

Mineral Activities

SPATIAL DATA STANDARD



www.fs.usda.gov Golconda Mine, Umatilla National Forest

DOCUMENT REVISIONS

| Revision | Date | Author | Description | Affected Pages |
|-----------------|-------------|--|-----------------------------------|-----------------------|
| 1.0 | 01/04/2017 | Timothy Barnes, Bryant Meckem, Eric Hiebenthal, Nicholas Kovac | 1 st released version. | All |
| | | | | |
| | | | | |
| | | | | |

Table of Contents

| | |
|--|----|
| 1. GENERAL INFORMATION..... | 5 |
| 1.1 ROLES AND RESPONSIBILITIES | 5 |
| 1.2 FOIA CATEGORY | 5 |
| 1.3 RECORDS RETENTION SCHEDULE | 6 |
| 1.4 SECURITY/ACCESS/SENSITIVITY | 6 |
| 1.5 KEYWORDS..... | 6 |
| 2. DATASET OVERVIEW | 8 |
| 2.1 DESCRIPTION | 8 |
| 2.2 USAGE | 9 |
| 2.3 SPONSOR/AFFECTED PARTIES | 10 |
| 2.4 RELATIONSHIP TO OTHER DATASETS, DATABASES or FILES | 10 |
| 2.5 DATA CATEGORY/ARCHITECTURE LINK..... | 10 |
| 2.6 RELATIONSHIP TO THE DEPARTMENT OF THE INTERIOR ENTERPRISE ARCHITECTURE - DATA RESOURCE MODEL | 11 |
| 2.7 MIN_ACTY DATA ORGANIZATION/STRUCTURE | 12 |
| 3. DATA MANAGEMENT PROTOCOLS | 13 |
| 3.1 ACCURACY REQUIREMENTS..... | 13 |
| 3.2 COLLECTION, INPUT, AND MAINTENANCE PROTOCOLS | 13 |
| 3.3 UPDATE FREQUENCY AND ARCHIVAL PROTOCOLS..... | 16 |
| 3.4 STATEWIDE MONITORING | 16 |
| 4. MIN_ACTY SCHEMA (simplified) | 16 |
| 4.1 MIN_ACTY Feature Dataset..... | 17 |
| 5. PROJECTION AND SPATIAL EXTENT | 17 |
| 6. SPATIAL ENTITY CHARACTERISTICS | 18 |
| 7. ATTRIBUTE CHARACTERISTICS AND DEFINITION (In alphabetical order) | 19 |
| 7.1 ACCURACY_FT..... | 19 |
| 7.2 BLM_ORG_CD..... | 19 |
| 7.3 CASE_DISP | 20 |
| 7.4 CASEFILE..... | 20 |
| 7.5 CASETP | 21 |
| 7.6 COMMODITY | 21 |
| 7.7 CLOSED_DT | 22 |
| 7.8 COORD_SRC..... | 22 |
| 7.9 ESTABLISHED_DT | 23 |
| 7.10 GIS_ACRES | 23 |
| 7.11 MIN_ACTY_ID..... | 24 |

| | |
|---|----|
| 7.12 OPERATIONAL_DT | 24 |
| 7.13 MIN_ACTY_NM | 24 |
| 7.14 REV_STAGE | 25 |
| 7.15 RGT HOLDER_NM..... | 25 |
| 7.16 SOURCE_VINTAGE..... | 26 |
| 7.17 VERSION_NAME | 26 |
| 7.18 WORK_TP | 26 |
| 8. LAYER FILES (PUBLICATION VIEWS)..... | 27 |
| 9. EDITING PROCEDURES | 27 |
| 9.1 MANAGING OVERLAP (GENERAL GUIDANCE)..... | 27 |
| 9.2 EDITING QUALITY CONTROL..... | 27 |
| 9.3 THEME SPECIFIC GUIDANCE..... | 28 |
| 10. OREGON/WASHINGTON DATA FRAMEWORK OVERVIEW | 29 |
| 11. ABBREVIATIONS AND ACRONYMS USED..... | 30 |
| APPENDIX A: DOMAINS (VALID VALUES) | 31 |
| A.1 BLM_ORG_CD..... | 31 |
| A.2 COORD_SRC | 32 |
| A.3 REV_STAGE..... | 33 |
| A.4 WORK_TP..... | 33 |
| A.5 COMMODITY | 33 |
| A.6 CASE_DISP..... | 35 |

1. GENERAL INFORMATION

Dataset (Theme) Name: **Mineral Activities**
 Dataset (Feature Class): **MIN_ACTY_POLY**

1.1 ROLES AND RESPONSIBILITIES

| Roles | |
|-----------------------------|---|
| State Data Stewards | The State Data Steward, Tim Barnes , at - - is responsible for approving data standards and business rules, developing Quality Assurance/Quality Control procedures, identifying potential privacy issues, and ensuring that data is managed as a corporate resource. The State Data Steward coordinates with field office data stewards, the state data administrator, Geographic Information System (GIS) coordinators, and national data stewards. The State Data Steward also reviews geospatial metadata for completeness and quality. |
| Lead GIS Specialist | The Lead GIS Specialist, Bryant Mecklem , at 503-808-6506 , works with data stewards to convert business needs into GIS applications, derive data requirements and participates in the development of data standards. The lead GIS specialist coordinates with system administrators and GIS coordinators to manage the GIS databases. The lead GIS specialist works with data editors to make sure data is being input into the enterprise Spatial Database Engine (SDE) database consistently and in accordance with the established data standard. The lead GIS specialist provides technical assistance and advice on GIS analysis, query and display of the dataset. |
| State Data Administrator | The Acting State Data Administrator, Eric Hiebenthal , at (503)-808-6565 , provides information management leadership, data modeling expertise, and custodianship of the state data models. The State Data Administrator ensures that defined processes for development of data standards and metadata are followed, and that they are consistent and complete. The State Data Administrator is responsible for making data standards and metadata accessible to all users. The State Data Administrator also coordinates with data stewards and GIS coordinators to respond to national spatial data requests. |
| State Records Administrator | The State Records Administrator, Tamara Yingling , at (503)-808-6450 , assists the State Data Steward to identify any privacy issues related to spatial data. The State Records Administrator also provides direction and guidance on data release and fees. The State Records Administrator also ensures that data has been classified under the proper records retention schedule and determines appropriate Freedom of Information Act category. |

Table 1 Role and Responsibilities

1.2 FOIA CATEGORY

This dataset falls under the standard Records Access Category 1A-Public Data.

1.3 RECORDS RETENTION SCHEDULE

General Records Schedule (GRS) Bureau of Land Management (BLM) 20/52 (Electronic Records/Geographic Information Systems)

PERMANENT. Transfer a copy of data to the National Archives and Records Administration (NARA) according to Schedule 20/52.

Annual snapshots are stored online for a minimum of 12 years after which the data are copied off line, with format and readability maintained in a five-year “tech refresh” cycle in order to retain full functionality. System data retained permanently at the BLM.

1.4 SECURITY/ACCESS/SENSITIVITY

The mineral activities (**MIN_ACTY**) theme does not require any additional security other than that provided by the General Support System (the hardware/software infrastructure of the Oregon/Washington (OR/WA) BLM.

This dataset is not sensitive and there are no restrictions on access to this data either from within the BLM or external to the BLM. This dataset falls under the standard Records Access Category 1A-Public Data.

A PIA assessment of this data standard has been initiated.

1.5 KEYWORDS

NOTE: These are the keywords outlined in the theme metadata that can be used to search for the theme. Examples of search tools include Geoportal.

1.5.1 Keywords from the BLM Thesaurus

These are words that can be used to locate this dataset:

- Facility
- Disturbance
- Authorization

1.5.2 Key terms taken from the International Organization for Standardization (ISO) Thesaurus

- **Sources:** geodata.gov (US Maps & Data), & fgdc.gov (MetadataQuickGuide.pdf)
(The official ISO naming convention is provided in parenthesis)
- **Business and Economic (economy), Section 005**

| | |
|------------|----------|
| Production | Commerce |
| Revenue | Industry |
- **Environment and Conservation (environment), Section 007**

| | |
|--------------|-----------------------------------|
| Facilities | Landscape |
| Ground Water | National Environmental Policy Act |
| Land use | (NEPA) |

Natural resources
Permits
Sites

Surface Water
Water quality

- **Geological and Geophysical (geoscientificInformation), Section 008**

Oil

Gas

Sulfur

Gold

Sand and Gravel

Manganese

1.5.3 Additional Dataset Keywords

Keywords not defined above that can be used to locate this dataset:

- Coal
- Silver
- Open-Pit Mining
- Surface Mining
- Ground Disturbance
- Locatable
- Leasable
- Salable/Saleable
- Lands
- Minerals

2. DATASET OVERVIEW

2.1 DESCRIPTION

The MIN_ACTY dataset represents spatial location and basic information about mineral facilities and mining disturbances (where mining/mineral operations have disturbed the surface of the earth) on federal estate including split estate. These locations may identify sites of mining activities (saleable, leasable, and locatable mining disturbances) such as open pit mine operations, construction of mine portals, or construction and development of facilities or structures intended to support mineral operations and will be connected to an LR2000 record when the matching casefile can be determined.

The MIN_ACTY theme is comprised of a single feature class:

- MIN_ACTY_POLY contains the polygonal features representing surface disturbances associated with mineral leases (Application for Permit to Drill APD or Geothermal Drilling Permit GDP), mining claims (Plans or Notice of Operation), material pits and others.

Areas identifiable as mineral activity disturbances make up only a small portion of lands throughout Oregon and Washington. Each individual case may contain multiple MIN_ACTY features and, as determined by the data steward and the lead GIS specialist identified in Section 1.1, features may share edges but will not overlap; this is done to maintain an accurate acreage calculation. Concurrently, mineral facilities from a casefile may be adjacent to feature(s) from another casefile due to the nature of leases, claims, and the clustering of mineral extraction areas.

Since MIN_ACTY features are captured primarily through the interpretation of aerial imagery or from GPS coordinates, structures, and disturbances captured in the dataset are constructed and visible. This dataset will not capture activities still in the planning stages. Therefore, there are no “proposed” features or “_P” feature classes, as seen in other datasets. Only disturbances with an Active CASE_DISP will be included in this feature class. When Closed or Relinquished, their CASE_DISP will be updated, they will be archived into the yearly archive and deleted from the feature class.

All MIN_ACTY features should be associated with mining claims (Plans or Notices), mineral disposals (including free use permits, mineral material sites), mineral leases (APDs and GDPs), or federal highway aggregate rights-of-way. All case information should be contained in an associated LR2000 record (LR2000 source record) and linked through the CASEFILE attribute populated for each MIN_ACTY feature (when it can be determined). The MIN_ACTY theme carries three LR2000 attributes (LR2000 sourced attributes) to aid in theme analysis; CASEFILE is used as a key field, CASE_DISP determines the current disposition of the case, and CASETP identifies the specific type of case. The date fields of OPERATIONAL_DT and CLOSED_DT (also identified as the LR2000 derived attributes) are determined from a specified list of LR2000 action codes (as outlined in section 7). Even though this is for Active cases, the CLOSED_DT should be filled in when it is no longer active. This will signal it to be deleted after the yearly archive is complete.

Leases and claims data (one of the potential LR2000 sources for MIN_ACTY) with the use of Notices and Plans or APDs and GDPs are mapped directly from LR2000 land descriptions. In most cases, the locations are only described down to the aliquot part (quarter-quarter); this often leads to more than one case described within a given area. In such cases (where exact LR2000 case information cannot be added to the MIN_ACTY theme with confidence), LR2000-derived and LR2000-interpreted attribute

values will be left null and the REV_STAGE attribute will reflect this status. Where case information cannot be attributed, district personnel will be tasked with adding attributes and correcting the LR2000 land descriptions (when available).

This dataset will require ongoing updates and edits. Over time, an increasing amount of approved mining facilities will be added to the dataset once new operations are started and recorded in the LR2000 database under Notices and Plans (Case group 38091X), APDs and GDPs or Mineral pits (Case group 36XXXX) case types. APD's and GDP's related to LR2000 leases are also tracked in separate BLM systems: Automated Fluid Minerals Support System (AFMSS) for oil/gas and Geothermal Resources Automated Support System (GRASS) for geothermal.

2.2 USAGE

This dataset is used to track and identify areas of surface disturbance and facilities construction connected with mining and other mineral activities. The utilized attributes are: CLOSED_DT, COMMODITY, ESTABLISHED_DT, GIS_ACRES, OPERATIONAL_DT, MIN_ACTY_NM, RGT HOLDER_NM, WORK_TP, and BLM_ORG_CD.

This dataset is used to supplement and replace the use of third party datasets with similar attributes and to connect them through the CASEFILE key attribute with their LR2000 records. The utilized attributes are: CASEFILE, CASE_DISP, CASETP, CLOSED_DT, COMMOD_EXP, ESTABLISHED_DT, GIS_ACRES, OPERATIONAL_DT, PROPERTY_NM, RGT HOLDER, and WORK_TP.

Analysis of this dataset may be used to assess areas in conjunction with natural resource and conservation efforts. The Oregon Department of Geology and Mineral Industries (DOGAMI) and Oregon Department of Environmental Quality (DEQ) databases will utilize the information contained in the theme concerning mineral activities and disturbances, clean air and water, or hazardous materials to determine the impact of state projects. The utilized attributes are: GIS_ACRES

Feature-level metadata is carried in the ACCURACY_FT, COORD_SRC and the SOURCE_VINTAGE attributes.

This dataset identifies surface impact of subsurface development. It is not the intent of this Data Standard to capture underground disturbances. Some activities may be completely visible (i.e. open pit mining). The nature of the disturbance and it's relation to subsurface extraction will be captured in the WORK_TP attribute.

Though AML (abandoned mine lands) will not be included in this data theme, there is the potential that digitizing efforts may capture AML features. If an AML site has been introduced into this dataset, it will be identified, removed, or optionally transferred to the HAZ_TRES_POLY database through regular review.

R

2.3 SPONSOR/AFFECTED PARTIES

The sponsor for this data set is the Deputy State Director, Division of Resources, Lands, Minerals and Fire.

2.4 RELATIONSHIP TO OTHER DATASETS, DATABASES or FILES

The AML features are contained in HAZ_TRES_POLY, a separate theme. If AML lands are introduced to this theme, they should be removed and migrated to the HAZ_TRES_POLY review queue upon discovery. If disturbance activity has ceased prior to January 1, 1981 (as cited in 43 C.F.R. § 3809.5 (2015)), then the feature should be contained within the AML theme. Operations which are active and under reclamation dated after that stated in CFR 3809 should be included in the MIN_ACTY data theme. In instances where features deemed by field reviewer staff to be mineral activities are found outside of mineral-related Leases and Claims, Notices Plans, APDs, GDPs or Free Use Permits and Material Sites Data polygons, the features may be considered trespasses, in which case, they should be removed and migrated to the HAZ_TRES_POLY review queue for possible inclusion in that theme.

The National Operations Center (NOC) may have propriety datasets that can be used to identify mineral activity disturbances. It is not the responsibility of the Oregon State Office (OSO), the lead GIS specialist, nor the MIN_ACTY data steward to maintain these datasets.

Notices, Plans, APDs, GDPs, and Mineral Pit activities from LR2000, are utilized to determine potential disturbance locations for inclusion into the mineral MIN_ACTY theme.

Trespass cases should be crossreferenced to insure that unauthorized surface disturbances are not included as mineral activities.

2.5 DATA CATEGORY/ARCHITECTURE LINK

These data themes are a portion of the Oregon Data Framework (ODF). The ODF utilizes the concept of inheritance to define specific instances of data. All OR/WA resource-related data are divided into three general categories: Activities, Resources, and Boundaries. These general categories are broken into sub-categories that inherit spatial characteristics and attributes from their parent category. These sub-categories may be further broken into more specific groups until the basic data set that cannot be further sub-divided. Those basic data sets inherit all characteristics of all groups/categories above them. The basic data sets are where physical data gets populated (those groups/categories above them do not contain actual data, but set parameters that all data of that type must follow). See the ODF Overview (Figure 2) for a simplified schematic of the entire ODF showing the overall organization and entity inheritance. The MIN_ACTY entities are highlighted. For additional information about the ODF, contact:

Eric Hiebenthal
Acting OR/WA State Data Administrator
Bureau of Land Management
P.O. Box 2965
Portland, OR 97208
503-808-6565

In the ODF, **MIN_ACTY** is considered an **activity** and categorized as follows:

ODF

ACTIVITIES

FACILITIES

FACILITIES EXISTING

MIN_ACTY

Figure 1 provides a graphic representation of the entities and hierarchical relationships.

2.6 RELATIONSHIP TO THE DEPARTMENT OF THE INTERIOR ENTERPRISE ARCHITECTURE - DATA RESOURCE MODEL

The Department of the Interior (DOI) Enterprise Architecture contains a component called the Data Resource Model. This model addresses the concepts of data sharing, data description, and data context. This data standard provides information needed to address each of those areas. Data sharing is addressed through complete documentation and simple data structures which make sharing easier. Data description is addressed through the section on Attribute Descriptions. Data context is addressed through the data organization and structure portions of this document. In addition, the DOI Data Resource Model categorizes data by use of standardized Data Subject Areas and Information Classes. For this data set, the Data Subject Area and Information Class are:

- Data Subject Area: Geospatial
- Information Class: Location

2.7 MIN_ACTY DATA ORGANIZATION/STRUCTURE

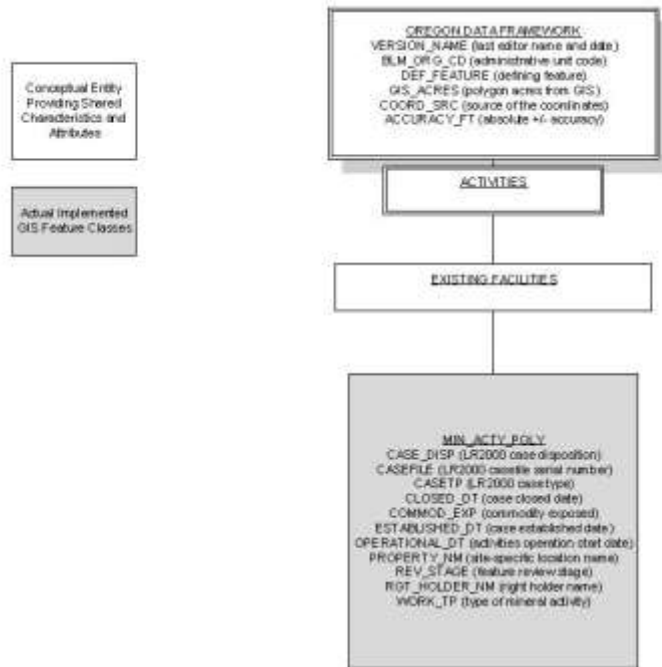


Figure 1 Data Organization Structure

3. DATA MANAGEMENT PROTOCOLS

3.1 ACCURACY REQUIREMENTS

The geometry and attributes for the MIN_ACTY theme should conform to the data standard with 95 percent accuracy, as required by the Federal Data Quality Act (Section 515 of the Consolidated Appropriations Act, 2001; PL 106–554). This accuracy is maintained through regular review. Due to some variance in LR2000 database entries, this may involve physical casefile research. Accuracy is determined by availability of survey data, the quality of aerial imagery for the activity/disturbance areas, and the presence of source features determined to be associated with the disturbance.

Mineral facilities and the surface disturbances associated with them have a physical existence on the ground, and it is possible to map their locations with a high degree of accuracy but may be limited by the visible disturbance as captured by remotely sensed data (aerial imagery or LiDAR). Utilized images will contain an expected range of inaccuracies and obstructions, depending on the date and type of remote sensing used. Locational accuracy is specified in the attribute ACCURACY_FT. Over time, the accuracy will continue to improve as disturbance and activity locations are noted using Global Positioning Systems (GPS) more carefully mapped at larger scales or improvements are made to the precision of the source material (remotely sensed images).

Errors will be mitigated through the REV_STAGE attribute, which tracks quality control during data capture (see Section 3.2 for an overview of the REV_STAGE attribute).

Some Leases and Claims, Notices Plans, APDs, GDPs or Free Use Permits and Material Sites legal case descriptions may be imported from LR2000 with imprecise legal descriptions and/or incomplete case information. However, newer features will have more complete information and, over time, the dataset will become more accurate and precise. The highest degree of accuracy is necessary for mineral facilities because the disturbances involved may conflict with conservation efforts in adjacent areas.

3.2 COLLECTION, INPUT, AND MAINTENANCE PROTOCOLS

Editors will use the following datasets and workflow to add features to the MIN_ACTY_POLY feature class:

A. Workflow:

- Areas of surface disturbance on Federal estate, including non-Federal surface management (split estate), are digitized and an attempt to connect that feature to an LR2000 record is made.
- If there is a clear attribute source polygon:
 - LR2000 Source and Derived attributes will be populated.
 - REV_STAGE will reflect the current review stage.
- If there are no attribute source features available, or there is more than one possible source, and visual inspection cannot determine the correct source feature:
 - LR2000 Source and Derived attributes will remain null.
 - REV_STAGE will reflect the current review stage.

B. Attribute sources.

- Plans of Operation and Notices and Permits (LR2000 Records) are used to identify potential disturbance areas for a mining claim. Disturbance and activity areas are located within.
- Application for Permit to Drill and Geothermal Drilling Permits (LR2000 Records) are used to identify potential disturbance areas for leases (oil/gas and geothermal). Disturbance and activity areas are located within.
- Free Use Permits and Material Sites Data (LR2000 Records) is used to identify potential disturbance areas. Disturbance and activity areas are located within.
- Federal Highway Pits Data (ESMTROW corporate dataset and LR2000 Records) is used to identify potential disturbance areas. Disturbance and activity areas are located within.
- Lases and Claims Data (corporate dataset and LR2000 Records) can be used to link to the above for attribute information.
- A data call will be placed to the districts annually to determine any additional records or datasets.

NOTE: DOGAMI & the Institute for Natural Resources (INR) data will not be used in the construction of this dataset as those databases will not relate to LR2000 casefiles.

Most mineral facilities features are input from GPS coordinates or using aerial imagery backdrops for heads-up digitizing. Some features may be copied from other existing digital data sources or constructed via historical surveys and diagrams. The coordinate source is captured in the attribute COORD_SRC and the date the COORD_SRC was collected is kept in SOURCE_VINTAGE. For example, what year the aerial imagery was created. .

Where LR2000 casefile sources (Notice, Plans, APDs, GDPs, Leases & Claims Data, Free Use Permits Data, etc.) overlap or are non-existent (making it difficult to determine LR2000 attribute sources), the data collector will utilize the REV_STAGE attribute to describe the current state of the disturbance feature and its attribution. Here is the current outline of the REV_STAGE attribute and a guide to its use:

contacts and they determine that the feature does not belong in this dataset.

The reviewer can either determine which dataset/theme the feature belongs in and transfer the feature, or the reviewer can delete the feature (at the discretion of the reviewer).

- Reviewed, Needs Spatial Adjustment
This is the REV_STAGE value when a feature has been reviewed by district mineral contacts and they determine that the geometry of a feature needs to be adjusted but the attributes are determined to be correct and complete. The reviewer can adjust the geometry of the feature at their discretion.
- Reviewed, Confirmed No Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required)
This is the REV_STAGE value when a feature has been reviewed by district mineral contacts and they determine that the geometry of a feature is correct; it is confirmed that there is no source feature associated with a case and the LR2000 attributes will remain null. If an appropriate LR2000 case is found, the reviewer will attribute the feature (and indicate a more appropriate REV_STAGE value). If an appropriate LR2000 case is found, the reviewer will initiate steps to adjust LR2000 legal descriptions for the source case to correctly indicate case extent.
- Reviewed, Confirmed Overlapping Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required)
This is the REV_STAGE value when a feature has been reviewed by district mineral contacts and they determine that the geometry of a feature is correct; it is confirmed that there are multiple source features associated with a case and the LR2000 attributes will remain null. If the associated LR2000 case can be confirmed, the reviewer will attribute the feature (and indicate a more appropriate REV_STAGE value). The reviewer will initiate steps to adjust LR2000 legal descriptions for the source case to correctly indicate case extent (if applicable).
- Reviewed, Confirmed No Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required); Needs Spatial Adjustment
This is the REV_STAGE value when a feature has been reviewed by district mineral contacts and they determine that the geometry of a feature is incorrect; it is confirmed that there is no source feature that is associated with a case and the LR2000 attributes will remain null. The reviewer can adjust the geometry of the feature at their discretion (and indicate a more appropriate REV_STAGE value). If an appropriate LR2000 case is found, the reviewer will attribute the feature (and indicate a more appropriate REV_STAGE value). If an appropriate LR2000 case is found, the reviewer will initiate steps to adjust LR2000 legal descriptions for the source case to correctly indicate case extent.
- Reviewed, Confirmed Overlapping Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required); Needs Spatial Adjustment
This is the REV_STAGE value when a feature has been reviewed by district mineral contacts and they determine that the geometry of a feature is incorrect; it is confirmed that there are multiple source features that are associated with a case and the LR2000 attributes will remain null. The reviewer can adjust the geometry of the feature at their discretion (and indicate a more appropriate REV_STAGE value). If the associated LR2000 case can be confirmed, the reviewer will attribute the feature (and indicate a more appropriate REV_STAGE value). The reviewer will initiate steps to adjust LR2000 legal descriptions for the source case to correctly indicate case extent (if applicable).

Upon reclamation of sites (according to 43 C.F.R. § 3809.5 (2015) standards), features will have the

CASE_DISP and CLOSED_DATE updated and removed from the dataset at the end of the year after the Archive is made.

3.3 UPDATE FREQUENCY AND ARCHIVAL PROTOCOLS

Data is updated as needed, but at least annually, by the data steward, the lead GIS specialist, the district GIS staff and the district mineral staff. Data is archived annually at the end of the calendar year.

After initial input, the MIN_ACTY data set is relatively dynamic, with occasional additions to the dataset. Attributes will change when the LR2000 case information is updated/corrected. There are three instances that require immediate evaluation of the associated MIN_ACTY features:

- A site visit, new imagery or the LR2000 acreage value for a feature in the MIN_ACTY theme is changed;
- LR2000 indicates that reclamation has been completed in a case;
- Features are found in violation of topology rules (feature must not overlap).

Common changes to the dataset may include small boundary line adjustments resulting from better digital data or attribute corrections based on improvements to the LR2000 record or insight provided by district mineral staff. MIN_ACTY is maintained in the corporate SDE database.

It is the responsibility of the data steward to ensure that any database external to the GIS remains current. The lead GIS specialist will approve update processes and provide assistance and oversight. At this time, there are multiple digital databases associated with MIN_ACTY (INR, DOGAMI). This responsibility extends to paper records. Reports or tables containing MIN_ACTY PLSS (Public Land Survey System) locations must be checked against the GIS location and, ideally, should correlate.

3.4 STATEWIDE MONITORING

The State data steward, assisted by the lead GIS specialist, is responsible for checking consistency and completeness across districts for the theme(s). The state data steward, in conjunction with the lead GIS specialist and district data stewards, should review the MIN_ACTY theme across the state at least once per year. During this review, the data stewards and the lead GIS specialist should review:

- New cases and case changes (closures, new sales, etc.)
- Feature attributes for completeness, accuracy and conflict
- Feature location for planning and purpose conflicts
- Feature location in relation to existing leases and claims
- Outstanding features requiring further review and research

The data stewards are responsible for checking consistency across districts for the theme(s) that are relevant to their programs. The state data steward and the state data administrator are responsible for coordinating the response to national BLM and interagency data calls for mineral activities data. State and district office GIS specialists will work with the state data steward to appropriately select and compile the data from the relevant MIN_ACTY theme.

4. MIN_ACTY SCHEMA (simplified)

General Information: Attributes are listed in the order they appear in the geodatabase feature class. The order is an indication of the importance of the attribute for theme definition and use.

There are no aliases unless specifically noted. The domains used in this data standard can be found in Appendix A. These are the domains at the time the data standard was approved. Domains can be changed without a re-issue of the data standard. Current domains are found on the internal OR/WA SharePoint data management page. Some of the domains used in this data standard are also available at the following web site:

[Data Management Data Standards](#)

For domains not listed at that site contact:

Eric Hiebenthal
Acting State Data Administrator
Bureau of Land Management
P.O. Box 2965
Portland, OR 97208
503-808-6565

4.1 MIN_ACTY Feature Dataset

4.1.1 MIN_ACTY_POLY Feature Class (Mineral Activities Polygons)

| Attribute Name | Data | Length | Default | Required? | Domain |
|----------------|---------|--------|--------------|-----------|----------------|
| MIN_ACTY_ID | Integer | Long | | Yes | |
| CASEFILE | String | 15 | | No | |
| CASE_DISP | String | 3 | | No | dom_CASE_DISP |
| CASETP | Integer | Long | | No | |
| MIN_ACTY_NM | String | 20 | | No | |
| RGT HOLDER_NM | String | 50 | | No | |
| ESTABLISHED_DT | String | 8 | | No | |
| OPERATIONAL_DT | String | 8 | | No | |
| CLOSED_DT | String | 8 | | No | |
| COMMODITY | String | 20 | | No | dom_COMMODITY |
| WORK_TP | String | 3 | | No | dom_WORK_TP |
| REV_STAGE | String | 2 | | Yes | dom_REV_STAGE |
| ACCURACY_FT | Integer | Short | | Yes | |
| COORD_SRC | String | 7 | | Yes | dom_COORD_SRC |
| SOURCE_VINTAGE | String | 8 | | Yes | |
| BLM_ORG_CD | String | 5 | OR000 | Yes | dom_BLM_ORG_CD |
| GIS_ACRES | Double | 8 | | Yes* | |
| VERSION_NAME | String | 50 | Initial Load | Yes* | |

*Automatically Populated

5. PROJECTION AND SPATIAL EXTENT

All feature classes and feature datasets are in Geographic, North American Datum 83. Units are decimal degrees. Potential spatial extent (potential area of coverage) includes all lands managed by the OR/WA BLM, bordered on the North by Latitude 49.5, on the South by Latitude 41.5, on the East by Longitude -116 and on the West by Longitude -125. (See metadata for this data set for more precise description of the extent.) In order to maintain consistent acres reporting, MIN_ACTY Polygons should be projected into Universal Transverse Mercator (UTM) unless otherwise stated* in the appropriate zone for acres (or

miles) calculations.

*Specific district protocols:

Prineville District: NAD1983 R6 Albers is used for acreage calculations.

Coos Bay, Lakeview, Medford, Northwest Oregon, Roseburg, Districts: NAD 1983 UTM Zone 10N.

Burns, Spokane, Vale Districts: NAD 1983 UTM Zone 11N.

6. SPATIAL ENTITY CHARACTERISTICS

MIN_ACTY_POLY

Description: Instance of Activities, Facilities, Existing Facilities.

Geometry: Polygon; scattered small areas with potential for holes and islands; the features will not stack or overlap.

Topology: Features must not overlap.

Data Reviewer Checks: SQL Checks CASEFILE IS NULL AND (REV_STAGE = '1' OR REV_STAGE = '4' OR REV_STAGE = '6') (ERROR). SQL Checks CASEFILE IS NOT NULL AND (REV_STAGE = '2' OR REV_STAGE = '3' OR REV_STAGE = '5' OR REV_STAGE = '7' OR REV_STAGE = '8' OR REV_STAGE = '9' OR REV_STAGE = '10').

Integration Requirements: None.

7. ATTRIBUTE CHARACTERISTICS AND DEFINITION (In alphabetical order)

7.1 ACCURACY_FT

| | |
|-----------------------|---|
| Geodatabase Name | ACCURACY_FT |
| BLM Structured Name | Accuracy_Feet_Measure |
| Inheritance | Inherited from Activities |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | <p>How close, in feet, the spatial GIS depiction is in relation to the actual location on the ground. There are several factors to consider in GIS error: scale and accuracy of map-based sources, accuracy of GPS equipment, and the skill level of the data manipulators. A value of “0” indicates no entry was made. This is the correct value when the COORD_SRC is another GIS theme (CADNSDI, DEM, and SOURCEC) because the accuracy is determined by that theme. However, if COORD_SRC is MAP (digitized from a paper map), DRG, DOQ, DIS or GPS, a value of “0” indicates a missing value that should be filled in either with a non-zero number or “-1.” A value of “-1” indicates the accuracy is unknown and no reliable estimate can be made. Use a large number to flag uncertain coordinates.</p> <p>Examples: 3 (for high accuracy GPS), 40 (best possible for USGS 24K topo map), 200</p> |
| Required/Optional | Required |
| Domain (Valid Values) | No domain |
| Data Type | Short Integer |

7.2 BLM_ORG_CD

| | |
|---------------------|--|
| Geodatabase Name | BLM_ORG_CD |
| BLM Structured Name | Administrative_Unit_Organization_Code |
| Inheritance | Inherited from ODF |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | <p>A combination of the BLM administrative state and field office which has administrative responsibility for the spatial entity. This includes which office covers the entity for planning purposes and which office is the lead for GIS edits. Another agency or individual may have the physical management responsibility for the on-the-ground entity. This field applies particularly when a spatial entity crosses resource area or district boundaries and the administrative responsibility is assigned to one or the other rather than splitting the spatial unit. Similarly, OR/WA BLM may have administrative responsibility over some area that is physically located in Nevada, Idaho, and California and vice versa. When appropriate, the office can be identified only to the district or state level rather than to the resource area level.</p> |
| Required/Optional | Required |

| | |
|-----------------------|--|
| Domain (Valid Values) | dom_BLM_ORG_CD Domain is a subset of the BLM national domain for organization codes. Only positions three through seven of the national code are used (leading LL and trailing zeros are dropped). |
| Data Type | Variable Characters (5) |

7.3 CASE_DISP

| | |
|-----------------------|--|
| Geodatabase Name | CASE_DISP |
| BLM Structured Name | LR2000_Case_Disposition_Code |
| Inheritance | Inherited from Entity Activities |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | This is the current case disposition as stated in the LR2000 Serial Register Page. All LR2000 case dispositions: VOID, PENDING, REJECTED, WITHDRAWN, AUTHORIZED, CANCELED, EXPIRED, RELINQUISHED, CLOSED |
| Required/Optional | Optional |
| Domain (Valid Values) | dom_CASE_DISP |
| Data Type | Long Integer (6) |

7.4 CASEFILE

| | |
|---------------------|--|
| Geodatabase Name | CASEFILE |
| BLM Structured Name | Casefile_Number |
| Inheritance | Inherited from Entity Activities |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | <p>Case number assigned by the LR2000 database (“serial number full”) when an action is begun (either by BLM action or due to receipt of an application). Include suffix (a unique identifier of cases resulting from the division of an original case into multiple, separate, and unique cases). For features with no BLM action, enter “NON_BLM.” This number must match exactly with the serial numbers in LR2000, including any spacing in the number (see the examples below; note that spacing may be variable).</p> <p>Examples: “OROR 65814”, “OROR 6818PT”, “OROR 61083FD”, “OROR 6173P1”, “ORORE 00014635”</p> <p>Within this data standard there is a check to verify that the REV_STAGE attribute reflects what should be present in the casefile attribute (for the actual SQL syntax, see section 6).</p> <p>When the CASEFILE attribute is NOT NULL, the acceptable REV_STAGE fields are:</p> <p><i>1 – Not Reviewed</i></p> <p><i>4 – Reviewed, Verified</i></p> |

| | |
|-----------------------|--|
| | <p>6 – Reviewed, Needs Spatial Adjustment</p> <p>When the CASEFILE attribute is NULL, the acceptable REV_STAGE fields are:</p> <p>2 – Not Reviewed; Attribute Source Polygon Discrepancy (Overlapping Attribute Source Features)</p> <p>3 – Not Reviewed; Attribute Source Polygon Discrepancy (No Attribute Source Features)</p> <p>5 – Reviewe; Not Mineral Disturbance (Remove Feature)</p> <p>7 – Reviewed; Confirmed No Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required)</p> <p>8 – Reviewed; Confirmed Overlapping Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required)</p> <p>9 – Reviewed; Confirmed No Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required); Needs Spatial Adjustment</p> <p>10 – Reviewed; Confirmed Overlapping Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required); Needs Spatial Adjustment</p> |
| Required/Optional | Optional |
| Domain (Valid Values) | No domain |
| Data Type | Variable Characters (15) |

7.5 CASETP

| | |
|-----------------------|--|
| Geodatabase Name | CASETP |
| BLM Structured Name | BLM_LR2000_Designated_Case_Type_Code |
| Inheritance | Inherited from Entity Activities |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | This attribute value is the LR2000 Case Type. For a complete list of Case types go to: https://www.blm.gov/lr2000/codes/CodeCasetype_code.pdf |
| Required/Optional | Optional |
| Domain (Valid Values) | No Domain |
| Data Type | Long Integer (6) |

7.6 COMMODITY

| | |
|---------------------|---|
| Geodatabase Name | COMMODITY |
| BLM Structured Name | Mineral_Activities_Commodity_Code |
| Inheritance | Inherited from EXISTING or PROPOSED ENCUMBRANCE |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | This is the mineral or commodity code (defined by LR2000) for the type of mineral commodity exposed during mining activities. Only minerals found in OR/WA are included in the domain. Locatable Mineral claims are not |

| | |
|-----------------------|---|
| | required to report what commodity is being extracted. Therefore, this value will likely be UNDETERMINED for some cases. For a complete list of Commodity Codes go to: https://www.blm.gov/lr2000/codes/CodeCasetype_code.pdf |
| Required/Optional | Optional |
| Domain (Valid Values) | dom_COMMODITY |
| Data Type | Variable Characters (4) |

7.7 CLOSED_DT

| | |
|-----------------------|--|
| Geodatabase Name | CLOSED_DT |
| BLM Structured Name | Case_Closed_Date |
| Inheritance | Not Inherited |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | This is the closed date for the case. This attribute is meant to represent when mineral activities and ground disturbances ceased in an area and reclamation was completed. This may be represented in the LR2000 case file as the closed date or the date under which Approved Reclamation was Completed. Associated LR2000 Action Codes: 043 – Suspension Order (with a non-temporary action remark) 044 – Cessation Order (with a non-temporary action remark) 475 – Operations Abandoned 541 – Reclamation Notice 529 – Acres Reclaimed 970 – Case Closed |
| Required/Optional | Optional |
| Domain (Valid Values) | No Domain |
| Data Type | Variable Characters (8) |

7.8 COORD_SRC

| | |
|-----------------------|---|
| Geodatabase Name | COORD_SRC |
| BLM Structured Name | Coordinate_Source_Code |
| Inheritance | Inherited from Entity Activities |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | The actual source of the GIS coordinates for the polylines. If the line is copied from another theme and already has COORD_SRC, it should be reviewed and may need to be changed for use in this dataset. |
| Required/Optional | Required |
| Domain (Valid Values) | dom_COORD_SRC |

| | |
|-----------|-------------------------|
| Data Type | Variable Characters (7) |
|-----------|-------------------------|

7.9 ESTABLISHED_DT

| | |
|-----------------------|---|
| Geodatabase Name | ESTABLISHED_DT |
| BLM Structured Name | Case_Record_Established_Date |
| Inheritance | Not Inherited |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | This attribute represents the date the case associated with the feature was first recognized by the BLM. This attribute should correlate with either the License Issued date, Date Approved, or Case Established date in the LR2000 record. |
| Required/Optional | Optional |
| Domain (Valid Values) | No Domain |
| Data Type | Variable Characters (8) |

7.10 GIS_ACRES

| Geodatabase Name | GIS_ACRES | | | | | | | | |
|--|---|-----------------------------------|-----------------------|------------|-------------------------|--|-----------------------|----------------------|-----------------------|
| BLM Structured Name | GIS_Acres_Measure | | | | | | | | |
| Inheritance | Inherited from Entity Oregon Data Framework | | | | | | | | |
| Feature Class Use | MIN_ACTY_POLY | | | | | | | | |
| Definition | <p>GIS_ACRES is calculated when the submitted polygon is approved for incorporation into the dataset. The standard spatial reference of Geographic (NAD 1983) cannot be used for calculating acres so the features are projected to one of three projections as determined by the BLM_ORG_CD of the record. These three projections all utilize linear units of meters, so the ESRI Geodatabase-controlled field SHAPE.AREA can be used to convert to acres with the factor based on the U.S. Survey Foot:</p> $\text{GIS_ACRES} = \text{SHAPE.AREA} * 0.0002471044$ <table border="1" data-bbox="516 1440 1482 1667"> <thead> <tr> <th>District indicated by BLM_ORG_CD:</th> <th>ESRI Projection used:</th> </tr> </thead> <tbody> <tr> <td>Prineville</td> <td>NAD 1983 USFS R6 Albers</td> </tr> <tr> <td>Coos Bay, Eugene, Lakeview, Medford, Roseburg, Salem</td> <td>NAD 1983 UTM Zone 10N</td> </tr> <tr> <td>Burns, Spokane, Vale</td> <td>NAD 1983 UTM Zone 11N</td> </tr> </tbody> </table> | District indicated by BLM_ORG_CD: | ESRI Projection used: | Prineville | NAD 1983 USFS R6 Albers | Coos Bay, Eugene, Lakeview, Medford, Roseburg, Salem | NAD 1983 UTM Zone 10N | Burns, Spokane, Vale | NAD 1983 UTM Zone 11N |
| District indicated by BLM_ORG_CD: | ESRI Projection used: | | | | | | | | |
| Prineville | NAD 1983 USFS R6 Albers | | | | | | | | |
| Coos Bay, Eugene, Lakeview, Medford, Roseburg, Salem | NAD 1983 UTM Zone 10N | | | | | | | | |
| Burns, Spokane, Vale | NAD 1983 UTM Zone 11N | | | | | | | | |
| Required/Optional | Required (automatically generated) | | | | | | | | |
| Domain (Valid Values) | No domain | | | | | | | | |
| Data Type | Decimal (16,6) | | | | | | | | |

7.11 MIN_ACTY_ID

| | |
|-----------------------|---|
| Geodatabase Name | MIN_ACTY_ID |
| BLM Structured Name | Mineral_Activities_Identifier |
| Inheritance | Not Inherited |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | <p>Unique number identifier for the Mineral Activities entity. May be used to link to a table with additional or detailed information associated with these Mineral Activities, if needed.</p> <p>Fill empty MIN_ACTY_ID using the “Unique ID Generator” tool and check for duplicate IDs with the “Unique ID QA/QC” tool. See UniqueIDGenerator_UserGuide.docx under the "arctools" SharePoint site.</p> |
| Required/Optional | Required |
| Domain (Valid Values) | No domain |
| Data Type | Long Integer |

7.12 OPERATIONAL_DT

| | |
|-----------------------|--|
| Geodatabase Name | OPERATIONAL_DT |
| BLM Structured Name | Mineral_Operations_Start_Date |
| Inheritance | Not Inherited |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | <p>This is the date recorded that may give the best indication that ground disturbance has begun on a particular property. This may be the “Plan of Operation Authorized”, Notice Concurred, or “Sale” date in LR2000. This may also be reflected in the APD or the GDP. For community pits or material sites, use the Established Pit date. If more than one of these dates are present in the LR2000 record, use the earliest date of those found.</p> <p>Associated LR2000 Action Codes:</p> <p>405 – Notice of Intent/Disturb 422 – Plan Oper/Expl/Dev Appv 528 – Acres Disturbed 539 – Produced Value 891 – Beginning Date 915 – Operations Authorized</p> |
| Required/Optional | Optional |
| Domain (Valid Values) | No Domain |
| Data Type | Variable Characters (10) |

7.13 MIN_ACTY_NM

| | |
|------------------|-------------|
| Geodatabase Name | MIN_ACTY_NM |
|------------------|-------------|

| | |
|-----------------------|---|
| BLM Structured Name | Mine_Property_Name |
| Inheritance | Not Inherited |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | This is the name, as stated on lease & claim legal documents, of the mine. This value will be site and feature specific. Mixed case allowed. Use same case and presentation as in LR2000. |
| Required/Optional | Optional |
| Domain (Valid Values) | No Domain |
| Data Type | Variable Characters (20) |

7.14 REV_STAGE

| | |
|-----------------------|---|
| Geodatabase Name | REV_STAGE |
| BLM Structured Name | Feature_Review_Stage_Code |
| Inheritance | Not Inherited |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | This attribute is used to double-check low-confidence feature captures made by personnel tasked with finding and digitizing mineral activity disturbance areas. The intent of this flag is to be able to prioritize and batch a feature review process, designed to streamline Quality Control and Quality Assurance procedures. See Section 3.2 for a more detailed description of how to use this attribute. |
| Required/Optional | Required |
| Domain (Valid Values) | dom_REV_STAGE |
| Data Type | Variable Characters (2) |

7.15 RGT HOLDER_NM

| | |
|-----------------------|---|
| Geodatabase Name | RGT HOLDER_NM |
| BLM Structured Name | Entity_Holding_Mining_Rights_Name |
| Inheritance | Not Inherited |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | This is the company, individual, or other entity that holds the current mining rights to which the mineral activities are associated. If the current rights holder cannot be confirmed at the time of data entry, the rights holder listed on the legal document should be listed. Mixed case allowed. Use same case and presentation as in LR2000. |
| Required/Optional | Optional |
| Domain (Valid Values) | No Domain |
| Data Type | Variable Characters (50) |

7.16 SOURCE_VINTAGE

| | |
|-----------------------|--|
| Geodatabase Name | SOURCE_VINTAGE |
| BLM Structured Name | COORDINATE_SOURCE_VINTAGE_Date |
| Inheritance | Not Inherited |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | Date the GIS coordinate source was collected. In the case of using imagery SOURCE_VINTAGE, it is the date the image was collected. In case the coordinate source is another GIS theme, use the publication date of the theme. Use exact date, if known. Use YYYYMMDD or YYYYMM (if only year and month is known) or YYYY format (if only year is known) or "UNKNOWN". |
| Required/Optional | Optional |
| Domain (Valid Values) | No Domain |
| Data Type | Variable Characters (8) |

7.17 VERSION_NAME

| | |
|-----------------------|--|
| Geodatabase Name | VERSION_NAME |
| BLM Structured Name | Geodatabase_Version_Text |
| Inheritance | Inherited from Entity ODF |
| Feature Class Use | MIN_ACTY_POLY |
| Definition | Name of the corporate geodatabase version previously used to edit the record. InitialLoad = feature has not been edited in ArcSDE. Format: username.XXX-mmddy-hhmmss = version name of last edit (hours might be a single digit; leading zeros are trimmed for hours only). XXX=theme abbreviation. Example: sfrazier.FIRE_POLY-121210-111034 Only appears in the transactional (edit) version. Public version (which is also the version used internally for mapping or analysis) does not contain this attribute. |
| Required/Optional | Required (automatically generated) |
| Domain (Valid Values) | No domain |
| Data Type | Variable Characters (50) |

7.18 WORK_TP

| | |
|---------------------|-------------------------------|
| Geodatabase Name | WORK_TP |
| BLM Structured Name | Type_Of_Mining_Operation_Code |
| Inheritance | Not Inherited |
| Feature Class Use | MIN_ACTY_POLY |

| | |
|-----------------------|---|
| Definition | Description of the type of mine (Underground, Open-Pit, Underground/Open-Pit, In-Situ, Placer, Surface) |
| Required/Optional | Optional |
| Domain (Valid Values) | dom_WORK_TP |
| Data Type | Variable Characters (3) |

8. LAYER FILES (PUBLICATION VIEWS)

External publication layers will only contain features that can be linked to an LR2000 record (CASEFILE IS NOT NULL). Additionally, external publication of the MIN_ACTY theme will require the removal of the RGT HOLDER_NM and VERSION_NAME attributes and will be divided into two published layers: one containing the features associated with active cases (CASE_DISP = 'AUTHORIZED') and the other containing all of the non-active cases (CASE_DISP != 'AUTHORIZED').

There will be no changes made to the theme for internal BLM publication.

9. EDITING PROCEDURES

9.1 MANAGING OVERLAP (GENERAL GUIDANCE)

“Overlap” means there is, potentially, more than one feature in the same feature class that occupies the same space (“stacked” polygons). **Depending on the query, acres will be double-counted.**

In this discussion, an area entity may consist of more than one polygon and a line entity may consist of more than one arc. They would have multiple records in the spatial table (with identical attributes). Multi-part features are not allowed. Multi-part features are easily created inadvertently and not always easy to identify. If they are not consciously and consistently avoided, feature classes will end up with a mixture of single and multi-part features. Multi-part features can be more difficult to edit, query, and select, along with impacting overall performance. Multi-part features are not allowed in the MIN_ACTY theme.

Overlap is only allowed in the ODF, in limited and controlled scenarios, and not allowed in the MIN_ACTY theme. Topology rules: must not overlap.

9.2 EDITING QUALITY CONTROL

- Duplicate features: Checking for undesirable duplicates is critical. Polygons or arcs that are 100% duplicate are easily found by searching for identical attributes, along with identical Shape_Area and/or Shape_Length. Searching for partially overlapping arcs or polygons is harder and each case must be inspected to determine if the overlap is desired or not.
- To avoid overlapping polygons on the same area, polygons from different input themes are incorporated with the Union spatial overlay tool, not copied.
- Union, rather than Intersect, is used to prevent unintended data loss.

- Gap and overlap slivers. These can be hard to find if there are no topology rules. A temporary map topology can be created to find overlap slivers. Gap slivers can be found by constructing polygons from all arcs and checking polygons with very small areas. For the MIN_ACTY theme, features may be small so review against imagery is recommended before removing any features due to slivers.
- GPS considerations: GPS line work is often messy and should always be checked and cleaned up as necessary. Often, vertices need to be thinned (generalize), especially at line ends. Multi-part polygons are sometimes inadvertently created when GPS files with vertices too close together, crossing lines or spikes are brought into ArcGIS. Tiny, unwanted polygons are created but are “hidden” because they are in a multi-part.
- Null geometry: Check any features that have 0 or very small Shape_Area or Shape_Length. If a feature has 0 geometry and you can’t zoom to it, it is probably an inadvertently created “Null” feature and should be deleted. Very small features may also be unintended, resulting from messy line work.
- Check tolerances. In general, set Cluster Tolerance as small as possible. This is 0.000000009 Degree (0.000007 Degree is approximately 1 meter).
- Check that all date fields contain valid dates in YYYYMMDD, YYYYMM or YYYY format. If an attribute has a domain, check for invalid values. The values must be exact.
- Check for capitalization and spacing differences in attribute values that should be the same. Check for leading or trailing blanks what will make a different value, even if it looks identical.

9.3 THEME SPECIFIC GUIDANCE

There is much in the data standard that addresses editing and provides guidance, especially in the Data Management Protocols (Section 3). Specifically, details concerning the REV_STAGE attribute can be referenced in Section 3.2.

The guidelines for digitizing data capture are as follows:

- 1/6000 scale or better should be used.
- LiDAR data, or derivatives, may be utilized, when available.
- 2014 one meter NAIP or newer, if available.
 - Note: it is imperative that the most recent imagery be used as, over time, most areas of mineral disturbance increase in size.

10. OREGON/WASHINGTON DATA FRAMEWORK OVERVIEW

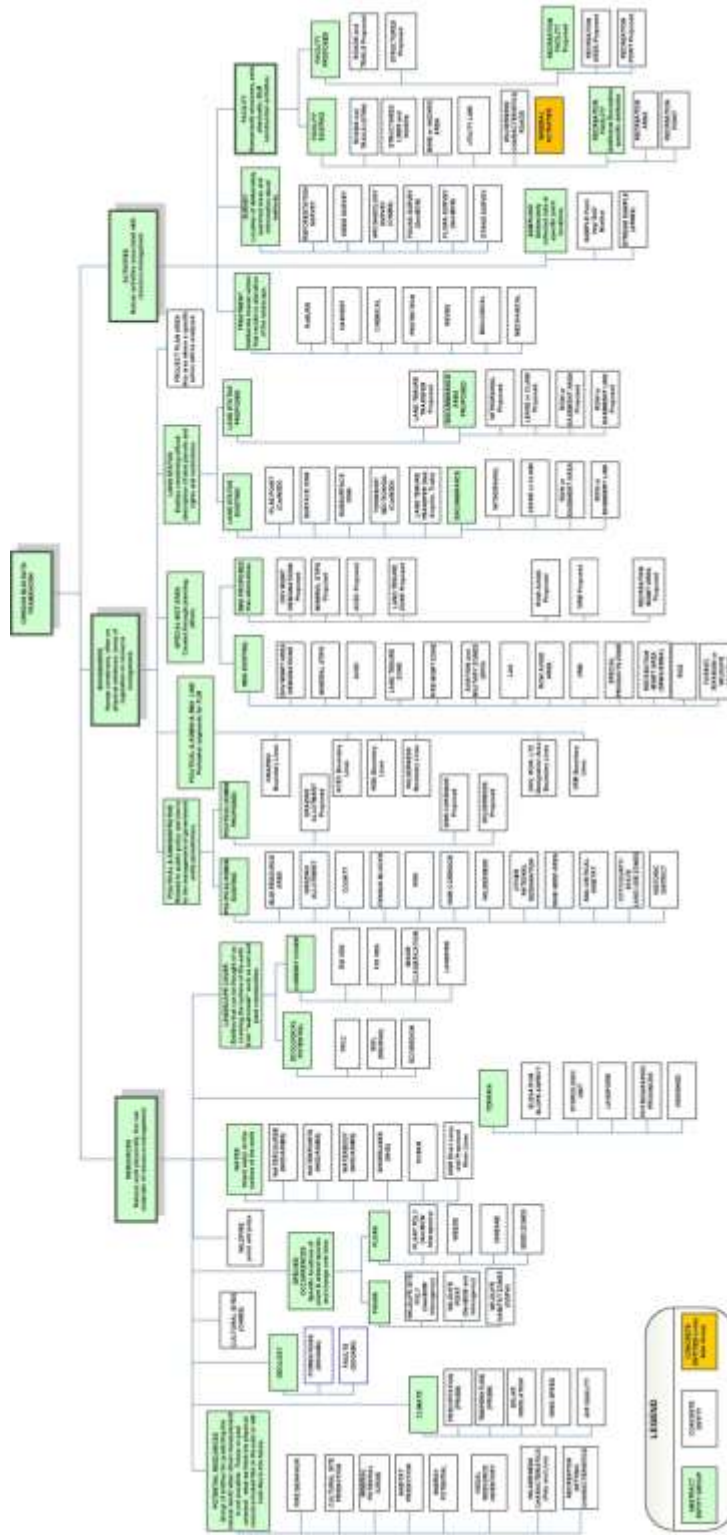


Figure 2 Oregon Data Framework Overview

11. ABBREVIATIONS AND ACRONYMS USED

(Does not include abbreviations/acronyms used as codes for particular data attributes or domain values)

| Abbreviations | Descriptions |
|---------------|--|
| AML | Abandoned Mine Lands |
| ARC | GIS line feature |
| APD | Application for Permit to Drill |
| BLM | Bureau of Land Management, U.S. Department of the Interior |
| CADNSDI | Cadastral National Spatial Data Infrastructure |
| DEM | Digital Elevation Model |
| DEQ | Department of Environmental Quality |
| DLG | Digital Line Graphs |
| DOGAMI | Oregon Department of Geology and Mineral Industries |
| FOIA | Freedom of Information Act |
| GDP | Geothermal Drilling Permit |
| GIS | Geographic Information System |
| GPS | Global Positioning System |
| GTRN | Ground Transportation GIS dataset |
| IDP | Interdisciplinary |
| INR | Institute for Natural Resources |
| LiDAR | Light Detection and Ranging |
| NAD | North American Datum |
| NAIP | National Agriculture Imagery Program |
| NARA | National Archives and Records Administration |
| NEPA | National Environmental Policy Act |
| POLY | GIS polygon feature |
| PUB | Publication |
| RMP | Resource Management Plan |
| ODF | Oregon Data Framework |
| OR/WA | Oregon/Washington BLM Administrative State |
| USFS | United States Forest Service, U.S. Department of Agriculture |
| USGS | United States Geological Survey, U.S. Department of the Interior |
| SDE | Spatial Database Engine |
| WEB | Worldwide Web (internet) |

Table 2 Abbreviations/Acronyms Used

APPENDIX A: DOMAINS (VALID VALUES)

These are the domains at the time the data standard was approved. Domains can be changed without a re-issue of the data standard. Current domains are found on the internal OR/WA SharePoint data management page. Some of the domains used in this data standard are also available at the following web site: <https://www.blm.gov/or/datamanagement/index.php>

For domains not listed at that site contact:

Eric Hiebenthal
Acting State Data Administrator
Bureau of Land Management
P.O. Box 2965
Portland, OR 97208
503-808-6565

A.1 BLM_ORG_CD

Administrative Unit Organization Code. Standard BLM Organization codes generated from the national list of organization codes. This is a subset of OR/WA administrative offices and those in other states that border OR/WA.

| | |
|-------|--|
| OR000 | OR000 - Oregon/Washington BLM |
| ORB00 | ORB00 - Burns District Office |
| ORB05 | ORB05 - Three Rivers Field Office |
| ORB06 | ORB06 - Andrews Field Office |
| ORC00 | ORC00 - Coos Bay District Office |
| ORC03 | ORC03 - Umpqua Field Office |
| ORC04 | ORC04 - Myrtlewood Field Office |
| ORL00 | ORL00 - Lakeview District Office |
| ORL04 | ORL04 - Klamath Falls Field Office |
| ORL05 | ORL05 - Lakeview Field Office |
| ORM00 | ORM00 - Medford District Office |
| ORM05 | ORM05 - Butte Falls Field Office |
| ORM06 | ORM06 - Ashland Field Office |
| ORM07 | ORM07 - Grants Pass Field Office |
| ORN00 | ORN00 - Northwest Oregon District Office |
| ORN01 | ORN01 - Cascades Field Office |
| ORN02 | ORN02 - Marys Peak Field Office |
| ORN03 | ORN03 - Siuslaw Field Office |
| ORN04 | ORN04 - Tillamook Field Office |
| ORN05 | ORN05 - Upper Willamette Field Office |
| ORP00 | ORP00 - Prineville District Office |
| ORP04 | ORP04 - Central Oregon Field Office |
| ORP06 | ORP06 - Deschutes Field Office |

| | |
|-------|--|
| ORR00 | ORR00 - Roseburg District Office |
| ORR04 | ORR04 - Swiftwater Field Office |
| ORR05 | ORR05 - South River Field Office |
| ORV00 | ORV00 - Vale District Office |
| ORV04 | ORV04 - Malheur Field Office |
| ORV05 | ORV05 - Baker Field Office |
| ORV06 | ORV06 - Jordan Field Office |
| ORW00 | ORW00 - Spokane District Office |
| ORW02 | ORW02 - Wenatchee Field Office |
| ORW03 | ORW03 - Border Field Office |
| CA000 | CA000 - California BLM |
| CAN01 | CAN01 - Northern California Field Office |
| CAN02 | CAN02 - Applegate Field Office |
| CAN03 | CAN03 - Arcata Field Office |
| CAN06 | CAN06 - Redding Field Office |
| ID000 | ID000 - Idaho BLM |
| IDB00 | IDB00 - Boise District Office |
| IDB01 | IDB01 - Four Rivers Field Office |
| IDB03 | IDB03 - Owyhee Field Office |
| IDC00 | IDC00 - Coeur d'Alene District Office |
| IDC01 | IDC01 - Coeur d'Alene Field Office |
| IDC02 | IDC02 - Cottonwood Field Office |
| NV000 | NV000 - Nevada BLM |
| NVE00 | NVE00 - Elko District Office |
| NVE02 | NVE02 - Tuscarora Field Office |
| NVW00 | NVW00 - Winnemucca District Office |
| NVW01 | NVW01 - Humboldt River Field Office |

A.2 COORD_SRC

Coordinate Source Code. The source of the geographic coordinates (lines, points, polygons).

| | |
|---------|--|
| CADNSDI | CADNSDI – Lines from or snapped to the CADNSDI dataset |
| CFF | CFF – Lines duplicated or buffered from Cartographic Feature Files |
| DEM | DEM – Digital Elevation Model (30m or better accuracy) used for creation of contours |
| DLG | DLG – Lines duplicated or buffered from (24K scale accuracy) USGS Digital Line Graphs Typical Accuracies (40 feet) |
| DIS | DIS – Lines generated to connect discontinuous features |
| DOQ | DOQ – Screen digitized line work over Digital Orthoquad backdrop |
| DRG | DRG – Screen digitized line work over Digital Raster Graphic (USGS) backdrop |
| GCD | GCD – Lines snapped to Geographic Coordinate Database Points |
| GPS | GPS – Coordinates obtained from a Global Positioning System device |
| IMG | IMG – Coordinates derived from interpretation of non-photographic imagery |

| | |
|---------|--|
| MAP | MAP – Digitized coordinates from hardcopy map or onto a map backdrop |
| MTP | MTP – Lines duplicated from Digital Master Title Plat |
| SOURCEL | SOURCEL – Coordinates duplicated from a BLM GIS source layer |
| SRV | SRV – Survey methods were used to create the line work |
| TIGER | TIGER – Tiger data |
| TRS | TRS – Coordinates only given as a legal description (township, range, section) |
| UNK | UNK – Unknown coordinate source |
| WOD | WOD – WODDB (Western Oregon Digital Database) Photogrammetric |

A.3 REV_STAGE

Feature review stage. Current state of Quality Control and Quality Assurance procedures.

| | |
|----|--|
| 1 | 1 – Not Reviewed |
| 2 | 2 – Not Reviewed, Attribute Source Polygon Discrepancy (Overlapping Attribute Source Features) |
| 3 | 3 – Not Reviewed, Attribute Source Polygon Discrepancy (No Attribute Source Features) |
| 4 | 4 – Reviewed, Verified |
| 5 | 5 – Reviewed, Not Mineral Disturbance (Remove Feature) |
| 6 | 6 – Reviewed, Needs Spatial Adjustment |
| 7 | 7 – Reviewed, Confirmed No Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required) |
| 8 | 8 – Reviewed, Confirmed Overlapping Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required) |
| 9 | 9 – Reviewed, Confirmed No Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required); Needs Spatial Adjustment |
| 10 | 10 – Reviewed, Confirmed Overlapping Attribute Source Polygons (LR2000 Attributes Remain Null, Further Case Research Required); Needs Spatial Adjustment |

A.4 WORK_TP

Work Type. Type of mining operation.

| | |
|----|---------------------------|
| IS | IS – In-Situ |
| OP | OP – Open-Pit |
| PL | PL – Placer |
| S | S - Surface |
| UN | UN - Underground |
| UP | UP – Underground/Open-Pit |

A.5 COMMODITY

Commodity Exposed. The type of mineral commodity exposed during mining activities. Only minerals found in OR/WA are included in the domain. For a complete list of Commodity Codes go to: <https://www.blm.gov/or/datamanagement/index.php>

| | |
|-----|--------------------------------|
| 12 | 12 - ALUMINUM, CLAY |
| 43 | 43 - ASPHALTIC MINERALS |
| 50 | 50 - BARIUM |
| 51 | 51 - BARIUM, BARITE |
| 91 | 91 - CALCIUM, LIMESTONE |
| 121 | 121 - CHROMITE |
| 135 | 135 - CLAY, BENTONITE |
| 137 | 137 - CLAY, COMMON |
| 140 | 140 - COAL |
| 170 | 170 - COPPER |
| 171 | 171 - COPPER, SULFIDES |
| 186 | 186 - ABRASIVE, FELDSPAR |
| 255 | 255 - GEMSTONE, SEMIPREC SIL |
| 256 | 256 - GEMSTONE, SEMIPREC OTH |
| 257 | 257 - GEMSTONE, NON-PRECIOUS |
| 260 | 260 - GOLD |
| 261 | 261 - GOLD, LODE |
| 262 | 262 - GOLD, PLACER |
| 271 | 271 - GRAPHITE, AMORP-CRYST |
| 340 | 340 - LEAD |
| 350 | 350 - LITHIUM |
| 353 | 353 - LIMESTONE |
| 380 | 380 - MERCURY |
| 410 | 410 - NATURAL GAS |
| 420 | 420 - NICKEL |
| 440 | 440 - PERLITE |
| 459 | 459 - OIL & GAS |
| 470 | 470 - PLATINUM GROUP |
| 471 | 471 - PLATINUM |
| 483 | 483 - POTASH, POTASSIUM NIT |
| 491 | 491 - PUMICE, PUMICITE |
| 492 | 492 - PUMICE, VOLCANIC ASH |
| 493 | 493 - PUMICE, VOLCANIC CINDER |
| 495 | 495 - PUMICE, SCORIA |
| 496 | 496 - OBSIDIAN |
| 497 | 497 - RHYOLITE |
| 500 | 500 - QUARTZ, CRYSTAL |
| 521 | 521 - SAND AND GRAVEL, SAND |
| 522 | 522 - SAND AND GRAVEL, SHALE |
| 523 | 523 - SAND AND GRAVEL, GRAVEL |
| 524 | 524 - SAND AND GRAVEL, CLINKER |
| 525 | 525 - SAND AND GRAVEL, S&G |
| 526 | 526 - SHALE |
| 531 | 531 - SILICON, QUARTZ |

| | |
|-----|--------------------------------|
| 532 | 532 - SILICON, QUARTZITE |
| 540 | 540 - SILVER |
| 550 | 550 - SODIUM |
| 561 | 561 - STONE, DIMENSION |
| 562 | 562 - STONE, CRUSHED & BROKEN |
| 563 | 563 - STONE, RIPRAP |
| 564 | 564 - STONE, WEATHERED GRANITE |
| 565 | 565 - STONE, SPECIALTY |
| 566 | 566 - STONE, TUFA |
| 650 | 650 - URANIUM, (U308 CONTENT) |
| 690 | 690 - ZEOLITES |
| 693 | 693 - ZEOLITES, CLINOPTILOLITE |
| 701 | 701 - ZINC, SULFIDES |
| 770 | 770 - GEOTHERMAL |
| 772 | 772 - GEOTHERMAL, WATER |
| 800 | 800 - TWO OR MORE MINERALS |
| 848 | 848 - GEMSTONE, SEMIPRECIOUS |
| 878 | 878 - PUBLIC PURPOSES |
| 879 | 879 - RECREATION PURPOSES |
| 885 | 885 - OTHER |
| 891 | 891 - SOIL/OTHER, FILL |
| 892 | 892 - SOIL/OTHER, TOPSOIL |
| 894 | 894 - SOIL/OTHER, DIATOMITE |
| 899 | 899 - ALL MATERIAL RESOURCE |
| UN | UN-UNKNOWN |

A.6 CASE_DISP

Current LR2000 Case Disposition. The current case disposition, as stated in the LR2000 Serial Register Page. See LR 2000 for complete definition of codes.

| | |
|---|-----------------------|
| 1 | 1 – Void (CR) |
| 2 | 2 – Pending (CR) |
| 3 | 3 – Rejected (CR) |
| 4 | 4 – Withdrawn (CR) |
| 5 | 5 – Authorized (CR) |
| 6 | 6 – Canceled (CR) |
| 7 | 7 – Expired (CR) |
| 8 | 8 – Relinquished (CR) |
| 9 | 9 – Closed (CR) |
| A | A – Active (MC) |
| C | C – Closed (MC) |
| P | P – Pending (MC) |
| V | V – Void (MC) |