

C O M P U T E R I Z E D  
R E S O U R C E S  
I N F O R M A T I O N  
B A N K

INSTRUCTIONS FOR REPORTERS

REVISION 9

SEPTEMBER 1974

PREPARED BY

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REVISION 9      9-74



NOTE

Make xerox copies of the filled-out forms. Keep the xerox copies in your possession for reference and backup and send the originals to one of the following CRIB representatives of the Office of Resource Analysis:

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Blank forms can be obtained from the above sources.

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SHORT FORM USERS: Please note and read \*'s on pages 2, 3 and 4.

## INSTRUCTIONS FOR REPORTERS (REVISION 9)

### General

CRIB (Computerized Resources Information Bank) is a computerized information file on mineral resources and represents one aspect of the Survey's mineral inventory program of the U.S. It will serve as the storage and retrieval facility for commodity data and for data resulting from the two-degree mineral inventory projects. The changeover to a computer-based resources information system will make it possible, on short notice, to search out and synthesize great quantities of diverse data on mineral resources and on individual deposits and to print this information in the form of organized reports, tables, and maps.

The CRIB file uses GIPSY (General Information Processing System) as the vehicle for creating, storing, and processing the resources information in the computer. GIPSY consists of a set of program routines that performs all of the file management requirements associated with a computer file. It operates on high-speed storage units and is arranged in variable field format (information items are of varying lengths). It is user oriented so that anyone can be a user. The USGS has adapted the GIPSY system, and it now resides in the computer's program library for immediate use.

All the needed software (IBM program routines plus other programs) now exists for going in almost any direction with regard to processing and synthesizing the CRIB resources data file. The GIPSY program itself will search the file and retrieve the fields (information items) or parts of fields specified by the user. The CRIB file is arranged so that the GIPSY program will produce certain table listings as standard output, and it can provide total summations of numeric data. Exit can be made to other programs for further processing. Real numbers can then be entered into STATPAC (the Survey's statistical package) for various statistical analyses. Descriptive (nonparametric) information can be entered into "cluster analysis" programs. Geodetic, UTM (Universal Transverse Mercator), and State coordinates all can be converted one into the other, and vice-versa. At least three map-plotting programs are available for the display and study of the spatial relations of any selected set of resources data. As a result of these computer capabilities, a computerized mineral resources file, such as now is being implemented, will markedly increase the scope and effectiveness of the Survey with respect to mineral resources studies and the ready availability of resources information.

- \* Two types of forms or records are available to reporters: form S (Short form) on a 5x8 card which provides a skeletal description of the deposit and should be used only in cases of minimal available information; form L (Long form) provides a complete description of the deposit. It should be used whenever possible.
- \* In 1973 Eleanor Keefer expanded the short form by adding extra 5x8 cards (continuation cards) to accommodate tables on production, reserves and potential resources, and reserves (only). These are laid out in a format equivalent to that of the long forms. Some commodity specialists prefer these 5x8 card forms and are using them as the basis for their office (manual) commodity files. Further information on multiple-card short forms is available from Eleanor Keefer.
- \* Both forms in fact are part of a single computer file so that information from both forms will automatically be retrieved whenever the file is interrogated. A third form contains Phil Guild's metallogenic map data and it also is interrogated simultaneously with forms S and L. Special forms can also be constructed by the user to suit his own specialized needs. Maureen Johnson is using several specialized forms and can be contacted for further information.

The present reporting forms and instruction for Sections S and L are based upon user response to earlier revisions; a survey of inquiries received by the Office of Mineral Resources; tentative decisions reached during meetings of representatives from Washington, Denver, and Menlo Park; and discussions with the Office of Minerals Exploration (OME).

#### Notes on Terminology and Usage

A record is a group of related facts or fields of information treated as a unit. A CRIB record is based upon the information filled in by the reporter on the reporting forms. There is a great deal of flexibility as to what constitutes a specific record. It may consist of information relating to a commodity, a group of commodities, a mineral deposit, or a related group of deposits, as each case may warrant. Each record will be assigned a unique identifying number (a record number) and must have at least one commodity present. The reporting forms for a record should be filled out as completely as possible, and all items known should be included. If items are unknown, they may be left blank. Any information ascertained at a later date for a given record can be added to that record as outlined under RECORD TYPE and in List A.

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\* Those paragraphs flagged by an asterisk refer to CRIB short forms.

Each field (information item) is preceded by a "label" (A10, A20, etc.) and each field also has a field name. Thus, the label A10 has the field name "DEPOSIT NAME" and label A40 has the field name "COUNTRY." In some fields the label and field name are the same, as "MAJOR" and "MINOR" in the section on Commodity Information. Most fields have a space for write-in material, and all such entries are enclosed by delimiters (< >) which mark the beginning and end of the text. A few labels have no associated text; therefore these labels have no delimiters.

Examples of these are the labels "YES" and "NO" in the section on Production. In some cases two related kinds of information are incorporated within one label. In the section on Production, for example, the "Item" and "Accuracy" fields are both associated with the same label. These various arrangements, as well as certain fixed fields, all have to do with program restrictions, output format, and search efficiency.

If information is not available for a given field, then leave that field blank.

In some fields, the information is entered according to certain rules. Observe the special directions given for these fields.

The write-in type of information may consist of any combination of alphabetic and numeric characters, or any of some 24 special characters, EXCEPT < > and @, which are reserved characters. In addition, avoid using symbols for degrees - °, minutes - ', seconds - ", feet - ', and inches - " in the write-in sections. Instead use the whole words or standard abbreviations.

"Left justify" and "right justify" are terms that mean that the characters must line up against the left or right margins of the fields.

- \* If more space is needed for write-in type material, the reporter may continue the entry on the back of the form. In the case of the short form, additional labels or fields taken from the long form may be entered on the back of the card. The reporter should indicate on the front of the card the existence of additional information on the back (i.e. "see over"). Continuations and additions must be properly labeled and identified. Do not incorporate commas in numeric fields. Commas in numeric fields prevent searching and sorting on these fields.

For the present, there is no provision for handling proprietary or confidential information. Therefore, any such information should be diluted or generalized before entry into the file.



## Instructions for Individual Fields

### RECORD IDENTIFICATION

#### B10 Record No.

Leave blank, as the record number is assigned by CRIB personnel in the various centers.

#### Record Type

The record type indicates whether a long or short form was originally used, or if a record is being updated. Circle the appropriate letter code on the form. See List A (p. 23), for definitions of these codes.

### \* UPDATE PROCEDURE

Additions, corrections, or deletions may be submitted at a later date(s) on either the long or short form, depending on how much and what type of information is to be updated.

LONG FORM - Circle the letter U only, enter the previously assigned record number in label B10, enter the deposit name if known in label A10, and update the appropriate labels.

\* SHORT FORM - Enter the previously assigned record number in label B10, enter the deposit name if known in label A10, and update the appropriate labels.

Periodically, each reporter will be sent a computer listing of records he has submitted; the record numbers will appear on this listing.

### \* B40 Deposit No.

This label is for optional use by the reporter as a file number for a series of localities of a given commodity; for a sequence of mineral localities on a given map sheet; for a field number; or for any other individual numbering system.

### \* B50 File Link ID

An entry in this field indicates that further information on this locality is stored in some other file, either computerized or not. Examples of keyword entries in this field would be RASS (Rock Analysis file), BURMINES (Bureau of Mines data), GEOPHY (Geophysical files), BLM (Bureau of Land Management data), CONSV (Conservation Division data), OOG (Office of Oil & Gas), FPC (Federal Power Commission), etc.

REPORTER

\* G1 Date

Enter the date the form is filled in. Include a leading zero for months prior to October.

G2 Name

Enter the name of the reporter filling in the form.

NAME

A10 Deposit Name

Enter the most commonly used name of the mineral deposit and include what the deposit is (i.e., district, mine, prospect, claim, occurrence, etc.). This may be a subunit of a larger unit (i.e., No. 2 orebody, Lone Star mine).

A11 Synonym Name(s)

Enter any other names by which the deposit may be known.

LOCATION

A30 District/Area/Subdist.

Enter the name of the mining district, area, or subdistrict, or other large mineral-area name or regional geographic name.

A40 Country

Enter the code letters representing the name of the country or countries containing the mineral deposit. See List C - Country Code (p. 24). The United States is "US." Note that each country code is to be entered twice - once within the delimiters, and once within the circle. Note that the form contains room for entering only one country. Should the deposit span more than one country, add the code for the second country (twice) directly below the entry for the first country.

A50 State

Enter the state, province, or other second-order political subdivision below the country level. For states of the United States use List D - State Code (p27). For Canada, the reporter may either use the Provincial Codes, also shown in List D, or he may write the full name of Province. For states or provinces of other countries, write in the name. Notice that if the state is in the U.S., the code must be entered twice, once within the delimiters, and once within the circle. Again, if the deposit spans more than one state, use the same procedure as explained above in the country directions.

A60 County

Enter the name of the county(ies) or other third-order political subdivision(s).

A82 Position From Nearest Prominent Locality

Enter the direction and distance of the location from some nearby town or prominent geographic feature.

Note that there are 4 possible location methods listed on the Long form, and that at least 1, if not more, must be entered. Each of the methods is described below.

A110-A130 UTM Coordinates

UTM coordinates provide a simple way of plotting a point. The UTM grid is shown on all USGS quadrangle maps printed since 1956. Grid lines drawn on the base map, together with a metric coordinate reader, make it a simple matter to plot a point in the UTM system.

To define a point in the UTM system, a Northing, Easting, and Zone No. are required. The world is divided into 60 meridional zones numbered from 1 to 60, each zone covering a strip 6° wide in longitude. The Northern and Southern Hemispheres must be indicated by a positive or negative value. If the Zone number is less than 10, insert a leading zero to the left of the number (place the zero in the second allotted space of A110). The Zone number is indicated in the lower-left corner of 7 ½ minute topographic sheets.

Within each zone, coordinates are measured north and east in meters. The whole number of meters should be right justified against the decimal point which is preprinted on the form. Fractional meters probably will never be needed, so the space after the decimal point may be left blank.

Example of a point in the Northern Hemisphere:

UTM Zone No.	+17
Northing	3598887.
Easting	90123.

Note on geographic coordinates: Enter either UTM coordinates or geodetic coordinates. There is no need to fill in both. UTM can be converted by computer to geodetic, and vice versa. It is much simpler to locate by UTM than geodetic because the grid spacing is the same everywhere and is in metric.

A70, A80 Latitude and Longitude (Geodetic Coordinates)

Use degrees, minutes, and seconds following the format indicated. For large areas choose an arbitrary center point or the coordinates of the principal mine or quarry. Even though a single-point location may not be a realistic "center," nevertheless it is important to assign some arbitrary location so that the area in question can be retrieved on the basis of latitude and longitude. Precision should be at least to the nearest minute in most cases. Indicate whether longitude is East or West (E/W) of the Greenwich Meridian and whether latitude is North or South (N/S) of Equator. If latitude is zero or longitude either zero or 180, it is not necessary to enter N/S or E/W.

A71 State X Coordinate

A72 State Y Coordinate

A73 State Zone Number

Each state has its own coordinate system, and these can be used as the location coordinates if desired. State-coordinate ticks are printed on the edges of most topographic maps. Detailed instructions can be obtained from the appropriate state agencies, and pamphlets describing the coordinate system of each state are available from the U.S. Coast and Geodetic Survey.

Program #D0154, written by Wayne A. Buehrer, will be used to convert state coordinates to geodetic coordinates; therefore the format used here is essentially the same as required by that program. Each location must contain an X coordinate, a Y coordinate, and a state zone number. The coordinate values may contain from one to nine digits to the left of the decimal point (whole number part), and one digit to the right of the decimal point (fractional part). The whole number part must be right justified against the preprinted decimal point. The fractional part may be left blank (ignored). In most cases, the accuracy provided by the fractional part (± 0.1 ft.) will not be needed.

Examples:

A71 < |X|X| X|X|X|X|X|X|X|. | >

Whole number part occupies all 9 spaces; fractional part left blank.

A72 < | | | | | |X|X|X|X|. | >

Whole number part occupies 4 spaces, right justified against decimal; unused spaces left blank.

Each state contains from one to seven zones, each of which has an official name. For the purpose of conversion program D0154, each zone has been assigned a four-digit number. This number is required by the conversion program and therefore must be entered in label A73 under "State Zone Number." A listing of the state zones and their corresponding zone number can be found in "Program Description, D0154," available at the Survey's computer offices throughout the country.

A77 Township

A78 Range

A79 Section

A81 Meridian

The location of a point by Township, Range, and Section is not recommended because this method is mathematically unprecise and therefore difficult to deal with in the computer. Any of the location methods described previously are far superior to the Twp-Rge-Sec method. However, inasmuch as many locations in the literature are given only by Twp-Rge-Sec, it has been included here.

Enter Twp, Rge, Sec in the spaces provided. For a given locality, there is space for two townships, two ranges, and six sections (three sections for each Twp-Rge). If only one Twp-Rge is entered, than all six sections may be referred to that single township.

Example of a locality extending into two townships:

Township      A77 <|0|3|8|N| , , , |0|3|8|N| >  
 Range         A78 <|0|3|2|E| , , , |0|3|3|E| >  
 Section       A79 <|0|6| |0|7| |1| |0|1| |0|2| |0|3| >

Do not enter the T for Township or the R for Range. Add leading zeros on the left when needed - as shown in the above example. It may be necessary to provide the name of the meridian which governs the set of townships and ranges.

A107 Altitude (FT or M)

This is the surface elevation of the item being described (mine, prospect, district, etc.). Fill in if it is considered meaningful. For a large area choose the altitude of a point, or an average altitude. Enter digits, followed by a space, and then FT or M (feet or meters).

Example: A107 <1350 FT>

A100 Quad Scale

Enter the denominator of fractional scale of the quad where the deposit is located (i.e., 24000 instead of 1:24000). Numbers should be right justified in allotted spaces.

A90 Quadrangle Number or Name

Enter the number or name of the quadrangle containing the mineral deposit.

A62 Drainage Area

Enter from the map, titled List J (p. 36), the drainage area in which the deposit is located. List J is only for the U.S. The numeric code is entered in the first two spaces within the delimiter. The rest of the line can be used to further describe the drainage area (i.e., Upper Hudson River) or to enter information about the drainage area of a non-U.S. mineral deposit.

A63 Physiographic Province

Enter from the map, titled List K (p. 37) the physiographic province in which the deposit is located. List K is also only for the U.S. Again the numeric code is entered in the first two spaces within the delimiter. The rest of the line can be used to further describe the physiographic province (i.e., Southern Catskills) or to enter information about the province of a non-U.S. deposit.

A83 Comments

Enter any comments concerning the location of the deposit.

COMMODITY INFORMATION

C10 Commodities Present

A long fixed field containing seven subfields (only six on short form) provides for the listing of up to seven commodities in a given mineral deposit. The subfields are to be filled out as shown below. Note that they are left-justified.

	1	2	3	4	5	6	7
C10 <	F	B	E	S	N		

	1	2	3	4	5	6	7
C10 <	L	S	T	1	L	S	T

The codes for commodities are in List E (p. 29). Element codes are the standard chemical symbols of one or two letters. Other commodities are coded in three letters or three letters and a number.

#### C20 Commodity Specialist Information

Enter those commodities (from C10 above) covered by special commodity knowledge. This field should be used when the following conditions apply:

Reporter is a commodity specialist and is supplying information on his own commodity.

Information is obtained from sources that were originally compiled by a commodity geologist.

#### Significance

This section classifies the commodities into MAJOR products, MINOR products, COPRODUCTS, BYPRODUCTS, POTENTIAL products, and OCCURRENCES. Re-enter each of the commodity codes shown in C10 into its proper category. Up to four different commodities may be entered in Major and Minor products; three each in Coproduct, Byproduct, Potential, and Occurrence. The terms Major, Minor, Coproduct, Byproduct refer to products that have been or are being produced. If a commodity has not been produced, then it cannot properly be classed as a major or minor product, or as a coproduct or byproduct. Commodities not produced should be entered under POTEN or OCCUR. A given commodity should be entered only once.

Do not combine categories, as Minor Byproduct, Major Coproduct, Major Potential, etc. Depending upon the reporter's point of view, a Minor Byproduct is entered under Minor or Byprod, but not both. A commodity produced in the past as a MAJOR commodity, but now is a POTEN commodity is entered under MAJOR, and the future potential can be noted in the section on "Reserves and Potential Resources." (See p.20 of instructions).

#### C30 Ore Minerals, Rocks, etc.

Enter names of most important ore minerals, rocks, or other ore materials. Use full word so that retrievals based on the name can be made. Note: Gangue minerals do not belong here.

#### C41 Commodity Subtypes or Use Categories

This field provides for the subdivision of commodities into specialized subtypes, if needed, or into categories based upon end use.

Examples:

- (1) Bauxite, coded ALL in C10, could be further classified in C41 as: C41 <BAUXITE, REFRACTORY GRADE >
- (2) Chromium, coded CR in C10, could be further classified in C41 as: C41 <METALLURGICAL USE >
- (3) Clay (general), coded as CLY in C10, could be further classified in C41 as: C41 <POTENTIAL USE AS BLOATING CLAY >

C42 Mineral Economics Factors

Enter in free text any noteworthy facts relating to economic factors that might govern or affect the exploitation of the deposit or commodity in question. These would include such items as distance to market, railroad, or road; high altitude; labor or price situation; favorable or unfavorable mining conditions; peculiar milling problems.

Additional information items can be added to this main category if needed.

C43 Analytical Data

Enter any analytical data which may exist for deposit samples, etc. Also, if desired, reference to analytical data may be entered in this area.

C50 Comments

Enter any comments necessary to clarify the commodity information section.

EXPLORATION AND DEVELOPMENT

L10 Year of Discovery

Enter exact year or approximate year, if possible. A generalized date will also be useful, as: PREHISTORIC, PRESPANISH, SPANISH, REVOLUTIONARY WAR, etc.

L20 By Whom

Enter name of company, organization, or person most closely involved in the discovery. If not known or not applicable, then leave blank.

L30 Nature of Discovery

Enter one of the letter codes from List L (p. 38).

L40 Year of First Production

Same instructions as L10.

A12 Present or Last Owner

Enter the name of the person or organization that recently has owned the mineral rights of the land the deposit is on.

A13 Present of Last Operator

Enter the name of the person or mining company that is actually working the deposit or most recently worked it, if inactive. Even if the operator is the same as the owner, the name must be entered in full in both A12 and A13.



L41-L43, L50, L60, L70 Work Done by USGS and Other Organizations

Space is available for as many as six entries, three for USGS work done, and three for work done by other organizations.

Year The year work was done, or started.

Type of Work Enter one of the codes from List M (p. 38).

Geologist and Results Enter the name of the geologist within the USGS, and the results of his (her) work.

Organization and Results Enter the name of the organization that did the work, and the results.

L100 Reports Available

Enter any reports, published or unpublished, that are available. References listed under General References (labels F1-F4) need not be repeated here.

L110 Comments

Enter any comments concerning the exploration and development of the deposit necessary to clarify this section.

DESCRIPTION OF DEPOSIT

The following fields in this section are numeric fields only, which call for a single numeric value:

M60	M160	Do not enter number ranges (e.g.,
M20	M170	From ... to ....), or qualifying
M30	M190	words in these fields. A rough
M40	M200	average is a valid and useful entry.
M50	M210	If information is lacking or uncer-
		tain, leave blank.

Associated with each numeric field is a "units" field in which English or Metric units are entered as follows:

FT	Feet	(for area use SQ FT, SQ M, Acres,
MI	Miles	etc. for volume use CU FT, CU M,
M	Meters	etc.)
KM	Kilometers	

C40 Deposit Type(s)

Enter the word or words from List F (p. 34) which most accurately describes the deposit type (placer, vein, etc.). Other deposit types not presently included in List F may also be used.

M10 Deposit Form/Shape

Enter the word or words from List N (p. 39) which most accurately describes the form or shape of the deposit (pod, irregular, etc.). Forms or shapes not presently included in List N may also be used.

M60 Max Thickness (numeric field only)

This entry applies mainly to low-dipping deposits.

M20 Depth to Top (numeric field only)

M30 Depth to Bottom (numeric field only)

Enter the distance from the surface to the highest and lowest points of the deposit.

M40 Max Length (numeric field only)

M50 Max Width (numeric field only)

Enter the overall width and length of the deposit, measured in the horizontal plane.

M21 - M61 Units

Enter units used, abbreviated as explained above.

M15 Size

Indicate general size of deposit by one of the "key words"  
LARGE, MEDIUM, SMALL.

Size, following the scheme devised for the metallogenic map of North America (Guild, 1968)\*, relates to the amount of metal or mineral contained in the deposit, district, or area being described. The key words represent different absolute value ranges for the different commodities. For example, an iron mine containing on the order of 150 million tons of iron would probably be considered as a LARGE mine, whereas a LARGE gold mine would contain only on the order of 500 tons of gold.

Production commonly is an index of size (as used here), as are the physical dimensions of the deposit.

M70 Strike

M80 Dip

M90 Plunge

M100 Direction of Plunge

These 4 fields may be used for a specific measurement, as N 20 DEG E, or a generalized regional trend - as NE. (Note that DEG is used instead of the symbol °).

\*Guild, P. W., 1968, Metallogenic Map of North America: Comm. Geol. Cong.--Internat. Union Geol. Sci.) Bull. 8, p. 77-90.

A20 Status of Exploration or Development

This label classifies the degree of development of the deposit into 4 categories in terms of the surface and underground information available. Choose one of the number codes from List B, (p. 23), and place it in A20. If none are applicable, then leave blank.

Property is: (active) A21 (inactive) A22

Circle appropriate label. If not known, then do not circle. This entry is intended to indicate whether there is any activity at the present time at the locality in question. It is applicable mainly to specific, tangible localities (prospect, mine, district, etc.). Activity includes production or any present-day exploration or development work.

Workings are: (surface) M120 (underground) M130 (both) M140

Circle appropriate label.

M160 Depth Below Surface (numeric field only)

Enter the depth from the surface to the lowest workings (ground surface = 0).

M170 Length of Workings (numeric field only)

Indicate the aggregate length of the subsurface workings.

M161 - M171 Units

Enter units used, abbreviated as explained at the beginning of this section.

For Open Workings (Surface or Underground)

Refers to surface quarries, Open-pit mines, etc. and to large underground stopes, rooms, etc.

M190 Overall Length of Mined Area (numeric field only)

M200 Overall Width of Mined Area (numeric field only)

M210 Overall Area (numeric field only)

M220 Comments

Enter any comments necessary to clarify this section.

M191, M201, M211 Units

Enter units used, abbreviated as explained at the beginning of this section.

## GENERAL REFERENCES

### F1, F2, F3, F4 - General References

Space is given for 4 references. Follow the standard U.S. Geological Survey arrangement (i.e., last name of author, initials, date, title of work, name of periodical). If this arrangement is followed, then the reference can be retrieved and used directly in reports without recopying.

## GEOLOGY AND MINERALOGY

Note: Several of the entries in this section call for geologic age(s). Geologic age information has been allotted a 10-space subfield at the beginning of these entries. Use the geologic age codes from LIST O (P39 ). Qualifiers and age ranges can be accommodated to a limited extent. Stay within the 10 spaces allotted so that effective retrievals can be made on the basis of geologic ages. A blank space (indicated by a 'Ø') immediately follows the age field.

Examples:

C|R|E|T| | | | | | | | | | (CRETACEOUS)  
P|P|R|E|C|R|E|T| | | | | | (PRE CRETACEOUS)  
L|C|R|E|T| | | | | | | | (LATE CRETACEOUS)  
C|R|E|T| - |T|E|R|T| | | (CRETACEOUS TO TERTIARY)

If the reporter wishes to record more detailed age information, he may do so in the "Descriptive Notes" field (N85).

### K1 Host Rocks and Age

Enter the rock types associated with the ore, and their geologic ages, if known.

### K2 Associated Igneous Rocks and Age

If the host rock is igneous, then repeat the same information here.

### K3 Age of Mineralization

If known, enter the geologic age during which mineralization took place.

### K4 Pertinent Mineralogy Other than Ore Minerals

Enter here any other mineralogical data.

### K5 Important Ore Control or Locus

Enter one or more general or specific ore controls, if known.

N5 Major Regional Structures or Trends  
Identify any significant large folds, faults, or other regional structures.

N15 Tectonic Setting  
Enter the overall tectonic background of the area, as: shield, geosyncline, platform, piedmont, or other large-scale descriptive terms.

N70 Significant Local Structures  
List any significant local structures that characterize the area or that affect the commodity in question.

N75 Significant Alteration

If alteration is an important factor relative to the locality or commodity, then it should be mentioned here. No standardization has been attempted for alteration types, whether regional or local, or with regard to what specifically constitutes alteration. Refinements to the form can be made later, depending upon user response. For the present, the reporter may enter anything he wishes in "write-in text," relative to alteration.

N80 Geological Processes of Concentration or Enrichment

This field is an attempt to provide for additional information on the basic causes of concentration or enrichment of the commodity. Entries can be general or specific. Several mechanisms or a combination of conditions, are usually involved. Enter in "write-in text" any information considered worthwhile on this subject.

N30 - N45 Formations, Age, Rock Types

Four lines are provided for the listing of as many as four formation names, their ages, and associated rock types.

N50 - N65 Igneous Units, Age, Rock Types

Four lines are provided for the listing of as many as four igneous units, their ages, if known, and associated rock types.

N85 Descriptive Notes

Enter any additional descriptive information concerning the local geology not already mentioned in the local geology labels.

GENERAL COMMENTS

GEN General Comments

This field is for any general comments about the deposit which have not previously been placed in any other comments fields.

PRODUCTION

YES    NO

Circle the appropriate word.

YES    There is or was production of ore, or of any of the commodities listed.

NO     There has never been any production.

If it is unknown whether or not there was production, do not circle either.

DH Annual Production Table

Annual production information for ore and as many as four commodities is provided on the form, with one line for each item reported. It is possible also to repeat a given item if the units or grade are different. Stay within spacing shown because the output is a table listing.

Data should be entered in the various slots of the tables, where possible, rather than in the "comments" field.

D1 - D5 Item

Enter appropriate commodity codes from List E (p. 29) in the column entitled "item."

D1 - D5 Accuracy

The accuracy field is intended to provide an indication of the accuracy of the production figure or, if figures are not available, an indication of the amount in terms of Small, Medium, or Large is asked for. The accuracy codes are shown in List G (p. 34).

D1A - D5A Amount

A maximum of 8 digits can be entered. In order to accommodate production figures and summations larger than 8 digits and to standardize the "amounts" column so that summations are possible, it is necessary to report production figures in thousands of units. This is accomplished by moving the decimal point of the actual figure 3 places to the left and dropping right-hand digits if necessary. Make entries right justified and add leading zeros in remaining spaces on the left. With this arrangement, figures in the tens of billions can be expressed. Do not insert commas in the "amount" field.

Examples:

1. A production figure of 3 1 2 0 5 3 5 1 6 3 2  
would be entered as 3 1 2 0 5 3 5 2

In this example the production figure exceeds the 8 spaces allowed. Therefore the rightmost three digits are dropped and the 1 is rounded up to 2.

2. A production figure of 4 2 5 3  
would be entered as 0 0 0 4 . 2 5 3
3. A production figure of 4 2 5 3 5 2 3 1  
would be entered as 4 2 5 3 5 . 2 3

In examples 2. and 3. the decimal is moved 3 places to the left and leading zeros added on the left where needed. The decimal point occupies one space.

D1B - D5B Thousand Units

It is necessary to enter the units associated with the amounts column. It is desirable to maintain consistency of units for a given commodity, but if this is not convenient, then the reporter can repeat the same commodity, with different production figures and different units, on a second line. Abbreviate units as per List H (p. 35). In rare cases it may be necessary to express figures greater than tens of billions, e.g., greater than 99,999,999,999. This can be done by entering millions of units (e.g., MIL TONS) in the "thousand units" field. For example, 999,000,000,000 tons would be entered as follows:

	(amount)		(thousand units)
	00000999		MIL TONS

which amounts to 999 thousand million tons (999x1000x1,000,000).

D1C - D5C Year

Enter the specific year if known, using all four digits. Enter 

A	V	G
---	---	---

 for average annual production. Enter 

E	S	T
---	---	---

 for estimated or approximate annual production. Leave blank if no figures are entered in the "amounts" field.

D1C - D5C Grade or Use

Enter the grade of the commodity or item and, if desired, mention can also be made of any special or noteworthy use. This latter is similar to the entry C41 (commodity subtypes or use categories) on page 2 of the reporting form, but is repeated here in order to relate a special use to production figures.

Grade refers primarily to ORE grade and includes the grades of the different commodities in the ore, as known.

Example from the Tintic Standard: D1C < 11.5%PB; 250 OZ/TON AG; 5%CU; 0.1 OZ/TON AU; ZN UNKNOWN >

If specific grade of "ORE" (in terms of %) is unknown, then list the principal commodities (metals) contained in the ore without showing the percent. This is needed so that the ore will be directly related to the commodities in it. In the "grade" field, use the commodity symbols, for example: "PB," rather than the commodity name "lead."

Stay within the delimiters (< >) for each label.



DH2 Cumulative Production Table

Space is provided for three entries - ORE plus two commodities, or three commodities.

Cumulative production may be used for total cumulative production, for production during a given time segment of two or more years, or for intermittent production across several time segments.

The "item," "accuracy," "amount," and "thousand units" fields are identical with those in the Annual Production table.

G7C - G9C Years

Summarize years of production, as for example: 1916-1919; 1941; 1943-1945. Use all four digits for years, rather than 1943-45.

For important historical periods where production years are not specifically known (e.g., Civil War), then enter an approximate year, or years, if possible. Some of the important historical periods with an "approximate" date assigned are shown below. In the absence of specific information use these assigned dates, for example (1777) rather than the name (Revolutionary War).

<u>Historical Period</u>	<u>Entry</u>
Revolutionary War	1777
Civil War	1862
World War I	1918
World War II	1942

Indicate item number when production years have to do with an individual line in the production tables. The item numbers (1-5 and 8-10) are at the left of each line.

G7C - G9C Grade or Use

Same as explained under annual production.

D9 Source of Information

Use short notation in the following order: Last Name, Initials, Year, Shortened Title.

Indicate item number when the source of information has to do with an individual line in the production tables.

D10 Production Comments

Enter any explanatory notes to clarify or embellish the previous entries on production.

Again, indicate item number when the comments have to do with an individual line in the production tables.

Example: Comments D10 <ITEM 2=MAIN LODE, ITEM 3=PLACER >

## RESERVES AND POTENTIAL RESOURCES

EH This section is similar to the production section. It gives a summary of the potential future value in terms of reserves plus potential resources of the given ore deposit or mineral locality. Stay within the spacing provided because the output is a table listing. A maximum of four items can be accommodated. The individual items, listed in the first column, may be combined ores, multi-commodity ore, single-commodity ore, a single commodity, two or more commodities combined, or other combinations. The table can also be used for reporting a given item or commodity in more than one way, if desired.

### E1 - E4 Item

Enter "ORE" or the appropriate commodity code (List E, p. 29). Nine spaces are provided so that different types of ore may be reported (e.g., ORE CU), if desired. Note: When reporting the particular type of ore, always place the word ORE first rather than last (e.g., ORE CU, not CU ORE). Retrievals can then distinguish between "ORE" as a reserve vs a given commodity as a reserve.

<u>E1 - E4</u>	The "accuracy," "amount", "thousand units", and
<u>E1A - E4A</u>	"grade or use" fields are similar to those in the
<u>E1B - E4B</u>	Production Table (p. 17), and the same instructions
<u>E1C - E4C</u>	apply. Do not insert commas in the "amount" fields.

### E7 Source of Information

Use short notation in the following order: Last name, Initials, Year, Shortened Title.

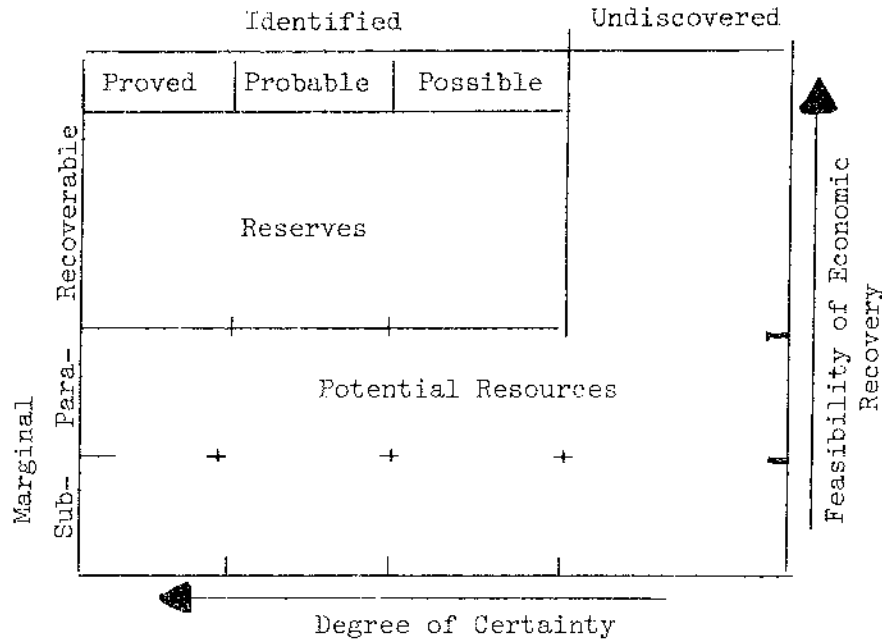
### E8 Comments

Enter any explanatory notes needed, particularly as to the general outlook for finding more ore or developing the ore already there, or special economic factors.

In addition, if the reporter feels that the locality in question needs additional study, then enter the key words, STUDY NEEDED. These key words are intended for use in cases where the reporter has reason to believe that the locality shows definite potential in some way and that such additional study might yield significant knowledge about the locality or region.

The tables on "Reserves Only" and "Potential Resources" provide for a separation of reserve data from data on potential resources. Information on reserves and information on potential resources, treated as separate and distinct categories, may be difficult to find, but nevertheless, represent an important objective relative to any mineral resource appraisal or inventory. A recent discussion on this subject is found in V. McKelvey, 1972, "Mineral Resource Estimates and Public Policy", Am. Scientist, v. 60, p. 32-40. See chart on next page.

CLASSIFICATION OF MINERAL RESOURCES



RESERVES ONLY

Reserves can be treated as a single class in the table, or they can be divided into proved, probable, and possible reserves. If this latter is done, place the appropriate word (PROVED, PROBABLE, or POSSIBLE) at the beginning of the "grade or use" fields of the given line (H16 - H6C). This will identify the meaning of the given line.

Example:

	(item reported)	(accuracy)	(amount)	(thousand units)	(grade)
1)	H1<O,R,E,C,U>	[A,C,C]>	H1A<0,0,0,0,3,5,0,0>	H1B<S,T>	H1C<PROVED
2)	H2<O,R,E,C,U>	[E,S,T]>	H2A<0,0,0,0,7,5,0,0>	H2B<S,T>	H2C<PROBABLE
3)	H3<O,R,E,C,U>	[E,S,T]>	H3A<0,0,0,1,5,0,0,0>	H3B<S,T>	H3C<POSSIBLE
4)	H4<>	>	H4A<>	H4B<>	H4C<>
5)	H5<>	>	H5A<>	H5B<>	H5C<>
6)	H6<>	>	H6A<>	H6B<>	H6C<>

In all other respects, the H labels are treated in the same manner as the E labels, p. 20.

POTENTIAL RESOURCES

JH This classification refers to undiscovered deposits, which can be divided into paramarginal and submarginal as compared with proved, probable, and possible.

J labels - see E labels, p. 20.

Note that extremely accurate figures are not required in these tables; an estimate is valid information provided it is flagged as such by entering "EST" in the accuracy column.

LIST A

RECORD TYPE

CODE

- L Original long form - This form contains space for all the entries for a deposit.
- S Short form - These forms (several variations) are for deposits for which there is only minimal information.
- U Update of existing record - An L or S form is used to make additions, corrections, or deletions.
- D At present this letter does not appear on any form. It may be used when reporters use their own form for particular files.

LIST B

STATUS OF EXPLORATION OR DEVELOPMENT

CODE

- 1 Occurrence--single-point information from outcrop, shallow pit, or isolated drill hole.
- 2 Raw prospect--two-dimensional information. Information exists on length and width from surface trenches, shallow adits, or scattered shallow drilling. Depth unknown or uncertain.
- 3 Developed prospect--three-dimensional information. Information exists on length, width, and depth from systematic drill-hole patterns, mine workings, mapping, or other work.
- 4 Producer--mine, district, etc., that is producing or that has produced.

## LIST C (continued)

## CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
IT	ITALY
IV	IVORY COAST
JM	JAMAICA
JN	JAN MAYEN
JA	JAPAN
JQ	JOHNSTON ATOLL
JJ	JORDAN
KE	KENYA
KN	KORFA, NORTH
KS	KOREA, SOUTH
KU	KUWAIT
LA	LAOS
LE	LEBANON
LT	LESOTHO
LI	LIBERIA
LY	LIBYA
LS	LIECHTENSTEIN
LU	LUXEMBOURG
MC	MACAO
MA	MADAGASCAR
MI	MALAWI
MY	MALAYSIA
MV	MALDIVES
ML	MALI
MT	MALTA
MB	MARTINIQUE
MR	MAURITANIA
MP	MAURITIUS
MX	MEXICO
MO	MIDWAY ISLANDS
MN	MONACO
MG	MONGOLIA
MH	MONTSERRAT
MO	MOROCCO
MZ	MOZAMBIQUE
MU	MUSCAT AND OMAN
NM	NAMIBIA
NR	NAURU
NP	NEPAL
NL	NETHERLANDS
NA	NETHERLANDS ANTILLES
NC	NEW CALEDONIA
NH	NEW HEBRIDES
NZ	NEW ZEALAND
NU	NICARAGUA
NG	NIGER
NI	NIGERIA
NE	NIUE
NF	NORFOLK ISLAND
NY	NORWAY

## CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
PK	PAKISTAN
PN	PANAMA
PP	PAPUA AND NEW GUINEA
PF	PARACEL ISLANDS
PA	PARAGUAY
PE	PERU
RP	PHILIPPINES
PC	PITCAIRN ISLAND
PL	POLAND
PO	PORTUGAL
PU	PORTUGUESE GUINEA
PT	PORTUGUESE TIMOR
RQ	PUERTO RICO
QA	QATAR
RE	REUNION
RD	ROMANIA
RW	RWANDA
YQ	RYUKYU ISLANDS, SOUTHERN
SM	SAN MARINO
TP	SAO TOME AND PRINCIPE
SA	SAUDI ARABIA
SG	SENEGAL
SE	SEYCHELLES
SL	SIERRA LEONE
SK	SIKKIM
SN	SINGAPORE
SO	SOMALIA
SF	SOUTH AFRICA
WA	SOUTH-WEST AFRICA
RH	SOUTHERN RHODESIA
YS	SOUTHERN YEMEN
UR	SOVIET UNION
SP	SPAIN
SS	SPANISH SAHARA
ME	SPANISH TERR. IN N. MOROCCO
PG	SPRATLY ISLAND
SC	ST. CHRISTOPHER-NEVIS-ANGUILLA
SH	ST. HELENA
ST	ST. LUCIA
SB	ST. PIERRE AND MIQUELON
VC	ST. VINCENT
SU	SUDAN
NS	SURINAM
SV	SVALBARD
SQ	SWAN ISLANDS
WZ	SWAZILAND
SW	SWEDEN
SZ	SWITZERLAND
SY	SYRIA
TZ	TANZANIA

## LIST C

## CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
AF	AFGHANISTAN
AL	ALBANIA
AG	ALGERIA
AQ	AMERICAN SAMOA
AN	ANDORRA
AO	ANGOLA
AY	ANTARCTICA
AC	ANTIGUA
AR	ARGENTINA
AT	ASHMORE AND CARTIER ISLANDS
AS	AUSTRALIA
AJ	AUSTRIA
BF	BAHAMAS
BA	BAHRAIN
BB	BARBADOS
BE	BELGIUM
BD	BERMUDA
BT	BHUTAN
BL	BOLIVIA
BC	BOTSWANA
PV	BOUVET ISLAND
BR	BRAZIL
BH	BRITISH HONDURAS
ID	BRITISH INDIAN OCEAN TERR.
BP	BRITISH SOLOMON ISLANDS
VI	BRITISH VIRGIN ISLANDS
BR	BRUNEI
BU	BULGARIA
RM	BURMA
BY	BURUNDI
CB	CAMBODIA
CM	CAMEROON
CA	CANADA
PQ	CANAL ZONE
EQ	CANTON AND ENDERBURY ISLANDS
CV	CAPE VERDE
CJ	CAYMAN ISLANDS
CT	CENTRAL AFRICAN REPUBLIC
CL	CENTRAL AND SOUTHERN LINE ISLANDS
CE	CEYLON
CD	CHAD
CI	CHILE
CH	CHINA, MAINLAND
TM	CHINA, REPUBLIC OF
KT	CHRISTMAS ISLAND
CK	COCOS ISLANDS
CO	COLOMBIA
CN	COMORO ISLANDS
CG	CONGO (KINSHASA)
CF	CONGO REPUBLIC

## CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
CW	COOK ISLANDS
CS	COSTA RICA
CU	CUBA
CY	CYPRUS
CZ	CZECHOSLOVAKIA
DM	DAHOMY
DA	DENMARK
DO	DOMINICA
DR	DOMINICAN REPUBLIC
GC	EAST GERMANY
EC	ECUADOR
ES	EL SALVADOR
FK	EQUATORIAL GUINEA
ET	ETHIOPIA
FO	FAROE ISLANDS
FA	FALKLAND ISLANDS
FJ	FIJI
FI	FINLAND
FR	FRANCE
FG	FRENCH GUIANA
FP	FRENCH POLYNESIA
FS	FRENCH SOUTHERN AND ANTARCTIC LANDS
FT	FRENCH TERRITORY OF AFARS AND ISSAS
GB	GABON
GA	GAMBIA
GZ	GAZA STRIP
GH	GHANA
GI	GIBRALTAR
GN	GILBERT AND ELLICE ISLANDS
GR	GREECE
GL	GREENLAND
GJ	GRENADA
GP	GUADELOUPE
GQ	GUAM
GT	GUATEMALA
GY	GUINEA
GY	GUYANA
HA	HAITI
HM	HEARD AND MCDONALD ISLANDS
HO	HONDURAS
HK	HONG KONG
HU	HUNGARY
IC	ICELAND
IN	INDIA
IO	INDONESIA
IR	IRAN
IZ	IRAQ
IY	IRAQ-SAUDI ARABIA NEUTRAL ZONE
EI	IRELAND
IS	ISRAEL

01-08-75

LIST C (continued)

CRIB COUNTRY CODE LIST

CODE	COUNTRY NAME
TH	THAILAND
TO	TOGO
TL	TOKELAU ISLANDS
TN	TONGA
TD	TRINIDAD AND TOBAGO
TC	TRUCIAL STATES
TS	TUNISIA
TU	TURKEY
TK	TURKS AND CAICOS ISLANDS
UG	UGANDA
EG	UNITED ARAB REPUBLIC
UK	UNITED KINGDOM
US	UNITED STATES
UV	UPPER VOLTA
UY	URUGUAY
BQ	US MISC CARIBBEAN ISLANDS
IQ	US MISC PACIFIC ISLANDS
TQ	US TRUST ISLANDS, PACIFIC
VT	VATICAN CITY
VE	VENEZUELA
VN	VIET-NAM, NORTH
VS	VIET-NAM, SOUTH
VQ	VIRGIN ISLANDS
WO	WAKE ISLAND
WF	WALLIS AND FUTUNA
WB	WEST BERLIN
GE	WEST GERMANY
WS	WESTERN SAMOA
YE	YEMEN
YO	YUGOSLAVIA
ZR	ZAIRE
ZA	ZAMBIA

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## LIST D

## STATE CODES FOR U.S. AND PROVINCE CODES FOR CANADA

CODE	STATE	CODE	STATE
01	ALABAMA	29	MISSOURI
02	ALASKA	30	MONTANA
04	ARIZONA	31	NEBRASKA
05	ARKANSAS	32	NEVADA
06	CALIFORNIA	33	NEW HAMPSHIRE
08	COLORADO	34	NEW JERSEY
09	CONNECTICUT	35	NEW MEXICO
10	DELAWARE	36	NEW YORK
11	DISTRICT OF COLUMBIA	37	NORTH CAROLINA
12	FLORIDA	38	NORTH DAKOTA
13	GEORGIA	39	OHIO
15	HAWAII	40	OKLAHOMA
16	IDAHO	41	OREGON
17	ILLINOIS	42	PENNSYLVANIA
18	INDIANA	44	RHODE ISLAND
19	IOWA	45	SOUTH CAROLINA
20	KANSAS	46	SOUTH DAKOTA
21	KENTUCKY	47	TENNESSEE
22	LOUISIANA	48	TEXAS
23	MAINE	49	UTAH
24	MARYLAND	50	VERMONT
25	MASSACHUSETTS	51	VIRGINIA
26	MICHIGAN	53	WASHINGTON
27	MINNESOTA	54	WEST VIRGINIA
28	MISSISSIPPI	55	WISCONSIN
		56	WYOMING

Note: The following codes are reserved for possible future use in identifying American Samoa (03), Canal Zone (07), Guam (14), Puerto Rico (43), and Virgin Islands (52).

LIST D (Continued)

CODE	PROVINCE
01	NEWFOUNDLAND-LABRADOR
02	NOVA SCOTIA
03	PRINCE EDWARD ISLAND
04	NEW BRUNSWICK
05	QUEBEC
06	ONTARIO
07	MANITOBA
08	SASKATCHEWAN
09	ALBERTA
10	BRITISH COLUMBIA
11	YUKON, NWT
12	MACKENZIE DISTRICT, NWT
13	FRANKLIN DISTRICT, NWT
14	KEEWATIN DISTRICT, NWT

## LIST E

## COMMODITY CODES

Note: For commodities not on this list write in the full name of the commodity above the corresponding allotted spaces on the form. Codes will then be assigned in Washington.

ALM	ALUM
AL	ALUMINUM (general)
AL1	BAUXITE
AL2	ALUMINUM (from other source materials)
AMB	AMBER
	ANHYDRITE (see GYPSUM)
SB	ANTIMONY
AS	ARSENIC
ASB	ASBESTOS
	ASPHALT (see BITUMENS)
BA	BARIUM
BE	BERYLLIUM
BJ	BISMUTH
BIT	BITUMENS (includes asphalt)
B	BORON - BORATES
BRI	BRINES/SALINES (see also EVAPORITES, SODIUM, HALITE)
BR	BROMINE
	BRUCITE (see MAGNESIUM)
STN2	BUILDING STONE (see under STONE)
CD	CADMIUM
CA	CALCIUM (see also CARBONATES, LIMESTONE, MARBLE, STONE)
C	CARBON
CAR	CARBONATES (see also CALCIUM, DOLOMITE, LIMESTONE, MARBLE, STONE, MAGNESIUM)
CER	CEMENT ROCK (natural)
CE	CERIUM
SC	CESIUM
CL	CHLORINE
CR	CHROMIUM
CLY	CLAY (general)
CLY1	BENTONITE
CLY2	FULLER'S EARTH
CLY3	KAOLIN OR KAOLINITIC CLAY (includes high alumina clay)
CLY4	BALL CLAY
CLY5	FIRE CLAY (refractory)
CLY6	BLOATING MATERIAL (includes clay, shale, slate)
CLY7	COMMON BRICK CLAY

COA COAL  
 COA1 ANTHRACITE  
 COA2 BITUMINOUS  
 COA3 SUB-BITUMINOUS  
 COA4 LIGNITE  
 CO COBALT  
 NB COLUMBIUM (see NIOBIUM)  
 CU COPPER  
 COR CORUNDUM

DIA DIAMOND  
 DIT DIATOMITE  
 STN2 DIMENSION STONE (see under STONE)  
 DOL DOLOMITE (general) (see also CARBONATES, STONE, MAGNESIUM, MARBLE)  
 DOL1 ULTRA PURE DOLOMITE ( $MgCO_3 \cdot CaCO_3 > 97\%$ )  
 DOL2 HIGH MAGNESIAN DOLOMITE ( $MgCO_3 \cdot CaCO_3 > 97\%$ )

EMY EMERY  
 EVA EVAPORITES (see also BRINE, SODIUM, HALITE)

FLD FELDSPAR  
 F FLUORINE, FLUORITE

GA GALLIUM  
 GAR GARNET  
 GAS GAS (natural)  
 GEM GEMSTONES  
 GE GERMANIUM  
 GLA GLAUCONITE  
 AU GOLD  
 GRT GRANITE, GRANITIC GNEISS  
 GRF GRAPHITE  
 GRAVEL (see SAND and GRAVEL)  
 GYP GYPSUM, ANHYDRITE

HF HAFNIUM  
 HAL HALITE (see also SODIUM, EVAPORITES, BRINE)  
 HE HELIUM  
 H HYDROGEN

IN INDIUM  
 I IODINE  
 FE IRON

KYN KYANITE, SILLIMANITE, ANDALUSITE

PB LEAD

LST LIMESTONE (general) (see also CARBONATES, CALCIUM, MARBLE, STONE)

LST1 ULTRA PURE LIMESTONE ( $\text{CaCO}_3 > 97\%$ )

LST2 HIGH CALCIUM LIMESTONE ( $\text{CaCO}_3 > 95\%$ )

LI LITHIUM

LIGHTWEIGHT AGGREGATE (see BLOATING MATERIAL under clay.  
See also VERMICULITE, PERLITE, PUMICE, STONE.)

MGS MAGNESITE

MG MAGNESIUM (see also CARBONATES, DOLOMITE, MARBLE, STONE, MAGNESITE)

MN MANGANESE

MBL MARBLE (see also CALCIUM, CARBONATES, DOLOMITE, LIMESTONE, MAGNESIUM,  
STONE)

HG MERCURY

MIC MICA MIC1 SHEET MICA

MPG MINERAL PIGMENTS MIC2 SCRAP MICA

MO MOLYBDENUM MIC3 FLAKE MICA

MON MONAZITE

NI NICKEL

NB NIOBIUM (COLUMBIUM)

N NITROGEN - NITRATES

OIL OIL (see PETROLEUM)

SAO OIL SANDS

SHO OIL SHALE

OLV OLIVINE

ORE ORE

OXD OXIDES

O OXYGEN

PD PALLADIUM

PEA PEAT

PER PERLITE

OIL PETROLEUM

P PHOSPHORUS - PHOSPHATES

PT PLATINUM GROUP METALS

K POTASSIUM

PUM PUMICE

PYR PYRITE

PYP PYROPHYLLITE

QTZ QUARTZ (see also SANDSTONE, SILICA)  
 QUARTZITE/QUARTZOSE SANDSTONE (see SANDSTONE)

RA RADIUM  
 RAE RARE EARTHS  
 RE RHENIUM  
 RH RHODIUM  
 RB RUBIDIUM  
 RU RUTHENIUM

BRI SALINES (see BRINE)  
 SALT (see BRINES, SALINES, SODIUM, HALITE)

SDG SAND AND GRAVEL

SST SANDSTONE (see also SILICA, STONE, QUARTZITE)

SC SCANDIUM

SE SELENIUM

SHL SHALE

SIL SILICA (see also QUARTZ, QUARTZITE, SANDSTONE)

AG SILVER

SLA SLATE (see also STONE)

NA SODIUM (see also EVAPORITES, HALITE, BRINE)

STN STONE

STN1 CRUSHED STONE

STN2 DIMENSION OR BUILDING STONE (see also CALCIUM, CARBONATES,  
 DOLOMITES, LIMESTONE)

SR STRONTIUM

SUL SULFIDES

S SULFUR

SAM SAND, MOLDING

TLC TALC, SOAPSTONE

TA TANTALUM

TE TELLURIUM

TL THALLIUM

TH THORIUM

SN TIN

TI TITANIUM

W TUNGSTEN

UNF UNIDENTIFIED COMMODITY

U URANIUM

V	VANADIUM
VRM	VERMICULITE
WOL	WOLLASTONITE
YT	YTTRIUM
ZEO	ZEOLITES
ZN	ZINC
ZN1	ZINC OXIDE
ZR	ZIRCONIUM

LIST F

DEPOSIT TYPES (Examples)

This is not an exhaustive list. Other deposit types may be used as needed.

Alkalic-Mafic Intrusive	Pegmatite
Bedded	Pipe
Chemical Sediment (except evaporites)	Placer
Clastic Sedimentary Rock	Replacement
Concordant Igneous	Secondary Enrichment
Disseminated	Skarn/Greisen
Evaporites	Stratabound
Gossan	Stratiform
Laterite	Stockwork
Lens	Sulfide Segregation
Massive Sulfides	Unconsolidated Sediments
Metamorphic	Vein/Shear Zone
Metamorphosed Bed	Volcanic
	Weathering Residual

LIST G

ACCURACY

CODE

ACC	accurate figure
EST	estimate
SML	small
MED	medium
LGE	large



## LIST H

## UNITS

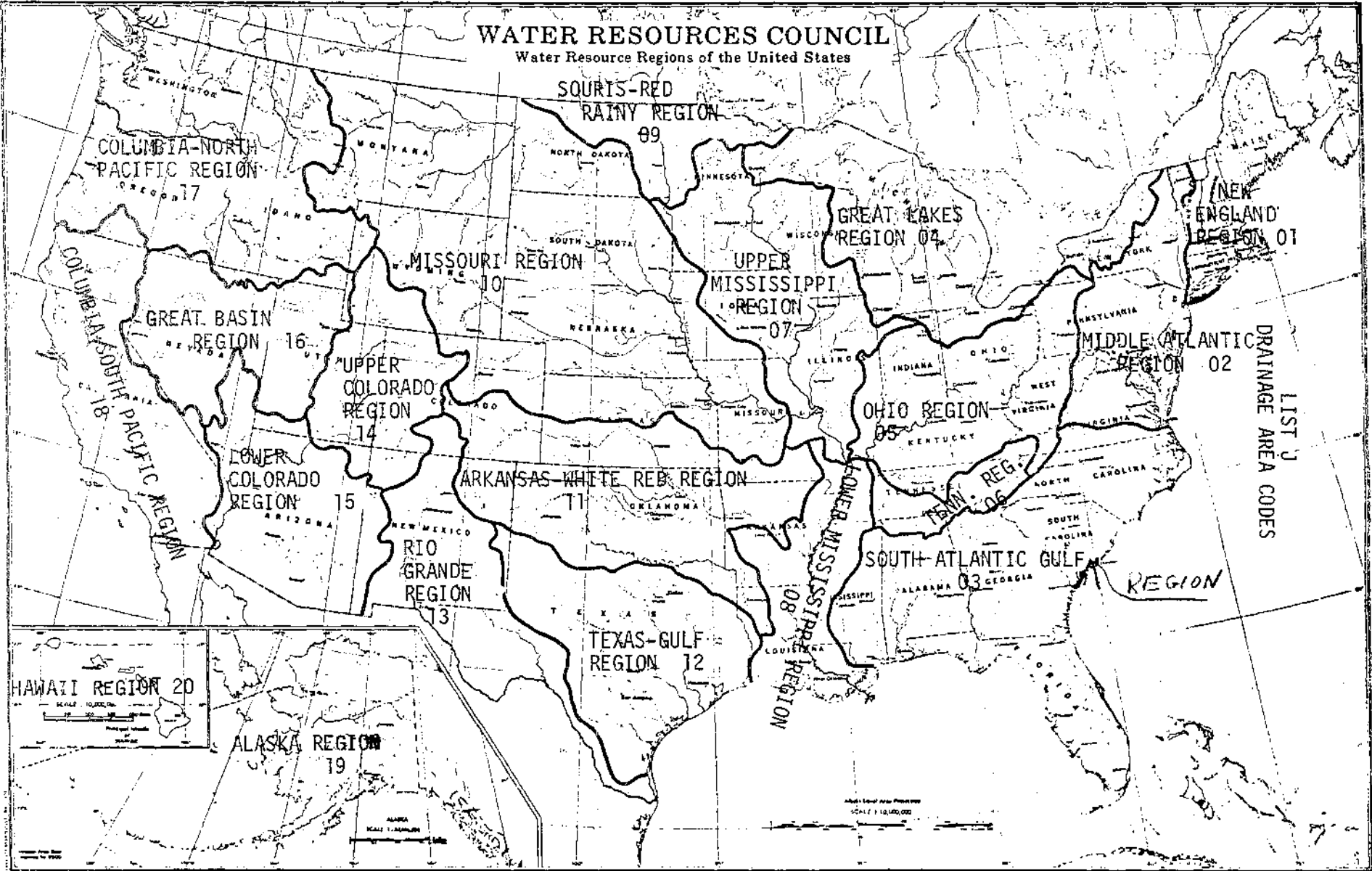
<u>UNITS</u>	<u>ABBREVIATIONS</u>
Tons	TONS (specify long or short tons if possible)
Long tons	LT
Short tons	ST
Metric tons	MEP TONS
Million tons	MIL TONS
Long ton units	LTU
Short ton units	STU
Pounds	LB
Million pounds	MIL LB
Grams	G
Kilograms	KG
Ounces	OZ
Troy ounces	TOZ
Flasks	FL
Cubic feet	CF
Million cubic feet	MMCF
Cubic yards	CY
Barrels	BBL

If none of the above units apply, insert the name of the units that pertain to the commodity in question.

Millions of units can be expressed by adding the prefix MIL, as shown in some of the entries above. Do not use \$(dollars) as units.

# WATER RESOURCES COUNCIL

Water Resource Regions of the United States



LIST J  
DRAINAGE AREA CODES

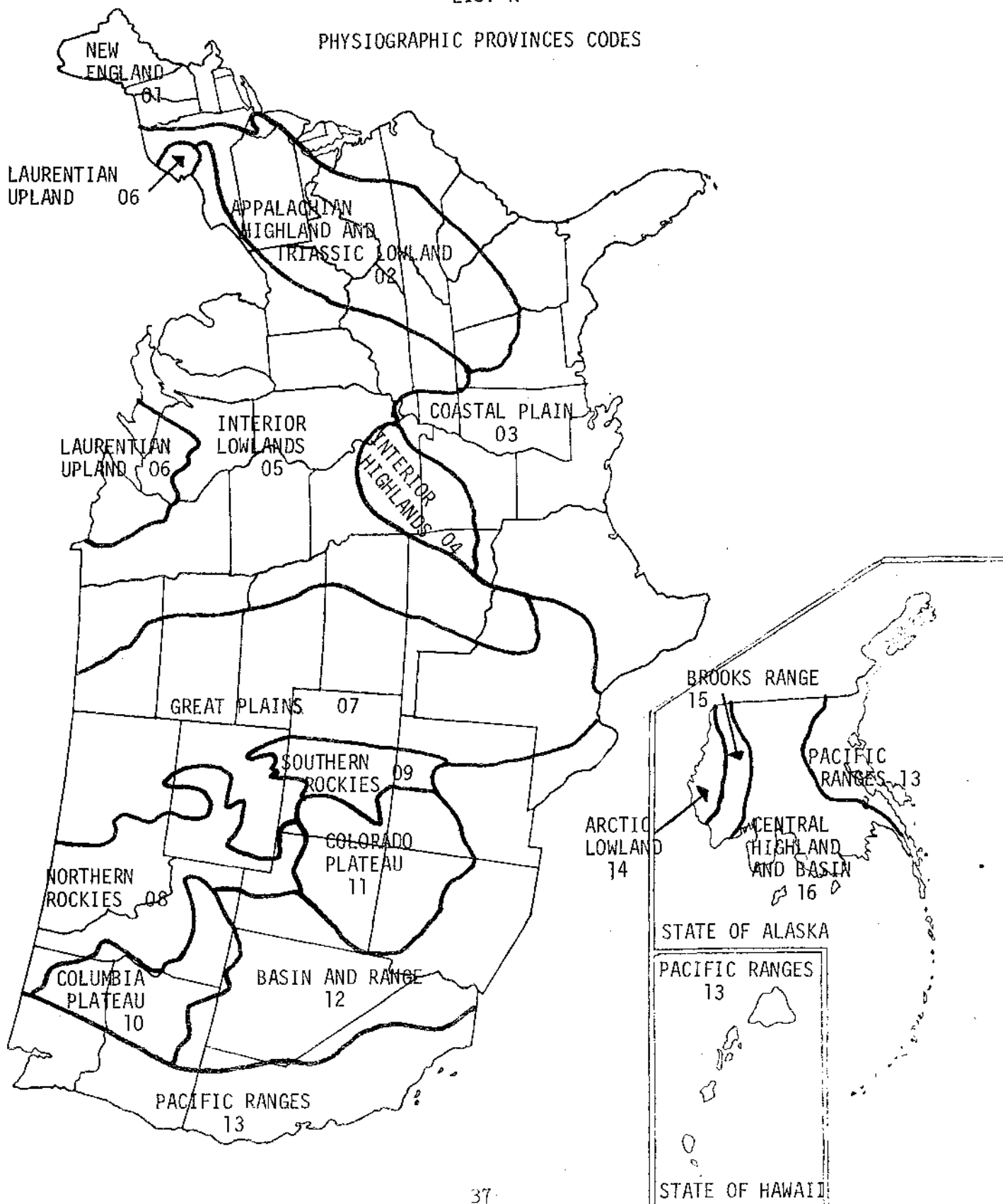
HAWAII REGION 20  
SCALE 1:100,000

ALASKA REGION 19  
SCALE 1:1,000,000

SCALE 1:10,000,000

LIST K

PHYSIOGRAPHIC PROVINCES CODES



LIST L

NATURE OF DISCOVERY

CODE

A	Ill defined
B	Ore mineral or material in place
C	Ore mineral or material not in place
D	Geophysical anomaly
E	Geochemical anomaly
F	Other (clarify under L110 "Comments," if desired)

LIST M

TYPE OF WORK DONE

CODE

COMPILE	Compilation
DIREXPL	Direct exploration (drilling, trenching, mining, pit, etc.)
GEOCHEM	Geochemical work
GEOLMAP	Geological mapping
GEOPHYS	Geophysical work
RECON	Reconnaissance
OTHER	Other types of work not covered by above. Enter "OTHER" under "TYPE of WORK" and clarify, if desired, under L110 "Comments."

LIST N

FORM/SHAPE OF DEPOSIT (Examples)

Choose one or more, as applicable, and enter under M10. This is not an exhaustive list. Other descriptive entries may be formulated by reporters as needed.

Tabular/blanket

Wedge

Pod/lens

Pinch and swell

Linear

Irregular

LIST O

AUTHORIZED AGE ABBREVIATIONS

Quaternary	QAT
Holocene	HOLO
Pleistocene	PLEIS
Tertiary	TERT
Pliocene	PLIO
Miocene	MIO
Oligocene	OLIGO
Eocene	EO
Paleocene	PALEO
Cretaceous	CRET
Jurassic	JUR
Triassic	TRI
Permian	PERM
Pennsylvanian	PENN
Mississippian	MISS
Devonian	DEV
Silurian	SIL
Ordovician	ORD
Cambrian	CAMB
Precambrian	PREC
Cenozoic	CEN
Mesozoic	MES
Paleozoic	PAL

ALPHABETICAL LABELS INDEX

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A11	5	C50	11	E7	20	H1C	21
A12	11			E8	20	H2C	21
A13	11	D1	17	F1	15	H3C	21
A20	14	D2	17	F2	15	H4C	21
A21	14	D3	17	F3	15	H5C	21
A22	14	D4	17	F4	15	H6C	21
A30	5	D5	17			H7	21
A40	5	D1A	17	G1	5	H8	21
A50	5	D2A	17	G2	5	J1	22
A60	6	D3A	17	G7	19	J2	22
A62	9	D4A	17	G8	19	J3	22
A63	9	D5A	17	G9	19	J4	22
A70	7	D1B	18	G7A	19	J5	22
A71	7	D2B	18	G8A	19	J6	22
A72	7	D3B	18	G9A	19	J1A	22
A73	7	D4B	18	G7B	19	J2A	22
A77	8	D5B	18	G8B	19	J3A	22
A78	8	D1C	18	G9B	19	J4A	22
A79	8	D2C	18	G7C	19	J5A	22
A80	7	D3C	18	G8C	19	J6A	22
A81	8	D4C	18	G9C	19	J1B	22
A82	6	D5C	18			J2B	22
A83	9	D9	19	H1	21	J3B	22
A90	9	D10	19	H2	21	J4B	22
A100	9			H3	21	J5B	22
A107	8	E1	20	H4	21	J6B	22
A110	6	E2	20	H5	21	J1C	22
A120	6	E3	20	H6	21	J2C	22
A130	6	E4	20	H1A	21	J3C	22
		E1A	20	H2A	21	J4C	22
B10	4	E2A	20	H3A	21	J5C	22
B40	4	E3A	20	H4A	21	J6C	22
B50	4	E4A	20	H5A	21	J7	22
		E1B	20	H6A	21	J8	22
C10	9	E2B	20	H1B	21	K1	15
C20	10	E3B	20	H2B	21	K2	15
C30	10	E4B	20	H3B	21	K3	15
C40	12	E1C	20	H4B	21	K4	15
C41	10	E2C	20	H5B	21		
C42	4	E3C	20				

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