NPS Form 10-900
(Rev. 8-86)

2662

OMB No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Registration Form

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NATIONAL REGISTER

This form is for use in nominating or requesting determinations of eligibility for individual properties or districts. See instructions in *Guidelines for Completing National Register Forms* (National Register Bulletin 16). Complete each item by marking "x" in the appropriate box or by entering the requested information. If an item does not apply to the property being documented, enter "N/A" for "not applicable." For functions, styles, materials, and areas of significance, enter only the categories and subcategories listed in the instructions. For additional space use continuation sheets (Form 10-900a). Type all entries.

1. Name of Property

historic name Julien Dubuque Monument
other names/site number 13DB116

2. Location

street & number Mines of Spain State Redreation Area, 8999 Bellevue Hts. [ ] not for publication N/A
city, town Dubuque [x] vicinity
state Iowa code IA county Dubuque code 061 zip code 52001

3. Classification

Ownership of Property	Category of Property	Number of Resources within Property	
		Contributing	Noncontributing
[ ] private	[ ] building(s)		buildings
[ ] public-local	[ ] district		sites
[x] public-State	[ ] site		structures
[ ] public-Federal	[ ] structure		
	[x] object	1	objects
		1	0 Total

Name of related multiple property listing:
Mines of Spain Area Archaeological Group

Number of contributing resources previously listed in the National Register 0

4. State/Federal Agency Certification

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this [x] nomination [ ] request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property [x] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

James E. Sandon OSHPO — 10-10-88
Signature of certifying official — Date

Chief Bureau of Historic Preservation
State or Federal agency and bureau

In my opinion, the property [ ] meets [ ] does not meet the National Register criteria. [ ] See continuation sheet.

Signature of commenting or other official — Date

State or Federal agency and bureau

5. National Park Service Certification

I, hereby, certify that this property is:

[x] entered in the National Register. [ ] See continuation sheet. — John J. Knoerl — 11/21/88
[ ] determined eligible for the National Register. [ ] See continuation sheet.
[ ] determined not eligible for the National Register.
[ ] removed from the National Register.
[ ] other, (explain:) _____

Signature of the Keeper — Date of Action

6. Function or Use

Historic Functions (enter categories from instructions)

RECREATION AND CULTURE/monument/marker

Current Functions (enter categories from instructions)

RECREATION AND CULTURE/monument/marker

LANDSCAPE/conservation area

7. Description

Architectural Classification
(enter categories from instructions)

Late Gothic Revival

Materials (enter categories from instructions)

foundation limestone

walls limestone

roof N/A

other N/A

Describe present and historic physical appearance.

[x] See continuation sheet

8. Statement of Significance

Certifying official has considered the significance of this property in relation to other properties:

☐ nationally ☒ statewide ☐ locally

Applicable National Register Criteria ☒ A ☐ B ☐ C ☐ D

Criteria Considerations (Exceptions) ☐ A ☐ B ☐ C ☐ D ☐ E ☒ F ☐ G

Areas of Significance (enter categories from instructions)	Period of Significance	Significant Dates
SOCIAL HISTORY	1897	1897

Cultural Affiliation
N/A

Significant Person
N/A

Architect/Builder
Alexander Simplot
Carter Brothers

State significance of property, and justify criteria, criteria considerations, and areas and periods of significance noted above.

☒ See continuation sheet

9. Major Bibliographical References

☒ See continuation sheet

Previous documentation on file (NPS):

- ☐ preliminary determination of individual listing (36 CFR 67) has been requested
- ☐ previously listed in the National Register
- ☐ previously determined eligible by the National Register
- ☐ designated a National Historic Landmark
- ☒ recorded by Historic American Buildings Survey # IA-9
- ☐ recorded by Historic American Engineering Record #

Primary location of additional data:

- ☒ State historic preservation office
- ☐ Other State agency
- ☐ Federal agency
- ☐ Local government
- ☐ University
- ☒ Other

Specify repository: Dubuque County Historical Society

10. Geographical Data

Acreage of property less than one acre

UTM References

	Zone	Easting	Northing
A	15	690500	4704295
B			
C			
D			

☐ See continuation sheet

Verbal Boundary Description

☒ See continuation sheet

Boundary Justification

☒ See continuation sheet

11. Form Prepared By

name/title Joyce McKay, Cultural Resources Consultant
organization private consultant date September 20, 1988
street & number P.O. Box 188 telephone 608-424-6315
city or town Belleville state Wisconsin zip code 53508

7. DESCRIPTION

The Julien Dubuque Monument belongs to the property type identified as a Commemorative Monument: An Expression of Boosterism. The property's physical appearance, called by its builders a "medieval design" (Hermann 1922), is one associated with the past by late nineteenth century culture. The form and its style suggest the later phase of boosterism which was usually associated with antiquarianism. Its integrity of design and materials remain intact. Although the essential elements remain, its setting and integrity of feeling have suffered partial alteration.

As originally built, the monument stood on the edge of the bluff above Catfish Creek, the placement identified by nineteenth century observors as the location of Dubuque's operations and the Mesquakie village (Schermer and Kurtz 1986). The location is historically identified as the grave of Julien Dubuque. An undated photograph taken prior to the erection of the monument does indicate a low mound supporting a stone cairn (Hartman 1986). Although intended as a park, no other park-like features are known to have been associated with the monument at the time of its construction (Herrmann 1922).

The monument is constructed of rock-faced limestone ashlar, a Galena limestone mined from a nearby quarry (Hermann 1922). This cylindrical tower is 12 feet wide and 25 feet high with walls approximately 18 inches in width and has no roof. The bonding material and the floor are cement. A rectangular, roughly shaped stone embedded in the center of the floor is intended to mark the grave site of Julien Dubuque. A 2.5 by 4 foot bronze plaque opposite the opening reads: "JULIEN DUBUQUE/MINER OF THE MINES OF SPAIN" (see Historic American Building Survey 1934: 100). Covered with grillwork to prevent entrance and vandalism (Herrmann 1922), the door-like rectangular opening overlooks the Mississippi River. There are narrow, rectangular openings on the upper portion of the monument and the top section is crenelated. The shape, massiveness, narrow windows, crenelation, and materials intentionally suggest a medeival form, a castle, features common to the Late Gothic Revival most commonly used between 1860 and 1890.

The monument was originally built on land owned by the Dubuque Monument Association: 1.33 acres in lot 2 of government lot 1 in section 6 and .15 acres in lot 1 of government lot 1 in section 5, a total of 1.48 acres (County of Dubuque, Plat Book 3, p. 109 in Hartman 1986). As noted, no associated features are known to have been constructed adjacent to the monument at the time of its erection. In 1948, the city proposed the construction of a road way to the monument. The paved road to the monument appears not to have been completed until 1965. Just prior to the monument's construction, Herrmann and others removed skeletal materials from the burial location and placed them in Herrmann's Museum of Indian artifacts. The one identified as Peosta was

donated to the Dubuque County Historical Society in 1966. By 1972, patrons objected to its presence and reburial of the skeleton near the Julien Dubuque Monument followed in 1973. Standing 50 feet southwest of the monument, the grave is marked by a 4 foot tall by 2 foot square, 900 pound limestone marker. An affixed plaque states: "PEOSTA, FOX INDIAN CHIEF, FRIEND OF JULIEN DUBUQUE (letter dated 9/18/74 from Peter Harstad to David Gradwohl). Benches and paths presumed to be relatively recent additions to the park are scattered west of the monument. Finally, a chain link fence along the bluff line stands east of the monument.

While integrity of place, design, and materials remain intact, intrusions partially disturb integrity of setting and feeling. The monument remains at its original location. Its design, including the form, plan, ornament, and style, are well preserved and an essential element to the significance of the property. Its builders intended a medieval design to convey an aesthetic of antiquity and a feeling of historical permanence which the massiveness of the structure conveys. The roughness of the materials related to their vision of a romanticized past. Thus, the integrity of design and material contribute heavily to integrity of feeling intended to convey a sense of past importance.

Intrusions to the west of the monument - the road, the 1972 grave, added benches, and walkways - lend a mid-twentieth century atmosphere to what was intended to be a rustic, natural late nineteenth century rural park. Except for the easily removed chain-link fence, the view overlooking the river remains unobstructed. The relationship between the monument, believed to be the site of Dubuque's grave by its nineteenth century builders, the river, and Catfish Creek, the location of historical events which to them made Dubuque historically important, is a critical one. This rustic placement also adds to the general feeling of antiquity. Therefore, although integity of setting and feeling have been disturbed in the recent past, the most essential element, the view from the bluff, remains. For these reasons, the boundary of the property is confined to that portion of lot 2 of lot 5 of government lot 1 immediately west of the monument and all of lot 1 of government lot 1, the edge of the bluff. This boundary delineation excludes all 1960s and 1970s intrusions except for the chain link fence which may be easily replaced by a more appropriate barrier.

8. STATEMENT OF SIGNIFICANCE

The Julien Dubuque Monument relates to the Late Nineteenth-Twentieth Century Boosterism context and the Commemorative Monument: An Expression of Boosterism property type. The property type recognizes the possible existence of a wide range of forms which express the booster ethic as an antiquarian phenomenon between approximately 1870 to 1940. Most are statues or small decorative architectural forms. Although they may commemorate a past historical event or series of events, the property type acquires significance under criterion A as an expression of antiquarian interest growing from a desire to maintain historical security, prove past importance, and promote their community based upon an association with past accomplishments. The Julien Dubuque Monument relates the importance of the City of Dubuque to its early association with Julien Dubuque through an architectural form which to the late nineteenth century connoted antiquity and stability. Although it overlooks the location they identified as Julien Dubuque's lead mining operations and stands over what they believed to be his grave site, the "medieval design" of the monument possesses no symbolic relationship to Dubuque himself. Its symbolism functions to connect the City of Dubuque with its past. The property type retains its associative values through integrity of place, setting, design, materials, and feeling. While the monument maintains its integrity of place, design, and materials, alterations to the west of the monument have partially disturbed integrity of design and feeling. For this reason, the boundary line is drawn excluding these distracting features to focus upon the bluff-top view to the west.

During the nineteenth century, boosterism usually moved through two related phases. It initially emerged as a central place community attempted to economically outdistance its neighbors. Leaders attempted to give their community a sense of importance by attracting a railroad, developing a large industrial and commercial base, founding educational and other institutions which would support community services, and beautifying their surroundings to attract population and business. Such ploys as expositions, business directories, guide books, and other forms of promotionalism attempted to sell the community as an important place to outsiders. In later phases of this movement as central places experienced frustrations with their promotional campaign, leaders often explored other avenues and acquired additional goals. They began to fear that their community might not adequately survive competition with other places. While they continued their former modes of promotion, they sought security for their community in the past. Usually prominent leaders gathered evidence about their early beginnings. These facts emphasized successes, greatness, progress, and firsts. Thus, they constructed highly selective histories. Despite their superficial interpretations of the past by late twentieth century standards of historiography, these histories served their own needs. The histories gave the rapidly changing, late

nineteenth and twentieth century lives a feeling of security anchored in the past. Commemorative moments built as a physical representation of the past were a by-product of this historicism. These monuments frequently included a statue or a small architectural form representing an important historical figure such as a community founder or an important event. They viewed the past as a series of true events. It was certain while the future was uncertain and hazy during a period of rapid technological progress and social disorientation.

Then, Dubuque's leaders such as Richard Herrmann searched for relics and gathered the facts of the past to place in his museum (Herrmann 1972). As a representation of the past, these objects whether they be from the early founding of Dubuque or from the prehistoric past such as the skeletal materials were revered if not understood. Although Dubuque's economy had experienced rapid growth after the arrival of the railroad in 1855, its industry slowly declined as lumber mills failed and the railroad began to draw natural products from the area to Chicago (Mahoney 1982). Thus, in 1897 during a period of gradual economic decline and following the depression of the 1890s, some of Dubuque leaders within the Early Settlers Association agreed to erect a monument to the person they identified as their community founder, Julien Dubuque.

Because the monument commemorates an historical trend rather than the individual alledged to be buried within, the actual events which occurred at its location are immaterial to the significance of the monument itself. The identification of the individuals uncovered while excavating the footings remains unconfirmed. What is important is that its builders believed that they had located the grave of Dubuque and several other noted participants in the early history of Dubuque, Peosta and Potosa. The Early Settlers Association with the Iowa Institute of Science and Letters of Dubuque jointly formed the Dubuque Monument Association to raise funds and erect the Monument in 1897. The original holdings purchased by the group for this purpose totalled 1.48 acres. Alexander Simplot submitted drawings depicting a medieval design for the monument followed by local builders, the Carter Brothers (DUBUQUE ENTERPRISE 1904; Herrmann 1922).

The dedication of the Julien Dubuque Monument in October, 1897 attracted a large gathering of from 2000 to 3000 individuals brought by special train excursions and a ferry (Herrmann 1972). Although the ceremony appears to the late twentieth century as a side-show, it was most likely an expression of respect for the past as well as an attempt to sub-consciously use history to verify the importance of Dubuque as a place. The Early Settler's Association "...had only the betterment of Dubuque in mind and the preserving of old relics of the early history of Dubuque" (Champion n.d.). A clear element of antiquarianism existed. But, additionally, Herrmann noted that "...all the

travelers and writers speak of the location of the grave as being an extremely curious and interesting place, which tourists should not fail to see" (1922: 54). Thus, although their antiquarian interest is real, the location links the past to the present, it also serves the present by drawing others to the city to view such an important place. It thus boosted the City of Dubuque.

The Julien Dubuque Monument emerged from the booster movement common to many midwestern cities and gains significance under criterion A as an expression of a series of events. Grave sites of historic figures are not considered significant as a representation of that person. This kind of property does not represent the productive years of the individual. And, commemorative properties are not eligible for the National Register as an expression of a past event or recognition of an individual. They did not exist during the period of the person's life or the event. Commemorative properties gain importance as a representation of how later generations viewed the past. They must possess their own historical significance. Thus, the Dubuque Monument acquires significance under a criterion consideration as a symbol of the use of history to find security within a rapidly changing society from which the later phases of boosterism developed.

The monument then derives significance from the area of social history. This property represents a significant, late nineteenth and twentieth century attitude toward economic progress and insecurities evolving from the rapid pace of change which precipitated both phases of the booster ethic. And, although a nation-wide phenomenon, this and most examples of the commemortive property types are expressions of a particular central place and therefore possess local significance. There are two other known National Register properties within Iowa that indirectly represent this context. The Spirit Lake Massacre cabin site in Arnold's Park, Dickinson County represents the massacre which occurred there in 1857. And, probably more significantly, the cabin was also the site of a museum displaying what were viewed as relics of that massacre and interpreting them from the late nineteenth century perspective. And, Sargent Floyd's Monument in Sioux City commemorates the death of Floyd on the Lewis and Clark expedition. They display a similar kind of antiquarianism to the Julien Dubuque Monument.

Because the monument was intended to tie Dubuque to its past thus evoking feelings of importance and security in the present, the property's location, design, materials, and setting compose the elements of integrity which convey that feeling as well as fulfill the registration requirements for the property type. The Late Gothic Revival design of the tower with its rock-faced limestone ashlar surface, crenelation, and narrow windows and the rustic view of the river valley overlooking the location of Dubuque's operations all continue to reinforce this originally intended feeling of antiquity and permanence. However, intrusions to the west, the road, modern park furniture,

and adjacent grave as well as the fence to the east do detract from the setting. For this reason, property boundaries orient the viewer toward the bluff's edge to the north and east.

9. MAJOR BIBLIOGRAPHIC REFERENCES

Champion, Fabian
n.d. The Old Settlers Association of Dubuque. Ms. at the Dubuque County Historical Society, Dubuque.

Dubuque Enterprise
1904 Dubuque's Grave Was Not Desecrated. Dubuque Enterprise, 3 (43): 1-2.

Harstad, Peter
1974 Letter to David Gradwohl, State University of Iowa, Ames from Peter Harstad, State Historical Society of Iowa, Iowa City dated 9/18/1974.

Hartman, Gerda Preston
1986 Historical Research on Mines of Spain Area: Abstracts, Personal Interviews, and Recollections. Ms. at Loras College Library, Dubuque.

Herrmann, Richard
1922 Julien Dubuque, His Life and Adventures. Times-Journal Company, Dubuque.

Herrmann, Henry
1972 Land of Promise and Fulfillment, Life and Story of Richard Hermann. Sr. Henry Herrmann, Dubuque.

Historic American Building Survey
1934 Plan of the Dubuque Monument, HABS. Copy of ms. at the Dubuque County Historical Society, Dubuque.

Mahoney, Timothy R.
1982 River Towns in the Great West, 1835-1860. Doctoral thesis, University of Chicago, Chicago.

Verbal Boundary Description:

The property contains all that portion of the tract east of a north-south line directly west of the monument in lot 2 of government lot 1 in section 6 and lot 1 of government lot 1 in section 5 (County of Dubuque, Plat Book 3, p. 109 in Hartman 1986) on which the Early Settlers Association originally built the monument east of a north-south line directly west of the monument.

Boundary Justification:

Logically, all of the lands on which the Early Settlers Association erected the monument, the 1.48 acres which contains the original setting of the monument, should be included within the property boundaries. However, since alterations to the west of the monument detract from this setting, the proposed west boundary line excludes all of these modern intrusions with the exception of the chain link fence which may be easily replaced.

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 10 Page 2

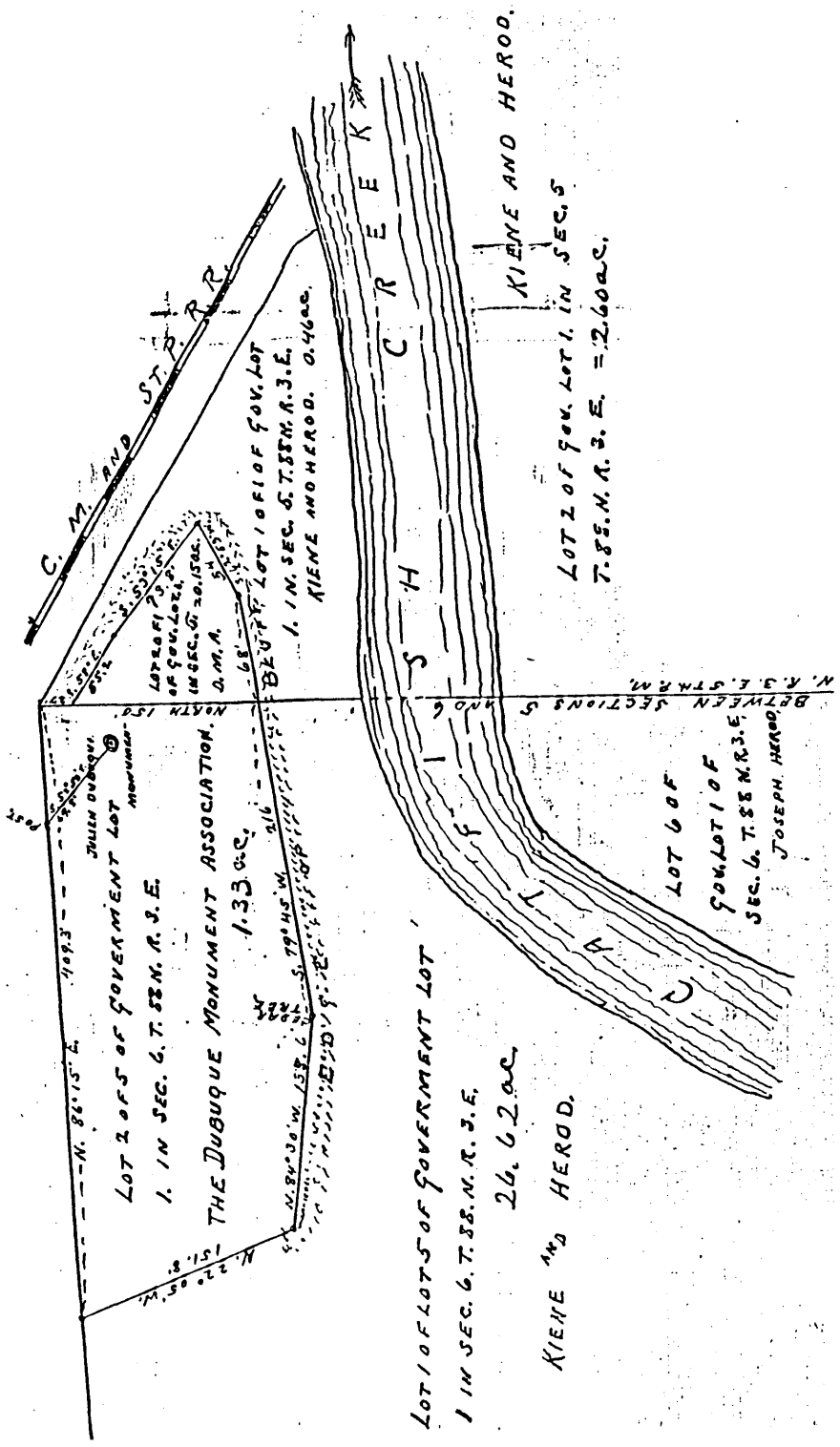

Figure 1: Plat of land purchased by the Dubuque Monument Association.

Property name: Julien Dubuque Monument
Location: Dubuque, Iowa
Photographer: Joyce McKay
Date: August, 1988
Location of negatives: Bureau of Historic Preservation, State Historical Society of Iowa, Capitol Complex, Des Moines, Iowa 50319

1. View of the Julien Dubuque Monument from the park facing the Mississippi River, looking southeast.

2. View of the Julien Dubuque Monument from the point immediately below the monument with the Mississippi River to the east and looking northwest.

3. View of the Julien Dubuque Monument from the terrace above Catfish Creek facing northwest.

1. NAME OF PROPERTY

Historic Name: JULIEN DUBUQUE'S MINES

Other Name/Site Number: Mines of Spain State Recreation Area; Mines of Spain

Archeological Names: Trading Post/Village of Kettle Chief Archeological District; Mines of Spain Area Lead Mining Community Archeological District; Mines of Spain Area Rural Community Archeological District; Julien Dubuque Monument; Mines of Spain Prehistoric District

2. LOCATION

Street & Number: 8999 Bellevue Heights Not for publication: X

City/Town: Dubuque Vicinity: X

State: IA County: Dubuque Code: 061 Zip Code: 52001

3. CLASSIFICATION

Ownership of Property
Private: ___
Public-Local: ___
Public-State: X
Public-Federal: ___

Category of Property
Building(s): ___
District: X
Site: ___
Structure: ___
Object: ___

Number of Resources within Property

Contributing	Noncontributing	
___	___	buildings
101	142	sites
___	___	structures
___	___	objects
101	142	Total

Number of Contributing Resources Previously Listed in the National Register: 101

Name of Related Multiple Property Listing: Mines of Spain Archeological Property Group

4. STATE/FEDERAL AGENCY CERTIFICATION

As the designated authority under the National Historic Preservation Act of 1966, as amended, I hereby certify that this ____ nomination ____ request for determination of eligibility meets the documentation standards for registering properties in the National Register of Historic Places and meets the procedural and professional requirements set forth in 36 CFR Part 60. In my opinion, the property ____ meets ____ does not meet the National Register Criteria.

_____ _____
Signature of Certifying Official Date

_____
State or Federal Agency and Bureau

In my opinion, the property ____ meets ____ does not meet the National Register criteria.

_____ _____
Signature of Commenting or Other Official Date

_____
State or Federal Agency and Bureau

5. NATIONAL PARK SERVICE CERTIFICATION

I hereby certify that this property is:

____ Entered in the National Register _____
____ Determined eligible for the _____
National Register
____ Determined not eligible for the _____
National Register
____ Removed from the National Register _____
____ Other (explain): _____

_____ _____
Signature of Keeper Date of Action

6. FUNCTION OR USE

Historic:	DOMESTIC	Sub:	Single Dwelling
	DOMESTIC		Village Site
	COMMERCE/TRADE		Trading Post
	AGRICULTURE/SUBSISTENCE		
	INDUSTRY/PROCESSING/EXTRACTION		Extraction Facility
	INDUSTRY/PROCESSING/EXTRACTION		Processing Site
Current:	LANDSCAPE	Sub:	Conservation area

7. DESCRIPTION

ARCHITECTURAL CLASSIFICATION: N/A

MATERIALS: N/A
Foundation:
Walls:
Roof:
Other:

Describe Present and Historic Physical Appearance.

The Julien Dubuque's Mines district is located less than one-quarter mile south of the city limits of Dubuque, Iowa. The district lies along the narrow creeks and in the limestone bluffs and rolling countryside west of the Mississippi River and encompasses 1,361 acres. The property types include the archeological remains of Dubuque's Trading Post (1788-1810) and associated Mesquakie village of Kettle Chief (ca. 1805/1820-1830); Amerindian and Euro-American lead extractive and refinement properties (ca. 1788-1914) which include exploratory lead mining pits, mining shafts, adits, and smelters; and the mining communities of Catfish and Mosalem (ca. 1832-1864). The properties are interrelated through lead mining activities beginning in the fur trading period (1788-1830) and continuing through the commercial lead mining period (1830-1914). Julien Dubuque's Mines were worked by the Mesquakie Indians and the lead ore was used in trade for goods at the Frenchman's post (Johnson and Malone 1959:475). The Mesquakie continued working the mines after Dubuque's death, but were ousted by American miners who finally acquired the mines as part of the 1832 peace settlement of the Black Hawk War. From the 1830s through the 1850s, the Dubuque's Mines, like those in surrounding northwestern Illinois, southwest Wisconsin, and northeastern Iowa, were thoroughly worked. The district was the world's most productive lead region until the Civil War when it was superseded by the opening of mining districts further West. Evidence of mining activity is abundant in Julien Dubuque's Mines district, now protected as part of the Mines of Spain State Recreation Area. A total of 101 contributing sites contain components related to lead mining within the district (Table 1).

ENVIRONMENTAL SETTING

The Julien Dubuque's Mines district is located within the Paleozoic Plateau of the Quad-State region (northeastern Iowa, southeastern Minnesota, southwestern Wisconsin, and northwestern Illinois) of the Mississippi River Valley, an anomalous area minimally influenced by the Pleistocene glacial deposits so characteristic of the central Lowland physiographic province of the Midwest (Fenneman 1938:518-534; Prior 1976). The Paleozoic Plateau includes parts of northeastern Iowa, southeastern Minnesota, southwestern Wisconsin, and northwestern Illinois. The terrain is dominated by deeply dissected Silurian, Cambrian, and Ordovician age bedrock. The latter's faults and fractures are hosts for galena, sphalerite, and marcasite/pyrite making it a world class deposit of lead and zinc (Leonard 1897:13-14).

The district extends for 3 1/2 miles along the western bank of the Mississippi River in northeastern Iowa, from Catfish Creek to Massey Station. The Mississippi River constitutes the most noticeable and significant physiographic feature in the area. It serves as a permanent water source which supplies a diversity of biotic resources. It also supplied the main force for the development of alluvial flats and terraces in the bottomlands. In addition, the Mississippi River represents a major transportation, communication, and trade conduit throughout the midlands during the prehistoric and historic periods.

The landscape in the area can be divided into three major units related to their relative periods of formation: 1) pre-Wisconsin, 2) Wisconsin, and 3) Holocene landforms (Abbott 1983:13). The pre-Wisconsin landforms generally occur at elevations above 700 feet Above Mean Sea Level (AMSL) and consist of numerous gentle to moderately sloping, concave risers which step away from valley floors. The Wisconsin landscape resulted in steep slopes and bluffs along with numerous bench and terrace remnants, occurring at 650, 640, 630, 620, 610, and 605 feet AMSL. The formation of talus slopes in many areas exposed underlying carbonate rock to periglacial phenomena which caused large blocks to detach, creating overhangs and rockshelters. The Holocene landscape primarily consists of alluvial and fluvial landforms in the bottomlands which may cover the Wisconsin landforms up to 630 feet AMSL. Loess-derived soils represent the most extensive Holocene feature in the area. They occur on Holocene, Wisconsin, and pre-Wisconsin landforms up to depths of 50 to 70 cm. The Holocene deposits contain most of the cultural remains.

The climate of the area is temperate continental and humid (Trewartha and Horn 1980:297-313; United States Department of Agriculture 1941:862-872). Temperature extremes are common, humidity and precipitation are moderate, and evapo-transpiration rates are high. Warm to hot summers and cold winters are typical. Seasonal variation in weather changes may produce severe storms, and droughts are not uncommon. Blizzard conditions with violent winds occasionally occur during the winter months with severe thunderstorms and associated tornadoes occurring in the spring and summer months.

The area is part of the Illinoian biotic province which occupies an extensive portion of the upper Mississippi Valley (Dice 1943:21-23). Mesic deciduous forests, dominated by oak, hickory, and other species occupy the uplands. Other wet mesic forest species flourish on the bottomlands where deep soils receive runoff from the slopes. Prairie areas are quite limited in the district (Abbott 1983:32). Concomitant with the diversity of forest species is a diversity of smaller flora and fauna (Prior 1984). Small micro-ecological areas within the forest, including isolated and limited areas of prairie, support grasses and flowering plants (some of which are rare or endangered in this part of Iowa). The forests support numerous white-tailed deer and smaller mammals. The wooded floodplains provide nesting areas for waterfowl and raptors. Outside the heavily forested area of the Mississippi River, the Iowa prairies contained numerous floral and faunal species, especially bison, prior to Euro-American exploitation. The region contained a vast assortment of available resources for human exploitation both prehistorically and historically.

Although the availability and diversity of faunal and floral species formed the basis for prehistoric exploitation in the region, it was the mineral resources which drew the interest of the Euro-Americans during the last years of the eighteenth century and the early part of the nineteenth century (Hunt 1967:242). The regional warping of the Paleozoic formations created a pattern of fractures and joints in the carbonate rocks which permitted hydrothermal emplacement of lead-zinc ore. The lead occurs as a sulfide (galena) and as a carbonate (cerussite) while the zinc occurs as a sulfide (sphalerite), a carbonate (smithsonite), and a silicate (calmine). Although galena occurs in three main levels in the Paleozoic bedrock, it was the upper two levels which were consistently exploited by the early miners. In the upper levels of the bedrock, the lead ore occurs in rich veins along fissures and linings in caves in the bedrock. In addition to the lead/zinc ores, chert deposits in the carbonate rock were exploited prehistorically, as well as the alluvial clay found in the bottomlands. The lead region of the Upper Mississippi Valley, controlled by Amerindians until ousted by Euro-Americans in the 1820s-1830s, was the world's most productive lead field in the 1840s, when approximately 50,000,000 lbs were produced annually (Rickard 1932:171). Some of the earliest worked and richest deposits were located within the district.

The Julien Dubuque's Mines district is currently dedicated as Mines of Spain State Recreation Area under the ownership of the Department of Natural Resources of the State of Iowa. Under this ownership, the area has not and will not receive heavy development. Current standing structures and objects within the State Recreation Area, excluded from the district, are the E.B. Lyons Nature Center and Preserve (established in 1974), the Julien Dubuque Monument (13DB116-built in 1897), and several deteriorating outbuildings associated with late nineteenth and early twentieth century agricultural activities (present at Sites 13DB73 and 13DB195). The Department of Natural Resources is

committed to the protection, enhancement, and interpretation of the natural and cultural resources within the Mines of Spain State Recreation Area.

Late-nineteenth century and twentieth century land use prior to the creation of the Mines of Spain State Recreation Area (in 1980) included agriculture, a limestone quarry at Horseshoe Bluff, several sand quarries, and logging. In the first part of the 1900s, sparsely utilized woodlands and small farms dotted the area. Major logging activities occurred between 1865 and 1880. Less intensive logging in the 1950s focused upon the remaining walnut trees. Although several small farms operated on the level hill tops and in the hollows from the mid-1800s to the 1980s, present agricultural use of the land is limited to 104 acres of cultivated fields rented from the Department of Natural Resources. Gravel and sand quarrying operations from the 1940s to the recent past hollowed out the interior of Horseshoe Bluff. The State is minimizing the effects of these disturbances by creating wetlands immediately adjacent to the quarry area and by re-establishing vegetation in the quarry. Along the Mississippi River bank, there are several non-contributing elements, all modern intrusions predating the creation of the Mines of Spain State Recreation Area: right of ways for the Soo Line Railroad, an electric transmission line, a bulk petroleum pipeline, and shoreline modifications constructed by the U.S. Army Corps of Engineers. Also, a dirt road, following a former railroad grade cuts through part of the district.

ARCHEOLOGICAL MANIFESTATIONS AND INVESTIGATIONS

The Julien Dubuque's Mines district represents a historic archeological district which has the potential to elucidate our present understanding of Amerindian/Euro-American contact and the role of lead mining in the development of the United States from the 1780s to the 1910s. Although limited mining occurred during the prehistoric period in the Upper Mississippi Valley Lead Region, it was not until the fur trading period that lead mining became a substantial part of the economic system of the Amerindians, mainly the Mesquakie (also called the Fox [Hodge 1965:472-474]). After the removal of the Mesquakie and Sauk following the Black Hawk War of 1832 (Hodge 1975:476), the American lead miners entered the area in numbers. The lead industry in the Upper Mississippi River Valley played an important role in the western migration of settlers during the 1830s and 1840s. Lead from these mines supplied the majority of the lead for the growing nation from the 1820s to the 1850s with a revival in the industry in the region during the Civil War. Lead mining in the region was to continue until 1914 but at a substantially reduced rate.

The archeological investigations in the Dubuque area and within the Mines of Spain State Recreation Area began during the late nineteenth and early twentieth centuries (Orr n.d.; Starr 1895; Woodman 1872). The focus of those investigations was locating, mapping, and excavating of burial mounds and mound groups. One mound group (13DB3) was recorded within the Mines of Spain State

Recreation Area during this early period of archeological research.

Investigations in the Mines of Spain State Recreation Area waned until 1968 when Office of the State Archaeologist of Iowa personnel tried to locate the remains of Julien Dubuque's house (McKusick 1968). Although the excavations failed to identify Dubuque's house, excavations at 13DB17 apparently located an 1830s era miner's cabin and a Late Woodland burial. In 1973, a limited survey was conducted in the Mines of Spain area in order to locate and identify prehistoric and historic occupations (Straffin 1973). The survey was centered on the immediate vicinity of Catfish Creek although the bluffs to the southeast along the Mississippi were also investigated. Several types of prehistoric and historic sites were identified. The results of Straffin's survey and testing suggested a probable location of the "Fox Indian Village" (also known in the literature as "Kettle Chief's Village"). Site 13DB9 was originally recorded by the Office of the State Archaeologist during a literature search that indicated a Mesquakie village at the mouth of Catfish Creek (Abbott 1983:2). An additional survey in the area was conducted by Anton Till (1977) as part of the Great River Road survey. Three burial mound sites and one prehistoric habitation site were identified in the Mines of Spain State Recreation Area as a result of the 1977 survey.

The preliminary archeological survey of the Mines of Spain State Recreation Area began in summer of 1981 (Abbott 1982a). Office of the State Archaeologist personnel attempted to relocate previously recorded sites and to locate and identify unrecorded sites. Pedestrian surface inspection was employed in cultivated and forested portions of the area. Along Catfish Creek, a limited shovel assisted survey was also conducted on a few forested terraces and benches. Ten of the fifteen previously recorded sites in the Mines of Spain area were relocated. In addition, 58 prehistoric and 79 historic sites were identified (Abbott 1982a). The data from the 1981 preliminary archeological survey allowed Office of the State Archaeologist personnel to develop an environmental model that provided criteria for the assessment and predictability of locations for the prehistoric manifestations within the Mines of Spain (Abbott 1982b). The 1982 Office of the State Archaeologist survey sought to verify Abbott's model for site location which was derived from site catchment analysis and to develop research strategy and sampling techniques for future archeological investigations in the Mines of Spain (Abbott 1983). The 1982 archeological investigations completed the pedestrian surface inspection of the forested and cultivated portions of the Mines of Spain (Abbott 1983:54-98). Additional shovel assisted survey was conducted along several forested ridges and terraces, especially along Cattesse Hollow and Catfish Creek. Several rockshelters along these drainages were also shovel tested. Eighty-five additional sites were located and recorded. In addition, 44 previously recorded prehistoric and historic sites were shovel tested, subjected to controlled surface collecting with associated post-hole testing, or mapped.

In 1987, the Office of the State Archaeologist, Department of Natural Resources, and the Iowa Archeological Society sponsored an archeological field school at the Mines of Spain (Schermer 1988). The field school personnel surveyed recently acquired land in the central part of the Recreation Area and the leased E. B. Lyons Nature Preserve. Five new sites were recorded in the former inholding and supplemental survey information was recorded for five previously recorded sites.

The impact zone for the proposed Mines of Spain Recreation Area Entrance Road and Picnic Grounds was investigated during 1988 (Anderson 1988,1989). The project was designed to allow greater public access, provide additional visitor safety, and allow better protection of the resources within the Recreation Area. The archeological investigations indicated that the proposed road construction (planned for 1989-1990) will have no adverse or no effect on the archeological properties concerned with the lead mining activities within the Recreation Area boundary (Anderson 1988; Simpson 1989). The Office of the State Archaeologist personnel also resurveyed the area near the mouth of Catfish Creek (Sites 13DB9, 13DB17, 13DB18, and 13DB62). In 1991, Office of the State Archaeologist personnel conducted Phase I and II investigations at the mouth of Catfish Creek along the proposed replacement of the Catfish Creek Bridge and the Mar Jo Quarry Road improvement (Finney 1991). Eight sites were investigated during the surveys including the recordation of five new sites (13DB404, 13DB405, 13DB406, 13DB407, and 13DB410) and testing of three previously recorded sites (13DB17, 13DB18, and 13DB62).

DUBUQUE'S TRADING POST (13DB62) AND MESQUAKIE VILLAGE (13DB9)

Sites 13DB62 (possible location of portion of Dubuque's Trading Post) and 13DB9 (associated Mesquakie Village of Kettle Chief) represent property types related to the National Historic Landmark theme of Indigenous American trade relationships (Theme I. CULTURAL DEVELOPMENTS: INDIGENOUS AMERICAN POPULATIONS, Subtheme D. Ethnohistory of Indigenous American Populations, Facet 2. Establishing Intercultural Relations, Subfacet i. Trade Relationships) and to the State's historic context of "Indian Contact, Conflict, Dispossession Along the Upper Mississippi and Lower Missouri River Valleys (1720-1860)" (McKay 1988). Based on historic and archeological documentation, the cultural resources contained within the archeological sites of Dubuque's Trading Post (13DB62) and the Mesquakie village (13DB9) represent multiple functions associated with an isolated trading post: trading, manufacturing/craft, agricultural, and domestic activities. The trading post and village represent two intimately related cultures which were dependent upon one another through economic ties. Both the Mesquakie village and the trading post extend over both sites 13DB9 and 13DB62 (Abbott 1982a,1982b,1983). Archeological testing at the two constituent sites identified surficial evidence of Mesquakie habitation, a storage pit, lead smelter, and artifacts dating to the period of occupation by the Mesquakie and the Dubuque trading post.

The Mesquakie first arrived in the Mines of Spain during the early 1780s. The Kettle Chief Village was established along Catfish Creek after Zebulon Pike's expedition in 1805 and prior to the 1820s (Schermer and Kurtz 1986:61-63). Dubuque arrived at the Mines of Spain in 1788 and died in 1810 (Auge et al. 1986:17-18). Although the occupation of the village and the trading post may not necessarily coincide, Dubuque lived in close proximity to the Mesquakie and focused his fur and lead trade with this group. The relationship between the two parties probably resulted in the cultural adjustments between Dubuque and the Mesquakie. The forms of such accommodations forms the central avenue of historical and archeological investigations of the property. The Mesquakie increased their involvement in the lead trade, altered the mode of production from self-sufficiency to dependence upon their labor and credit for livelihood, emphasized a single leader with de-emphasis of the moiety system, and relied heavily upon trade in some areas of their material culture which resulted in the elimination of certain native products. Dubuque's participation in the relationship involved the formation of a major Euro-American trading post with associated risks. His residence with the Mesquakie represented a familiar French-Canadian trading adaptation which included a possible marriage alliance, gift giving, and the maintenance of cultural ties at commercial centers, such as St. Louis, Prairie du Chien, and the trade factory at Fort Madison. The extensive involvement of Dubuque in the lead trade anticipated greater American involvement in the region after the War of 1812.

The two sites were identified with the Late Historic Mesquakie (Speth 1986) interaction with the French-Canadian trading culture between 1788 and 1830. This period began with the date Dubuque received permission from the Mesquakie to utilize the lead mines and ends with the year the Mesquakie abandoned the village when they fled the area to escape the Menomini. Although they returned to Dubuque's Mines to mine lead, they never re-established the village which was subsequently burned by trespassing American miners in 1831 (Auge 1976:8; Auge et al. 1986:32-34; Langworthy 1855:377; Schermer and Kurtz 1986:63-65). The dates and cultural associations are documented in the historic record. In addition, archeological investigations have substantiated the association of Dubuque's trading post (13DB62) and the Mesquakie village with the two sites (Abbott 1982a,1983; Straffin 1973). Contemporary villages associated with the Mesquakie at the mouth of Turkey River and at Rock Island have either been destroyed or remain unlocated (Straffin 1973). Earlier adjustment to the Euro-American presence, ca. 1700-1730, was represented by the excavations of the Bell site (47WN9) in Wisconsin (Gourley 1985; Mason 1983:313-320; Parmalee 1963:58-69; Speth 1986; Wittry 1963:1-57). The material culture recovered from the Bell site displays the beginnings of Euro-American influence on the Mesquakie. Contemporary and typologically comparable regional trading posts within the Upper Mississippi region have suffered substantial alteration from either early, inadequately reported archeological investigations (McKay 1987) or historical modification resulting from continued site habitation into the early twentieth century (McKay 1985). The

remains of Fort Madison (1808-1813) are located beneath a paved parking lot. Excavations at the site have been limited to the officers' quarters, the central blockhouse, and the enlisted men's barracks (Hansman 1987:217-231; McKusick and Williams 1980). The extent of the Mesquakie, Sauk, and Ioway cultural elements at Fort Des Moines II (established in 1843) are not clearly identified but archeological testing at the site indicate the survival of some components (Brice, Petrides and Associates 1985; Gourley 1985; Rogers and Stanley 1989). Fort Des Moines II (13PK61) and the associated Indian agency fulfilled trading, diplomatic, agricultural, craft, and manufacturing needs of (as well as political control over) the Amerindians prior to their removal from Iowa.

According to historical documentation, the Dubuque trading post was scattered along Catfish Creek beginning at the confluence with the Mississippi River. Associated structures and properties included Dubuque's house, an adjacent storage cellar for furs and lead, at least three other dwellings (some may have been associated with the dwellings of his engagees), four fields (one for each dwelling), one or several granaries or barns, a blacksmith shop, a horse-drawn grain mill, and a landing on the Mississippi affiliated with a "yard" which may have been either a wharf or warehouse. Several exploratory lead mining pits dotted the landscape by 1804 and Dubuque operated at least one smelter near the mouth of Catfish Creek (Auge et al. 1986:15; A. Chouteau 1804; P. Chouteau 1810; Swisher 1945:308). Historic documentation for the Village of Kettle Chief, particularly between 1820 and 1830, indicates the presence of 17-20 lodges arranged in two parallel rows and a larger council house near the mouth of Catfish Creek. Accounts indicate a large expanse of corn fields near the village and numerous open, shallow lead mines west of the village along Catfish Creek (Langworthy 1855; Schermer and Kurtz 1986:71-72; Schoolcraft 1819).

Archeological data recovered from testing at 13DB9 and 13DB62 suggest the possible location of a portion of Dubuque's trading establishment and the Mesquakie settlement. This location was originally indicated by J. Riess (Till 1977:315). Office of the State Archaeologist personnel under the direction of Marshall McKusick (1968) attempted to verify the location in 1968. In 1973, Dean Straffin conducted pedestrian surveys along the mouth of Catfish Creek, the bank of the Mississippi River to the south, and an adjacent agricultural field. In addition, he conducted excavations at 13DB9. A zone of heavy disturbance was encountered in the initial ten inches of his 4 x 30 ft trench. From 10 to 36 inches below the surface, a basin-shaped refuse pit was located at the southern end of the trench. The basin measured 29 inches in depth and 4 ft in diameter at its base. Chert flakes, burned limestone cobbles and pebbles, and a Brandon flint from a flintlock musket were recovered. Combination of the archeological data with historical sources strongly suggested that the pit was associated with Mesquakie village. During the pedestrian survey of the adjacent, cultivated field, a blue glass bead, a section of a clay pipe stem, and a musket ball were recovered (Straffin 1973).

During the archeological surveys of 1981 and 1982, personnel were able to define the approximate limits of Sites 13DB9 and 13DB62 (Abbott 1982a,1983). Site 13DB9 lies on the second bottom terrace, toe slope, and foot slope of an alluvial fan immediately southwest of the confluence of the Mississippi River and Catfish Creek. Site 13DB62 lies to the south along a low, loamy terrace remnant. The sites occupy the transitional zone between the original vegetation comprising the mesic forest and the bottomland prairie. Two separate archeological concentrations were indicated by the investigations, which included pedestrian surface inspection and artifact collection, controlled surface collection, and post hole tests over much of this area. The post hole tests were placed at 10 m intervals. Testing occurred to a depth of 70-80 cm in 10 cm arbitrary levels (Abbott 1982a,1983).

Several archeological features have been located during the survey efforts. Two or three features apparently represent tepee rings (possible lodge locations). One small shallow encircling ditch measures approximately 15 to 20 ft in diameter. A larger oblong depression measures approximately 100 ft in length and 25 to 30 ft in breadth. The dimensions of a third are indeterminate although its configuration seems to conform to size of a council house (Abbott 1982a).

A smelter feature at 13DB9 contains a large concentration of lead ore and ash, clinkers, and burned earth. A roughly circular formation of limestone slabs, approximately one meter in diameter, encloses this debris. Its location along the incline of the river bank indicates that it was a log furnace. Its stratigraphic position beneath historic overbank flood deposits suggests a possible association with the Dubuque trading post and Mesquakie village.

In addition, testing uncovered a single burial associated with the Mesquakie settlement. Recovered material included a female skull, small bone fragments, a small silver tinkler, and a small silver and copper bobble. Similar silver ornaments were manufactured for the British dominated trade from 1760 to approximately 1820. Systematic post hole tests revealed the occurrence of Euro-American materials in area of stratified sediments which alternated with thick, dark layers containing historic materials. Beneath these sediments, a buried soil horizon contains materials associated with a prehistoric occupation.

Artifacts collected during the surveys of Sites 13DB9 and 13DB62 strongly suggest probable association with the Dubuque trading post and Mesquakie village. Silver beaver coins from the Hudson Bay Company and the Northwest Fur Company, gunflints, galena, clay pipe fragments, and glass trade beads appear to represent clearly associated artifacts. Other artifacts include glass, earthenware, porcelain, and stoneware fragments (Abbott 1982a,1983).

The evidence suggests close coincidental occupation of the Mesquakie village to Dubuque's trading post or movement of the

village to the location of the trading post after the Mesquakie destroyed it following Dubuque's death in 1810. Features associated with the village are scattered from the mouth of Catfish Creek through Sites 13DB9 and 13DB62 to Horseshoe Bluff. Archeological evidence also suggests that a portion of Dubuque's trading post extended along a sliver of land between Catfish Creek and the Mississippi River in addition to the area of 13DB62 (Abbott 1982a,1983). Disturbances from later nineteenth century occupation, twentieth century agriculture, and natural erosion has resulted in some site attrition. McKusick's 1968 excavations revealed the occurrence of a lead mining occupation in the vicinity of the Dubuque and Mesquakie settlements. The mining community of Catfish, also located in this area, may have also disturbed earlier cultural deposits. Construction of railroad lines along the Mississippi River and Catfish Creek, during the 1870s, apparently encroached upon the edges of the two sites. The portions of the sites which lie in a former agricultural field have been sown with grasses in order to protect the archeological resources. The extent of site disturbance through cultivation is currently unknown. Areas of the two sites have suffered from moderate to heavy erosion especially along the river bank. In addition, a portion of 13DB9 is under water due to higher pool levels associated with the lock and dam system along the Mississippi River. The Iowa Department of Natural Resources has stabilized most of the site disturbances except for some erosion along the river bank.

The archeological investigations of the Dubuque trading post and Mesquakie village of Kettle Chief supports the historically documented occupations along Catfish Creek near its confluence with the Mississippi River. The location of features and artifacts contained in stratified sediments indicate that sufficient portions of the sites remain in relatively pristine conditions. The archeological data recovered from the sites and the archeological material which remains have much to offer to the present understanding of Euro-American and Amerindian acculturation resulting from the trading relationship.

LEAD MINING AND PROCESSING SITES

American commercial lead mining in the Dubuque's Mines area began after the removal of the Mesquakie following the Black Hawk War in 1832. Although trespassing miners operated in the Mines of Spain after the Mesquakie fled the area in 1830, the American miners were not officially permitted in the area until 1833 with the opening of the Black Hawk Purchase. Peak activity occurred until the Civil War (Childs 1984; Langworthy 1855). The archeological sites within this property, coupled with fragmentary contemporary literature, have the potential to yield significant insight into the common technological forms and community forms associated with lead mining in the Upper Mississippi Valley lead mining region during the significant period of the 1830s and 1840s. The exceedingly rich but shallow lead deposits in the area (Owen 1844), readily accessible to river transport, made the Dubuque's Mines attractive to the first miners; however, their shallow nature and pinching out caused

their abandonment by all but the smallest operations. This factor, coupled with designation as a state recreation area, has preserved the archeological resources.

The lead mining and processing properties within the Julien Dubuque's Mines district are associated with the National Historic Landmark theme of Westward expansion related to the mining frontier (Theme X. WESTWARD EXPANSION OF THE BRITISH COLONIES AND THE UNITED STATES, 1763-1898; Subtheme E. The Mining Frontier) and the State's historic context concerning "Mining and Bulk Products: Lead Mining in the Mines of Spain (1830-1914)" (McKay 1988). Associated property types relate to the different phases of lead extraction techniques and those associated with the refinement of the lead ore. Exploratory mining pits, shafts, and adits (horizonal mine entrances) exemplify the extraction techniques. Log furnaces and Scotch hearths represent the refinement process. These property types were common to the Upper Mississippi Valley Lead Region (Fatzinger 1971; Fay et al. 1986). The majority of the mining sites are associated with the American mining efforts in the Dubuque's Mines area, especially between 1830 and 1861 as well as the limited mining extending until 1914. The Mesquakie may have mined some of the horizontal entrances or adits near the mouth of Catfish Creek. Association of adits with the mining activities of the Mesquakie, including Monument Caves (13DB109) and Fessler Mines (13DB151 and 13DB153), remains poorly documented (Pruszko 1983:51). The property gains archeological coherence through its representation of both social relationships concerning how the miners lived and the technological circumstances under which they worked. Since the miners of the Upper Mississippi Lead Region tended to remove accessible surface deposits with little investment of capital and engaged in small business relationships, either as individuals or partners, their presence at any single location was short-lived. Although full-time miners often migrated to other lead mining regions once the surface deposits were depleted, farmers or laborers associated with the farmsteads continued to supplement their income by lead mining after the lead mining boom subsided following the Civil War in the 1860s.

Archeological sites associated with the commercial lead mining industry are scattered across the district. The known sites form a discontinuous district although there is a high probability that less visible remains of additional extraction, processing, and camp sites may be located in future investigations. The boundaries of the district approximate the boundaries of the Mines of Spain State Recreational Area. This approach acknowledges the existence of 97 individual sites within an area of high concentration and protects those associated with the property types which may remain unlocated. Property types are sub-categorized according to the technological manifestations common to the area. These include lead smelting sites, mining shafts, lead adits, and exploratory lead mining pits. Several sites contain components which may fall into more than one category (for example, Site 13DB95 contains a lead smelter, mining shafts, and exploratory lead mining pits). Distribution

of the sites within these property type subcategories include 81 exploratory mining pits, 8 shafts, 10 adits, and 6 smelters.

Although the majority of the exploratory pits, shafts, and adits cannot currently be assigned a date more closely than the 1790 to 1914 period, many of the shallow deposits were depleted by the 1860s and no longer drew full time miners (Hartman 1986; Pruszko 1983). Historical documentation which is consistent with the archeological record indicates that individuals and partners with some small companies operated within the district from the 1830s to 1860s. Farmers continued to mine the area on a supplementary basis until ca. 1914 when almost all the mining ceased in the area. The last significant mining activity occurred between 1910 and 1914 at the Fessler Mines (13DB151 and 13DB153). The period of significance for the commercial lead mining period falls between 1830 and 1865, although mining had dropped appreciably by the end of the 1850s. Although mining lead and later zinc continues until the early twentieth century, the mode of production changed from commercial mining to supplementing farming income during the latter portion of the nineteenth century.

During the pedestrian surveys of 1981 and 1982 (Abbott 1982a,1983), 78 archeological sites within the Mines of Spain State Recreation Area were located and identified as containing exploratory lead mining pit components. These pits dot the landscape. The majority of the pits represent the miners' failed attempts to locate lead veins. Others may simply represent shallow, productive mines which were possibly associated with the pre-settlement era or locations of mine shafts which have slumped giving the feature the appearance of an exploratory pit. The pits commonly occur along the upper slopes and ridge tops where lead veins were anticipated to be located above the water table. On occasion, the pits are located on the lower slopes or high valleys. Sites range in size from isolated pits (the most common) to small clusters of two to ten pits and less frequently to clusters of ten or more exploratory pits (for example Site 13DB95 contains 571 pits, 13DB132 contains 112 pits, 13DB155 contains 87 pits, and 13DB178 contains 34 pits). The oblong to circular exploratory mining pits vary from approximately 1.2 to 4.0 m in diameter. Most range in depth from 0.2 to 2.5 m in depth. Fifteen pits were identified as trenches which range from 4.6 by 2.1 m to 20 by 5 m and frequently reach depths of 1.0 to 4.5 m. A spoil pile generally rings the orifice and tapers away from it. A few of the pits have the orifices secured by limestone rubble walls (e.g., 13DB95, 13DB202, 13DB221, and 13DB273). Sites containing ten or more pits were mapped. In addition, Site 13DB178 was shovel tested along its edges in order to locate any associated features such as side walls. The surveys located virtually no cultural material associated with the exploratory mining pits (Abbott 1981,1983). Although a limited number of the shallow pits show moderate erosion and several deeper ones have suffered some degree of slumpage, the majority of the mining pits have experienced little natural or cultural disturbance since they were abandoned (Abbott 1982a,1983,1988; Pruszko 1983).

Mining shafts are vertical, roughly circular depressions which are normally deeper than the exploratory mining pits. The shafts extend to the lead ore vein. Horizonal drifts (tunnels) may extend at different levels and directions from the main shaft. Twelve such sites were identified during the 1981 and 1982 Office of the State Archeologist survey of the area. Although some of the exploratory mining pits may be associated with the pre-settlement era, American miners excavated the shafts after 1830 (Straffin 1973). The shafts are generally less than one meter in diameter and rarely descend beyond a depth of 15.25 m. Since greater depths required greater capital, the majority of the miners were unwilling to invest in such propositions. On occasion, the upper portion of the shafts was lined from the surface to bedrock with a rubble stone wall to prevent slumping during the mining operations. Spoils radiate away from the shaft. Mining shafts essentially represent successful exploratory pits and are often found in the same environmental setting. The Longueville Mine (13DB73) contains the deepest known shaft and rather extensive drifts. The most recent shaft of the three known shafts contains a limestone rubble lining (its opening is currently protected by a metal grate). The horizontal bracing timbers key into the ledges along the ceiling of the drifts and therefore vertical supports are not needed. This type of shoring suggests a date of operation between the 1850s and 1860s. The mine was also open between 1908 and 1912 and was explored for possible reopening in the 1950s. Few cultural materials were recovered from the vicinity of the shaft (Abbott 1982a,1983,1988; Hartman 1986; Pruszko 1983; Straffin 1973). Slumping around the opening or deeper cave-ins occasionally made it difficult to distinguish between shafts and exploratory pits (Abbott 1982a; Pruszko 1983).

Twelve sites containing adits were also identified during the pedestrian surveys of the Mines of Spain State Recreation Area (Abbott 1982a,1983,1988). Adits represent horizontal mine entrances. While the majority of the adits probably represent excavations to gain access to lead deposits, they may also be drainage systems for flooded mines (Pruszko 1983). Most adits occur along the mid to lower portion of the slopes where miners hoped to intersect lead bearing veins (usually around 650 ft AMSL). Adit openings vary from three or four meters up to ten meters. Drifts rarely extend more than 4.5 to 6.0 m into the slope. Such excavations also characterize the miner's goal to exploit the accessible resources without large investments of time and capital. The three Fessler mines (13DB151 and 13DB153) were the longest adits and were mined between 1908 and 1914. Fessler No. 2 (13DB151) extended approximately 52 m into the slope. Fessler No. 2 contains a track composed of 1.5 inch steel rail lain on 1 x 4 inch boards (lain flat) which dates the mining operation after 1900 (Pruszko 1983). Site 13DB188, a foundation and well, apparently represents a dwelling or a storage facility used during the operation of these mines. Horizontal timber bracing and a track composed of 1 x 3 inch boards (standing on edge) indicate the South Bluff Cave (13DB224) probably operated between the 1850s and 1860s (Pruszko 1983). Mining in the Monument Caves (13DB108) along the bluffs near the mouth of

Catfish Creek may be associated with the Mesquakie although such an association lacks substantiating historical or archeological documentation (Abbott 1982a,1983; Hartman 1986; Pruszko 1983). Although the entrance to some of the larger adits have collapsed, several remain open or have suffered minor slumping.

The final property type associated with the commercial mining activities is the log furnace and Scotch Hearth which relates to the temporary smelter operations. Five sites containing smelter features were identified during the Office of the State Archaeologist surveys and shovel testing in 1981 and 1982 (Abbott 1982a,1983,1988). The inclined, log furnace sites, located within the Dubuque's Mines district, are the older, simpler works and either lie along the Mississippi River, Catfish Creek, or Cattesse Hollow. Access to a stream or valley is an important factor for the transportation of the lead. Intact examples, such as one log furnace at 13DB9, contain a concentration of flat stones which form a triangle or rough circle which are angled away from the main section of the smelter towards a rock-lined channel down slope to a collection area. The archeological remains of the furnace cover an area of approximately one square meter. Presumably, a trench or other collecting device was located at the end of this channel. Other smelting sites contain stone concentrations and debris similar to that found in the log furnace at 13DB9. The debris consists of burned limestone, burned earth, galena fragments, lead ash, charcoal, and clinkers. One log furnace at 13DB9, located just south of Catfish Creek lies within stratified historic flood deposits which probably date between 1850 and 1876. The low stratigraphic location of the second one in the historic sediments suggests a date of construction prior to 1830. The other smelter sites have not been dated but may potentially date to the period prior to the 1830s. Although fragile, the smelter sites have remained undisturbed except the two exposed to erosion at 13DB9 (Abbott 1982a,1983,1988). Their pristine state will allow for future work on the industrial archeology of lead smelting practices in frontier conditions, a practice with only limited metallurgical literature.

LEAD MINING COMMUNITIES

Associated with commercial lead mining activities during the mid-nineteenth century, two communities and one camp were identified during the archeological investigations within the boundaries of the Mines of Spain State Recreational Area (Abbott 1982a,1983,1988; McKusick 1968; Straffin 1973). The two mining communities (Catfish [13DB9, 13DB17, 13DB18, and 13DB62] and Mosalem) and a satellite mining camp (13DB201) functioned as temporary nucleated communities. The small, temporary community is important to the understanding of how the nineteenth century lead miners lived, traveled to the mines, traded their ore, and procured provisions from larger trading centers. These property types contained dwellings and associated outbuildings associated with the domestic activities of local miners. The communities also contained commercial operations which relate to economic, political, and social functions: a mercantile store, craft shops,

blacksmith shop, a small industry, and perhaps a meeting place for religious, educational, or government activities. Although these mining communities represent special purpose resource extractive settlements, they also fit into the pattern of small rural communities during the mid-nineteenth century. These communities are identified within the National Historic Landmark theme of Western expansion related to the mining frontier (Theme X. WESTWARD EXPANSION OF THE BRITISH COLONIES AND THE UNITED STATES, 1763-1898; Subtheme E. The Mining Frontier) and the State's historic context of "Special Purpose Settlements: Lead Mining Communities in the Mines of Spain (1830-1860s)" (McKay 1988). Sites 13DB9, 13DB17, 13DB18 and 13DB62 coincide with the location of Catfish. These sites occur along a high sandy terrace and a second bottom terrace, toe slope, and foot slope of an alluvial fan which are located on the south side of the confluence of Catfish Creek and the Mississippi River. Mosalem was located at the mouth of Cattesse Hollow south of Horseshoe Bluff.

Catfish was founded in 1832, at the mouth of Catfish Creek and was abandoned by 1860. The community contained a landing, smelter, distillery, dwellings, a nearby mill, and perhaps several businesses within an area of approximately 15 acres (Auge et al. 1986; Childs 1984; DeWerthern 1858; Goodspeed 1911; Hoffmann 1930; Rogers 1976; Tanner 1836). Components from Sites 13DB9, 13DB17, probably 13DB18, and 13DB62 relate to the occupation of Catfish. Trench excavations by Office of the State Archaeologist personnel (McKusick 1968) located a building foundation at 13DB17 which they identified as an 1830s miner's cabin. Their excavations recovered stoneware, a ceramic pipe fragment, metal and glass fragments, buttons, a horseshoe, a china doll fragment, and other associated domestic debris (Abbott 1983; McKusick 1968; Straffin 1973). A trench excavation by Straffin (1973) and controlled surface collection and post hole tests by Office of the State Archaeologist personnel in 1981 and 1982 (Abbott 1982a,1983) located several additional foundations measuring between 5 by 7 m and 7 by 8 m; areas of stratified historic materials containing materials similar to those recovered in 1986 at 13DB17 (metal, glass, earthenware, porcelain, and galena); and at least one post-1830s smelter. At 13DB18 artifacts associated with Catfish were also recovered, although the site primarily represents a prehistoric occupation. Controlled surface collection and post hole tests, spaced at 10 m intervals, at 13DB62 indicate the community of Catfish spread southward along the Mississippi away from Catfish Creek. These archeological investigations located artifact concentrations containing stoneware, earthenware, porcelain, metal, glass, and a ceramic pipe. Structural features included evidence of a foundation. Testing and historical documentation suggest that these sites contain further archeological data which relates to this community. These sites were under cultivation until 1983. They have also suffered from occasional severe erosion. Site 13DB9 has also suffered some disturbance resulting from the construction of a railroad line. In addition, it was apparent to the investigators that a portion of the site extended east of the railroad track which is now covered by the Mississippi River.

Mosalem existed as a post office from 1850 to 1855 and from 1862 to 1864 (Hartman 1986). In 1858, it appeared as a platted community on the DeWerthern map but was not shown on the 1874 Harrison and Warner map. As of 1860, 20 miners resided in the community and it served as the post office for seven mining companies (Hartman 1986; Pruszko 1983). Pedestrian surveys located numerous lead mining pits and shafts on the hillsides surrounding the ravine which contained the community at the mouth of Cattesse Hollow. Smelter sites also occurred in the tributaries to Cattesse Hollow. Although historical documents and archeological investigations suggested the location of Mosalem, its precise boundaries remain tenuously defined. Construction by the Chicago, Clinton, Dubuque, and Minnesota Railroad (now the Soo Line) between 1870 and 1873 (Western Historical Company 1880:630) severely impacted a portion of the community along the bank of the Mississippi. Flooding by the Mississippi may have also impacted a portion of Mosalem.

A smaller mining community or camp is indicated by the historical documentation and archeological evidence. The pedestrian survey and shovel testing in 1982 (Abbott 1983) located a mining camp associated with a lead smelter (13DB201). The remains of a dwelling were recorded above the left band of Cattesse Hollow along the ridge top. A small concentration of burned limestone, clinkers, and charcoal also supported the presence of a smelter. The area also contained numerous exploratory mining pits (Abbott 1983). Although the lead mining exploitation sites, including exploratory mining pits, mining shafts, and adits, have experienced some detrimental impact resulting primarily from natural processes, they are sufficiently intact to indicate original form, function, and location. The communities have suffered more substantial disturbance from farming and railroad activities. However, archeological features do remain intact.

Information concerning parallel small, transitory lead mining communities in other portions of the Upper Mississippi Valley Lead Region is extremely limited. Kirk (1939:20) described a "smelting community" located 1.5 miles north of Galena, Illinois, which was founded in 1829. This community contained a stone warehouse, a stone dwelling and three other dwellings, a saw and grist mill, a blacksmith shop, and smelting furnaces.

NONCONTRIBUTING SITES

Noncontributing sites within the confines of the proposed Julien Dubuque's Mines National Historic Landmark District relate to the prehistoric period and to historic activities (e.g., farming, logging, and boosterism) which post-date the major lead mining exploitation of the area from the 1788 to 1865. There are a total of 142 identified archeological sites within the proposed District which constitute noncontributing archeological sites. One hundred one sites contain prehistoric components; thirty-five sites represent historic farmsteads, road systems, quarrying activities, logging operations, cemeteries or monuments related to boosterism; and five sites contain both prehistoric and historic components (Table 2).

The prehistoric cultural sequence in the district typically follows the generalized pattern for the Midwestern United States (Alex 1980; Griffin 1978). The Mississippi River and the Paleozoic Plateau represent significant geographic features which were influential in the development of cultural adaptations unique to the region. The Mines of Spain State Recreational Area contains a high density and diversity of prehistoric archeological sites. These sites include large and small open-air sites, rockshelters, and mounds. Both Archaic and Woodland sites have been identified in the Julien Dubuque's Mines district.

Noncontributing historic archeological sites are concerned with farming, logging, and the promotion of boosterism in the region. The development of the rural community in eastern Iowa began with the lead miners during the 1830s; however, Government Land Office sales of farm land did not commence until 1847. Generally, the regional farmsteads consisted of one to two dwellings, barns, granaries, storage sheds, silos, privies, and middens (Abbott 1982a,1983; Hartman 1986,1987). During the second half of the nineteenth century, several local farmers also supported their families by continuing to mine lead. Lumbering also provided additional supplementary income. Most of the timber cut for sale by the farmers was probably sold to the local mill (13DB190) after its founding in 1857. Lumbering continued within the Mines of Spain State Recreation Area until the 1880s (Acrea 1985). Farming continued until the recent past when the State purchased the land for a State Recreation Area although the majority of the farmsteads were abandoned between 1920 and 1950. Limited agricultural activities within the recreation area still occur. The final historic archeological noncontributing site (13DB116) is concerned with state boosterism. In 1897, the Early Settlers Association and the Iowa Institute of Science and Letters of Dubuque jointly formed the Dubuque Monument Association to raise money and erect a monument to Julien Dubuque. The monument is located over the grave of Dubuque which overlooks the location of his fur and lead trading operations. The monument, erected in 1897, represents the late nineteenth and early twentieth century view towards commemoration of significant past events or important persons.

The Iowa Department of Natural Resources (DNR) has recently proposed upgrading a historic period roadway (13DB146) in the central portion of the Recreation Area. This historic roadway will serve as an entrance road to a picnic area located near Horseshoe Bluff. Although the roadway passes near to three lead mining sites (13DB136, 13DB138, and 13DB142), proposed construction activities will not impact any of these sites. Since the State intends to utilize the existing historic roadway, impact to the archeological district will be minimal. In addition to this construction, the DNR is presently in the process of replacing a bridge over Catfish Creek (Finney 1991). Five new sites were recorded as well as additional testing at 13DB17, 13DB18, and 13DB62. The impact of these projects will not affect the proposed landmark district.

8. STATEMENT OF SIGNIFICANCE

Certifying official has considered the significance of this property in relation to other properties: Nationally: X Statewide: ___ Locally: ___

Applicable National Register Criteria: A X B ___ C ___ D X

Criteria Considerations (Exceptions): A ___ B ___ C ___ D ___ E ___ F ___ G ___

NHL Criteria: 1, 6

NHL Theme(s):

I. CULTURAL DEVELOPMENTS: INDIGENOUS AMERICAN POPULATIONS
   D. Ethnohistory of Indigenous American Populations
      3. Varieties of Early Conflict, Conquest, or Accommodation associated with the Amerindian contact, conflict, and dispossession along the Upper Mississippi River Valley, 1788-1833

X. Westward Expansion of the British Colonies & the United States 1763-1898
   E. The Mining Frontier

Areas of Significance: Archeology Historic/Aboriginal
Archaeology Historic/Non-Aboriginal
Exploration/Settlement
Industry
Commerce

Period(s) of Significance: 1788-1865

Significant Dates:

Significant Person(s):

Cultural Affiliation: Mesquakie
French-Canadian

Architect/Builder:

State Significance of Property, and Justify Criteria, Criteria Considerations, and Areas and Periods of Significance Noted Above.

The Julien Dubuque's Mines district gains national significance as a major concentration of historic archeological sites related to the mining of lead from 1788 to 1865. These resources are nationally significant under Criteria 1 and 6. Under Criteria 1, these resources represent, at a national level, the earliest example of the folk/moot phenomenon known as the mining district. In addition, the resources are significant in the area of Exploration/Settlement because of their association with the Westward Expansion into the Upper Mississippi River Valley, particularly the lead mining regions of the Upper Mississippi River Valley. Within the areas of Industry and Commerce, district was part of the most productive lead mining district during the Early National Period which was also the scene of the first major mining rush in the United States. It significantly affected Indian policy, mining methods and laws, and was a precursor of the Far West Mining Frontier. Under Criteria 6, the archeological resources have yielded and have the potential to yield information of major scientific importance concerning the effects of contact between the French-Canadians, Amerindian Mesquakie, and the Americans; the technology of early lead mining and processing; and the lifestyles of the 1833-1865 miners/settlers of the region.

The district relates to 1) National Historic Landmark Theme I. CULTURAL DEVELOPMENTS: INDIGENOUS AMERICAN POPULATIONS, Subtheme D. Ethnohistory of Indigenous American Populations, Facet 3. Varieties of Early Conflict, Conquest, or Accommodation associated with the Amerindian contact, conflict, and dispossession along the Upper Mississippi River Valley, 1788-1833; and 2) National Historic Landmark Theme X. WESTWARD EXPANSION OF THE BRITISH COLONIES AND THE UNITED STATES, 1763-1898, Subtheme E. The Mining Frontier concerning the expansion into the lead mining frontier of the Upper Mississippi River Valley, 1788-1865 (National Park Service 1987). Under the general theme of Cultural Adaptations at Contact, the property types, including Dubuque's trading post and the associated Mesquakie Village of Kettle Chief, represent the adaptive response of the Mesquakie to lead mining associated with the fur and lead trade. The sub-theme represented in the Westward Expansion of the British Colonies and the United States, 1763-1898, pertains to the mining frontier which applies to Dubuque's trading establishment from 1788 to 1810 and the subsequent ousting of Amerindians by Euro-American miners, especially after the Black Hawk War in 1832. Although no specific sub-theme applies to the westward migration of the American Nation into the Upper Mississippi Lead Mining Region, the district is also nationally significant since lead mining served as one of the major emphases for initial settlement of Illinois, Iowa, and Wisconsin (Bain 1906:72). Additionally, lead and iron were the major Jacksonian era industries. The lead mines of the district produced more than any other region in the world at the time of Andrew Jackson's death (Ripley and Dana 1860:376-392). Geologist H. Foster Bain summarized that during this period the region was

"the most important source of lead in the world, aside from the mines of northern England and Spain" (Bain 1906:72). The mining activities in the Upper Mississippi region led to the foundation of U.S. mining land law used in subsequent frontiers.

The cultural resources of the Julien Dubuque's Mines district are located within the boundaries of the Mines of Spain State Recreation Area, one fourth mile south of the city limits of Dubuque, Iowa. The area extends for 3 1/2 miles along the Mississippi River's west bank and is 1 1/4 miles wide, covering the river bluffs, hollows, creeks, and prairies where archeological surveys have identified mining pits, adits, and shafts; furnaces and camps; a Mesquakie village; and the trading post and lead works of Julien Dubuque. A stone tower, erected in 1897, marks the location of Dubuque's grave.

At the national level, these resources are related to the development of the mining district and associated mining regulations and federal legislation. From a cultural perspective, the evolution of the mining district and regulations has its basis in the social experience of the mining communities (Shinn 1965:44-46; Waldbauer 1986:2). The resources contained in the Julien Dubuque's Mining district represent some of the best preserved sites relating to the first major national mineral rush. The miners in the Upper Mississippi Valley lead region established the first system of self-government that was to regulate their mining activities in the country. These local laws, customs, and rules were the foundations of national mining legislation and subsequent mineral rushes in the West beginning with the California Gold Rush in 1849. The first major lead mining activity in the Upper Mississippi Valley was associated with the lead and fur trade establishment of Julien Dubuque with the Mesquakie. Dubuque's establishment included the Mines of Spain State Recreation Area. A major Mesquakie village was also located within the park near the confluence of the Mississippi River and Catfish Creek. After the removal of the Mesquakie, American miners from the Illinois side of the Mississippi River established claims and mining communities on the lands previously occupied by Dubuque and the Mesquakie including the proposed National Historic Landmark district. Because of the rugged terrain within the park, historic archeological sites associated with the first national mineral rush are extremely well preserved. In addition, these resources represent the entire range of property types associated with the initial lead mining districts.

A) JULIEN DUBUQUE AND THE MESQUAKIE, 1788-1833

French explorers knew of the Upper Mississippi lead deposits for a century before Julien Dubuque arrived in 1788. In the seventeenth century, the French laid claim to an empire which extended up the St. Lawrence River, across the Great Lakes, and into the Mississippi River Valley. The early explorers noted two major mineral lands in the Mississippi River Valley, in present-day Missouri and in present-day Wisconsin, Illinois, and Iowa. About 1690, Amerindians revealed to French explorer Nicolas

Perrot a rich lead deposit near present-day Dubuque, Iowa. Perrot established a trading post along the Mississippi and bartered for lead ore from the Amerindians (Hoffmann 1930:28-36; Rickard 1932:149-150). Because of isolation, the area was abandoned by 1710. During the eighteenth century, the French shifted their energies on developing the mines of the lower Mississippi, west of Kaskaskia, Illinois, and St. Genevieve, Missouri, and south of St. Louis. The French and their heirs worked the lower Mississippi mines during a golden era from the 1740s to the 1810s. Their success finally brought renewed interest to the Upper Mississippi mines. Traders at Prairie du Chien, at the mouth of the Wisconsin River, made contact with the Mesquakie about their mines. One of the traders, Julien Dubuque, sought to work those mines (Hoffmann 1930:79; McKay 1988; Wilkie 1987:80).

Julien Dubuque was born on January 10, 1762, in the then-French province of Quebec. Following a career as a clerk, he was in Prairie du Chien in 1785 when he heard of the rich mines of the Mesquakie. Winning the favor of the people through gifts and probable marriage into the tribe, he was able to negotiate an agreement with the Mesquakie on September 22, 1788, for the sole permission to work the mines. At the mouth of Catfish Creek on the Mississippi River, he built a trading post, residence, smelter, and opened the mines with help from his French Canadian helpers and, especially, the Mesquakie. At what would become known as Dubuque's Mines, he initiated the medieval practice of mine "plantations," where a smelter overseer would buy ore, cut wood from timber tracts, and operate a primitive log furnace. A residence, farm lands, and store house would surround the works. Dubuque's miners were the Amerindian Mesquakie and his plantation staff, French *engagees* (laborers) from British Canada. To secure his position in what was then Spanish Louisiana, Dubuque requested confirmation of his agreement with the Mesquakie from the governor at New Orleans. In 1796, the Spanish governor finally recognized Dubuque's rights to mine what Dubuque obsequiously termed the "Mines of Spain" (Hoffmann 1930:88-91; McKay 1987,1988; Wilkie 1987:82-85).

Dubuque combined fur and lead trading, residential, agricultural, and preliminary manufacturing functions at his post (Hoffmann 1930:87; Kay 1977:207-208; McKay 1987; Van der Zee 1915). While lead was viewed as a supplement to the early fur trading strategies along the upper Mississippi, it was Dubuque who engaged in the first extensive lead trading operation in the region. During Dubuque's control of the fur and lead trade in the Mines of Spain area, the Mesquakie appeared well entrenched within the trading system. They no longer operated as a self-sufficient unit as they had before Dubuque's arrival in 1788. Production of lead provided approximately one-half of their needs in trade goods (Schermer and Kurtz 1986:84).

Each year Dubuque journeyed to St. Louis, his boats laden with furs and lead, which he exchanged for trade goods. A lover of the offerings of St. Louis merchants and shops, Dubuque fell into debt and assigned half of his claim to Auguste Chouteau, a

transaction determined invalid after a lengthy law suit, which was not settled until 1854. Dubuque, the court determined, had acquired the right to mine the lead, not to own the land. Earlier in 1804, in the newly acquired Louisiana Purchase, American Governor William Henry Harrison recognized Dubuque's claim which measures approximately 21 miles by 9 miles on the west bank of the Mississippi River from the Tetes Des Morts Creek to the Little Maquoketa River. In 1805, Lt. Zebulon Pike visited Dubuque while exploring the headwaters of the Mississippi. Dubuque, who had illegally purchased ores from the eastern side of the Mississippi and reportedly had contempt for American traders (only after the War of 1812 would the Upper Mississippi French Canadian traders give up their link to British Canada), gave only curt answers to Pike's questions: he shipped 20,000 to 40,000 pounds of lead per year and his mines were six miles from the river (undoubtedly misleading information in order to dissuade Pike from exploring the mines). Details about Dubuque's operation were limited. He was part of the French trading community with close ties to Prairie du Chien and St. Louis, a society distant and competitive with the arriving Americans (Hoffmann 1930:83-112; McKay 1988; Wilkie 1987:90-95,98-105).

When Dubuque died on March 24, 1810, the Mesquakie buried him with tribal honors beneath a log mausoleum on the bluff overlooking the Mississippi River at Catfish Creek. In 1896-1897, the grave was excavated and the body exhumed, then reburied during the construction of a stone monument dedicated to the pioneer. The tower still marks the grave at the north end of the Mines of Spain State Recreation Area, within the National Historic Landmark boundaries (Wilkie 1987:104-105,109).

The Mesquakie, under chief Peosta, were loyal to Dubuque. His fur and lead factory prospered as an outpost because of this bond. The Mesquakies learned from him and his French charges how to work the mines and how to smelt the lead ore. Henry Schoolcraft, geologist, ethnologist, writer, and discoverer of the headwaters of the Mississippi, left a description of the Mesquakie miners in 1820:

> The lead mines of the upper Mississippi...had acquired some celebrity for their reputed extent, and the novel circumstances of their being worked by the Indian tribes...The principal mines are situated on a tract of one square league, commencing at the Fox [Mesquakie] village of the Kettle [Aquoqau] chief, and extending westward. This is the seat of the mining operations formerly carried on by Dubuque, and of what are called the *Indian Diggings*... The lead ore at these mines is now exclusively dug by the Fox Indians, and, as is usual among savage tribes, the chief labour devolves upon the women. The old and superannuated men also partake in these labors, but the warriors and the young men, hold themselves above it. They employ the hoe, shovel, pick-axe, and crow-bar, in taking up the ore. These things are supplied by the traders, but no shafts are sunk, not even of the simplest kind, and the

> windlass and buckets are unknown among them...They run drifts into the hills so far as they can conveniently go, without the use of gunpowder, and if the trench caves in, it is abandoned (Schoolcraft 1953).

Schoolcraft noted that Chief Aquoqau and 250 Mesquakie lived at the mouth of Catfish Creek in a village of 20 lodges. One Indian Agent noted that the Mesquakie had "given up the chase" and fur trade in favor of trading lead. During the 1810s and early 1820s, they would trade with Americans who established themselves on the islands of the Mississippi River. These traders reported the abundance of resources in the Mississippi to the interested immigrants who began arriving in the Illinois country in great numbers after the War of 1812 (Schafer 1932; Wilkie 1987:115-120).

During the war, the country had needed lead, especially since Britain controlled the world's supply. The U.S. government, seeing the need for increased lead production, announced the availability of leases to anyone willing to open the mineral lands opposite the Dubuque Mines. The Mesquakie had already relinquished their title to lands east of the Mississippi River in a treaty signed on November 3, 1804. In 1822, the first lease was let to Colonel James Johnson of Kentucky, who brought equipment, craftsmen, and 150 slaves to the Fever River (Galena) area, ten miles from the Mesquakie village. A rush of people from Missouri and the Ohio Valley soon ensued. An estimated 10,000 miners were in the hills on the east side of the Mississippi by the late 1820s. The Mesquakie, fearful of this advance, petitioned the government for protection of their ownership of the mines. In 1824, Secretary of War, John C. Calhoun, wrote to Chief Peamuska at Dubuque's Mines: "I promised you, at your request, a piece of parchment containing the assurances that your lead Mines should not be encroached upon. This is to inform you that Mr. Forsyth [Indian Agent] has been directed to keep off all intruders, so that you may work your lead mines on the West side of the Mississippi, and enjoy the profits of your labor unmolested" (Wilkie 1987:120-126).

As the towns of Galena, Illinois, and Mineral Point, Wisconsin, and a host of other small mining camps with names like Hardscrabble, Swindler's Ridge, and Buncombe Diggings boomed and mines opened and smelters built, the Mesquakie continued to mine lead under the protection of a small detachment of military commanded by Colonel Zachary Taylor at Fort Crawford, fifty miles up the river near Prairie du Chien. The inevitable overflow of miners into the Mesquakie lands was a precursor to what would happen throughout the subsequent Far Western mining frontier. While the Mesquakie were away from their lodges on a peace mission to Prairie du Chien, the Americans rushed in to claim the Dubuque's mines. Colonel Taylor sent troops and evicted the intruders. In 1830-1831, the Mesquakie spent a harsh winter, short of food and threatened by covetous miners on islands and the bluffs overlooking their village. In the spring, the diminished band left, never to return. They joined the Sauk chief Makataimeshekiakiak (Black Hawk) at Rock Island, and

participated in the brief but disastrous Black Hawk War, which decimated the Sauk and Mesquakie. Although the majority of the Sauk and Mesquakie did not participate in the uprising, they were removed from their lands in Illinois and eastern Iowa by the U.S. Government In the words of historian Reuben Gold Thwaites, "the treatment of Black Hawk and his band, both before and during the hostilities is discreditable to us. It is a black chapter in the history of the West" (Rickard 1932:164; Wilkie 1987:126-129).

The frightened miners, who had overreacted, built stockades in their mining camps, and formed a militia which sought to destroy the outnumbered Amerindians, now demanded access to the Dubuque mines. In 1833, the Mesquakie lost the mines in the Black Hawk Purchase, negotiated at the end of the war. It is ironic that the father of the Indian Removal Policy, John C. Calhoun, had penned the note in 1824 assuring the Mesquakie protection at the same time espousing the removal of all Amerindians to the headwaters of the Mississippi and to West of the Missouri (Billington 1967:470-472; Hoffmann 1930:129; Wilkie 1987:137). The Indian Removal Act of 1830 codified this view. Because of the Black Hawk War and the pressure from the miners, the Mesquakie would be among the first Amerindians forcefully removed under this act. This Jacksonian era removal policy would be the foundation for removing tribes to reservations during the rest of the nineteenth century.

B) THE RUSH AND COMMUNITY BUILDING AT DUBUQUE'S MINES, 1833-1849

With the Mesquakie removed, the miners crossed the river and rushed to claim the Dubuque lead mines, which extended for fifteen miles along the Mississippi River. A group of some 200 people crossed prior to the official opening of the mineral lands and had to be evicted by Lt. Jefferson Davis. Davis protected the miners' claims until an official from the federal mines office arrived in June of 1833 to issue permits. During the first year, he issued over 1,000 permits but then was all but ignored as a new wave of miners defied federal leasing rules and overstaked the mineral lands. The region attracted individuals from throughout the country through such articles as appeared in the Wheeling, Virginia, *Gazette*: "Go to that land for we are confident there you will find the *Eldorado* of your imagination. Are you poor? Seek, and you shall obtain a competence. Art thou rich? There shall your monies reap a noble interest." By 1836, the year of the first territorial census, 4,274 people lived in Dubuque County; nearly half were adult males over 22, a typically disproportionate mining camp population (Petersen 1964:401-402; Wilkie 1987:143-144).

In the words of a reminiscing pioneer blinded by the mission of frontier expansion: "emigrants continued to flock hither, the mines increased in richness, and as if by magic the country was transformed from a lonely wilderness into a prosperous community." In 1833-1834, several townsites were staked and promoted. Peru became the center for the mines on the Little Maquoketa Creek to the north, Durango was platted to the west, and the Catfish townsite was promoted at the former Mesquakie

village site. All were quickly eclipsed by the City of Dubuque. The richest lead veins in the district were found to crop out adjacent to the town (Van Tramp 1869:558). Dubuque became the largest community in the entire lead district and in what is now Iowa, a position it held until after the Civil War. The mining communities of Catfish, Cattesse Hollow, and Mosalem were located within the Julien Dubuque's Mines district. The community at Catfish never developed beyond a camp, but during the 1830s, it was the site of a furnace and river landing. A traveler, Charles Augustus Murry, visited the Dubuque mines. He later wrote of the booming town, its lawlessness, and the industry of its miners, most of whom were from Ireland, the lead district of Derbyshire, and Cornwall in England, and Germany. Of the miners, he wrote, "many are industrious and regular in their habits. These persons amass a competent fortune with astonishing rapidity." Wages were high, as were provisions, "owning to the inability of the neighboring farmers to raise them in sufficient quantity." If the steamboat from St. Louis was delayed, prices rose 100 to 200% (McKay 1988; Petersen 1964; Wilkie 1987:173-175).

Archeological surveys have found evidence of those miners' pits and homes throughout the Julien Dubuque's Mines district. The smaller mining domiciles at Cattesse Hollow and Mosalem developed around rich diggings. Cattesse had rich lead outcrops that attracted miners, while Mosalem had a smelter and was located on the river. Cattesse Hollow, Mosalem, and Catfish represent the three types of communities which arose during the lead boom; though above grade resources have long vanished, archeological surveys have shown the potential for information about the sites through more thorough testing. In 1835, painter and explorer George Catlin visited the area and later completed a painting of Catfish and Dubuque's grave, the one rare view of the area during the rush (Catlin 1973:130,Plate 229). The scene also shows its wilderness setting (Abbott 1983,1988; Wilkie 1987:109,172).

By the mid 1830s, an island of settlement, isolated from the continuous farming frontier in the Ohio Valley-Mississippi junction, had spread over the lead mining district, beyond the established bounds of government (Iowa was still an unorganized territory). Of the region, historian Ray Allen Billington wrote: "The lawlessness of the Fever River district—the saloons, gambling halls, bowie knife fights, and vigilance committees that made violent mayhem a daily occurrence—was typical of all mining communities where the lure of sudden wealth drew frontiersmen beyond the restraining forces of the law" (Billington 1967:297). This mining fraternity would impact the governments of territorial Wisconsin, established in 1836, and Iowa, established two years later. The first Delegate to Congress for the region was George Wallace Jones, most prominent of the early miners. Son of a wealthy Missouri mine and smelter owner, Jones rushed to the region in 1827 and leased 1,001 acres in southwest Wisconsin, opposite Dubuque. He operated a smelter and trading post from which he bartered for ores with the Mesquakie. During the Black Hawk War, he attained the rank of Colonel of the Militia which gained the respect of his fellows. Later, in Congress, he gained silent partners in his land speculations, most noticeably

Massachusetts Senator Daniel Webster. Jones acquired and dealt in land throughout the lead district, including the Dubuque mines. He was a prominent resident of Dubuque when he was selected as one of the first senators from Iowa (Parish 1912).

The political connections of the region were strong and changes to federal mineral land laws were forthcoming. Among the earliest settlers to the lead mines was the brother of the Vice President Richard "Old Dick" Johnson of Kentucky, Alexander Hamilton's son William, and other men of influence and connections from Missouri, Ohio, Kentucky, and Tennessee. In addition, George Wallace Jones had the Congressman from Missouri as a brother-in-law. Such lead mining men as Henry Dodge and his son, Caesar Augustus, served as first senators from Iowa and Wisconsin and would affect national mineral land policy.

The federal government's policy on mineral lands was changed by miners working under frontier conditions. The first federal policy for the Mississippi Valley region, established in 1807, was more regal than republican. Miners were required to lease lands and pay 10% of the proceeds to the government. This led to disputes between owners of French and Spanish grants in the Missouri mines and the federal government. The lead shortage crisis of the War of 1812 brought settlement of claims in the Missouri mines, which after much debate were removed from the leasing provision and allowed for purchase from the government. In the Upper Mississippi, the federal government retained title to the mineral lands and applied the mineral lease system. In 1822, the first lease was written, but there were few takers. The system initially led to unequal distribution, where wealthy men could acquire mineral holdings of 1,000 acres or more, much to the dissatisfaction of the small scale miner. In the areas where individuals owned large landholdings, miners had to pay the leaseholders up to 4/5 of their lead as rent. In these situations, miners ignored the leaseholder, usually an absentee, or worked elsewhere. Miners came in, worked the shallowest, richest deposits and then moved to the next surface deposit, ignoring the leasing system (Wright 1966:15-17).

In 1825, the government revised the system whereby anyone could dig for ore after receiving a permit to mine and agreeing to sell the ore only to licensed smelters. The licensed smelters paid 10% of the revenues to the government. In 1830, this was reduced to 6%. This easing of the system coincided with the major rush to the "Fever River Mines" on the east side of the Mississippi in present Wisconsin and Illinois. By the time miners arrived in the Dubuque mines, the federal system was all but ignored. Miners rushed in, staked claims in accordance with the size restriction at the Fever River mines, 200 yards square, and held a miners meeting to draft a Miner's Compact which stated who could mine, size of claims, and rules for maintaining possession. In 1834, the Dubuque miners ignored the Federal Superintendent of the Lead Mines, and between 1835 and 1841, no fees were collected by the government in the mines. An attempt to enforce the system, in 1841, met with opposition again, and resulted in government court cases. The government won the cases but local

courts gave minimal awards. In one instance, the government received a judgement of five cents but had to pay lawyer fees and court costs. In 1845, President James K. Polk called for a revision of the system, noting that for the period between 1841-1845, the government collected $6,354.74, while expenses were $26,111.11. He concluded: the system was "not only unprofitable to the government, but unsatisfactory to the citizens who had gone upon the lands, and must, if continued, lay the foundations of much future difficulty between government and lessees." On July 11, 1846, Congress passed the act allowing for the sale of the Upper Mississippi lead mines. The federal mineral policy changed from one of lease to selling to the highest bidder. In order to ensure that mine claimants or mine workers got possession, vigilante-like "claim association" groups appeared at public auctions to verbally stifle or beat non-resident speculators (Calvin and Bain 1900:16; Childs 1984:18; Fay et al. 1986; Harpers New Monthly Magazine 1866; Langworthy 1855:282,411; Meeker 1908:271; Schafer 1932:107; Western Historical Company 1880:27; Wright 1966:95-97).

This change in federal policy occurred just in time for the discovery of gold in California. The lead miners who moved West brought their locally adopted miners' compacts or codes which became a model for local mining districts organization and the growth of miner's law in the gold regions (Caughey 1948:168-169; Paul 1947:47-48,210; Shinn 1965:44-46; Waldbauer 1986:1-3). Historian Frederick Jackson Turner, in his seminal 1893 article, "The Significance of the Frontier in American History," asked future scholars to "see how the mining experience in the lead regions of Wisconsin, Illinois and Iowa was applied to the mining laws of the Sierras." Mining Law would be further codified and revised; however, the main philosophy of leasing as in the European tradition was shifted to private ownership because of the experience of the Upper Mississippi lead mines. The region fully supported the Mining Act of 1872, which was signed into law by the former Galena resident, President Ulysses S. Grant. The act is still in effect today.

C) MINING OPERATIONS TO 1865

The first lead mines were worked on a small scale, more medieval than modern in technology. The galena seams of the region were narrow, a few inches wide, and shallow. The high grade ores, the ones worked by the first miners, rarely went deeper than 100 feet or the level of the water table. Below that depth, the ores became unworkable, complex sulphides mixed with zinc. They were limited operations with a handful of men as partners. In 1837, geologist George W. Featherstonaugh, a visitor to the region, described the area's mine operations:

> With but few exceptions, the diggings for metal were quite superficial; such a thing as a steam-engine, to drain a shaft or hoist out the 'mineral,' as it was called, was unknown here; so that, as soon as the superficial diggings were exhausted, the population was always prepared to flock to another quarter...Men do

> not always seem to select situations in that country with a view to live tranquilly and happily, but to try to find ready money by digging for it, or to live upon others; the moment they find there is no likelihood of success, they go to another place" (Smith 1987:20).

His conclusion would have fit nearly every nineteenth century mining rush.

In Dubuque, there were unique deposits of galena which lined the walls and ceilings of caverns in the Ordovician limestone. Miners noticed that the galena seams cut in an east-west fashion through the limestone. The practical miner excavated these seams in search of large ore bodies. Occasionally, these seams opened into natural caverns, rich in mineral. When a miner "struck a cave," as one phrased it, the man was "suddenly made rich, for a mine in Dubuque is a mine indeed." Such caves of galena made the Dubuque mining district one of the richest in the Upper Mississippi region. The most spectacular find was the Levin cave discovered in 1855. Within four years, the mine produced $100,000 worth of lead. Well known geologist Josiah D. Whitney described the find as a cavern 500 feet long by 25 feet wide and 40 feet high with sheets of galena two feet thick lining the walls. Another bonanza, the Langworthy cave, was described by its owner: "the subterranean vault...was completely filled with the shining ore, lighted up and sparkling like diamonds, or lying in great masses or adhering to the sides and roof in huge cubes." The owners of these caves became the richest of Dubuque's residents, building Italianate villas on the bluffs overlooking the river (Hall and Whitney 1858; Langworthy 1855).

The Fessler mine, located within the district, is more typical of the caves. Located near Catfish, its discovery dates to the first rush of the 1830s. Inside the half mine/half cave are remains of wood rails and gad and pick marks which attest to the early working and the simplicity of operation. Ore was removed from the cavern in tubs placed on carts and rolled along wooden rails, still evident. At the south end of the National Historic Landmark, at Cattesse Hollow, a seam was excavated and a shaft sunk in search of caverns lined with galena. Some ore was found and evidence of miners' camps remain at the clusters of pits and trenches (Pruszko 1983).

After digging the ore from the pit, the miner washed it in either the creek beds or wooden sluices, where water carried away the dirt and lighter materials such as limestone. The ore was transported by horse, wagon, or canoe to smelters. Like the mines, the early smelting works were primitive and small scale. The galena ore was easily worked and the primitive log furnace, ancient by the time of the Middle Ages, was first used to reduce the ore to lead for trade or sale. By 1840, the number of smelters in the whole region was estimated at fifty. Geologists described the log furnace, the most common in the district, as a stone base on which ore and logs were alternately placed and then burned. The melted lead was collected in a stone lined bowl under the log heap. Much fuel was wasted, but this simple

furnace could be built for $50 and required minimal skill since the galena was easily reduced. Unfortunately, the log furnace saved only 50% of the lead values in the ore. This furnace was replaced by the similarly primitive ash furnace (or reverberatory) and its modification, the cupola furnace. Both types also wasted much fuel and extracted only slightly more of the mineral values. Yet, because they were built of sturdier materials—fire brick and stone—and could be run continuously, ore could be fed in a side opening with the liquid metal flowing out the front, and the deadly fumes vented through a stack, these furnaces were adopted throughout the district. They cost more to construct, thus only men of means were smelter owners. In 1834, French Canadian Robert Lorimier built a cupola furnace at the mouth of Catfish Creek. His operation was like others in the district. As one writer claimed, smelter owners "became a distinct class from the miners." They bought the miners' ore, hauled it to their furnaces, and paid the government its share after smelting the ore. They were businessmen; however, they had to ship their lead pigs out of the district for return on their investment, which could take ten months. Thus operations were highly speculative. Most smelters lasted only a few years (Burt 1980; Hodge 1842:42-53; Ingalls 1908:62).

In 1835, the first Scotch Hearth furnace appeared in the district. This type of furnace represented a significant improvement over the early works. Developed a century before in Derrbyshire, England, and brought to the lead district by British smelters, a Scotch Hearth was first built in the United States between Dubuque and Mineral Point, Wisconsin. The second was built in 1836, by Richard Watters at Rockdale, just northwest of the district. The furnace retrieved a higher percentage of the lead from its ores (up to 80%). The Scotch Hearth had a larger furnace area and had a bellows which could create a stronger draft, raising the heat in the hearth. The draft could also be regulated, further controlling the smelting process, a first step from the traditional bound smelting to scientific operations. The new smelters required knowledge about the application of variable heat and chemistry. The British industrial revolution had arrived in the lead district. In 1836, Lt. Albert Lea visited Dubuque and noted "the smelting establishments have recently been much improved, and are now conducted with scientific accuracy yielding seventy or eighty per cent of lead from the native sulphurett." In 1837, government surveyors marked on their field notes a "Latin's furnace and house" on Catfish Creek. Little is known about this operation other than the log furnace remains found within the district by archeological surveys (Ingalls 1908:62; Wilkie 1987:143-144, 151-152).

By the 1840s, Eastern investment was directed to the district. Investors hired some of the most renowned geologists of the day to inspect the mines. To stimulate investment, the government also hired geologists to prepare reports on the mineral potential. This benefitted the growth of the new science of geology. The federal government funded the first survey in 1839. The report, by David Dale Owen, son of utopian Robert Owen, was

the first important geological survey funded by the federal government. With 139 assistants, Owen transversed the entire region within one season (Owen 1840,1844). His work was the model for future geological surveys conducted under the later organized U.S. Geological Survey (Heyl et al. 1959:70). Through intensive field work, he thoroughly defined and classified formations, described ore deposits, suggested how they were formed, and tied his comments to broader studies. His report, published in 1840 and reprinted in 1844, and other works, published by State geological surveys in the 1850s, proved their value by still serving as references (Owen 1844; Hendrickson 1943).

This activity coincided with the peak in production, reached between 1845 and 1847, when approximately 54,000,000 pounds of lead were produced annually, more than any other mining district in the world at that time (Heyl et al. 1959:72-74; Rickard 1932:171). The rush and the first easily worked discoveries were exhausted by 1849. That year began the exodus to gold strikes in California. The experiences of the miners in the lead district during the frontier stage, 1833-1849, would be repeated in the Far West. In the Spring of 1849, the Dubuque *Miner* reported that 150 men had left for California. They took their mining codes and experience. With their skill in digging and washing out the heavy metal from the dirt, they served as teachers through example to thousands of argonauts.

The halcyon days of lead mining occurred roughly from 1840 to 1857. This period saw the shift in transportation modes. The region, blessed by cheap river transportation from the beginning, improved with the rise of steamboat traffic. In 1850, one thousand steamboats called at Dubuque and carried lead to St. Louis and New Orleans. In 1847, the lead trade with St. Louis equaled $1,654,077.60, more than the fur trade and the Santa Fe trade combined in that city. The lines of trade shifted with the construction of railroads west from Milwaukee and Chicago; the Illinois Central arrived at Galena and Dubuque in 1855, while the Dubuque and Pacific, given a land grant, began construction west. In the 1850s, Dubuque become a manufacturing center for lead shot, pipe, sheets, and white lead for paint. South of town, the Dubuque and Pacific built up Catfish Creek and started a branch southward along the Mississippi River from that point. The town of South Dubuque was platted at the railroads' junction and on top of the 1830s camps of Catfish and Riprow. As the community grew north of Dubuque's grave, outside the district, a steam sawmill was built at the mouth of Catfish Creek. Between 1850-1860, Dubuque grew from 3,108 to over 13,000, with a similar growth occurring in the surrounding countryside. The lead mines continued productive; however, high market prices made the dollar value of the production high but belied declining production (Bain 1906; Calvin and Bain 1900:583; Fatzinger 1971:51-52,59,67; Ludvigson and Dockal 1984:4-5; McKay 1988; Petersen 1964:406; Pruszko 1983:51; Wilkie 1987:148-152).

The Panic of 1857 impacted new investment into the district and caused a collapse in railroad construction until after the Civil

War. Attempts by Dubuque's businessmen to capture Western trade and build a lead industry all but collapsed with the Panic. The war's demands for lead, however, forestalled the collapse of mining until after 1865. In that year, the post office at the mining community of Mosalem was closed. Problems with the flooding closed the mines as did the complex lead/zinc ores (blende masarac), which, though abundant, were impossible to work by the early methods. Signs of decline followed the exhaustion of the easily worked surface deposits, for the most part, depleted during the Civil War. The attraction of rich farmlands lured miners away from the mines and into agriculture. These farmers would lease their mineral lands or work, part-time and on a small scale the leads on their farms. Between 1847 and 1857, all the land within the National Historic Landmark was sold by the government to farmers. By the 1860s, farming had replaced lead mining as the region's most valuable asset. Typical of the miners turned farmers was Sylvestor Preston. Operator of a smelter at Mineral Point in the 1830s, Preston inspected the Dubuque mines and determined to squat on lands near the Cattesse Hollow diggings. When the government offered the land for sale, he purchased 747 acres of prairie, woodlands, and "Mineral Grounds." He and his neighbors settled in to farm the rich Iowa lands, but kept an attachment to mines from which they creviced out galena when found. Preston divided his lands among his sons and son-in-laws, some selling back the lands after following the rush to California. The Preston family last mined in 1912. The family still farms a portion of the original 640-acre claim. Five hundred twelve acres of the original Preston claim is now part of the Mines of Spain State Recreation Area (Hartman 1986,1987).

While farming attracted a portion of the mining community, the more unsettled men left for the West. The California gold strike had caused the first decrease in the number of miners, while later strikes, especially in Colorado and Montana, attracted more (Auge et al. 1986:49-50). The difficulty of working ores and the lack of capital invested in the mines heightened the district's decline. Thus mining technology in the region remained primitive in contrast to massive changes in mining and processing technology in the West. As late as 1912, the Watter's Scotch Hearth furnace was still operating at Rockdale, a striking, diminutive contrast to large regional plants at Omaha, St. Louis, and Chicago. In production, the Upper Mississippi lead district was eclipsed by Western mining districts, most notably southwest Missouri, Nevada, and then Colorado, after 1865 (Bain 1906; Heyl et al. 1959:67-72). Revival occurred at the turn of the century when complex lead/zinc ores were finally worked and another boom hit the Upper Mississippi district. Yet, activity was tied to industrialization and the new uses of zinc, and only occurred to a limited scale in the district because of the lack of zinc ore bodies. Small-scale operators at the Dubuque mines dug out a few tons of lead ore and shipped it to nearby ore buyers. The last digging for lead in the Julien Dubuque Mines National district occurred in the 1950s. In 1980, the State of Iowa purchased the land for the Mines of Spain State Recreation Area.

Total lead production of the Upper Mississippi lead district exceeded $248,000,000, the most productive years occurring between 1827 and 1871. At the Upper Mississippi lead district, there occurred the first major mining rush in the United States (Greever 1963:47; Rickard 1932:147-160). It significantly affected Indian policy, mining methods, and mining law; and was the precursor of the Far Western mining frontier. Under Criterion 1, the mining activities within Julien Dubuque's Mining district reflect the major activities that occurred during the frontier lead mining era in the Upper Mississippi Valley.

ARCHEOLOGICAL POTENTIAL OF JULIEN DUBUQUE'S MINES DISTRICT

The significant archeological resources are divided between the fur and lead trading period from 1788 to 1833 and the American lead mining operations from 1830 to 1865. Although past archeological investigations of the Mines of Spain State Recreation Area were preliminary, the analysis of the data indicates a wealth of information is available to our understanding of the Amerindian involvement in early lead mining activities and the subsequent American commercial mining period under Criterion 6. The frontier lead mining era extends over two centuries from the initial exploitation during the fur trade period during the eighteenth century to the commercial ventures during the nineteenth century. The archeological investigations of the Dubuque establishment and associated Mesquakie village has the potential to answer questions concerning Euro-American and Amerindian interactions and acculturation. In addition, the long, diverse lead mining history of the region which included the Julien Dubuque's Mining district has the potential to answer questions concerning the industrial archeology of the lead industry, frontier settlement patterns, trade networks, and ethnicity (Abbott 1988:11; Knox 1987).

A) FUR AND LEAD TRADING

The archeological sites, consisting of Dubuque's trading post and the Mesquakie village, represent prime examples of the Regional Trading Post/Amerindian Village property types. It should be stressed that it is the combination of the two types which reflect the acculturative processes of both the Amerindian and Euro-American components. Such developments are of national significance to Amerindian contact and expansion of the United States during the early part of the nineteenth century.

Amerindian/Euro-American contact in the Dubuque's Mines area is directly related to the establishment of the lead and fur trade by Julien Dubuque with the Mesquakie. The Dubuque trading post and Mesquakie Village of Kettle Chief (13DB9 and 13DB62) gained significance between 1788 and 1830. Existing archeological and historic documentation confirms the location of the Mesquakie village in the vicinity of his post although it is probable that they did not settle at the mouth of Catfish Creek, the location of the Village of Kettle Chief, until after Pike's visit in 1805; however, the Mesquakie were clearly present at this location in 1820. Nevertheless, the acculturation of the two cultures was

affected by their mutual interaction in this location (Auge et al. 1986; Schermer and Kurtz 1986).

Archeological investigations of the district, complemented by historical documentation, can address the arrangement of the structural components of the Mesquakie settlement, period of its erection, and the way in which this arrangement reflected some levels of clan and moiety structures and perhaps leadership organization. It may also reveal an estimation of household size. Archeological investigations which address the spatial variation of faunal materials with supplemental historic documentation may identify products utilized for the fur trade from those used for subsistence. This data might also suggest seasonality of occupation. Permanence of occupation may reflect change as the number of fur bearing animals decreased. Archeological evidence also indicated the presence of Mesquakie habitation sites, burial sites in or near the village site, and stratified artifact deposits (Abbott 1981,1983). A study of the trade goods versus the native produced items should confirm heavy reliance upon Euro-American goods which would reflect specific areas of change within the Mesquakie economic system and perhaps provide insight to the social meanings of such alterations. Unfortunately, the close association of the Mesquakie occupation to Dubuque's trading post may not provide a clear understanding of the social, economic, and political changes which occurred to the Mesquakie during this period. Dating of the Mesquakie settlement may indicate the degree of separation between the two components. Historical documentation offers some data concerning Mesquakie subsistence patterns, the retention of agriculture, the settlement pattern based upon seasonal occupation of a semi-permanent village, limited background on leadership alterations and political forms, the division of labor (especially the effects of the lead trade on labor divisions), the composition of hunting parties, and the high dependence upon trade goods.

Other known Mesquakie village sites were contemporaneously occupied with the Village of Kettle Chief within the upper Mississippi region during a parallel period of acculturation. Other village sites included ones at Rock Island, the mouth of Turkey River, and Prairie du Chien. Since they have been destroyed or remain unlocated, this property gains significance as a representation of a Mesquakie village site within the region and time period (Straffin 1973).

The initial period of non-aboriginal occupation of the area was associated with Julien Dubuque and his trading establishment. The significance of Dubuque and his trading post represents a transitional phase in the Upper Mississippi Valley trading system. Although Dubuque participated in a bi-cultural tradition through his residence, possible marital alliance with the Mesquakie, and gift giving, his residence on the trading frontier was permanent unlike his predecessors. The inventory of his estate clearly reflected this permanency as well as the strong affiliation of the material goods with the French-Canadian trading tradition (Auge 1976; Auge et al. 1986; Chouteau 1810). Since his involvement in the lead and fur trade required a

considerable capital investment, the breadth of his enterprise, physical operations, and involvement in the lead trade foreshadowed later development, his trading enterprise represented a transitional phase between the individual French-Canadian tradition and the large trading enterprises of the nineteenth century.

The poor documentation of such regional trading posts adds significance to the remaining archeological materials. The regional trading post fulfilled multiple functions including residential, trading, agricultural, and manufacturing and/or craft along with possible military, diplomatic, and missionary roles. They were also relatively large, permanent operations although varying seasonality in occupants and functions; were located along major riverways; and often involved more than one Amerindian group. Dubuque's placement, permanency, establishment size with multiple functions, and probable trade connections with other groups, such as the Sack, in addition to the Mesquakie, places his trading post in such a category. Functionally comparable regional trading posts have suffered extensive site modification, or remain uninvestigated. Investigations at Fort Madison suggest that potential data exists for comparison (Hansman 1987; McKusick 1980). Fort Des Moines II may preserve potential data relevant to this property type (Brice, Petrides and Associates 1985; Gourley 1985); however, its late date reflects the end result of the acculturation process of the Mesquakie rather than a period of significant change.

Archeological testing and historical documentation of the two component sites, 13DB9 and 13DB62, indicate that they potentially contain sufficient data to address investigations focusing upon the Amerindian and Euro-American acculturation within a trading framework. Historical documentation indicates the overall physical form of the trading post and Amerindian village; however, it does not interrelate the two. It also offers data upon Dubuque's trading relationship with the Mesquakie and to a lesser extent his alliance with the Mesquakie, external relationships with other traders at regional commercial centers, the procurement of furs and particularly lead production, the association with his engagees, and the retention of aspects of his cultural background as well as his adjustments. Archeological testing indicates a complementary archeological data base. Testing has recorded such features as a smelter and stratified artifact deposits (Abbott 1981,1983). Although the archeological testing of the two component sites does not contain all of the Dubuque trading establishment, maps (Chouteau 1804; Nau 1975) and artifacts contemporary with the period of the post strongly suggest that a portion exists within the bounds of 13DB62. Both archeological and historical data exist to potentially yield insight into research questions concerning both Dubuque's operation and the Mesquakie involvement.

Subsequent disturbances through later settlement, railroad construction, cultivation, destruction of some building types, mixing of artifacts, and erosion may have limited the ability to fully address each research question. Although the extent of

disturbance is unknown, archeological investigations, documenting specific concentrations of materials, clearly indicate that the core of the property remains intact. Historical data should also assist interpretations of some of the disturbed areas.

B) COMMERCIAL LEAD MINING

The American lead mining activities in the National Historic Landmark represent common types of historical mining development. The totality of these resources represent the technological and social aspects common to the early nineteenth century mining industry. The district contains archeological evidence to address specific issues related to the historical development of the mining industry which was characteristic within the Upper Mississippi Valley Lead Region on the American frontier during the early nineteenth century. Although disturbances caused by natural slumpage within the mines, erosion, and railroad construction have reduced the physical integrity of the district to a limited degree, sufficient archeological and historical data remain to address questions relevant to the context (Abbott 1988).

Each resource within the property contributes to the significance of the district. The lead mining exploratory pits, shafts, adits, and smelters represent the technological approach to mining in the area (Abbott 1988). Together they exhibit the kinds of environment in which the lead miner sought lead, the level of technology used, and the methods of extracting and processing the ore. Exploratory mining pits clearly identify ridges and upper slopes, the most accessible areas, as targets of the miners. Their forms indicate how lead veins were located through a rather random technique. Shallow shafts and short tunnels confirm and indicate the means by which low investment mining in the region occurred. Their high location penetrating above the water table reveals avoidance of high cost techniques by early miners to seek deeper deposits, something which would occur after 1870. In addition to the low cost, temporary log furnaces located in the Dubuque's Mines area, miners also brought their ore to specialists outside the Dubuque's Mines area, such as the cupola furnace at Riprow or several blast furnaces in the region. Archeological evidence suggests that the smelters (log furnaces) at Catfish compose one of the economic services of that community (Abbott 1981,1983,1988; Auge et al. 1986).

In addition to the individual mining claims, small, temporary communities sprang up in the mineral lands. The miners often lived in these communities, traveled from these communities to the mining claims, and traded their ore and procured provisions from the larger trading centers, such as St. Louis and Prairie du Chien. These communities were commonplace during the nineteenth century. They maintained a particular variety and combination of social institutions through economic, political, religious, and educational bonds. Kinship and cooperation in manners of common welfare, such as mining, helped to bind the communities together. Other social institutions, such as voluntary and informal associations also formed binding agencies for the development of

community identity (Hine 1980). The distinguishing features of the community include their internal physical structure, social institutions, and functions which form the community structure (Lewis 1977a,1977b; McKay 1984). The social interaction of the miners formed the basis for the folk/moot phenomenon known as the mining district. According to Waldbauer (1986:2), the great significance of mining laws was their evolution from the social experience of mining community:

> When that law refers to "local customs" and "rules of miners," it means a system of self-government miners devised for themselves during regular meetings of the mining district...the meetings were examples of the best traditions in American representative democracy.
>
> Individual rights were the paramount concern in any action decreed by majority vote in miners' meetings. Most miners were simply trying to attend to their own business and leave others' alone. As a result, anything tending to prevent all individuals from having an equal chance to mine the riches in their district was accorded a rapid hearing and visited with quick justice. Miners could not squander valuable time during the season to delve deeply into the legal ambiguities of a particular situation.

Although Waldbauer (1986) was discussing the Hoodoo Mining District in Idaho (1860-1950), the same interaction was true of the earlier mineral rush in the Upper Mississippi Valley lead region. Shinn (1965:44) indicated that the Dubuque lead miners assembled in 1830 to draft regulations which were to be the only local code in Iowa for thirteen years. As Shinn (1965:45-46) explained, the social interaction of the lead miners was to form the basis for the development of the future mining activities and mineral laws in the West. It was also in this mineral region that the Euro-American miners were initially influenced by the Spanish. The influence of Spanish mining concepts was to play an even greater part in the institutional development of American mining legislation and regulations during and subsequent to the California Gold Rush.

The small mining communities in the Upper Mississippi Lead Region emerged quickly in response to the rapid settlement during the 1820s and 1830s. They were often composed of temporary residences, a general merchandising store, a blacksmith shop, a smelter, and a saloon. Services essentially supplied the immediate needs of the nucleated community. Near Galena, Illinois, a small smelting establishment, founded in 1829, contained a stone warehouse, one blacksmith shop, a saw and grist mill, one stone house, three additional dwellings, and smelting furnaces. Mosalem, Catfish, and Riprow represent three small nucleated communities located within or near the Dubuque's Mines area. These communities appeared during the early 1830s to the mid-1860s.

Settlements such as Catfish and Mosalem experienced a short life span coincident with the rapid exploitation of the adjacent mines. Archeological and historical documentation indicate the presence of residential and commercial (service-oriented) buildings at Catfish and residential buildings at Mosalem (Auge et al. 1986). Archeological testing at Catfish has confirmed the existence of domestic artifacts and evidence of the industrial elements (Abbott 1981,1983). Not only do the two communities and outlying camp offer materials for the understanding of physical structure and social composition of the mining communities but through their comparison, they document changes in emphasis through time in a single area. Despite limited remains uncovered at Mosalem through reconnaissance survey and non-systematic testing, this community is worthy of recognition since it offers this potential contrast. Although Catfish and Mosalem have been disturbed by erosion partially through flooding, railroad construction, and cultivation, a major portion of these archeological sites appear intact. The mining camp associated with Mosalem appears relatively undisturbed. Although disturbances may inhibit the ability to address some of the aforementioned research questions, the archeological and historical resources offer enough data to enlarge the current view of mining technology and temporary mining communities and camps within the Upper Mississippi Valley Lead Region during the period of national significance.

Investigation of these sites contributes to an understanding of the contexts related to lead mining exploitation, lead mining communities, and the property types which compose them. In addition, these sites provide information pertinent to an understanding of the western migration and American expansion in the Upper Mississippi River Valley during the 1830s and 1840s. The miner's view of lead mining in the Upper Mississippi Valley Lead Region reflected an early, common approach to resource exploitation. Mining offered a rapid, inexpensive means to wealth (especially for the poor farmers of the South and New England states) based upon nineteenth century values emphasizing social advancement through extracting the valued metal (Fatzinger 1971). Initial research must distinguish variations between the kinds of extractive strategies to determine any changes in mining technology. Their distribution in relation to each other, to the physical environment, and to the communities will assist this categorization. It may indicate the existence of changing approaches to mining which are not currently apparent and perhaps associate specific mining areas within the Mines of Spain with the different communities as they become temporally distinguished. This community approach offers a more wholisitic view of historical development. Additionally, historical resources (such as census records, business directories, business ledgers, and land records) may offer a clearer understanding of the individuals who mined in the area, their length of tenure, and possibly their relationship to individuals and labor organizations in Dubuque. Such analysis may be able to precisely define the nature of the mining organizations, the kinds of relationships which bind communities together, and how individuals relate to areas outside their immediate community.

Investigation of these research problems adds to the understanding of the more common forms of mining and the mining associations in the Upper Mississippi Valley Lead Region during its peak effect upon American expansion and industrial development from the 1830s to the Civil War.

Examination of the community forms versus the exploitative sites provides a complementary view of the miner's socio-cultural placement in mid nineteenth century society. The physical composition of the camps and communities require delineation. The form and components of each individual dwelling indicates the degree of procurement, preparation, and reliance on other food sources as well as defining the kind of diet. With assistance from the census and land records, these physical forms enable household composition. The physical arrangement of the dwellings and their relationship to businesses will define the community plan. Such analysis can determine whether the entrepreneurial buildings are separate from the dwellings and concentrated in one area or whether they are within the dwellings scattered throughout the community. Research should also address the major purpose of the mining community (such as domestic or a center offering industrial, craft, and business services).

Historical surveys within the Upper Mississippi Valley Lead Region in southwest Wisconsin confirm the prevalence of small, short-term lead mining communities with parallel functions to Catfish and Mosalem (Fay et al. 1986). Primarily domestic in nature, they also offered a few small businesses, crafts, and industrial services and occasionally other types of social services (Fatzinger 1972; Kirk 1939). The short-term exploitation of surface deposits with little investment was also common to southwestern Wisconsin and northwestern Illinois during the primary mining period between the 1820s and the 1850s. During this period, the lead mines of the Upper Mississippi Valley Lead Region provided the emerging United States with an invaluable source of lead and provided exploitative industry which added emphasis to the frontier expansion of the nation. As rich surface deposits became depleted, the mining period extended on a part time basis into the early twentieth century. Because the Dubuque's Mines area encompasses most of the significant developments (including the lead trade with Amerindians and the commercial lead mining) within its boundaries, it gains significance at the national level.

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Previous documentation on file (NPS):

___ Preliminary Determination of Individual Listing (36 CFR 67) has been requested.
___ Previously Listed in the National Register.
_X_ Previously Determined Eligible by the National Register.
___ Designated a National Historic Landmark.
___ Recorded by Historic American Buildings Survey: #_____
___ Recorded by Historic American Engineering Record: #_____

Primary Location of Additional Data:

___ State Historic Preservation Office
_X_ Other State Agency: **Office of State Archeologist, Iowa**
___ Federal Agency
___ Local Government
___ University
___ Other (Specify Repository):

10. GEOGRAPHICAL DATA

Acreage of Property: 1,361 acres

UTM References:

	Zone	Northing	Easting
A	15	693510	4704310
B	15	697890	4701620
C	15	697590	4701620
D	15	697660	4701230
E	15	697210	4701230
F	15	697200	4701630
G	15	696930	4701800
H	15	696720	4701430
I	15	696210	4701420
J	15	696210	4701380
K	15	696130	4701380
L	15	696130	4701210
M	15	695590	4701180
N	15	695620	4701580
O	15	695180	4701580
P	15	695180	4701660
Q	15	694870	4701660
R	15	694870	4701820
S	15	694770	4701800
T	15	694760	4701940
U	15	694820	4701940
V	15	694800	4702360
W	15	694740	4702360
X	15	694720	4702770
Y	15	693920	4702760
Z	15	693900	4703580
AA	15	692260	4703520
BB	15	692240	4703520
CC	15	691940	4703900
DD	15	691940	4704030
EE	15	691860	4704090
FF	15	691810	4704160
GG	15	691740	4704020
HH	15	691680	4704090
II	15	691720	4704200

Verbal Boundary Description:

The Julien Dubuque's Mines district is located in the Mines of Spain State Recreational Area approximately one quarter of a mile south of the city limits of Dubuque. The boundary of the property coincides with the boundaries of Mines of Spain State Recreational Area. The recreation area is roughly bounded by the Illinois Central Railroad line to the north, U.S. Highway 52 to the west, the Mississippi River to the east, and an unnamed creek which empties into the Mississippi River at Massey Station to the south. The district consists of discrete areas spread through much of the land management unit of the Mines of Spain State Recreation Area. Containing an irregular western boundary, the discontinuous National Historic Landmark District varies between 0.125 to 1.125 miles in width and is 3.375 miles in length. It is located in portions of Sections 4, 5, 6, 8, 9, and 10, T88N, R13E (Mosalem Township).

Boundary Justification:

Archeological excavations and surveys conducted in 1968 (McKusick 1968), 1973 (Straffin 1973), 1981 and 1982 (Abbott 1981,1983), and 1987 (Schermer 1988) indicate that resources associated with the fur and lead trade and with mining technology, communities, and camps are spread across much of the Mines of Spain State Recreation Area. To adequately encompass known sites as well as those which potentially exist, the property is viewed as a continuous district within a specifically bounded conservation

area. The boundary of the nominated property is delineated by a polygon whose vertices are indicated by the UTM reference points. This boundary closely coincides with the boundary of the Mines Of Spain State Recreation Area. The 1987 survey indicated that portions of several sites and additional sites were not included in the 1981 and 1982 reconnaissance surveys because of private ownership. It is also highly probable that other sites remain to be discovered within the boundaries of the Mines of Spain Recreation Area since the natural ground cover may have obscured surface manifestations (Shirley Schermer, personal communications, 1990).

In addition, most of the recorded mining sites are located in forested areas that have suffered little from agricultural activities. It is possible that the surface manifestations of such sites in the cultivated areas have been obliterated by farming activities. Since these areas were only surface inspected, there is a potential for subsurface features in the upland cultivated areas.

11. FORM PREPARED BY

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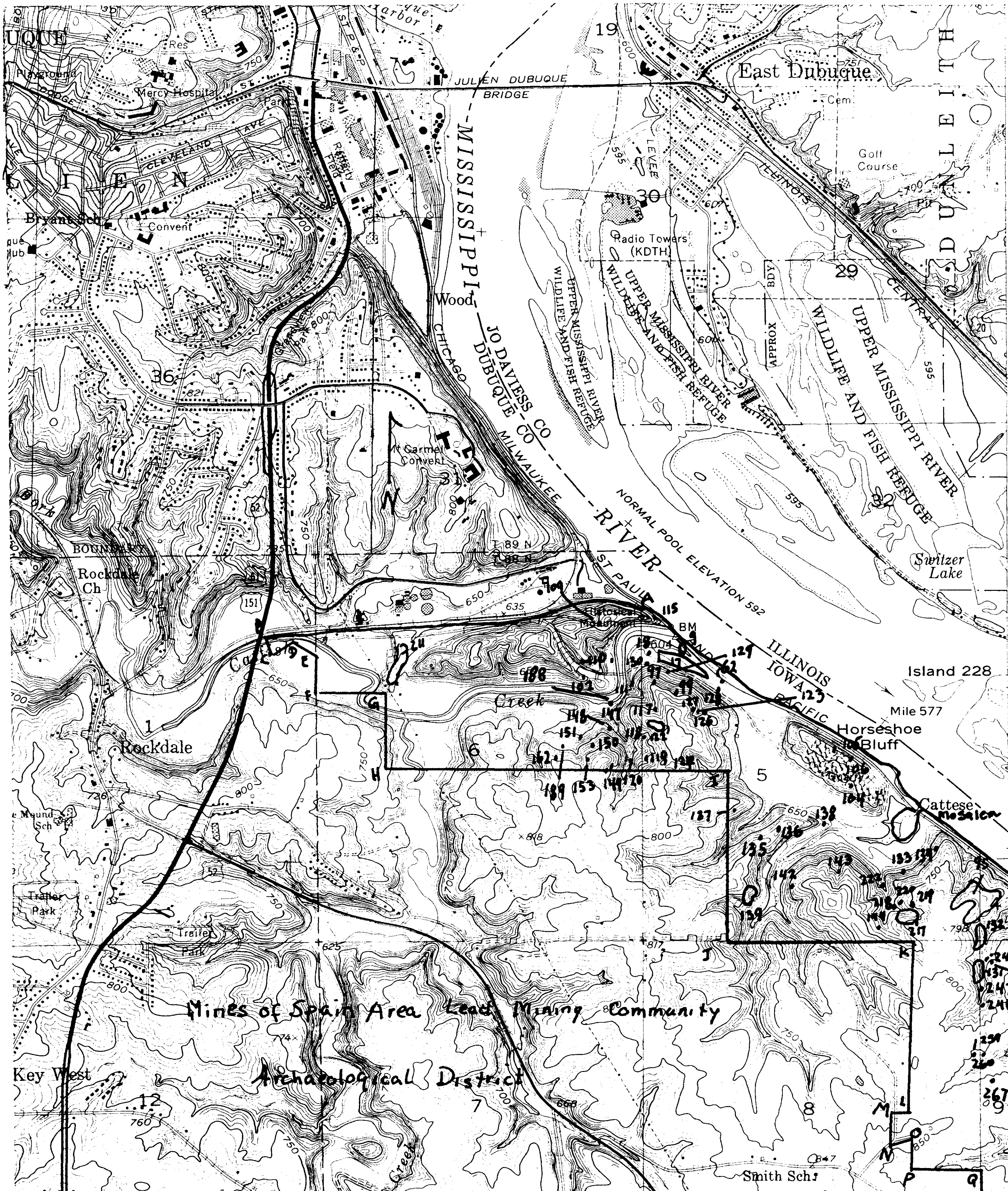
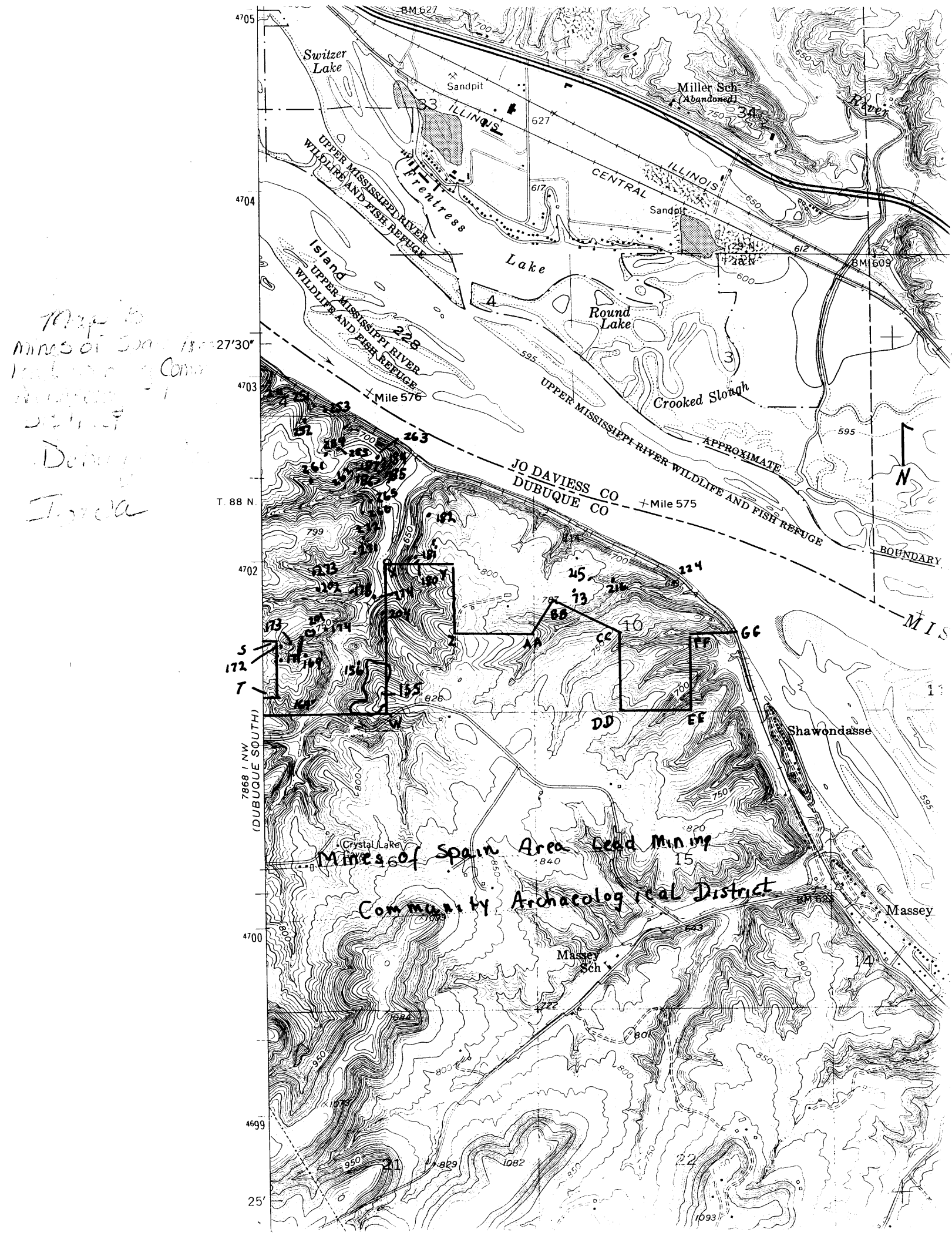
Date: April 9, 1992



Mines of Spain Area Lead Mining Community
Archaeological District
East Dubuque
JULIEN DUBUQUE BRIDGE
Mercy Hospital
Playground
Cleveland Ave
Bryant Sch
Convent
Mt Carmel Convent
Radio Towers (KDTH)
Golf Course
Cem
MISSISSIPPI RIVER
JO DAVIESS CO
DUBUQUE CO
ILLINOIS
IOWA
NORMAL POOL ELEVATION 592
UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE
CHICAGO MILWAUKEE ST PAUL AND PACIFIC
ILLINOIS CENTRAL
Wood
Switzer Lake
Island 228
Mile 577
Horseshoe Bluff
Cattese
Historical Monument
BM
Rockdale Ch
Rockdale
BOUNDARY
Catfish Creek
Creek
T 89 N
T 88 N
Trailer Park
Key West
Smith Sch
Joseph Sch
GALENA 13 MI.


Switzer Lake
Sandpit
Miller Sch (Abandoned)
River
ILLINOIS CENTRAL
Sandpit
UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE
Prentress Lake
Island
Round Lake
Crooked Slough
APPROXIMATE
UPPER MISSISSIPPI RIVER WILDLIFE AND FISH REFUGE BOUNDARY
JO DAVIESS CO
DUBUQUE CO
Mile 576
Mile 575
T. 88 N.
27'30"
Shawondasse
Crystal Lake Cave
Massey
Massey Sch
7868 I NW (DUBUQUE SOUTH)
Mines of Spain Area Lead Mining Community Archaeological District
AA
BB
CC
DD
EE
FF
GG

NPS Form 10-900-a
(8-86)
NPS Word Processor Format
(Approved 08-89)

OMB Approval No. 1024-0018

United States Department of the Interior
National Park Service

National Register of Historic Places Continuation Sheet

Section number 10 Page 15

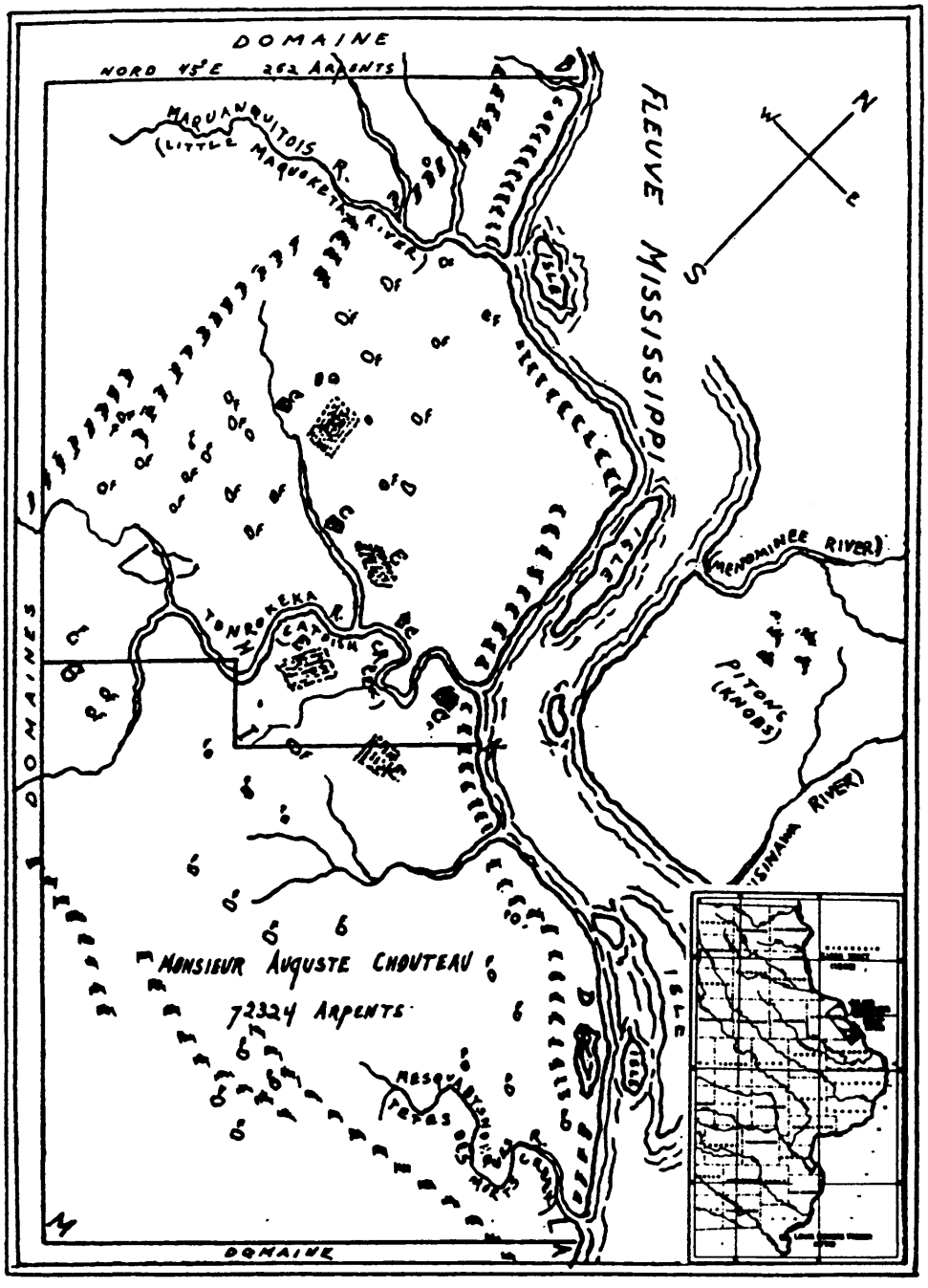
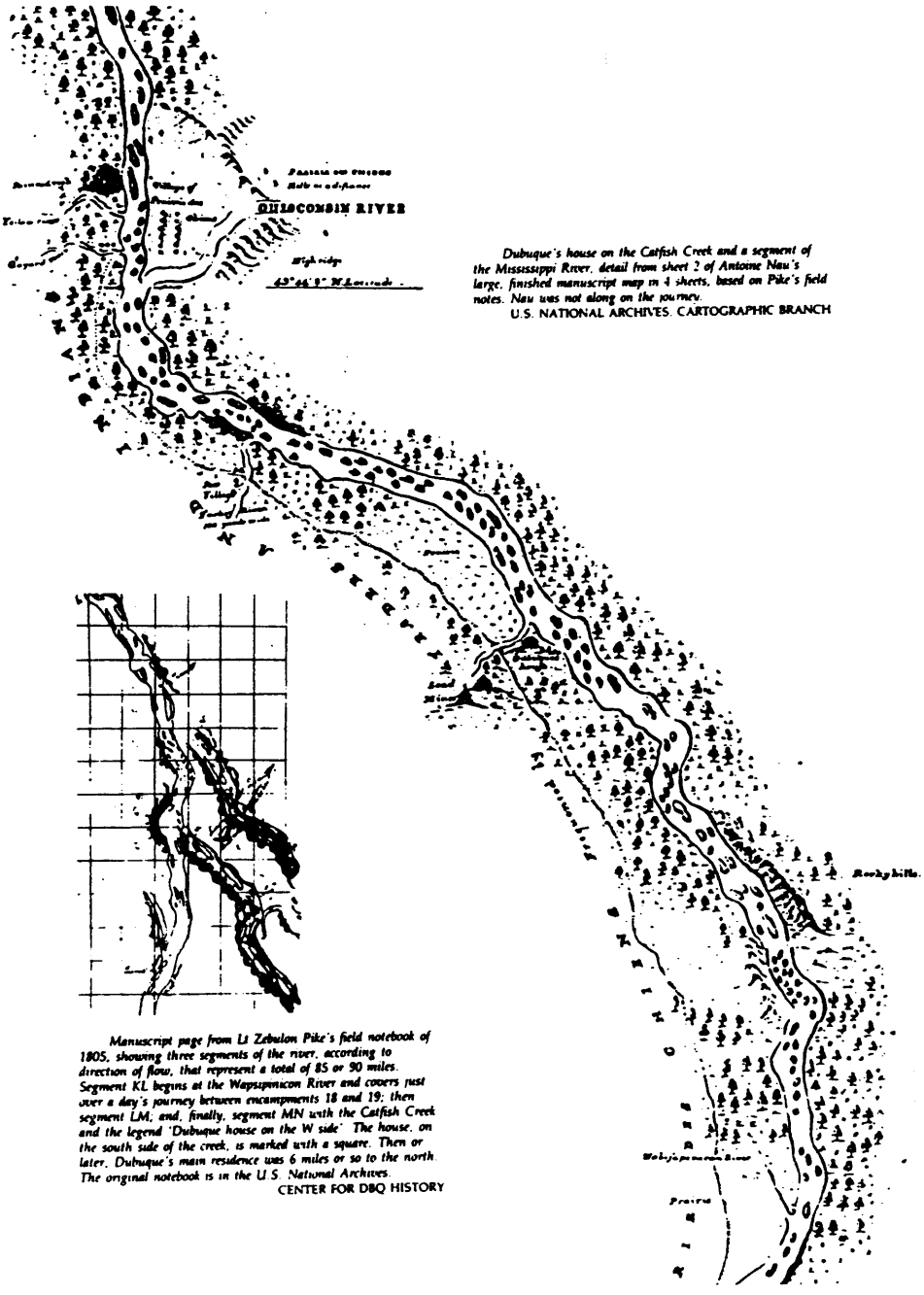


Figure 1. Oldest known map illustrating the Mines of Spain and indicating joint ownership of Julien Dubuque and Auguste Chouteau in 1804 (Hoffmann 1930:109).



Dubuque's house on the Catfish Creek and a segment of the Mississippi River, detail from sheet 2 of Antoine Nau's large, finished manuscript map in 4 sheets, based on Pike's field notes. Nau was not along on the journey.
U.S. NATIONAL ARCHIVES, CARTOGRAPHIC BRANCH

Manuscript page from Lt Zebulon Pike's field notebook of 1805, showing three segments of the river, according to direction of flow, that represent a total of 85 or 90 miles. Segment KL begins at the Wapsipinicon River and covers just over a day's journey between encampments 18 and 19; then segment LM; and, finally, segment MN with the Catfish Creek and the legend 'Dubuque house on the W side.' The house, on the south side of the creek, is marked with a square. Then or later, Dubuque's main residence was 6 miles or so to the north. The original notebook is in the U.S. National Archives.
CENTER FOR DBQ HISTORY

Figure 2. Antoine Nau's map of Lieutenant Zebulon Pike's field notebook of 1805 (Wilkie 1987:108).

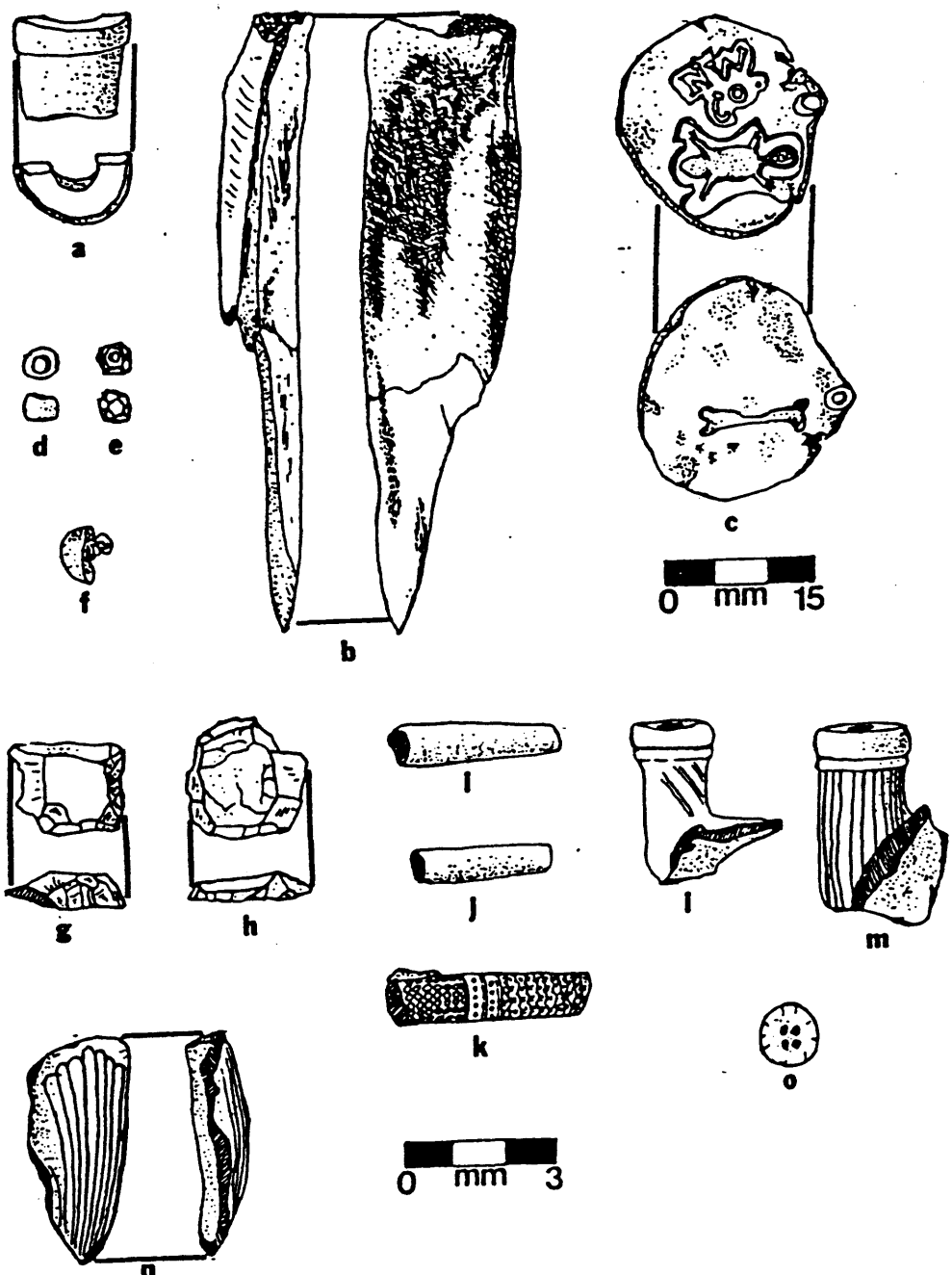
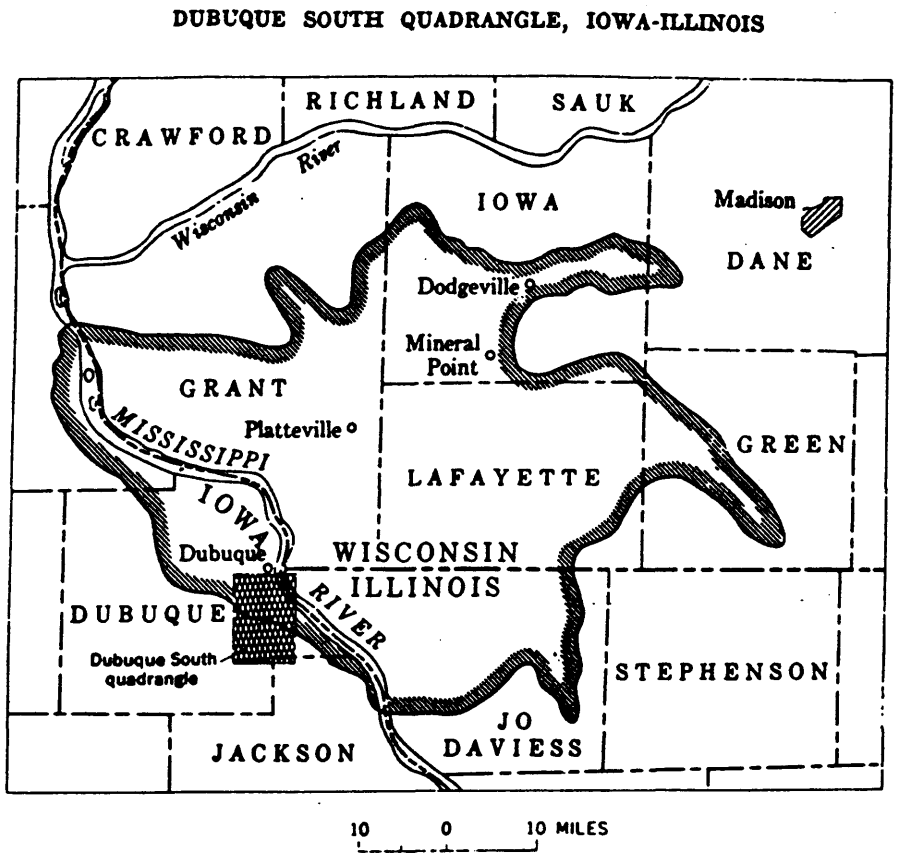


Figure 3. Historic artifacts from Site 13DB9: a) catlinite pipe fragment; b) bone awl; c) Northwest Company silver coin; d-f) trade beads; g-h) gun flints; i-n) clay pipe fragments; o) bone button (Abbott 1983:93).



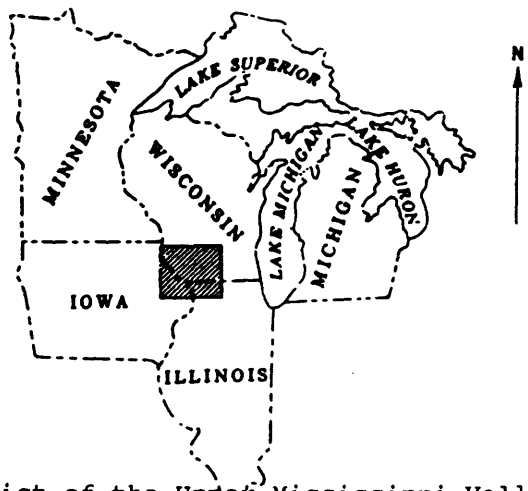


Figure 4. Zinc-Lead Mining District of the Upper Mississippi Valley (Pruszko 1983:4).

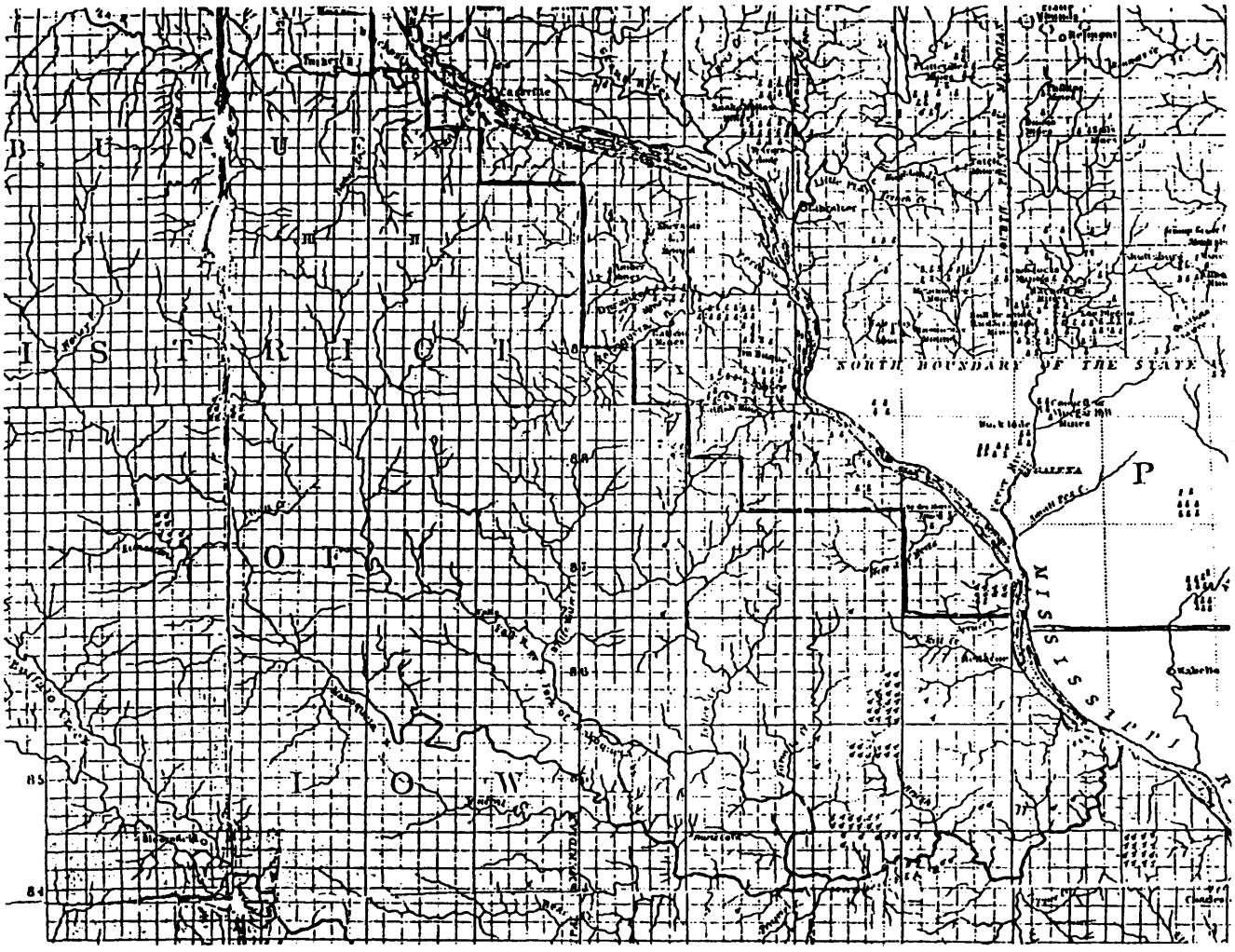


Figure 5. Owen's 1840 map of the Dubuque Mineral Region.

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United States Department of the Interior
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National Register of Historic Places Continuation Sheet

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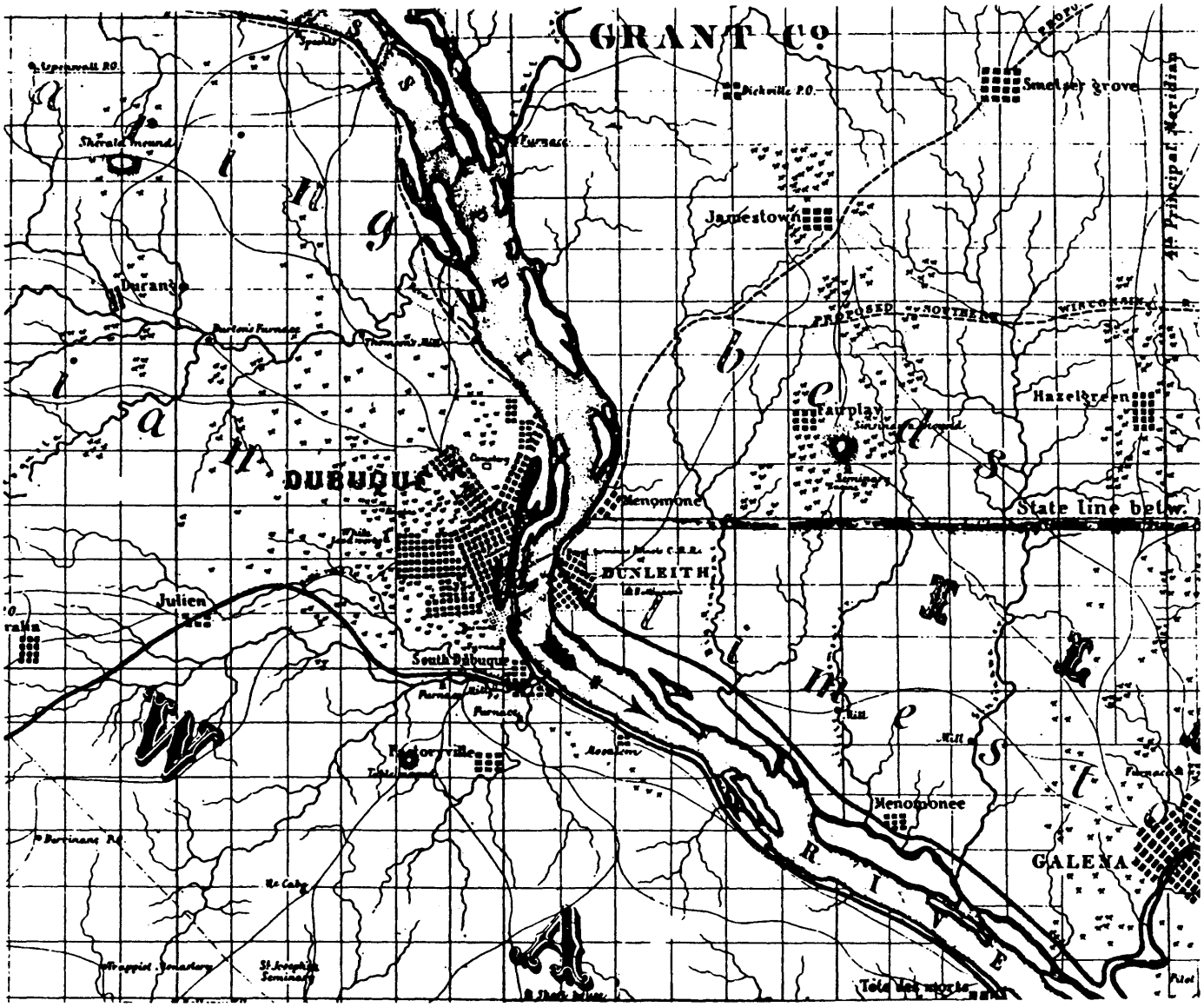

Figure 6. The 1858 Werthern map of the Dubuque Mineral Region (Pruszko 1983:56).

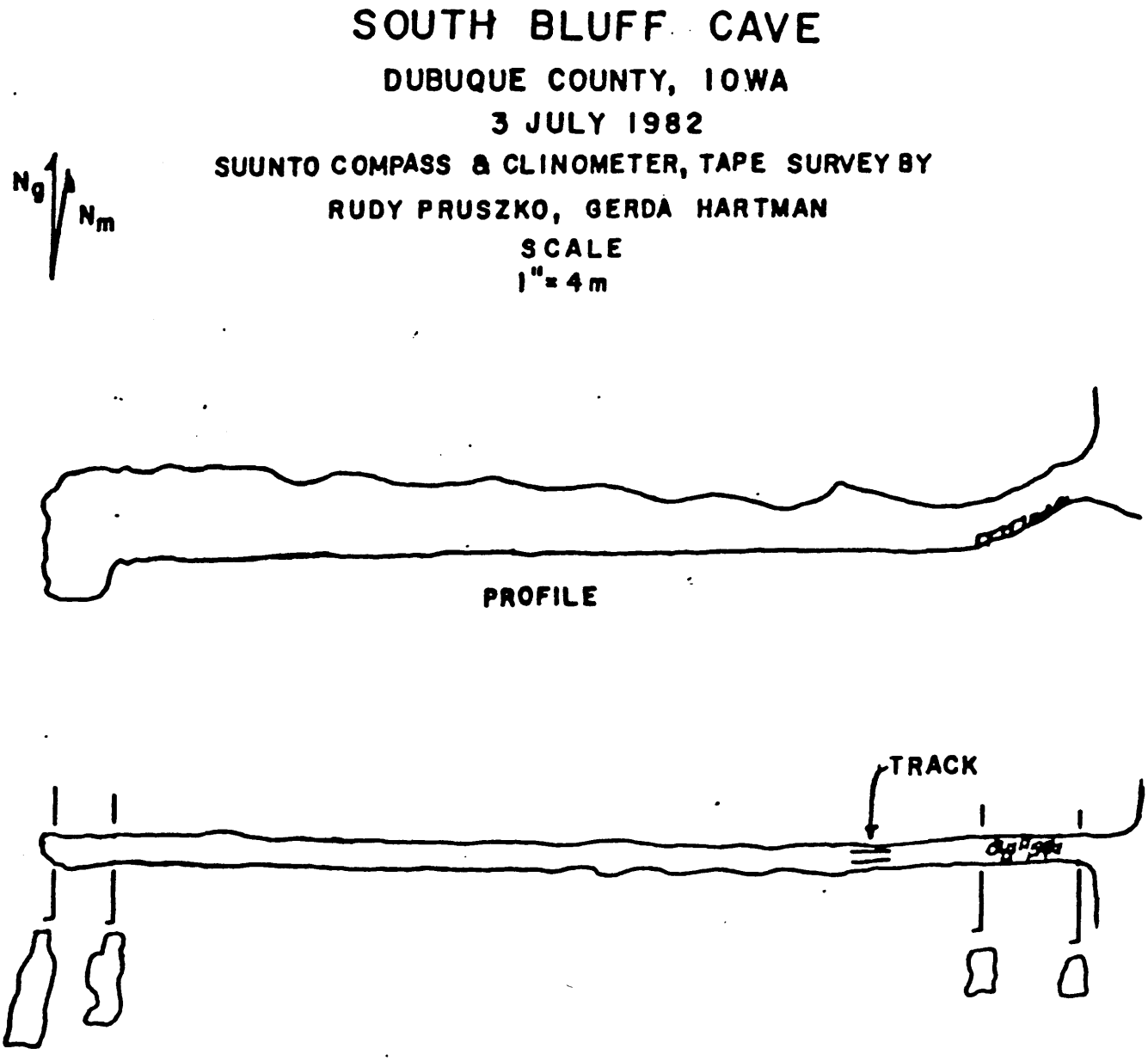

Figure 7. Map of South Bluff Cave, a lead adit (PPruszko 1983:29).

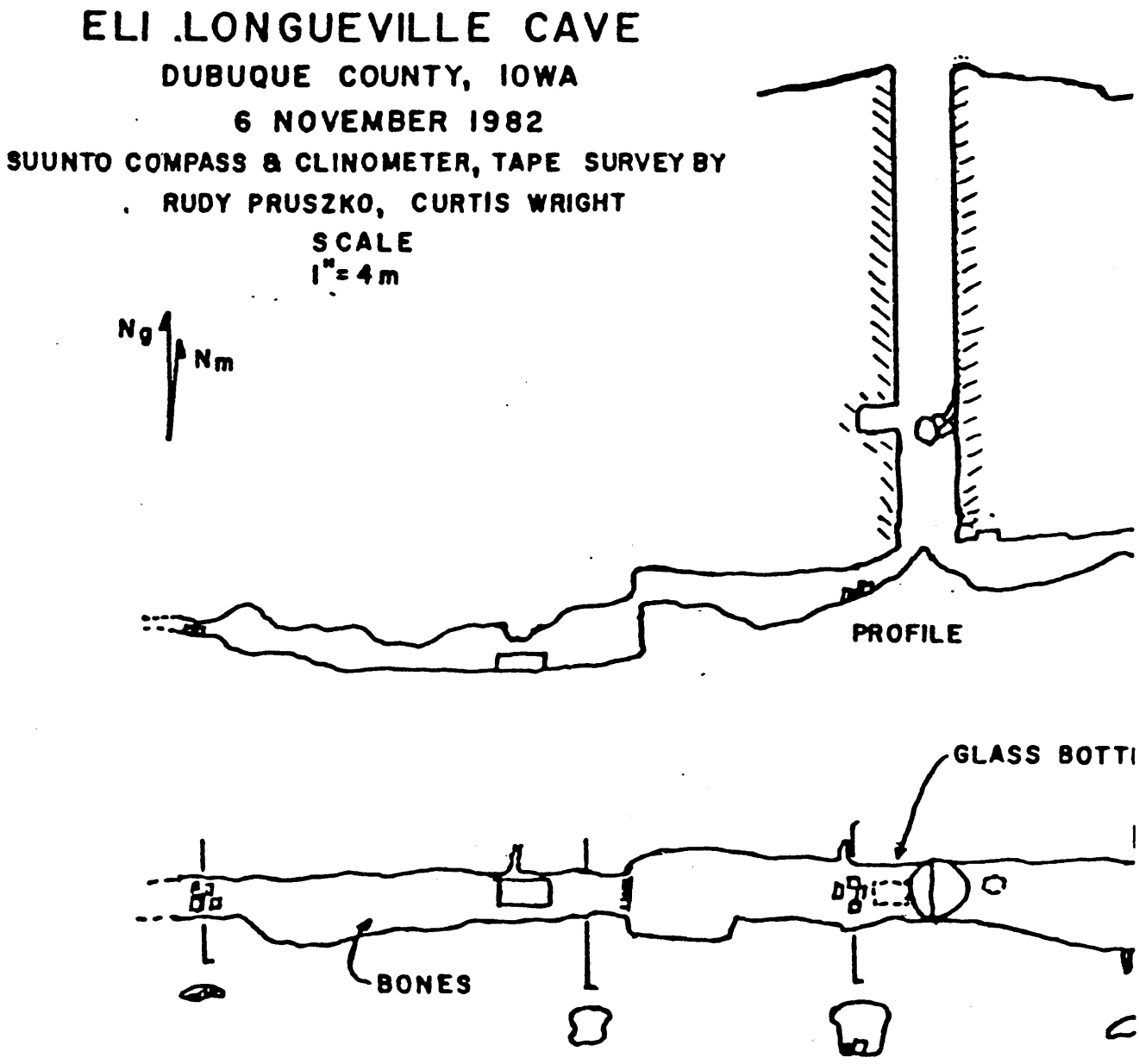

Figure 8. Map of Eli Longueville Cave (13DB73), a mining shaft (Pruszko 1983:28).

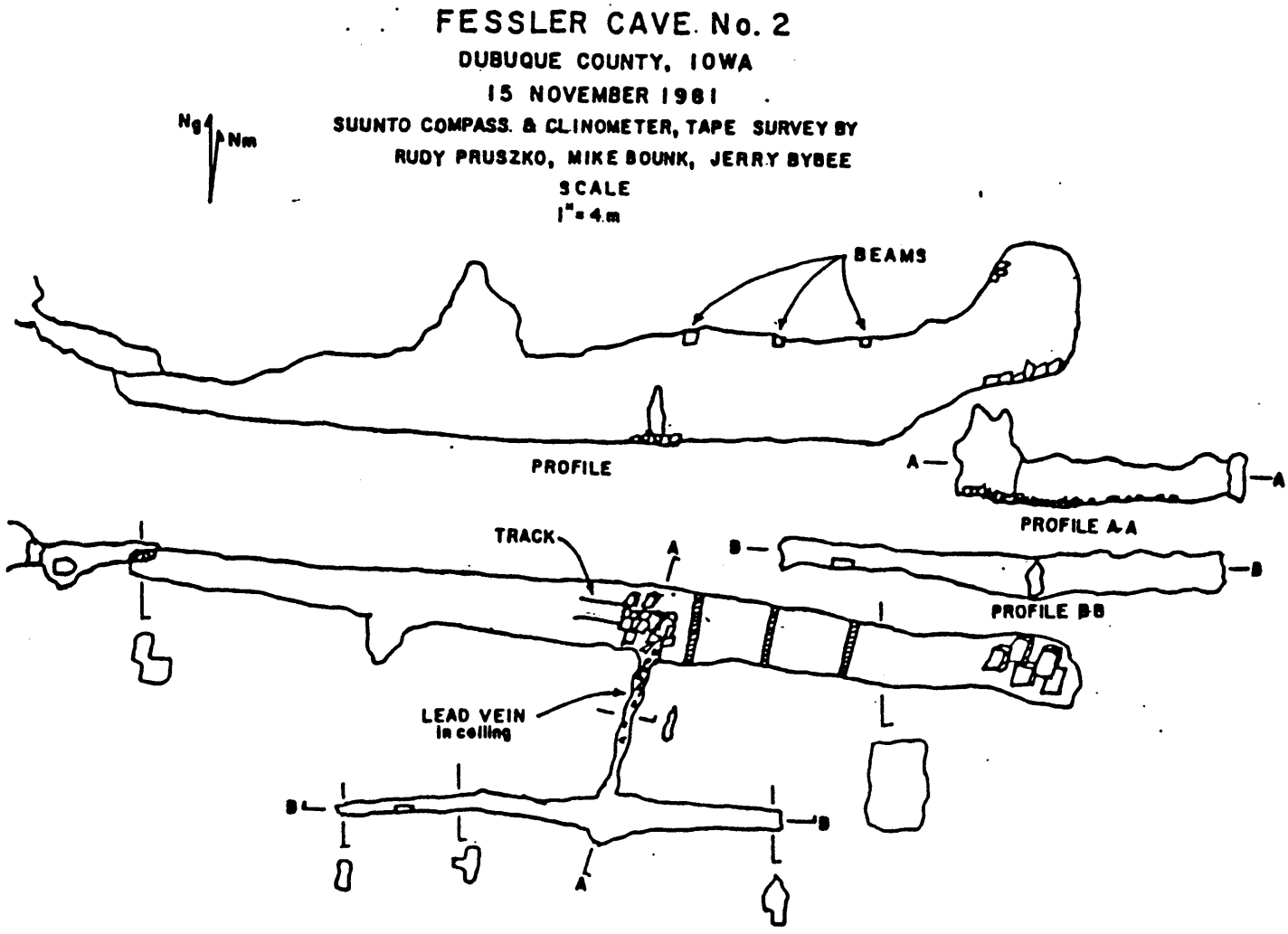

Figure 9. Map of Fessler Cave No. 2 (13DB151), a lead adit (Pruszko 1983:26).

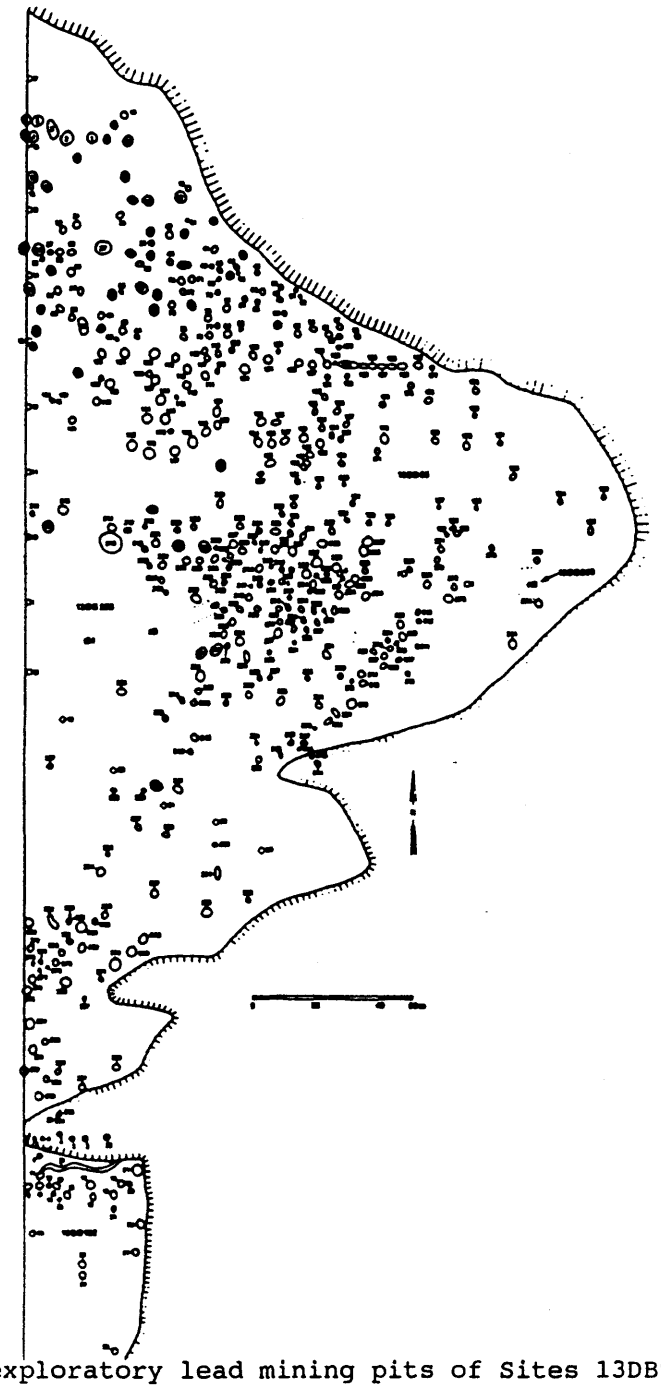

Figure 10. Sketch map of exploratory lead mining pits of Sites 13DB95, 13DB132, 13DB208, and 13DB209 (Abbott 1983:88).

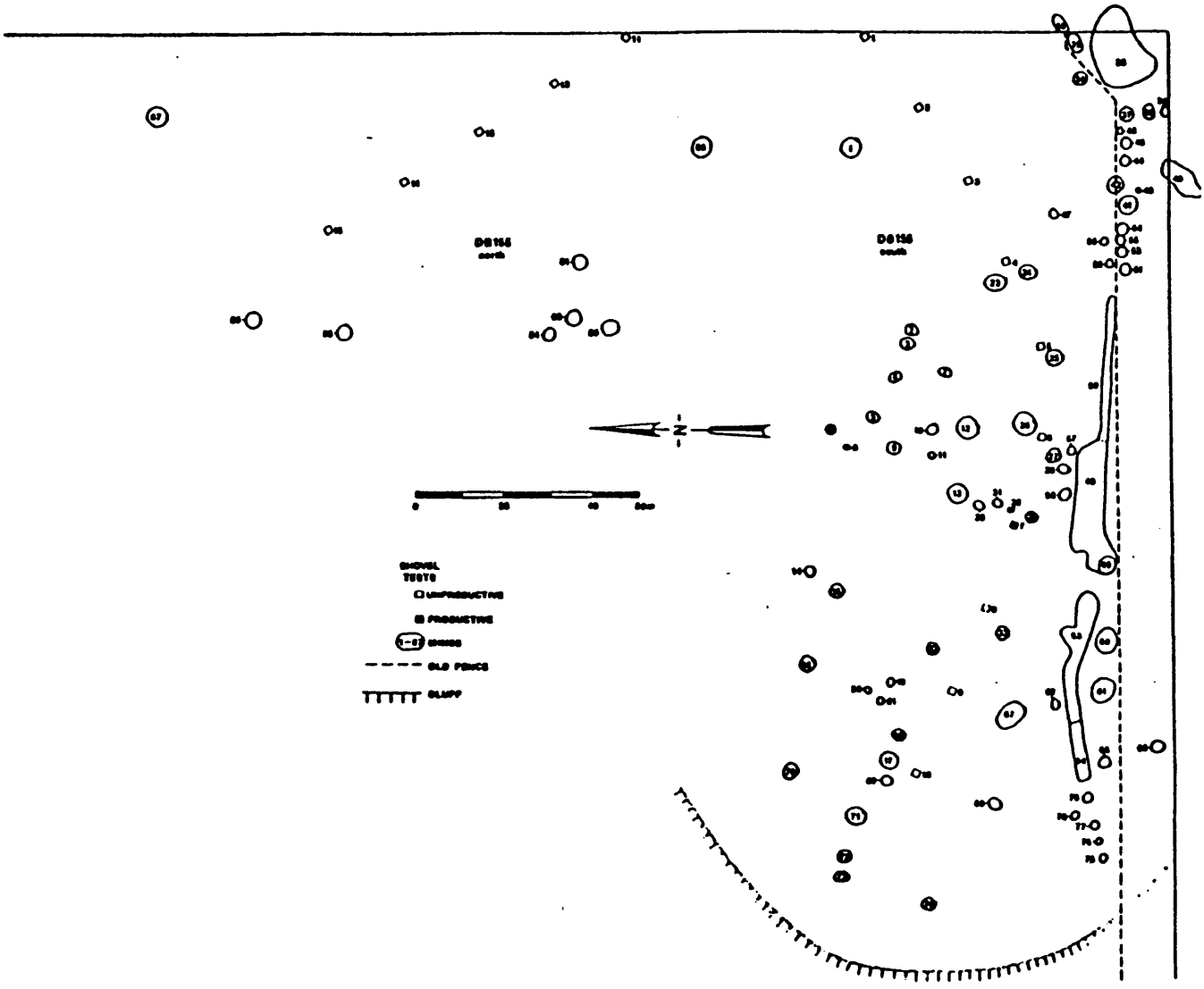

Figure 11. Sketch map of exploratory lead mining pits of Site 13DB155 (Abbott 1983:89).

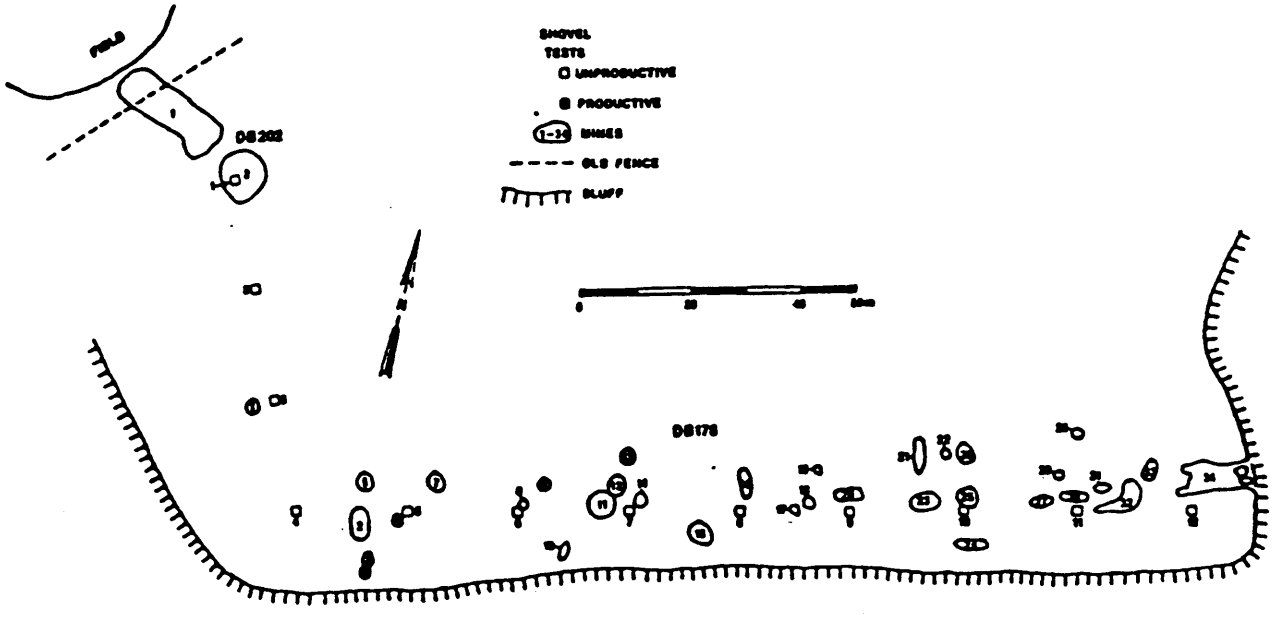

Figure 12. Sketch map of exploratory lead mining pits of Sites 13DB178 and 13DB202 (Abbott 1983:90).

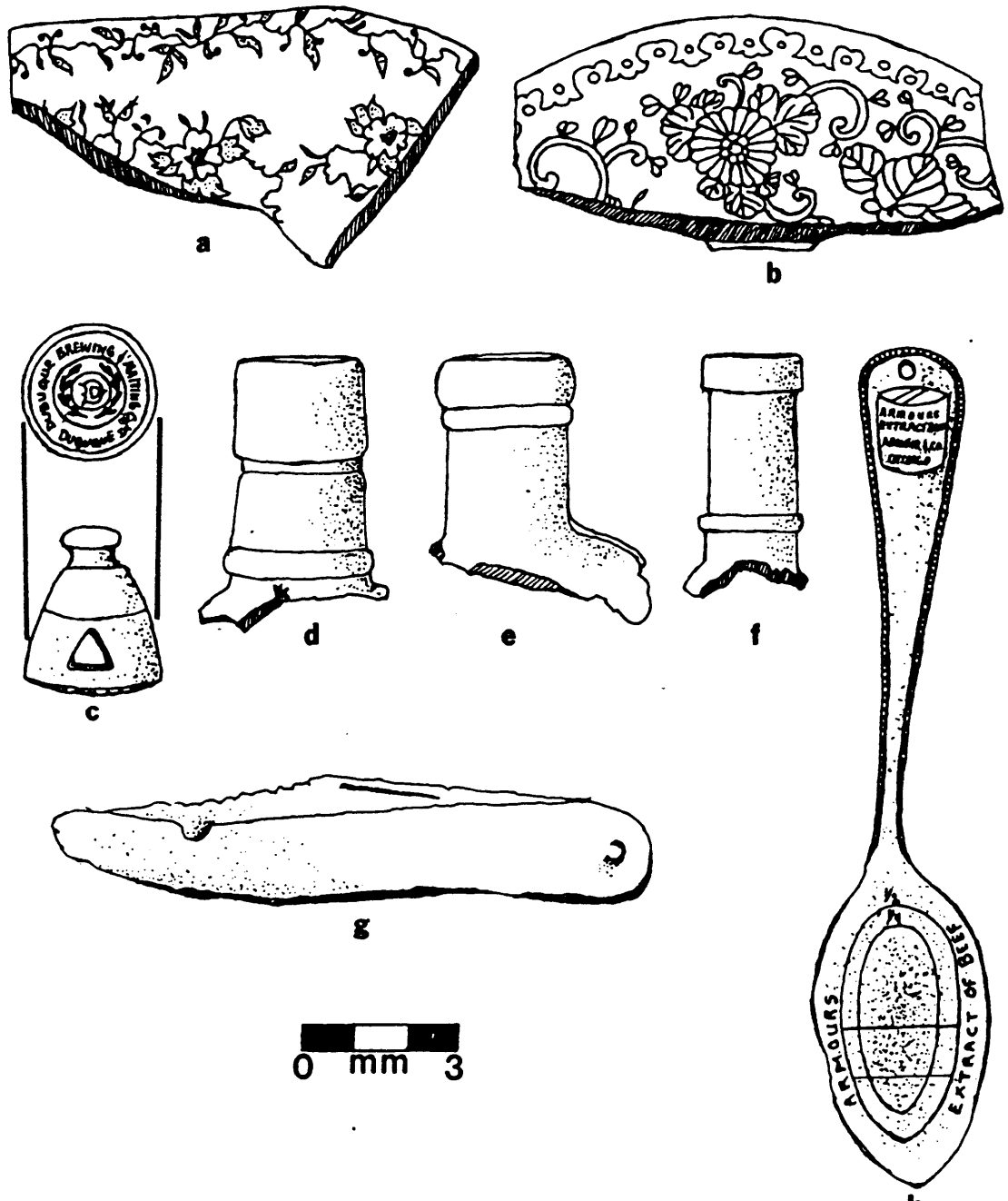

Figure 13. Historic artifacts from the Mines of Spain area: a-b) ceramic sherds (13DB9); c) bottle closure (13DB9); d-f) bottle neck fragments (13DB62); g) knife fragment; and h) spoon (13DB9) (Abbott 1983:95).

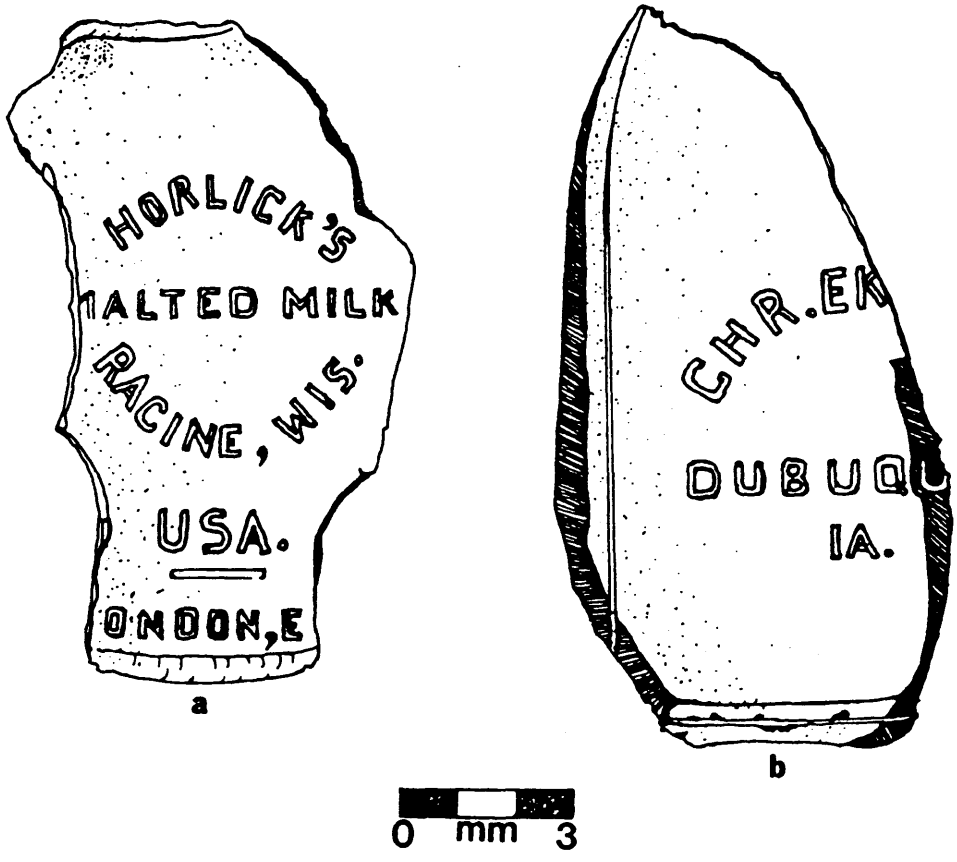

Figure 14. Historic artifacts from the Mines of Spain area: a-b) bottle glass fragments from Site 13DB9 (Abbott 1983:96).

LIST OF TABLES:

LIST OF FIGURES:

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1. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: View of the juncture of Catfish Creek and the Mississippi River showing Sites 13DB9 and 13DB62. Taken from the Dubuque Monument, facing south.

2. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: View of the east edge of Site 13DB9 facing north along the Mississippi towards its juncture with Catfish Creek.

3. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: Location of the site of the Mesquakie village, Site 13DB9, south of Catfish Creek, facing east.

4. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: Field containing evidence of the Mesquakie settlement especially along the east edge which includes the west edge of Site 13DB9 and to the south or left of middle ground Site 13DB62, facing southeast.

5. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: View of the floodplain south of Catfish Creek, the area of the community of Catfish, facing northeast towards the location of Site 13DB9.

6. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: A series of exploratory mining pits along the hill slope at Site 13DB131, facing west.

7. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: Exploratory mining pits at Site 13DB131, facing west.

8. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: Remains of a log heap furnace at Site 13DB9 on the bank of the Mississippi River, facing southwest.

9. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: Adit No. 1 at the Fessler Mines, Site 13DB151, facing south.

10. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Joyce McKay
Date: October 1987
Location of Negative: Bureau of Historic Preservation, State Historical Society of Iowa, Des Moines, Iowa
Description: Entrance through an adit at Fessler Mines No. 2, Site 13DB153, facing south.

11. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Larry Abbott
Date: June 1981
Location of Negative: Office of the State Archaeologist, University of Iowa, Iowa City, Iowa
Description: 13DB9, 13DB17, 13DB18 complex, Phase I survey, surface inspection. 13DB18 center, background, cultivated field; 13DB17 lower left-hand corner of photo; 13DB9 center right, lower terrace in cultivated field and timbered area right side of photo, facing north/northwest.

12. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Fred Finney
Date: June 1991
Location of Negative: Office of the State Archaeologist, University of Iowa, Iowa City, Iowa
Description: Phase I/II testing at 13DB62, 1 m x 1 m test unit. Burned earth feature at base of plowzone believed to be a structure, facing west.

13. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Fred Finney
Date: June 1991
Location of Negative: Office of the State Archaeologist, University of Iowa, Iowa City, Iowa
Description: Phase I/II testing at 13DB17, 1 m x 1 m test unit. Nancy Finney, crew member, left of unit, facing south/southeast.

14. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Marshall McKusick
Date: 1968
Location of Negative: Office of the State Archaeologist, University of Iowa, Iowa City, Iowa
Description: Excavation at 13DB17, facing west/southwest.

15. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Shirley Schermer
Date: June 1987
Location of Negative: Office of the State Archaeologist, University of Iowa, Iowa City, Iowa
Description: 13DB95, survey and mapping of mining pits. Bud Isenhart, on left in pit. Loren Schutt on right, facing east/southeast.

16. Property Name: Julien Dubuque's Mines
Location: Dubuque County, Iowa
Photographer: Rudy Pruszko
Date: May 1981
Location of Negative: Office of the State Archaeologist, University of Iowa, Iowa City, Iowa
Description: 13DB151, interior of Fessler Mine II, facing unknown direction. Note ore cart tracks, metal over wooden rails.

TABLE 2 (cont.)

Site #	Type of Site	Cultural Period
13DB145	Old road	Follows tributaries and draws from Horseshoe Bluff windgap to uplands
13DB146	Old, forked road	Follows tributaries and draws from Horseshoe Bluff windgap to uplands
13DB158	Old road	Follows tributary from Cattesse Hollow to uplands; may connect with old road 13DB170
13DB161	Stone fence	May connect with stone fence 13DB168
13DB168	Stone fence	May connect with stone fence 13DB161, parallels old road 13DB170
13DB170	Old road	Follows tributary from Cattesse Hollow towards uplands; may connect with old road 13DB158
13DB183	Old road	Runs down Cattesse along bottoms and on terrace, fork follows draw to uplands
13DB188	Two foundations, pit mine and rubble lined well	
13DB190	Possible site of old mill	
13DB200	Historic farmstead	
13DB206	Three segments of old road	
13DB212	Historic farmstead	
13DB223	Limestone quarry, gravel pile	
13DB231	Washed-out dam & former pond	
13DB248	Old road	
13DB258	Old road	
13DB270	Two foundations	
13DB279	Sand quarry	
13DB280	Sand quarry	
13DB281	Old road	
13DB282	Old farm road	
13DB283	Old road	
13DB374	Historic secondary refuse	
13DB384	Historic homestead	
13DB404	Mining pit or trench	
13DB405	Possible old road or mining trench	
13DB406	Historic secondary refuse	
13DB407	Mining pit	
13DB410	Foundation or disposal of concrete slabs	

TABLE 2 (cont.)

Site #	Type of Site	Cultural Period
13DB175	Rockshelters	Indeterminate
13DB177	Rockshelter	Indeterminate
13DB179	Rockshelters	Indeterminate
13DB186	Rockshelter	Woodland
13DB188	Camp site	Indeterminate
13DB191	Camp site	Indeterminate
13DB192	Rockshelter	Indeterminate
13DB195	Prehistoric camp	Indeterminate
13DB196	Prehistoric camp	Indeterminate
13DB197	Single rockshelter	Indeterminate
13DB198	Cluster of 3 rockshelters	Indeterminate
13DB199	Prehistoric camp	Woodland
13DB200	Prehistoric camp	Indeterminate
13DB203	Single rockshelter	Indeterminate
13DB205	Prehistoric camp	Indeterminate
13DB207	Prehistoric camp	Indeterminate
13DB208	Prehistoric camp	Indeterminate
13DB209	Prehistoric camp	Indeterminate
13DB210	Prehistoric camp	Woodland
13DB213	Two rockshelters	Indeterminate
13DB214	Single rockshelter	Indeterminate
13DB225	Two rockshelters	Indeterminate
13DB226	Single rockshelter	Indeterminate
13DB227	Single rockshelter	Indeterminate
13DB228	Two rockshelters	Indeterminate
13DB229	Single rockshelter	Indeterminate
13DB230	Single rockshelter	Indeterminate
13DB232	Two rockshelters	Indeterminate
13DB233	Single large rockshelter	Indeterminate
13DB234	Single rockshelter	Indeterminate
13DB235	Three rockshelters	Indeterminate
13DB236	Single large rockshelter	Indeterminate
13DB237	Single rockshelter	Indeterminate
13DB240	Prehistoric camp	Indeterminate
13DB241	Rockshelter	Indeterminate
13DB242	Rockshelter	Indeterminate
13DB243	Rockshelter	Indeterminate
13DB244	Rockshelter	Indeterminate
13DB245	Rockshelter	Indeterminate
13DB256	Rockshelter	Indeterminate
13DB257	Rockshelter	Indeterminate
13DB264	Rockshelter	Indeterminate
13DB268	Prehistoric camp	Woodland
13DB269	Prehistoric camp	Indeterminate
13DB374	Prehistoric camp	Indeterminate
13DB384	Prehistoric camp	Indeterminate
13DB386	Prehistoric camp	Middle Woodland

HISTORIC SITES

Site #	Type of Site	Comment
13DB60	Historic farmstead	
13DB69	Historic farmstead	
13DB80	Historic farmstead	
13DB86	Refuse pit	Probably associated with historic farmstead 13DB90
13DB89	Historic cemetery	Preston family plot
13DB90	Historic farmstead	Adjacent to cemetery 13DB89
13DB99	Lead smelter?	
13DB100	Historic farmstead	
13DB107	Rockshelter	Hobo camp?
13DB116	Julien Dubuque monument	Constructed in 1897 over grave of Julien Dubuque
13DB121	Old road	Follows tributary from Catfish Creek to uplands
13DB125	Square excavation	Purpose unknown

TABLE 2
NONCONTRIBUTING ARCHEOLOGICAL SITES
PREHISTORIC SITES

Site #	Type of Site	Cultural Period
13DB3	Mound group	Probably Woodland
13DB10	Mound group	Probably Woodland
13DB11	Camp site	Late Archaic or Early Woodland
13DB12	Single mound	Possibly Woodland
13DB13	Mound group	Possibly Woodland
13DB15	Mound group	Possibly Woodland, destroyed by quarry at Horseshoe Bluff
13DB43	Linear mound	Possibly Woodland, maybe natural feature
13DB44	Camp site	Possibly Archaic and Woodland
13DB45	Mound group	Possibly Woodland
13DB46	Single mound	Possibly Woodland
13DB47	Mound group	Possibly Woodland
13DB60	Camp site	Woodland
13DB61	Village site	Woodland
13DB63	Camp site	Indeterminate
13DB64	Camp site	Indeterminate
13DB65	Camp site	Indeterminate
13DB66	Camp site	Indeterminate
13DB67	Camp site	Indeterminate
13DB68	Camp site	Indeterminate
13DB70	Camp site	Indeterminate
13DB71	Camp site	Indeterminate
13DB72	Camp site	Indeterminate
13DB74	Camp site	Indeterminate
13DB75	Camp site	Indeterminate
13DB76	Camp site	Indeterminate
13DB77	Camp site	Indeterminate
13DB78	Camp site	Indeterminate
13DB79	Camp site	Late Archaic or Early Woodland
13DB80	Camp site	Archaic
13DB81	Camp site	Indeterminate
13DB82	Camp site	Indeterminate
13DB83	Camp site	Late or Post Woodland
13DB84	Camp site	Indeterminate
13DB85	Village site	Late Archaic to Woodland
13DB87	Camp site	Indeterminate
13DB88	Camp site	Indeterminate
13DB91	Camp site	Indeterminate
13DB92	Camp site	Indeterminate
13DB93	Mound group	Possibly Woodland
13DB94	Camp site	Indeterminate
13DB96	Camp site	Late Woodland
13DB101	Camp site	Indeterminate
13DB103	Mound group	Probably Woodland
13DB106	Rockshelter	Indeterminate
13DB108	Rockshelter	Indeterminate
13DB111	Rockshelter	Indeterminate
13DB112	Rockshelter	Indeterminate
13DB113	Rockshelter	Indeterminate
13DB114	Rockshelters	Indeterminate
13DB136	Mound group	Possibly Woodland
13DB140	Rockshelter	Indeterminate
13DB154	Rockshelters	Indeterminate
13DB157	Rockshelters	Indeterminate
13DB159	Rockshelter	Indeterminate
13DB160	Rockshelter	Indeterminate
13DB162	Rockshelter	Indeterminate
13DB163	Rockshelter	Indeterminate
13DB165	Rockshelter	Indeterminate
13DB167	Rockshelter	Woodland

TABLE 1 (cont.)

Property Type	Site #	Comments (Abbott 1983; Schermer 1988)
	13DB253	Two lead mines (pits).
	13DB254	Three lead mines (pits).
	13DB255	Two lead mines (pits).
	13DB259	Single lead mine (pit).
	13DB260	Single lead mine (pit).
	13DB261	Single lead mine (pit).
	13DB262	Single lead mine (pit).
	13DB263	Two lead mines (pits).
	13DB266	Single lead mine (pit).
	13DB267	Two lead mines (pits).
	13DB271	Two lead mines (pits).
	13DB273	Single lead mine (pit).
	13DB274	Cluster of lead mines (pits) and possible foundation.
	13DB377	Cluster of lead mines (pits).

TABLE 1 (cont.)

Property Type	Site #	Comments (Abbott 1983; Schermer 1988)
	13DB118	Lead mines, pits on low ridge.
	13DB119	Lead mines, pits on low ridge.
	13DB120	Lead mines, pits (possibly shafts) in draw adjacent to old road 13DB121.
	13DB122	Lead mines, pits on high ridge.
	13DB126	Lead mine, pit on upper slope.
	13DB127	Lead mines, pits on upper slope.
	13DB128	Lead mines, pits on upper slope.
	13DB129	Lead mines, pits on mid-slope.
	13DB130	Lead mines, pits on ridge.
	13DB131	Lead mines, pits and possibly shafts on broad spur ridge.
	13DB132	Lead mines, pits and possibly shafts on broad spur ridge.
	13DB133	Lead mines, pits on mid-slope.
	13DB134	Lead mines, pits on ridge.
	13DB135	Lead mine, pit on mid-slope.
	13DB137	Lead mine, pit on upper slope.
	13DB138	Lead mine, pit on upper slope.
	13DB139	Lead mines, pits, and a stone quarry on upper slope.
	13DB141	Lead mine, trench along foot of bluff.
	13DB143	Lead mines, pits and possibly shafts on lower slope.
	13DB144	Lead mines, pits on lower to upper slope above old road 13DB145.
	13DB147	Lead mines, pits and possibly shafts on mid-slope.
	13DB149	Lead mine, pit on ridge shoulder.
	13DB150	Lead mine, pit on ridge shoulder.
	13DB152	Lead mines, pits on upper slope.
	13DB155	Lead mines, pits, trenches and possibly shafts on shoulders and summits of forked ridge.
	13DB156	Lead mines, pits on middle and lower slope.
	13DB164	Lead mine, pit on upper slope.
	13DB166	Lead mines, pits on spur ridge.
	13DB169	Lead mines, pits on ridge.
	13DB171	Lead mine, pit on ridge.
	13DB172	Lead mine, pit on ridge.
	13DB173	Lead mine, pit on ridge.
	13DB174	Lead mine, pit on ridge.
	13DB176	Lead mines, pits on spur ridge.
	13DB178	Lead mines, pits and possible shaft on ridge.
	13DB180	Lead mine, pit on ridge.
	13DB181	Lead mine, pit on ridge.
	13DB182	Lead mine, pit on ridge.
	13DB184	Lead mine, pit on shoulder slope above Mississippi bluff.
	13DB185	Lead mines, pits on ridge.
	13DB189	Lead mine, pit on lower ridge.
	13DB202	Lead mine (trench) & possible cairned mine shaft.
	13DB211	Limestone foundation & lead mine (pit).
	13DB215	Four lead mines (pits).
	13DB216	Single lead mine (pit).
	13DB217	Cluster of lead mines (pits).
	13DB218	Cluster of lead mines (pits).
	13DB219	Single, large lead mine (pit).
	13DB220	Single, small lead mine (pit).
	13DB221	Two lead mines (pits).
	13DB222	Single lead mine (pits).
	13DB239	Cluster of lead mines (pits).
	13DB246	Cluster of lead mines (pits).
	13DB247	Single lead mine (pit).
	13DB249	Cluster of lead mines (pits).
	13DB250	Cluster of lead mines (pits).
	13DB251	Single lead mine (pit).
	13DB252	Cluster of lead mines (pits).

TABLE 1
CONTRIBUTING SITES ASSOCIATED WITH THE JULIEN DUBUQUE'S MINES DISTRICT.

Property Type	Site #	Comments (Abbott 1983; Schermer 1988)
Fur Trading Post and Mesquakie Village:	13DB9	Historic Mesquakie Village and burial site, Euro-American lead smelters, village of Catfish.
	13DB62	Historic Mesquakie Village, possible location of portion of Dubuque's trading establishment, "Catfish."
Communities:	- Catfish	
	13DB9	Historic Mesquakie Village and burial site, Euro-American lead smelters, village of Catfish.
	13DB17	"Catfish."
	13DB18	"Catfish."
	13DB62	Historic Mesquakie Village, possible location of portion of Dubuque's trading establishment, "Catfish."
	Mosalem	Rural community, Post Office from 1850 to 1855 and from 1862 to 1864.
	13DB201	Possible historic camp with smelter.
Lead Smelting:	13DB9	Historic Mesquakie Village and burial site, Euro-American lead smelters, village of Catfish.
	13DB95	Lead mines, pits, and smelters concentrated on large area of ridge.
	13DB131	Lead mines, pits and possible shafts on broad spur ridge and smelter.
	13DB132	Lead mines, pits and possible shafts on broad spur ridge and smelter.
	13DB201	Possible historic camp with smelter.
	13DB204	Possible historic smelter.
Mining Shafts:	13DB73	Two shaft lead mines.
	13DB120	Lead mines, pits (possibly shafts) in draw adjacent to old road 13DB121.
	13DB123	Lead mine, possible shaft in draw.
	13DB124	Lead mine, possible shaft in draw.
	13DB131	Lead mines, pits and possibly shafts on broad spur ridge.
	13DB142	Lead mines, shafts on mid-slope.
	13DB143	Lead mines, pits and possibly shafts on lower slope.
	13DB202	Lead mine (trench) & possible cairned mine shaft.
Lead Adits:	13DB104	Lead mines, pits and adit(s) on upper slope.
	13DB105	Lead mine, small adit on lower bluff.
	13DB109	Lead mines, four small adits on upper bluff.
	13DB148	Lead mine, one small adit on lower slope.
	13DB151	Lead mines, adits #2 and #3 of the Fessler Mines; on lower slope.
	13DB153	Lead mine, adit #1 of the Fessler Mines; on lower slope of draw.
	13DB187	Lead mine, adit in upper bluff.
	13DB224	Single lead mine (adit).
	13DB265	Small lead mine (adit).
	13DB272	One small lead mine (adit).
Exploratory Lead Mining Pits:	13DB14	Pit mine.
	13DB95	Lead mines, pits, and smelters concentrated on large area of ridge.
	13DB97	Lead mine, pit on ridge.
	13DB98	Lead mines, pits on upper slope.
	13DB102	Lead mine, pit on slope.
	13DB104	Lead mines, pits and adit(s) on upper slope.
	13DB110	Lead mine, pit on ridge.
	13DB115	Lead mine, pit at foot of bluff.
	13DB117	Lead mines, pits on low ridge.

CAPTIONS FOR FIGURES:

Figure 1. Oldest known map illustrating the Mines of Spain and indicating joint ownership of Julien Dubuque and Auguste Chouteau in 1804 (Hoffmann 1930:109).

Figure 2. Antoine Nau's map of Lieutenant Zebulon Pike's field notebook of 1805 (Wilkie 1987:108).

Figure 3. Historic artifacts from Site 13DB9: a) catlinite pipe fragment; b) bone awl; c) Northwest Company silver coin; d-f) trade beads; g-h) gun flints; i-n) clay pipe fragments; o) bone button (Abbott 1983:93).

Figure 4. Zinc-Lead Mining District of the Upper Mississippi Valley (Pruszko 1983:4).

Figure 5. Owen's 1840 map of the Dubuque Mineral Region.

Figure 6. The 1858 Werthern map of the Dubuque Mineral Region (Pruszko 1983:56).

Figure 7. Map of South Bluff Cave, a lead adit (PPruszko 1983:29).

Figure 8. Map of Eli Longueville Cave (13DB73), a mining shaft (Pruszko 1983:28).

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Figure 10. Sketch map of exploratory lead mining pits of Sites 13DB95, 13DB132, 13DB208, and 13DB209 (Abbott 1983:88).

Figure 11. Sketch map of exploratory lead mining pits of Site 13DB155 (Abbott 1983:89).

Figure 12. Sketch map of exploratory lead mining pits of Sites 13DB178 and 13DB202 (Abbott 1983:90).

Figure 13. Historic artifacts from the Mines of Spain area: a-b) ceramic sherds (13DB9); c) bottle closure (13DB9); d-f) bottle neck fragments (13DB62); g) knife fragment; and h) spoon (13DB9) (Abbott 1983:95).

Figure 14. Historic artifacts from the Mines of Spain area: a-b) bottle glass fragments from Site 13DB9 (Abbott 1983:96).