

GIS-based Identification of Areas with Mineral Resource Potential for Six Selected Deposit Types, Bureau of Land Management Central Yukon Planning Area, Alaska

Frequently anticipated questions:

- [What does this data set describe?](#)
 1. [How should this data set be cited?](#)
 2. [What geographic area does the data set cover?](#)
 3. [What does it look like?](#)
 4. [Does the data set describe conditions during a particular time period?](#)
 5. [What is the general form of this data set?](#)
 6. [How does the data set represent geographic features?](#)
 7. [How does the data set describe geographic features?](#)
- [Who produced the data set?](#)
 1. [Who are the originators of the data set?](#)
 2. [Who also contributed to the data set?](#)
 3. [To whom should users address questions about the data?](#)
- [Why was the data set created?](#)
- [How was the data set created?](#)
 1. [From what previous works were the data drawn?](#)
 2. [How were the data generated, processed, and modified?](#)
 3. [What similar or related data should the user be aware of?](#)
- [How reliable are the data; what problems remain in the data set?](#)
 1. [How well have the observations been checked?](#)
 2. [How accurate are the geographic locations?](#)
 3. [How accurate are the heights or depths?](#)
 4. [Where are the gaps in the data? What is missing?](#)
 5. [How consistent are the relationships among the data, including topology?](#)
- [How can someone get a copy of the data set?](#)
 1. [Are there legal restrictions on access or use of the data?](#)
 2. [Who distributes the data?](#)
 3. [What's the catalog number I need to order this data set?](#)
 4. [What legal disclaimers am I supposed to read?](#)
 5. [How can I download or order the data?](#)
- [Who wrote the metadata?](#)

What does this data set describe?

Title:

GIS-based Identification of Areas with Mineral Resource Potential for Six Selected Deposit Types, Bureau of Land Management Central Yukon Planning Area, Alaska

Abstract:

Maps showing the estimated potential and relative certainty of various mineralization models in the Bureau of Land Management Central Yukon Planning Area, Alaska.

1. How should this data set be cited?

Jones, J.V., III, Karl, S.M., Labay, K.A., Shew, N.B., Granitto, M., Hayes, T.S., Mauk, J.L., Schmidt, J.M., Todd, E., Wang, B., Werdon, M.B., and Yager, D.B., 2015, GIS-based Identification of Areas with Mineral Resource Potential for Six Selected Deposit Types, Bureau of Land Management Central Yukon Planning Area, Alaska: U.S. Geological Survey Open-File Report 2015-1021.

Online Links:

- <https://pubs.usgs.gov/of/2015/1021>

2. What geographic area does the data set cover?

West_Bounding_Coordinate: -162.5

East_Bounding_Coordinate: -142.9

North_Bounding_Coordinate: 71.1

South_Bounding_Coordinate: 62.3

3. What does it look like?

4. Does the data set describe conditions during a particular time period?

Calendar_Date: 2015

Currentness_Reference: publication date

5. What is the general form of this data set?

Geospatial_Data_Presentation_Form: map

6. How does the data set represent geographic features?

a. How are geographic features stored in the data set?

This is a Vector data set.

b. What coordinate system is used to represent geographic features?

The map projection used is NAD 1983 Alaska Albers (Meters).

Projection parameters:

Standard_Parallel: 55.0

Standard_Parallel: 65.0

Longitude_of_Central_Meridian: -154.0

Latitude_of_Projection_Origin: 50.0

False_Easting: 0.0

False_Northing: 0.0

Planar coordinates are encoded using coordinate pair
Abcissae (x-coordinates) are specified to the nearest 0.001
Ordinates (y-coordinates) are specified to the nearest 0.001
Planar coordinates are specified in meters

The horizontal datum used is North American Datum of 1983.

The ellipsoid used is Clarke 1866.

The semi-major axis of the ellipsoid used is 6378206.4.

The flattening of the ellipsoid used is 1/297.9786982.

7. How does the data set describe geographic features?

REE_HUCs

Geodatabase feature class showing mineral resource potential estimation for REE-Th-Y-Nb (-U-Zr) deposits associated with peralkaline to carbonatitic intrusive rocks (Source: this data set)

HUC12

Field HUC12 contains the unique 12-digit hydrologic unit code identifying the sub-watershed area of the National Hydrography Dataset and Watershed Boundary Dataset. (Source: Watershed Boundary Dataset (WBD) of the Advisory Committee on Water Information (ACWI))

Range of values	
Minimum:	190201010301
Maximum:	190605021705

SED_SCORE (alias SEDIMENT_SCORE)

Presence of certain elements in sediment geochemistry. Possible score of 1, 2, or 3, depending on the measured value of Nb, Ce, Yb, or Th. See publication text for cut offs of each element. Higher scores will replace lower scores. A null score denotes that there were no sediment samples of any type present in the HUC. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	3

ARDF_SCORE

Scoring for the ARDF keyword search. A null score denotes that there were no ARDF samples of any type present in the HUC. (Source: this data set)

Value	Definition
0	keyword search TOTAL <= 2
1	keyword search TOTAL > 2 and TOTAL <= 5
2	keyword search TOTAL > 5

IGN_SCORE (alias IGNEOUS_SCORE)

Scores from igneous indices for ASI (aluminum saturation index), $10000 \cdot \text{Ga}/\text{Al}$ (gallium over aluminum), or displacement of Fe#. Points are additive for a maximum of 3 points. See publication text for selection details. A null score denotes that there were no igneous samples of any type present in the HUC. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	3

AERORAD_SCORE

Score for Th/K value from aerorad data set. A null score denotes that there were no ARDF samples of any type present in the HUC. (Source: this data set)

Value	Definition
0	Th/K value <= 5
1	Th/K value > 5 and <= 12

2	Th/K value > 12
---	-----------------

TOTAL_SCORE

The sum of the individual scores (SED_SCORE, IGN_SCORE, ARDF_SCORE, and AERORAD_SCORE) (Source: this data set)

Range of values	
Minimum:	0
Maximum:	16

SED_PCT (alias SEDIMENT_PCT)

The percentage of SED_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

ARDF_PCT

The percentage of ARDF_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

IGN_PCT (alias IGNEOUS_PCT)

The percentage of IGN_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

AERORAD_PCT

The percentage of the score from AERORAD_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

POTENTIAL

Relative description of estimated potential of REE minerals in this HUC based on the scoring methodology for the REE deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

CERTAINTY

Relative description of certainty of the estimated potential of REE minerals in this HUC based on the scoring methodology for the REE deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

SYMBOL

Concatenation of POTENTIAL and CERTAINTY used to symbolize the HUC scoring graphic. (Source: this data source)

Value	Definition
HIGH,HIGH	dark red color
HIGH,MED	medium red color
HIGH,LOW	light red color
MED,HIGH	dark yellow color
MED,MED	medium yellow color
MED,LOW	light yellow color
LOW,HIGH	dark green color
LOW,MED	medium green color
LOW,LOW	light green color
UNKNOWN	dark gray

Placer_HUCs

Geodatabase feature class showing mineral resource potential estimation for placer and paleoplacer gold (Source: this data set)

HUC12

Field HUC12 contains the unique 12-digit hydrologic unit code identifying the sub-watershed area of the National Hydrography Dataset and Watershed Boundary Dataset. (Source: Watershed Boundary Dataset (WBD) of the Advisory Committee on Water Information (ACWI))

Range of values	
Minimum:	190201010301
Maximum:	190605021705

SED_SCORE (alias SEDIMENT_SCORE)

Presence of certain elements in sediment geochemistry. Possible score of 1 or 3, depending on the measured value of Au, Ag, Ti, or W. See publication text for cut offs of each element. Scores are additive. A null score denotes that there were no sediment samples of any type present in the HUC. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	8

ARDF_SCORE

Scoring for the ARDF keyword search (Source: this data set)

Value	Definition
0	keyword search TOTAL <= 0
10	keyword search TOTAL > 0

MIN_SCORE (alias MINERAL_SCORE)

Presence of certain minerals identified in pan concentrate mineralogy. The score is additive unless gold is present which replaces the lower score with 10 points. If cassiterite, powellite, scheelite, cinnabar, monazite, or thorite is present, 1 point each. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	10

LITH_SCORE (alias LITHOLOGY_SCORE)

Presence of igneous or metaigneous rock units from the state geologic map (Source: this data set)

Value	Definition
0	An igneous or metaigneous geologic unit from the state geologic map is not present
1	A volcanic or metaigneous geologic unit on the state map is present
2	A plutonic rock as a minor component of a geologic unit on the state map is present
3	A plutonic rock as a major component of a geologic unit on the state map is present

STREAM_SCORE

Scores for HUCs downstream of areas with high potential for placer or paleoplacer gold (Source: this data set)

Value	Definition
0	Not considered downstream of a HUC with high potential for placer gold
1	River or stream downstream of HUC with high potential for placer gold past intersection with equal or higher stream order segment
3	River or stream greater than 25 km downstream of a HUC with high potential for placer gold
6	Within 25 km downstream of a HUC with high potential for placer gold

TOTAL_SCORE

The sum of the individual scores (SED_AU_SCORE, SED_AG_SCORE, SED_TI_SCORE, SED_W_SCORE, ARDF_SCORE, MINERAL_SCORE, LITH_SCORE, and STREAM_SCORE) (Source: this data set)

Range of values	
Minimum:	0
Maximum:	37

ARDF_PCT

The percentage of ARDF_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

MINL_PCT (alias MINERAL_PCT)

The percentage of MIN_SCORE of the TOTAL_SCORE (Source: this data set)

--

Range of values	
Minimum:	0
Maximum:	100

SED_PCT (alias SEDIMENT_PCT)

The percentage of the scores from sediment geochemistry data of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

LITH_PCT (alias LITHOLOGY_PCT)

The percentage of LITH_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

STREAM_PCT

The percentage of STREAM_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

POTENTIAL

Relative description of estimated potential of placer or paleoplacer Au in this HUC based on the scoring methodology for the placer or paleoplacer Au deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

CERTAINTY

Relative description of certainty of the estimated potential of placer or paleoplacer Au in this HUC based on the scoring methodology for the placer or paleoplacer Au deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

SYMBOL

Concatenation of POTENTIAL and CERTAINTY used to symbolize the placer or paleoplacer scoring graphic. (Source: this data source)

Value	Definition
HIGH,HIGH	dark red color
HIGH,MED	medium red color
HIGH,LOW	light red color
MED,HIGH	dark yellow color
MED,MED	medium yellow color

MED,LOW	light yellow color
LOW,HIGH	dark green color
LOW,MED	medium green color
LOW,LOW	light green color
UNKNOWN	dark gray

PGE_HUCs

Geodatabase feature class showing mineral resource potential estimation for PGE (-Co-Cr-Ni-Ti-V) deposits associated with mafic-to-ultramafic intrusive rocks (Source: this data set)

HUC12

Field HUC12 contains the unique 12-digit hydrologic unit code identifying the sub-watershed area of the National Hydrography Dataset and Watershed Boundary Dataset. (Source: Watershed Boundary Dataset (WBD) of the Advisory Committee on Water Information (ACWI))

Range of values	
Minimum:	190201010301
Maximum:	190605021705

SED_SCORE (alias SEDIMENT_SCORE)

Presence of certain elements in sediment geochemistry. Possible score of 1, 2, or 3, depending on the measured value of Co, Cr, Ni, Ti, V, Os, Pd, or Pt. See publication text for cut offs of each element. Higher scores will replace lower scores. A null score denotes that there were no sediment samples of any type present in the HUC. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	3

ARDF_SCORE

Presence of ARDF record with relative possibility of being a PGE deposit (Source: this data set)

Value	Definition
0	No ARDF locality with PGE evidence
1	ARDF model is uncertain but may be permissible for PGEs
2	ARDF locality is permissible mode for PGEs
3	ARDF locality has PGE potential or PGEs present

MIN_SCORE (alias MINERAL_SCORE)

Presence of chromite, copper-cobalt-sulfides, nickel-cobalt sulfides, nickel sulfides, chromite-nickel sulfides, serpentine, Cr-diopside, or chalcopyrite in the heavy mineral concentrate mineralogy. Also includes scores for high on ARDF keyword search if deposit is a placer. See publication text for point allocation. Higher scores will replace lower scores. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	3

RCK_SCORE (alias ROCK_SCORE)

Presence of certain elements in rock geochemistry. Possible score of 1, 2, or 3 depending on measured value of Co, Cr, Ni, TiO₂, V, Ir, Pd, Rh, or Ru. See publication text for cut offs of each element. Higher scores will replace lower scores (Source: this data set)

Range of values	
Minimum:	0
Maximum:	3

HMC_SCORE (alias HEAVY_MIN_CONC_SCORE)

Possible score of 1, 2, or 3 depending on presence of Ir, Os, Pd, Pt, Rh, Ru, Co, Cr, Ni, Ti, or V in the geochemistry analyses of heavy mineral concentrates. See publication text for cut offs for each element. Higher scores will replace lower scores (Source: this data set)

Range of values	
Minimum:	0
Maximum:	3

LITH_SCORE (alias LITHOLOGY_SCORE)

Presence of mafic or ultramafic rock units on the state geologic map (Source: this data set)

Value	Definition
0	A mafic or ultramafic geologic unit on the state geologic map is not present
1	A mafic or ultramafic rock as a minor component of a geologic unit on the state map is present
2	A mafic or ultramafic rock as a major component of a geologic unit on the state map is present

TOTAL_SCORE

The sum of the individual scores (LITH_SCORE, RCK_SCORE, HMC_SCORE, SED_SCORE, MIN_SCORE and ARDF_SCORE). (Source: this data set)

Range of values	
Minimum:	0
Maximum:	17

SED_PCT (alias SEDIMENT_PCT)

The percentage of SED_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

ARDF_PCT

The percentage of ARDF_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

MIN_PCT (alias MINERAL_PCT)

The percentage of MIN_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

RCK_PCT (alias ROCK_PCT)

The percentage of RCK_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

HMC_PCT (alias HEAVY_MIN_CONC_PCT)

The percentage of HMC_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

LITH_PCT (alias LITHOLOGY_PCT)

The percentage of LITH_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

POTENTIAL

Relative description of estimated potential for PGE deposits in this HUC based on the scoring methodology for the PGE deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

CERTAINTY

Relative description of certainty of the estimated potential for PGE deposits in this HUC based on the scoring methodology for the PGE deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

SYMBOL

Concatenation of POTENTIAL and CERTAINTY used to symbolize the PGE scoring graphic. (Source: this data source)

Value	Definition
HIGH,HIGH	dark red color
HIGH,MED	medium red color
HIGH,LOW	light red color
MED,HIGH	dark yellow color

MED,MED	medium yellow color
MED,LOW	light yellow color
LOW,HIGH	dark green color
LOW,MED	medium green color
LOW,LOW	light green color
UNKNOWN	dark gray

CuCarb_HUCs

Geodatabase feature class showing mineral resource potential estimation for carbonate-hosted Cu (-Co-Ag-Ge-Ga) deposits (Source: this data set)

HUC12

Field HUC12 contains the unique 12-digit hydrologic unit code identifying the sub-watershed area of the National Hydrography Dataset and Watershed Boundary Dataset. (Source: Watershed Boundary Dataset (WBD) of the Advisory Committee on Water Information (ACWI))

Range of values	
Minimum:	190201010301
Maximum:	190605021705

SED_SCORE (alias SEDIMENT_SCORE)

Presence of certain elements in sediment geochemistry. Possible score of 1, 2, or 3, depending on the measured value of Cu. See publication text for element cut offs. Higher scores will replace lower scores. A null score denotes that there were no sediment samples of any type present in the HUC. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	3

SEDTR_SCORE (alias SEDIMENT_TRACE_SCORE)

Presence of certain trace elements in sediment geochemistry. Possible score of 1 depending on the measured values of Co, Ge, Ga, and Ag. See publication text for element cut offs. Scores for each trace element will be added together. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	4

ARDF_SCORE

Presence of ARDF record with relative possibility of being a Cu carbonate deposit (Source: this data set)

Value	Definition
0	No ARDF locality with Cu carbonate evidence
2	ARDF model is uncertain but may be permissible for Cu carbonate
5	ARDF locality has Cu carbonate potential or Cu carbonate present

MIN_SCORE (alias MINERAL_SCORE)

Presence of chalcopyrite, copper-cobalt-sulfides, copper sulphates, copper sulfide/copper oxide, azurite, cuprite, enargite, and malachite in the heavy mineral concentrate mineralogy. See publication text for point allocation. Scores will be added together. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	8

RCK_SCORE (alias ROCK_SCORE)

Presence of certain elements in rock geochemistry. Possible score of 1, 2, or 3, depending on the measured value of Cu. See publication text for element cut offs. Higher scores will replace lower scores. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	3

RCKTR_SCORE (alias ROCK_TRACE_SCORE)

Presence of certain trace elements in rock geochemistry. Possible score of 1 depending on the measured values of Co, Ge, Ag, and Ga. See publication text for element cut offs. Scores for each trace element will be added together. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	4

LITH_SCORE (alias LITHOLOGY_SCORE)

Presence of carbonate rock units on the state geologic map (Source: this data set)

Value	Definition
NULL	A carbonate geologic unit on the state geologic map is not present
2	A carbonate rock as a minor component of a geologic unit on the state map is present
3	A carbonate rock as a major component of a geologic unit on the state map is present

TOTAL_SCORE

The sum of the individual scores (SED_SCORE, SEDTR_SCORE, ARDF_SCORE, MIN_SCORE, RCK_SCORE, RCKTR_SCORE, and LITH_SCORE). (Source: this data set)

Range of values	
Minimum:	0
Maximum:	20

SED_PCT (alias SEDIMENT_PCT)

The percentage of SED_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0

Maximum:	100
-----------------	-----

SEDTR_PCT (alias SEDIMENT_TRACT_PCT)

The percentage of SEDTR_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

ARDF_PCT

The percentage of ARDF_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

MIN_PCT (alias MINERAL_PCT)

The percentage of MIN_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

RCK_PCT (alias ROCK_PCT)

The percentage of RCK_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

RCKTR_PCT (alias ROCK_TRACT_PCT)

The percentage of RCKTR_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

LITH_PCT (alias LITHOLOGY_PCT)

The percentage of LITH_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

POTENTIAL

Relative description of estimated potential for PGE deposits in this HUC based on the scoring methodology for the Cu carbonate deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

CERTAINTY

Relative description of certainty of the estimated potential for PGE deposits in this HUC based on the scoring methodology for the Cu carbonate deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

SYMBOL

Concatenation of POTENTIAL and CERTAINTY used to symbolize the PGE scoring graphic. (Source: this data source)

Value	Definition
HIGH,HIGH	dark red color
HIGH,MED	medium red color
HIGH,LOW	light red color
MED,HIGH	dark yellow color
MED,MED	medium yellow color
MED,LOW	light yellow color
LOW,HIGH	dark green color
LOW,MED	medium green color
LOW,LOW	light green color
UNKNOWN	dark gray

SandU_HUCs

Geodatabase feature class showing mineral resource potential estimation for sandstone U (-V-Cu) deposits (Source: this data set)

HUC12

Field HUC12 contains the unique 12-digit hydrologic unit code identifying the sub-watershed area of the National Hydrography Dataset and Watershed Boundary Dataset. (Source: Watershed Boundary Dataset (WBD) of the Advisory Committee on Water Information (ACWI))

Range of values	
Minimum:	190201010301
Maximum:	190605021705

SED_SCORE (alias SEDIMENT_SCORE)

Presence U (uranium) in sediment geochemistry (Source: this data set)

Value	Definition
null	No sediment samples were collected in this HUC
0	The highest value for U is not in the 75th percentile
1	The highest value for U is in the 75th percentile, but not in the 91st percentile
2	The highest value for U is in the 91st percentile, but not in the 98th percentile
3	The highest value for U is in the 98th percentile

ARDF_SCORE

Based on tables for ARDF and ARDF placer records. (See text.) (Source: this data set)

Value	Definition
0	No ARDF locations.
1	Permissible geology but no direct evidence for PGEs
2	Chromite and favorable geology
3	PGEs reported as major or minor commodities

RCK_SCORE (alias ROCK_SCORE)

Presence of U in sedimentary rock geochemistry. (Source: this data set)

Value	Definition
0	There are no U measurements in the 91st percentile
1	The highest value for U measures in the 91st percentile, but not the 98th percentile
2	The highest value for U measures in the 98th percentile

IGN_SCORE (alias IGNEOUS_SCORE)

Score for igneous rocks that have the displacement of Fe#, a Fe index, from an expected Fe# versus SiO₂ array. See publication text for more detailed description (Source: this data set)

Value	Definition
0	Fe_# displacement < 0 AND the 65% < SiO ₂ < 75% is not true
1	Fe_# displacement < 0 AND the 65% < SiO ₂ < 75%

LITH_SCORE (alias LITHOLOGY_SCORE)

Presence of certain lithologies in rock units from the state geologic map. (Source: this data set)

Value	Definition
0	Does not have rocks conducive for hosting sandstone U deposits based on the state geologic map
1	Unconsolidated rock unit that is within 3 km of a sandstone or similar type rock on the state map
2	Sandstone or similar lithology is a component of a rock unit on the state map
3	Sandstone or similar lithology is a component of a rock unit on the state map and has an Tertiary or Tertiary/Cretaceous age
4	Arkose is a component of a geologic unit on the state map

COAL_SCORE

Presence of Upper Cretaceous or Tertiary coal as mapped in Alaska Division of Geological Surveys Special Report 37 (Source: this data set)

Value	Definition
0	Upper Cretaceous or Tertiary coal is not present
1	Upper Cretaceous or Tertiary coal is present

AERORAD_SCORE

Score for U value from aerorad data set (Source: this data set)

Value	Definition
0	U value <= 2
1	2 < U value <= 5
2	U value > 5

TOTAL_SCORE

The sum of the individual scores (SED_SCORE, RCK_SCORE, IGN_SCORE, LITH_SCORE, COAL_SCORE, AERORAD_SCORE, and ARDF_SCORE). (Source: this data set)

Range of values	
Minimum:	0
Maximum:	14

SED_PCT (alias SEDIMENT_PCT)

The percentage of SED_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

ARDF_PCT

The percentage of ARDF_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

RCK_PCT (alias ROCK_PCT)

The percentage of RCK_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

IGN_PCT (alias IGNEOUS_PCT)

The percentage of IGN_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

LITH_PCT (alias LITHOLOGY_PCT)

The percentage of LITH_SCORE of the TOTAL_SCORE (Source: this data set)

--

Range of values	
Minimum:	0
Maximum:	100

COAL_PCT

The percentage of COAL_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

AERORAD_PCT

The percentage of AERORAD_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

POTENTIAL

Relative description of estimated potential of sandstone U in this HUC based on the scoring methodology for the sandstone U deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

CERTAINTY

Relative description of certainty of the estimated potential of sandstone U in this HUC based on the scoring methodology for the sandstone U deposit model (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

SYMBOL

Concatenation of POTENTIAL and CERTAINTY used to symbolize the sandstone U scoring graphic. (Source: this data source)

Value	Definition
HIGH,HIGH	dark red color
HIGH,MED	medium red color
HIGH,LOW	light red color
MED,HIGH	dark yellow color
MED,MED	medium yellow color
MED,LOW	light yellow color
LOW,HIGH	dark green color
LOW,MED	medium green color
LOW,LOW	light green color
UNKNOWN	dark gray

Geodatabase feature class showing mineral resource potential estimation for Sn-W-Mo (-Ta-In-fluorspar) deposits in specialized granites (Source: this data set)

HUC12

Field HUC12 contains the unique 12-digit hydrologic unit code identifying the sub-watershed area of the National Hydrography Dataset and Watershed Boundary Dataset. (Source: Watershed Boundary Dataset (WBD) of the Advisory Committee on Water Information (ACWI))

Range of values	
Minimum:	190201010301
Maximum:	190605021705

SED_SCORE (alias SEDIMENT_SCORE)

Score for measures of In, Mo, Sn, Ta, and W in sediment geochemistry. Two points given if the highest analysis is in the 98th percentile, one point if in the 91st percentile. A maximum of 2 points for a single element in a HUC. The points for the individual elements is additive, for a maximum of 10 points per HUC. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	10

ARDF_SCORE

Scoring for the ARDF keyword search (Source: this data set)

Value	Definition
0	keyword search TOTAL < 4
1	4 <= TOTAL < 20
2	keyword search TOTAL >= 20

RCK_SCORE (alias ROCK_SCORE)

Presence of In, Mo, Sn, Ta, or W in the 91st percentile in igneous rock geochemistry. Points are additive. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	7

IGN_SCORE (alias IGNEOUS_SCORE)

Scores from igneous indices, for samples with SiO₂ > 65% and either ASI (aluminum saturation index) > 1 or 10000*Ga/Al (gallium over aluminum) > 2.6, then 1 point is given. Points are additive for a maximum of 2 points. (Source: this data set)

Range of values	
Minimum:	0
Maximum:	2

AERORAD_SCORE

Score for Th (thorium) value from the aerorad data set (Source: this data set)

Value	Definition
0	Th value < 6
1	Th value >= 6

TOTAL_SCORE

The sum of the individual scores (IGN_SCORE, RCK_SCORE, SED_SCORE, ARDF_SCORE, and AERORAD_SCORE). (Source: this data set)

Range of values	
Minimum:	0
Maximum:	14

SED_PCT (alias SEDIMENT_PCT)

The percentage of SED_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

ARDF_PCT

The percentage of ARDF_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

RCK_PCT (alias ROCK_SCORE)

The percentage of RCK_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

IGN_PCT (alias IGNEOUS_SCORE)

The percentage of IGN_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

AERORAD_PCT

The percentage of AERORAD_SCORE of the TOTAL_SCORE (Source: this data set)

Range of values	
Minimum:	0
Maximum:	100

POTENTIAL

Relative description of estimated potential of Sn-W-Mo in specialized granites in this HUC based on the scoring methodology for the Sn-W-Mo in specialized granites (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

CERTAINTY

Relative description of certainty of the estimated potential of Sn-W-Mo in specialized granites in this HUC based on the scoring methodology for the Sn-W-Mo in specialized granites (Source: this data set)

Relative terms of LOW, MED, and HIGH. See this publication's text for complete description

SYMBOL

Concatenation of POTENTIAL and CERTAINTY used to symbolize the Sn-W-Mo specialized granite scoring graphic. (Source: this data source)

Value	Definition
HIGH,HIGH	dark red color
HIGH,MED	medium red color
HIGH,LOW	light red color
MED,HIGH	dark yellow color
MED,MED	medium yellow color
MED,LOW	light yellow color
LOW,HIGH	dark green color
LOW,MED	medium green color
LOW,LOW	light green color
UNKNOWN	dark gray

Who produced the data set?**1. Who are the originators of the data set?** (may include formal authors, digital compilers, and editors)

- Jones, J.V., III
- Karl, S.M.
- Labay, K.A.
- Shew, N.B.
- Granitto, M.
- Hayes, T.S.
- Mauk, J.L.
- Schmidt, J.M.
- Todd, E.
- Wang, B.
- Werdon, M.B.
- Yager, D.B.

2. Who also contributed to the data set?

This data set was prepared by Matt Granitto, Keith Labay, Greg Lee, Jeanine Schmidt, and Nora Shew

3. To whom should users address questions about the data?

U.S. Geological Survey
Attn: Timothy S. Hayes
Research Geologist
520 N. Park Avenue Ste. 355
Tucson, AZ
U.S.A.

520-670-5024 (voice)
thayes@usgs.gov

Why was the data set created?

To estimate the potential of mineral resources in the Bureau of Land Management Central Yukon Planning Area using geographic information systems (GIS) analysis of multiple statewide datasets. The six mineral deposit models are: 1) REE-Th-Y-Nb deposits associated with peralkaline to carbonatitic intrusive rocks, 2) placer and paleoplacer Au, 3) PGE (-Co-Cr-Ni-Ti-V) deposits associated with mafic-to-ultramafic intrusive rocks, 4) carbonate-hosted Cu (-Co-Ag-Ge-Ga) deposits, 5) sandstone U (-V-Cu) deposits, and 6) Sn-W-Mo (-Ta-In-fluorspar) deposits in specialized granites. GIS data layers available for analysis include sediment and rock geochemistry, pan concentrate mineralogy and geochemistry, Alaska Resource Data File, and regional geologic mapping.

How was the data set created?

1. From what previous works were the data drawn?

AGDB2 (source 1 of 7)

Granitto, Matthew, Schmidt, Jeanine M., Shew, Nora B., Gamble, Bruce M., and Labay, Keith A., 2013, Alaska Geochemical Database Version 2.0 (AGDB2) - Including "Best Value" data compilations for rock, sediment, soil, mineral, and concentrate sample media: USGS Data Series 759.

Online Links:

- pubs.usgs.gov/ds/759/

Type_of_Source_Media: DVD and online

Source_Contribution:

AGDB2 is the USGS compilation of geochemical analyses of Alaska samples. Sample media include rock, sediment, soil, mineral, and heavy-mineral concentrate. The stream sediment geochemistry used in the resource potential analyses is a compilation of data from AGDB2, Alaska Division of Geological and Geophysical Surveys (ADGGS), and the National Uranium Resource Evaluation (NURE) data set. The AGDB2 contributed approximately 55 percent of the total stream sediment geochemistry samples. Igneous rock geochemistry was collected from 3 sources, AGDB2, ADGGS, and from published literature. AGDB2 also contributed data on the mineralogy and geochemistry of nonmagnetic heavy mineral concentrates.

ADGGS (source 2 of 7)

Alaska Division of Geological and Geophysical Surveys, Unknown, WebGeochem: DGGS Geochemical Sample Analysis Search website www.dggs.alaska.gov/webgeochem/.

Online Links:

- www.dggs.alaska.gov/webgeochem/

Type_of_Source_Media: online

Source Contribution:

The ADGGS database provided about 6 percent of the analyses in the combined AGDB2, ADGGS, and NURE sediment geochemistry data set. ADGGS data comprises approximately 11% of the total rock geochemistry used in this project.

NURE (source 3 of 7)

U.S. Geological Survey, 2004, National Uranium Resource Evaluation (NURE) hydrogeochemical and stream sediment reconnaissance data: U.S. Geological Survey Open-File Report 97-492.

Online Links:

- <https://pubs.usgs.gov/of/1997/ofr-97-0492/> or <https://mrdata.usgs.gov/nure/sediment/>

Type of Source Media: online

Source Contribution:

The NURE data comprises approximately 38% of the analyses in the combined AGDB2, ADGGS, and NURE sediment geochemistry data set.

ARDF (source 4 of 7)

U.S. Geological Survey, 2008, Alaska Resource Data File (ARDF): U.S. Geological Survey Open-File Report 2008-1225.

Online Links:

- <http://ardf.wr.usgs.gov/> <https://mrdata.usgs.gov/ardf/>

Other Citation Details:

data also available at: <https://mrdata.usgs.gov/ardf>

Type of Source Media: online

Source Contribution:

ARDF was a contributing factor in the scoring of mineral resource potential.

state geologic map (source 5 of 7)

Wilson, Frederic H., Unpublished material, Alaska geologic map.

Type of Source Media: geodatabase

Source Scale Denominator: 500000

Source Contribution:

A generalized geologic map was produced from the geology of Alaska data set in early 2013. The geology of Alaska data set was also used to derive various lithology layers for the mineral resource potential analyses.

aerorad (source 6 of 7)

Duval, Joseph S., 2001, Aerial gamma-ray surveys in Alaska: U.S. Geological Survey Open-File Report 2001-128.

Online Links:

- <https://pubs.usgs.gov/of/2001/of01-128>

Type of Source Media: CD-ROM

Source Contribution:

This source provides the measure of flux of gamma rays emitted due to radioactive decay of naturally occurring elements K40 (potassium), U238 (uranium), and Th232 (thorium). These data were used in the analyses for the REE, Sn-W, and sandstone U models.

HUC (source 7 of 7)

U.S. Geological Survey, 2013, Watershed boundary dataset.

Online Links:

- <http://nhd.usgs.gov/wbd.html>

Type_of_Source_Media: online

Source_Contribution:

The 12-digit HUC (hydrologic unit code) hydrologic units are used to define the area boundaries for the mineral resource analyses.

2. How were the data generated, processed, and modified?

Date: 2013 (process 1 of 11)

AGDB2 "best value" stream sediment geochemistry was combined with similar data from ADGGS and NURE data sets. The "best value" represents the value done by the better analytical method for samples that were analyzed by multiple methods. A more detailed description of how "best value" is determined is available in the AGDB2 publication. The statistical measures of median, 75th, 91st, and 98th percentiles were calculated on the combined AGDB2, ADGGS, and NURE sediment data. These analyses have been measured over a long period of time and have used different analytical methods with varying detection limits. For elements with less than 50% censored data, the censored datum was replaced with either half the minimum non-censored value, or half of the minimum lower detection limit, whichever was smaller. If the number of censored data was greater than 50%, then statistics were estimated using the Kaplan-Meier method.

Date: 2014 (process 2 of 11)

Rock data from AGDB2 was combined with rock data from ADGGS. In addition, a subset of AGDB2 and ADGGS rock data was combined with data from published literature to create an igneous rock geochemistry data base. These data were used to analyze various ratios and other igneous rock indices.

Date: 2013 (process 3 of 11)

The mineralogy and geochemistry of the nonmagnetic heavy mineral concentrates were each converted to a geodatabase.

Date: 2013 (process 4 of 11)

The statistical measures of median, 75th, 91st, and 98th percentiles were calculated on the combined AGDB2, ADGGS, and NURE sediment data. These analyses have been measured over a long period of time and have used different analytical methods with varying detection limits. For elements with less than 50% censored data, the censored datum was replaced with either half the minimum non-censored value, or half of the minimum lower detection limit, whichever was smaller. If the number of censored data was greater than 50%, then statistics were estimated using the Kaplan-Meier method.

Date: 2014 (process 5 of 11)

Rock data from ADGGS was combined with rock data from AGDB2. In addition, a subset of AGDB2 and ADGGS rock data was combined with data from published literature to create an igneous rock geochemistry data base. These data were used to analyze various ratios and other igneous rock indices.

Date: 2013 (process 6 of 11)

The statistical measures of median, 75th, 91st, and 98th percentiles were calculated on the combined AGDB2, ADGGS, and NURE sediment data. These analyses have been measured over a long period of time and have used different analytical methods with varying detection limits. For elements with less than 50% censored data, the censored datum was replaced with either half the minimum non-censored value, or half of the minimum lower detection limit, whichever was smaller. If the number of censored data was greater than 50%, then statistics were estimated using the Kaplan-Meier method.

Date: 2014 (process 7 of 11)

The ARDF is text based database containing descriptions of mines, prospects, and mineral occurrences in Alaska. This project developed a method to 'quantify' ARDF records based on keywords in certain ARDF

fields. The keywords were weighted by relevance to the mineral deposit of interest and records were individually scored. See this publication's text for more detailed description of the method.

Date: 2013 (process 8 of 11)

The polygons of the Alaska geologic map were grouped based on the geologic age of the rock unit and general rock type (volcanic, igneous, sedimentary, metamorphic, or unconsolidated), and then the polygons were dissolved to create a generalized geologic map.

Date: 2013 (process 9 of 11)

Polygons from the Alaska geologic map database were selected based on the presence and quantity of various rocks in the geologic unit description for the state map. If the rock is present in the geologic unit, and the amount of that rock is considered a 'major' (> 33%) or indeterminate portion of the unit, then the lithology is considered a 'major' proportion of that geologic unit. If the amount is 'minor' or incidental, the lithology is considered a 'minor' proportion. Once polygons were selected based on rock and quantity, the polygons were dissolved.

Date: 2012 (process 10 of 11)

The original K, Th, and U data was converted to geotiffs. An additional Th/K image was also created.

Date: 2014 (process 11 of 11)

Any of the 12-digit hydrologic unit polygons overlapping the area of the BLM Central Yukon planning area (CYPA) is included in this project's area of interest. All six models included HUCs within a 100 km buffer to assist during evaluation.

3. What similar or related data should the user be aware of?

How reliable are the data; what problems remain in the data set?

1. How well have the observations been checked?

There were many sources of data of varying scale and positional accuracy used in these analyses. These data are used to evaluate 12-digit HUC (hydrologic unit code) areas, which are large areas which encompass multiple drainage areas.

2. How accurate are the geographic locations?

3. How accurate are the heights or depths?

4. Where are the gaps in the data? What is missing?

None of the datasets used in scoring the 12-digit HUCs has even distribution of data in the area of interest. One of the purposes of this analysis is to use existing data to frame a better understanding of mineral resources in the state of Alaska.

5. How consistent are the relationships among the observations, including topology?

Each polygon contains an estimate of potential and uncertainty of a particular mineral deposit model to be found in that polygon. Estimates are based on the proximity of certain favorable geologic conditions found in multiple statewide datasets. Descriptions of the scoring methods for each model is described in the text portion of this publication.

How can someone get a copy of the data set?

Are there legal restrictions on access or use of the data?

Access_Constraints: None

Use_Constraints:

None. Acknowledgment of the U.S. Geological Survey would be appreciated in products derived from these data.

1. Who distributes the data set? (Distributor 1 of 1)

U.S. Geological Survey
MS902
Box 25286
Denver Federal Center
Lakewood, CO
U.S.A.

1-888-ASK-USGS (voice)

2. What's the catalog number I need to order this data set?

OFR 2015-1021

3. What legal disclaimers am I supposed to read?

This publication was prepared by an agency of the United States Government. Neither the United States Government nor any agency thereof, nor any of their employees, makes any warranty, expressed or implied, or assumes any legal liability or responsibility for the accuracy, product, or process disclosed in this report, or represents that its use would not infringe privately owned rights. Reference therein to any specific commercial product, process, or service by trade name, trademark, manufacturer, or otherwise does not necessarily constitute or imply its endorsement, recommendation, or favoring by the United States Government or any agency thereof.

4. How can I download or order the data?

o **Availability in digital form:**

Data format: Arc geodatabase and shapefiles

Network links: <https://pubs.usgs.gov/of/2015/1021>

o **Cost to order the data:** none

Who wrote the metadata?

Dates:

Last modified: 02-Feb-2015

Last Reviewed: 02-Feb-2015

Metadata author:

U.S. Geological Survey
Attn: Nora Shew
4210 University Drive
Anchorage, AK
U.S.A.

907-786-7445 (voice)

nshew@usgs.gov

Metadata standard:

FGDC Content Standards for Digital Geospatial Metadata (FGDC-STD-001-1998)
