LARS Contract Report 022378

PHOTO-INTERPRETATION HANDBOOK

Volume 1
Methods and Materials used for

The Identification of Derelict Lands Associated with Surface Mining of Coal in Southwestern Indiana

Laboratory for Applications of Remote Sensing
Purdue University West Lafayette, Indiana 47906 USA
1978

PHOTO-INTERPRETATION HANDBOOK

for

The Identification of Derelict Lands
Associated with the Surface
Mining of Coal in Southwestern Indiana

Prepared by

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at

Purdue University's
Laboratory for Applications for Remote Sensing

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EXHIBITS

TABLES

TITLE: Photo-Interpretation Handbook for the Identification of Derelict Lands

SECTION I - GENERAL OVERVIEW

A. Objective

The purpose of this manual is to provide instruction for the interpretation of derelict strip mine lands in Southwestern Indiana.

B. Introduction

The Division of Reclamation in the Indiana Department of Natural Resources is charged under Public Law 152 (Appendix I) with providing an inventory of derelict surface strip mined lands. The principal areas of interest are twenty Counties in Southwestern Indiana (Exhibit 1). Derelict land for the purpose of this study is land in need of vegetative cover as a consequence of having been affected by mining operations for coal. This land is not affected by the 1968 State Reclamation legislation and poses a possible threat to the environment. This inventory will provide information related to the location and condition of such lands as identified from aerial photographs.

Suspect lands are defined as those less than 75% vegetated per acre and obviously not in some other land classification such as agriculture. When identified, these lands will be located and mapped to the nearest quarter section. Surrounding land use classes will be identified and external drainage

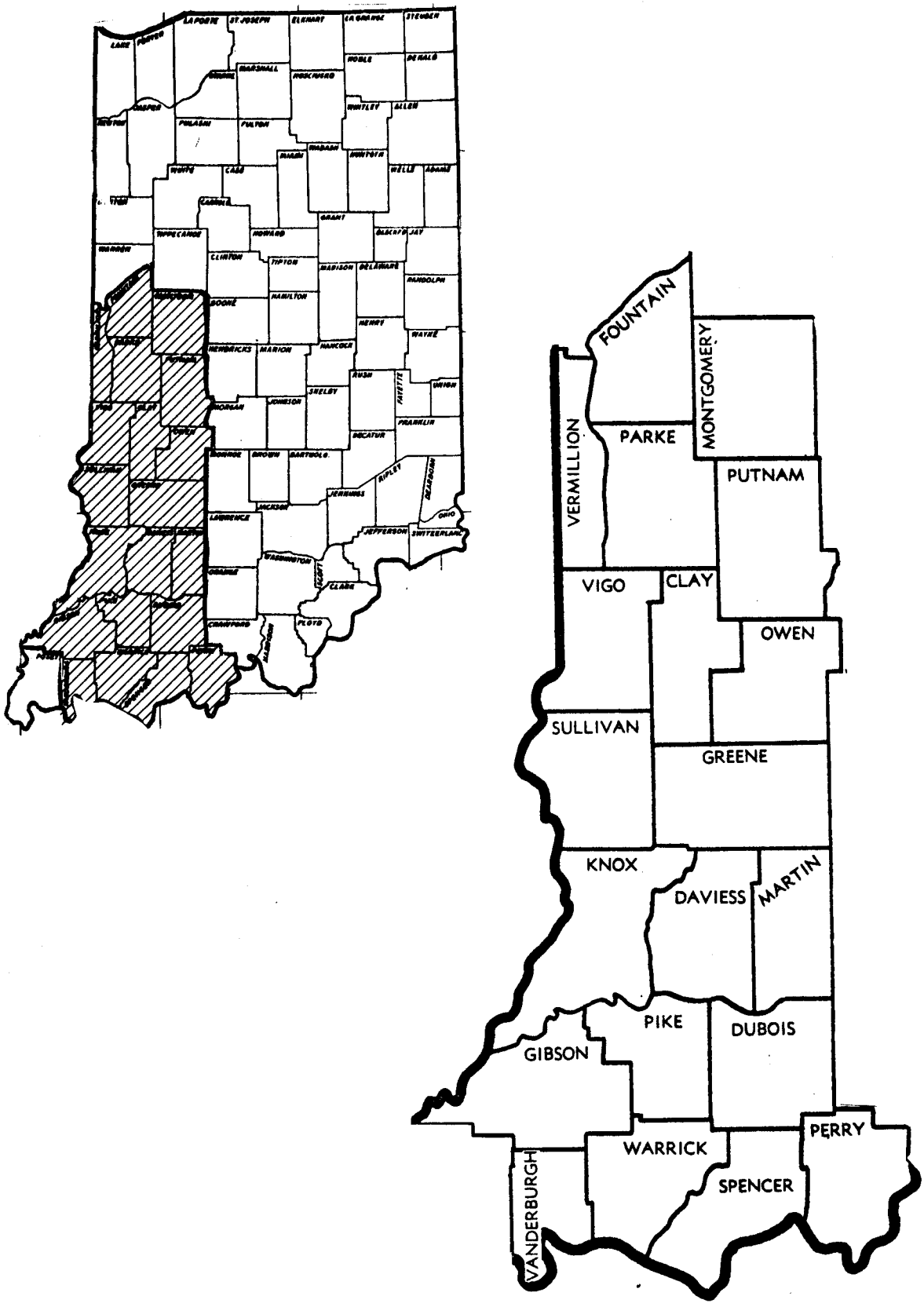


Exhibit 1. Derelict Lands study area.

characteristics noted. Data will be compiled by townships within counties for acres of affected lands.

Statistics by county and maps showing location of derelict lands will be available to DNR on or before November 1, 1977. An atlas of this information will be prepared for the State Legislative committee which mandated the original inventory, under Public Law 152 Acts of 1976.

C. Description of Data

Photographic data will consist of high flight color infrared photography collected in 1971, a part of the Corn Blight Watch Experiment. The data originally was collected at a contact scale of approximately 1:120,000. These images will be photographically enlarged four times to yield an approximate scale of 1:30,000, or 1 inch equals 2,500 feet.

In addition to the photographic, hard copy enlargements, contact scale transparencies will be available for stereo interpretation. U.S.G.S. 7½ minute quadrangle maps, will also be available for the study site. The 7½ minute topographic maps will be considered as ancillary information to the interpreter, but will also be used as the base upon which the derelict lands will be mapped.

SECTION II - DATA PREPARATION

This section serves as a schedule of events which must occur upon receipt of the project data. This schedule, will be followed to insure that the data will be properly indexed and cataloged for future work. This schedule is divided into two parts; one for the map data, the other for the photo data. Each item listed under the separate heading is considered critical to the successful completion of the project and must be strictly adhered to.

D. I. Map Data Preparation Schedule

1. Upon receipt, topographic maps will be checked to verify that the site has been completely covered. Project maps in the file will be marked with a red diagonal on the State index map, (Exhibit 2).
2. Maps will be filed alphabetically in the flat map file.
3. Quadrangles will be cross indexed to indicate county coverage (Attachment III).

D. II. Photo Data Preparation Schedule

1. Upon receipt, photos will be checked to verify quality and coverage.
2. Photos will be indexed on 1:250,000 U.S.G.S. maps according to principal point. Photo numbers will be marked at the principal point on the index base map (Exhibit 3).

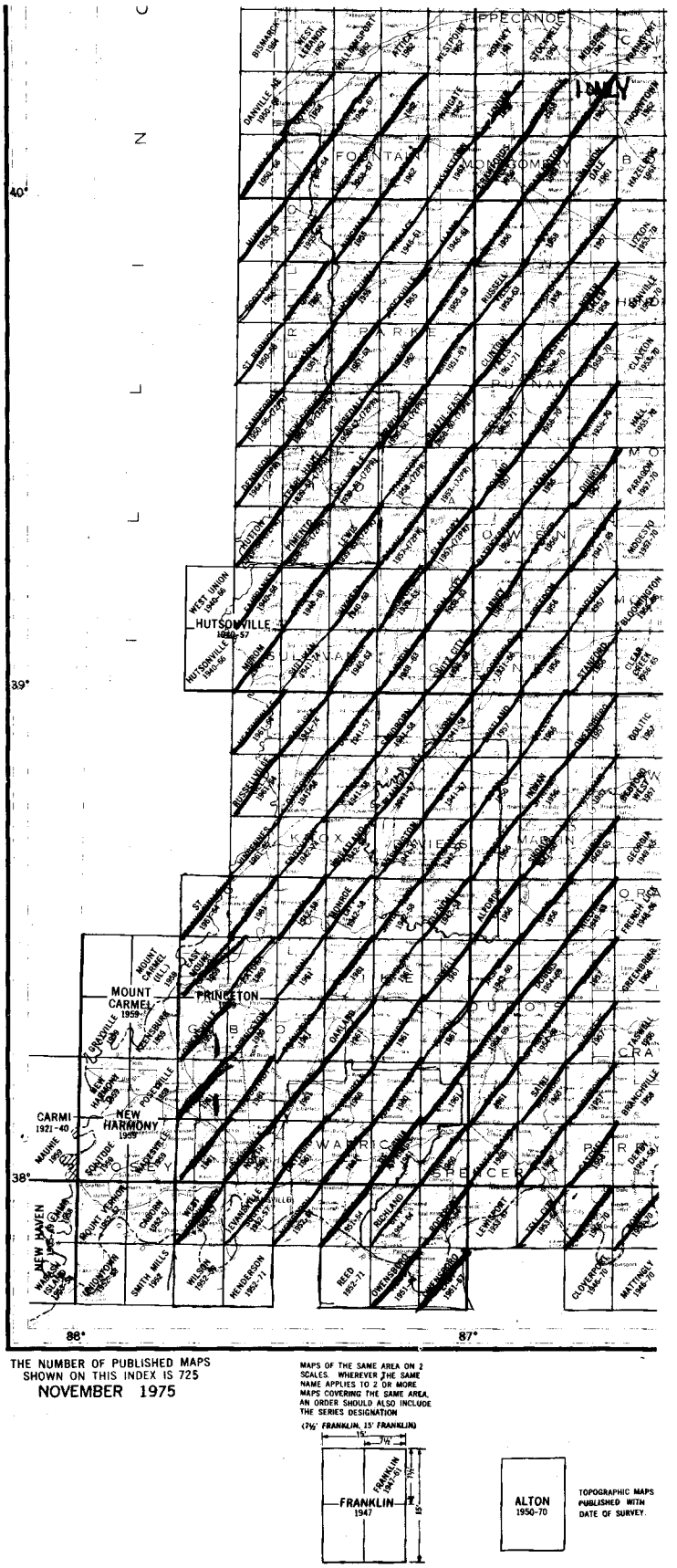


Exhibit 2. Example of U.S.G.S. quad map index.

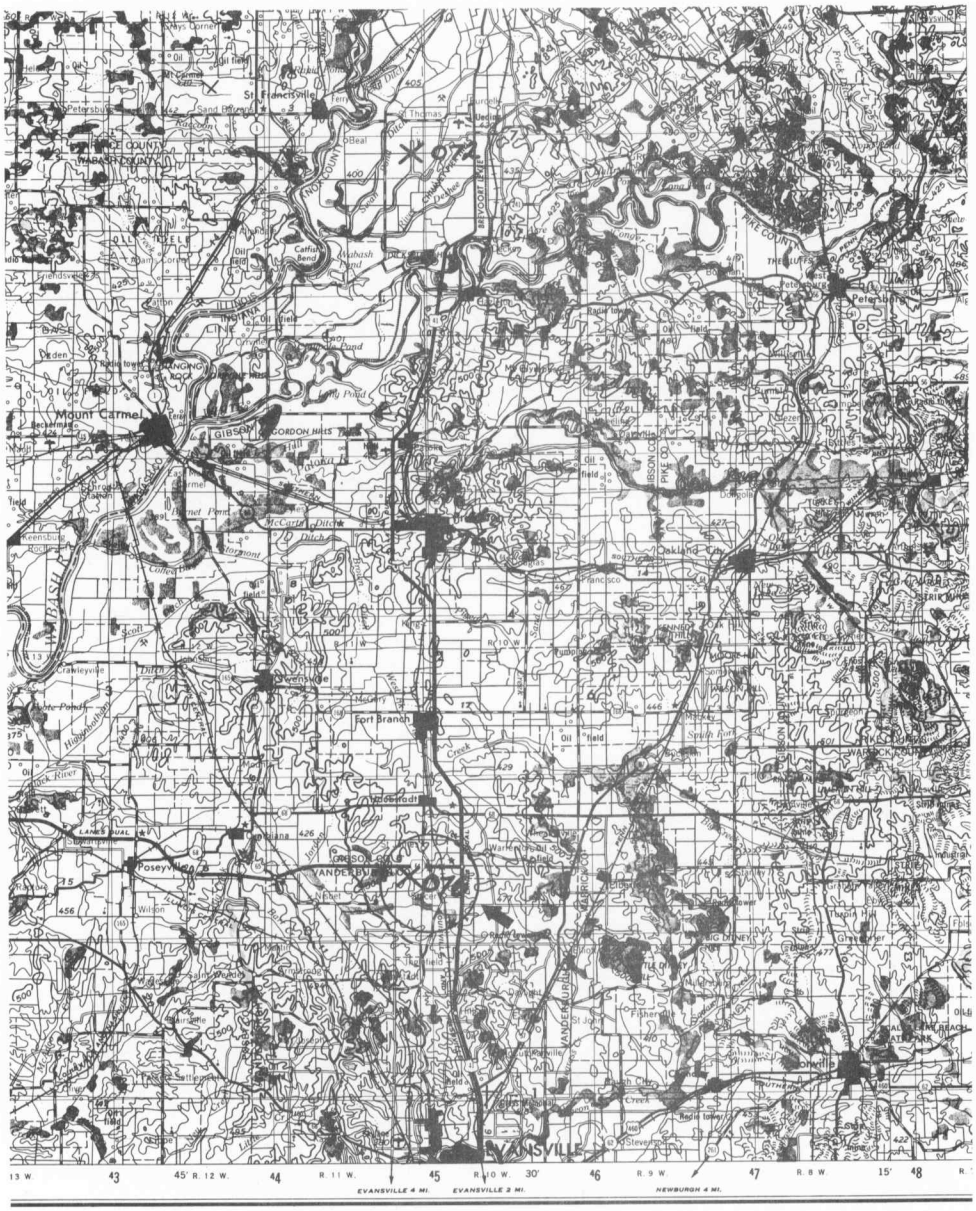


Exhibit 3. Example of proper air photo indexing.

3. The area of photo coverage will be cross referenced to the 7½ minute quad sheets (Attachment VI).

4. Photo scale will be verified for each image. Actual image scale will be determined in the following manner:

Procedure to Determine Actual Photo Scale:

The 7½ minute (1:24,000) U.S.G.S. topographic maps which most closely corresponds to the principal point (center) of a photograph will be used to determine actual photo scale. Features which are identifiable on both map and photograph will be used to determine scale. Pick features that as far distant from each others as possible. A line connecting these features should pass as close to the center of the photo as possible. First, determine the actual ground distance between the two points on the map. The following relationship is used to calculate actual ground distance in inches.

Distance between two points in inches x 24,000 = Actual ground distance (in).

To calculate actual photo scale use the relationship:

$$\text{Scale} = \frac{\text{Photo Distance Between Points (in)}}{\text{Ground Distance Between Corresponding Points (in)}}$$

Where photo distance is the measurement of the straight line distance between the two points on the photograph read in inches. Calculated photo scale will be indicated as a ratio (e.g. 1:30,000).

5. On each photo mark the corners of the townships that occur on the photographs (Exhibit 4). Markings should be made with a fine point india ink pen. The nomenclature that will be used to identify townships and range, is:

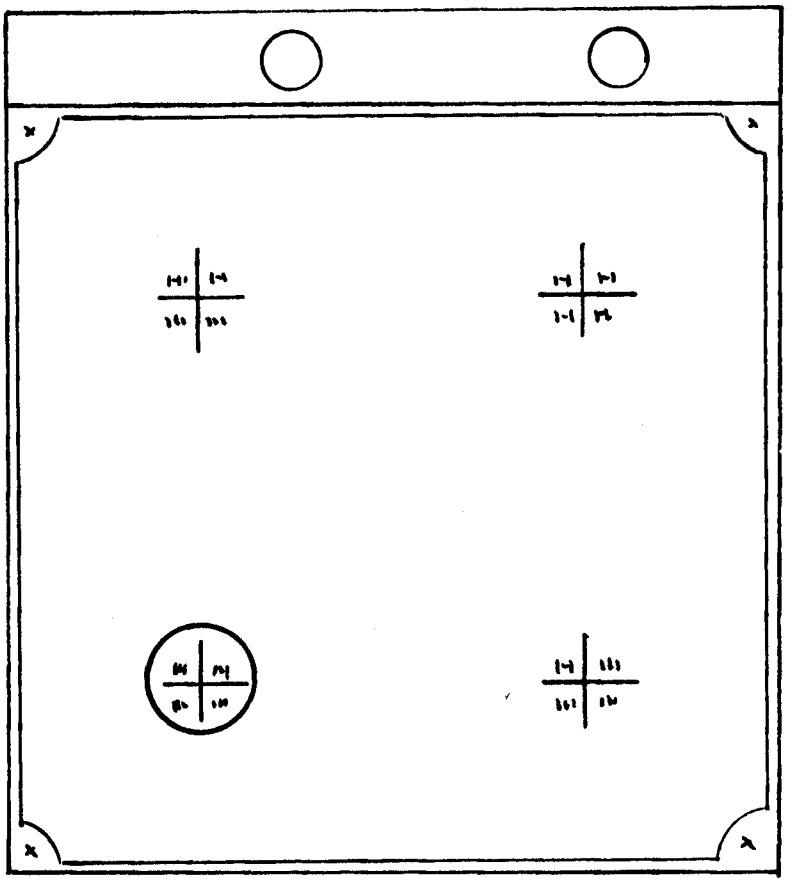
   37, 3 which will be read T. 37 N, R. 3. W.

   A portion of the site includes northern and southern township markings. These occur from T1S to T8S. Township annotation for these areas will include an N or S indicator such as:

   3S3 to be read as T3S, R3W.

   The township and range boundary information will be interpreted from the 7½ minute quad maps.

6. Photos will be filed numerically within flight-lines in the flat file.



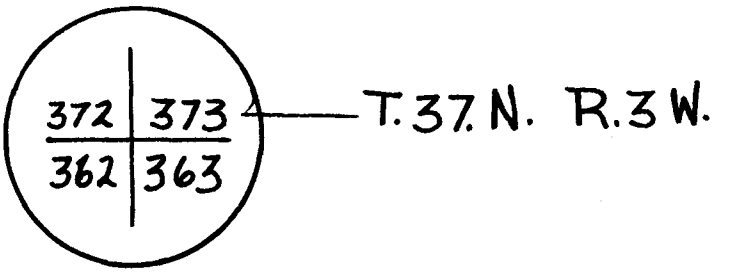


Exhibit 4. Proper township and range indexing on aerial photographs.

SECTION III - PI PROCEDURES

E. Photo-Interpretation

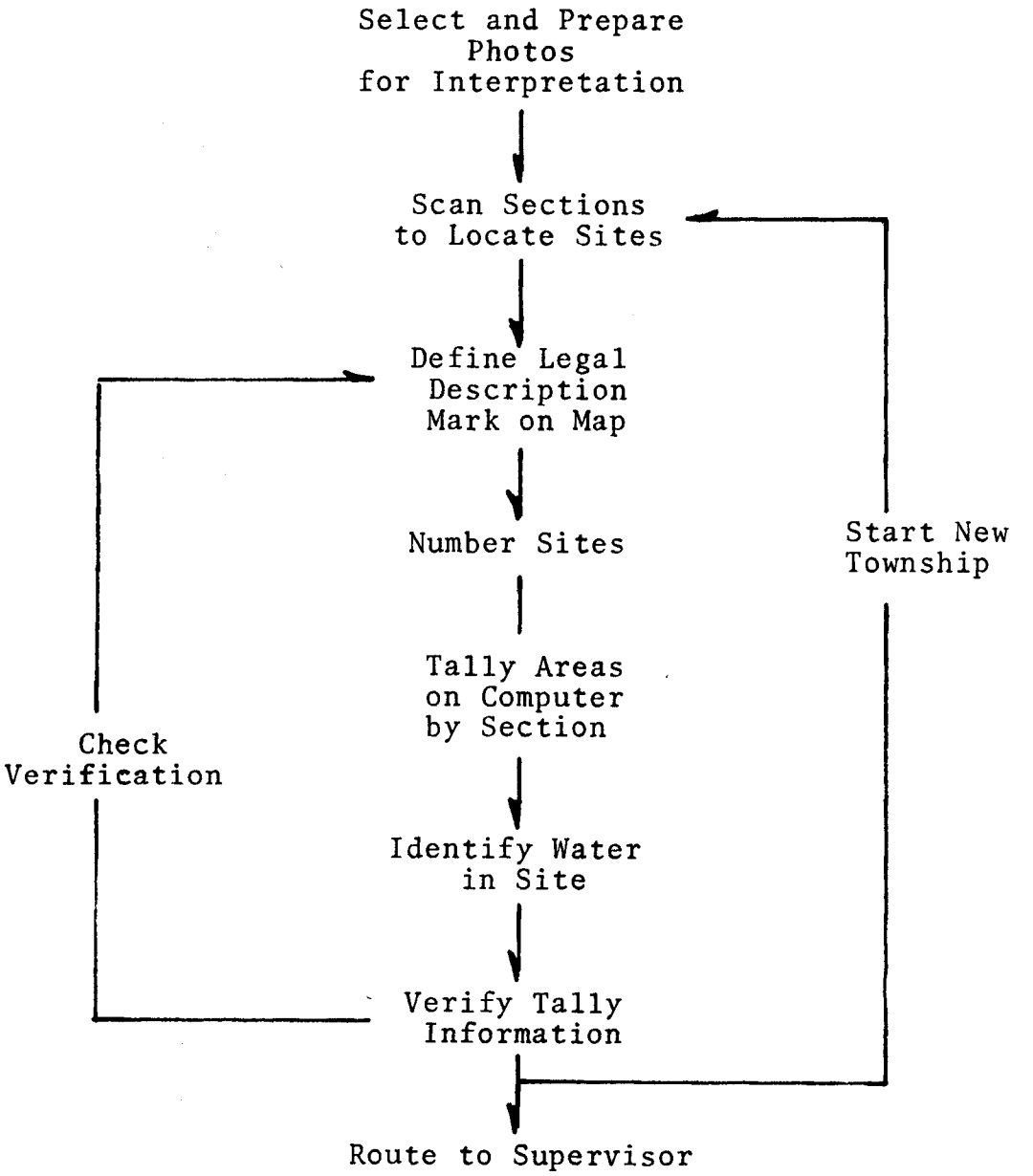
The objective of this study is to identify through photo-interpretation techniques lands left in a derelict condition after the surface strip mining of coal. Such lands pre-date 1968 reclamation legislation and present a possible environmental detriment. They are defined as a portion of land which is the direct result of coal strip mining activity, lacks a sufficient vegetative cover, and is a potential environmental hazard.

The photo-interpretation activity is designed to accomplish the following tasks:

1. Locate land by legal description which had been surface mined before 1968 and is in need of additional vegetative cover.
2. Code interpreted sites within counties and record the number of acres occupied by each site.
3. Record the acreage of surface water associated with each site.
4. Classify the drainage status of each site, indicating if the area is externally or internally drained.
5. Record the use of the land adjacent to the site as a percent of the peripheral area in seven general land use classes.

Section III of this handbook, PI Procedures, deals with the day-to-day interpretation activities that will be used throughout the project.

Generalized photo-interpretation procedures will follow the flow as defined in the schematic diagram below:



F. Detailed PI Procedures

Specific activities that each photo-interpreter will follow are outlined in this section. These steps are intended as guidelines for the interpreters. Individual style may vary from this suggested approach. However, the interpreter must remember to complete the necessary information for each township before proceeding to the next.

PROCEDURES

Counties have been assigned priority for interpretation based on the extent of strip mining activity in the county. Attachment I lists the county priorities. Interpreters will be assigned counties by the supervisor.

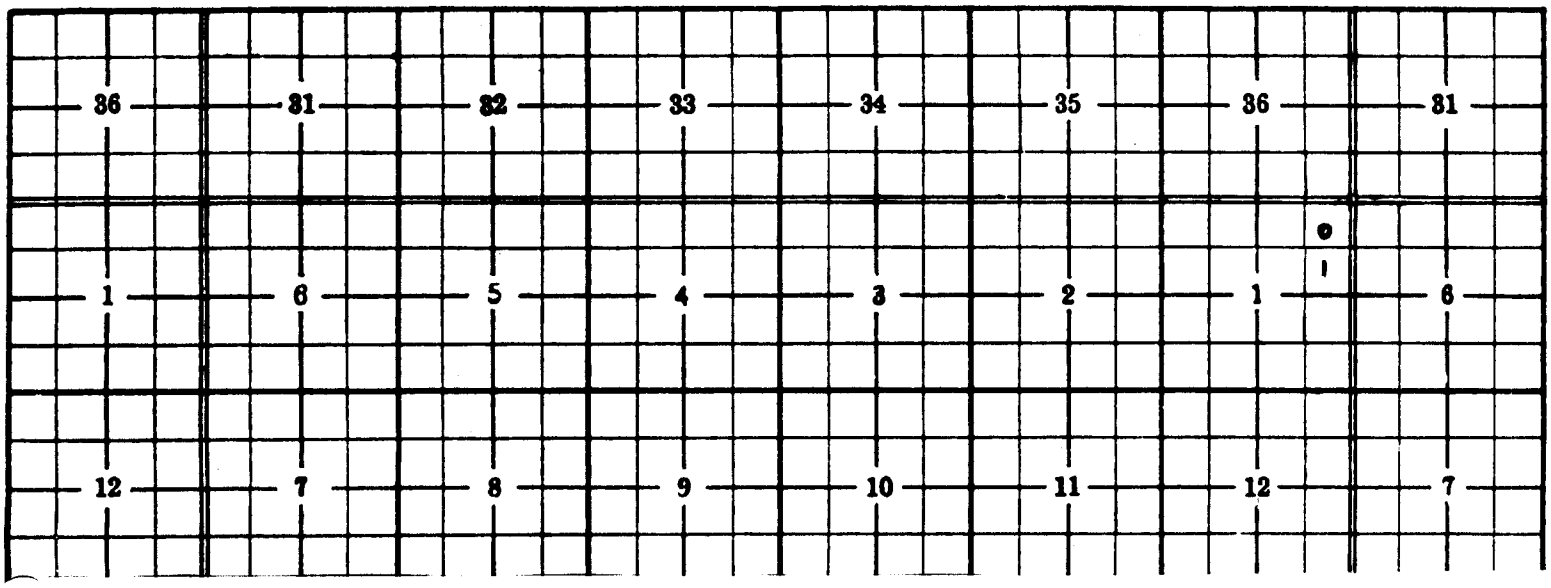
1. Select appropriate photo from index (Attachment II) and pull photo from stack.
2. Select appropriate 7½ minute quad sheets from index (Attachment III) and pull sheets from flat file.
3. Pull blank tally sheet and township plat sheet and label according to illustrations (Exhibit 5) by:
   a. County Name
   b. Township and Range
   c. Photo Number
   d. Corresponding Quad Sheets

   Interpret townships according to the sequence in the illustration (Exhibit 6).
4. Using drafting tape attach the photo to the drafting table.

TOWNSHIP PLAT

Owner IDNR Photo No. 6074 Date 6/14/77

Township 15 Range 12W County GIBSON



TALLY SHEET

CO. CODE	SITE NO.	TNSP.	RANGE	SEC	¼	¼	AC	WATER	DRAIN
XX	XXX	XXXX	XXXX	XX	X	X	XXX	X	X
GI	001	T01S	R12W	01	1	1	—	—	—

The Ben Meadows Co., Atlanta, Ga. 102430

Exhibit 5. Proper method of labeling township plat and tally sheet.

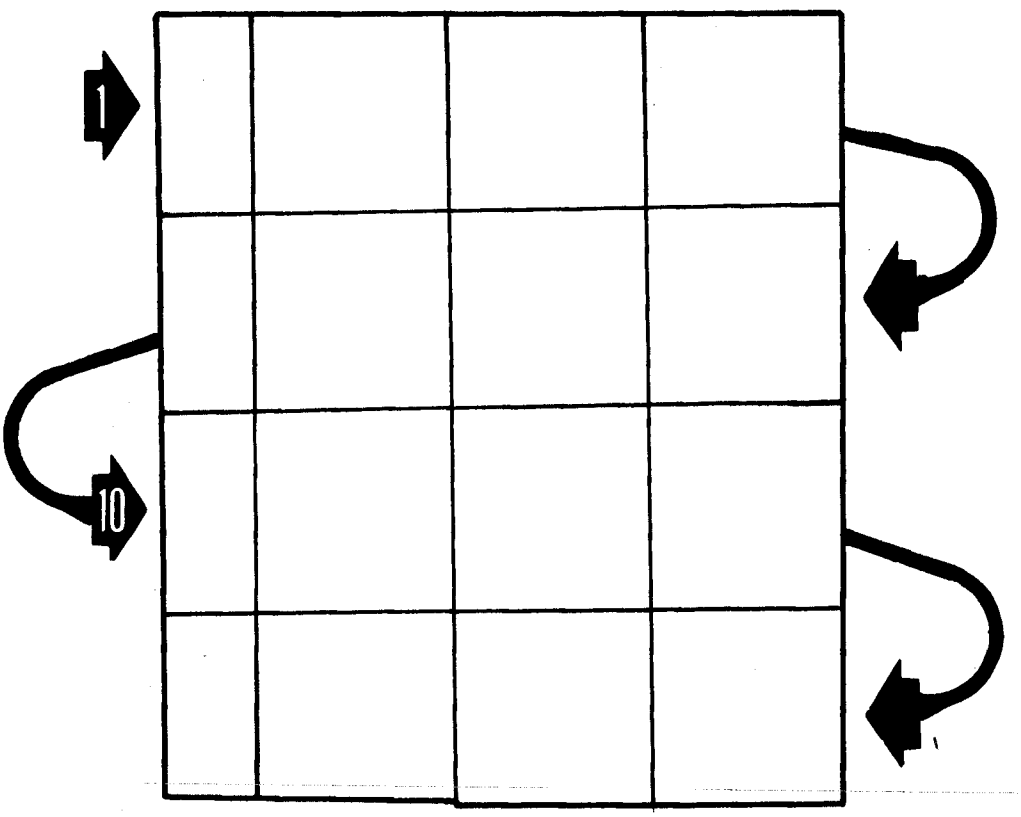


Exhibit 6. Township interpretation sequence. Start with township in northwest corner of county.

5. Beginning with Section 1, scan the section for any indications of derelict land. Use the key in Attachment V as a guide to identification of various derelict conditions. Mark the suspect site location on the township plat sheet in the correct ¼-¼ section. At this time it would be wise if you do not attempt to classify the site. Proceed to identify suspect derelict conditions for the entire township on a section-by-section basis. After you have located suspect sites within a township, number and classify the sites according to their condition, and mark the sites on the photo and USGS quad sheet according to the procedure outlined below.

   <u>If a positive identification is made</u>:

   a. Outline the limits of the site in the section with a non-photo blue pencil on the USGS 7½ minute quad sheet. Ink in the site boundary on the photo and mark the approximate location on the plat sheet.

   b. Number sites sequentially by County Code (Attachment I) and ascending number on photos, plat sheets and quad maps. Outline the extent of the site and number on:
      - aerial photographs
      - mark the approximate location within the ¼ section on the township plat sheet
      - on 7½ minute quad sheet
      - fill in the appropriate information required on the computer tally sheet

c. Dot tally acres in site by section and record on:
   - computer tally sheet

d. Identify any water which occurs in the site by condition as:
   - impounded or flowing
   - clear or silted

   and record on computer tally sheet and map extent of affected water on the 7½ minute quad sheet and air photo (Exhibit 7).

e. Indicate predominant drainage condition as a best estimate from the photography.
   - use an arrow to indicate surface drainage and direction (indicate direction by predominant quadrant where drainage occurs)

f. Tally the percent of each land use class that occurs around the perimeter of the site.

   Land use classes that will be considered for this study are:
   - Ag. land, lands which the predominant use has been for agricultural crops
   - pasture, permanent grasslands
   - forest, lands that support a predominant forest crop
   - water, flowing rivers or impounded water bodies
   - other, a class that is not included in the four above categories but might include:
     - active strip mining sites

T A L L Y S H E E T

CO. CODE	SITE NO.	TNSP.	RANGE	SEC	¼	¼	AC	WATER	DRAIN	DIRECTION	LAND USE							
											CLASS	%	CLASS	%	CLASS	%	CLASS	%
XX	XXX	XXXX	XXXX	XX	X	X	XXX	X	X	X	XXX	XX	XXX	XX	XXX	XX	XXX	XX

Exhibit 7. Computer tally sheet.

- rail yards
- industrial complexes

g. Repeat procedure for each section in the township.

h. After all 36 sections have been interpreted:

- check air photo, township plat, and computer tally sheet for agreement.

i. Clip township plat and computer tally sheet together and leave with supervisor.

j. Continue on to the next township.

<u>If identification is uncertain</u>:

b.1 Outline site on air photo in ink and mark location on township plat in red pencil. Do not annotate 7½ minute quad sheets.

c.1 Continue to next site but leave room on computer tally sheet for annotation of uncertain site.

The above procedures will be followed until each township of a county has been completed. Once an interpreter completes a county he will check with the supervisor for his next assignment.

SECTION IV - QUALITY CONTROL PROCEDURES

The material outlined in this section defines the quality control procedures which will be used to monitor the photo-interpretation results.

G. Quality Control Procedures

1. Interpreters give completed township data; township plat sheets, computer tally sheets and photos to supervisor.
2. The supervisor takes a 10% random sample of the township, to select four of the 36 sections for evaluation. The selection of sections are based on a table of random numbers.
3. The supervisor checks any areas that have been penciled in as questionable (red pencil areas).

   If the site is determined to be derelict:

   a. The boundary code is changed from red to blue.
   b. The site is numbered on the township plat and computer tally.

      NOTE: If a site changes status from uncertain to a positive identification its numerical position will occur as the last site in a given township.

   c. The supervisor will then complete interpretation of the site and fill in the computer tally form as described in Section III.

   If the site is determined not to be derelict:

   d. The supervisor will erase the red markings and continue to step four.

4. For the 4-sample sections the inspector will re-interpret each according to the PI's procedures described in Section III.

   If the supervisor questions the interpretations on the sample sections:

   a. Each derelict site in the township should be checked.

   b. Scan township to determine if any sites were missed, and

   c. Recycle township to interpreter for re-evaluation.

5. The supervisor selects a site from one of the four sections for field verification. The site is identified as described in Attachment IV and the appropriate information will be sent to Jasonville, Indiana.

6. The supervisor then checks to insure that the township plat and computer tally are complete.

7. The information will be separated and distributed as follows:

   - Computer sheets will be given the supervisor who will schedule them for key-punching.
   - Air photos will be returned to the file.
   - Township plat sheets will be copied and distributed according to the attached list.

SECTION V - MAPPING PROCEDURE

This section describes the procedure to follow for drafting final project maps. Care should be exercised in preparing final maps, since these will be reduced and published in an Atlas form for distribution within the IDNR and State Legislature.

Work flow for final map drafting will proceed as follows:

A. Receive plat sheets and field verification sheets from J. Allen.

B. Edit CMS files; delete sites not derelict.

C. Renumber sites for entire county.

1) Begin in NW Township of County - Do townships in following sequence:

W → E
↓
W ← E
↓
W → E ...

Do NOT renumber when beginning new township.

2) Each site should have only one number in each county. The site should be numbered when it FIRST appears in a township, and retain that number throughout the county.

3) Mark new number sequence on print-out in red pencil.

4) Return print-out to supervisor.

D. Edit CMS Files; renumber sites in proper sequence return corrected print out to Supervisor.

E. Draft sites on good Topo sheets.

1) Use Photo, Work Copy, Toposheet, Plat sheet, correct Printout to locate site.

2) Draw site accurately on good Topo sheet with #4 Pencil.

3) Draw over pencil line with #1 point pen and completely fill in site with ink.

4) Number site with:

Site Number Site Code

example: 1S - for all Slurry sites

1 - for all Barren spoil

1G - for all Gob soils

Put site number and code to right side of site or place number and code so as not to interfere with existing map designators. Use press on letters to number sites on good copy.

5) When drafting is completed, return topo to draw, file to cabinet.

6) Note which counties and Topo's are completed on sheet located next to flight line map.

F. Attach a Legend box to the lower left hand corner of each map.

SECTION VI PI ACCURACY

This section describes the evaluation of the aerial photo-interpretation process used to identify and classify derelict lands. These evaluations were based on the field verification information provided by IDNR personnel.

A total of 1480 sites were identified on the air photos. Each site was field checked to verify the interpreter's classification. Approximately sixty four percent (63.9%) or 946 sites were deleted from the computer file based on field verification reports. Table 1 shows the distribution of these interpreted sites into various non-derelict land use classes. These 946 sites do not represent misinterpretation by the photo-interpreters. Rather, the data indicate the changes in land use that occured from the time the photography was collected in 1971 to the time the interpretation were field checked in 1977. This data suggests a trend toward reclaiming strip mine land for other uses.

Further evaluation of the field verification data indicates that the interpreters correctly classified derelict land with an average 97.9 percent accuracy. Table 2 gives the interpretation accuracy for the three major classes of derelict land; barren spoil, gob, and slurry. This table also shows the classes which confused the interpretation and the percent of sites which were misclassified. The exact reason for these misidentifications is not apparent from these data.

TABLE 1. Percent of total sites classified by ground Survey into other land uses classifications.

Land Use Description	Percent
Surface mining, other than coal	2.4
Remined, areas reworked for a deeper coal seam	4.7
Construction, old mine site which are currently supporting structures	7.4
New law, mined lands covered by bond but not reclaimed	8.5
Wildlife, areas planted after mining currently supporting 75% cover	8.7
Pasture/Farm, mined lands reclaimed to agricultural use after 1971	12.3
Other, diversified uses not defined above	19.9
Total	63.9

TABLE 2. Percent interpretation accuracy for derelict classes and the percent of misclassifications by confusion class.

PI Class	Accuracy	Confusion Class	Misclassification
	(percent)		(percent)
Barren Spoil	95.6	Gob	4.4
Gob	99.1	Barren Spoil	.9
Slurry	99.1	Gob	.9
Average	97.9		2.1

Second Regular Session 99th General Assembly 1976

PRINTING CODE—The parts in this style type are additions to the text of the existing section of the law. The parts in ~~this style type~~ are deletions from the text of the existing section of the law. The absence of either of the above type styles in an amendatory SECTION indicates that an entirely new section or chapter is to be added to the existing law.

HOUSE ENROLLED ACT No. 1305

AN ACT concerning certain lands affected by mining operations

Be it enacted by the General Assembly of the State of Indiana:

SECTION 1. The Indiana department of natural resources is directed to conduct a survey of lands affected by mining operations to acquire the following information:

(a) the specific location of all land in this state which is in need of vegetational cover as a consequence of having been affected by mining operations for coal, clay or shale and which is not protected by bond under IC 13-4-6;

(b) the number of sites located under item (a) of this section;

(c) the total land acreage located under item (a) of this section;

(d) the total underwater acreage located under item (a) of this section;

(e) the drainage status of the land located under item (a) of this section;

(f) the use of land which is contiguous to the land located under item (a) of this section;

(g) the condition and offsite influence of the land located under item (a) of this section; and

(h) the impact on the environment of the land located under item (a) of this section.

SECTION 2. After the duties imposed by SECTION 1 of this act have been performed, the department of natural resources shall:

(a) develop plans to improve the land located under item (a) of SECTION 1 of this act;

(b) set priorities for executing the plans developed under item (a) of this section;

(c) clearly define and outline the work scope involved in executing each phase of item (a) of this section; and

(d) prepare cost estimates for executing the plans developed under item (a) of this section.

SECTION 3. After the duties imposed by SECTION 2 of this act have been performed, the department of natural resources shall make a comprehensive report to the conservation advisory committee concerning its findings and recommendations made pursuant to SECTIONS 1 and 2 of this act. The conservation advisory committee shall then prepare proposed legislation to implement all or part of the recommendations of the department of natural resources, if, in its judgment, those plans should be implemented.

'78

SECTION 4. This act expires by limitation on November 1, 1978.

GUIDELINES

Respecting The Administration Of Public Law 152, Acts of 1976

This law is meant to provide certain data and information on the "derelict-orphan lands" resulting from past mining operations within the State of Indiana, for the purpose of possible program development to deal with the environmental problems resulting from their characteristics.

PHASE 1

Section I

The Department of Natural Resources is directed to conduct a survey of lands affected by mining operations of coal, clay or shale and obtain the following information.

a. The specific location by ¼ section, section, township, range and county of all land areas in the State of Indiana over 1 acre in size and having less than 75% vegetational cover and are not protected by bond. The areas are to be outlined on U.S.G.S. Topographic Quadrangle maps of 1:24,000 scale and assigned a site number including reference to the aerial photos.

b. A listing of the derelict sites as outlined in (a) above with the following parameters by county. Total number, site numbers, total acreage independently and collectively.

c. Included in listing (b) above.

d. Determine acreage of water on each site, indicate acid or silt laden bodies of water and determine whether or not the impoundments are self-contained.

e. Determine the drainage system away from each site and identify the receiving water course and pollutant, if present.

f. Identify the land use on contiguous areas for each site for the categories of croplands, woodlands, grazing lands, housing, recreation or others as a percentage of periphery.

g. The status of the areas outlined in (a) above in reference to its existing use such as all terrain vehicle tract, housing development, junkyard.

h. When the sites outlined under (a) above have a negative influence on off-site areas, then identify the nature of impact. Examples: air pollution resulting from burning refuse, absence of vegetation as a result of acid laden run-off. Absence of aquatic fauna resulting from acid and/or silt laden run-off. The range of negative influence expressed as a unit of measurement.

This phase of the survey is to be completed with supporting documents by November 1, 1977.

PHASE 2

Section II

After the duties imposed by Section I of this Act have been performed, the Department of Natural Resources shall:

a. Develop a general approach plan to improve the sites located under Section I.

b. Set priorities for executing the plans developed under (a) this section for each site located under Section I. Those sites that affect the environment of contiguous areas will be given first priority. Second priority will be given those that affect the environment within the sites and the influence is self-contained. Last priority will be given those sites that are esthetically displeasing and are not creating environment influence on or off site.

c. Develop general construction designs to improve the sites located under Section I.

d. Prepare general cost estimates for the restoration of the sites located under Section I.

This phase of the study is to be completed by April 1, 1978.

PHASE 3

Section III

The Department of Natural Resources shall combine the findings of Section I and Section II into a comprehensive report with recommendations and submit the results to the Conservation Advisory Committee of the Indiana General Assembly. (I.C. 2-5-5)

This phase of the study is to be completed by June 1, 1978.

The Conservation Advisory Committee shall then prepare proposed legislation to implement all or part of the recommendations of the Department of Natural Resources, if in its judgement, a program should be developed.

Section IV

This Act expires by limitation on November 1, 1978.

Attachment I

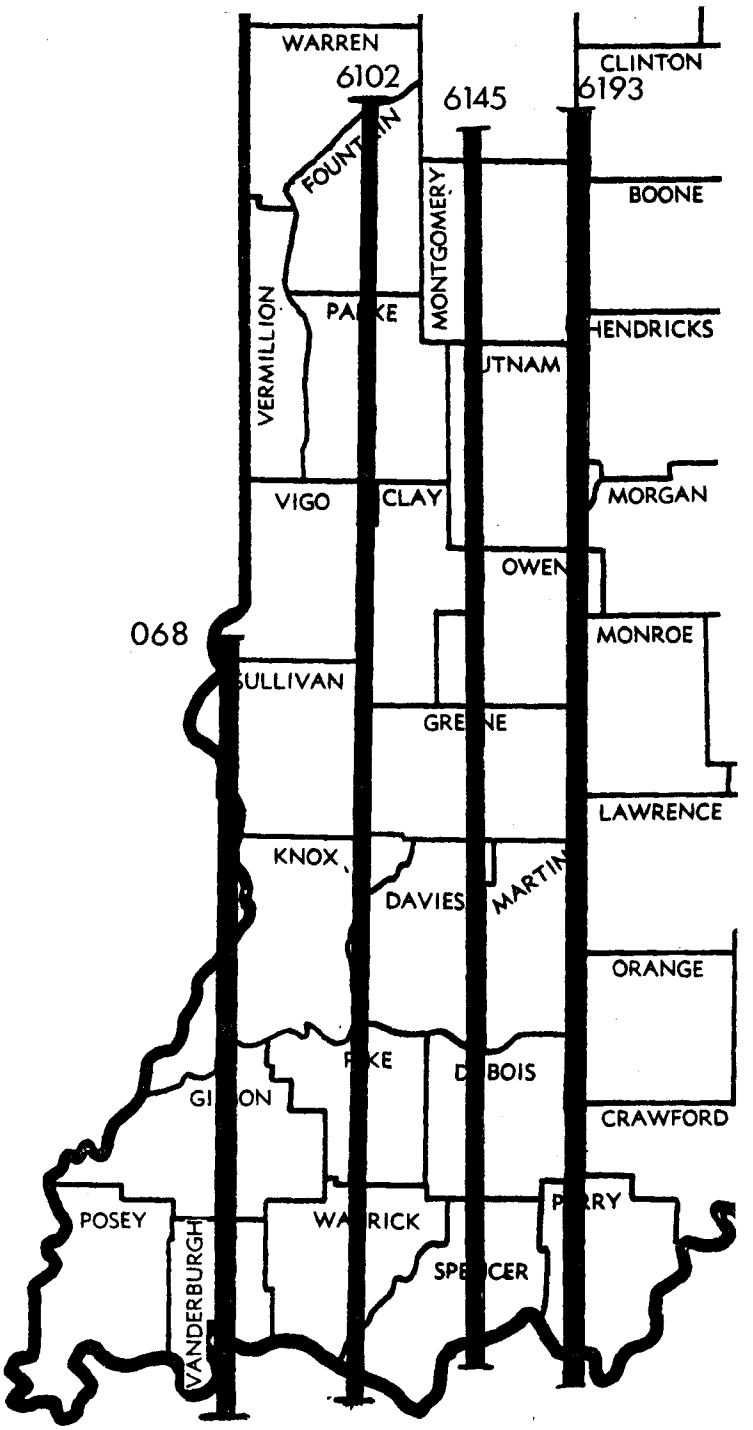
Counties in Study Area, Priorities, Codes*

County	Code	Priority
Clay	CL	1
Daviess	DA	11
Dubois	DU	16
Fountain	FO	18
Gibson	GI	6
Greene	GR	7
Knox	KN	9
Martin	MA	13
Montgomery	MO	19
Owen	OW	15
Parke	PA	3
Pike	PI	8
Putnam	PU	17
Spenser	SP	14
Sullivan	SU	2
Vanderburgh	VA	10
Vermillion	VE	5
Vigo	VI	4
Warrick	WA	12

* Perry county was included after the interpretations began.

Attachment II

Air Photo Index



Attachment III

7½ Minute Map Index by County

COUNTY	FULL QUADS	PARTIAL QUADS
Clay		Coal City Jasonville Saline City Clay City Patricksburg Poland Center Point Staunton Brazil East & West
Davies	Epsom Montgomery	Scotland Odon Lyons Plainville Loogootee Alfordsville Glendale Sandy Hook Washington Wheatland Bicknell Monroe City Jasper Sandborn
Dubois	Jasper Huntingburg Dubois Saint Anthony	Otwell Velpen Holland Dale Saint Meinrad Birdseye Cuzco Hillham Rusk
Fountain	Veedersburg Hillsboro Mellott	Alamo Wallace Kingman Newport Waynetown Wingate Westpoint Attica Stone Bluff Covington Perrysville

COUNTY	FULL QUADS	PARTIAL QUADS
Gibson	Owensville	New Harmony
	Princeton	Poseyville
	Francisco	Cynthiana
		Haubstadt
		Elberfeld
		Lynnville
		Oakland City
		Union
		Petersburg
		Iona
		Decker
		Patoka
		East Mount Carmel
		Mount Carmel (IL)
		Grayville
		Keensburg
Greene	Switz City	Jasonville
	Bloomfield	Coal City
	Solsberry	Arney
		Freedom
		Whitehall
		Stanford
		Owensburg
		Koleen
		Scotland
		Lyons
		Sandborn
		Linton
Knox	Fritchton	East Mount Carmel
	Oaktown	Decker
	Bicknell	Saint Francisville
		Monroe City
		Vincennes
		Washington
		Lyons
		Bucktown
		Heathsville
		Russelville (IL)
		Patoka
		Iona
		Sandy Hook
		Wheatland
		Plainville
		Sandborn
		Carlisle

COUNTY	FULL QUADS	PARTIAL QUADS
Martin	Shoals	Alfordsville
	Indian Springs	Jasper
		Rusk
		Hilham
		Huron
		Williams
		Owensburg
		Koleen
		Scotland
		Odon
		Loogootee
Montgomery	Crawfordsville	Wingate
	Darlington	Linden
	New Market	Kirpatrick
	Ladoga	Colfax
		Waynetown
		Shannondale
		Alamo
		New Ross
		Russellville
		Roachdale
		North Salem
Owen	Spencer	Poland
		Cataract
		Quincy
		Gosport
		Whitehall
		Freedom
		Arney
		Coal City
		Clay City
		Patricksburg
Parke	Mecca	Brazil East
	Catlin	Brazil West
	Mansfield	Rosedale
	Rockville	Clinton
		Montezuma
		Wallace
		New Goshen
		Bellmore
		Kingman
		Alamo

COUNTY	FULL QUADS	PARTIAL QUADS
Pike	Petersburg Winslow Augusta	Holland Lynnville Union Monroe City Glendale Velpen Folsomville Oakland City Iona Sandy Hook Otwell
Perry	Bristow Gatchel	Birdseye Taswell Saint Meinrad Branchville Beechwood Fulda Desby Alton Tell City Cannelton Rome Cloverport Mattingly
Putnam	Clinton Falls Reelsville Cloverdale Greencastle	Bellmore Mansfield Brazil East Center Point Coatsville Roachdale Poland Cataract Quincy Eminence North Salem Russellville

COUNTY	FULL QUADS	PARTIAL QUADS
Spencer	Santa Claus	Saint Meinrad Fulda Tell City Lewisport Rockport Owensboro East Reed Yankeetown Richland City De Gonia Springs Chrisney Holland Owensboro West Dale
Sullivan	Shelburn Hymera Dugger Sullivan	Hutton Pimento Lewis Saline City Jasonville Linton West Union Sandborn Bucktown Carlisle Heathsville Merom Hutsonville Fairbanks
Vanderburgh	Evansville North	Cynthiana Kassnn West Franklin Wilson Henderson Evansville South Newburgh Daylight Elberfield Haubstadt

COUNTY	FULL QUADS	PARTIAL QUADS
Vermillion		Danville N.E. and S.E. Humrick Scotland Saint Bernice Sandford Covington Kingman New Goshen Clinton Dana Montezuma Newport Perrysville
Vigo	Terre Haute Seelyville	Sandford New Goshen Rosedale Brazil West Staunton Saline City Lewis Pimento Hutton Dennison
Warrick	Boonville	Yankeetown Newburgh Daylight Elberfield Lynnville Folsomville Holland Chrisney De Gonia Springs Richland City

Attachment IV

Field Verification Check Sheet

FIELD VERIFICATION SHEET

County____________________________ Date____________________________

Site No.	T & R	PI Class	Ac.	Field Class & Remarks

Attachment V - Description of Land Use Classes

Public Law 152, Acts of 1976 require that in addition to identifying derelict land, the use class of the surrounding land must also be identified. The general classes of land use and a short description of the class make-up is presented in this section.

LAND USE DESCRIPTIONS

Class I Possible Derelict Sites. This class will include the following categories:

A. Active sites characterized as having no vegetation, obvious overburden ridges and shadow patterns.

B1. Inactive sites ungraded, vegetation less than 75%. Ridge pattern apparent. (Barren Spoil)

B2. Inactive sites graded, vegetation less than 75%, no apparent ridge or shadow pattern. (Barren Spoil)

C. Gob, occurance of vegetation is rare, piles usually have a mounded appearance with no apparent shadow pattern.

D. Slurry, occurance of vegetation is rare, feature is usually contained by a high wall structure.

E. Water, no vegetation, contained sometimes affected by salt level or specular reflection.

Class II, Other, Non-Derelict Sites. This class of land include the following:

A1. Ag lands, bare soil, no vegetation, geometric field pattern with apparent soil boundary delineation.

A2. Ag lands, vegetated, up to 100% cover by vegetation, uniform tone contained in geometric field pattern.

B. Pasture, at least 15% covered by grass, coarse textured and relatively uniform field pattern, may contain scattered trees.

C1. Hardwood Forests, 100% covered by vegetation, regular to irregular field pattern and coarse texture.

C2. Conifer Forests, 100% covered by vegetation, irregular field patterns and generally fine textured.

D. Successfully Reclaimed Lands, greater than 75% vegetative cover, ridge structure usually apparent.

E. Other, anywhere from barren to completely vegetated, variable field pattern, usually includes features such as urban development, railroad yards, etc.

F. Water, same as Class I E. above.

Photo-interpretation Key

	Use Descriptor	Veg.	Pattern	Color and Tone	Text
I. Possible Derelict Site	A. Active Site	0%	ridged	bright white to light blue	ruff
	B. Inactive Site				
	1. Ungraded	<75%	ridged	(<25% vegetation) med. blue to lt. gray blue	ruff
	2. Graded	<75%	amphorous	(>25% vegetation) mottled lt. grayish pink	smoot coar not-ru
	C. Gob	rare	mounded	lt. blue to very dk. blue often mottled or patchy	coar
	D. Slurry	rare	contained	lt. blue to very dk. blue color may often blend	smoo (fin
	E. Water	0%	contained	black or very dk. blue, bright blue if silty	smoo
II. Other, Non-Derelict	A. Ag. Lands				
	1. Bare Soil	0%	angular or geometric	white to dk. blue	smoo
	2. Vegetation	100%	uniform	pale pink to purplish red, sometimes bright red	"
	B. Pasture	>15%	regular to irregular	bright red to mauve or to grayish red	coar
	C. Forest				
	1. Hardwood	100%	regular to irregular	bright to dark red often mottled	coar
	2. Conifer	100%	irregular	dark brownish red	fin
	D. Successfully Reclaimed	>75%	ridged	bright red to dk. brownish red	fine coar
	E. Other	0-100%	variable	any color or combination	man
	F. Water	0%	contained or flowing	black to very dk. blue, bright blue if silty	smoo

	Pattern	Color and Tone	Texture	Shadow	Remarks
	ridged	bright white to light blue	ruffled	apparent	Boundary roads usually apparent around perimeter.
	ridged	(<25% vegetation) med. blue to lt. gray blue	ruffled	apparent	Same as above.
	amphorous	(>25% vegetation) mottled lt. grayish pink	smooth to coarse not-ruffled	none	Same as above.
	mounded	lt. blue to very dk. blue often mottled or patchy	coarse	none	Has tendency to form gullies. Visible drainage pattern multi-directiona
	contained	lt. blue to very dk. blue color may often blend	smooth (fine)	none	Surface drainage patterns usually obvious and in predominant direction.
	contained	black or very dk. blue, bright blue if silty	smooth	none	Specular reflection or sun glint will cause water to appear white.
	angular or geometric	white to dk. blue	smooth	none	Fence rows and row patterns are sometimes apparent.
	uniform	pale pink to purplish red, sometimes bright red	''	''	Same as above.
	regular to irregular	bright red to mauve or to grayish red	coarse	none	May have a few sparse trees or a small pond in field, sometimes animal trails may be apparent.
;	regular to irregular	bright to dark red often mottled	coarse	yes	Vegetative cover includes component of grass under story for both 1 and 2
;	irregular	dark brownish red	fine	yes	Forests often follow natural contours Regular pattern in hardwood associated with farm woodlot. Conifers mostly associated with mine activity.
%	ridged	bright red to dk. brownish red	fine to coarse	possible	Most remarks pertain to Forest class above.
0%	variable	any color or combination	many	possible	May include rural development, railroad or major transportation.
	contained or flowing	black to very dk. blue, bright blue if silty	smooth	none	Specular reflection or sun glint will cause water to appear white.