DESKTOP REVIEW OF CULTURAL RESOURCES BACKGROUND AND RECOMMENDATIONS FOR THE DOW SITE, IBERVILLE PARISH, LOUISIANA

Oct. 15, 2013

Exhibit EE. Dow Louisiana Operations WestIntroductionDesktop Cultural Resources Assessment Report

This report addresses a request from the Baton Rouge Area Chamber (BRAC) to conduct a desktop review of cultural resources and cultural resource possibilities on the 882.87 acre (357.29 hectare) Dow tract in Iberville Parish, Louisiana (Figure 1). To perform this work, several tasks were carried out. First, the geomorphology of the Area of Potential Effects (APE) was described. Second, files of the Louisiana Division of Archaeology (LDOA) were examined to determine if the area had received previous archaeological attention. Third, the LDOA's cultural resources map was consulted to determine if there were recorded sites in the project area. Fourth, historic topographic maps from the Louisiana State University Cartographic Information Center (LSUCIC) were researched to see if historic structures appeared on them, as well as to see if physiographic changes had taken place over the past 75-odd years. When these tasks were completed, recommendations were made regarding the advisability of cultural resources fieldwork



Figure 1. Area of Potential Effects (APE) (Red).

Environment/geomorphology

The most influential factors in determining the natural setting of the project area are the fluvial geomorphological processes associated with the lower Mississippi River. The meandering nature of the river, its associated tributaries and distributaries, the building of natural levees, and crevasses in the natural levee, affected the extent, time, and nature of prehistoric and historic occupations.

The Mississippi River changed abruptly, in geological terms, from a river of braided channels to a meandering stream approximately 12,000 years ago. This change is generally though to have been caused by a rise in sea level dating from the end of the last Ice Age (Gagliano 1984, Figure 2)



Figure 2. Major delta complexes and associated archaeological complexes in the Mississippi River deltaic plain (Adapted from Gagliano 1984:40).

The soils in the study area are mapped as pertaining to the Commerce and Sharkey associations. The first consists of loamy soils on the highest portions of the natural levees of the Mississippi River and covers most of the APE. Sharkey soils are clays that occur on the lower elevations of natural levees of the Mississippi River (USDA 1971).



Figure 3. Soils areas for the APE (Source: USDA 1971).

In terms of natural vegetation, this region contains a mix of cypress (*Taxodium distichum*) and such hardwood varieties as water oak (*Quercus nigra*), hickory (*Carya spp.*), and hackberry (*Celtis laevigata*). In the areas of lower elevation that are affected by alluviation, species such as palmetto (*Sabal minor*) and water willow (*Salix nigra*) grow in abundance. Other flora are rich and varied and include broomsedges, briars, and poison ivy.

Animal life is likewise diverse and most of the 62 mammal species found in Louisiana may at one time have been found within the area. These include white-tail deer (Odocoileus virginianus), cottontail rabbit (Sylvilagus floridanus), swamp rabbit (Sylvilagus aquaticus), gray squirrel (Sciurus carolinensis), fox squirrel (Sciurus niger), skunk (Mephitis mephitis), black bear (Euarctos americanus), raccoon (Procyon lotor), mink (Mustela vison), beaver (Castor canadensis), opossum (Didelphus virginiana), bobcat (Lynx rufus), gray fox (Urocyon cinereoargenteus) and red fox (Vulpes fulva) (Lowery 1974). Birds include such predators as the great horned owl (Bubo virginianus), barred owl (Strix platypterus), marsh hawk (Circus cyaneus), and many others. Non-predatory types include woodcocks (Philohela minor), wood ducks (Aix sponsa), bobwhite quail (Colinus virginianus), and mourning doves (Zenaidura macroura) (Lowery 1955).

Reptile life is particularly diverse, owing to the heterogeneity of habitats in the area. Included are alligators (*Alligator mississippiensis*), several species of snakes, including the cotton mouth (*Agkistrodon contortrix*), and varied species of lizards and turtles. Amphibians include species of salamanders, frogs, and toads (Dundee and Rossman 1989).

Fish life is very prolific in this part of Louisiana and no doubt was likewise prehistorically. Prominent fish species are gar (*Lepisosteus spp*), largemouth bass (*Micropterus salmoides*), and bluegill (*Lepmis macrochirus*), among many others. Brackish water clams (*Rangia cuneata*) are frequently found in archaeological deposits near coastal Louisiana, although there are several archaeological sites in the vicinity of the project area that contain these shells indicating a more brackish water environment than exists currently.

From the above, it seems likely that any cultural deposits in the APE date no earlier than the period of the Lafourche delta (i.e., ca. 1,500 B.P.). In historic times, the APE was an area of some natural levee (Commerce soils) and backswamp (Sharkey soils), well away from both the Mississippi River and Bayous Grosse Tete, Plaquemine and Jacob.

Previous archaeological projects in the Area of Potential Effects (APE)

A number of previous archaeological projects have taken place in/adjacent to the APE. Table 1 presents these projects, their acreage (when known), results, and authors.

Report				In/Adjacent to			
No.	Туре	Org.	Findings	APE?	Acres	Citation	
22-0089	Storage/Pipeline	CEI	Neg.	No	Unk	Brooks & Weinstein 1977	
22-0752	Sewage	1	Neg. Yes 1,000+		McIntire 1980		
22-2140	Residential	SURA	No el. Sites	No	400	Wells et al. 1998	
22-2245	Industrial	CEI	No el. sites	Yes 275 Wells 1999		Wells 1999	
22-2261	Channel Improv.	RCG	Land use study	No	N/A	Draughon et al. 1999	
22-2456	Pipeline	ESI	No el. sites	Yes	430	Smith et al. 2001	
22-2930	Pipeline	URS	Neg.	Yes	>10	Cassedy et al. 2007	
22-2977	Pipeline	CEI	5 sites	Yes	>20	Hunter 2007a	
22-2977-1	Pipeline	CEI	Neg.	Yes	>20	Hunter 2007b	
22-3036	Pipeline	SWCA	Neg.	Yes	450	Crow et al. 2009	
22-3453	Pipeline	SWCA	Neg.	Yes	40	Peyton and Mehok 2010	
22-3229-2	Pipeline	URS	Neg.	No	3.35	Handly and Dafoe 2009	
22-3559	Pipeline	URS	No el. sites	No	4,900*	King et al. 2011	
22-3760	Pipeline	URS	No el. sites	Yes	2,744*	Handly et al. 2011	

Table 1. Archaeological studies in the environs of APE (Source: LDOA).

*Only a small portion of APE in Iberville Parish.

Figure 4 provides a visual of the previously surveyed areas closest to the APE and the designations of the particular projects.



Figure 4. Visual, showing areas previously surveyed in relation to APE (Source: LDOA).

The above indicates there have been eight projects adjacent to or within the current APE (McIntire 1980; Wells 1999; Cassedy et al. 2007; Hunter 2007a,b; Crow et al. 2009; Peyton and Mehok 2010; and Handly et al. 2011). Of these, only one (Hunter 2007a) recorded sites that were of possible NRHP eligibility. None of these sites were within the current APE. Wells (1999) recorded one historic site (16IV47) on the northern periphery of the APE but judged it ineligible for the NRHP. Thus, in terms of previous experience, little of archaeological value has been found in these environs. In their investigation of a 400-acre (162 hectare) tract to be used for The Island community, between Bayous Plaquemine and Jacob, SURA considered the possibility of Chitimacha settlements in the general area but found no evidence for them (Wells 1998); the main Chitimacha Village (16IV158) was recorded at the confluence of Bayous Plaquemine and Grosse Tete (Kniffen 1938).

As for the quality of the coverage in the projects listed, all but one seem to have met current standards for level-of-effort in terms of the area assigned to them on the LDOA cultural resources map. The exception is that of McIntire, who performed a survey for a sewage planning area in and around Plaquemine (McIntire 1980). While the LDOA map shows a large block for the area he surveyed (22-0752), his report states: The field inspection covered both known sites and location of new sites that might be located along the proposed sewer system corridors (McIntire 1980:9).

These corridors appear to be primarily along Bayou Plaquemine (McIntire 1980:3).

No judgment is made concerning McIntire's level-of-effort in the corridors he investigated. He was a careful surveyor and it is probable that his work met the standards applicable at that time. To imply that the entire area in purple on the LDIOA map was covered, however, would be misleading: McIntire performed archival research for this bloc but his fieldwork took in only the corridors mentioned.

Previously recorded archaeological sites in the APE

No archaeological sites have been recorded for the APE. The locations of nearby sites are given in Figure 5 and a list of sites is presented in Table 2.



Figure 5. LDOA map showing locations of recorded archaeological sites near APE.

Site #	Site Name	Hist/Pre.	Culture	Function	Lat. extent	Landform	NR status	ln/Adj. To APE	Org.
16WBR1	Medora Site	Prehist.	Plaq.	Cer. Center	Undetermined	Batture	Destroyed	No	LSU
16WBR44	(None)	Hist.	AngloAm	Eng. Str.	1.9 ac	Batture?	NE	No	CEI
16WBR48	(None)	Hist.	Unk.	Scatter	.39 ac	Swamp	NE	No	URS
16IV29	Po'Folks Site	Hist.	Euro/AfAm	Residence	.74 ac	Nat Levee	NE	No	SURA
16IV30	Five-in-One Site	Hist.	EuroAm	Residence	1.5 ac	Nat Levee	NE	No	SURA
16IV31	The Brick Site	Hist.	EuroAm	Trash pit	1.5 ac	Nat Levee	NE	No	SURA
16IV32	Manager's House Site	Hist.	AngloAm	Residence	2.47 ac	Nat Levee	NE	No	SURA
16IV33	Little House on the Bayou	Hist.	AngloAm	Residence	.43 ac	Nat Levee	NE	No	SURA
16IV34	Cut Bone Site	Hist.	AngloAm	Residence	.15 ac	Nat Levee	NE	No	SURA
16IV35	Turnerville Dump	Hist.	AngloAm	Town Dump	1.24 ac	Nat Levee	NE	No	SURA
16IV36	(None)	Hist.	Unknown	Residence	3.86 ac	Nat Levee	NE	No	CEI
16IV37	Enterprise Plantation	Hist.	EuroAm	Plantation	138.37 ac	Floodplain	NE	No	PLM, CEI
16IV47	(None)	Hist.	Unk.	Residence	6.9 ac	Crevasse	NE	Yes	CEI, URS
16IV105	(None)	Hist.	Unk.	Residence	1.78 ac	Nat Levee	Unknown	No	LDOA
16IV106	St. Louis Plantation	Hist.	EuroAm	Plantation	2.47 ac	Nat Levee	Unknown	No	LSU
16IV129	Masonic Hall Site	Hist.	AngloAm	Meeting House	Unk.	Nat Levee	Unknown	No	CEI
16IV130	Plaquemine Lock	Hist.	AngloAm	Eng. Str.	N/A	Nat Levee	Listed	No	CEI
16IV180	Irish Town	Hist.	IrishAm	Neighborhood	.22 ac	Nat Levee	Unknown	No	LSU

Table 2. Recorded archaeological sites in general vicinity of APE (Source: LDOA).

The tally of sites in Table 2 brings out several points. First, of the 18 sites in the table, only one, the Medora Site (16WBR1), is prehistoric. The remainder are historic in nature. In terms of NRHP eligibility, only one site, the Plaquemine Locks (16IV130) is listed; one site, the Medora Site (16WBR1), would have certainly been eligible but is now largely destroyed; and four sites (16IV105, 16IV106, 16IV129, and 16IV180) are of unknown eligibility status. Thus, considering the 18 sites as a whole, only 33 percent do qualify, could qualify, or could have qualified, for NRHP listing. Eliminating the four sites of unknown eligibility, some of which probably would not be eligible after further examination, the number of significant sites drops by two-thirds, to 11 percent. Finally, all but one of the 18 sites are located within ¹/₂ mile (805 m) of a major water course (Mississippi River, Bayou Bourbeaux, Bayou Jacob, Bayou Plaquemine). The sole exception, 16WBR48, is an historic scatter that is ineligible for the NRHP.

Historic Topographic Maps

Historic topographic maps from the Louisiana State University Cartographic Information Center (LSUCIC) were examined. These includes the Addis, La. 1953, 1971, 1980, and 1992 7.5-minute sheets; the Baton Rouge, La. 1908 and 1939 15-minute sheets; the Grosse Tete, La. 1932, 1934, 1935, and 1940 15-minute sheets; and the Plaquemine, La. 1953, 1971, 1980, and 1992 7.5-minute sheets. The most relevant maps from the foregoing will be presented below.

The earliest map available is the 1908 Baton Rouge, La. 15-minute topographic sheet and it shows only the eastern portion of the APE (Figure 6). No structures or topographic features appear. The next maps of interest are the Baton Rouge, La. 1939 and Grosse Tete, La. 1932 15-minute maps, which are shown in a composite in Figure 7. In that map, a series of structures is indicated on the south side of an unnamed bayou, in the northwestern part of the APE, within the two green dashed-line circles. The next informative maps are the Addis, La. 1953 and Plaquemine, La. 1953 7.5-minute sheets, which show the structures that appeared on the previous map as either demolished or vacant. In the southeastern corner of the APE, one vacant and one apparently tenanted structure appears. A line of structures on the south side of the southeastern boundary road is apparently outside the APE (Figure 8). By the time of the 1971 editions of these maps the situation remains unchanged save for the continued apparent demolition of vacant structures in the northwest of the APE (Figure 9). The 1980 edition of these maps provides the same information, although several new structures have apparently been constructed in the northwestern part of the APE (Green dashed-line circle). The final editions of these maps, from 1992, shows all the foregoing structures gone save for a single apparently tenanted structure in the extreme southeast of the APE, near Hwy 1 (Figure 11).



Figure 6. Portion of Baton Rouge, La. 1908 15-minute Topographic Quadrangle showing portion of APE.



Figure 7. Composite of Baton Rouge, La. 1939 and Grosse Tete, La. 1932 15-minute Topographic Quadrangles, showing APE (Red boundary lines).



Figure 8. Composite of Addis, La. 1953 and Plaquemine, La. 1953 7.5-minute Topographic Quadrangles, showing APE (Red boundary lines).



Figure 9. Composite of Addis, La. 1971 and Plaquemine, La. 1971 7.5-minute Topographic Quadrangles, showing APE (Red boundary lines).



Figure 10. Composite of Addis, La. 1980 and Plaquemine, La. 1980 7.5-minute Topographic Quadrangles, showing APE (Red boundary lines).



Figure 11. Composite of Addis, La. 1992 and Plaquemine, La. 1992 7.5-minute Topographic Quadrangles, showing APE (Red boundary lines).

Conclusion and Recommendations

Generally speaking, the APE is in areas well-removed from major watercourses. As such, it has a low potential for prehistoric deposits except in the areas along the small unnamed bayou in the northwest of the survey area, shown on the earliest topographic maps.

Several archaeological projects have covered parts of the APE. All have been of a level-of-effort sufficient to satisfy contemporary SHPO requirements but McIntire's 1980 study did not cover the entire area shown on the LDOA cultural resources map. None of these projects, however, covered more than a very small portion of the APE.

There are no known archaeological sites within the APE.

Topographic maps show structures in the northwestern part of the APE, along an unnamed bayou, in the first half of the 20th-century. As time passed, these structures were demolished.

In accord with the foregoing, the following conclusions are in order: (1) The APE, in general, was unsuitable for historic human habitation, except in areas along the single unnamed bayou in the northwestern part of the APE. Even in the surrounding area, most of the archaeological sites that have been recorded are relatively modern (i.e., 20th-century sites that do not qualify for the NRHP). Thus, *with the exception of the area along the unnamed bayou*, which historic maps indicate to have been occupied in the first half of the 20th century, *and a small area in the southeastern corner of the APE* where two structures are shown on historic maps, *no archaeological survey is necessary*. (2) Conversely, those areas along the unnamed bayou in the northwest of the APE, and the afore-mentioned area in the southeast of the APE, should be surveyed archaeologically (Figure 12). The reason for this survey would be to determine if any deposits associated with the historic structures shown on the maps, or any prehistoric deposits along the small bayou, qualify for the National Register of Historic Places.



Figure 12. Composite of Addis, La. 1992 and Plaquemine, La. 1992 7.5-minute Topographic Quadrangles, showing areas needing archaeological survey (Red boundary lines).

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