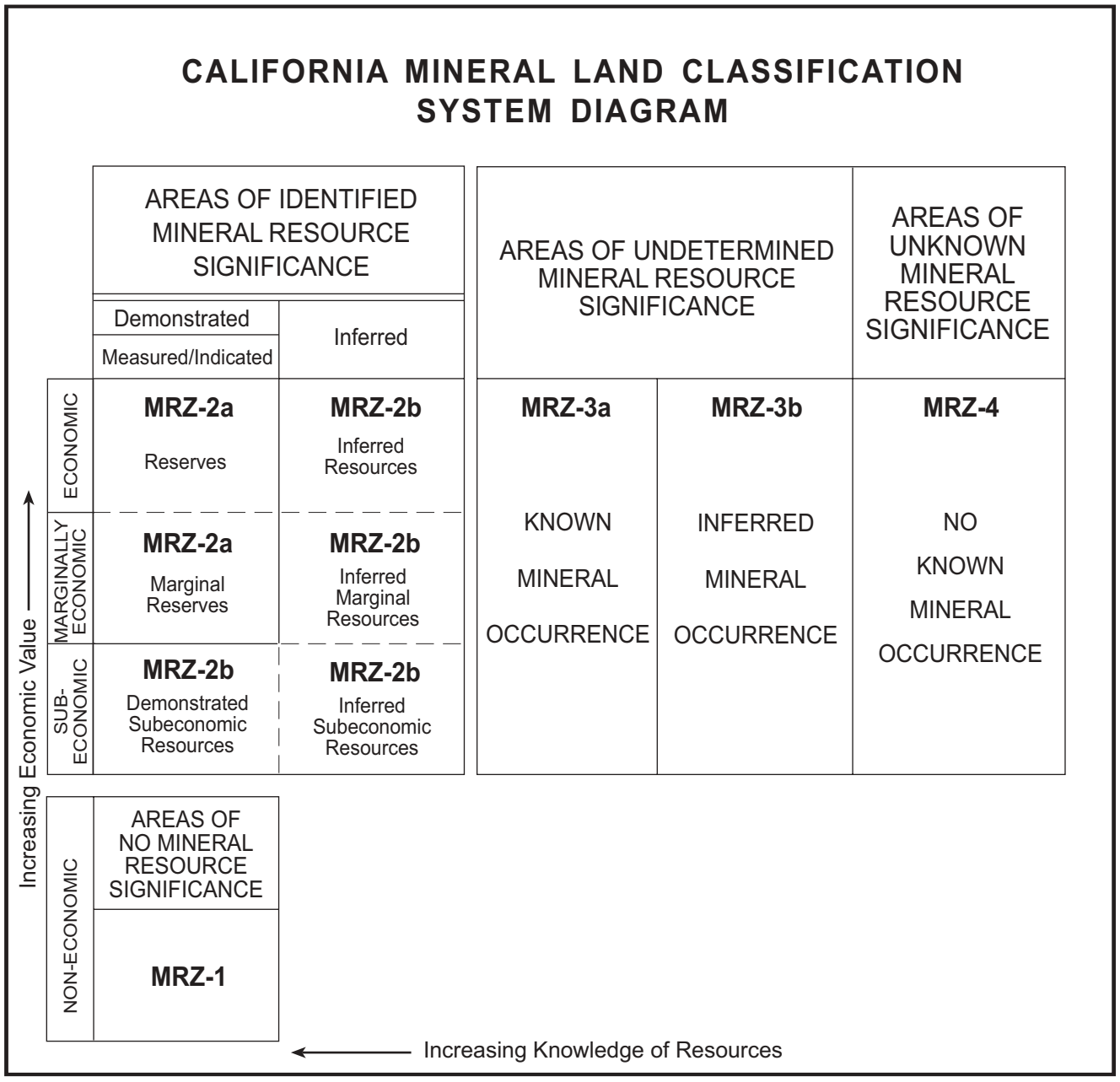
In order to communicate information concerning the existence of mineral resources within lands subject to classification, the classification categories set forth in guidelines by the SMGB have been adapted from the California Mineral Land Classification System Diagram (Figure). These adaptations are presented below:

A. *MRZ-1*—Areas where adequate geologic information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence. This zone is applied where well developed lines of reasoning, based on economic-geologic principles and adequate data, indicate that the likelihood for occurrence of significant mineral deposits is nil or slight.

B. *MRZ-2a*—Areas underlain by mineral deposits where geologic data show that significant measured or indicated resources are present. As shown on the diagram of the California Mineral Land Classification System, MRZ-2 is divided on the basis of both degree of knowledge and economic factors. Areas classified MRZ-2a contain discovered mineral deposits that are either measured or indicated reserves as determined by such evidence as drilling records, sample analysis, surface exposure, and mine information. Land included in the MRZ-2a category is of prime importance because it contains known economic mineral deposits. A typical MRZ-2a area would include an operating mine, or an area where extensive sampling indicates the presence of a significant mineral deposit.

C. *MRZ-2b*—Areas underlain by mineral deposits where geologic information indicates that significant inferred resources are present. Areas classified MRZ-2b contain discovered deposits that are either inferred reserves or deposits that are presently sub-economic as determined by limited sample analysis, exposure, and past mining history. Further exploration work and/or changes in technology or economics could result in upgrading areas classified MRZ-2b to MRZ-2a. A typical MRZ-2b area would include sites where there are good geologic reasons to believe that an extension of an operating mine exists or where there is an exposure of mineralization of economic importance.

D. *MRZ-3a*—Areas containing known mineral deposits that may qualify as mineral resources. Further exploration work


CALIFORNIA MINERAL LAND CLASSIFICATION SYSTEM DIAGRAM
AREAS OF IDENTIFIED MINERAL RESOURCE SIGNIFICANCE
Demonstrated
Measured/Indicated
Inferred
AREAS OF UNDETERMINED MINERAL RESOURCE SIGNIFICANCE
AREAS OF UNKNOWN MINERAL RESOURCE SIGNIFICANCE
ECONOMIC
MARGINALLY ECONOMIC
SUB-ECONOMIC
MRZ-2a
Reserves
MRZ-2b
Inferred Resources
MRZ-2a
Marginal Reserves
MRZ-2b
Inferred Marginal Resources
MRZ-2b
Demonstrated Subeconomic Resources
MRZ-2b
Inferred Subeconomic Resources
MRZ-3a
KNOWN MINERAL OCCURRENCE
MRZ-3b
INFERRED MINERAL OCCURRENCE
MRZ-4
NO KNOWN MINERAL OCCURRENCE
NON-ECONOMIC
AREAS OF NO MINERAL RESOURCE SIGNIFICANCE
MRZ-1
Increasing Economic Value
Increasing Knowledge of Resources

within these areas could result in the reclassification of specific localities into the MRZ-2a or MRZ-2b categories. MRZ-3a areas are considered to have a moderate potential for the discovery of economic mineral deposits. As shown on the diagram of the California Mineral Land Classification System, MRZ-3 is divided on the basis of knowledge of economic characteristics of the resources. An example of a MRZ-3a area would be where there is direct evidence of a surface exposure of a geologic unit, such as a limestone body, known to be or to contain a mineral resource elsewhere but has not been sampled or tested at the current location.

E. *MRZ-3b*—Areas containing inferred mineral deposits that may qualify as mineral resources. Land classified MRZ-3b represents areas in geologic settings which appear to be favorable environments for the occurrence of specific mineral deposits. Further exploration work could result in the reclassification of all or part of these areas into the MRZ-3a category or specific localities into the MRZ-2a or MRZ-2b categories. MRZ-3b is applied to land where geologic evidence leads to the conclusion that it is plausible that economic mineral deposits are present. An example of a MRZ-3b area would be where there is indirect evidence such as a geophysical or geochemical anomaly along a permissible structure which indicates the possible presence of a mineral deposit or that an ore-forming process was operative.

F. *MRZ-4*—Areas where geologic information does not rule out either the presence or absence of mineral resources.The distinction between the MRZ-1 and MRZ-4 categories is important for land-use considerations. It must be emphasized that MRZ-4 classification does not imply that there is little likelihood for the presence of mineral resources, but rather there is a lack of knowledge regarding mineral occurrence. Further exploration work could well result in the reclassification of land in MRZ-4 areas to MRZ-3 or MRZ-2 categories.

4. Criteria for Determination of Aggregate Resource Areas (ARAs)

ARAs are areas classified MRZ-2a or MRZ-2b for construction aggregate that have current land uses which are similar to those areas which have been mined in the past. The purpose of determining ARAs is to provide a semi-quantified estimate of construction aggregate resources which are likely to be available to satisfy society's needs during the 50-year period following the classification of an area. This estimate, when compared to DMG projected needs for the next 50 years, provides the context for communities to plan for future aggregate needs in their land-use policies. This information is distributed by the SMGB to all affected lead agencies. The establishment of ARAs in no way infringes on the authority of the local governments to make land-use decisions. The determination of ARAs is also intended for the use of the SMGB in identifying areas which are candidates for designation under SMARA.

The specific land uses listed on the Table are considered to be generally incompatible with mining and have been excluded from ARAs. MRZs containing land uses not listed will be considered for inclusion as an ARA. The criteria are to be applied only to lands classified MRZ-2a and MRZ-2b for construction aggregate.

The estimation of future mineral resource availability in ARAs is not a precise analysis, but rather the best general estimate which can be made with the data available. Once ARAs have been identified, they are divided into one of three relative categories of significance as follows—Immediately Significant, Highly Significant, and Significant. The criteria for the rating are:

A. *Immediately Significant*—All permitted lands within ARAs.

B. *Highly Significant*—ARAs that contain 10 or more times the threshold value of material, or that are adjacent to property currently permitted for mining.

C. *Significant*—All remaining ARAs.

If conditions warrant, an ARA may be changed from Highly Significant to Significant or from Significant to Highly Significant. These conditions include but are not limited to, rarity of the commodity, proximity to an operating aggregate plan, and distance from market areas.

5. Mineral Land Classification Reports

A. *Report Contents*—Areas assigned by the State Geologist to mineral resource zones are delineated on suitable maps at scales adequate for use on lead agency general plan maps. A summary report showing the mineral land classification mapped according to jurisdictional boundaries (i.e., counties, groups of counties, or major portions of counties) is prepared after classification is complete. Maps also show the boundaries of each permitting authority in the report area.

B. *Public Workshop*—Before a report is finalized, a public workshop is conducted in the principal jurisdiction covered by the report. The workshop is an opportunity for interested parties and individuals (lead agency planners, mine operators, public interest groups, members of SMGB, and others) to comment on the findings of the report, and for preparers of the report to incorporate relevant comments into the final report and maps. Subsequent to the workshop, the report and maps are finalized and submitted to the SMGB. The maps and report are then formally transmitted by the SMGB to those lead agencies which have areas classified as MRZ-2a,

TABLE

Criteria for determining which MRZ-2a and MRZ-2b areas or parts of MRZ-2a and MRZ-2b areas are suitable as Aggregate Resource Areas.

There are two general categories of exclusion: I. Economic Exclusion, and II. Social Exclusion.

I. Economic Exclusion

A. Residential areas, and areas committed to residential development, such as approved tracts
B. Commercial areas with land improvements (buildings)
C. Industrial areas (buildings and adjacent needed storage and parking facilities)
D. Major public or private engineering projects

1. Canals
2. Freeways
3. Bridges
4. Airports and associated developments such as parking lots
5. Dams
6. Railroads
7. Major pipelines
8. Major power transmission lines

E. Small areas isolated by urbanization (generally less than 40 acres)

II. Social Exclusion

A. Cemeteries
B. Public parks, developed historical sites and structures, and public recreation areas of all types
C. Public or private schools, institutions, hospitals, and prisons, including adjacent developments such as parking lots
D. Military bases and reservations

MRZ-2b, or MRZ-3a or MRZ-3b within their jurisdiction. The report and maps are also made available to other interested parties.

C. *Lead Agency Responsibilities*—Within 12 months of receiving a mineral lands classification report, the lead agency shall develop and adopt mineral resource management policies in accordance with Article 4. Section 2762(a) of SMARA.

D. *Reports on Construction Materials*—Mineral land classification reports of regions containing deposits of construction aggregate classified MRZ-2a or MRZ-2b include the following additional information:

(1) The identification of ARAs and their ranking by the categories *Immediately Significant*, *Highly Significant*, and *Significant* as explained in Section I. 4.

(2) An estimate of the total quantity of construction aggregate that will be needed to supply the requirements of the county or marketing region in which it occurs for the next 50 years. The marketing region is defined as the area within which such material is usually mined and marketed. The amount of construction aggregate needed for the next 50 years is projected using past consumption rates adjusted for anticipated changes in population. These estimates are periodically reviewed as provided in Section 1. 6.

6. Periodic Review of Classified Lands

A. The State Geologist may periodically review the mineral land classification information in defined study regions to determine whether:

(1) A reclassification of the area is necessary.

(2) The projected requirements for construction materials for the next 50 years should be revised.

B. The State Geologist will report the results of such reviews to the SMGB together with recommendations. The

SMGB may direct the State Geologist to reexamine mineral lands already classified on the basis of his recommendation, or for other reasons. Any resulting reclassification will be treated in the same manner as the original classification, and employ the same marketability and threshold criteria. The 50-year period for purposes of estimating marketability will begin anew at the time of reclassification.

SECTION II. PROCEDURES FOR DESIGNATION OF LANDS CONTAINING SIGNIFICANT MINERAL DEPOSITS

1. Designation Criteria

Areas to be considered for designation by the SMGB will contain one or more mineral deposits believed to be of statewide or regional significance. Ordinarily, classification of a mineral deposit as MRZ-2a or MRZ-2b by the State Geologist will constitute adequate evidence that an area contains significant mineral deposits, but other data shall be considered by the SMGB in determining the significance of specific mineral deposits and the desirability of designation.

2. Designation Procedures

A. Upon receipt from the State Geologist of a mineral land classification map and report delineating one or more areas classified as MRZ-2a or MRZ-2b and a recommendation by the State Geologist that all or parts of the MRZ-2a or MRZ-2b areas be designated, the SMGB may:

(1) Review the map and report to determine the sufficiency of the submitted data as a basis for designation, and request such additional information as may be required from the State Geologist or other sources.

(2) Determine the need for, and the priority of, designation, taking into consideration the importance of the mineral deposits to the State or region thereof and the imminence of any threatened land-use changes that would be incompatible with mineral extraction.

(3) Notify the appropriate lead agencies of the decision to consider designation of mineral resource areas within their jurisdiction.

(4) Set a date and place for a public hearing to consider the areas which the SMGB proposes to designate as containing mineral deposits of statewide or regional significance. If feasible, the public hearing shall be held in or near the county in which the area proposed for designation occurs.

(5) Notify all known affected agencies and parties having an interest in the lands considered for designation.

B. At the public hearing to consider proposed designations, the SMGB shall seek the recommendations of concerned federal, state, and local agencies, educational institutions, civic and public interest organizations, and private organizations and individuals in the identification of mineral deposits of statewide or regional significance. Such review and comment should address:

(1) The adequacy of the mineral lands classification data transmitted by the State Geologist and of any additional data transmitted to the SMGB, which together will constitute the principal basis for designation.

(2) Additional data bearing on the presence and marketability of mineral deposits proposed to be of statewide or regional significance in the area under consideration.

(3) The need, amount, and location of mineral deposits of regional significance that should be designated, and, in the case of construction materials, the needs of the region for 50 years.

(4) The existing uses of the areas proposed for designation and the future uses of these areas adopted by local agencies.

(5) Values relating to recreation, watershed, wildlife range and forage, and aesthetic enjoyment.

C. Following the public hearing, the SMGB may designate to be of statewide or regional significance, and include in state policy, all or part of the proposed areas classified as MRZ-2a or MRZ-2b. The designation report will specify the following:

(1) The boundaries of the designated areas.

(2) The mineral deposits of statewide or regional significance contained in each designated area.

(3) An estimate of the amount of each mineral commodity that is available for mining under present (or foreseeable) technologic, economic, and land-use conditions, for designated MRZ-2a or MRZ-2b areas, unless to do so would reveal proprietary data.

(4) The reason that each designated area is of significance to the State or region, the advantages to the State or region that might be achieved from the extraction of the minerals of the area, and the adverse effects that might result from premature development and/or land uses that would preclude mining.

(5) The specific goals and policies to protect the areas containing mineral deposits designated to be of statewide or regional significance from premature development to uses that

would preclude mining, or to uses with which mining would be incompatible.

(6) Lead agencies having jurisdiction over the area.

D. Upon designation of an area or areas containing significant mineral deposits, the SMGB will transmit a report of its action to the affected lead agencies. The report will include a map of the designated areas in a format suitable for general plan purposes.

E. The SMGB shall monitor local government implementation of its mineral resource management policies for designated areas as described in Section 3676 of Article 6 of the Public Resources Code.

3. Termination of Designation Status

A. The status of mineral lands previously designated to be of statewide or regional significance may be terminated, either partially or wholly, by the SMGB on a finding that the designation status is no longer necessary or appropriate. Such an action is a rulemaking procedure that must be accomplished in compliance with the provisions of the Administrative Procedures Act (California Government Code, Section 11340-et seq.).

B. Prior to making such a finding, the SMGB shall hold a public hearing. If feasible, it shall be held in or near the county in which the designated area occurs. Such a finding may result from, but not be limited to, the depletion of the mineral deposit or deposits within the designated area.

C. Petitions may also be brought before the SMGB to terminate the designated status of mineral lands pursuant to the above referenced provisions of the Administrative Procedures Act. Petitions submitted to the SMGB shall include the following information:

(1) The petitioner's name, mailing address, and interest (owner, lessee, agent, or other) in the petitioned area.

(2) A map (USGS 7½' quadrangle or other appropriate map) showing the boundaries of the petitioned area.

(3) Reference to the specific SMGB action that designated the area.

(4) The reasons and supporting data as to why direct SMGB involvement is no longer necessary.

D. The SMGB shall then evaluate the data submitted in the petition as to its accuracy and sufficiency. If the SMGB finds that the petition contains sufficient information and arguments to require a public hearing on termination, then the SMGB shall schedule such a hearing and proceed as outlined in this section.

4. Designation Appeals

The procedures for appealing the approval or denial, by a lead agency, of a permit to conduct surface mining in an area designated by the SMGB are given in the Public Resources Code, Section 2775 and in the California Code of Regulations, Title 14., Division 2., Chapter 8., Subchapter 1., Article 4.

SECTION III. GUIDELINES FOR CLASSIFICATION AND DESIGNATION PETITIONS

1. Classification Petitions

Petitions may be brought before the SMGB by any individual or organization to classify mineral lands that are claimed to contain significant mineral deposits. A petition form is provided in Appendix A.

It should be recognized that petitioning does not create an instantaneous action, but rather starts in motion the classification process which requires actions by the State Geologist, the SMGB, and lead agencies prior to a final land-use decision.

A. *Criteria for Consideration of Classification Petitions—*

(1) Petitions will be preliminarily reviewed by the State Geologist to determine if the deposit meets the threshold value and other criteria required to qualify as MRZ-2a or MRZ-2b as in Section I.2. If these criteria are met, the State Geologist will recommend acceptance of the petition by the SMGB. Upon acceptance of the petition by the SMGB, the State Geologist will conduct a study sufficient in scope to classify mineral deposit areas that are the subject of the petition.

(2) The petitioner must supply sufficient geologic and economic data to enable the State Geologist to classify the mineral deposit areas that are the subject of the petition. The State Geologist may rely on proprietary data supplied by the petitioner. Such data, as requested of the petitioner and clearly marked, shall remain proprietary.

B. *Priority Considerations for Classification Petitions—* Prior to submitting a petition application, the petitioner should contact the SMGB or the State Geologist to find out about any current or pending classification studies by the State Geologist in the area of the petition deposit and the scheduled completion dates.

After acceptance of a petition by the SMGB, it will be ranked according to priority for classification based on the chronological order of acceptance unless otherwise specified by

the SMGB. The petitioned classification report will be completed as determined by its priority ranking after receipt of all of the petition fees.

The SMGB will notify affected lead agencies after formal acceptance of a petition for classification and each petition's assigned priority for classification. The SMGB will also provide them with a copy of the accepted petition.

C. *Classification Petition Fees*—There are two fees to be paid by the petitioner:

(1) A fee of $5,000 for conducting the preliminary review of the petition application.

(2) A processing fee for conducting the classification study. Prepayment of the processing fee to cover the costs of conducting the classification study will be required if the petition is accepted. The petitioner will be provided with an estimate of the cost of conducting the classification study. Any funds in excess of the amount actually needed for conducting the study will be refunded to the petitioner. Any undercollected funds must be submitted prior to the official release of the report.

2. Designation Petitions

A. Prior to permitting a use that would threaten the potential to extract minerals classified by the State Geologist as MRZ-2a or MRZ-2b but not yet designated, the lead agency may petition the SMGB for a designation hearing.

B. Petitions for a designation hearing may also be brought before the SMGB by any other party provided that the SMGB has received and approved land classification information that indicated that the area in question is classified MRZ-2a or MRZ-2b and that the SMGB has not yet considered designation. A petition form is provided in Appendix A.

C. SMGB shall then forward the data to the State Geologist who will evaluate it as to its accuracy and sufficiency and make a recommendation to the SMGB for or against designation of all or part of the area petitioned for designation.

D. If the SMGB finds that the petition contains sufficient information and arguments to require a public hearing, then the SMGB shall schedule such a hearing and proceed as outlined in Section II. 1. and 2.

Appendix A

Petition for Classification-Designation of Mineral Lands

Part I
Mineral Information

1. The petitioner's name, mailing address and interest (owner, lessee, agent, or other) in the area to be considered for classification.

   _____

   _____

   _____

2. Name and legal description of petitioned deposit. Attach map (USGS 7 1/2 minute quadrangle or other appropriate map) showing the boundaries of the area the petitioner wishes to have classified.

   _____

   _____

   _____

   _____

3. A description of the significant mineral deposits claimed to occur within the area described, including sufficient geologic and economic data to support the claim that the mineral deposits are significant as defined in the "Guidelines for Classification and Designation of Mineral Lands."

   _____

   _____

   _____

   _____

   a. Geologic setting (Attach map)

      _____

      _____

      _____

      _____

b. Mineral commodities

_____

_____

_____

c. Value of deposit [-1,-2] _____

Tonnage [-2] _____ Grade [-2] _____

[-1] Gross selling price of first marketable product
[-2] Estimated values

The mineral information (Part I) of this petition and its supporting documentation are accurate and supportable by the supplied information and the deposit is as stated.

Signature of Petitioner

Date _____

Part II
Land-Use Information

4. The name and mailing address of each recorded land owner and each recorded lessee in and adjoining the area described. (Attach separate sheet)

5. Action requested. If designation is requested in addition to classification, then the reasons for requesting designation should also be stated.

_____

_____

_____

_____

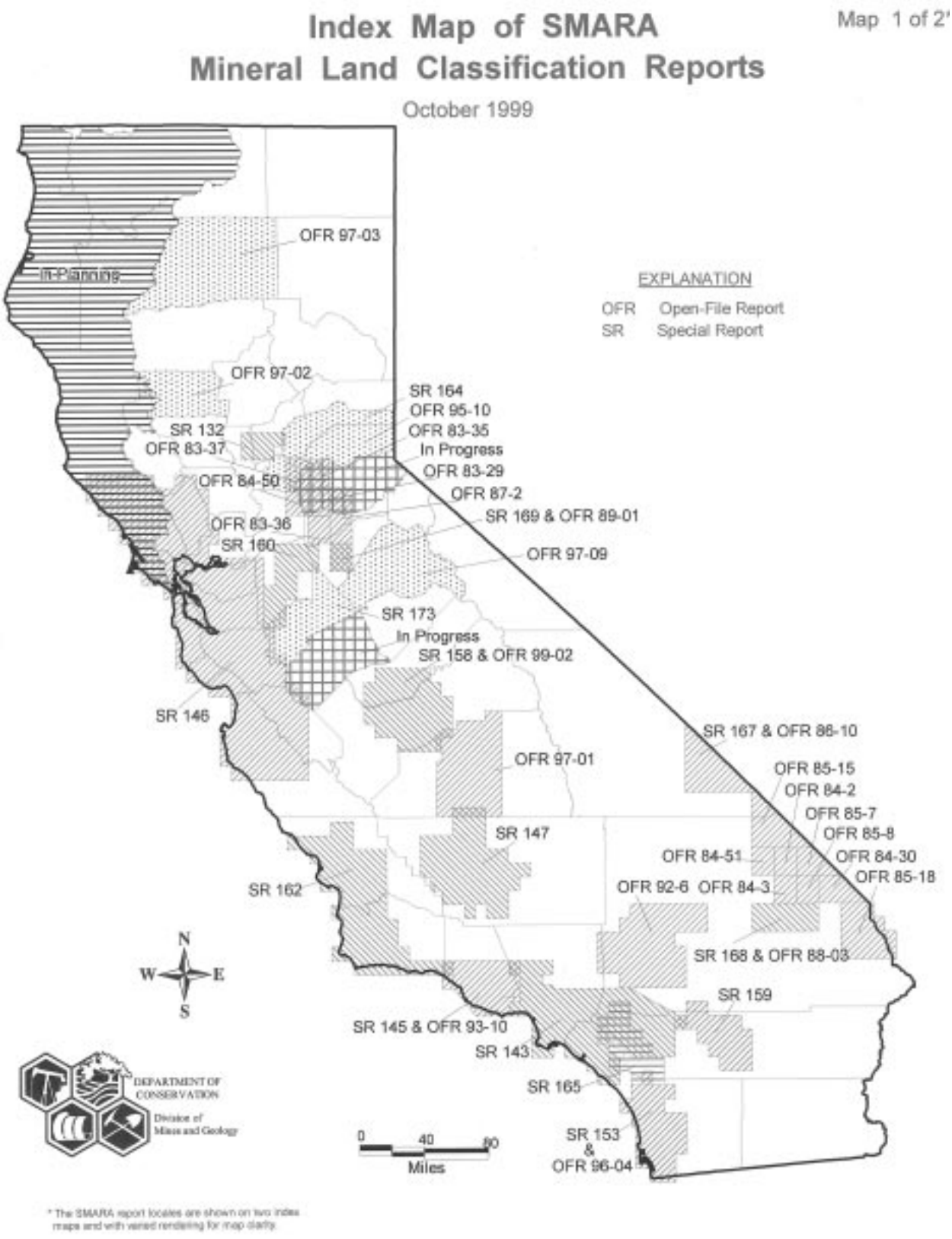
The land-use information (Part II) of this petition and its supporting documentation are accurate and supportable by the supplied information.

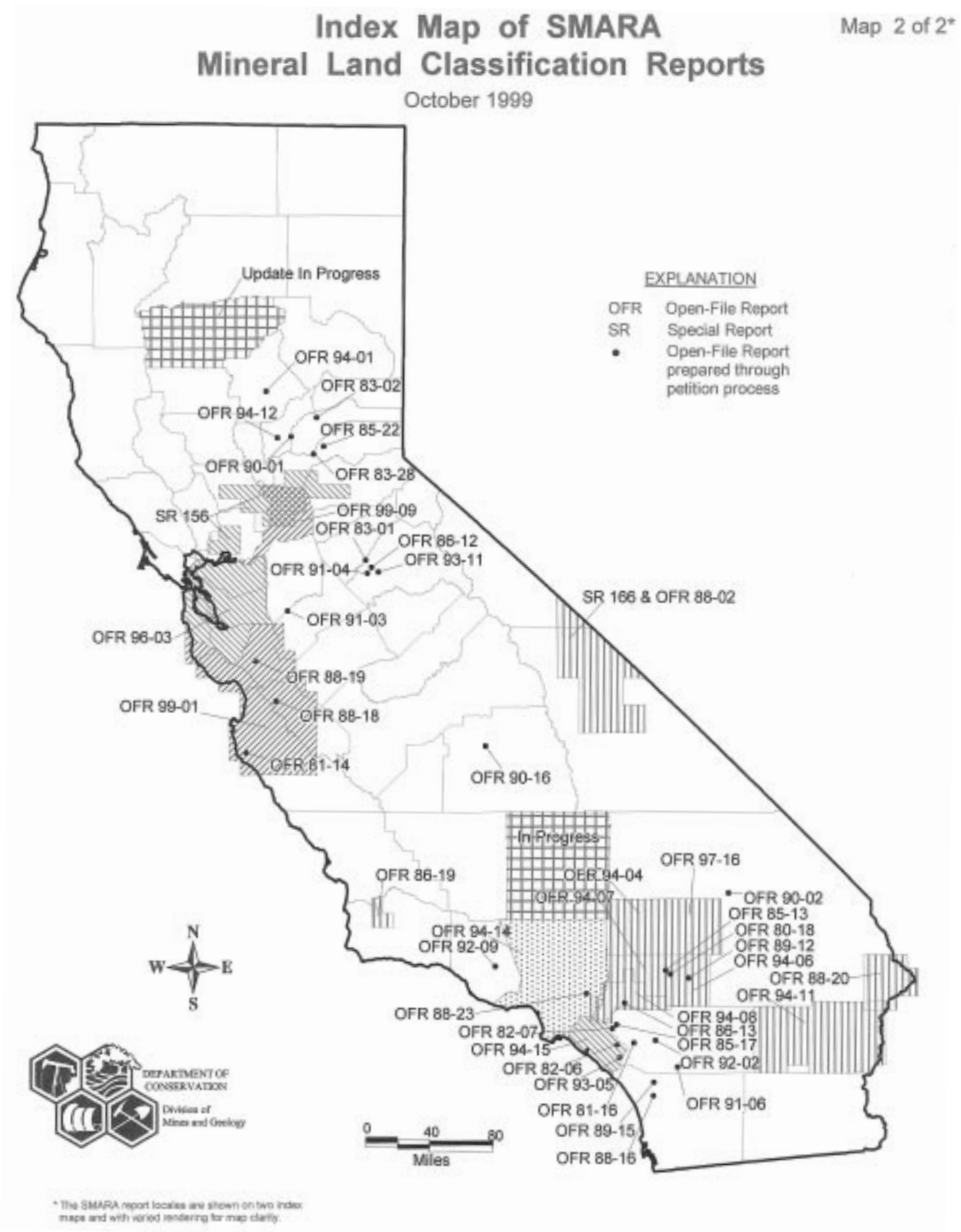
Signature of Petitioner

Date _____

This form is to be used as a guide for content and format. Additional information sheets may be attached as necessary.

Appendix B


Index Map of SMARA
Mineral Land Classification Reports
October 1999
Map 1 of 2*
EXPLANATION
OFR Open-File Report
SR Special Report
In Planning
OFR 97-03
OFR 97-02
SR 132
OFR 83-37
SR 164
OFR 95-10
OFR 83-35
In Progress
OFR 83-29
OFR 84-50
OFR 87-2
SR 169 & OFR 89-01
OFR 83-36
SR 160
OFR 97-09
SR 173
In Progress
SR 158 & OFR 99-02
SR 146
SR 167 & OFR 88-10
OFR 97-01
OFR 85-15
OFR 84-2
OFR 85-7
OFR 85-8
SR 147
OFR 84-51
OFR 84-30
OFR 85-18
SR 162
OFR 92-6 OFR 84-3
SR 168 & OFR 88-03
SR 159
SR 145 & OFR 93-10
SR 143
SR 165
SR 153
&
OFR 96-04
N
W
E
S
DEPARTMENT OF
CONSERVATION
Division of
Mines and Geology
0
40
80
Miles
* The SMARA report locales are shown on two index
maps and with varied rendering for map clarity


Index Map of SMARA
Mineral Land Classification Reports
Map 2 of 2*
October 1999
Update In Progress
EXPLANATION
OFR Open-File Report
SR Special Report
• Open-File Report prepared through petition process
OFR 94-01
OFR 83-02
OFR 94-12
OFR 85-22
OFR 90-01
OFR 83-28
SR 156
OFR 99-09
OFR 83-01
OFR 86-12
OFR 93-11
OFR 91-04
SR 166 & OFR 88-02
OFR 91-03
OFR 96-03
OFR 88-19
OFR 99-01
OFR 88-18
OFR 81-14
OFR 90-16
In Progress
OFR 97-16
OFR 86-19
OFR 94-04
OFR 94-07
OFR 90-02
OFR 85-13
OFR 80-18
OFR 89-12
OFR 94-14
OFR 92-09
OFR 94-06
OFR 88-20
OFR 94-11
OFR 88-23
OFR 94-08
OFR 82-07
OFR 86-13
OFR 94-15
OFR 85-17
OFR 82-06
OFR 92-02
OFR 93-05
OFR 91-06
OFR 81-16
OFR 89-15
OFR 88-16
N
W
E
S
DEPARTMENT OF CONSERVATION
Division of Mines and Geology
0 40 80
Miles
* The SMARA report locales are shown on two index maps and with varied rendering for map clarity.

Appendix C

Publications of the SMARA Mineral Land Classification Project Dealing with Mineral Resources in California

January 2000

California Department of Conservation
Division of Mines and Geology
Geologic Information and Natural Resources Program
Mineral Resources Development Project
801 K Street, MS 08-38
Sacramento, CA 95814-3531

Minerals Program Managers

Supervising Geologist: Trinda L. Bedrossian (916) 327-6977

SMARA North: Robert L. Hill, Senior Geologist (916) 322-3119

SMARA South: Russell V. Miller, Senior Geologist (213) 239-0883

Minerals Laboratory and Mineral Hazards: Ronald K. Churchill,
Senior Geologist (Specialist) (916) 327-0745

TABLE OF CONTENTS

SMARA SPECIAL REPORTS DEALING WITH MINERAL RESOURCES

SR 132: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the **Yuba City-Marysville** Production-Consumption Region. Habel, R.S., and Campion, L.F., **1986**.

SR 139: Aggregate in the **Greater Los Angeles Area**, California. Evans, J.R., Anderson, T.P., Manson, M.W., Maud, R.L., Clark, W.B., and Fife, D.L., **1979**.

SR 143: Part I: Mineral Land Classification of the **Greater Los Angeles Area**: Description of the Mineral Land Classification Project of the Greater Los Angeles Area. Anderson, T.P., Loyd, R.C., Clark, W.B., Miller, R.V., Corbaley, Richard, Kohler, Susan, and Bushnell, M.M., **1979**.

SR 143: Part II: Mineral Land Classification of the **Greater Los Angeles Area**: Classification of Sand and Gravel Resource Areas, **San Fernando Valley** Production-Consumption Region. Anderson, T.P., Loyd, R.C., Clark, W.B., Miller, R.V., Corbaley, Richard, Kohler, Susan, and Bushnell, M.M., **1979**.

SR 143: Part III: Mineral Land Classification of the **Greater Los Angeles Area**: Classification of Sand and Gravel Resource Areas, **Orange County-Temescal Valley** Production-Consumption Region. Miller, R.V., Corbaley, Richard, **1981**.

SR 143: Part IV: Mineral Land Classification of the **Greater Los Angeles Area**: Classification of Sand and Gravel Resource Areas, **San Gabriel Valley** Production-Consumption Region. Kohler, Susan, **1982**.

SR 143: Part V: Mineral Land Classification of the **Greater Los Angeles Area**: Classification of Sand and Gravel Resource Areas, **Saugus-Newhall** Production-Consumption Region and **Palmdale** Production-Consumption Region. Joseph, S.E., Miller, R.V., Tan, S.S., and Goodman, R.W., **1987**.

SR 143: Part VI: Mineral Land Classification of the **Greater Los Angeles Area**: Classification of Sand and Gravel Resource Areas, **Claremont-Upland** Production-Consumption Region. Cole, J.W., **1987**.

SR 143: Part VII: Mineral Land Classification of the **Greater Los Angeles Area**: Classification of Sand and Gravel Resource Areas, **San Bernardino** Production-Consumption Region. Miller, R.V., **1987**.

SR 145: Mineral Land Classification of **Ventura County**;

Part I: Description of the Mineral Land Classification Project of Ventura County;

Part II: Classification of the Sand, Gravel, and Crushed Rock Resource Areas, **Simi** Production-Consumption Region;

Part III: Classification of the Sand, Gravel, and Crushed Rock Resource Areas, **Western Ventura County** Production-Consumption Region. Anderson, T.P., Loyd, R.C., Kiessling, E.W., Kohler, S.L., and Miller, R.V., **1981**.

SR 146: Part I: Mineral Land Classification: Aggregate Materials in the **San Francisco-Monterey Bay Area**: Project Description: Mineral Land Classification for Construction Aggregate in the San Francisco Monterey Bay Area. Stinson, M.C., Manson, M.W, and Plappert, J.J., **1986**.

SR 146: Part II: Mineral Land Classification: Aggregate Materials in the **San Francisco-Monterey Bay Area**: Classification of Aggregate Resource Areas: **South San Francisco Bay** Production-Consumption Region. Stinson, M.C., Manson, M.W., and Plappert, J.J., **1987**.

SR 146: Part III: Mineral Land Classification: Aggregate Materials in the **San Francisco-Monterey Bay Area**: Classification of Aggregate Resource Areas: **North San Francisco Bay** Production-Consumption Region. Stinson, M.C., Manson, M.W., and Plappert, J.J., **1987**.

SR 146: Part IV: Mineral Land Classification: Aggregate Materials in the **San Francisco-Monterey Bay Area**: Classification of Aggregate Resource Areas: **Monterey Bay** Production-Consumption Region. Stinson, M.C., Manson, M.W., and Plappert, J.J., **1989**.

SR 147: Mineral Land Classification: Aggregate Materials in the **Bakersfield** Production-Consumption Region. Cole, J.W., **1988**.

SR 153: Mineral Land Classification: Aggregate Materials in the **Western San Diego County** Production-Consumption Region. Kohler, S.L., and Miller, R.V., **1982**.

SR 156: Mineral Land Classification: Portland Cement Concrete Grade Aggregate in the **Sacramento-Fairfield** Production-Consumption Region. Dupras, D.L., **1988**.

SR 158: Mineral Land Classification: Aggregate Materials in the **Fresno** Production-Consumption Region. Cole, J.W., and Fuller, D.R., **1986**.

SR 159: Mineral Land Classification: Aggregate Materials in the **Palm Springs** Production-Consumption Region. Miller, R.V., **1987**.

SR 160: Mineral Land Classification: Portland Cement Concrete-Grade Aggregate in the **Stockton-Lodi** Production-Consumption Region. Jensen, L.S., and Silva, M.A., **1989**.

SR 162: Mineral Land Classification: Portland Cement Concrete Aggregate and Active Mines of all other Mineral Commodities in the **San Luis Obispo-Santa Barbara** Production-Consumption Region. Miller, R.V., Cole, J.W., and Clinkenbeard, J.P., **1991**.

SR 164: Mineral Land Classification of **Nevada County**, California. Loyd, R.C., and Clinkenbeard, J.P., **1990**.

SR 165: Mineral Land Classification of the **Temescal Valley Area**, **Riverside County**, California. Miller, R.V., Shumway, D.O., and Hill, R.L., **1991**.

SR 166: Mineral Land Classification of the **Eureka-Saline Valley Area**, **Mono and Inyo Counties**, California. Taylor, G.C., and Joseph, S.E, **1993**.

SR 167: Mineral Land Classification of the **Ash Meadows**, **Big Dune**, **Eagle Mountain**, **Funeral Peak**, **Ryan**, **Pahrump**, and **Stewart Valley 15'** and **High Peak 7.5' Quadrangles**, **Inyo County**, California.Taylor, G.C, **1993**.

SR 168: Mineral Land Classification of the **Kerens, Flynn, and Colton Well 15-Minute Quadrangles, San Bernardino County, California**. Loyd, R.C, **1993**.

SR 169: Mineral Land Classification of the **San Andreas 15' Quadrangle**, **Calaveras County**, California. Taylor, G.C., Greenwood, Richard, and Joseph, Stephen, **1993**.

SR 173: Mineral Land Classification of **Stanislaus County**, California. Higgins, C.T., and Dupras, D.L., **1993**.

SMARA SPECIAL REPORTS SHOWING COUNTY/AREA

SR 132	**Yuba City-Marysville** (1986).
SR 139	**Greater Los Angeles Area** (1979).
SR 143 (Part I)	**Greater Los Angeles Area** (1979).
SR 143 (Part II)	**San Fernando Valley** (1979).
SR 143 (Part III)	**Orange County-Temescal Valley** (1981).
SR 143 (Part IV)	**San Gabriel Valley** (1982).
SR 143 (Part V)	**Saugus-Newhall / Palmdale** (1987).
SR 143 (Part VI)	**Claremont Upland** (1987).
SR 143 (Part VII)	**San Bernardino** (1987).
SR 145	**Ventura County** (1981).
SR 145 (Part I)	**Introduction**
SR 145 (Part II)	**Simi**
SR 145 (Part III)	**Western Ventura County**
SR 146 (Part I)	**San Francisco-Monterey Bay Area** (1986).
SR 146 (Part II)	**South San Francisco Bay** (1987).
SR 146 (Part III)	**North San Francisco Bay** (1987).
SR 146 (Part IV)	**Monterey Bay** (1989).
SR 147	**Bakersfield** (1988).
SR 153	**Western San Diego County** (1982).
SR 156	**Sacramento-Fairfield** (1988).
SR 158	**Fresno** (1986).
SR 159	**Palm Springs** (1987).
SR 160	**Stockton-Lodi** (1989).
SR 162	**San Luis Obispo-Santa Barbara** (1991).
SR 164	**Nevada County** (1990).
SR 165	**Temescal Valley/Riverside County** (1991).
SR 166	**Mono and Inyo Counties** (1993).
SR 167	**Inyo County** (1993).
SR 168	**San Bernardino County** (1993).
SR 169	**Calaveras County** (1993).
SR 173	**Stanislaus County** (1993).

SMARA OPEN-FILE REPORTS DEALING WITH MINERAL RESOURCES

OFR 80-18 Mineral Land Classification of **Pfizer, Inc.** Limestone Deposits in Lucerne Valley, **San Bernardino County**, California. (Petition) Miller, R.V., and Morton, P.K., **1980**.

OFR 81-14 Mineral Land Classification of **Granite Rock Company** Limestone Deposits in the **Pico Blanco Area**, **Monterey County**, California. (Petition) Stinson, M.C., **1982**.

OFR 81-16 Mineral Land Classification of **Pacific Clay Products, Inc.**, Clay Deposits in the **Alberhill Area**, **Riverside County**, California. (Petition) CDMG Staff, **1982**.

OFR 82-06 Mineral Land Classification of the **Riverside Cement Company Platz Property** Deposit in Trabuco Canyon, **Orange County**, California. (Petition) Greenwood, R.B., **1982**.

OFR 82-07 Mineral Land Classification of the **Pacific Clay Products, Inc.**, **Thomas Clay Deposit**, Corona, **Riverside County**, California. (Petition) Joseph, S.E., **1982**.

OFR 83-01 Mineral Land Classification of the **Ordway Skunk Gulch Carbonate Deposit**, **Calaveras County**, California. (Petition) Loyd, R.C., **1982**.

OFR 83-02 Mineral Land Classification of the **Placer Service Corporation**, Placer Gold Deposit on **San Juan Ridge**, **Nevada County**, California. (Petition) Loyd, R.C., **1983**.

OFR 83-28 Mineral Land Classification of the **Joe Chevreaux Company** Property for Portland-Cement-Concrete-Grade Aggregate, **Nevada** and **Placer Counties**, California. (Petition) Dupras, D.L., **1983**.

OFR 83-29 Mineral Land Classification of the **Placerville 15' Quadrangle**, **El Dorado**, and **Amador Counties**, California. Loyd, R.C., Anderson, T.P., and Bushnell, M.M., **1983**.

OFR 83-35 Mineral Land Classification of the **Georgetown 15' Quadrangle**, **El Dorado**, and **Placer Counties**, California. Kohler, S.L., **1983**.

OFR 83-36 Mineral Land Classification of the **Sutter Creek 15' Quadrangle**, **Amador**, and **Calaveras Counties**, California. Loyd, R.C., **1983**.

OFR 83-37 Mineral Land Classification of the **Auburn 15' Quadrangle**, **El Dorado**, and **Placer Counties**, California. Kohler, S.L., **1984**.

OFR 84-02 Mineral Land Classification of the **Mescal Range 15' Quadrangle**, **San Bernardino County**, California. Joseph, S.E., **1984**.

OFR 84-03 Mineral Land Classification of the **Kelso 15' Quadrangle**, **San Bernardino County**, California. Greenwood, R.B., **1984**.

OFR 84-21 Mineral Land Classification of **Pleuss-Staufer, Inc.**, Limestone Deposits, Lucerne Valley, **San Bernardino County**, California. (Petition) Joseph, S.E., **1984**.

OFR 84-30 Mineral Land Classification of the **Lanfair Valley**, **Homer Mountain**, and **Davis Dam 15' Quadrangles**, **San Bernardino County,** California. Kohler, S.L., **1984**.

OFR 84-50 Mineral Land Classification of the **Folsom 15' Quadrangle**, **El Dorado**, **Placer**, and **Amador Counties**, California. Loyd, R.C., **1984**.

OFR 84-51 Mineral Land Classification of the **Halloran Springs 15' Quadrangle**, **San Bernardino County**, California. Greenwood, R.B., **1984**.

OFR 85-07 Mineral Land Classification of the **Ivanpah**, **Crescent Peak**, and **Searchlight 15' Quadrangles**, **San Bernardino County**, California. Joseph, S.E., **1985**.

OFR 85-08 Mineral Land Classification of the **Mid Hills 15' Quadrangle**, **San Bernardino County**, California. Greenwood, R.B., **1985**.

OFR 85-13 Mineral Land Classification of **Pleuss-Staufer, Incorporated White Knob Limestone Deposit**, Lucerne Valley, **San Bernardino County**, California. (Petition) Joseph, S.E., **1985**.

OFR 85-15 Mineral Land Classification of the Northern **Kingman 1° by 2° Quadrangle**, **San Bernardino County**, California. Bezore, S.P., and Joseph, S.E., **1987**.

OFR 85-17 Mineral Land Classification of the **United States Tile Company Dominguez Clay Deposit**, Corona, **Riverside County**, California. (Petition) Joseph, S.E., **1985**.

OFR 85-18 Mineral Land Classification of the NE Quarter of the **Needles 1° by 2° Quadrangle**, **San Bernardino County**, California. Kohler, S.L., Loyd, R.C., and Burnett, J.L., **1985**.

OFR 85-22 Mineral Land Classification of the **W.L. Harvey Clay/Shale Deposit**, **Placer County**, California. (Petition) Taylor, G.C., **1985**.

OFR 86-10 Mineral Land Classification of the **Ash Meadows**, **Big Dune**, **Eagle Mountain**, **Funeral Peak**, **Ryan**, **Pahrump**, and **Stewart Valley 15'** and **High Peak 7.5' Quadrangles**, **Inyo County**, California. Taylor, G.C., **1986**. (Reprinted as SR 167)

OFR 86-12 Mineral Land Classification of the South Half of the **Bald Mountain/Browns Flat Gold Mining District**, **Tuolumne County**, California. (Petition) Loyd, R.C., **1986**.

OFR 86-13 Mineral Land Classification of the **Matich Corporation Declezville Quarry**, Fontana, **San Bernardino County**, California. (Petition) Joseph, S.E., **1986**.

OFR 86-19 Mineral Land Classification of a portion of the **Sisquoc River**, **Santa Barbara County**, California - for Portland-Cement Concrete-Grade Aggregate. (Petition) Cole, J.W., and Jensen L.S., **1986**.

OFR 87-02 Mineral Land Classification of the **Camino and Mokelumne Hill 15' Quadrangles**, **El Dorado**, **Amador**, and **Calaveras Counties**, California. Loyd, R.C., and Kohler, S.L., **1987**.

OFR 88-02 Mineral Land Classification of the **Eureka-Saline Valley Area**, **Mono and Inyo Counties**, California. Taylor, G.C., and Joseph, S.E., **1988**. (Reprinted as SR 166)

OFR 88-03 Mineral Land Classification of the **Kerens**, **Flynn**, and **Colton Well 15' Quadrangles**, **San Bernardino County**, California. Loyd, R.C., **1988**.

OFR 88-16 Mineral Land Classification of the **Sycamore Ridge Property**, San Marcos Quadrangle, **San Diego County**, California - for Portland Cement Concrete Grade Aggregate. (Petition) Clinkenbeard, J.P., **1988**.

OFR 88-18 Mineral Land Classification of the **Pearce Quarry Site**, **Hollister Quadrangle**, **San Benito County**, California - for Aggregate Materials. (Petition) Clinkenbeard, J.P., **1988**.

OFR 88-19 Mineral Land Classification of the **San Bruno Canyon** Greenstone Deposits, Morgan Hill Quadrangle, **Santa Clara County**, California - for Aggregate Materials. (Petition) Jensen, L.S., **1988**.

OFR 88-20 Mineral Land Classification of the **Whipple** and **Riverside Mountains**, **San Bernardino** and **Riverside Counties**, California. Kohler, S.L., and Bezore, S.P., **1988**.

OFR 88-23 Mineral Land Classification of the **Fish Canyon Quarry**, **Azusa Quadrangle**, **Los Angeles County**, California for Portland Cement Concrete Aggregate and Base Aggregate. (Petition) Miller, R.V., **1988**.

OFR 89-01 Mineral Land Classification of the **San Andreas 15' Quadrangle**, **Calaveras County**, California.Taylor, G.C., Greenwood, Richard, and Joseph, Stephen **1989**. (Reprinted as SR 169)

OFR 89-12 Mineral Land Classification of the **Smart Ranch Limestone Property**, **Big Bear City** and **Rattlesnake Canyon Quadrangles**, **San Bernardino County**, California for High-Grade and Cement-Grade Limestone. (Petition) Miller, R.V., **1989**.

OFR 89-15 Mineral Land Classification of the **Pankey Ranch Site**, **Bonsall Quadrangle**, **San Diego County**, California - for Aggregate Materials. (Petition) Clinkenbeard, J.P., **1989**.

OFR 90-01 Mineral Land Classification of the **Western World Mining Company Copper-Zinc Deposit** near Smartville, **Yuba County**, California. (Petition) Taylor, G.C., **1990**.

OFR 90-02 Mineral Land Classification of the **Calmat Land Co. Baxter Iron/Carbonate Rock Deposit**, **San Bernardino County**, California. (Petition) Anderson, T.P., **1990**.

OFR 90-16 Mineral Land Classification of the **Hannah Ranch Site**, **Tulare County**, California, for Portland Cement Concrete Aggregate. (Petition) Pridmore, C.L., **1990**.

OFR 91-03 Mineral Land Classification of the **South Tracy Site**, **San Joaquin County**, California, for Portland Cement Concrete Aggregate. (Petition) Boylan, Richard, and Loyd, Ralph, **1991**.

OFR 91-04 Mineral Land Classification of the **Jamestown Mine** Property, **Tuolumne County**, California, for Lode Gold Resources. (Petition) Loyd, R.C., and Boylan, Richard, **1991**.

OFR 91-06 Mineral Land Classification of the **Wilson Creek Property, Aguanga, Cahuilla Mtn., Sage, and Vail Lake Quadrangles**, **Riverside County**, California for Asphaltic or Portland Cement Concrete-Grade Aggregate. (Petition) Miller, R.V., **1991**.

OFR 92-02 Mineral Land Classification of the **Winchester Aggregate Site**, **Romoland** and **Winchester Quadrangles**, **Riverside County**, California for Asphaltic-Concrete-Grade Aggregate and Base-Grade Aggregate. (Petition) Strand, R.G., **1992**.

OFR 92-06 Mineral Land Classification of Concrete Aggregate Resources in the **Barstow-Victorville Area**. Miller, R.V., **1993**.

OFR 92-09 Mineral Land Classification of the **Boulder Creek Aggregate Site, Fillmore Quadrangle**, **Ventura County**, California for Portland Cement Concrete, Asphaltic Concrete Aggregate, and Base Aggregate. (Petition) Strand, R.G., **1992**.

OFR 93-05 Mineral Land Classification of the **Ortega Rock Quarry** Property, **Canada Gobernadora 7.5' Quadrangle**, **Orange County**, California, for Asphaltic-Concrete-Grade Aggregate and Construction Aggregate. (Petition) Shumway, D.O., **1993**.

OFR 93-10 Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California, Part I - **Ventura County**. Miller, R.V., **1993**.

OFR 93-11 Mineral Land Classification of the **Rough and Ready Creek Site**, **Standard 7.5' Quadrangle**, **Tuolumne County**, California, for Carbonate Rock (Limestone and Dolomite). Silva, M.A., **1993**.

OFR 94-01 Mineral Land Classification of the **Green Rock Quarries Oroville Plant No. 1** Property, **Oroville Quadrangle**, **Butte County**, California, for Railroad Ballast. (Petition) Stinson, M.C., **1994**.

OFR 94-04 Mineral Land Classification of a Part of Southwestern **San Bernardino County**: the **Barstow-Victorville Area**, California. Bezore, S.P., and Shumway, D.O., **1994**.

OFR 94-06 Mineral Land Classification of a Part of Southwestern **San Bernardino County**: The **Big Bear Lake-Lucerne Valley Area**, California. Taylor, G.C., **1994**.

OFR 94-07 Mineral Land Classification of a Part of **Southwestern San Bernardino County**, California: A Part of **the Eastern San Gabriel Mountains** and the **Western San Bernardino Mountains**. Shumway, D.O., and Hill, R.L., **1995**.

OFR 94-08 Mineral Land Classification of a Part of Southwestern **San Bernardino County**: the **San Bernardino Valley Area**, California. Shumway, D.O., and Silva, M.A., **1994**.

OFR 94-11 Mineral Land Classification of the **Eastern Half of Riverside County**, California. Kohler-Antablin, S., **1994**.

OFR 94-12 Mineral Land Classification of the **Triangle Properties Hofman Ranch Site**, **Browns Valley 7.5' Quadrangle**, **Yuba County**, California, for Portland Cement Concrete-Grade Aggregate. (Petition) Higgins, C.T., and Dupras, D.L., **1994**.

OFR 94-14 Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California, Part II - **Los Angeles County**. Miller, R.V., **1994**.

OFR 94-15 Update of Mineral Land Classification of Portland Cement Concrete Aggregate in Ventura, Los Angeles, and Orange Counties, California, Part III - **Orange County**. Miller, R.V., **1995**.

OFR 95-10 Mineral Land Classification of **Placer County**, California Loyd, Ralph, **1995**.

OFR 96-03 Update of Mineral Land Classification: Aggregate Materials in the **South San Francisco Bay** Production-Consumption Region. Kohler-Antablin, Susan, **1996**.

OFR 96-04 Update of Mineral Land Classification: Aggregate Materials in the Western **San Diego County** Production-Consumption Region. Miller, R.V., **1996**.

OFR 97-01 Mineral Land Classification of Concrete Aggregate Resources in the **Tulare County** Production-Consumption Region, California. Taylor, G.C., **1997**.

OFR 97-02 Mineral Land Classification of Concrete-Grade Aggregate Resources in **Glenn County**, California. Shumway, D.O., **1997**.

OFR 97-03 Mineral Land Classification of Alluvial Sand and Gravel, Crushed Stone, Volcanic Cinders, Limestone, and Diatomite within **Shasta County**, California. Dupras, D., **1997**.

OFR 97-09 Mineral Land Classification of a Portion of **Tuolumne County**, California, for Precious Metals, Carbonate Rock, and Concrete-Grade Aggregate. Higgins, C.T., **1997**.

OFR 97-16 Mineral Land Classification of a Part of Southwestern **San Bernardino County**: the **Barstow-Newberry Springs Area**, California. Bezore, S.P., **1997**.

OFR 99-02 Update of Mineral Land Classification: Aggregate Materials in the **Fresno** Production—Consumption Region, California. Youngs, L.G., and Miller, R.V., **1999**.

SMARA OPEN-FILE AND SPECIAL REPORTS BY COUNTY

ALAMEDA:	OFR 96-03, SR 146-Part I, SR 146-Part II
AMADOR:	OFR 83-29, OFR 83-36, OFR 84-50, OFR 87-02
BUTTE:	OFR 94-01
CALAVERAS:	OFR 83-01, OFR 83-36, OFR 87-02, OFR 89-01, SR 169
CONTRA COSTA:	OFR 96-03, SR 146-Part I, SR 146-Part II
EL DORADO:	OFR 83-29, OFR 83-35, OFR 83-37, OFR 84-50, OFR 87-02, SR 156
FRESNO:	SR 158
GLENN:	OFR 97-02
INYO:	OFR 86-10, OFR 88-02, SR 166, SR 167
KERN:	SR 147
LOS ANGELES:	OFR 88-23, OFR 94-14, SR 139, SR 143-Part I, SR 143-Part II, SR 143-Part III, SR 143-Part IV, SR 143-Part V, SR 143-Part VI
MADERA:	R 158
MARIN:	SR 146-Part I, SR 146-Part III
MONO:	OFR 88-02, SR 166
MONTEREY:	OFR 81-14, SR 146-Part I, SR 146-Part IV
NAPA:	SR 146-Part I, SR 146-Part III
NEVADA:	OFR 83-02, OFR 83-28, OFR 84-04 (may not have been accepted by the SMGB), SR 132, SR 164
ORANGE:	OFR 82-06, OFR 93-05, OFR 94-15, SR 143-Part I, SR 143-Part II
PLACER:	OFR 83-28, OFR 83-35, OFR 83-37, OFR 84-50, OFR 85-22, OFR 95-10, SR 156
RIVERSIDE:	OFR 81-16, OFR 82-07, OFR 85-17, OFR 88-20, OFR 91-06, OFR 92-02, OFR 94-11, SR 143-Part I, SR 143-Part III, SR 143-Part VII, SR 159, SR 165
SACRAMENTO:	SR 156
SAN BENITO:	OFR 88-18, SR 146-Part I, SR 146-Part IV
SAN BERNARDINO:	OFR 80-18, OFR 84-02, OFR 84-03, OFR 84-21,OFR 84-30, OFR 84-51, OFR 85-07, OFR 85-08, OFR 85-13, OFR 85-15, OFR 85-18, OFR 86-13, OFR 88-03, OFR 88-20, OFR 89-12, OFR 90-02, OFR 92-06, OFR 94-04, OFR 94-05, OFR 94-06, OFR 94-07, OFR 94-08, OFR 94-14, OFR 97-16, SR 143-Part I, SR 143-Part III, SR 143-Part VI, SR 143-Part VII, SR 168
SAN DIEGO:	OFR 88-16, OFR 89-15, OFR 96-04, SR 153
SAN FRANCISCO:	OFR 96-03, SR 146-Part I, SR 146-Part II
SAN JOAQUIN:	OFR 77-16, OFR 91-03, SR 160
SAN LUIS OBISPO:	SR 162

SAN MATEO:	OFR 96-03, SR 146-Part I, SR 146-Part II, SR 146-Part III
SANTA BARBARA:	OFR 86-19, SR 162
SANTA CLARA:	OFR 88-19, OFR 96-03, SR 146-Part I, SR 146-Part II, SR 146-Part IV
SANTA CRUZ:	SR 146-Part I, SR 146-Part IV
SHASTA:	OFR 97-03
SOLANO:	SR 146-Part I, SR 146-Part III, SR 156
SONOMA:	SR 146-Part I, SR 146-Part III
STANISLAUS:	SR 160, SR 173
SUTTER:	SR 132
TULARE:	OFR 90-16, OFR 97-01
TUOLUMNE:	OFR 86-12, OFR 91-04, OFR 93-11, OFR 97-09
VENTURA:	SR 145-Part I, SR 145-Part II, SR 145-Part III, OFR 92-09, OFR 93-10
YOLO:	SR 156
YUBA:	OFR 90-01, SR 132, OFR 94-12

COUNTIES WITH NO SMARA REPORTS

ALPINE
COLUSA
DEL NORTE
HUMBOLDT
IMPERIAL
KINGS
LAKE
LASSEN
MARIPOSA
MENDOCINO
MERCED
MODOC
PLUMAS
SIERRA
SISKIYOU
TEHAMA
TRINITY

CALIFORNIA SURFACE MINING AND RECLAMATION POLICIES AND PROCEDURES

SPECIAL PUBLICATION 51

title information to be placed on spine of perfect binding