



OFFICE OF ENERGY PROJECTS

DIVISION OF HYDROPOWER ADMINISTRATION & COMPLIANCE

MANAGING HYDROPOWER PROJECT EXHIBITS

April 22, 2004

INTRODUCTION

In the hydropower project approval process, the project owner (licensee/exemptee) is required to submit drawings showing all project features, project boundaries, and all plans related to the development of the project (e.g. recreational plans). The drawing sheets are considered exhibits and each is individually referred to as an exhibit drawing. The drawings are submitted to the Commission for review, and once approved; each sheet of the drawings is assigned an exhibit number and sequential drawing number.

The Office of Energy Projects (OEP) assigns and tracks exhibit drawings for proposed, licensed, and exempted hydropower projects. Along with the authorizing document (Preliminary Permit, License, or Exemption), exhibit drawings are the primary source of information about a hydropower project. Once a project is authorized, exhibit drawings are transferred to aperture card format and filed with the Commission for long term storage. Exhibit drawings are not generally stored in aperture card format for proposed projects; however, the drawings themselves are necessary in order to track the boundary of a project for land withdrawal from public use. The OEP coordinates with the U.S. Department of Interior's Bureau of Land Management (BLM) for proposed projects on federal lands.

Aperture cards refer to microfilm copies of drawings in a specific "hard copy" format shown in the figure below. The Commission intends to phase-in the replacement of this format with electronic aperture cards; which are included in this discussion.

EXHIBIT DRAWINGS AND APERTURE CARDS

Exhibit drawings for every hydropower project are kept on file at the Commission. There are three basic categories of exhibit drawing information the Commission requires for hydropower projects:

- project works,
- project boundaries, and
- recreational facilities

In general, maps and drawings are identified as Exhibit F, Exhibit G, or Exhibit R and contain critical energy infrastructure information (CEII), as defined under the Commission's regulations at 18 CFR §388.113(c). All information on the drawings must be clearly legible and conform to the standards and specifications under the regulations at 18 CFR §4.39; which describes:

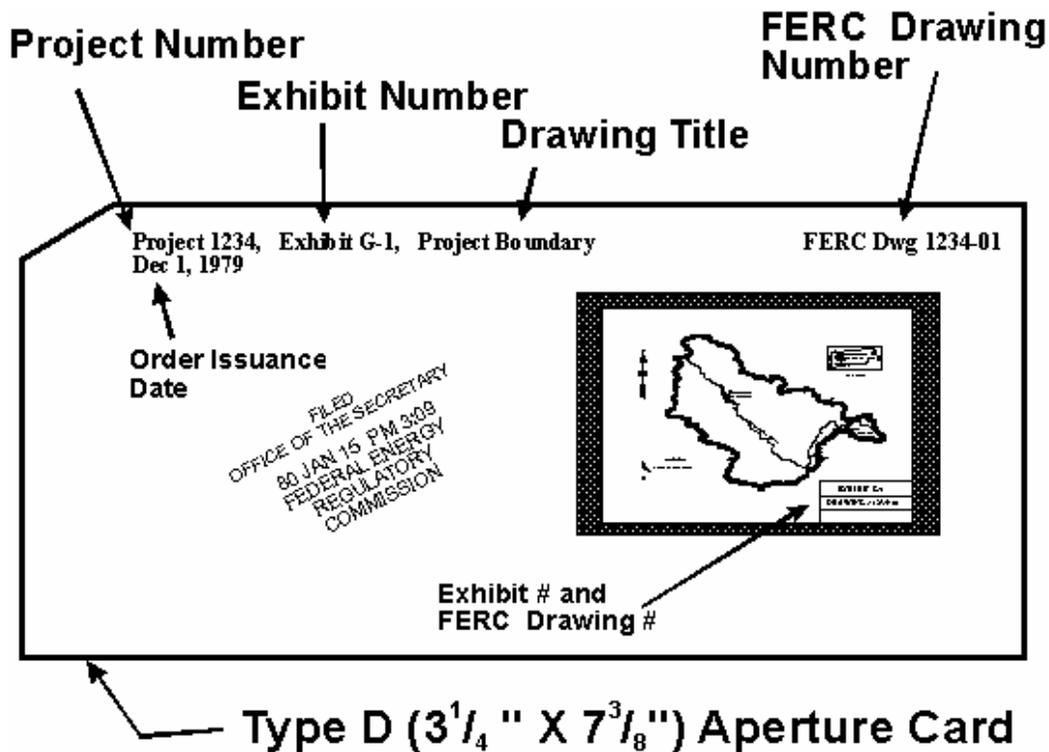
- Drawing size and scale and map features,
- Aperture card specifications,
- Drawings must be stamped by a registered land surveyor,
- Drawings should be identified as CEII material,
- Electronic filings

In addition, maps and drawings that contain project boundary information must conform to the standards and specifications under the regulations at 18 CFR §4.41; which describes:

- All projects must have a boundary and exhibits identify principal features,
- Projects on Federal lands must be identified,
- Project boundary standards identified,
- Project boundary is required in a georeferenced electronic format

Aperture Card Specifications (Microfilm)

Exhibit drawings are converted to aperture card format because they provide a durable medium for storing information about a hydropower project's features and boundaries. For each exhibit drawing there should be a corresponding aperture card. The microfilm copies must contain an image of the approved exhibit drawing. Each aperture card must contain the exhibit drawing mounted on silver or gelatin 35mm microfilm mounted on Type D (3 1/4" X 7 3/8") aperture cards. When an exhibit drawing needs to be reviewed, the microfilmed image can be easily viewed on a screen or enlarged and printed on paper to a working size. Typical information contained on the sample aperture card is shown below:



In transferring the exhibit drawing information to an aperture card, the card must be labeled with specific information, such as project number and drawing number, date of approval, etc. to allow for ease in filing and retrieval at a later date.

Electronic Card Specifications (Raster Data)

Electronic versions of the Exhibit drawings should be filed in CD-ROM format with the Commission. The CD should be labeled “**Project Maps and Drawings**” and identified as **(CEII) material under 18 CFR §388.113(c)**. Each exhibit drawing must be contained in a separate electronic raster file; which meets the following format specification:

IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
RESOLUTION –300 dpi desired, (200 dpi min)
DRAWING SIZE FORMAT – 24” X 36” (min), 28” X 40” (max)
FILE SIZE – less than 1 MB desired

Each Exhibit G drawing that includes project boundary information must contain a minimum of three known reference points, arranged in a triangular format. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown and identified. A sample high quality electronic aperture card is shown at the end of this document.

The filename for each drawing shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, FERC approval date, and file extension [e.g., P-1234-1001, G-1, Project Boundary, 02-05-2004.TIF].

Project Boundary Data (Vector Data)

Project boundary data contained on Exhibit G drawings must be filed in a geo-referenced vector electronic format – such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format. The electronic boundary data must be positionally accurate to ± 40 feet and comply with the National Map Accuracy Standards for maps at a 1:24,000 scale. A single electronic boundary data file is preferred; however, if more than one file is required they should be consecutively labeled. Each project boundary file must contain the same reference points shown on the individual exhibit G's. For example, one project boundary vector file created from three exhibit G files should contain a minimum of nine reference points. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown in the vector file. The file name shall include: FERC Project Number, data description, FERC approval date, and file extension as shown in the sample below:

P-1234, boundary vector data-sheet 1, 02-05-2004.shp
P-1234, boundary vector data-sheet 2, 02-05-2004.shp
P-1234, reference point data-sheet 1, 02-05-2004.shp
P-1234, reference point data-sheet 2, 02-05-2004.shp

Project Boundary Information (Text Data)

The project boundary vector data file must be accompanied by a metadata text file that describes: the map projection used (i.e., UTM, State Plane, Decimal Degrees, etc.), the map datum (i.e., North American Datum 27, North American Datum 1983, etc.), and the units of measurement (i.e., feet, meters, miles, etc). The text file name shall include: FERC Project Number, data description, FERC approval date, and file extension [e.g., P-1234, project boundary metadata, 02-05-2004.TXT].

PRELIMINARY PERMITS & LICENSE APPLICATIONS

Exhibit drawings for “applications“ are generally not transferred to aperture card format in the pre-authorization review process. However, for those projects proposed on federal lands, it is extremely important the FERC and BLM concurrently track land withdraws. By statute (Section 24 of the FPA), federal lands are considered withdrawn upon receipt of a hydropower project application, so it is important that the BLM be notified of the withdrawal as soon as possible and receive a copy of the application, boundary exhibits, and Form FERC-587. The Commission’s licensing staff works with the applicant to make sure the BLM receives the information promptly. Additional details regarding the appropriate information to file with the BLM can be obtained by reviewing the forms at the end of this document, or contacting the Commission at 202-502-8836.

PROJECT APPROVAL

When a hydropower license or exemption is issued by the Commission, the appropriate exhibit drawings are approved and incorporated into the authorizing document. Only those exhibit drawings that are relevant to the hydropower project are approved by the Commission and assigned FERC drawing numbers. The authorizing license or exemption will contain a section specifying the exhibit drawings incorporated into the document. However, it is important to note that older exemptions (1980’s era) frequently incorporate by reference the exhibits submitted as part of the application. Project owners are required to file aperture cards of all approved exhibit drawings.

FILING REQUIREMENTS

Aperture cards for approved exhibit drawings are required for both licenses and exemptions. The license/exemption will also require the filing of project boundary aperture cards with the BLM if the project includes federal lands. In addition, for those projects on federal lands, Form FERC-587 must be filed with the Commission and BLM. The following are examples of ordering paragraphs:

No Federal Lands Involved

Within 45 days of the date of issuance of this license, the licensee shall file the approved exhibit drawings in aperture card and electronic file formats.

a) Three sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Drawing Number (e.g., P-1234-### through P-1234-###) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (e.g., F-1, G-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections _____ Regional Office.

b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections _____ Regional Office. The drawings must be identified as **(CEII) material under 18 CFR §388.113(c)**. Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension [e.g., P-1234-#####, G-1, Project Boundary, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
RESOLUTION – 300 dpi desired, (200 dpi min)
DRAWING SIZE FORMAT – 24" X 36" (min), 28" X 40" (max)
FILE SIZE – less than 1 MB desired

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points, arranged in a triangular format. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown and identified on the drawing.

c) The licensee shall file three separate sets of the project boundary data in a geo-referenced vector electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format) with the Secretary of the Commission, ATTN: OEP/DHAC. The file name shall include: FERC Project Number, data description, date of this license, and file extension [e.g., P-1234, boundary vector data, MM-DD-YYYY.SHP]. The geo-referenced electronic boundary data file must be positionally accurate to ±40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. A single electronic boundary data file is preferred and must contain

all reference points shown on the individual project boundary drawings. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown. The data must be accompanied by a separate text file describing the map projection used (i.e., UTM, State Plane, Decimal Degrees, etc), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this license, and file extension [e.g., P-1234, project boundary metadata, MM-DD-YYYY.TXT].

Federal Lands Involved

Within 45 days of the date of issuance of the license, the licensee shall file the approved exhibit drawings in aperture card and electronic file formats.

a) Four sets of the approved exhibit drawings shall be reproduced on silver or gelatin 35mm microfilm. All microfilm shall be mounted on type D (3-1/4" X 7-3/8") aperture cards. Prior to microfilming, the FERC Drawing Number (e.g., P-1234-1001 through P-1234-###) shall be shown in the margin below the title block of the approved drawing. After mounting, the FERC Drawing Number shall be typed on the upper right corner of each aperture card. Additionally, the Project Number, FERC Exhibit (e.g., F-1, G-1, etc.), Drawing Title, and date of this license shall be typed on the upper left corner of each aperture card.

Two of the sets of aperture cards along with form FERC-587 shall be filed with the Secretary of the Commission, ATTN: OEP/DHAC. The third set shall be filed with the Commission's Division of Dam Safety and Inspections _____ Regional Office. The remaining set of aperture cards and a copy of Form FERC-587 shall be filed with the Bureau of Land Management office at the following address:

State Director
Bureau of Land Management
City, State Zip
ATTN: FERC Withdrawal Recordation

b) The licensee shall file two separate sets of exhibit drawings in electronic raster format with the Secretary of the Commission, ATTN: OEP/DHAC. A third set shall be filed with the Commission's Division of Dam Safety and Inspections _____ Regional Office. The drawings must be identified as **(CEII) material under 18 CFR §388.113(c)**. Each drawing must be a separate electronic file, and the file name shall include: FERC Project-Drawing Number, FERC Exhibit, Drawing Title, date of this license, and file extension [e.g., P-1234-####, G-1, Project Boundary, MM-DD-YYYY.TIF]. Electronic drawings shall meet the following format specification:

IMAGERY - black & white raster file
FILE TYPE – Tagged Image File Format, (TIFF) CCITT Group 4
RESOLUTION – 300 dpi desired, (200 dpi min)
DRAWING SIZE FORMAT – 24” X 36” (min), 28” X 40” (max)
FILE SIZE – less than 1 MB desired

Each Exhibit G drawing that includes the project boundary must contain a minimum of three known reference points, arranged in a triangular format. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown and identified on the drawing.

c) The licensee shall file three separate sets of the project boundary data in a geo-referenced vector electronic file format (such as ArcView shape files, GeoMedia files, MapInfo files, or any similar format) with the Secretary of the Commission, ATTN: OEP/DHAC. The file name shall include: FERC Project Number, data description, date of this license, and file extension [e.g., P-1234, boundary vector data, MM-DD-YYYY.SHP]. The geo-referenced electronic boundary data file must be positionally accurate to ± 40 feet in order to comply with National Map Accuracy Standards for maps at a 1:24,000 scale. A single electronic boundary data file is preferred and must contain all reference points shown on the individual project boundary drawings. The latitude and longitude coordinates, or state plane coordinates, of each reference point must be shown. The data must be accompanied by a separate text file describing the map projection used (i.e., UTM, State Plane, Decimal Degrees, etc), the map datum (i.e., North American 27, North American 83, etc.), and the units of measurement (i.e., feet, meters, miles, etc.). The text file name shall include: FERC Project Number, data description, date of this license, and file extension [e.g., P-1234, project boundary metadata, MM-DD-YYYY.TXT].

AS-BUILT EXHIBITS FOR NEW CONSTRUCTION

If a hydropower project approval includes authorization for new project features, a license article will require the licensee to file as-built exhibits with the Commission within 90 days from date of completion of project construction. The exhibits are reviewed to make sure they match the as-built conditions, and determine their compliance with the license. The terms and conditions of an Exemption generally do not require the filing of as-built exhibits. However, Commission approval is required if the constructed features differ substantially from those authorized.

INSTRUCTIONS FOR COMPLETING FORMS FERC-587

Form FERC-587 is issued to identify those project boundary maps associated with federal lands. There are two versions of the form to account for the two different ways land is surveyed in the United States, the Public Land States and the Non-Public Land States. The Public Land States version is used for projects located on the western side of the United States, and is based on the Federal Township and range system. The Non-Public Land States version is to be used for most of the projects located on the eastern side of United States, including Texas, and is based just on county information.

To complete either form you must:

1. Identify the boundary maps in the license, preliminary permit, or in the application for license, amendment of license, or preliminary permit.
2. Provide the project number assigned by FERC. Type or print legibly when entering information on the form. Include your signature, and date completing the form.
3. Microfilm copies of the project boundary maps must be submitted with the land description forms as directed by FERC. Each map must be reproduced on silver or gelatin 35 mm microfilm mounted on type D (3-1/4" x 7-3/8") aperture cards. The project number followed by a hyphen and sheet number or letter must be typed on the front of each card in the upper right corner.
4. Mail a copy of the completed land description forms and aperture cards to:

Secretary
Routing Code PJ-12
Federal Energy Regulatory Commission
888 First Street NE
Washington, DC 20426

Another copy of the form FERC-587 must be filed with the Bureau of Land Management state office(s) involved using the format below. Go to the following internet address to get mailing address for a particular State Office (<http://www.blm.gov/nhp/directory/index.htm>).

State Director
Bureau of Land Management
City, State Zip
ATTN: FERC Withdrawal Recordation

5. Keep the land description forms and project boundary drawings up-to-date. If the project boundary changes, revised land description forms and drawings must be provided to the Commission immediately. The revised land description forms must be fully completed so as to supersede (not supplement) earlier forms. Mail updates in accordance with instruction 4.

If there are any questions, please contact the FERC at (202) 502-8836.

6. Where to send comments on the Public Reporting Burden. The public reporting burden for this collection of information is estimated to average 1 hour per response, including the time for reviewing the instruction, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any aspect of this collection of information, including suggestions for reducing this burden, to the Federal Energy Regulatory Commission, 888 First Street., Washington, DC 20426 (Attention: Mr. Michael Miller, ED-30); and to the Office of Information and Regulatory Affairs, Office of Management and Budget, Washington, DC 20503 (Attention: Desk Officer for the Federal Energy Regulatory Commission). This is a mandatory information collection requirement.)

To complete the Public Land States (Rectangular Survey System Lands) you need to:

1. Identify the state in which the project is located. If the project lies within multiple states, then provide the state for the township which the form refers.
2. Provide the FERC Project Number assigned by FERC (i.e., P-96). Only one project number should appear on the form.
3. Identify the Township, Range and Meridian where the project lands and federal lands overlap. Each township is depicted in a map by an identifying number according to where it falls (i.e. T9SR22E). The east/west numbers are identified by the term "Range" and the north/south numbers are identified by the term "Township". The completed land description form will identify the sections of the township affected by the project (both federal and non-federal lands) and provide references to the maps that show the project boundary in those sections. Complete a separate form for each township identified, regardless of the ownership status of the lands.
4. Identify whether you are completing the form for a licensed project or a preliminary permit. Identify whether the license is pending or issued. Provide an expiration date in case of a preliminary permit.
5. Using the township grid provided on the form, identify the section (s), in which the federal land is located on the map. Every Section is numbered, from 1 to 36, depending upon its position within the township. Specify the exhibit sheet (drawing) number, or letter within the appropriate township section. If the FERC sheet numbers have been assigned, they must be used on the land description forms. In those cases where FERC has not assigned sheet numbers, assign letter designations A, B, C, etc., in lieu of FERC sheet numbers. Permittees and permit applicants must assign letter designations since FERC does not assign sheet numbers for permits. The sheet numbers or letters are to be entered in the appropriate place on the land description forms to provide references to the maps. (i.e., if sheets 74 and 75 show the project boundary in sections 13 and 24 of a township, the numbers 74 and 75 would be inserted in the box on the land description form representing sections 13 and 24).
6. Provide the name and telephone number of the person completing the form, and the date the form is submitted.

LAND DESCRIPTION

**Public Land States
 (Rectangular Survey System Lands)**

1. STATE _____ 2. FERC PROJECT NO. _____

3. TOWNSHIP _____ RANGE _____ MERIDIAN _____

4. Check one:

____ License
 ____ Preliminary Permit

Check one:

____ Pending
 ____ Issued

If preliminary permit is issued, give expiration date: _____

5. EXHIBIT SHEET NUMBERS OR LETTERS

Section 6	5	4	3	2	1
7	8	9	10	11	12
18	17	16	15	14	13
19	20	21	22	23	24
30	29	28	27	26	25
31	32	33	34	35	36

6. contact's name _____

telephone no. (_____) _____

Date submitted _____

To complete the Non-Public Land States (Non-Rectangular Survey System Lands in Public Land States) form you need to:

1. Identify the state in which the project is located. If the project lies within multiple states, then provide the state for the counties which the form refers.
2. Provide the FERC Project Number assigned by FERC (i.e., P-00). Only one project number should appear on the form
3. Identify the federal reservation that is located within the project boundary as shown on the maps.
4. Identify the federal land holding agency responsible for the federal land within the project boundary as shown on the maps
5. Identify the county or counties the federal land lies in.
6. Identify whether you are completing the form for a licensed project or a preliminary permit. Identify whether the license is pending or issued. Provide an expiration date in case of a preliminary permit.
7. Complete a land description form for each federal tract with lands inside project boundaries. If more than one land description form is required to list the Federal tracts, page numbers must be shown in the upper right corner of the form, e.g., page 1 of 2. Do not list more than one project or state on each form.
8. Provide sheet numbers or letters that should be entered on the lines provided under "Exhibit Sheet Numbers) or Letter(s)" opposite to the corresponding Federal tract identification designated by the Federal land holding agency. Specify the exhibit sheet (drawing) number, or letter within the appropriate township section. If the FERC sheet numbers have been assigned, they must be used on the land description forms. In those cases where FERC has not assigned sheet numbers, assign letter designations A, B, C, etc., in lieu of FERC sheet numbers. Permittees and permit applicants must assign letter designations since FERC does not assign sheet numbers for permits.
9. Provide the name, telephone number of the person completing the form, and the date the form is submitted.

LAND DESCRIPTION

**Non-Public Land States
(and Non-Rectangular Survey System Lands in Public Land States)**

1. STATE _____ 2. FERC PROJECT NO. _____

3. FEDERAL RESERVATION: _____

4. FEDERAL LAND HOLDING AGENCY: _____

5. Counties: _____

6. Check one:
 License
 Preliminary Permit

Check one:
 Pending
 Issued

If preliminary permit is issued, give expiration date: _____

7. Federal Tract(s)
Identification

8. Exhibit Sheet Number(s)
or Letter(s)

9. contact's name _____

telephone no. (_____)

date submitted _____

BUREAU OF LAND MANAGEMENT STATE OFFICES

Last Updated September 11, 2003

ALASKA	Bureau of Land Management Division of Lands and Renewable Resources (AK-932) 222 W 7TH AVE #13 ANCHORAGE AK 99513-7599
ARIZONA	Bureau of Land Management Division of Lands and Renewable Resources (AZ-930) 222 N CENTRAL AVE PHOENIX AZ 85004-2203
CALIFORNIA	Bureau of Land Management Branch of Adjudication and Records (CA-943.5) 2800 COTTAGE WAY SUITE W1834 SACRAMENTO CA 95825-1886
COLORADO	Bureau of Land Management Branch of Realty Programs (CO-935) 2850 YOUNGFIELD ST LAKEWOOD CO 80215-7093
IDAHO	Bureau of Land Management Land Services Section (ID-943A) 1387 S VINNELL WAY BOISE ID 83709-1657
MONTANA NORTH DAKOTA SOUTH DAKOTA	Bureau of Land Management Branch of Land Resources (MT-932) PO BOX 36800 BILLINGS MT 59107-6800
NEVADA	Bureau of Land Management Branch of Lands and Minerals Operations (NV-943.2) PO BOX 12000 RENO NV 89520-0006
NEW MEXICO OKLAHOMA KANSAS TEXAS	Bureau of Land Management Branch of Lands and Minerals Operations (NM-943C-2) PO BOX 27115 SANTA FE NM 87502-0115

**OREGON
WASHINGTON**

Bureau of Land Management
Lands and Minerals Adjudication Section (OSO958.1)
PO BOX 2965
PORTLAND OR 97208-2965

UTAH

Bureau of Land Management
Branch of Lands and Minerals Operations (UT-942)
PO BOX 45155
SALT LAKE CITY UT 84145-0155

**WYOMING
NEBRASKA**

Bureau of Land Management
Branch of Land Resources (WY-931)
PO BOX 1828
CHEYENNE WY 82003-1828

**ARKANSAS
IOWA
LOUISIANA
MINNESOTA
MISSOURI
DISTRICT OF
COLUMBIA
PUERTO RICO
and all states east
of the Mississippi
River**

Bureau of Land Management
Branch of Lands (ES-930)
7450 BOSTON BLVD
SPRINGFIELD VA 22153