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Rev. 07/10/02

LETTER OF TRANSMITTAL

From: Bruce Yare
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Date: 10/04/02

Sauget Area 1

Dead Creek: Sediment Removal Action

Michael Ribordy (SR-6J)
Environmental Protection Agency
77 West Jackson Blvd.
Chicago, IL 60604

The following items are:

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3	Sauget Area 1, Sauget and Cahokia, Illinois Dead Creek Sediment Removal Action
	Mitigation Plan, October 4, 2002

The above items are submitted:

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Comments:

By: Bruce Yare

168252

Sauget Area 1, Sauget and Cahokia, Illinois

Dead Creek Sediment Removal Action

Mitigation Plan

October 4, 2002

Submitted To:

U.S. Environmental Protection Agency
Region 5, Chicago, Illinois

Submitted By:

Solutia Inc, St. Louis, Missouri

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Section 1

1.0 Introduction

On August 29, 2001, USEPA Region 5 issued an Amended Administrative Order (Docket No. V-W-99-C-554) for a time-critical sediment removal action in Dead Creek, a 3.5-mile long stream located in Sauget and Cahokia, St. Clair County, Illinois. As required by the Order, approximately 46,000 cubic yards of impacted sediment were removed from Creek Segments B, C, D, E and F, Site M and the lift station sump where Dead Creek discharges into Old Prairie du Pont Creek. Excavated sediments were transferred to a RCRA and TSCA-compliant containment cell constructed adjacent to the west bank of Dead Creek Segment B just north of Judith Lane. Sediment transfer was completed in January 2002. A temporary plastic cover was installed in the cell to isolate the impacted sediments from storm water. Storm water falling on the cell was contained and treated using granular activated carbon prior to discharge to Creek Segment B.

In addition to installing the cap on the containment cell, several additional work elements required by Section 3, Work to be Performed, of the Order need to be completed. Remaining work includes Section 3.B.4 Excavated Area Soil Sampling, Section 3.B.5 Excavated Area Bottom Liner Requirements, Section 3.C Mitigation Plan. The first two work elements are underway and will be addressed in a separate document; the third work element is dealt with in this submittal.

Specific requirements of Section 3.C of the Order are:

> "Sixty days after completion of the sediment and soils removal activities required by this Order, Respondent shall submit to EPA a Mitigation Plan which contains a detailed statement describing the steps the Respondents have taken and are taking to ensure that the actions required by this Order are implemented in such a way as to avoid and/or minimize adverse impacts to area wetlands and habitat.
>
> Respondents Mitigation Plan shall also provide for the replacement of all habitat and wetlands unavoidably lost in the implementation of the project. Specifically, Respondents Mitigation Plan shall provide an accounting of all wetlands and habitat adversely affected by the project and specific actions Respondents will take, and an associated schedule, to provide replacement of the value and function associated with lost wetlands and habitat.
>
> The Mitigation Plan shall also include a plan for investigating any potential "hot spots" of contamination found in the Borrow Pit Lake located directly west of

> Creek Segment F. This "hot spot" investigation plan shall also provide for the remediation of those sediments in the Borrow Pit Lake that are found to be acting as a source to further risk to human health and the environment."

To summarize, the Mitigation Plan requires the following plans or reports:

Implementation Mitigation Plan - A plan to avoid and/or minimize adverse impacts to area wetlands and habitat during implementation of the removal action;

Baseline Habitat Assessment - An accounting of all wetlands and habitat adversely affected by the removal action;

Creek Channel Mitigation Plan - A plan to provide replacement of the value and function associated with lost wetlands and habitat; and

Borrow Pit Lake Investigation and Remediation Plan - A plan to identify and remediate any potential "hot spots" in the Borrow Pit Lake located directly west and downstream of Creek Segment F.

Measures to be taken to avoid and/or minimize adverse impacts to wetlands and habitat during implementation of the removal action were described in the June 30, 2000 Time Critical Removal Action Work Plan, Dead Creek Sediment and Soil, Sauget and Cahokia, Illinois submitted to USEPA Region 5 by Solutia Inc. The Baseline Habitat Assessment, Creek Channel Mitigation Plan and Borrow Pit Lake Investigation and Remediation Plan are discussed in Sections 2.0, 3.0 and 4.0 of this document, respectively.

Section 2

2.0 Habitat Assessment

The Time-Critical Sediment Removal Action UAO did not specify the type or duration of baseline habitat assessment that needed to be performed. All that the Order required was that "Sixty days after the completion of the sediment and soils removal activities required by this Order, Respondents shall submit to EPA a Mitigation Plan which .... shall provide an accounting of all wetlands and habitat adversely affected by the project".

The Baseline Habitat Assessment, summarized in Section 2.1 and included in Appendix 1 of this Mitigation Plan, was performed to partially address this requirement of the UAO. To fully-address the requirement, a post-removal assessment needs to be performed. Performance of the Post-Removal Habitat Assessment is on hold pending USEPA review of the Dead Creek Final Remedy Engineering Evaluation/Cost Analysis submitted on June 21, 2002.

Placing the Baseline Habitat Assessment in a local and regional context and evaluating the overall habitat value of Dead Creek and the Borrow Pit Lake were not required by the UAO. However, this information was collected for performance of the Sauget Area 1 Ecological Risk Assessment and is incorporated into Section 2.2 of the Mitigation Plan.

2.1 Baseline Habitat Assessment

The Time Critical Sediment Removal Action UAO was issued by the Agency on May 31, 2000. Since this was a time-critical removal action, work was planned, approved and implemented in an expeditious manner that did not allow for assessment of baseline habitat conditions for a year period prior to implementation of the removal action. On June 30, 2000, the Draft Time Critical Removal Action Work Plan was submitted to the Agency. The Baseline Habitat Assessment was performed in October and November 2000, just before installation of the sediment dewatering system, which began in November 2000 and finished in February 2001. Containment cell construction started in April 2001, when the Work Plan was approved. Sediment removal was started in June 2001 and completed in February 2002.

To compensate for the lack of seasonal, site-specific observations of the extent of migratory bird use during spring and fall migrations, nesting use in summer months, herpetological use in the

spring and summer and plant community composition changes throughout the course of the growing season, literature sources were used to provide information on the plant and animal species that were or might be present in the Dead Creek corridor.

In November 2000, prior to the start of the Sediment Removal Action, Woodlot Alternatives, Inc. performed a baseline habitat assessment for Creek Segments B, C, D and E and Creek Segment F upstream of the Terminal Railroad Embankment. During this assessment, qualitative and quantitative information on plants, animals, vegetation alliances and hydrologic regimes was collected to identify organisms potentially at risk from the removal action and provide the information needed to develop habitat restoration plans.

Dead Creek and adjacent riparian communities form a narrow, linear wetland system that passes through Sauget and Cahokia, Illinois. Portions of Dead Creek are adjacent to residential and business lots that contain mowed lawns, buildings, driveways and roads. Land uses in the top of bank areas along Dead Creek are summarized below:

Summary of Land Use Adjacent to Dead Creek in Cahokia and Sauget, Illinois

Segment	East Bank			West Bank		
CS-B	Industrial	620 ft.	32.6 %	Undeveloped	1,140 ft.	62.6 %
	Agricultural	740 ft.	38.9 %	Agricultural	680 ft.	37.4 %
	Undeveloped	380 ft.	20.1 %	**Total**	1,820 ft.	100.0 %
	Residential	160 ft.	8.4 %			
	Total	1,900 ft.	100.0 %			
CS-C	Residential	360 ft	24.0 %	Recreational	300 ft.	19.4 %
	Undeveloped	600 ft.	40.0 %	Residential	740 ft.	48.1 %
	Residential	540 ft.	36.0 %	Recreational	360 ft.	23.4 %
	Total	1,500 ft.	100.0 %	Residential	140 ft.	9.1 %
				Total	1,540 ft.	100.0 %
CS-D	Residential	920 ft.	100.0 %	Residential	800 ft.	88.9 %
	Total	920 ft.	100.0 %	Commercial	100 ft.	11.1 %
				Total	900 ft.	100.0 %
CS-E	Residential	100 ft.	2.7%	Institutional	120 ft.	3.3 %
	Undeveloped	640 ft.	17.1 %	Residential	480 ft.	12.9 %
	Institutional	380 ft.	10.2 %	Undeveloped	600 ft.	16.1 %
	Residential	240 ft.	6.4 %	Residential	760 ft.	20.2 %
	Commercial	60 ft.	1.6 %	Undeveloped	420 ft.	11.3 %
	Residential	510 ft.	13.6 %	Institutional	900 ft.	23.9 %
	Commercial	70 ft.	1.9 %	Residential	480 ft.	12.3 %
	Agricultural	160 ft.	4.2 %	**Total**	3,760 ft.	100.0 %
	Institutional	1580 ft.	42.3 %			
	Total	3,740 ft.	100.0 %			

Creek Segment F, between Cargill Road and the Borrow Pit Lake is a 350 ft. wide undeveloped area bounded by agricultural areas on both sides of the channel. To a great extent, these areas

are so modified that only relict portions of natural vegetation alliances exist. Furthermore, many areas are also influenced by non-native plant species.

Habitats in the Dead Creek Baseline Habitat Assessment study area breakdown as follows:

• Forests	8.2 Acres	47.4 %
• Shrublands	0.1 Acres	0.6 %
• Herbaceous Alliances	2.2 Acres	12.7 %
• Wetlands	3.2 Acres	18.5%
• Open Water	3.6 Acres	20.8 %
Total	17.3 Acres	100.0 %

Sections of the creek are utilized by rare species indicating that Dead Creek does posses value for wildlife habitat and as a travel corridor. Two rare species, specifically the Brown Creeper (a bird) and Early Wild-rye (a grass), were observed in Dead Creek Segments B and C, respectively.

Brown Creeper (Serthia americana) singing was heard on November 8, 1999 in Creek Segment B. This area possessed a few, very large diameter, dead, standing trees which provide habitat for this bird. It is likely that Brown Creeper use of Dead Creek is minor due to limited intact forest and the young age of most trees.

Early Wild-rye (Elymus macregorii) appears to be rare in Illinois and information on its occurrence in Creek Segment C was included in the Baseline Habitat Assessment in the event it became a state-tracked species. The only occurrence of this grass in the study area was from a Fraxinus pennsylvanian-Ulmus americana Temporarily Flooded Forest in Creek Segment C. It was located on the east bank of Dead Creek, upstream of Cahokia Street within wetland characterization plot C-4. Plants were limited to a small area (7 sq. ft.) and were senescent with dispersing fruits at time of observation (November 1999).

Vegetation alliances were identified during field surveys performed on November 2, 8, 9, 10 and 11, 2000 and were mapped to determine the areal extent of each alliance. Quantitative and qualitative data regarding plant species abundance and distribution were collected for all dominant vegetation communities. Quantitative data on plant species composition and abundance were collected in 9m radius plots for trees, lianas, saplings, shrubs, seedlings and herbs. Qualitative data collected outside of the plots included photographs of each community,

a list of all plant species observed and general descriptions of the degree of anthropogenic disturbance and estimated age of forested communities.

Nine vegetation alliances were identified in Dead Creek:

- Fraxinus americana - Ulmus americana Temporarily Flooded Forest
- Populus deltoides Temporarily Flooded Forest
- Salix nigra Temporarily Flooded Forest
- Cephalanthus occidentalis Semi-Permanently Flooded Shrubland
- Persicaria - Mixed Forb Temporarily Flooded Herbaceous
- Typha Seasonally Flooded Herbaceous
- Potamogeton - Ceratophyllum - Elodea Permanently Flooded Herbaceous
- Temporarily Open Water
- Permanent Open Water

Dead Creek is occupied to a significant extent by non-native, invasive plant species. Though exotic herbaceous species are present, it is the introduced and escaped woody species found in the forested communities that are most prevalent. White mulberry, Siberian elm, paper mulberry and tree-of-heaven are frequent throughout the study area and, in some cases, locally dominant. Common, non-native lianas, including trumpet-creeper, Japanese honeysuckle and Chinese spindle-tree, were frequently seen growing as a dense mat over the ground or other woody species. Amur honeysuckle is the common, non-native shrub in the study area.

Qualitative information on animal use was collected through direct observation of species or their sign, by a review of previous site investigations and by comparing habitat available on site to habitat requirements of species known or suspected to occur in or near the project area. Information on aquatic invertebrates and fish was obtained from previous investigations and dip nets surveys performed during the Baseline Habitat Assessment. Amphibians, reptiles, birds and mammals seen on the site were recorded.

Animal use is generally limited to species that do not require large tracts of pristine land and can tolerate some level of habitat modification and disturbance. Several species of birds were observed including American robin, northern cardinal, blue jay, northern mockingbird, Carolina wren, sparrows, Eurasian tree sparrow, European starlings, waterfowl, wading birds and great horned owl. Mammals using Dead Creek include eastern chipmunks, gray squirrels, raccoons and white-tailed deer.

Rare species observed in the Dead Creek include one state threatened species of bird, Brown Creeper (Serthia americana), and one potentially rare grass, Early Wild-rye (Elymus macregorii).

A qualitative wetland function-value assessment was performed to document existing functions and values in Dead Creek. Results of surveys and community plot sampling along Dead Creek indicate that it is a highly modified wetland system that, for much of the season, appears to act more as a set of shallow ponds rather than a riverine system. Dead Creek Segments B, C, D, E and F and the Borrow Pit Lake typically fill with water during spring rains. Runoff from spring rains discharging into Dead Creek at road crossings or falling directly on the creek channel fills CS-B, C, D and E. Runoff from the floodplain in these creek segments does not readily reach Dead Creek because the floodplain is lower than the creek or there is little or no natural or engineered drainage to route runoff to the creek. Undersized culverts located above the channel bottom at Judith Lane, Edwards Street, Kinder Street, Jerome Lane, Edgar Street and the Parks College parking lot act as flow constrictions and detain storm water.

Flow is also restricted by the low gradient in Dead Creek. Channel bottom centerline elevation at the low point of Creek Segment B, after completion of sediment removal, was 396.06 while the low point elevation of the channel centerline at the Cottonwood Apartments at the downstream end of Creek Segment E was 395.53 ft. amsl. This is a drop of 0.53 ft. over a distance of approximately 8,000 ft., a gradient of 0.35 feet per mile or 0.007%. A one percent slope is typically the minimum design for channel flow.

Creek Segment F fills with flow from upstream creek segments; runoff from Route 157, Route 3 and Cargill Road; runoff from the Phillips Pipeline property and other areas adjacent to CS-F. When the rise in Mississippi River stage triggers closure of the flap valves discharging water from Dead Creek beneath the levee at Old Prairie du Pont Creek, storm water is detained and accumulates in Creek Segment F and the Borrow Pit Lake. Storm water is also detained in Creek Segment F because the channel bottom elevation at its confluence with the Borrow Pit Lake is four feet lower that the elevation of the bottom of the Borrow Pit Lake (392.08 ft amsl vs. 396.4 ft, respectively). With this elevation differential, the Borrow Pit Lake acts as a dam causing water to backup in the channel portion of CS-F upstream of its confluence with the BPL.

From late summer through winter, Dead Creek and the Borrow Pit Lake are typically drying up or dry, creating intermittent, isolated water bodies. When water levels in Creek Segments B, C, D and E fall below the culvert inverts at Judith Lane, Edwards St., Kinder St., Jerome Lane, Edgar Street and the Parks College parking lot during dry weather conditions, a series of stagnant, discontinuous pools with no flow are created upstream of each road crossing. Pools in Creek Segments B, C, D and E routinely dewater or dry up in warm weather and/or low rainfall periods. Creek Segment F north of the Terminal Railroad embankment dries up also in these weather conditions. CS-F south of the Terminal Railroad embankment dewaters but does not dry up, probably as a result of water flow from the Phillips Pipeline property.

As reported in the June 2001 Sauget Area 1 Ecological Risk Assessment, water levels were extremely low in Dead Creek and the Borrow Pit Lake during the Sauget Area 1 Support Sampling Plan ecological site reconnaissance and sampling in September, October and November 1999. Many areas of these water bodies were dry with exposed mud. Fish and other aquatic organisms (e.g. frogs) were concentrated in shallow puddles. The Borrow Pit Lake was in the last stages of drying up when the Support Sampling Plan fish tissue sampling was conducted in October and November1999. These low water levels were persistent region-wide.

Observations made in the field in 1999 indicate that the water level in the Borrow Pit Lake and Creek Segment F were low. This may be due to natural fluctuations in water level and may also be linked to the particularly dry growing season in 1999. Dead Creek was a series of small, shallow water bodies of standing water. Examination of the creek bed and riparian vegetation suggests that Dead Creek does not retain substantial amounts of standing water during the summer months and that water levels are dependent on relatively recent precipitation.

A memorandum authored by Bill McClain of the Illinois Department of Conservation (dated July 23, 1992 and received by Tom Crause at the Illinois Department of Natural Resources on July 29, 1992) contains observations of Creek Segments B through F indicating that a low water level is a normal condition in Dead Creek. Historical information from a 1984 survey of the American Bottoms conducted by IEPA and reported in 1989 indicated that 12 out of 14 streams were at low flow conditions in the summer. Historical discharge data for other creeks in St. Clair County, Illinois (Canteen Creek, Mud Creek and Richland Creek) indicates a high variability in

discharge over each year. However, for a large portion of each year, discharge is very low, often near zero. Both of these patterns occur each year, suggesting that low to zero flow conditions, as seen in Dead Creek in 1999, are common.

Annual dewatering/desiccation of Dead Creek and the Borrow Pit Lake creates an aquatic habitat that is not conducive to a sustainable fish population. Streams in the mid-American Bottoms basin, in which Dead Creek and the Borrow Pit Lake are located, are considered moderate to limited aquatic resources.

Riparian communities along Dead Creek portray classic symptoms of residential development, including narrow and fragmented forests, young canopy trees, limited vertical diversity in terrestrial habitats, bisection by numerous roads, disturbed drainage and a high incidence of non-native species. Dead Creek, nonetheless, plays an important role in the local storm water flow, is a wildlife travel corridor and is utilized by rare and uncommon plant and animal species.

Results of the baseline habitat assessment are presented in Appendix 1.

2.2 Local and Regional Habitat Value of Dead Creek

Information on the local and regional habitat value of Dead Creek was collected for performance of the Sauget Area 1 Ecological Risk Assessment. Menzie-Cura & Associates made observations of the site in 1966 and the site and reference areas in September, October and November 1999. Information presented here is also based on research on ecological receptors at the site.

2.2.1 Dead Creek Habitat

The Dead Creek channel and riparian communities form a narrow, linear wetland system that passes through suburban Cahokia. Portions of Dead Creek are adjacent to residential and business lots that contain mowed lawns, buildings, driveways and roads. To a great extent, these areas were modified so that only relict portions of natural vegetation alliances exist. Furthermore, many areas are also influenced by non-native plant species. Sections of the creek, however, are used by rare species monitored by the Illinois Endangered Species

Protection Board. This illustrates that Dead Creek does possess value for wildlife habitat and as a travel corridor.

Dead Creek's wetlands appeared healthy with no evidence of ecological stress (no chlorotic plants, no monospecific stands of vegetation, no areas of dying or dead vegetation, no observed surface water sheens or sediment staining) with the exception of extremely low water levels observed in Fall 1999, when portions of Dead Creek and the Borrow Pit Lake dried out completely. The wetlands appeared to support a diverse aquatic and terrestrial wildlife community, with abundant prey species (i.e. fish, frogs, turtles) and predatory species (i.e. wading birds, waterfowl, raccoons).

Animal use of Dead Creek is generally limited to species that do not require large tracts of pristine land and can tolerate some level of habitat modification and disturbance. These animals are mostly species that can use residential areas for foraging and/or shelter or are smaller vertebrates that have limited spatial requirements.

Birds - Several species of birds were observed using Dead Creek and the adjacent riparian corridor for foraging an roosting. Many of the birds seen were those that frequent residential areas (e.g. American robin, northern cardinal, blue jay, northern mockingbird) and could use the area of the Dead Creek floodplain for nesting. Carolina wrens, several species of sparrows and Eurasian tree swallows were noted using dense shrub and liana thickets. European starlings were seen roosting in large flocks in the larger tress along Dead Creek. Limited use of the open water sections by waterfowl and wading birds does occur. These open water areas are likely to be used during the breeding season for feeding by swallows, phoebes and flycatchers. On two occasions, a great horned owl was seen in or near the study area.

Two bald eagles, a federal-listed endangered species, were observed by USEPA and IEPA approximately one mile west of Dead Creek Segment B and 0.5 miles east of the Mississippi River in late 1999. A bald eagle was also observed in the same location in December 2000.

Small numbers (one to ten individuals) of state-listed endangered or threatened wading birds were found foraging along sections of Dead Creek. Observed state-listed endangered species included little blue heron (Egretta caerulea), snowy egret (Egretta thula) and black-crowned

night heron (Nycticorax ncyticorax). Great egret (Casmerodieu albus), an Illinois threatened species, was also observed.

Mammals - Mammals using Dead Creek habitats were primarily rodents, small omnivores and likely bats and insectivores (i.e. shrews). Eastern chipmunks and gray squirrels were seen frequently during the surveys. Raccoon tracks were found nearly everywhere the ground surface was conducive to track formation. The only large mammal documented in the study area was white-tailed deer. Numerous tracks were observed of this species. USFWS service lists the Indiana bat as a federal endangered species. The Indiana bat requires a habitat of small stream corridors with well-developed riparian woods and nearby upland forest. The wooded areas around Dead Creek and the Borrow Pit Lake are not well developed due to residential and agricultural uses and, therefore, do not provide good habitat for the Indiana bat.

Herptiles - Few amphibians and reptiles, collectively called herptiles, were observed in the vicinity of Dead Creek. However, the stream channel and adjacent riparian forest provide habitat for a number of species that can occur in small, somewhat disturbed water bodies. Animals that are ubiquitous in many wetland types in the United States, such as bull frogs, northern cricket frogs, painted turtles, red-eared sliders and common garter snakes, are expected to use Dead Creek for feeding and shelter.

Fish - Though Illinois has a rich fish fauna, it was expected that few species would be found in Dead Creek. Due to blocked drainages and elevated culverts, much of the upper Dead Creek functions more as a series of linear, shallow ponds rather than a flowing stream course. Therefore, during much of the year, it would be difficult for fish to move through the watershed to escape declining water levels or other stressful conditions (e.g. high water temperature, low dissolved oxygen, avian predators). Furthermore, Dead Creek generally possessed turbid water and a soft bottom, eliminating species that require clear water and firm substrate. Fish were only observed in Creek Segments B and D during implementation of the Sauget Area 1 Support Sampling Plan. No fish were observed in Creek Segment F.

2.2.2 Borrow Pit Lake

Creek Segment F of Dead Creek flows through riparian woods and shrubs into the southern third of the Borrow Pit Lake, which is the largest non-flowing water body in the area. Its shore is surrounded with mature riparian trees. Based on observations made in September 1999, very little submerged or emergent vegetation appears to grow in the Borrow Pit Lake. In October 1999, water levels were extremely low and sediment was exposed in large portions of the Borrow Pit Lake. Ducks, herons and fish were observed in the lake. Observed fish species included: white crappie, largemouth bass, bluegill sunfish, brown bullhead, yellow bullhead, walleye, drum, silver carp and gar.

Extensive wetlands occur west of Route 3, particularly in the vicinity of the Borrow Pit Lake. These wetlands receive water from both Dead Creek and from drainage areas to the north.

2.2.3 Regional Habitat

Old Prairie du Pont Creek - During high water conditions, Dead Creek flows from the Borrow Pit Lake into the ditched section of Old Prairie du Pont Creek. At the confluence of Dead Creek and Old Prairie du Pont Creek and above it, the ditch shore is vegetated with grasses, herbs and small shrubs. This portion of Old Prairie du Pont Creek is maintained as a storm water drainage ditch routing runoff from this portion of the American Bottoms to the Mississippi River. During high river stage, Old Prairie du Pont Creek becomes a backwater area impounding water between the flood-control levees constructed on both banks.

Habitat in Old Prairie du Pont Creek at East Carondelet, Illinois, approximately 3 miles southwest of the Dead Creek watershed, was evaluated during implementation of the Sauget Area 1 Support Sampling Plan ecological sampling. Here, Old Prairie du Pont Creek is a broad, shallow water body with a mud substrate similar to the Borrow Pit Lake. It is also similar to the Borrow Pit Lake in that it is near agricultural land, it has a narrow riparian zone and it has little to no emergent or submerged vegetation. It supports an aquatic community similar to the Borrow Pit Lake with many of the same species present. Fish species present included brown bullhead, crappie, bluegill sunfish and largemouth bass. Clams and shrimp were the invertebrates present in this stretch of Old Prairie du Pont Creek. Great and snowy egret were observed in this area.

Cahokia Chute and Arsenal Island - Flow in the ditched section of Old Prairie du Pont Creek is northwest to Arsenal Island on the Mississippi River. Arsenal Island contains areas of mature riparian woods and agricultural fields. The shoreline of the lower end of the ditch, referred to as the Cahokia Chute, is lined with riparian woods, principally large cottonwoods and willow. Large catfish, wood ducks, wading birds and turtles were observed in the channel.

Cahokia Chute forms the eastern border of Arsenal Island. The waterway flows north to south, draining the region northeast of the island. During times when the Mississippi River is high, it appears that the river uses the chute channel to flow around Arsenal Island. Therefore, any water from the Dead Creek watershed only flows through the lower half of the Cahokia Chute between the confluence with the ditched Old Prairie du Pont Creek and the Mississippi River. The remains of a bald eagle nest and congregating wading birds were observed in 1996at the southern tip of Arsenal Island where the Chute flows into the Mississippi River.

In 1993, a pair of bald eagles (the only federal endangered or threatened species in the study area) unsuccessfully attempted to nest at the southern end of Arsenal Island where the ditched portion of Old Prairie du Pont Creek enters the Mississippi River. The pair was apparently scared off the site based on the unsuccessful nesting attempt. The next year the pair returned to the island, but no monitoring was conducted to determine if they successfully nested. The nest has since blown down and no other nests were constructed on the island.

No wading bird colonies are located within the study area. Small numbers (one to ten individuals) of state-listed endangered or threatened wading birds were found foraging along the ditched length of Old Prairie du Pont Creek, Cahokia Chute and the Mississippi River. Observed state-listed endangered species included little blue heron (Egretta caerulea), snowy egret (Egretta thula) and black-crowned night heron (Nycticorax ncyticorax). Great egret (Casmerodieu albus), an Illinois threatened species, was also observed. The largest concentration of foraging herons (approximately ten individuals at a location) was observed at the confluence of Dead Creek and the ditched Old Prairie du Pont Creek and where the ditched Old Prairie du Pont Creek flows into the Mississippi River. These areas likely support the best concentration fishing areas for wildlife along the waterways.

East St. Louis - Two 1,000 to 2,000 mixed-species wading bird colonies are located in the region. One of these colonies is located approximately one mile east of Sauget Area 1 near the Alton and Southern rail yards in Alorton. The second colony is located over two miles to the north of Sauget Area 1 at Audubon Avenue and 26th Street in East St. Louis, Illinois. These two colonies contain the only breeding little blue heron and snowy egret in Illinois. In addition, black-crowned night heron, great egret, cattle egret (Bubulcus ibis), great blue heron (Ardea herodias) and green-backed heron (Butorides virescens) nest in these colonies.

In 1988, USFWS collected black-crowned night heron and little blue heron eggs from the Alorton colony for contaminant analysis because the region was heavily industrialized with numerous Superfund sites. PCBS, DDE and metals were detected at varying levels in the wading bird eggs. The observed endangered and threatened wading birds foraged on a wide range of aquatic organisms, such as fish, frogs and crayfish, as well as some terrestrial species such as reptiles and insects. USFWS found that these wading birds foraged over a wide area around East St. Louis. Wetlands in Dead Creek and the Old Prairie du Pont Creek composed a relatively small percentage of the available wetland foraging area in the region.

American Bottoms - Long Slash Creek north of the culvert where Merrimac Road crosses the creek (Reference Area 2-1) is located approximately 20 miles south of the Dead Creek watershed. Habitat in this creek is similar to that in Dead Creek Segments B, C, D and E. It is shallow and muddy with a road crossing and agricultural fields down to the water's edge. There was evidence of beaver activity at the culvert under the road crossing. Biota present included creeping buttercup and snails.

A flooded borrow pit north of Fountain Creek was also evaluated as part of the Sauget Area 1 Support Sampling Plan (Reference Area 2-2). This water body, approximately 20 miles south of Dead Creek, had a muddy substrate and a fish and invertebrate community similar to the Borrow Pit Lake. Vegetation surrounding this flooded borrow pit consisted of a thin riparian zone

2.2.4 Habitat Observations

- Dead Creek and adjacent riparian communities form a narrow, linear wetland system with value for wildlife habitat and as a travel corridor. Examination of creek bed and riparian

vegetation suggests that Dead Creek does not retain substantial amounts of standing water during the summer months and that water levels are dependent on relatively recent precipitation. Streams in the middle portion of the Americans Bottom Basin, in which the Dead Creek watershed is located, are considered moderate to limited aquatic resources. 12 out of 14 streams in the American Bottoms area surveyed by IEPA in 1984 were in low flow conditions during the summer with low to extremely low dissolved oxygen concentrations. Stream flow records for Canteen Creek, Mud Creek and Richland Creek, all of which are located in St. Clair County, Illinois, indicate that discharge is low, often near zero, for a large portion of each year.

- Much of Dead Creek (Creek Segments B, C, D and E and the upstream portion of Creek Segment F) flows through suburban Cahokia, Illinois adjacent to residential and business lots that contain mowed lawns, buildings, driveways and roads. Relict portions of natural vegetation alliances occur in the developed stretch of Dead Creek (Creek Segments B, C, D and E and the upstream portion of Creek Segment F). However, there is sufficient natural riparian vegetation to support local aquatic and terrestrial communities

- The Dead Creek watershed supports a diverse plant community although many areas are influenced by non-native plant species. Forest, shrubland and open water in Dead Creek watershed provide some landscape diversity, however, the early age of most of the communities (due to disturbance) provides limited structural diversity.

- The Dead Creek watershed supports a diverse animal community although animal use is generally limited to species that do not require large tracts of pristine land and can tolerate some level of habitat modification and disturbance.

- Birds and wildlife species are abundant in the Dead Creek watershed and making use of the habitat, which is also used by rare (brown creeper), threatened (great egret) and endangered (little blue herons, black-crowned night herons and snowy egrets) species. Use of Dead Creek by rare bird species is minor due to limited intact forest and the young age of most trees. Endangered bird species forage over a wide area with the Dead Creek watershed forming only a small part of their availability feeding territory.

- Few fish species were found in Dead Creek Segments B, C, D, E and the channel portion of Creek Segment F because blocked drainages and elevated culverts create a series of linear, disconnected, shallow ponds that make it difficult for fish to move through the watershed to escape declining water levels, high water temperature, low dissolved oxygen, avian predators or other stressful conditions.

- A variety of fish species were present in the Borrow Pit Lake, which is the largest non-flowing water body in the area. Fish probably enter the Borrow Pit Lake in the spring during high water stage in the Mississippi River before the river stage is high enough to close the flap valves on the pipes beneath the levee at Old Prairie du Pont Creek. During dry weather conditions, water levels in the Borrow Pit Lake are low with large areas of exposed sediment.

- Ecological stresses observed in the Dead Creek watershed, namely lack of submerged or emergent vegetation and impaired benthic community, are due to poor habitat conditions

including low water levels, silty substrate and low dissolved oxygen concentrations. No other evidence of ecological stress was evident in the Dead Creek watershed.

- Moderate to limited aquatic resources, similar to the stream portion of Dead Creek, occur regionally in the American Bottoms, e.g. Old Prairie du Pont Creek, Long Slash Creek and Fountain Creek. Habitats similar to the Borrow Pit Lake also occur regionally in the American Bottoms, e.g. the Fountain Creek borrow-pit lake. Better habitats than Dead Creek and the Borrow Pit Lake are also present regionally, e.g. Cahokia Chute and Arsenal Island and the wading-bird rookeries in Alorton and East St. Louis.

Section 3

3.0 Creek Channel Mitigation Plan

A baseline habitat assessment performed by Woodlot Alternatives, Inc. demonstrated: 1) that a variety of alliances or communities were present on site prior to the sediment removal action, 2) they were limited in habitat quality by size and 3) significant non-native species occurred in the project area (Appendix 1). The goal of this revegetation plan is to restore the creek to a more natural, native landscape that can become an effective greenway/wildlife corridor through the middle of this urbanized area. Dead Creek connects with other quality natural areas near the Mississippi River at its downstream end. Therefore, by re-establishing native vegetation and connecting it with other natural areas, Dead Creek has the potential of becoming an effective and beautiful greenway corridor through the local community.

Specifically, the Creek Channel Mitigation Plan is focused on:

- Re-establishing Dead Creek as an amenity to the local community;
- Creating a quality, natural landscape with native, locally appropriate plant species;
- Achieving success by using readily available plant species; and
- Using methods and equipment associated with habitat restoration contractors.

These goals will be achieved by incorporating a variety of native seeds in the upland and channel sections of Dead Creek. Mulch will be installed for erosion control during the establishment period. Incorporated seeds will not include any woody or non-seed species because significant evidence suggests that prior to settlement, many areas in St. Louis, including some streams, were prairie or savanna in community. Additionally, in order to provide the best stabilization of the creek banks, grasses and grass-like plants, as well as a diversity of forbs, are required. Finally, unless maintained in a prairie or savanna like community, it is likely that a variety of tree species may, over time, begin to dominate the project area without being installed with this project. Therefore, the revegetation plan for Dead Creek is focused on utilizing locally appropriate native seeds.

One of the two remedial alternatives considered in the June 21, 2002 Dead Creek Final Remedy Engineering Evaluation/Cost Analysis, was containment of creek bottom soils with constituent concentrations above site-specific, risk-based levels by armored impermeable liners.

Such liners would be utilized to remediate creek bottom soil in all of Creek Segment B (1,800 linear feet), as required by the Sediment Removal Action UAO, and Creek Segment F from the Terminal Railroad Embankment to a point 800 ft. south of the embankment.

Construction of the armoring system should not require grubbing to remove trees, shrubs, roots and debris from the creek channel, as sediment excavation was recently completed (February 2002). Contouring and/or filling may be conducted in and adjacent to the channel to achieve channel sections and top of bank topography that will facilitate the installation of the armored liner, and that will allow for installation of a stable finished cap. Armored liners will consist of four components listed below from bottom to the top of the liner system:

- Base Geotextile;
- 40-mil HDPE Liner;
- Covering Geotextile; and
- Riprap

Installation of soil in the interstices of the riprap and revegetation is not part of this design but could be included given the low gradient/low energy environment found in Dead Creek. If this were done, root penetration of the HDPE liner is highly unlikely unless the membrane is damaged during or after installation. Installation of a base geotextile below the HDPE liner and a covering geotextile on top of the HDPE lining, and placement of riprap in such a manner as to not damage the membrane, will prevent liner damage and eliminate the potential for root penetration.

As an alternative to riprap, 3 ft. of well-graded crushed rock ("dense grade") could be placed on top of the cover geotextile, a geotextile could be placed on top of the dense grade to act as a marker layer for the membrane liner and a vegetative growth layer could be placed on top of the geotextile. Channel bottom and side slopes could then be seeded with the seed mix proposed in the revised Mitigation Plan.

3.1 Creek Segments B, C, D and E Revegetation Plan

A number of measures to avoid and/or minimize adverse impacts to wetlands and habitat during implementation of the removal action were included in the June 30, 2001 Time Critical Sediment Removal Action Work Plan. A summary of these actions is given below

Creek Segment B - "Trees growing within the creek channel and branches hanging over the channel that might interfere with equipment operation will be chipped and incorporated in the impacted sediment. Most the CS-B channel is clear of trees except for the north end immediately south of Queeny Avenue. These trees will need to be removed in order to conduct the sediment removal action. The east bank of CS-B is lined with trees from Queeny Avenue south to the north side of Site M. These trees will not be removed as part of the sediment removal action. Only branches hanging over the creek will be cut and chipped if they can interfere with the safe and efficient implementation of the sediment removal action."

Creek Segment C - "While trees line a good portion of the creek banks of CS-C, the creek channel is clear of trees. Consequently, tree removal will not be necessary except where branches overhanging the channel might interfere with equipment operation. Such branches will be removed, chipped and incorporated in the impacted sediment."

Creek Segment D - "While trees line a good portion of the creek banks of CS-D, the creek channel is clear of trees. Consequently, tree removal will not be necessary except where branches overhanging the channel might interfere with equipment operation. Such branches will be removed, chipped and incorporated in the impacted sediment."

Creek Segment E - "While trees line most of the east creek banks [of CS-E between Jerome Lane and Edgar Street], the creek channel is clear of trees. Consequently, tree removal will not be necessary except where branches overhanging the channel might interfere with equipment operation. Such branches will be removed, chipped and incorporated in the impacted sediment. ... Trees line both banks of the creek [in the stretch of Creek Segment E between Edgar Street and the second of the three streets in the Quail Run trailer park], however, the channel is clear of trees. Consequently, tree removal will not be necessary except where branches overhanging the channel might interfere with equipment operation. Such branches will be removed, chipped and incorporated in the impacted sediment. ... In the stretch of Dead Creek between the second street in the Quail Run trailer park and the north end of the Parks College parking lot, one to six-inch diameter trees are growing in the channel bottom and line both banks of the channel. These trees will need to be removed in order to excavate impacted sediments. Care will be taken to remove no more trees than necessary to excavate sediments in a safe and responsible manner. ... Small diameter trees are also growing in the CS-E channel from the south end of the Parks College parking lot to Route 157. These trees will be chipped and incorporated in the impacted sediment. Care will be taken to remove no more trees than necessary to excavate sediments in a safe and responsible manner. Large trees are growing on the banks in this stretch of the creek. Branches overhanging the channel that might interfere with equipment operation will be chipped and incorporated in the impacted sediment."

With two exceptions, the sediment removal action was performed as described above to minimize impact on habitat adjacent to the creek. One exception to the plan was removal of the trees along the east bank of Creek Segment B in order to provide access to implement the removal action. The other exception was using chipped trees as mulch in the areas adjacent to the creek rather than incorporating them into the impacted sediments. This increased the

volume available for impacted sediments in the containment cell and improved the moisture-holding capacity of the soils adjacent to the creek.

After completion of sediment removal, grasses were proposed for revegetation of the channel and top of bank area in Creek Segments B, C, D and D, instead of trees, shrubs and forbs, for the following reasons:

- Grasses were the original plant species prevalent in this area and local experts prefer to use them rather than trees, shrubs and forbs for restoration projects;
- Grasses are less likely to be perceived as weeds than forbs in developed and agricultural areas or undeveloped areas near residential/commercial areas and, therefore, are less likely to be cut back or eradicated by property owners and/or municipalities. Creek Segments B, C, D and E are bordered by developed or agricultural land or undeveloped land which is mowed to control weeds (as required by local ordinance); and
- Sediment removal in CS-B, C, D and E was performed within the creek channel with minimal disturbance to top of bank areas. Planting trees and shrubs in the channel is not considered appropriate for the reasons discussed below.

Equipment used to perform the sediment removal action in CS-B, C, D and E was confined to the creek channel except for six entry/exit points. Trackhoes, used to remove impacted sediment and load it into articulated haul trucks, worked within the channel. Haul trucks drove on plank roads within the channel until they reached an entry/exit point where they traversed the top of bank area to reach a paved road.

It is inappropriate to plant trees or shrubs in the channel of Dead Creek since they will reduce the channel section, impede downstream flow and increase the potential for flooding in residential and commercial areas. Re-establishment of tress and shrubs in the channel is also contrary to the objective of the Dead Creek Culvert Replacement Removal Action. Culverts at Cargill Road and the Terminal Railroad Embankment were replaced, under a UAO, to move water downstream from residential and commercial areas and reduce the threat of flooding. Trees and shrubs in the channel of Creek Segments B, C, D or E will reduce the flow improvements that resulted from the Culvert Replacement Removal Action.

Entry/exit points in Creek Segments B, C, D and E were located strategically along the channel at road crossings or areas where top of bank disturbance could be minimized. Each entry/exit point is listed below along with the type of land use found in the associated top of bank area:

- Creek Segment B - West Bank 300 ft. North of Judith Land (Grassy Field)
- Creek Segment C - West Bank at Judith Lane (Grassy Area Adjacent to Golf Driving Range)
- Creek Segment D - Kinder Street (Developed Area - Single Family Housing)
- Creek Segment E - East Bank at Edgar Street (Gravel Parking Lot)
  West Bank 100 ft. South of Trailer Park (Agricultural Land)
  East Bank Opposite Apartment Buildings (Grassy Area)

Due to the presence of developed and agricultural land or mowed undeveloped land at each of these entry/exit points, restoration of top of bank areas with trees, shrubs or forbs is not considered appropriate. That said, IDOT Class 5 and 5A forb seed mixes, as modified by USFWS, will be added to the IDOT 4A (Low Profile Native Grass) channel side-slope seed mix proposed in the Mitigation Plan as directed by USACE and USFWS. Revegetation plans also need to take into consideration that vegetation was re-established naturally this spring along most, if not all, of the Dead Creek channel.

Seed mixtures selected for this project represent a mix of plant species that are appropriate for native, naturalized areas, and are hardy, yet are not routinely invasive. In addition, they are taken from Illinois Department of Transportation native seed mixes and therefore have been proven and accepted by numerous Illinois agencies. Local contractors and seed suppliers are familiar with these products.

Two seed mixtures will be used in this section of Dead Creek: 1) IDOT Class 4A - Low Profile Native Grass and 2) IDOT Class 4B - Wetland Grass and Sedge Mixture. The Low Profile Native Grass Seed mix will include Little Blue Stem, Side-Oats Grama, Wild Rye, Prairie Drop Seed, Annual Ryegrass, Spring Oats and Perennial Ryegrass. The Wetland Grass and Sedge Mixture will include Annual Ryegrass, Spring Oats, Blue Joint Grass, Lake-Bank Sedge, Awl-Fruited Sedge, Tussock Sedge, Fox Sedge, Needle Spike Rush, Blunt Spike Rush, Fowl Manna Grass, Common Rush, Slender Rush, Torrey's Rush, Rice Cut Grass, Hard-Stemmed Bullrush, Dark Green Bullrush, River Bullrush, Softstem Bullrush and Prairie Cord Grass. IDOT Class 4A seed mixes will be planted on the channel side slopes and Class 4B mixes will be planted on the channel bottom.

As directed by USACE and USFWS, IDOT Class 5 and 5A forb seed mixes, as modified by USFWS, will be added to the IDOT 4A (Low Profile Native Grass) channel side-slope seed mix

proposed in the Mitigation Plan as directed by USACE and USFWS. These seed mixes will be modified as follows:

Remove: Shasta Daisy (Chrysanthemum maxim)
Blanket Flower (Gaillardia pulchallae)
Long-Headed Coneflower (Ratilba columnitera)

Reduce: Downy Sunflower (Helianthus mollis) in Class 5A seed mix to 3 to 5% by weight

Figures 3 - 1 through 3 - 13 show the planned planting locations of the seed mixes.

3.2 Creek Segment F Revegetation Plan

Rather than working in the channel, as was done in CS-B, C, D and E, sediment removal was performed from the bank in four distinct areas of CS-F:

- Route 157 to Route 3 — West Bank Opposite Cahokia Sign - Grassy Field
- Route 3 to Cargill Road — West Bank at Abundant Love Church - Parking Lot
- Cargill Road to the Terminal Railroad — West Bank - Grassy Field
- Terminal Railroad to Borrow Pit Lake — East Bank - Undeveloped Wooded Area

Planting trees, shrubs and forbs in the top of bank areas between Route 157 and the Terminal Railroad Embankment is not appropriate because such plantings would conflict with current land use.

Approximately 12 to 15 entry/exit points were necessary to perform the Sediment Removal Action in Creek Segment F downstream of the Terminal Railroad Embankment because of the length of this creek segment (approximately 4500 ft.). Entry/exit points to the creek channel, constructed every 100 to 150 ft., were made without cutting trees. However, 20 to 25 ft. of underbrush was removed at each entry/exit point in order to gain access to the channel. Dead trees in the channel were removed and used to create brush pile habitats along the border between the wooded area along Creek Segment F and the adjacent farm fields.

Given the undeveloped, wooded nature of the top of bank area along Creek Segment F from the Terminal Railroad Embankment to the Borrow Pit Lake and the brush that was removed to gain

access for the Sediment Removal Action, it is appropriate to plant shrubs (e.g. Winterberry, Silky Dogwood and Buttonbush) in the disturbed upland areas of this portion of the creek segment.

Planting forbs in the channel bottom and sides slopes in the undeveloped, wooded portions of Creek Segment F downstream of the Terminal Railroad Embankment is contrary to the concept of restoring the creek channel to its likely original habitat - prairie and savannah. Since this undeveloped area is currently wooded, it is appropriate to add IDOT Class 5 and 5A forb seed mixes, as modified by USFWS, to the IDOT 4A (Low Profile Native Grass) channel side-slope seed mix proposed in the Mitigation Plan.

Two seed mixtures will be used in this section of Dead Creek: 1) IDOT Class 4A - Low Profile Native Grass and 2) IDOT Class 4B - Wetland Grass and Sedge Mixture. The Low Profile Native Grass Seed mix will include Little Blue Stem, Side-Oats Grama, Wild Rye, Prairie Drop Seed, Annual Ryegrass, Spring Oats and Perennial Ryegrass. The Wetland Grass and Sedge Mixture will include Annual Ryegrass, Spring Oats, Blue Joint Grass, Lake-Bank Sedge, Awl-Fruited Sedge, Tussock Sedge, Fox Sedge, Needle Spike Rush, Blunt Spike Rush, Fowl Manna Grass, Common Rush, Slender Rush, Torrey's Rush, Rice Cut Grass, Hard-Stemmed Bullrush, Dark Green Bullrush, River Bullrush, Softstem Bullrush and Prairie Cord Grass. IDOT Class 4A seed mixes will be planted on the channel side slopes and Class 4B mixes will be planted on the channel bottom.

As directed by USACE and USFWS, IDOT Class 5 and 5A forb seed mixes, as modified by USFWS, will be added to the IDOT 4A (Low Profile Native Grass) channel side-slope seed mix proposed in the Mitigation Plan as directed by USACE and USFWS. These seed mixes will be modified as follows:

Remove: Shasta Daisy (Chrysanthemum maxim)
Blanket Flower (Gaillardia pulchallae)
Long-Headed Coneflower (Ratilba columnitera)

Reduce: Downy Sunflower (Helianthus mollis) in Class 5A seed mix to 3 to 5% by weight

Figures 3 - 1 through 3 - 18 show the planned planting locations of the seed mixes.

3.3 Specifications

Specifications for seeding and mulching are included in Appendix 2 and 3, respectively. These specifications will require any potential contractor to perform the work in a manner consistent with native vegetation restoration but also provide that contractor some latitude in how they accomplish this work. Therefore, a number of methods and techniques were identified that should provide the best establishment success.

Additionally, while the seed is germinating and beginning root and stem growth during the establishment period, mulch will maintain the seed in place and minimize erosion to the site. The mulching specifications were not "engineered" per se, but do set out requirements for meeting specific environmental conditions. The specifications note that manufacturer recommendations should be met and the local mulching materials supplier may become actively involved in the project as a result.

Section 4

4.0 Borrow Pit Lake Investigation and Mitigation Plan

4.1 Site Description and Background

4.1.1 1997 Ecology & Environment Creek Segment F Preliminary Risk Assessment

Ecology and Environment performed a "Preliminary Ecological Risk Assessment for Sauget Area 1, Creek Segment F, Sauget, St. Clair County, Illinois (TDD: S05-9703-012, PAN: 7M1201SI)" for USEPA on August 31, 1997. The objective of the report was "to determine whether the site poses no immediate or long-term ecological risk or if a potential ecological risk exists and further evaluation is necessary". On April 18, 1997, E&E (D. Sinars and D. Robin) conducted a site investigation with USEPA (S. Bories, L. Evison and J. Chapman) and IEPA (P. Takacs).

As described in this report, Dead Creek Segment F is a wooded corridor ranging in width from approximately 20 to 100 feet with a predominantly cottonwood overstory. Trees form a mostly closed canopy over the upstream portion but Dead Creek broadened downstream so that the canopy covered only the bank. Vegetation was of low floristic quality, consisting primarily of invasive and pioneer plants, consistent with drainage of wetlands and clearing of woods in the 1930s and the highly disturbed surrounding agricultural and industrial land. However, the creek did provide good quality wildlife habitat as evidenced by the presence of the Black-Crowned Night Heron, a state-listed endangered species. Plentiful detrital inputs (twigs, bark and leaf litter) to the creek provided substantial food base to benthic invertebrates. Lack of riffle areas and, therefore, a potential for periods of low dissolved oxygen levels was noted as one limitation on benthic invertebrate populations.

During this one-day investigation, eight sediment samples were collected at the following locations:

Summary of 1997 E&E Preliminary Ecological Risk Assessment Sediment Sampling Locations

Upstream Sediment Samples

- F107 Borrow Pit Lake Backwater, Upstream of Confluence with Dead Creek
- F106 Ponded Area Downstream of Cargill Road and Phillips Pipeline Company

CS-F Channel Sediment Samples (Cargill Road to Borrow Pit Lake)

- F105 Dead Creek Channel Immediately Downstream of Terminal Railroad Embankment
- F101 Dead Creek Channel South of "Dog Leg" Turn
- F102 Dead Creek Channel Halfway to Confluence with Borrow Pit Lake
- F103 Dead Creek Channel Upstream of Confluence with Borrow Pit Lake
- F104 Dead Creek Channel at Confluence with Borrow Pit Lake

Downstream Sediment Samples

- F108/109 Borrow Pit Lake Downstream of Confluence with Dead Creek

Note: Sample F109 was a duplicate of Sample F108

Since the sample location map included in the E&E report was not drawn to scale, these sample locations are approximate.

Sediment samples consisted of two or three composites at each sampling location. The first aliquot of each composite was collected in the deepest portion of the channel. One or two additional aliquots were collected in suspected depositional areas in other portions of the channel at that sampling location. Samples were analyzed for Metals, PCBs, PAHs, Pesticides, TOC and Dioxin. Due to resource limitations, not every parameter was analyzed for every sample.

E&E performed the screening-level ecological impact assessment "with the following conservative assumptions:

1) The Area Use Factor is 100%: the organism spends all of its time in the contaminated area, so is constantly exposed;
2) Bioavailability is 100%: Conditions do not limit the uptake or adsorption of the contaminant;
3) The most sensitive life stage is present (e.g. early stage); and
4) Species feed entirely on the most contaminated dietary option.

Because this is a screening-level ecological risk assessment, uncertainty is intentionally assumed to be the worst-case scenario in order not to miss contamination that might be present."

Since the primary goal of the investigation was to screen for human health and ecological risk, maximum detected concentrations were used in the assessments. Results indicated that "maximum detections for all of the contaminants are below the human-health based risk values" and that "human health is not severely at risk".

When compared to ecological screening criteria, E&E reported that the data suggested "contamination is a problem". Specifically,

"The metals data indicate that severe contamination exists from arsenic and cadmium (SEL HQs greater than 1) and minor pollution from chromium, lead and mercury. All nine samples exceeded the SEL for arsenic (144 to 276 parts per million [ppm]), including the background, which had the lowest level (144 ppm). Three samples exceeded the LEL for cadmium, one of which exceeded the SEL. The other samples, including the background, were "non detect" for cadmium.

Three samples contained PCB Aroclor-1254, all of which were between the LEL and SEL. Only one sample (F105) contained PAHs. The four PAHs detected were similar to the LEL, but far below the SEL. The maximum concentration of dioxin detected exceeded the high risk concentration for both birds and mammals. In addition, pesticides were not detected above background in any sample.

Sample F104 contained the highest metal concentrations; sample F102 contained the highest PCB and dioxin concentration; and sample F105 was the only sample to contain PAHs. The background sample (F107) contained the lowest concentration of each contaminant, except barium. The duplicate samples, F108 and F109, showed very similar results."

The 1997 E&E Preliminary Ecological Risk Assessment did not discuss the areal distribution of analytical data. Five of the eight samples were collected in the channel of Dead Creek upstream of the Borrow Pit Lake. One of the eight samples was collected in a pond south of Cargill Road that discharges into the channel of Dead Creek. Two of the eight samples were collected in the Borrow Pit Lake (F107 and F108/109). One of the Borrow Pit Lake samples was collected upstream of the confluence with Dead Creek and the other sample was collected downstream of the confluence.

An examination of the analytical data, presented below, indicates that impacted sediments were confined to the channel portion of Creek Segment F, which was remediated as part of the Dead Creek Time Critical Sediment Removal Action.

Summary of 1997 E&E Preliminary Ecological Risk Assessment Sediment Analyses

	Upstream of Dead Creek		Dead Creek Channel Upstream of Borrow Pit Lake					Borrow Pit Lake Downstream of Dead Creek
	(BPL)	(CS-F)						
Constituent, mg/kg	F107	F106	F105	F101	F102	F103	F104	F108/9
Arsenic (6.0)	144	160	166	232	187	213	276	199
Barium (NA)	137	133	116	145	162	179	228	163
Cadmium (0.6)	ND	ND	ND	ND	4.56	8.89	16.3	ND
Chromium (26.1)	10.4	12.1	12.6	44.2	29.0	43.8	27.2	14.9
Lead (31.0)	28.2	28.3	56.2	41.2	199	111	124	50.2
Mercury (0.2)	ND	ND	ND	ND	0.24	0.30	0.55	0.12
Aroclor 1254 (0.06)	ND	ND	ND	ND	2.1	0.50	0.52	ND

Benzo(b)fluoranthene (NA)	NS	0.63	NS	NS	NS	NS	NS	NS
Benzo(g,h,I)perylene (0.17)	NS	**0.52**	NS	NS	NS	NS	NS	NS
Fluoranthene (0.75)	NS	0.62	NS	NS	NS	NS	NS	NS
Indeno(1,2,3-c,d)pyrene (0.2)	NS	**0.50**	NS	NS	NS	NS	NS	NS
Dioxin TEQ, ppt (21)	2.29	NS	**53.4**	**211**	11.5	NS	NS	NS

Notes: 1) Sediment LEL concentrations included in the E&E report are included in parentheses adjacent to each constituent and those constituents with concentrations greater than the LEL are high-lighted in bold.
2) LELs are based on concentrations where ecotoxic effects become apparent but the majority of sediment-dwelling organisms are not affected.

Constituent concentrations in the Dead Creek channel between the Terminal Railroad Embankment and the Borrow Pit Lake clearly show a potential for impact across several parameter groups (metals, PCBs and Dioxin TEQs). Data collected during implementation of the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan also indicated that sediments in this stretch of Dead Creek were adversely impacted. All sediments were removed from this portion of Dead Creek, as well as from the channel between Route 3 and the Terminal Railroad Embankment during the Time Critical Sediment Removal Action. Impacted sediments were also removed from Creek Segments B, C, D and E as part of this removal action.

Sediments in the ponded area immediately south of Cargill Road, and the Phillips Pipeline Company facility which discharges surface water into it, exceeded screening levels for Benzo(g,h,i)perylene and Indeno(1,2,3-c,d)pyrene by a factor of 3. This was the only sample analyzed for PAHs. PAH detections in this ponded area are to be expected given its location downstream of a paved, asphalt road with heavy truck traffic to the Cargill bulk grain terminal; Phillips Pipeline Company, a large, bulk petroleum storage and distribution facility built in the 1930s and still active today; and Rogers Cartage, a truck washing facility that operated upstream of Phillips until sometime in the 1970s.

None of the constituents detected in the sediment sample collected in the Borrow Pit Lake backwater upstream of the confluence with Dead Creek exceeded their respective LELs except for Arsenic, which seems uniformly distributed across all of the E&E sampling locations at concentrations higher than its LEL. Lead in the Borrow Pit Lake sediment sample collected downstream of the confluence with Dead Creek exceeded the sediment LEL by a factor of 2 with a detected concentration level of 50.2 mg/kg and an LEL of 31.0 mg/kg.

4.1.2 2002 Menzie-Cura Sauget Area 1 Ecological Risk Assessment

USEPA approved the Sauget Area 1 Support Sampling Plan, Human Health Risk Assessment Work, Ecological Risk Assessment Work Plan and RI/FS Work Plan on September 9, 1999. Ecological data collected as part of the Support Sampling Plan included the following samples:

Summary of Sauget Area 1 Support Sampling Plan Ecological Samples

	Sediment Samples		Sediment	Composite Tissue Samples		
	Industry-Specific	Broad-Scan	Bioassays	Fish	Prey	Plants
CS-B	10	3	3	1	1	3
CS-C	12	3	3	NS	1	3
CS-D	9	3	3	1	1	3
CS-E	26	3	3	NS	NS	2
CS-F	40	3	4	NS	NS	2
BPL	8	3	3	12	4	NS
OPDC	1	2	2	NS	NS	1
Reference Areas	0	4	2	11	7	1

Notes: 1) Industry-specific samples were analyzed for PCBs, Total Petroleum Hydrocarbons, Copper and Zinc.
2) Broad-scan samples, which included sediment and tissue samples, were analyzed for VOCs, SVOCs, Pesticides, Herbicides, PCBs, Dioxin, Metals, Mercury and Cyanide.
3) Sediment bioassays consisted of acute and chronic exposure of Hyallela azteca and Chironomous tentans
4) NS indicates that insufficient tissue was available to allow sample collection and analysis.

These data were considered to have sufficient power to assess the risks associated with site-related constituents in Dead Creek and the Borrow Pit Lake and to confirm or refute the 1997 Ecology & Environment Preliminary Ecological Risk Assessment, which was a screening-level evaluation based on a eight sediment samples (6 samples from the channel of Creek Segment F and two samples from the Borrow Pit Lake) collected in one day.

Data collected as part of the Sauget Area 1 Support Sampling Plan, and evaluated in the Sauget Area 1 Ecological Risk Assessment, support the findings of the E&E Preliminary Risk Assessment. Specifically,

- Sediments in the channel of Dead Creek in Creek Segment F have an adverse ecological impact. These sediments were removed during implementation of the Sauget Area 1 Time Critical Sediment Removal Action to eliminate this impact; and
- Sediments in the Borrow Pit Lake may have an adverse impact due to the presence of a metal (mercury). These sediments need further characterization and assessment to determine actual or potential risks.

The primary difference between the Ecology & Environment Preliminary Risk Assessment and the Menzie-Cura Sauget Area 1 Ecological Risk Assessment, both of which evaluated the same areas (Creek Segment F and the Borrow Pit Lake), is that E&E identified Lead as a Constituent of Potential Concern (COPC) based on exceedance of a screening-level sediment criteria while Menzie-Cura identified Mercury as a Constituent of Concern (COC) based on the results of a site-specific ecological risk assessment. For this reason, it is considered appropriate to focus on Mercury rather than Lead during the further investigation of Borrow Pit Lake sediments required by the Sediment Removal Action UAO.

Aquatic impacts due mercury, such as toxicity and/or bioaccumulation, will depend upon the species of mercury present in the ecosystem. If mercury is in the form of Inorganic Mercury, it will not be readily available in the aquatic ecosystem. If it is in the form of Methyl Mercury, it will be readily available. Sediment and biota samples collected during implementation of the Sauget Area 1 Support Sampling Plan were analyzed for Total Mercury, not mercury species. However, comparing Total Mercury concentrations in sediment and biota samples collected during implementation of the Sauget Area 1 Support Sampling Plan allows a preliminary assessment of the bioavailability of mercury in sediments. This assessment is an important component of designing the Borrow Pit Lake Investigation Plan.

Total Mercury concentrations in Sauget Area 1 sediments are summarized below. Data for Creek Segments B, C, D E and F, which represent concentrations in sediments that were removed and transferred to the on-site containment cell during the Time-Critical Sediment Removal Action, are presented in order from upstream (Sample 1) to downstream (Sample 3) as are the Borrow Pit Lake sediment samples:

Summary of Total Mercury Concentrations in Dead Creek, Borrow Pit Lake and Reference Area Sediments

	Sample 1	Sample 2	Sample 3
Creek Segment B	0.96	1.5	1.4
Creek Segment C	0.66	0.64	0.58
Creek Segment D	0.5	0.42	0.35
Creek Segment E	0.51	0.3	0.3
Creek Segment F	0.3	1.1	0.45
Borrow Pit Lake	0.091	0.16	0.11
Reference Area 1	0.042	0.063	NS

Reference Area 2	0.048	0.04	NS

Note: 1) Concentrations in mg/kg

Total Mercury data are also available for creek bottom soil samples collected and analyzed after completion of sediment removal. These data are summarized below with data from Creek Segments B, C, D, E and F listed from upstream to downstream:

Summary of Maximum Total Mercury Concentrations in Dead Creek and Site M Bottom Soils

Transect/ Sample	CS-B	Site M	CS-C	CS-D	CS-E	CS-F
0	0.82	NS	NS	NS	NS	NS
1	0.23	NS	0.046	0.14	0.11	0.12
2	0.24	0.026	0.06	0.11	0.25	0.074
3	0.27	0.061	0.046	0.07	0.11	0.63
4	0.099	0.22	0.13	0.71	0.083	0.038
5	0.054	0.062	0.074	0.065	0.094	0.82
6	0.21	0.05	0.31	0.33	0.25	0.14
7	0.12	0.33	NS	NS	0.12	0.086
8	0.15	0.092	NS	NS	0.34	0.09
9	0.29	0.031	NS	NS	0.6	0.32
10	0.16	0.3	NS	NS	0.6	0.11
11	0.8	NS	NS	NS	0.46	0.093
12	0.84	NS	NS	NS	0.69	0.031
13	0.096	NS	NS	NS	0.84	0.018
14	0.032	NS	NS	NS	0.28	0.32
15	0.064	NS	NS	NS	0.25	0.17
16	0.12	NS	NS	NS	1.6	0.04
17	0.34	NS	NS	NS	0.27	NS
18	0.055	NS	NS	NS	NS	NS

Notes: 1) Concentrations in mg/kg
2) NS = No Sample

Total Mercury was detected in 12 of the 28 tissue samples collected during implementation of the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan. Total Mercury concentrations in whole-body tissue samples collected from CS-B, CS-D, the Borrow Pit Lake, Reference Area 1

and Reference Area 2 during implementation of the Sauget Area 1 Support Sampling Plan are summarized below.

Summary of Toal Mercury Concentrations in Sauget Area 1 Biota (Whole Body) Samples

Sample		CS-B	CS-D	Borrow Pit Lake	Reference Area 1	Reference Area 2
Bottom Feeder Fish	1	NS	NS	0.05	0.1	0.05
	2	NS	NS	0.075	0.086	NS
	3	NS	NS	0.26	NS	NS
Forage Fish	1	ND (0.095)	0.018	0.052	0.05	0.051
	2	NS	NS	0.6	NS	0.064
	3	NS	NS	ND (0.1)	NS	0.046
Predator Fish	1	NS	NS	ND (0.016)	0.097	NS
	2	NS	NS	0.057	0.14	0.1
	3	NS	NS	0.064	NS	NS
Shrimp		NS	NS	ND (0.091)	ND (0.091)	ND (0.083)
Clams	1	NS	NS	ND (0.074)	ND (0.0.95)	ND (0.074)
	2	NS	NS	ND (0.091)	NS	ND (0.077)
	3	NS	NS	ND (0.10)	NS	NS
Snails		ND (0.0.071)	ND (0.077)	NS	ND (0.087)	ND (0.091)

Notes: 1) Concentrations in mg/kg

2) A composite snail sample was also collected in Creek Segment C. Mercury = ND (0.077)

Comparison of average Total Mercury concentrations in Sauget Area 1 sediment and biota samples, using half of the detection limit for non detects, allows an initial assessment of the bioavailability of mercury in sediments. While average Total Mercury concentrations in Creek Segment B and Creek Segment D sediment samples are an order of magnitude higher than average sediment concentrations in the Reference Areas 1 and 2 sediment samples, average biota concentrations are lower (0.035 ppm vs. 0.055 ppm), which indicates that mercury is not bioaccumulating in Creek Segments B and D:

Summary of Average Total Mercury Concentrations in Sauget Area 1 Sediment and Biota Samples

Sample	CS-B	CS-D	Borrow Pit Lake	Reference Area 1	Reference Area 2

Sediment	1.287	0.043	0.120	0.053	0.044
Biota	0.042	0.028	0.127	0.062	0.047

Note: 1) Concentrations in mg/kg

Average Total Mercury concentrations in sediment and biota from the Borrow Pit Lake are essentially the same (0.120 vs. 0.127). Average tissue concentrations are higher in the Borrow Pit Lake than in CS-B, CS-D and the two Reference Areas. This evidence for bioaccumulation depends upon one outlier forage fish tissue concentration of 0.6 ppm. Removing this outlier from the Borrow Pit Lake biota data set results in an average biota mercury concentration of 0.074 ppm in the Borrow Pit Lake, which is an order of magnitude lower than the average Borrow Pit Lake sediment concentration of 0.120 ppm and 0.012 to 0.027 mg/kg higher than fish tissue concentrations in the Reference Areas.

Additional sediment sampling and analysis in the Borrow Pit Lake, as required by the Sediment Removal Action UAO, is needed to determine whether or not bioavailable Mercury is present in these sediments and, if so, where it is located. Incorporation of existing information on the distribution and occurrence of mercury in Dead Creek and the Borrow Pit Lake is critically important to developing a sampling plan that will effectively characterize the distribution of mercury species in the Borrow Pit Lake. Not understanding these data could result in improper sampling plan design, incorrect risk assessment conclusions and inappropriate risk management decisions.

4.2 Sampling Program Objectives and Rationale

4.2.1 Sediment Sampling

Mercury was selected as a COPC in the 2001 Menzie Cura Sauget Area 1 Ecological Risk Assessment due to exceedance of ecological thresholds and identified as a COC due to toxicity to fish and fish-eating birds. The Borrow Pit Lake Investigation Plan is designed to address three nature and extent of mercury migration issues that were not resolved during implementation of the Sauget Area 1 Ecological Risk Assessment, namely:

1) What is the aerial distribution of mercury in the Borrow Pit Lake downstream of Dead Creek;

2) Where do mercury concentration highs (i.e. "hot spots") occur in the Borrow Pit Lake; and
3) Where do mercury concentrations in Borrow Pit Lake sediments exceed site-specific, risk-based concentrations?

Results obtained during implementation of the Borrow Pit Lake Investigation Plan will be used to determine if mercury is uniformly distributed in the Borrow Pit Lake or if it occurs in "hot spots" (concentration highs). Mercury concentration and speciation data obtained during implementation of Borrow Pit Lake Sampling Plan will also be used, in conjunction with existing Borrow Pit Lake fish tissue data, to establish site-specific, risk-based concentrations for biologically-available mercury and identify those areas, if any, that need to be remediated in order to protect fish or fish-eating birds. Containing or removing "hot spots" (concentration highs) that cause exceedance of site-specific, risk-based levels are appropriate removal/remedial actions in an adversely impacted habitat. Consequently, it is important to know if mercury is uniformly distributed in the Borrow Pit Lake sediments or if mercury concentration highs ("hot spots") occur.

Evaluating existing data on the nature and extent of mercury in the Dead Creek watershed is a critical component of the design of a sampling plan for the Borrow Pit Lake. It is appropriate to include this evaluation in the Mitigation Plan because it allows assessment of known mercury distribution and how this distribution might reflect mercury distribution in the Borrow Pit Lake. Such distributions need to be taken into consideration in the design of the Borrow Pit Lake sediment-sampling program and in interpretation of the results. For example, if mercury in Creek Segments B, C, D, E or F sediments was wholly, or in part, due to migration from sources in the Dead Creek watershed, there could be "hot spots" in creek channel sediments and, therefore, "hot spots" (concentration highs) in the Borrow Pit Lake at and/or downstream of its confluence with Dead Creek.

Distribution of mercury in Dead Creek and Borrow Pit Lake sediments is discussed below.

Dead Creek - Mercury analytical data is available for sediment samples collected in Dead Creek as part of the Sauget Area 1 Support Sampling Plan. These results are summarized below, by creek segment, with the upstream sample in each segment listed first:

Summary of Pre-Removal Action Mercury Concentrations in Dead Creek Sediments

Creek Segment	Sample 1	Sample 2	Sample 3	Average Concentration
CS-B	0.96	1.5	1.4	1.28
CS-C	0.66	0.64	0.58	0.63
CS-D	0.5	0.42	0.35	0.42
CS-E	0.51	0.3	0.3	0.37
CS-F	0.3	1.1	0.45	0.62

Notes: 1) Concentrations are in mg/kg
2) Sediment Quality Guidelines Threshold Effects Concentration (TEC) = 0.18 mg/kg
3) Florida Sediment Quality Assessment Guidelines (TEL) = 0.13 mg/kg
4) Ontario Guidelines Lowest Effects Level (LEL) = 0.2 mg/kg

While all of these samples exceed ecological screening levels, none of these data indicate that mercury "hot spots" (concentration highs) are present in Dead Creek sediments. All sediments in Creek Segments B, C, D and E and Creek Segment F between Route 157 and the Borrow Pit Lake were excavated and transported to an on-site containment cell during the Sauget Area 1 Sediment Removal Action.

Borrow Pit Lake - During implementation of the Sauget Area 1 Support Sampling Plan, sediment samples were also collected in the Borrow Pit Lake to determine the impact, if any, of discharges from Dead Creek on the Borrow Pit Lake. If Dead Creek was a migration pathway from source areas in the upstream portion of its watershed to the Borrow Pit Lake, there should be a concentration high where Dead Creek discharges into the Borrow Pit Lake. Sediment deposition typically occurs when a stream enters a lake because water velocity decreases and the energy environment is too low to keep all of the sediments in suspension.

Four broad-scan sediment samples were collected to determine whether or not impacted sediment deposition was occurring at the mouth of Dead Creek, i.e. a concentration high or "hot spot". One sample was collected 3,000 ft. upstream of the confluence of Dead Creek and the Borrow Pit Lake in the backwater area, a second sample was collected 200 ft upstream of the confluence of Dead Creek with the Borrow Pit Lake, a third sample was collected at the mouth of Dead Creek and the fourth sample was collected 200 ft. downstream of the confluence. Mercury analyses from these samples are given below, along with copper and zinc concentrations, metals that are known site-specific constituents:

Summary of Sediment Metal Concentrations at the Confluence of Dead Creek and the Borrow Pit Lake

	Mercury	Copper	Zinc
Backwater of Borrow Pit Lake, 300 ft. Upstream of Confluence	0.091	48	320
200 ft. Upstream of Dead Creek Confluence	0.11	64	36

Mouth of Dead Creek	0.45	240	1,600
200 ft. Downstream of Dead Creek Confluence	0.16	36	250

Note: Concentrations in mg/kg

These data indicate that a metals "hot spot" (concentration high) occurs at the mouth of Dead Creek where the channel portion of Creek Segment F enters the Borrow Pit Lake. All sediments in Creek Segment F between Route 157 and the Borrow Pit Lake (the channel portion of CS-F) were excavated and transported to an on-site containment cell during the Sauget Area 1 Sediment Removal Action.

None of these data indicate there is a mercury concentration high ("hot spot") in the Borrow Pit Lake sediments. From an ecological impact perspective, mercury concentrations in two of the three sediment samples from the Borrow Pit Lake were lower than all three of the threshold values considered to pose ecological food chain risks:

Comparison of Borrow Pit Lake Sediment Concentrations to Ecological Screening Levels for Mercury

Borrow Pit Lake Sediment Concentration			Ecological Screening Levels		
Sample 1	Sample 2	Sample 3	TEC	TEL	LEL
0.091	0.11	**0.16**	0.18	0.13	0.2

Notes: 1) Concentrations are in mg/kg
2) Concentrations higher than screening levels indicated in bold print
3) TEC = Sediment Quality Guidelines Threshold Effects Concentration
4) TEL = Florida Sediment Quality Assessment Guidelines
5) LEL = Ontario Guidelines Lowest Effects Level

One of the three Borrow Pit Lake sediment samples exceeded the lowest of the three ecological screening levels by 0.03 mg/kg.

Additional sampling is needed to determine the aerial distribution of mercury in the Borrow Pit Lake downstream of Dead Creek; to confirm or refute the observation that mercury concentration highs (i.e. "hot spots") do not occur in the Borrow Pit Lake; to provide the data that will allow site-specific, risk-based concentrations to be established for biologically-available mercury in Borrow Pit Lake sediments and to identify locations in the Borrow Pit Lake where sediments exceed site-specific, risk-based concentrations and removal action is appropriate.

4.2.2 Fish Sampling

Data collected in Dead Creek, the Borrow Pit Lake, Old Prairie du Pont Creek and Reference Areas 1 and 2 for use in the Sauget Area 1 Ecological Risk Assessment included the following:

Summary of Sauget Area 1 Support Sampling Plan Ecological Samples

	Sediment Samples			Tissue Samples		
	Industry Specific	Broad Scan	Sediment Bioassays	Fish	Prey	Plants
Dead Creek	97	15	16	2	2	13
Borrow Pit Lake	8	3	3	12	4	NS
Old Prairie du Pont Creek	1	2	2	NS	NS	1
Reference Areas	0	4	2	11	7	1

Notes: 1) Industry-Specific Sediment Samples were analyzed for PCBs, TPH, Copper and Zinc
2) Broad-Scan Sediment Samples were analyzed for VOCs, SVOCs, Pesticides, Herbicides, PCBs, Dioxin, Metals, Mercury and Total Cyanide
3) Sediment bioassays consisted of acute and chronic exposure of Hyallela azteca and Chironomous tentans

These data were considered to have sufficient power to assess the risks associated with site-related constituents in Dead Creek and the Borrow Pit Lake and to confirm or refute the 1997 Ecology & Environment Preliminary Ecological Risk Assessment, which was a screening-level evaluation based on a eight sediment samples (6 samples from the channel of Creek Segment F and two samples from the Borrow Pit Lake) collected in one day.

During performance of the Sauget Area 1 Ecological Risk Assessment, mercury was identified as a constituent causing a potentially unacceptable impact to forage fish in the Borrow Pit Lake and birds (Great Blue Heron) feeding on the forage fish. One of 12 composite fish tissue samples from the Borrow Pit Lake had a mercury concentration (0.6 mg/kg) significantly above a threshold level reported in the literature to be harmful to fish (0.25 mg/kg):

Summary of Fish Tissue Mercury Concentrations in the Borrow Pit Lake

	Composite 1	Composite 2	Composite 3
Bottom Feeder Fish (Brown Bullhead - Whole Body)	0.05	0.075	**0.26**
Forage Fish (Whole Body)	0.052	**0.6**	ND (0.1)
Predator Fish			
– **Large Mouth Bass (Whole Body)**	ND (0.016)	0.057	0.064
– **White Crappie (Fillet)**	ND (0.02)	ND (0.01)	0.037

Notes: 1) Concentrations in mg/kg
2) Concentrations greater than literature-based 0.25 mg/kg toxicity level in bold print

Analytical data from twelve fish tissue samples (9 whole body and 3 fillet) collected from three different locations in the Borrow Pit Lake indicate that mercury in Borrow Pit Lake sediments is

not widely distributed, not biologically available or both. The Borrow Pit Lake Investigation Plan is designed to collect the information on mercury distribution and bioavailability in sediments to verify this observation.

Additional fish tissue sampling and analysis in the Borrow Pit Lake is not considered necessary for the following reasons:

1) The existing fish tissue database, which represents three trophic levels of fish (bottom feeder, forager and predator) collected across the entire Borrow Lake, may provide enough high-quality data to allow assessment of ecological impacts associated with mercury. What definitely needs to be augmented is data on the distribution and speciation of mercury in Borrow Pit Lake sediments. Such additional data will help resolve the issue of impacts on fish populations and piscivorous birds due to the presence of mercury in the Borrow Pit Lake;

2) Fish tissue sampling in the Borrow Pit Lake is difficult because the Metro East Sanitary District uses the BPL as a storm-water detention basin. When water levels in the Mississippi River and Old Prairie du Pont Creek are high, flap valves on the discharge pipes that conduct flow from Dead Creek beneath the levee close. Storm-water flow from Dead Creek is detained in the Borrow Pit Lake and allowed to backup until the water level reaches Elevation 10 ft. (local datum). This results in an impounded water depth of 6 to 7 feet at the downstream end of the BPL. When the BPL water level reaches EL 10 ft., the lift station pumps are turned on and water is pumped over the levee and into Old Prairie du Pont Creek. Operating the Borrow Pit Lake as a storm-water detention basin creates an aquatic habitat that is not conducive to producing a sustainable fish population; and

3) Fish present in the Borrow Pit Lake and Dead Creek probably enter these intermittent water bodies in the spring when water levels in Old Prairie du Pont Creek are high, but not high enough to close the flap valves on the pipes conducting flow beneath the levee, and when the culverts at the Terminal Railroad Embankment, Cargill Road, Old Route 3, Route 3, Route 157, Parks College parking lot, Edgar Street, Jerome Lane, Kinder Street, Edwards Street and Judith Lane are submerged. When water levels in Creek Segments B, C, D and E fall below the culvert inverts at Judith Lane, Edwards St., Kinder St., Jerome Lane, Edgar Street and the Parks College parking lot during dry weather conditions, a series of stagnant, discontinuous pools with no flow are created upstream of each road crossing. Pools in Creek Segments B, C, D and E routinely dewater or dry up in warm weather and/or low rainfall periods. The BPL was in the last stages of drying up when the Support Sampling Plan fish tissue sampling was conducted in October and November1999. Dead Creek and the Borrow Pit Lake are intermittent water bodies that are typically drying up or dry from late summer through winter. Annual dewatering/desiccation of Dead Creek and the BPL creates an aquatic habitat that is not conducive to a sustainable fish population.

4.3 Borrow Pit Lake Investigation Plan

4.3.1 Sample Location

Sediment samples will be collected immediately upstream, at and downstream of the confluence of Dead Creek with the Borrow Pit Lake to determine the aerial distribution of mercury in the Borrow Pit Lake downstream of Dead Creek; to confirm or refute the observation that mercury concentration highs (i.e. "hot spots") do not occur in the Borrow Pit Lake; to provide the data that will allow site-specific, risk-based concentrations to be established for biologically-available mercury in Borrow Pit Lake sediments and to identify locations in the Borrow Pit Lake where sediments exceed site-specific, risk-based concentrations and removal action is appropriate.

Evidence collected during implementation of the Support Sampling Plan supports the conclusion that industry-specific constituents were not deposited in the backwater portions of the Borrow Pit Lake upstream of the point where Dead Creek Segment F discharges into it. This conclusion is not based on one sample in the backwater area but on eight samples in the backwater area specifically collected with the intent of determining whether or not backwater deposition occurred in that portion of the Borrow Pit Lake upstream of Dead Creek. Sufficient sampling was done during implementation of the Sauget Area 1 Support Sampling Plan to make this determination. Additional sampling is not considered appropriate.

Observed distribution patterns of PCBs, TPH, Copper and Zinc, based on eight (8) samples in the Borrow Pit Lake upstream of the confluence of Dead Creek with the Borrow Pit Lake, nineteen (19) samples in Dead Creek immediately upstream of its confluence with the BPL and eleven (11) samples in the BPL downstream of the confluence with Dead Creek, indicate that backwater deposition of industry-specific constituents did not occur in the portions of the Borrow Pit Lake upstream of the confluence vith Dead Creek. These constituents were selected to be indicative of the constituents released or potentially released in the upstream portions of the Dead Creek watershed. On September 9, 1999, USEPA approved their selection as indicator parameters when it approved the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan. The Agency also approved the sampling rationale and number of samples (8) selected to determine whether or not backwater deposition was occurring in the Borrow Pit Lake upstream of the confluence with Dead Creek.

Eight samples were collected upgradient of the confluence, spaced every 400 ft. from the north end of the Borrow Pit Lake, and analyzed for PCBs, TPH, Copper and Zinc. These data are

adequate to demonstrate the lack of backwater effects. For example, PCB concentrations ranged from ND to 6,290 ug/kg in Dead Creek upstream of the confluence of Dead Creek and the Borrow Pit Lake, were ND in the Borrow Pit Lake upstream of the Dead Creek confluence and ranged from 10 to 390 ug/kg downstream of the confluence. The highest observed PCB concentration downstream of the confluence, 390 ug/kg, was observed in the lift station sump at the Old Prairie du Pont Creek levee. Other than the one "hot spot" concentration of 390 ug/kg in the lift station sump, PCB concentrations downstream of the Dead Creek confluence were ND in 9 out of the 10 samples and 10 ug/kg in the tenth sample.

As can be seen from the analytical data presented below, this distribution pattern is repeated for Total Petroleum Hydrocarbons, Copper and Zinc:

Summary of Industry-Specific Analytical Results, Creek Segment F and Borrow Pit Lake Sediment Samples

Sample Number	PCBs (ug/kg)	TPH (mg/kg)	Copper (mg/kg)	Zinc (mg/kg)
Borrow Pit Lake Upstream of Dead Creek Confluence				
FASED-BPL-S1-0-10IN	ND (99.4)	23	9.9	380
FASED-BPL-S2-0-10IN	ND (109.3)	10	15	230
FASED-BPL-S3-0-8IN	ND (121.8)	4.6	14	300
FASED-BPL-S4-0-10IN	ND (109.9)	4	13	360
FASED-BPL-S5-0-9IN	ND (109.0)	6.6	13	280
FASED-BPL-S6-0-11IN	ND (119.5)	8.1	15	220
FASED-BPL-S7-0-9IN	ND (109.9)	4.3	18	410
FASED-BPL-S8-0-9IN	ND (119.5)	5.5	21	490
Creek Segment F Upstream of Borrow Pit Lake				
FASED-CSF-S31N-0-13IN	ND (2,770)	49	130	2,400
FASED-CSF-S30N-0-8IN	35	20	54	850
FASED-CSF-S29W-0-10IN	ND (121.8)	21	26	510
FASED-CSF-S28-0-10IN	6,290	220	1,200	3,200
FASED-CSF-S27E-0-16IN	1,850	44	1,900	6,200
FASED-CSF-S26W-0-13IN	573	75	930	4,700
FASED-CSF-S25E-0-10IN	1,046	71	2,500	6,200
FASED-CSF-S24W-0-13IN	192	47	530	3,200
FASED-CSF-S23-0-16IN	1,397	49	1,400	5,400
FASED-CSF-S22-0-20IN	1,095.2	50	420	4,800
FASED-CSF-S21-0-21IN	523	87	920	4,500
FASED-CSF-S20-0-12IN	456	50	710	2,300
FASED-CSF-S19-0-13IN	1,242.9	74	5,400	10,000
FASED-CSF-S18E-0-14IN	261	110	1,700	9,100
FASED-CSF-S17W-0-16IN	475	100	1,400	11,000
FASED-CSF-S16-0-20IN	13	18	33	3,900
FASED-CSF-S15W-0-28IN	64	31	430	7,700
FASED-CSF-S14W-0-15IN	437	91	480	3,200
FASED-CSF-S13W-0-15IN	241	77	370	2,100
Borrow Pit Lake Downstream of Dead Creek Confluence				
FASED-CSF-S12-0-15IN	ND (139.8)	16	80	680
FASED-CSF-S11W-0-10IN	ND (145.1)	11	88	690

FASED-CSF-S10-0-9IN	ND (124.7)	17	33	250
FASED-CSF-S9-0-11IN	ND (145.1)	24	78	400
FASED-CSF-S8-0-15IN	ND (121.8)	8.6	34	160
FASED-CSF-S7E-0-11IN	ND (115.1)	5.7	21	84
FASED-CSF-S6E-0-10IN	ND (118.9)	3.4	17	85
FASED-CSF-S5W-0-10IN	10	3	13	62
FASED-CSF-S4-0-7IN	ND (109.9)	2.7	10	50
FASED-CSF-S3E-0-6IN	ND (112.2)	3.8	17	63
FASED-CSF-S2-0-7IN	390	920	12	53

Data from 38 sediment samples collected in Creek Segment F down stream of the Terminal Railroad Embankment and the Borrow Pit Lake during implementation of the Sauget Area 1 Support Sampling Plan and presented above, indicate that constituents migrating via the surface water pathway in Dead Creek were not deposited in the backwater portions of the Borrow Pit Lake. Therefore, additional sampling in this area is not considered appropriate.

4.3.2 Sample Analysis

Sediment samples collected in the Borrow Pit Lake during implementation of the Sauget Area 1 Support Sampling Plan were analyzed for two analytes groups: 1) industry-specific analytes which included Total PCBs, Total Petroleum Hydrocarbons, Copper and Zinc and 2) broad-scan analytes which included VOCs, SVOCs, Pesticides, Herbicides, PCBs, Dioxin, Metals, Mercury and Total Cyanide. Detection limits for the following broad-scan analytes exceeded sediment screening-levels in all three of the sediment samples collected in the Borrow Pit Lake:

- Total Cyanide;
- 14 PAH Compounds;
- Bis(2-ethylhexyl)phthalate; and
- Hexachlorobenzene

Detection limits for the following broad-scan analytes exceeded screening criteria in some of the Borrow Pit Lake sediment samples:

- Silver;
- Total PCBs; and
- 10 Pesticide Compounds

Detection limits are very often higher than ecological screening levels because of the conservative nature of the screening levels and the inability of Agency-approved analytical

methods to achieve detection limits equal to or less than the screening levels. Considerable effort was made to achieve the lowest possible detection limits with USEPA-approved analytical methods as described in the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan Quality Assurance Project Plan (which was approved by USEPA on September 9, 1999).

In spite of these efforts, detection limits for some constituents were higher than their ecological screening levels. Constituents with detection limits that exceeded screening levels were retained as Constituents of Potential Concern (COPCs) in the June 2001 Menzie-Cura Sauget Area 1 Ecological Risk Assessment. COPCs selected using the Agency-approved process include Total PCBs, Dioxin TEQs and the following constituents:

SVOCs

- Bis(2-ethylhexyl)phthalate)
- Di-n-butylphthalate
- Diethylphthalate
- Pentachlorophenol

PAHs

- Acenapthalene
- Benzo(a)pyrene
- Benzo(b)fluoranthene
- Benzo(g,h,i)perylene
- Benzo(k)fluoranthene
- Dibenzo(a,h)anthracene
- Fluoranthene
- Indeno(1,2,3-c,d)pyrene

Pesticides

- Aldrin
- delta-BHC
- gamma-BHC
- alpha-Chlordane
- gamma-Chlordane
- Total DDT
- Dieldrin
- Endosulfan I
- Endosulfan II
- Endosulfan Sulfate
- Endrin Aldehyde
- Endrin Ketone
- Heptachlor
- Heptachlor Epoxide
- Methoyxchlor

Herbicides

- 2,4-D
- 2,4-DB
- Dicamba
- Dichloroprop
- MCPA
- MCPP

Metals

- Aluminum
- Antimony
- Arsenic
- Barium
- Beryllium
- Cadmium
- Chromium
- Copper
- Iron
- Lead
- Manganese
- Mercury
- Molybdenum
- Nickel
- Selenium
- Silver
- Vanadium
- Zinc

Inorganics

- Fluoride

Bis(2-ethylhexyl)phthalate, eight PAHs, 15 Pesticides, Total PCBs and Silver were included as COPCs even though detected concentrations exceeded screening levels. Inclusion of constituents on that basis is conservative and standard practice. Six PAHs (Anthracene, Benzo(a)anthracene, Chrysene, Fluorene, Napthalene and Phenanthrene) were not selected as COPCs because they were either not detected or were infrequently detected. PAHs with the greatest potential impact on ecosystems were included in the Sauget Area 1 Ecological Risk Assessment.

In addition, the detection limits achieved during analysis of the Sauget Area 1 Support Sampling Plan sediment samples do not indicate that high concentrations of the non-detect constituents are present. Detection limits for the COPCS that exceeded screening levels in all three Borrow Pit Lake sediment samples are summarized below:

Summary of COPC Detection Limits for Borrow Pit Lake Sediment Samples Exceeding Screening Criteria

PAHs, ug/kg	ESED - S1	ESED - S1FD	ESED - S2	ESED - S3
1) Acenapthene	470 UJ	470 UJ	500 UJ	470 UJ
2) Acenaphthylene	470 UJ	470 UJ	500 UJ	470 UJ
3) Anthracene	470 UJ	470 UJ	500 UJ	470 UJ
4) Benzo(a)anthracene	470 UJ	470 UJ	500 UJ	470 UJ
5) Benzo(a)pyrene	250 UJ	250 UJ	260 UJ	250 UJ
6) Benzo(b)fluoranthene	470 UJ	470 UJ	500 UJ	470 UJ
7) Benzo(g, h, I)perylene	470 UJ	470 UJ	500 UJ	470 UJ
8) Benzo(k)fluoranthene	470 UJ	470 UJ	500 UJ	470 UJ
9) Dibenzo(a,h)anthracene	250 UJ	250 UJ	260 UJ	250 UJ
10) Fluorene	470 UJ	470 UJ	500 UJ	470 UJ
11) Indeno(1,2,3-cd)pyrene	470 UJ	470 UJ	500 UJ	470 UJ
12) Napthalene	470 UJ	470 UJ	500 UJ	470 UJ
13) Phenanthrene	470 UJ	470 UJ	500 UJ	470 UJ
14) Pyrene	470 UJ	470 UJ	500 UJ	470 UJ

Herbicides, ug/kg	ESED - S1	ESED - S1FD	ESED - S2	ESED - S3
1) 2,4,5-T	23 UJ	23 UJ	24 UJ	23 UJ
2) 2,4,5-TP (Silvex)	23 UJ	23 UJ	24 UJ	23 UJ
3) 2,4-DB	23 UJ	23 UJ	24 UJ	23 UJ
4) Dalapon	180 UJ	180 UJ	190 UJ	180 UJ

5) Dicamba	55 UJ	55 UJ	58 UJ	56 UJ
6) Dichloroprop	280 UJ	270 UJ	290 UJ	280 UJ
7) Dinoseb	280 UJ	270 UJ	290 UJ	280 UJ
8) MCPA	5500 UJ	5500 UJ	5800 UJ	5600 UJ
9) MCPP	5500 UJ	5500 UJ	5800 UJ	5600 UJ
10) Pentachlorophenol	47 UJ	47 UJ	50 UJ	47 UJ
PCBs, ug/kg	**ESED - S1**	**ESED - S1FD**	**ESED - S2**	**ESED - S3**
Monochlorobiphenyl	46 UJ	9.2 UJ	9.7 UJ	9.2 UJ
Dichlorobiphenyl	46 UJ	9.2 UJ	9.7 UJ	9.2 UJ
Trichlorobiphenyl	46 UJ	9.2 UJ	9.7 UJ	9.2 UJ
Tetrachlorobiphenyl	95 UJ	19 UJ	20 UJ	19 UJ
Pentachlorobiphenyl	95 UJ	19 UJ	20 UJ	19 UJ
Hexachlorobiphenyl	95 UJ	19 UJ	20 UJ	19 UJ
Heptachlorobiphenyl	140 UJ	28 UJ	29 UJ	28 UJ
Octachlorobiphenyl	140 UJ	28 UJ	29 UJ	28 UJ
Nonachlorobiphenyl	230 UJ	46 UJ	49 UJ	46 UJ
Decachlorobiphenyl	230 UJ	46 UJ	49 UJ	46 UJ
SVOCs, ug/kg	**ESED - S1**	**ESED - S1FD**	**ESED - S2**	**ESED - S3**
Bis(2-ethylhexyl)phthalate	470 UJ	470 UJ	500 UJ	470 UJ
Hexachlorobenzene	190 UJ	190 UJ	200 UJ	190 UJ
Inorganics, mg/kg	**ESED - S1**	**ESED - S1FD**	**ESED - S2**	**ESED - S3**
Silver	2.8 UJ	2.8 UJ	0.79 UJ	2.5 UJ
Total Cyanide	1.4 UJ	1.4 UJ	1.5 UJ	1.4 UJ

Based on this information, high detection limits are not masking the presence of constituents that could have an adverse ecological impact. MCPA (2-Methyl-4-Chlorophenoxyacetic Acid) and MCPP (2-Methyl-4-Chlorophenoxypropionic Acid) are the only two constituents with detection limits high enough to indicate that significant concentrations of these two herbicides might be present in Borrow Pit Lake sediments. Sediment screening levels are not available for MCPA and MCPP. For these reasons, it is not appropriate to include SVOCs, Herbicides, PCBs, Metals and Total Cyanide analyses in the further investigation of Borrow Pit Lake sediments required by the Sediment Removal Action UAO. It is appropriate to focus this investigation on Mercury.

4.3.3 Sampling Plan

Sediment samples will be collected in the Borrow Pit Lake on a 200 ft grid in order to evaluate the distribution of mercury in sediments immediately upstream, at and downstream of the confluence of Dead Creek with the Borrow Pit Lake. As directed by the Agency, sediment samples will be collected in the Borrow Pit Lake upstream of the confluence of Dead Creek on a 300 ft. grid to evaluate the distribution of mercury in sediments in this backwater area.

Samples will be collected from the center of each grid cell at a depth of 0 to 6 inches below ground surface to characterize the biologically active zone, a total of 60 samples (Figure 4-1). Samples will be collected at every odd-numbered grid cell (50 percent of the sampling locations) from a depth of 6 inches to the bottom of the sediment profile, which is typically 8 to 15 inches thick, to characterize the remainder of the sediment column.

Number of Sediment Samples:	90	
Analyses:	Total Mercury	USEPA Method 7470A/7471A
	Methyl Mercury	USEPA Method 1630/1631

Specialized analytical laboratories capable of performing mercury-speciation analyses, such as the Battelle Marine Sciences Center, Brooks Rand or equivalent, will perform the Borrow Pit Lake sediment analyses. Total mercury analytical methods may be changed to allow total mercury and methyl mercury analyses to be performed by the same laboratory.

Sampling locations will be finalized in the field with the concurrence of USEPA Region V or its designee. Sampling methods, procedures and protocols will be the same used for the Sauget Area 1 EE/CA and RI/FS Support Sampling Plan and associated Field Sampling Plans and Quality Assurance Project Plans.

QA/QC Samples - QA/QC samples will consist of one duplicate per ten, or fraction of ten, environmental samples collected and one MS/MSD or spike duplicate per twenty, or fraction of twenty, environmental samples collected. Duplicate, MS/MSD, and spike duplicate samples will be submitted for analysis. Duplicate samples are collected to measure consistency of field sampling technique. MS/MSD and spike duplicate samples are collected to measure laboratory

quality control procedures. A field blank (or equipment blank) must be submitted to the laboratory with the investigative samples and analyzed for the same parameters as the investigative samples. The minimum required is one per ten, or fraction of ten, environmental samples collected, unless dedicated or disposable sampling equipment is used to collect the samples.

Field Procedures - Coordinates for each sampling location will be established from existing topographic surveys prior to undertaking the sampling effort. This will be accomplished by overlaying a 200 ft by 200 ft grid pattern over the Borrow Pit Lake on the site topographic map. A GPS unit will be used in the field to navigate to each sampling location based on these pre-established coordinates.

Sediment samples will be collected using a manual push-type sediment core sampler. The sampler consists of a PVC barrel, polycarbonate (Lexan®) liner, check valve, extension rods, and a "T" handle. A liner will be placed into the bottom of the tube and secured in place. The sampler will then be pushed into the sediment, collecting a sediment sample from 0 to 18 inches below the top of the sediment. Sediment will then be pulled up, creating a slight vacuum that closes the check valve. The tube will be removed from the sampler, and the sediment will be placed into the sample containers. Where water depths require, extensions will be added to the sample tube to facilitate collecting the sediment sample. In these instances, a boat will be used to reach the sampling location. Sample containers will be placed on ice in coolers. Chain-of-custody procedures will be followed. After each sampling location or when all decontaminated sampling equipment has been used, sampling equipment will be decontaminated according to the procedures outlined below.

Decontamination - The following procedures will be used for sampling equipment decontamination:

- Brush-wash reusable equipment in a bucket or tub using a trisodium phosphate (TSP) or other commercial detergent solution (2 lb of TSP per 10 gal of clean water). Completely brush the entire exterior surface of the article undergoing decontamination. Wash interior wetted surfaces as required. Rinse the item with copious quantities of potable water, followed by a distilled water rinse.

- Rinse reusable sampling equipment used to collect environmental media for metals analysis in a dilute nitric acid solution, followed by a distilled water rinse.
- Air-dry sampling equipment on a clean, non-plastic surface in a well-ventilated, uncontaminated environment. If the sampling device is not to be used immediately, wrap it in aluminum foil and place it in a plastic bag or storage container.
- Contain rinse water in a plastic tub with a lid. Empty the contents of this tub daily into a 55 gallon drum located at the IDW storage area.

Documentation - A field notebook will be kept for the sediment sampling activity. At a minimum, the field notebook will include the project name and number, date and time, weather conditions, sampler's name, sample location, limiting field conditions, problems encountered, subcontractor personnel on-site, USEPA Region 5 personnel on-site, and other personnel on-site. Notation of USEPA Region 5 acceptance of sampling locations will be included in the field notebook.

Data Validation - 100 percent of the mercury analyses will be validated using Tier 3 Criteria and 10 percent of the data will be validated using Tier 4 Criteria. Validation methods, procedures and protocols described in the Sauget Area 1 Data Validation Plan will be used to perform the data validation.

4.4 Borrow Pit Lake Remediation Plan

The Sediment Removal Action UAO required preparation of a Mitigation Plan that included a plan for remediation of the Borrow Pit Lake. To comply with the UAO, a Borrow Pit Lake Remediation Plan was included in the Dead Creek Mitigation Plan. Before a remediation plan can be proposed, the Borrow Pit Lake Investigation Plan must be implemented.

After completion of the Borrow Pit Lake Investigation Plan, validated analytical data will be used to determine the aerial distribution of mercury in the Borrow Pit Lake downstream of Dead Creek; to confirm or refute the observation that mercury concentration highs (i.e. "hot spots") do not occur in the Borrow Pit Lake; to provide the data that will allow site-specific, risk-based concentrations to be established for biologically-available mercury in Borrow Pit Lake sediments

and to identify locations in the Borrow Pit Lake where sediments exceed site-specific, risk-based concentrations and removal action is appropriate.

A three-step Borrow Pit Lake Remediation Plan is appropriate to identify risks associated with Mercury in the Borrow Pit Lake and any remedial measures that might be needed to mitigate those risks:

1) Collect additional Borrow Pit Lake sediment samples, analyze them for Total Mercury and Methyl Mercury and contour the Total Mercury and Methyl Mercury concentrations to determine if mercury is wide spread, if there are identifiable concentration highs (mercury "hot spots) or both. "Hot spots" will be quantified by contouring the mercury concentration data to determine if there are identifiable areas of higher mercury concentrations or if the mercury is wide spread. Mercury distribution patterns may help determine the source of the mercury. For example, a concentration high at the confluence of the Dead Creek and the Borrow Pit Lake could indicate fluvial deposition from a source along Dead Creek. A concentration gradient from the confluence to the lift station at Old Prairie du Pont Creek could also indicate a source along Dead Creek. A relatively uniform distribution in the BPL could indicate an anthropomorphic source such as atmospheric fall out from coal-fired power plants (air deposition) or background concentrations;

2) Compare bioavailable Methyl Mercury concentrations in Borrow Pit Lake sediments to screening criteria such as the Sediment Quality Guidelines (TEC = 0.18 mg/kg), the Florida SQAG (TEL = 0.13 mg/kg) or Ontario Guidelines (LEL = 0.2 mg/kg) to determine whether or not there is a potential for risk; and

3) If there is a potential for risk, based on exceedance of screening-level concentrations, determine a site-specific, risk-based Methyl Mercury concentration that will protect fish and piscivorous birds. The mercury speciation data from the Borrow Pit Lake Investigation Plan would be used, along with the existing Borrow Pit Lake fish tissue Total Mercury data (9 whole body composites and 3 fillet composites), to determine a mercury uptake factor for fish. This uptake factor would then be used to calculate a site-specific, risk-based concentration for methyl mercury that is protective of fish and fish-eating birds, which would be integrated into an EE/CA for the Borrow Pit Lake.

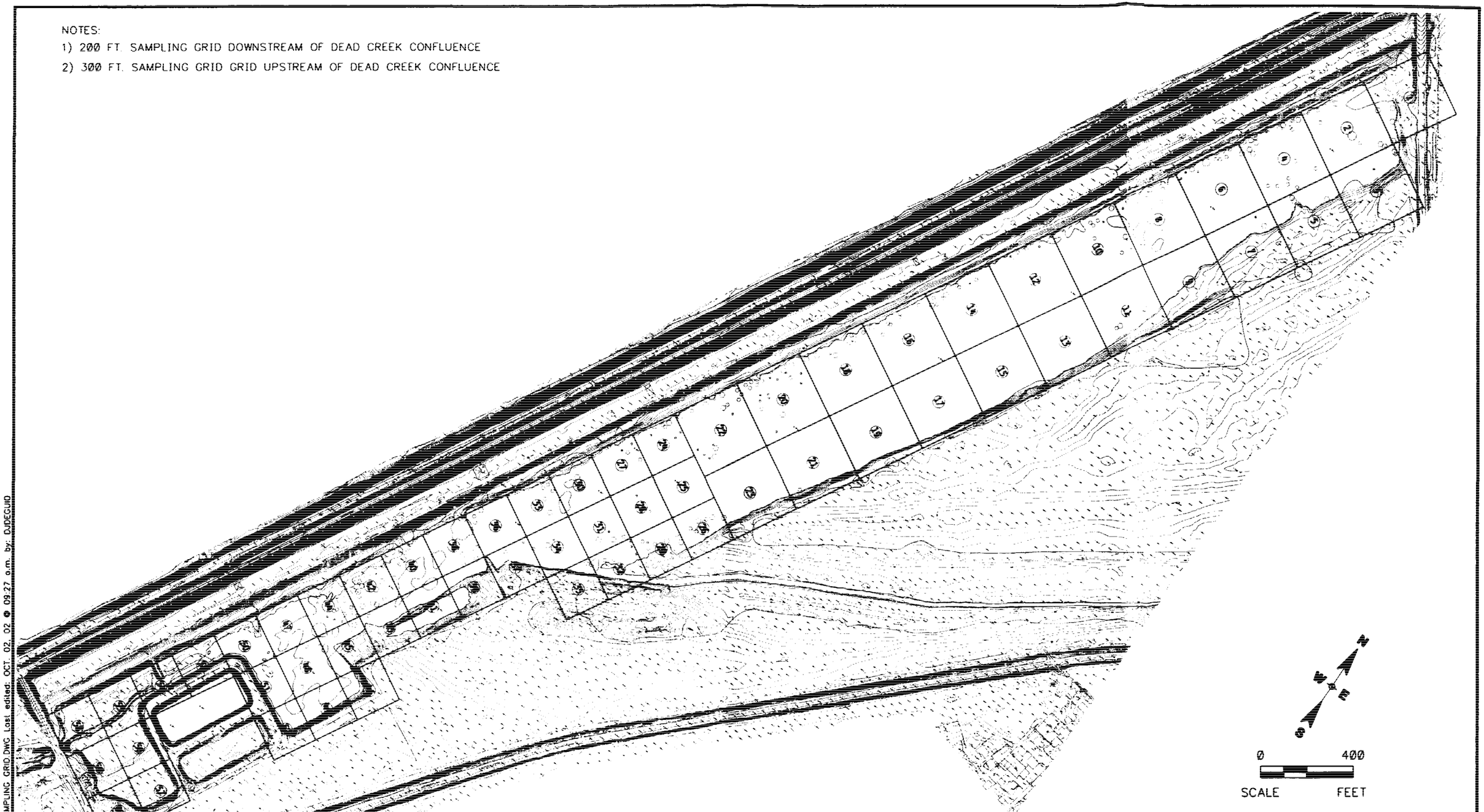
On completion of the mercury risk assessment, an EE/CA can be performed to evaluate remedial alternatives and identify an appropriate remedy.

FIGURES

NOTES:

1) 200 FT. SAMPLING GRID DOWNSTREAM OF DEAD CREEK CONFLUENCE

2) 300 FT. SAMPLING GRID GRID UPSTREAM OF DEAD CREEK CONFLUENCE



SAUGET AREA 1 SAUGET ILLINOIS	PROJECT NO. 23-20020041.00

URS

DRN. BY: djd 5/6/02 DSGN. BY: rbv CHKD. BY:	Borrow Pit Lake Investigation Plan Sediment Sampling Locations	FIG. NO. 4-1

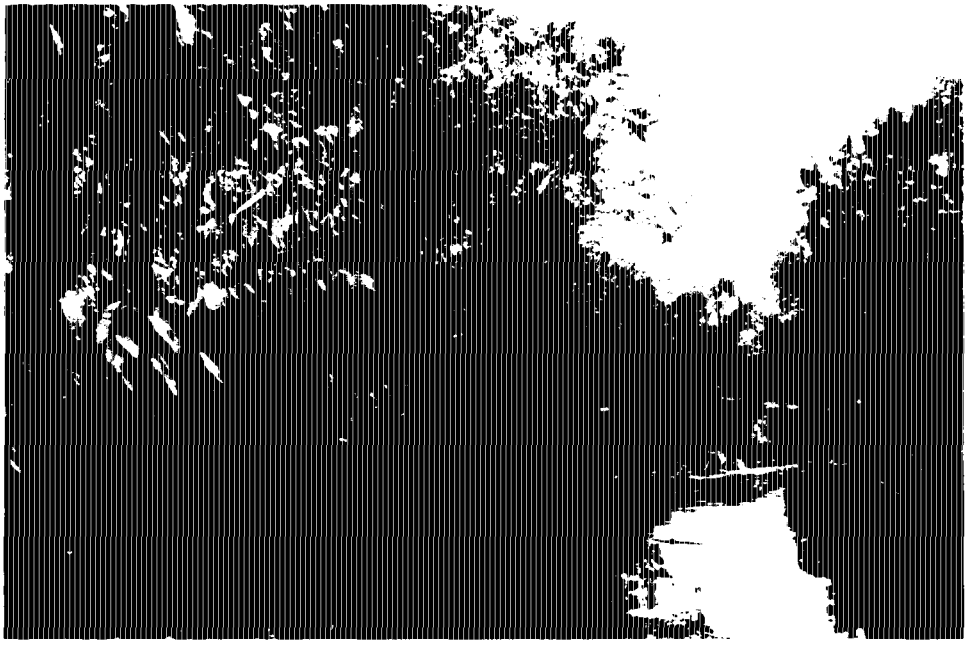
File: E:\23200200041.00\URS\SAMPLING GRID.DWG Last edited: OCT. 02, 02 @ 09:27 a.m. by: DJDEGUIO

APPENDIX 1

Baseline Habitat Assessment

Menzie-Cura & Associates, Inc.

Baseline Habitat Assessment
Dead Creek, Illinois



Prepared by
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January 2001

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1.0 INTRODUCTION

Woodlot Alternatives, Inc. was contracted to perform a baseline habitat assessment along approximately 2.4 km of Dead Creek in Sauget and Cahokia, Illinois. During this assessment, qualitative and quantitative information on plants, animals, vegetation alliances, and hydrologic regimes was collected. This report presents the results of the baseline assessment that can be used to identify organisms potentially at risk from remedial actions. These data can also be used to develop habitat restoration plans.

1.1 BACKGROUND

The project area is in Sauget and Cahokia, residential communities (population ca. 200 and 17550 people, respectively) situated south of East St. Louis in St. Clair County, Illinois (Figure 1). Dead Creek was used by various industries prior to the late 1930s as a site for waste discharge (United States Environmental Protection Agency 1996). Impoundments and borrow pits along Dead Creek have also been used for waste and wash water disposal. As a result, chlorinated solvents, chlorobenzenes, polychlorinated biphenyls, various metals, and other substances have come to be located in the sediments of Dead Creek (United States Environmental Protection Agency 1996).

The Dead Creek channel and adjacent riparian communities form a narrow, linear wetland system that passes through suburban Cahokia. Portions of Dead Creek are adjacent to residential and business lots that contain mowed lawns, buildings, driveways, and roads. To a great extent, these areas have been modified so that only relict portions of natural vegetation alliances exist. Furthermore, many areas are also influenced by non-native plant species. Sections of the creek, however, are utilized by rare species monitored by the Illinois Endangered Species Protection Board. This illustrates that Dead Creek does possess value for wildlife habitat and as a travel corridor.

Solutia, Inc. has announced it plans to begin remediation activities along Dead Creek and adjacent source sites in Cahokia and Sauget (Solutia, Inc. 2000).

> Creek Segments B through the upper portion of F are subject to a Unilateral Administrative Order issued by the USEPA on May 31, 2000, to Monsanto Company and Solutia, Inc. (Docket No. V-W-99-C-554) pursuant to section 106(a) of the Comprehensive Environmental Response, Compensation and Liability Act of 1980 as amended, 42 U.S.C. Section 9606(a). The Order requires the following response activities at Sauget Area 1 Creek Segments B and Site M and Creek Segments C, D, E, and F upstream of the Terminal Railroad Association embankment, which are located in Sauget and Cahokia, Illinois (Figure 1-1):
>
> - Preparation of a Time Critical Removal Action Work Plan;
>
> - Implementation of the Removal Action in accordance with the Work Plan to mitigate the threats posed by presence of contamination in Dead Creek sediments and certain adjacent soils and their potential migration via overflow and flood waters from the Site;

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SCALE: 1"=2000'	Study Area Location Dead Creek Project Area Baseline Habitat Assessment Cahokia, Illinois
DATE: December 2000	
PROJ. NO. 100123	
DWG. NAME: study_area.dwg	Source:USGS Topo Quads: Cahokia IL./French Village IL. REV.

- Removal of materials from CS-B (creek sediments, creek bed soils and flood plain soils); CS-C, D, and E (non-native creek sediments only); and Site M (pond sediments and pond bottom soils) in Sauget Area 1, while minimizing adverse impacts to area wetlands and habitat;

- Proper handling, dewatering, treatment and placement of such materials in the on-site Containment Cell; A plan for management of Dead Creek storm water during the removal action;

- Sampling and analysis of areas where material has been removed, for the purpose of defining remaining contamination;

- Placement of membrane liner material over CS-B and in all other excavated areas where, based on post-removal sample results, such liner is determined to be necessary; and

- Design of a containment cell that will provide adequate protection to human health and the environment.

The Order requires Solutia to conduct these removal activities to abate a potential imminent and substantial endangerment to the public health, welfare or the environment that may be presented by the actual or threatened release of hazardous substances at or from the site.

2.0 METHODS

This section of the report describes the methods used to identify and map vegetation alliances (also referred to as natural communities), characterize the components of each alliance (e.g., wetlands, plants, soils), determine animal use, and describe wetland functions and values in the Dead Creek study area.

2.1 VEGETATION ALLIANCE IDENTIFICATION AND MAPPING

Vegetation alliances were identified during field surveys performed on 2 and 8–11 November 2000. Identification of alliances (or communities) was performed by examination of site hydrology, soils, and landscape location combined with determination of dominant species by strata. Classification of alliances largely followed Drake and Faber-Langendoen (1997) except for unvegetated communities (open water). Wetland communities were also classified according to Cowardin *et al.* (1979). Once identified, the boundaries of each alliance were located in the field using GPS equipment and verified using aerial and land-based photo interpretation. The extent of each community was then plotted on topographic base maps in AutoCAD Release 14. Upon completion of plotting, vegetation alliances were mapped and the areal extent of each alliance calculated.

2.2 VEGETATION ALLIANCE AND WETLAND CHARACTERIZATION

Quantitative and qualitative data regarding plant species abundance and distribution was collected for all dominant vegetation communities. Quantitative data was collected in plots that were 9 m in radius using the methods and performance standards contained in

United States Army Corps of Engineers Wetlands Delineation Manual (1987). While methods contained in this manual were developed for wetland delineation, they also provide a means for collecting quantitative data on plants, soils, and hydrology in upland and riparian habitat. Descriptive data on plant species composition and abundance were collected for trees, lianas (i.e., woody trailing, twining, or climbing plants), saplings, shrubs, seedlings, and herbs. Basal area was measured for trees using a ten-factor prism gauge. Percent areal cover per species was estimated for all other strata. Because the community surveys occurred in late season, some herbaceous plants could not be identified and dominance estimates were likely skewed. Qualitative data collected outside of plots included photographs of each community, a list of all plant species observed, and general descriptions of the ecological integrity of vegetation communities (i.e., degree of anthropogenic disturbance and estimated age of forested communities).

Descriptive data on soils were collated from available reports including the Natural Resource Conservation Service (formerly the Soil Conservation Service) medium intensity soil reports and from soil borings performed on site as part of previous investigations. No new boring or soil analyses were performed. Soil hydrology data were collected from field observations regarding inundation, saturation, and degree of organic matter buildup in the topsoil horizon.

2.3 ANIMAL USE CHARACTERIZATION

Qualitative information on animal use of the project area was collected through direct observation of species or their sign (e.g., tracks, scat, browsing), by a review of previous site investigations, and by comparing habitat available on site to habitat requirements of species known or suspected to occur in or near the project area. Information on aquatic invertebrates and fish was collected from previous site investigation reports and dip net surveys performed during site characterization. In addition, a list of fish species suspected of occurring in Dead Creek was prepared by reviewing range distributions of Illinois fish. Amphibians, reptiles, birds, and mammals seen on the site were recorded, and a list of species that could use the area was developed based on ranges and habitat availability.

2.4 WETLAND FUNCTION-VALUE ASSESSMENT

A wetland function-value assessment was performed for wetlands in the project area to document existing functions and values. The Hydrogeomorphic (HGM) Assessment to Riverine Wetlands system (Brinson *et al.* 1995) was used to the extent possible to assess wetlands and assign values for each function that the wetland provides (e.g., flood control, wildlife habitat, sediment retention). The HGM methodology could not be performed in its entirety because reference wetlands information has not been published and detailed measurements of areal net primary productivity, duration of bank overflow, soil pore space, etc. were not collected during this initial investigation. Its format, however, was followed to provide a qualitative HGM wetland function-value assessment.

3.0 RESULTS AND DISCUSSION

This section describes baseline conditions of the Dead Creek project area and includes: a map showing dominant vegetation alliances and wetland communities; a matrix table of animals known or likely to occur in the Dead Creek corridor; quantitative plant community data; representative photographs of each alliance; a wetland function-value assessment; and narrative descriptions of the site. Common names for species are used throughout the report. Scientific names can be found in Tables 3 and 4.

3.1 VEGETATION ALLIANCE IDENTIFICATION AND MAPPING

Nine vegetation alliances were identified in the Dead Creek project area based on vegetation, landscape position, and hydrological characteristics. These are: *Fraxinus americana–Ulmus americana* Temporarily Flooded Forest, *Populus deltoides* Temporarily Flooded Forest, *Salix nigra* Temporarily Flooded Forest, *Cephalanthus occidentalis* Semi-permanently Flooded Shrubland, *Persicaria*–Mixed Forb Temporarily Flooded Herbaceous, *Typha* Seasonally Flooded Herbaceous, *Potamogeton–Ceratophyllum–Elodea* Permanently Flooded Herbaceous, Temporary Open Water, and Permanent Open Water. The location and extent of each community in the project area is identified on the Wetland Characterization and Vegetative Alliance Map (Sheets 1 through 5). Table 1 presents summary statistics of each community.

3.2 VEGETATION ALLIANCE AND WETLAND CHARACTERIZATION

Both qualitative and quantitative observations of the wetland alliances found in and adjacent to Dead Creek were made during site surveys. Vegetation data was collected in sample plots located throughout the study area and the results are presented in Table 2. A preliminary flora of Dead Creek Areas B through F is presented in Table 3. Explanation of Cowardin (1979) acronyms follows:

- PFO Palustrine Forested Wetland
- PSS Palustrine Scrub-Shrub Wetland
- PEM Palustrine Emergent Wetland
- PAB Palustrine Aquatic Bed
- PUB Palustrine Unconsolidated Bottom
- POW Palustrine Open Water

Table 1. Natural Communities in Dead Creek Study Area.

Natural Communities[1]		Number of Occurrences in Study Area (Areas B - E)[2]	Total Area of Community Type (ha)	Mean Basal Area (m^2/ha)
Vegetation Alliances of Drake and Faber-Langondoen (1997)	Cowardin *et al.* (1979)			
Forests	**Palustrine Forested Wetland (PFO)**	**9**	**3.26**	**69.29**
Fraxinus pennsylvanica-Ulmus americana Temporarily Flooded Forest		4	2.84	60.47
Populus deltoides Temporarily Flooded Forest		4	0.34	83.15
Salix nigra Temporarily Flooded Forest		1	0.08	49.13
Total		9	3.26	
Shrublands	**Palustrine Scrub-Shrub Wetland (PSS)**	**1**	**0.04**	**7.56**
Cephalanthus occidentalis Semi-permanently flooded shrubland		1	0.04	7.56
Total		1	0.04	
Herbaceous Alliances	**Palustrine Emergent Marsh Wetland (PEM)**	**15**	**0.87**	**0.00**
	Palustrine Aquatic Bed Wetland (PAB)	**8**	**1.01**	**0.00**
Persicaria -Mixed Forb Temporarily Flooded Herbaceous		13	0.86	0.00
Potamagetan -Ceratophyllun -Elodea Permanently Flooded Herbaceous		8	1.01	0.00
Typha Seasonally Flooded Herbaceous		2	0.01	0.00
Total		23	1.88	
Open Water	**Palustrine Unconsolidated Bottom Wetland (PUB)**	**3**	**1.20**	**0.00**
	Palustrine Open Water (POW)	**4**	**1.16**	**0.00**
Permanent Open Water		4	1.16	0.00
Temporary Open Water		3	0.26	0.00
Total		4	1.42	

1 = Vegetation alliance classification of Drake and Faber-Langondoen (1997) is based on dominant plant species by strata, landscape position, and hydrology. The wetland classification system of Cowardin *et al.* (1979) is based largely on the tallest dominant strata that is present for vegetated communities.

2 = occurrences separated by stream channel considered to be the same occurrence, those separated by a road are considered different occurrences

Note: Gray shading indicates community characteristics for Cowardin *et al.* classification.

Table 2. Wetland Characterization Plot Data.

Plot	Community[1]	Strata	Plant[2]	Count or Percent Cover[3]	Basal Area (m/ha)[4]	Hydrological Notes	Additional Comments
B-1	*Salix nigra* Temp. Flooded Forest	Tree	*Salix nigra*	8	60.47	scoured channel and silt stains on bank	
		Liana	*Lonicera japonica*	2		shallow rooted trees	
		Liana	*Campsis radicans*	6			
		Liana	*Rubus trivialis*	1			
		Sapling	*Salix nigra*	12			
		Sapling	*Broussonetia papyrifera*	4			
		Shrub	*Broussonetia papyrifera*	5			
		Shrub	*Salix nigra*	2			
		Herb	*Amaranthus tuberculatus*	20	60.47		
B-2	*Persicaria*-Mixed Forb Temp. Flooded	Herb	*Amaranthus tuberculatus*	63		water stained debris, silt lines over bank	
		Herb	*Potentilla norvegica*	0.5		saturated to surface	
		Herb	*Persicaria lapathifolia*	1			
B-3	*Fraxinus-Ulmus* Temp. Flooded Forest	Tree	*Morus alba*	2	15.12	area periodically flooded	area likely flooded during storm events
		Tree	*Ailanthus altissima*	10	75.59	remnant debris lines	
		Liana	*Toxicodendron radicans*	6			
		Liana	*Smilax hispida*	5			
		Liana	*Euonymus fortunei*	31			
		Sapling	*Ailanthus altissima*	14			
		Shrub	*Lonicera maeckii*	47			
		Herb	*Equisetum hyemale*	1			
		Herb	*Lonicera maeckii*	2			
		Herb	*Sanicula* sp.	1			
		Herb	*Geum canadense*	2	90.71		
B-4	*Fraxinus-Ulmus* Temp. Flooded Forest	Liana	*Ampelopsis cordata*	63		soils saturated at or near surface	
		Liana	*Smilax hispida*	24			
		Liana	*Euonymus fortunei*	3			
		Liana	*Campsis radicans*	6			
		Shrub	*Sambucus canadensis*	10			
		Herb	*Ampelamus albidus*	20			
		Herb	*Solanum ptychanthum*	18			
		Herb	*Eupatorium serotinum*	17			
		Herb	*Amaranthus tuberculatus*	26			
		Herb	*Carex albolutescens*	10			
		Herb	*Potentilla norvegica*	12			
		Herb	*Lycopus americanus*	6			
		Herb	*Bidens vulgata*	3	0.00		
C-1	*Typha* Seasonally Flooded Herbaceous	Sapling	*Acer saccharinum*	3		1-2 cm standing water	
		Shrub	*Acer saccharinum*	1		silt staining on vegetation	
		Herb	*Typha latifolia*	70		organic matter in soil	
		Herb	*Persicaria lapathifolia*	5			
		Herb	*Persicaria emersa*	5			
		Herb	*Lycopus americanus*	15			
		Herb	*Potentilla norvegica*	20			
		Herb	*Carex* sp.	5			
C-2	*Persicaria*- Mixed Forb Temp. Flooded	Herb	*Persicaria lapathifolia*	40		5-7 cm standing water	
		Herb	*Leersia oryzoides*	40		organic matter in soil	
		Herb	*Symphyotrichum lanceolatum*	2			
		Herb	*Lycopus americanus*	1			
		Herb	*Cyperus strigosus*	2			
C-3	*Potamogeton-Ceratophyllum-Elodea* Perm.	Herb	*Ludwigia peploides*	45		15-20 cm standing water	
		Herb	*Alisma subcordatum*	25		high organic content in soil	
		Herb	*Leersia oryzoides*	10			
		Herb	*Persicaria lapathifolia*	2			
		Herb	*Persicaria maculosa*	1			
		Herb	*Eleocharis obtusa*	12			
C-4	*Fraxinus-Ulmus* Temp. Flooded Forest	Tree	*Ulmus americana*	4	30.24	infrequent flooding	
		Tree	*Ailanthus altissima*	3	22.68	(no observable debris line)	
		Liana	*Lonicera japonica*	15			
		Liana	*Toxicodendron radicans*	36			
		Liana	*Campsis radicans*	36			
		Liana	*Smilax hispida*	10			
		Shrub	*Rubus occidentalis*	1			
		Shrub	*Cornus drummondii*	25			
		Shrub	*Ailanthus altissima*	10			
		Herb	*Allium* sp.	8			

C-7	*Fraxinus-Ulmus* Temp. Flooded Forest	Tree	*Ulmus americana*	6	45.35	soils saturated at or near surface	
		Tree	*Acer negundo*	1	7.56	evident debris line	
		Tree	*Ulmus pumila*	1	7.56		
		Liana	*Euonymus fortunei*	32			
		Liana	*Campsis radicans*	30			
		Liana	*Smilax hispida*	5			
		Liana	*Toxicodendron radicans*	6			
		Sapling	*Ulmus americana*	14			
		Shrub	*Cornus drummondii*	18			
		Shrub	*Lonicera maackii*	16			
		Shrub	*Rosa multiflora*	8	60.47		
C-8	*Persicaria*-Mixed Forb Temp. Flooded	Herb	*Symphyotrichum lanceolatum*	10		soils saturated to surface	
		Herb	*Leersia oryzoides*	25			
		Herb	*Carex albolutescens*	35			
		Herb	*Lycopus americanus*	5			
		Herb	*Persicaria maculosa*	10			
		Herb	*Potentilla norvegica*	10			
		Herb	*Amaranthus tuberculatus*	8			
		Herb	*Glechoma hederacea*	5			
		Herb	*Torilis arvensis*	1			
D-1	*Potamogeton-Ceratophyllum-Elodea* Perm.	Herb	*Ludwigia peploides*	80		20-25 cm standing water	
		Herb	*Echinodorus berteroi*	1		no discernable flow	
		Herb	*Alisma subcordatum*	1		organic matter in soils	
		Herb	*Leersia oryzoides*	1			
D-2	*Persicaria*-Mixed Forb Temp. Flooded	Liana	*Rubus trivialis*	8		soils saturated to surface	
		Herb	*Persicaria amphibia*	42			This is variety *emersa*
		Herb	*Persicaria lapathifolia*	26			
		Herb	*Lycopus americanus*	6			
		Herb	*Leersia oryzoides*	38			
		Herb	unknown Lamiaceae	5			insufficient material for identification
		Herb	*Glechoma hederacea*	1			
D-3	*Fraxinus-Ulmus* Temp. Flooded Forest	Tree	*Ulmus pumila*	5	37.80	infrequent flooding	
		Tree	*Broussonetia papyrifera*	1	7.56	(no obvious debris line)	
		Tree	*Robinia pseudoacacia*	1	7.56		
		Liana	*Euonymus fortunei*	16			
		Sapling	*Broussonetia papyrifera*	15			
		Shrub	*Sambucus canadensis*	10			
		Shrub	*Morus alba*	43			
		Shrub	*Lonicera maackii*	10			
		Shrub	*Celtis occidentalis*	6			
		Shrub	*Acer negundo*	1			
		Herb	*Allium* sp.	1			insufficient material for identification
		Herb	*Symphyotrichum lanceolatum*	3			
		Herb	*Glechoma hederacea*	1			
		Herb	*Persicaria caespitosa*	1	52.91		
D-4	*Persicaria*-Mixed Forb Temp. Flooded	Liana	*Ampelopsis cordata*	6		saturated to inundated soils	
		Shrub	*Morus alba*	2		frequently flooded	
		Shrub	*Ulmus americana*	2			
		Herb	*Lycopus americanus*	2			
		Herb	*Symphyotrichum lanceolatum*	35			
		Herb	*Leersia oryzoides*	36			
		Herb	*Sparganium* sp.	25			
		Herb	*Cyperus strigosus*	20			
		Herb	*Rumex crispus*	8			
		Herb	*Persicaria lapathifolia*	8			
		Herb	*Carex albolutescens*	5			
E-1	*Cephalanthus* Perm. Flooded Shrubland	Tree	*Acer saccharinum*	1	7.56	standing water present	
		Liana	*Vitis riparia*	8		semi-permanently flooded	
		Sapling	*Acer saccharinum*	16		organic matter in soils	
		Shrub	*Cephalanthus occidentalis*	43			
		Herb	*Persicaria lapathifolia*	10			
		Herb	*Leersia oryzoides*	3			
		Herb	*Lycopus americanus*	1	7.56		
E-2	*Potamogeton-Ceratophyllum-Elodea* Perm.	Herb	*Wolffia borealis*	40		standing water in plot approx. 35 cm	
		Herb	*Lemna perpusilla*	1		*Rana* larvae, topminnow (*Fundulus*)	
		Herb	*Ludwigia peploides*	16		organic matter in soils	
		Herb	*Persicaria punctata*	18			
E-3	*Fraxinus-Ulmus* Temp. Flooded Forest	Tree	*Ulmus americana*	2	15.12	infrequent flooding	
		Tree	*Acer negundo*	1	7.56	(no obvious debris line)	
		Tree	*Juglans nigra*	2	15.12		
		Liana	*Toxicodendron radicans*	12			

		Liana	*Vitis riparia*	8			
		Sapling	*Ulmus americana*	4			
		Shrub	*Cornus drummondii*	40			
		Shrub	*Sambucus canadensis*	20			
		Shrub	*Lonicera maackii*	8			
		Herb	*Hackelia virginiana*	5			
		Herb	*Geum canadense*	7			
		Herb	*Sanicula* sp.	8			insufficient material for identification
		Herb	*Ageratina altissima*	7			
		Herb	*unknown*	5			insufficient material for identification
		Herb	*Carex* sp.	3	37.80		insufficient material for identification
E-4	*Populus deltoides* Temp. Flooded Forest	Tree	*Ulmus pumila*	5	37.80	frequently flooded	
		Tree	*Platanus occidentalis*	2	15.12	debris line present	
		Tree	*Acer negundo*	2	15.12		
		Tree	*Morus alba*	1	7.56		
		Tree	*Populus deltoides*	1	7.56		
		Liana	*Toxicodendron radicans*	14			
		Liana	*Vitis riparia*	16			
		Liana	*Campsis radicans*	1			
		Liana	*Euonymus fortunei*	1			
		Sapling	*Morus alba*	34			
		Shrub	*Celtis occidentalis*	10			
		Shrub	*Lonicera maackii*	2			
		Herb	*Ageratina altissima*	1			
		Herb	*Allium* sp.	1			insufficient material for identification
		Herb	*Sanicula* sp.	1	83.15		insufficient material for identification
E-5	*Populus deltoides* Temp. Flooded Forest	Tree	*Populus deltoides*	8	60.47	seasonally flooded	
		Tree	*Morus alba*	2	15.12	debris line present	
		Tree	*Celtis occidentalis*	1	7.56		
		Tree	*Ulmus rubra*	1	7.56		
		Liana	*Euonymus fortunei*	38			
		Sapling	*Morus alba*	25			
		Sapling	*Acer saccharinum*	10			
		Sapling	*Celtis occidentalis*	6			
		Shrub	*Celtis occidentalis*	5			
		Shrub	*Ulmus rubra*	5			
		Shrub	*Lonicera maackii*	5			
		Herb	*Ageratina altissima*	10			
		Herb	*Persicaria punctata*	2			
		Herb	*Carex* sp.	4	90.71		insufficient material for identification
E-6	*Potamogeton-Ceratophyllum-Elodea* Perm.	Herb	*Alisma subcordatum*	15		30+ cm of standing water	
		Herb	*Leersia oryzoides*	25		organic matter in soils	
		Herb	*Symphyotrichum lanceolatum*	3			
		Herb	*Persicaria punctata*	1			
		Herb	*Sagittaria montevidensis*	1			material is var. calycina
		Herb	*Bidens vulgata*	1			
		Herb	*Rumex crispus*	1			
F-1	*Populus deltoides* Temp. Flooded Forest	Tree	*Populus deltoides*	7	52.91	seasonally flooded	
		Tree	*Ulmus americana*	2	15.12	debris line present	
		Tree	*Ulmus pumila*	1	7.56		
		Liana	*Toxicodendron radicans*	8			
		Liana	*Smilax hispida*	8			
		Liana	*Euonymus fortunei*	18			
		Sapling	*Celtis occidentalis*	15			
		Sapling	*Ulmus pumila*	2			
		Sapling	*Albizzia julibrissin*	4			
		Shrub	*Celtis occidentalis*	2			
		Shrub	*Cornus drummondii*	15			
		Shrub	*Morus alba*	18			
		Shrub	*Acer negundo*	8			
		Shrub	*Ulmus pumila*	2			
		Shrub	*Lonicera maackii*	11			
		Herb	*Ageratina altissima*	4			
		Herb	*Allium* sp.	1			insuficient material for identification
		Herb	*Carex* sp.	1	75.59		insuficient material for identification

1=Community classification follows Drake and Faber-Langendoen (1997).

2=Taxonomy follows Haines and Vining (1998) where applicable and otherwise follows Flora of North America Editorial Committee (in ed.).

3=Counts provided for trees represent sampling with a 10-factor prism, otherwise counts represent areal coverage.

4=Basal area counts are provided for individual species in each plot and as well as cumulative counts located in the lowest row for the plot.

Table 3. Preliminary Flora of Dead Creek Project Area.

Plant Names		Present in the Following Natural Communities								
Species Latin Name	Species Common Name	*Salix nigra* Temporarily Flooded Forest Alliance	*Populus deltoides* Temporarily Flooded Forest Alliance	*Fraxinus pennsylvanica-Ulmus americana* Temporarily Flooded Forest Alliance	*Cephalanthus occidentalis* Semi-permanently Flooded Shrubland Alliance	*Typha* Seasonally Flooded Herbaceous Alliance	*Persicaria*-Mixed Forb Temporarily Flooded Herbaceous Alliance	*Potamogeton-Ceratophyllum-Elodea* Permanently Flooded Herbaceous Alliance	Native to Illinois	Notes
Acalypha rhomboidea	three-seeded mercury						X		yes	
Acer negundo	box elder		X	X					yes	
Acer rubrum	red maple			X					yes	
Acer saccharinum	silver maple		X	X	X	X			yes	
Ageratina altissima	white snakeroot		X	X					yes	
Ailanthus altissima	tree-of-heaven			X					no	dominant in portions of Area B
Albizzia julibrissin	silk-tree		X	X					no	
Alisma subcordatum	southern water-plantain							X	yes	
Allium sp.	an onion		X	X						insufficient material for identification
Amaranthus tuberculatus	rough-fruited water-hemp	X					X		yes	dominant in portions of Area B
Ampelamus albidus	sandvine			X					yes	
Ampelopsis cordata	raccoon-grape			X					yes	
Apocynum sp.	a dogbane			X						insufficient material for identification
Asclepias incarnata	swamp milkweed						X		yes	
Bidens bipinnata	Spanish needles			X					yes	
Bidens vulgata	tall beggar ticks			X					yes	
Boehmeria cylindrica	false nettle						X		yes	
Broussonetia papyrifera	paper mulberry	X		X					no	
Calystegia sepium	hedge-bindweed			X			X		yes	
Campsis radicans	trumpet-creeper	X		X					no	
Carex alboiutescens	greenish-white sedge		X	X					yes	
Carex sp.	sedge					X				insufficient material for identification
Catalpa speciosa	northern catalpa		X	X					no	
Celtis occidentalis	northern hackberry		X	X					yes	frequent in sapling stratum
Cephalanthus occidentalis	buttonbush				X				yes	
Chenopodium berlandieri var. *bushianum*	pitseed goosefoot						X		yes	
Cornus drummondii	rough-leaved dogwood		X	X					yes	frequent shrub in study area
Cyperus strigosus	false nutsedge	X					X		yes	
Dactylis glomerata	orchard grass								no	
Desmodium sp.	a tick-trefoil									insufficient material for identification
Duchesnea indica	indian strawberry						X		no	
Echinochloa crus-galli	barnyard grass						X		no	
Echinodorus berteroi	tall bur-head							X	yes	
Eleocharis obtusa	blunt spikesedge						X	X	yes	
Elymus canadensis	Canada wild-rye								yes	
Elymus macregorii	early wild-rye			X					yes	a potentially rare species
Elymus virginicus	Virginia wild-rye			X					yes	
Equisetum hyemale	common scouring-rush			X					yes	
Erechtites hieraciifolia	pilewort	X							yes	
Euonymus fortunei	Chinese spindle-tree		X	X					no	prevalent in project area
Eupatorium serotinum	late eupatorium			X					yes	
Fallopia scandens	false buckwheat								yes	
Forsythia viridissima	greenstem forsythia			X					no	
Fraxinus americana	white ash			X					yes	
Galium asprellum	rough bedstraw			X					yes	
Geum canadense	white avens			X					yes	
Glechoma hederacea	gill-over-the-ground			X					no	
Hackelia virginiana	Virginia stickseed			X					yes	
Humulus japonicus	Japanese hops						X		no	
Juglans nigra	black walnut			X					yes	
Lactuca biennis	tall blue lettuce			X					yes	
Leersia oryzoides	rice cut-grass				X		X	X	yes	common wetland herb
Lemna perpusilla	minute duckweed							X	yes	
Lolium arundinaceum	reed fescue			X					no	
Lonicera japonica	Japanese honeysuckle	X		X					no	

Lonicera maackii	Amur honeysuckle		X	X					no	prevalent in project area
Ludwigia peploides	floating primrose-willow							X	yes	common aquatic herb
Lycopus americanus	American water-horehound				X	X	X		yes	
Menispermum canadense	moonseed			X					yes	
Morus alba	white mulberry		X	X					no	prevalent in project area
Muhlenbergia bushii	Bush's muhly			X					yes	
Oenothera parviflora	small-flowered evening-primrose		X	X					yes	
Persicaria amphibia var. *emersa*	water smartweed						X		no	
Persicaria caespitosa	a smartweed						X		no	
Persicaria lapathifolia	dock-leaved smartweed				X	X	X	X	yes	common wetland herb
Persicaria maculosa	lady's thumb						X	X	no	
Persicaria punctata	dotted smartweed		X				X		yes	
Persicaria sagittata	arrow-leaved tear-thumb			X					yes	
Philadelphus sp.	a mock-orange			X					no	
Phytolacca americana	pokeweed								yes	
Pilea pumila	clearweed			X					yes	
Platanus occidentalis	sycamore		X	X					yes	among largest trees in project area
Populus deltoides	eastern cottonwood		X						yes	among largest trees in project area
Potentilla norvegica	rough cinquefoil			X		X	X		yes	
Prunus serotina	black cherry			X					yes	
Quercus rubra	red oak			X					yes	
Rhus glabra	smooth sumac			X					yes	
Robinia pseudoacacia	black locust			X					no	
Rosa multiflora	multiflora rose			X					no	
Rubus bifrons	a blackberry			X					no	
Rubus occidentalis	black raspberry			X					yes	
Rubus trivialis	coastal-plain dewberry	X		X					yes	
Rumex crispus	curly dock						X		no	
Rumex obtusifolius	bitter dock						X		no	
Sagittaria montevidensis var. *calycina*	Mississippi arrowhead							X	yes	
Salix caroliniana	Carolina willow			X					yes	
Salix nigra	black willow	X							yes	dominant in upstream Area B
Sambucus canadensis	common elder			X					yes	
Sanicula sp.	a sanicle			X						insufficient material for identification
Scrophularia marilandica	eastern figwort			X					yes	
Setaria pumila	pigeon grass						X		no	
Smilax hispida	hispid greenbriar		X	X					yes	
Solanum ptychanthum	eastern black nightshade			X					yes	
Solidago altissima	tall goldenrod						X		yes	
Sorghum halapense	Johnson-grass			X					no	
Sparganium sp.	a bur-reed							X		insufficient material for identification
Stellaria media	common chickweed								no	
Symphyotrichum ericoides	white squarrose aster								yes	
Symphyotrichum lanceolatum	eastern lined aster						X		yes	
Symphyotrichum pilosum	awl aster								yes	
Torilis arvensis	field hedge-parsley			X			X		no	
Toxicodendron radicans	poison ivy			X					yes	
Trifolium repens	white clover		X						no	
Typha latifolia	broad-leaved cattail					X			yes	
Ulmus americana	American elm			X					yes	
Ulmus pumila	Siberian elm			X					no	prevalent in project area
Ulmus rubra	slippery elm		X	X					yes	
Urtica dioica	stinging-nettle						X			subspecies not determined
Verbascum thapsus	common mullein			X					no	
Verbena urticifolia	white vervain			X			X		yes	
Viola sp.	a violet			X						insufficient material for identification
Vitis riparia	river grape	X		X					yes	
Wolffia borealis	watermeal							X	yes	important waterfowl food
Xanthium strumarium	common cocklebur						X		no	

Table 4. Animal Species Known or Likely to Occur in Dead Creek Study Area.

Common Name	Genus	Specific Epithet	State Status	Notes	Aquatic System[2]	Terrestrial–Wetland Systems[2]
BIRDS						
Acadian flycatcher	*Empidonax*	*virescens*				B
American bittern	*Botaurus*	*lentiginosus*	Endangered			B
American black duck	*Anas*	*rubripes*			**W**	**W**
American coot	*Fulica*	*americana*			**Y**	
American Crow	*Corvus*	*brachyrhynchos*				**Y**
American goldfinch	*Carduelis*	*tristis*				**Y**
American Kestrel	*Falco*	*sparverius*				**Y**
American red-start	*Setophaga*	*ruticilla*				B
American robin	*Turdus*	*migratorius*				**Y**
American tree sparrow	*Spizella*	*arborea*				W
American wigeon	*Anas*	*americana*			W	W
American woodcock	*Scolopax*	*minor*				B
Baltimore oriole	*Icterus*	*galbula*				B
bank swallow	*Riparia*	*riparia*				B[1]
barn swallow	*Hirundo*	*rustica*				B
barred owl	*Strix*	*varia*				Y
bay-breasted warbler	*Dendroica*	*castanea*				W
belted kingfisher	*Ceryle*	*alcyon*			**B**	**B**
black-capped chickadee	*Poecile*	*atricapillus*				**Y**
black-crowned night-heron	*Nycticorax*	*Nycticorax*	Endangered		**B**	**B**
black-throated green warbler	*Dendroica*	*virens*				W
blackpoll warbler	*Dendroica*	*striata*				W
blue jay	*Cyanocitta*	*cristata*				**Y**
blue-gray gnatcatcher	*Polioptila*	*caerulea*				B
blue-winged teal	*Anas*	*discors*			B	B
blue-winged warbler	*Vermivora*	*pinus*				B
broad-winged hawk	*Buteo*	*platypterus*				B
brown creeper	*Certhia*	*americana*	Threatened			**Y**
brown thrasher	*Toxostoma*	*rufum*				**B**
brown-headed cowbird	*Molothrus*	*ater*				W
Canada goose	*Branta*	*canadensis*			**Y**	**Y**
Carolina chickadee	*Poecile*	*carolinensis*				**Y**
Carolina wren	*Thryothorus*	*ludovicianus*				**Y**
cattle egret	*Bubulcus*	*ibis*				B
cedar waxwing	*Bombycilla*	*cedrorum*				**Y**
chestnut-sided warbler	*Dendroica*	*pensylvanica*				B
chimney swift	*Chaetura*	*pelagica*				B
chipping sparrow	*Spizella*	*passerina*				B
cliff swallow	*Hirundo*	*pyrrhonota*				B[1]
common grackle	*Quiscalus*	*quiscula*				**Y**
common nighthawk	*Chordeiles*	*minor*				B
common snipe	*Gallinago*	*gallinago*	Watch List			B
common yellowthroat	*Geothlypis*	*trichas*				B
dark-eyed junco	*Junco*	*hyemalis*				**W**
dickcissel	*Spiza*	*americana*				B
downy woodpecker	*Picoides*	*pubescens*				**Y**
eastern bluebird	*Sialia*	*sialis*				**B**
eastern kingbird	*Tyrannus*	*tyrannus*				B
eastern meadowlark	*Sturnella*	*magna*				**Y**
eastern phoebe	*Sayornis*	*phoebe*				**B**
eastern towhee	*Pipilo*	*erythrophthalmus*				**Y**
eastern wood-pewee	*Contopus*	*virens*				B
Eurasian tree sparrow	*Passer*	*montanus*		species locally introduced in St. Louis Area		**Y**
European starling	*Sturnus*	*vulgaris*		introduced to North America		**Y**
field sparrow	*Spizella*	*pusilla*				**Y**
fox sparrow	*Passerella*	*iliaca*				**W**
gadwall	*Anas*	*strepera*			**W**	**W**
golden-crowned kinglet	*Regulus*	*satrapa*				**W**

grasshopper sparrow	*Ammodramus*	*savannarum*				B
gray catbird	*Dumetella*	*carolinensis*				**B**
great blue heron	*Ardea*	*herodias*			**Y**	**Y**
great crested flycatcher	*Myiarchus*	*crinitus*				B
great horned owl	*Bubo*	*virginianus*				**Y**
greater yellowlegs	*Tringa*	*melanoleuca*			W	W
green heron	*Butorides*	*virescens*			B	B
green-winged teal	*Anas*	*crecca*			Y	Y
hairy woodpecker	*Picoides*	*villosus*				Y
herring gull	*Larus*	*argentatus*			**Y**	
hooded merganser	*Lophodytes*	*cucullatus*			**Y**	**Y**
house finch	*Carpodacus*	*mexicanus*		introduced to North America		**Y**
house sparrow	*Passer*	*domesticus*		introduced to North America		**Y**
house wren	*Troglodytes*	*aedon*				B
indigo bunting	*Passerina*	*cyanea*				B
Kentucky warbler	*Oporornis*	*formosus*				B
killdeer	*Charadrius*	*vociferus*				**Y**
least flycatcher	*Empidonax*	*minimus*				B
little blue heron	*Egretta*	*caerulea*	Endangered		B	B
mallard	*Anas*	*platyrhynchos*			**B**	**B**
mourning dove	*Zenaida*	*macroura*				**Y**
Nashville warbler	*Vermivora*	*ruficapilla*				**W**
northern bobwhite	*Colinus*	*virginianus*				**Y**
northern cardinal	*Cardinalis*	*cardinalis*				**Y**
northern flicker	*Colaptes*	*auratus*				**Y**
northern mockingbird	*Mimus*	*polyglottos*				**Y**
northern parula	*Parula*	*americana*				B
northern pintail	*Anas*	*acuta*				W
northern rough-winged swallow	*Stelgidopteryx*	*serripennis*				B
northern shoveler	*Anas*	*clypeata*			W	W
northern waterthrush	*Seiurus*	*noveboracensis*				B
orange-crowned warbler	*Vermivora*	*celata*				**W**
orchard oriole	*Icterus*	*spurius*				B
palm warbler	*Dendroica*	*palmarum*				W
pied-billed grebe	*Podilymbus*	*podiceps*	Threatened			Y
prothonotary warbler	*Protonotaria*	*citrea*				B
purple martin	*Progne*	*subis*				B
red-bellied woodpecker	*Melanerpes*	*carolinus*				**Y**
red-eyed vireo	*Vireo*	*olivaceus*				B
red-headed woodpecker	*Melanerpes*	*erythrocephalus*				Y[1]
red-tailed hawk	*Buteo*	*jamaicensis*				**Y**
red-winged blackbird	*Agelaius*	*phoeniceus*				**Y**
ring-billed gull	*Larus*	*delawarensis*			**Y**	
rock dove	*Columba*	*livia*				**Y**
rose-breasted grosbeak	*Pheucticus*	*ludovicianus*				B
ruby-crowned kinglet	*Regulus*	*calendula*				W
ruby-throated hummingbird	*Archilochus*	*colubris*				B
rusty blackbird	*Euphagus*	*carolinus*				W
savannah sparrow	*Passerculus*	*sandwichensis*				W
semipalmated sandpiper	*Calidris*	*pusilla*			W	W
snowy egret	*Egretta*	*thula*	Endangered		B[1]	B[1]
solitary sandpiper	*Tringa*	*solitaria*			W	W
song sparrow	*Melospiza*	*melodia*				**Y**
sora	*Porzana*	*carolina*			B	B
spotted sandpiper	*Actitus*	*macularia*			B	B
Swainson's thrush	*Catharus*	*ustulatus*				B
swamp sparrow	*Melospiza*	*georgiana*				**B**
Tennessee warbler	*Vermivora*	*peregrina*				W
tree swallow	*Tachycineta*	*bicolor*				**Y**
tufted titmouse	*Baeolophus*	*bicolor*				**Y**
turkey vulture	*Cathartes*	*aura*				Y
vesper sparrow	*Pooecetes*	*gramineus*				**W**
warbling vireo	*Vireo*	*gilvus*				B
whip-poor-will	*Caprimulgus*	*vociferus*				B
white-breasted nuthatch	*Sitta*	*carolinensis*				**Y**
white-eyed vireo	*Vireo*	*griseus*				B

white-crowned sparrow	*Zonotrichia*	*leucophrys*				Y
white-throated sparrow	*Zonotrichia*	*albicollis*				Y
Wilson's warbler	*Wilsonia*	*pusilla*				W
wood duck	*Aix*	*sponsa*			B	B
worm-eating warbler	*Helmitheros*	*vermivorus*				B
yellow warbler	*Dendroica*	*petechia*				B
yellow-billed cuckoo	*Coccyzus*	*americanus*				B
yellow-breasted chat	*Icteria*	*virens*				B
yellow-crowned night heron	*Nyctanassa*	*violacea*	Endangered		B	B
yellow-rumped warbler	*Dendroica*	*coronata*				W
yellow-throated vireo	*Vireo*	*flavifrons*				B
MAMMALS						
beaver	*Castor*	*canadensis*		herbivory observed		Y
big brown bat	*Eptesicus*	*fuscus*				Y
common muskrat	*Ondatra*	*zibethicus*		dens observed		Y
coyote	*Canis*	*latrans*				Y
deer mouse	*Peromyscus*	*maniculatus*				Y
eastern chipmunk	*Tamias*	*striatus*				Y
eastern cottontail	*Sylvilagus*	*floridanus*				Y
eastern gray squirrel	*Sciurus*	*carolinensis*				Y
eastern mole	*Scalopus*	*aqauticus*				Y
eastern pipistrelle	*Pipistrellus*	*subflavus*				Y
gray fox	*Urocyon*	*cinereoargenteus*				Y
hoary bat	*Lasiurus*	*cinereus*				B
house mouse	*Mus*	*musculus*				Y
least shrew	*Cryptotis*	*parva*				Y
little brown myotis	*Myotis*	*lucifugus*				Y
long-tailed weasel	*Mustela*	*frenata*				Y
masked shrew	*Sorex*	*cinereus*				Y
meadow vole	*Microtus*	*pennsylvanicus*				Y
mink	*Mustela*	*vison*				Y
northern short-tailed shrew	*Blarina*	*brevicauda*				Y
Norway rat	*Rattus*	*norvegicus*				Y
raccoon	*Procyon*	*lotor*		tracks observed		Y
red bat	*Lasiurus*	*borealis*				Y
red fox	*Vulpes*	*vulpes*				Y
silver-haired bat	*Lasionycteris*	*noctivagans*				W
striped skunk	*Mephitis*	*mephitis*				Y
Virginia opossum	*Didelphis*	*virginiana*				Y
white-footed mouse	*Peromyscus*	*leucopus*				Y
white-tailed deer	*Odocoileus*	*virginianus*				Y
woodchuck	*Marmota*	*monax*				Y
HERPETILES						
American Toad	*Bufo*	*americanus*			B	B
black racer	*Coluber*	*constrictor*				B
broad-headed skink	*Eumeces*	*laticeps*				B
brown snake	*Storeria*	*dekayi*				B
bullfrog	*Rana*	*catesbeiana*			B	B
common garter snake	*Thamnophis*	*sirtalis*				B
Cope's gray treefrog	*Hyla*	*chrysoscelis*			B	B
crawfish frog	*Rana*	*areolata*			B	B
eastern box turtle	*Terrapene*	*carolina*			B	B
eastern gray treefrog	*Hyla*	*versicolor*			B	B
eastern milk snake	*Lampropeltis*	*triangulum*				B
eastern narrowmouth toad	*Gastrophryne*	*carolinensis*			B	B
eastern newt	*Notophthalmus*	*viridescens*			B	
eastern spadefoot	*Scaphiopus*	*holbrookii*			B	B
false map turtle	*Graptemys*	*pseudogeographica*			B	B
five-lined skink	*Eumeces*	*fasciatus*				B
Fowler's toad	*Bufo*	*fowleri*			B	B
fox snake	*Elaphe*	*vulpina*				B
Graham's crayfish snake	*Regina*	*grahamii*			B	B
green frog	*Rana*	*clamitans*			B	B
lesser siren	*Siren*	*intermedia*			B	
lined snake	*Tropidoclonion*	*lineatum*				B
milk snake	*Lampropeltis*	*triangulum*				B

northern cricket frog	*Acris*	*crepitans*			B	B
northern water snake	*Nerodia*	*sipedon*			B	B
painted turtle	*Chrysemys*	*picta*			B	B
plains garter snake	*Thamnophis*	*radix*			B	B
rat snake	*Elaphe*	*obsoleta*				B
rough green snake	*Opheodrys*	*aestivus*				B
red-eared slider	*Trachemys*	*scripta*		variety *elegans*	B	B
smallmouth salamander	*Ambystoma*	*texanum*			B	B
snapping turtle	*Chelydra*	*serpentina*			B	B
southern leopard frog	*Rana*	*sphenocephala*			B	B
spiny softshell	*Apalone*	*spinifera*			B	B
spotted salamander	*Ambystoma*	*maculatum*			B	B
spring peeper	*Pseudacris*	*crucifer*			B	B
striped chorus frog	*Pseudacris*	*triseriata*			B	B
tiger salamander	*Ambystoma*	*tigrinum*			B	B
western ribbon snake	*Thamnophis*	*proximus*				B
FISH						
black bullhead	*Ameiurus*	*melas*		variety of habitats with turbid water and slow current	Y	
blackstripe topminnow	*Fundulus*	*notatus*		moderate turbidity, slow current, mud bottom	Y	
fathead minnow	*Pimephales*	*promelas*		tolerates extremes in turbidity, temperature, and oxygen	Y	
green sunfish	*Lepomis*	*cyanellus*		tolerates extremes in turbidity, temperature, and oxygen	Y	
johnny darter	*Etheostoma*	*nigrum*		slow current and mud (or sand and gravel) bottom	Y	
mosquitofish	*Gambusia*	*affinis* or *holbrookii*		wide variety and quality of habitats; taxonomy uncertain	Y	
red shiner	*Cyprinella*	*lutrensis*		variety of habitats, tolerates turbidity	Y	

1 = species documented to occur in project area by previous site investigators (information supplied by Menzie-Cura & Associates, Inc.)

2 = explanation of codes Seasonal Use Y=potential year round use of project area
B=likely present only during summer breeding season
W=likely present only during migration and/or winter season

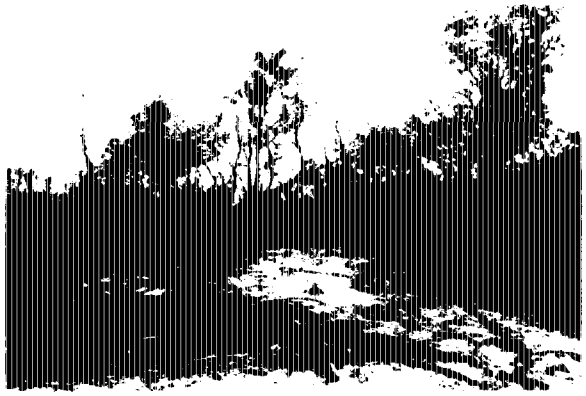
Grey shading indicates species observed in project area

3.21 Vegetation Alliance Descriptions

3.211 Forests

Forests are typically defined as areas with greater than 65 percent areal cover of trees. This definition was broadened in the Dead Creek study area to also include areas that had been cleared of canopy-sized trees and were in various stages of recovery or succession. This concept was used because Drake and Faber-Langendoen (1997) do not provide classification for anthropogenic habitats and these communities will ultimately recover as forests if protected from further disturbance.

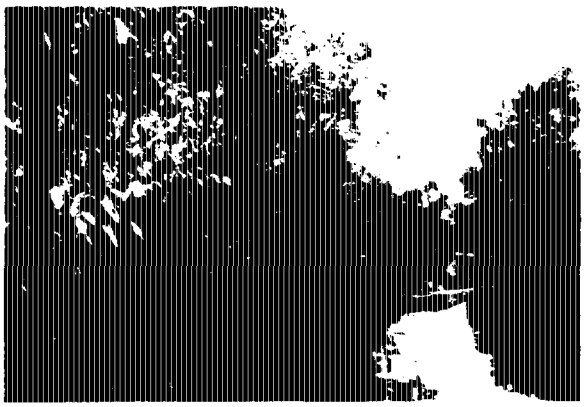
SALIX NIGRA TEMPORARILY FLOODED FOREST ALLIANCE — PFO



This forested alliance occurs along riparian corridors of streams and rivers and is subject to flooding during high water events. It is identified by the dominance of black willow in the canopy. In Illinois, other tree species may also occur to a lesser extent, including eastern cottonwood, sycamore, river birch, and green ash. No other tree species occurred with black willow in the study area. The canopy was sparse and estimated to possess 40 percent areal cover. The larger trees measured 35 cm in diameter and were 45 years old. Lianas were prevalent and included Japanese honeysuckle, trumpet-creeper, and coastal-plain dewberry. Additional plants of this alliance included paper mulberry, rough-fruited water-hemp, and false nutsedge. The stream channel of this community was scoured and consisted of sand and gravel. Both water flow velocity and substrate (moderately fast and scoured, respectively) were unique to the study area. This natural community was found only near the upstream end of the study area adjacent to Queeny Avenue.

FRAXINUS PENNSYLVANICA–ULMUS AMERICANA TEMPORARILY FLOODED FOREST ALLIANCE — PFO

This forested alliance occurs along riverbanks and floodplains. It is subject to flooding during high water events. The frequency of flooding the vegetation alliance experiences is dependent on the community elevation above the river channel. For example, some occurrences of this alliance were on relatively high banks and would not be flooded as frequently as those occurring on low areas adjacent to the creek channel. This community varied in the study area relative to the amount of disturbance to the canopy and prevalence of non-native species. In some areas, such as north of Judith Lane, the tree stratum was nearly absent and dense thickets of native and non-native lianas blanketed the slope and low vegetation. Dominant species in this disturbed forest setting included raccoon-grape, hispid greenbriar, Chinese spindle-tree, and trumpet-creeper.



A second manifestation of this community was dominated by non-native tree species. Frequent canopy species in this setting included white mulberry, Siberian elm, and tree-of-heaven. The final form of this community in the study area was dominated by native tree species. Common trees included American elm, white ash, box elder, and limited stems of silver maple and black walnut. Non-native canopy species were sometimes intermixed in this last form of the community. Throughout the study area, common saplings and shrubs of this community included paper mulberry, Amur honeysuckle, common elder, and rough-leaved dogwood. The former two species are aggressive, non-native species. White snakeroot, white avens, and false nettle were common herbaceous species. Canopy height and age varied with location and species composition. In many areas the majority of trees were shorter than 15 m, had stems 10–20 cm in diameter, and were up to 15 years old. The largest trees in this community were often escaped Siberian elms (50 cm in diameter or larger).

POPULUS DELTOIDES TEMPORARILY FLOODED FOREST ALLIANCE — PFO

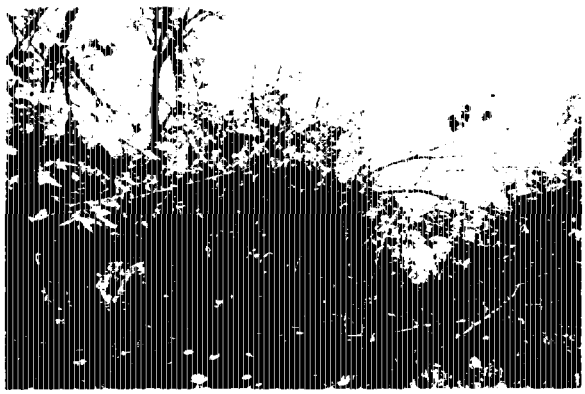
This forested alliance is found within riparian corridors of streams and rivers. It is inundated for short periods of time during high water events. The community is recognized by its dominance of tall, deciduous trees with eastern cottonwood as the primary canopy component. In the study area, eastern cottonwood is the most frequent species, with sycamore, box elder, and American elm often present. White mulberry and Siberian elm were frequent non-native trees. Understory woody species included northern hackberry, Chinese spindle-tree, and Amur honeysuckle. Herbaceous species were both scarce and patchy in distribution. Common species were white snakeroot and dotted smartweed. The canopy of this alliance exceeded 20 m in height, with the larger trees 80–200 cm in diameter and up to 70 years old. Substrate varies for this community throughout its range; from bare, newly formed alluvial bars to floodplain flats and terraces. Substrate also varied within the study area.

3.212 Shrublands

Shrublands are areas that lack complete tree canopies during mature stages. Though some trees are generally present, the dominant stratum in the alliance is the shrub layer.

The small, woody vegetation usually occurs in broken mats or clumps with exposed substrate (soil or water) and herbaceous plants in between.

CEPHALANTHUS OCCIDENTALIS SEMI-PERMANENTLY FLOODED SHRUBLAND — PSS

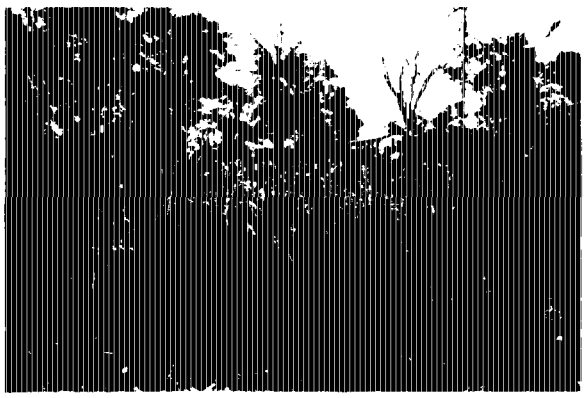


As its name indicates, this alliance is a shrub-dominated alliance with buttonbush representing the majority of cover. In the study area, this habitat was limited to a small occurrence immediately downstream of Jerome Lane. Canopy-sized trees were scarce and limited to small silver maples on the margin of the alliance. The shrub layer was almost entirely dominated by buttonbush growing in about 20 cm of water. These shrubs grew in thicket-like colonies with open water and herbs interspersed between them. Some silver maple saplings were present in this stratum as well. Dock-leaved smartweed and rice cut-grass were the dominant herbs.

3.213 Herbaceous Alliances

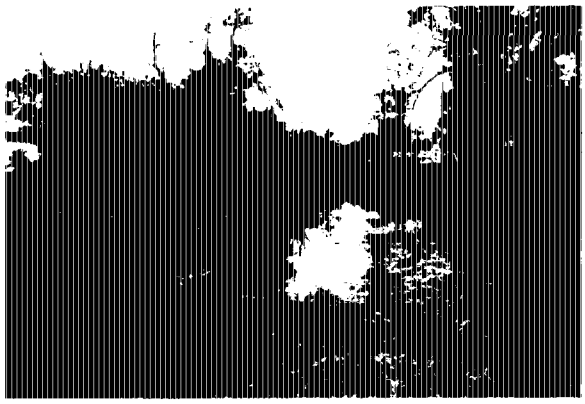
Similar to shrublands, herbaceous alliances are those communities that lack complete tree canopies. In this case, however, the dominant stratum was the herb layer; these communities had very little above ground living material in the winter season, though dead persistent stems may have occurred.

TYPHA SEASONALLY FLOODED HERBACEOUS — PEM



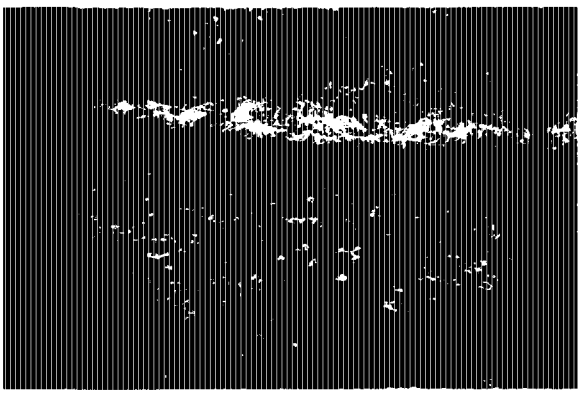
This vegetation alliance is identified by the dominance of grass-like herbs (usually cattails) growing in seasonally flooded soils. Within the project area, this natural community was limited to two small occurrences: one immediately downstream of Judith Lane and a second occurrence near Falling Springs Road. Silver maple was the only woody species to occupy this community, and it was limited to a few saplings and seedlings. Broad-leaved cattail dominated the alliance and formed a thick stand of emergent vegetation. Other common herbs included rough cinquefoil, American water-horehound, and dock-leaved smartweed. Standing water was present during the survey to a depth of 10 cm.

PERSICARIA–MIXED FORB TEMPORARILY FLOODED HERBACEOUS — PEM



This vegetation alliance is very diverse and poorly defined. It typically occurs as exposed, saturated soil that has been uncovered as temporary pools recede during the growing season. Herbaceous species are reported to sometimes differ from year to year. In the study area, this alliance had two different forms based on substrate exposure. In the upstream portion of the study area, above Judith Lane, the community was almost entirely dominated by tall stems of rough-fruited water-hemp with tiny smartweed seedlings underneath. These plants occurred on exposed, wet mud at the edge of an open water channel. Downstream of Judith Lane, the community grew in shallow water and at the edge of the bank. The soil was nearly covered by vegetation, water, and/or leaf litter with very limited exposed mineral soil. Dock-leaved smartweed and rice cut-grass were herbaceous species that were nearly always present. Other frequent species in this form of the alliance were eastern lined-aster, water smartweed, dotted smartweed, and American water-horehound. Water depth ranged from 0 to mostly less than 15 cm deep in this community.

POTAMOGETON–CERATOPHYLLUM–ELODEA PERMANENTLY FLOODED HERBACEOUS — PAB



This vegetation alliance is another variable and poorly defined community. It is described as typically possessing standing water less than 2 m deep with less than 25 percent emergent or floating-leaved plants and often 25 percent or more submerged vegetation. In the study area, this vegetation alliance was generally dominated by floating primrose-willow and southern water-plantain. Several other species were present to lesser extent, including rice cut-grass, dotted smartweed, minute duckweed, watermeal, Mississippi arrowhead, and tall bur-head. Water depth commonly ranged from 10–50 cm in this community.

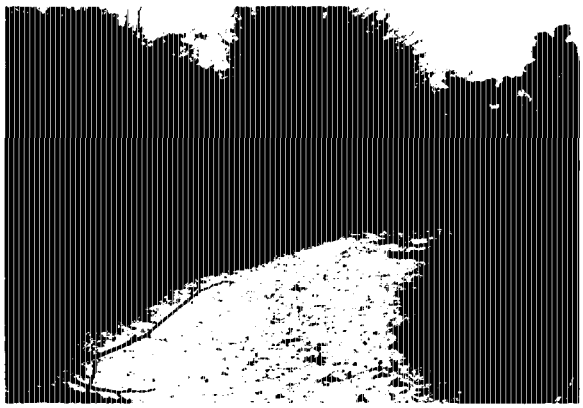
3.214 Open Water Communities

The open water community is defined as areas of standing water that lacked sufficient aquatic vegetation to be considered as one of the herbaceous alliances. In the study area,

this community occurred in several locations and, in some instances, appeared to be shade or water persistence related.

TEMPORARY OPEN WATER — PUB

This natural community was located in the upstream portion of the study area above Judith Lane (Area B). It is best described as a long channel of shallow water (usually less than 50 cm deep) that is dependent on relatively recent precipitation to maintain its level.



Portions of the shore and central channel were devoid of water and saturated substrate (firm mud) was exposed. Following a rain event during the site survey, these previously exposed areas had become inundated again. It was apparent through examination of the substrate and vegetation that this community is unlikely to maintain substantial standing water through the entire growing season. The size of this community likely varies from year to year depending on the amount of rainfall. During drought years, this community will likely be small or absent and largely replaced by *Persicaria*–Mixed Forb Temporarily Flooded Herbaceous Alliance. In heavy rainfall years, this community will be larger and impose on the herbaceous vegetation at the edge of the channel.

PERMANENT OPEN WATER — POW

This natural community was present the middle and downstream ends of the study area, below Judith Lane. It occurred both as relatively large, open pond-like areas and narrow channels located beneath the canopies of large deciduous trees (e.g., eastern cottonwood, sycamore, Siberian elm). In the study area, it is defined as somewhat shallow, open water that is both relatively permanent and relatively devoid of vegetation. The size of the community appears to be more constant than the previous open water community. No significant difference could be observed in community size following a rain event during the site visit. Only during larger storm events and spring run-off would the open water potentially overflow its bank and impinge on the forested alliances.

3.22 Rare Species

Notes on rare species occurrences were maintained during natural community and wetland mapping surveys of Dead Creek. One state threatened species of bird and one potentially rare grass was observed. Definitions of rarity and criteria for listing follow the Illinois Endangered Species Protection Board (2000).

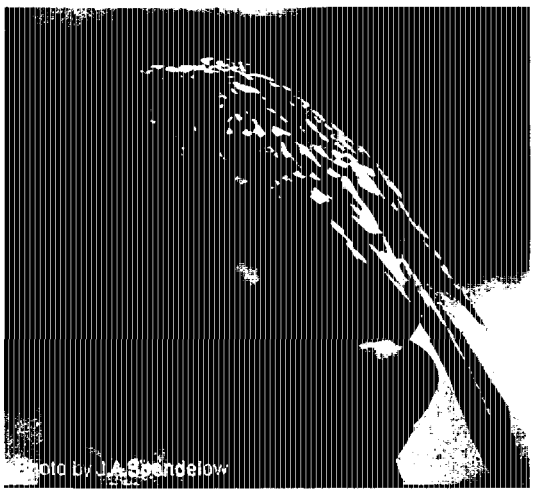
- Illinois Endangered Species: Any species that is in danger of extinction as a breeding species in Illinois.

- Illinois Threatened Species: Any breeding species that is likely to become a state endangered species within the foreseeable future in Illinois.

- Criteria For State Listing: A species shall be included on the official list of endangered and threatened species when one or more of the following criteria exists: (1) Species included in the Federal list of Endangered or Threatened Species, (2) Species proposed for Federal Endangered or Threatened Species which occur in Illinois, (3) Species which formerly were widespread in Illinois but have been nearly extirpated from the State due to habitat destruction, collecting, or other pressures resulting from the development of Illinois, (4) Species which exhibit very restricted geographic ranges of which Illinois is a part, (5) Species which exhibit restricted habitats or low populations in Illinois, or (6) Species which are significant disjuncts in Illinois (i.e., the Illinois population is far removed from the rest of the species' range).

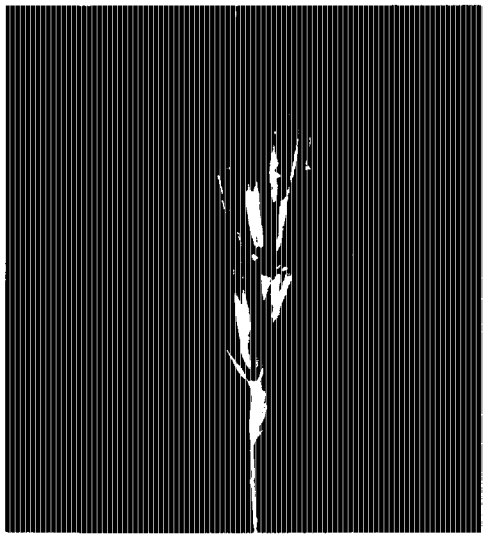
Brown Creeper (*Serthia americana*)

A small, brown-streaked bird related to nuthatches, the brown creeper occurs throughout most of the United States and southern Canada. As its name implies, it forages by moving closely over the stem and main branches of trees. Its diet is comprised largely of insects, though some seeds and nuts are eaten as well (Ehrlich *et al.* 1988). This bird commonly nests in conifer, mixed conifer-hardwood, or hydric forests. Special habitat requirements include standing dead trees with loose bark for feeding and trees greater than 25 cm in diameter for nesting (Thomas *et al.* 1979). This species was heard singing on 8 November 2000 from Area B (upstream of Judith Lane). This area possessed a few, very large diameter, standing dead trees. Brown creepers were also observed by previous site investigators (information supplied by Menzie-Cura & Associates). It is likely that brown creeper use of the Dead Creek study area is minor due to limited intact forest and the young age of most trees.



Early Wild-rye (*Elymus macregorii*)

This recently described species belongs to a group of taxonomically challenging grasses. Early wild-rye possesses a single spike of congested flowers tipped by long bristles. It occurs primarily in rich forests and floodplains in eastern United States and has been



documented from five counties in Illinois (e.g., Fulton, Jersey, Knox, Peoria, Union) based on review of museum specimens performed by Campbell (in ed.). Because this species occurs in floodplain forests, a community that has largely been converted to agricultural land in Illinois, this species may be extirpated from portions of the state. Though this species is not formally listed by the Illinois Endangered Species Protection Board, early wild-rye appears to be rare in the state and information on its occurrence is being supplied in the event it becomes a state-tracked species. The only occurrence of this grass in the Dead Creek study area was from a *Fraxinus pennsylvanica–Ulmus americana* Temporarily Flooded Forest in Area C. It was located on the east bank of Dead Creek, upstream of Cahokia Street within wetland characterization plot C-4. The plants were limited to a small area (2 m^2) and were senescent with dispersing fruits at the time of observation. Poison ivy, trumpet-creeper, white snakeroot, rough-leaved dogwood, and black raspberry were associated species.

3.23 Invasive Plant Species

Invasive plants are generally considered to be species that can grow to densities that exclude other plants. Invasive species can be economically important when they interfere with agricultural species or can be ecologically important when they alter the character of native plant communities. Invasive species can be further classified into two categories: those that are native to an area and those that are not. Native invasive species are plants that are historically known to occur in an area prior to extensive human occupation that, due either to changing land use practices or introduction of foreign genotypes, have subsequently become problematic. The following discussion will be restricted to non-native invasive species.

The Dead Creek study area is occupied to a significant extent by non-native species. Though exotic herbaceous species are present, it is the introduced and escaped woody species found in the forested communities that are most prevalent. In the tree stratum, white mulberry, Siberian elm, paper mulberry, and tree-of-heaven are frequent throughout the study area and, in some cases, locally dominant. These trees alter the character of native riparian forests by replacing native plants. Common non-native lianas in the study area included trumpet-creeper, Japanese honeysuckle, and Chinese spindle-tree. Not only do these species produce very different fruits as compared to the native

river grape (seeds within a dehiscent fruit *versus* fleshy berries, respectively) but the non-native lianas were also frequently seen growing as a dense mat over the ground or other woody species. This growth form stagnates native plant regeneration. The growth form of the Amur honeysuckle, the common non-native shrub in the study area, likewise abrogates native plants by occupying space.

Because of the abundance of non-native plant species, good opportunity exists for habitat improvement should remediation activities occur. If floodplain sediments are removed, native species can be planted and non-native species controlled in the riparian communities of Dead Creek.

3.24 Wetland Characterization

Results of surveys and community plot sampling along the approximately 2.4 km of Dead Creek indicate the site has a highly modified wetland system that, for much of the season, appears to act more as a set of shallow ponds rather than a riverine system as its name would imply. The riparian communities portray classic symptoms of residential development, including narrow and fragmented forests, young canopy trees, limited vertical diversity in terrestrial habitats, bisection by numerous roads, disturbed drainage, and a high incidence of non-native species. Dead Creek, nonetheless, plays an important role in the local storm water flow, is a wildlife travel corridor, and is utilized by rare and uncommon plant and animal species.

The Dead Creek project area is subdivided into five areas referred to as Area B, Area C, Area D, Area E, and Area F[1]. The limits of each area and a general description of vegetation alliance and condition follow.

Area B

The upstream most section of the study area occurred between Queeny Avenue and Judith Lane. This stretch possessed a poorly defined stream channel with soft mud substrate (downstream) and sand and gravel substrate (upstream). Essentially no aquatic plants occurred in the open water areas indicating the water likely did not persist without rain events to restore it. The immediate eastern shoreline was generally a broad flat of exposed, saturated substrate dominated by herbaceous species (e.g., rough-fruited water-hemp, dock-leaved smartweed). This herbaceous community was bordered on the upland side by a relatively continuous band of early successional temporarily flooded forest. Most of the native trees expected to occur in this community, such as green ash and American elm, had been replaced by non-native species (e.g., white mulberry, tree-of-heaven, paper mulberry). The western shoreline had a more abrupt bank and was largely cleared of canopy species. Regeneration there was being stagnated by a dense and continuous covering of vines and lianas over the woody vegetation. This area was extensively used by sparrows and wrens (e.g., song sparrow, field sparrow, house sparrow, Eurasian tree sparrow, Carolina wren) due to the abundance of concealing

[1] For purposes of this report, Area F is defined as the stretch of Dead Creek between IL Route 3 and Water Street.

vegetation. In general, Area B was not closely bordered by homes but instead had several large fields and open areas abutting the riparian corridor.

Area C

This section of the study area, positioned between Judith Lane and Cahokia Street, is considerably different from Area B both in terms of hydrology and vegetation. Very little exposed substrate occurred in this area; rather water, vegetation, and leaf litter concealed the creek bottom. Herbaceous communities were much more dense and frequently grew out of shallow water, rather than open wet soil. The eastern shoreline consisted of a continuous strip of floodplain forest containing a mixture of native and non-native tree species. Though of young age and frequently with abundant non-native trees and lianas, this section possessed some of the better remaining examples of *Fraxinus pennsylvanica–Ulmus americana* Temporarily Flooded Forest. This community was found to harbor early wild-rye, a recently described species that appears to be rare in Illinois. The western shoreline of Area C was very different, due to close residential development. The forest was fragmented and open lawns bordered the creek in several areas. The water appeared to be more permanent as evidenced by the sparse aquatic vegetation present.

Area D

This portion of the study area, located between Cahokia Street and Jerome Lane, can be generally described as a linear pond that is split into two sections by Kinder Street. Both sections (above and below Kinder Street) are relatively similar. The channel is shallow (less than 100 cm deep), stagnant, and vegetated by several species of aquatics including floating primrose-willow, southern water-plantain, tall bur-head, and blunt spikesedge. A somewhat continuous band of rice cut-grass with smartweeds and other herbs (*Persicaria*–Mixed Forb Temporarily Flooded Herbaceous) occurred along the edge of the creek channel and in shallow water. On the stream banks was found the *Fraxinus pennsylvanica–Ulmus americana* Temporarily Flooded Forest alliance. This community varied in terms of both age and non-native species influence, and was cleared in a few areas due to residential lots.

Area E

This long section began below Jerome Lane and ended upstream of Route 3. It was consequently a variable section. The channel was relatively deep and open in the upstream portion of this area (in the vicinity of Club Lane) and frequently over 1 m in depth. Large portions of the upper channel are sparsely vegetated with free-floating herbs (e.g., minute duckweed, watermeal) and a few rooted aquatics near the edge. Further downstream, the creek became a narrow channel frequently shaded by large tree canopies. In these shaded sections of Dead Creek, open water in the channel was essentially devoid of aquatic vegetation. The *Persicaria*–Mixed Forb Temporarily Flooded Herbaceous Alliance was nearly absent throughout Area E, represented only by small patches in the shallow water edges of the channel. The forested community was

represented by two different alliances: *Fraxinus pennsylvanica–Ulmus americana* Temporarily Flooded Forest and *Populus deltoides* Temporarily Flooded Forest. The latter community was prevalent near the downstream section of Area E in the vicinity of the intersecting parking lot. Throughout this area, the forested communities were encroached on and fragmented by streets, residential areas, and parking lots.

Area F

For purpose of this report, the description of Area F is confined to the upstream section between Route 3 and Water Street. The channel of Dead Creek in this section is well defined with vertically cut banks. No aquatic vegetation was observed in the creek. Significant portions of the adjacent riparian forest was either entirely cleared of canopy trees or fragmented with isolated large trees. Construction of a gravel parking lot on the northwest side of the channel had eliminated adjacent forests. This portion of the study area was historically vegetated by a *Populus deltoides* Temporarily Flooded Forest, as evidenced by several, large, remaining eastern cottonwood trees. Clearing, ditching, and invasive species, however, appeared to have altered the site and the regenerating community had more in common with *Fraxinus pennsylvanica–Ulmus americana* Temporarily Flooded Forest. Non-native woody species were common and even dominant in the liana, sapling, and shrub strata. Two large diameter pipes emerged from the bank and crossed Dead Creek above the water surface. Current construction was occurring for culvert improvement near Water Street.

3.25 Soil Survey

Three different soils were reported to occur in the Dead Creek project area (Illinois Watershed Management Clearinghouse 2000). In the upstream portion of Area B, immediately south of Queeny Avenue, the landscape was considered Urban Land. This area was formally derived from alluvial soils and had since been modified by various earth moving and filling activity. The majority of Area B was Haynie Silt Loam. This soil is identified by its high composition of silt particles combined with lesser amounts of sand and clay. It is further characterized by 0–2 percent slope and occasionally flooded terrain. Beginning just upstream of Judith Lane (Area B) and occurring for the remainder of the length of the project area (to Route 3) were soils referred to as Shafton–Urban Land Complex. This soil, similar to Urban Land, is found in areas with a high degree of landscape modification. This soil is also described as having 0–2 percent slope and occasionally flooded terrain.

3.3 ANIMAL USE CHARACTERIZATION

Animal use of the Dead Creek study area was generally limited to species that do not require large tracts of pristine land and can tolerate some level of habitat modification and disturbance. These animals are mostly species that can utilize residential areas for foraging and/or shelter or are smaller vertebrates that have limited space requirements. The juxtaposition of forest, shrubland, and open water did provide for some landscape diversity. Additionally, the proximity of the site to the Mississippi River and presence of

wetlands provided feeding areas for migratory waterfowl and wading birds. The early age of most of the communities (due to disturbance), however, provided limited structural diversity.

Several species of bird were observed using Dead Creek and the adjacent riparian corridor for foraging and roosting during site visits from 2 and 8–11 November 2000. Many of the birds seen were those that frequent residential areas (e.g., American robin, northern cardinal, blue jay, northern mockingbird) and could use the project area for nesting. Carolina wrens, several species of sparrows, and Eurasian tree sparrows were noted utilizing the dense shrub and liana thickets north of Judith Lane in Area B. European starlings were seen roosting in large flocks in the larger trees along Dead Creek. Limited use of the open water sections by waterfowl and wading birds does occur. These open water areas of Dead Creek are likely also used during the breeding season for feeding by swallows, phoebes, and flycatchers. On two occasions, a great horned owl was seen in or near the study area. Bird species known or likely to occur in the Dead Creek study area are presented in Table 4. This table was created by field observations of bird sightings, notes on available habitat and condition, and gathering relevant range and life history information from National Geographic (1999), Korotev (1998), and Illinois Natural History Survey (2000).

Mammals using Dead Creek habitats were primarily rodents, small omnivores, and likely bats and insectivores (i.e., shrews). Eastern chipmunks and gray squirrels were seen frequently during the surveys. Raccoon tracks were found nearly everywhere the ground surface was conducive to track formation. The only large mammal documented in the study area was white-tailed deer. Numerous tracks were observed of this species. Mammal species known or likely to occur in the Dead Creek study area are presented in Table 4. This table was created by field observations of mammal sightings, notes on available habitat and condition, and gathering relevant range and life history information from Schwartz and Schwartz (1981) and Illinois Natural History Survey (2000).

Few amphibian and reptiles (collectively called herpetiles) were observed in the study area due to the time of survey. However, the stream channel and adjacent riparian forest provide habitat for a number of species that can occur in small, somewhat disturbed, water bodies. Animals that are ubiquitous in many wetland types in the United States, such as bullfrogs, northern cricket frogs, painted turtles, red-eared sliders, and common garter snakes, were expected to utilize Dead Creek for feeding and shelter. Herpetile species known or likely to occur in the Dead Creek study area are presented in Table 4. This table was created by field observations of amphibian and reptile sightings, notes on available habitat and condition, and gathering relevant range and life history information from Phillips *et al.* (1999), Johnson (2000), Conant and Collins (1991), and Illinois Natural History Survey (2000).

Though Illinois has a rich fish fauna, it was expected that few species would be found in the project area. Due to blocked drainages and elevated culverts, much of the upper Dead Creek functioned more as a series of linear, shallow ponds rather than a flowing stream course. Therefore, during much of the year, it would be difficult for fish to move through

the watershed to escape declining water levels or other stressful conditions (e.g., high water temperature, low dissolved oxygen, avian predators). Furthermore, Dead Creek generally possessed turbid water and had a soft bottom, eliminating species that require clear water and firm substrate. Blackstripe topminnows were seen in the upstream portion of Area E in approximately 50 cm of water. Other fish that could be found in the Dead Creek study area are listed in Table 4. This table was created by field observations of fish surveys, notes on available habitat and condition, and gathering relevant range and life history information from Fuller *et al.* (1999), McClane (1978), Missouri Department of Conservation (2000), Page and Burr (1991), and Illinois Natural History Survey (2000).

Invertebrate species use Dead Creek for feeding, reproduction, and larval habitat. Odonate larvae of both suborders Anisoptera and Zygoptera (dragonflies and damselflies, respectively) were observed. This order of insects has predaceous larvae. Their presence likely indicates that a prey base of smaller arthropods occurs in Dead Creek. Other predaceous invertebrates observed in Dead Creek were giant water bugs (Order Hemiptera). This species feeds on insects and tiny vertebrates (e.g., frog and salamander larvae). A relatively large crustacean (Order Amphipoda) was also observed south of Jerome Lane. This indicates fairly permanent standing water conditions for the upstream portion of Area E.

3.4 WETLAND FUNCTION–VALUE ASSESSMENT

The Illinois Department of Natural Resources (IDNR) currently does not recognize a formal procedure for completing wetland function-value assessments. Work is being completed by the United States Army Corps of Engineer's (USACE) St. Louis District office and IDNR that will generate wetland reference data in St. Clair County for use with the USACE's Hydrogeomorphic Assessment (HGM) technique. This technique utilizes wetland hydrogeomorphic classification, comparison to reference wetlands in the region, and set functional indices to determine wetland functional value. Because the necessary data for a comprehensive HGM assessment are not available at the time of writing, we have based this narrative assessment on HGM technique definitions and criteria in an attempt to facilitate agency review. Note that the HGM technique requires quantitative sampling of many wetland elements and processes. The objective of these initial field efforts was to collect baseline ecological data for potential use during restoration planning. Functions have been discussed in general terms, and are not intended to address each specific variable included in formal HGM analyses.

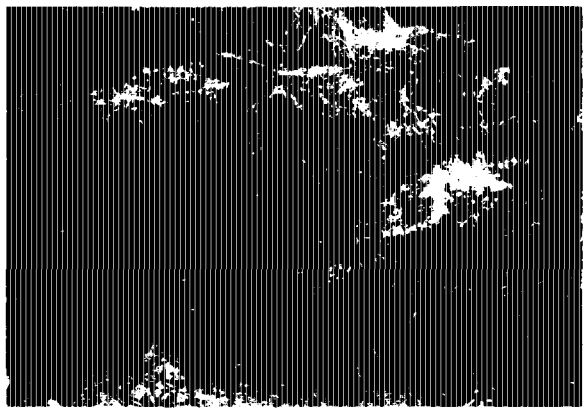
The HGM technique identifies seven distinct wetland types based on factors that influence how wetlands function. These factors include: (1) geomorphic setting, (2) water source, and (3) hydrodynamics. This technique also identifies regional wetland subclasses based on site-specific wetland characteristics. Based on this method, the upper approximately 2,400 m of the Dead Creek study area would be classified as a Depression (Open, Surface Water) Wetland. This determination is based on the fact that the system occurs in a series of topographic depressions with closed elevation contours that allow for the accumulation of surface water (Smith *et al.* 1995). In depression

systems, the direction of water movement normally is from the surrounding uplands to the center of the depression. These systems may have any combination of inlets and outlets. Given that the primary sources of water in this system include precipitation, overland flow, and interflow between basins, the HGM regional subclass "Open, Surface Water" would be assigned. It is likely that downstream portions of the Dead Creek system (i.e., unculverted stretches in Area F) would be classified as true riverine systems under this assessment method.

The following sections provide a narrative discussion of existing wetland functions in the upper portion of the Dead Creek study area from Area B to Area F. Functions discussed are based on the 15 wetland functions identified in the HGM methodology. Given the nature of this project, discussion has been limited to provide a general depiction of existing site conditions.

3.41 Dynamic Surface Water Storage

The portion of the Dead Creek study area encompassed by Areas B–F is functionally similar to a series of interconnected detention basins. Urbanization of the surrounding landscape has resulted in a high percentage of impervious surface including roads, parking areas, and buildings. This factor, combined with multiple culvert crossings and storm drain outlets, has altered the natural hydrology and flow regimes of this system. Each of the basins, as separated by road crossings, responded to inputs of overland runoff somewhat independently of each other. This was primarily due to culvert restrictions and culvert elevations that were, in several areas, above the channel bed elevation. Due to these factors, overland flows were detained in the creek bed for prolonged periods and downstream channel flows through the length of the system were limited to full pond conditions when surface water elevations exceeded culvert elevations. The eight basins included in this portion of the Dead Creek study area were able to detain large amounts of overland runoff, and desynchronize or gradually release flood flows that would have otherwise emptied directly to riverine portions of Dead Creek south of Route 3.



Dynamic surface water storage capacity refers to a wetland's ability to slow and partially detain overland flows from uplands, or overbank flows during flood events, prior to flows reaching the open channel or basin associated with the subject wetland. Dynamic surface water storage capacity was not considered to be an important function of the Dead Creek wetlands in this upper portion of the system. This is because Areas B–F were channelized and contained few functional floodplain wetlands. Rather than flows passing through floodplain wetland transition zones prior to entering a water body, overland flow drained directly into the channel or impounded water. Dense herbaceous vegetation persisted in the *Persicaria*-Mixed Forb

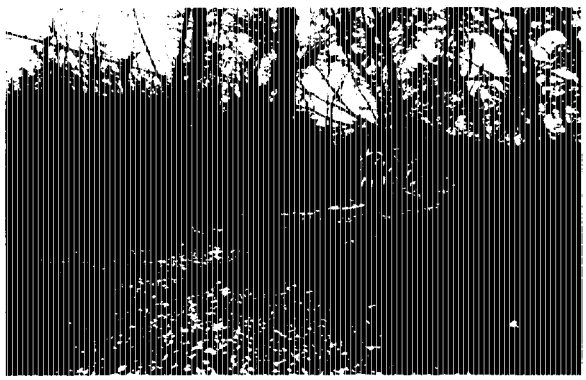
communities, and dense woody stems occurred throughout areas mapped as *Fraxinus–Ulmus* Temporarily Flooded Forest community. This vegetation may have contributed to site roughness and slow overland flow velocities. However, long-term surface water storage was likely a more important function provided by this portion of the study area.

3.42 Long-Term Surface Water Storage

Unlike the dynamic surface water storage function that relates to a wetlands ability to slow flowing water, long-term surface water storage relates to the wetlands ability to store water once overbank flow retreats into the channel or basin, and is present for durations in excess of seven days. Long-term surface water storage was a primary function of the upper stretch of Dead Creek given the multiple restricted outlets present. To some extent, each of the interconnected basins included in Areas B–F acted as detention ponds for overland runoff from adjacent developed areas. During site investigations, surface water depths in aquatic communities varied from 30–130 cm. Although investigations were limited to a single week in the field, aquatic communities observed were well established and supported aquatic plant and animal species typical of shallow pond ecosystems in the region. Several of the basins included relatively deep organic muck substrates indicative of long-term organic settling and decay.

As discussed above, culvert elevations that limited downstream flows were the primary factor allowing long-term ponding in this system. Continuous flows from Area B to riverine portions of Area F were likely limited to periods with high runoff when the individual basins were at full holding capacity and surface water elevations reached culvert heights throughout the length of the system. All of the areas investigated for the purposes of this characterization study showed signs of being able to expand surface water detention capacity beyond the apparent limits of developed aquatic community types. This ability to expand water detention was evidenced by identifiable debris lines, silt deposits, and ice damage to woody stems.

3.43 Energy Dissipation



Energy dissipation functioning relates to the physical expression of flow velocities (i.e., deposits of woody debris, gravel deposits, and channel scours) and how these occurrences contribute to further slowing channel velocities. Energy dissipation functioning in the study area was primarily attributable to standing surface water that in effect halted flow velocity in several basins and allowed for gradual release to downstream areas. A few portions of the study area demonstrated more of the traditional indicators of energy dissipation. These indicators were limited to areas less-frequently ponded that maintain some riverine characteristics. Area B included the most pronounced signs of energy

dissipation in the study area. These signs included scoured gravel deposits and braided channels within the mapped *Salix nigra* Temporarily Flooded Forest community; buildup of coarse woody debris, including large tree trunks, throughout the upper channel; and fine woody debris along channel edges. These elements contributed to channel surface roughness that in turn contributed to energy dissipation of flow velocities.

3.44 Subsurface Storage of Water

As periodic draw down of surface water and reduction in soil saturation occurs, water storage capacity in drained soil pores becomes available. This storage capacity provides available volume for storing surface flows that would otherwise directly increase channel or basin inundation. Subsurface storage functioning is largely dependent on soil porosity and rate of water level fluctuations. Wetland soils throughout the study area consisted of poorly and very poorly drained silt loams, most of which were permanently saturated or flooded. Subsurface storage of water was unlikely to be a significant function performed by study area wetlands given the low porosity of project area silt loams, and the apparent permanence of soil saturation throughout the project area. Upland soils present within the mapped *Fraxinus pennsylvanica–Ulmus americana* Temporarily Flooded Forest community type likely offered some subsurface storage capacity within the riparian corridor.

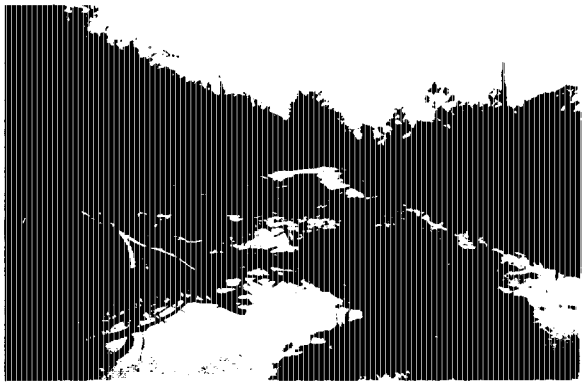
3.45 Moderation of Groundwater Flow or Discharge

This function refers to the ability of the receiving wetland to modify groundwater flow rates entering the wetland from up-gradient sources. Similar to a wetland's capacity to alter the rate of overland runoff, modification of groundwater flows enables a wetland to buffer downstream surface bodies from the effects of cumulative hydrologic inputs. The Dead Creek study area is located on a flat terrace within the Mississippi plain. This flat topography is not conducive to groundwater discharge or seep formation. No seeps were noted during our investigations, and the ability of the upper Dead Creek wetlands to perform this function is likely limited.

3.46 Nutrient Cycling

Analysis of the nutrient cycling function is intended to measure the ability of a wetland to maintain living biomass and detrital stocks. The balance achieved in a given wetland system to convert organic matter into primary productivity and in turn release nutrients back into the cycle as detritus is indicative of a wetlands ability to perform other functions. A proper assessment of this function should limit consideration of nutrient imports from outside of the wetland. The potential for the wetland to absorb nutrients in runoff is discussed below as part of the Removal of Imported Elements and Compounds function.

Seven distinct plant community types had been mapped in the project area. Each contributed to the uptake of nutrients for primary productivity and contributed to existing detrital stocks. Perhaps the greatest contribution of seasonal detritus came from the three



deciduous forested communities types: *Populus deltoides* Temporarily Flooded Forest, *Fraxinus pennsylvanica–Ulmus americana* Temporarily Flooded Forest, and *Salix nigra* Temporarily Flooded Forest. The measured average basal area for these stands in the study area was approximately 67 m/ha. Approximately 3.26 ha of deciduous forest communities were mapped in close association with the wetland study area. Detrital stocks, including leaf litter, downed woody debris, and standing snags, were noted throughout the length of the project area. Observed vigor and density of plant communities and few signs of eutrophication, or excess nutrients, indicated that net productivity and annual detritus turnover rates were in balance. Our ability to properly assess this function was limited by the lack of reference site data and quantitative measures of litterfall and net biomass production within the study area.

3.47 Removal of Imported Elements and Compounds

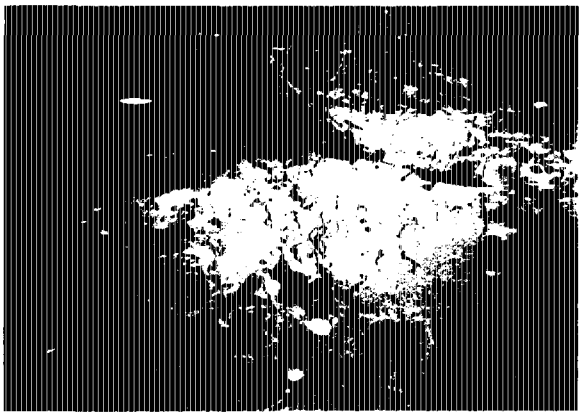
Removal of imported elements and compounds was a primary function performed by the project area wetlands. The urbanized landscape surrounding the study area, and the geographic position of the wetlands as headwaters to a riverine system enabled this portion of Dead Creek to intercept nutrients and contaminants from non-point overland runoff and point sources including storm drain outlets. The ability of the wetland basins to perform this function was further enhanced by long-term water detention capacity and the presence of both dense woody and herbaceous vegetation capable of removing elements through absorption into rhizomes and roots.

Additional variables contributing to the wetlands ability to trap nutrients included an abundance of surfaces available for microbial activity, sorptive properties of the study area soils, and deep organic sediment. Microbial activity removes or renders inactive many chemicals and compounds. Microbes are typically associated with complex surfaces such as leaf litter, humus, and plant surfaces. Aquatic vegetation in the *Potamageton–Cerataphyllum–Elodea* Permanently Flooded Herbaceous community throughout the study area provided substantial surface area for microbial activities. Fine textured soils such as the project area silts typically offer greater sorption capacities than more coarse soil types.

3.48 Retention of Particulates

Similar to the study area wetlands ability to remove dissolved substances in overland runoff, this system is able to slow and detain runoff waters and allow suspended particles to settle out of the water column. Restricted outlets in each of the basins prevent significant sediment flushing to downstream portions of Dead Creek. Over time, it is likely that the particulate matter accumulates in the lower portions of the basins and

becomes colonized by aquatic and emergent vegetation. The development of dense herbaceous communities within shallow portions of the basins likely augments retention functioning by increasing the roughness factor of the wetland and further slowing flow rates. The communities best able to support this function were the *Persicaria*–Mixed Forb Temporarily Flooded Herbaceous and *Potamageton–Cerataphyllum–Elodea* Permanently Flooded Herbaceous aquatic beds that occasionally covered the width of the basins and were therefore exposed to the largest percentage of flows. Surface runoff and storm drain outflows that emptied directly into open water portions of the study area wetlands were immediately slowed regardless of the presence of intercepting vegetation. In these situations, particulate matter was able to settle as a direct result of change in velocity.



3.49 Organic Carbon Export

Organic carbon export refers to the process through which dissolved and particulate organic carbon is exported from a wetland through leaching, flushing, and erosion. The ability of the study area wetlands to perform this function was limited to processes of leaching. It is likely that dissolved organic carbon (DOC) was leached from detritus and organic muck and transported via surface flows to downstream portions of the study area. Due to the relatively closed nature of this depression wetland system, much of the leached DOC was likely used by microbial processes within the basin.

3.410 Maintain Characteristic Plant Community

Seven vegetation alliances were mapped in the study area. Community determinations were based on Drake and Faber-Langondoen (1997). Because the portion of Dead Creek investigated for the purposes of this report was located in a residential area, the plant communities represented included some of the typical alliance characteristics, but were largely dominated by weedy and often non-native invasive species. Non-native invasive species common, and often dominant, throughout the study included:

tree-of-heaven
paper mulberry
trumpet-creeper
barnyard grass
Chinese spindle-tree
gill-over-the-ground
Japanese hops
reed fescue
Japanese honeysuckle
Amur honeysuckle
white mulberry
smartweed
lady's thumb
black locust
multiflora rose
curly dock
pigeon grass
Johnson grass
common chickweed
field hedge-parsley
Siberian elm
common mullein
common cocklebur

Determinations of plant invasiveness are based on Shackleford, Padley, and Schultes (1998) and on-site observations.

Few portions of the study area maintained community characteristics similar to the more mature bottomland hardwood stands in lower Area F. This was primarily due to the disturbance regime, dominance of non-native species, and 'edge' type community present along the Dead Creek corridor. A factor considered by the HGM method in the evaluation of this function is whether the project area community will, through succession, develop characteristics of typical reference wetland communities. The plant communities in the study area did not appear to be progressing toward a more typical bottomland community structure. Represented seedlings and saplings consisted, in part, of non-native species, including tree-of-heaven, paper mulberry, white mulberry, and Siberian elm.

The disturbed condition of plant communities throughout the study area limited the potential occurrences for rare, threatened or endangered species. Early wild-rye was documented in the *Fraxinus pennsylvanica-Ulmus americana* Temporarily Flooded Forest communities in Area C. This species is not currently listed by the Illinois Endangered Species Protection Board as rare, however, this is likely due to the recentness of this plant's description rather than its conservation biology. Information regarding this species occurrence has been included in Section 3.22.

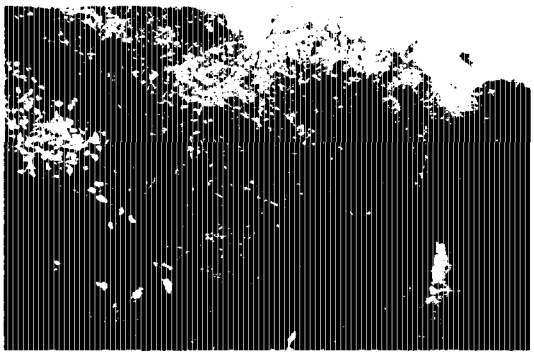
3.411 Maintain Characteristic Detrital Biomass

This function relates to the presence of fine woody debris (wood <10cm in diameter) and coarse woody debris (wood >10cm in diameter) within the study area. Determinations are based on the production rates, accumulation, and dispersal of woody debris and other dead plant biomass as compared to reference wetland standards.

Four tree and shrub dominated community types occurred along the length of the study area. Only a few portions of the creek bank were without woody cover. Coarse woody debris, including standing snags, downed trunks, and branches, were noted within each basin other than the southernmost basin in Area E. Similarly, accumulations of fine woody debris were noted in drift lines along the wetland edge in most basins. Functions provided by woody debris varied with occurrence in each basin. Standing snags noted in Area B contained several cavities that were being utilized by Eurasian tree sparrows at the time of our investigation, and were likely used by several species during the breeding season. Downed trees and large branches in the Area B channel slowed flows and trapped additional debris carried in surface water. Silt and fine woody debris had accumulated behind several of the downed trees and branches in Area B. Elsewhere in the study area, coarse woody debris occurred in permanently flooded areas, acting as structure for aquatic habitat, while fine woody debris contributed to detritus available for nutrient recycling.

3.412 Maintain Spatial Structure of Habitat

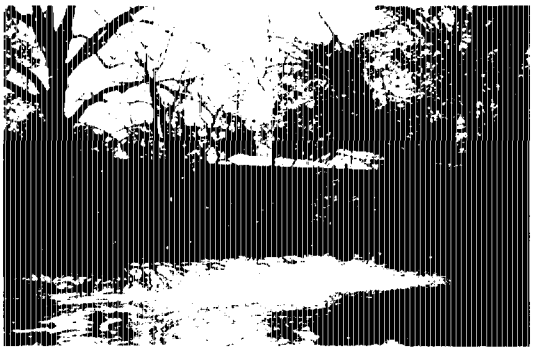
The goal of assessing this function was to evaluate the structural and spatial complexity of the study area wetland plant community with focus on those elements that affect animal populations. The upper portion of Dead Creek assessed for the purposes of this report functioned as a riparian corridor, and in some respects a habitat island, which extended through a populated residential area. True wetland plant communities in the project area were structurally limited to herbaceous species and small patches of shrub and tree dominated communities. However, the adjacent temporarily flooded forest communities, although technically not entirely wetlands, maintained some structural diversity utilized by resident and migratory wildlife.



Dense shrub and liana growth occurred commonly along the banks of the study area, particularly in Area B. At the time of our investigations, eastern cottontail rabbits, northern bobwhite, and numerous perching birds, were utilizing these areas. Dense growth provided cover, fruit, and nesting opportunity, as evidenced by the abundance of songbird nests visible after leaf-off.

Uneven canopies (i.e., structurally diverse canopies) were present in the study area, but were sporadic and limited in size. Most of the tree stratum in the study area was too young or comprised of too few species to be very diverse. The patchiness of canopy cover contributed to the structural heterogeneity of the corridor. Species observed in areas with well-developed tree strata included roosting great horned owl, red-tailed hawk, woodpeckers, white-breasted nuthatch, and eastern gray squirrel. Trees that would be considered very mature by the HGM method were scattered along the length of the study area with greatest density occurring in the mapped *Populus deltoides* Temporarily Flooded Forest community in Area E. Similarly, several large snags were noted throughout the study area, but the occurrence of this structural feature did not represent a significant component of any community type mapped.

3.413 Maintain Interspersion and Connectivity



Proper evaluation of this function requires that potential for both aquatic and terrestrial organism movement be considered. Primary factors that dictate interspersion potential are surface water connections and the presence of continuous vegetative cover. Surface water connections that could facilitate inter-basin movements of aquatic invertebrates and vertebrates appeared limited to seasonal occurrences in some portions of the study area

and were relatively permanent in others. As discussed above, this was due to anthropogenic disturbances, primarily culvert crossings. Terrestrial connectivity was relatively continuous along the length of the study area given the dense shrub growth that lined most of the channel. This connectivity was fragmented by eight road crossings and a large parking lot. Overland access to areas outside of the Dead Creek corridor was not only limited by residential development, but also by the presence of fencing that would inhibit large mammal movements into or out of the riparian corridor.

3.414 Maintain Distribution and Abundance of Invertebrates

Due to the reconnaissance nature of these preliminary investigations, no attempts were made by Woodlot to comprehensively sample the existing invertebrate community. Proper analysis of this function as defined in the HGM method requires both terrestrial and benthic sampling to characterize invertebrate use and abundance within the project area. Potential for use can be assumed based on our site observations, macrophyte and emergent vegetation mapping efforts, and limited aquatic sampling. The HGM method identifies coarse particulate organic matter (CPOM) as a critical variable that can determine potential abundance of invertebrates in a given wetland system. The overland runoff detention capacity of basins and the presence of deciduous trees, shrubs, and lianas along most of the study area length likely added to the available CPOM required by invertebrates. Submersed macrophytes provided an important source of organic matter available to aquatic invertebrates. Floating primrose-willow was abundant in shallow, permanently flooded portions of the study area. The annual senescence of the emergent communities also contributed to available CPOM in the system.

3.415 Maintain Distribution and Abundance of Vertebrates

As discussed above, comprehensive assessments of vertebrate use in the study area has not been completed to date. Table 3 includes a list of species observed during vegetation alliance and wetland characterization work. This table also includes species likely to use the upper portion of Dead Creek (Areas A–F). Field observations for the purposes of this preliminary assessment were limited to five days in early November. During this time, 57 species of birds, and 5 species of mammals were observed without using formal sampling techniques. It appears that the riparian communities extending from Area B to Area F were well utilized by vertebrate species in the local area, and may have served as a localized travel corridor for species moving through this developed area.

Aside from the direct measures of abundance of fish, herpetiles, birds, and mammals, the HGM method also considers beaver use in the study area wetlands. Beaver herbivory was noted in several of the project area basins. No lodges, or dams were noted, but the increased downed coarse woody debris resulting from the beaver activity likely enhanced other wetland functions performed in the study area.

4.0 LITERATURE CITED

Brinson, M.M., R.D. Rheinhardt, F.R. Hauer, L.C. Lee, W.L. Nutter, R.D. Smith, and D. Whigham. 1995. A Guidebook for Application of Hydrogeomorphic Assessments to Riverine Wetlands. United States Army Corp of Engineers, Wetlands Research Program Technical Report WRP-DE-11.

Campbell, J.J.N. in ed. Notes on North American *Elymus* species (Poaceae) with paired spikelets: *E. macregorii* sp. nov., *E. glaucus* ssp. *mackenzii* comb. nov., and problems in the "*interruptus*" group.

Conant, R. and J.T. Collins. 1991. A Field Guide to Reptiles and Amphibians. Houghton Mifflin Company, Boston, MA.

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of Wetlands and Deepwater Habitats of the United States. U.S. Department of the Interior, Washington, D.C.

Drake and Faber-Langendoen. 1997. An Alliance Level Classification of the Vegetation of the Midwestern United States. Report to the University of Idaho Cooperative Fish and Wildlife Research Unit and GAP Analysis Program. Copyright The Nature Conservancy 1997.

Ehrlich, P.R., D.S. Dobkin, and D. Wheye. 1988. The Birder's Handbook: A Field Guide to the Natural History of North American Birds. Simon and Schuster Inc., New York, NY.

Fuller, P.L., L.G. Nico, and J.D. Williams. 1999. Nonindigenous fishes introduced into inland waters of the United States. American Fisheries Society, Special Publication 27.

Illinois Endangered Species Protection Board. 2000. Endangered and Threatened Species List. URL: http://dnr.state.il.us/espb/datelist.htm. Springfield, IL.

Illinois Natural History Survey. 2000. Birds of Illinois. URL: http://www.inhs.uiuc.edu/cbd/ilspecies/birdsplist.html. Champaign, IL.

_____. 2000. Fishes of Illinois. URL: http://www.inhs.uiuc.edu/cbd/ilspecies/fishsplist.html. Champaign, IL.

_____. 2000. The Amphibian and Reptile Species of Illinois. URL: http://www.inhs.uiuc.edu/cbd/herpdist/splist.html. Champaign, IL.

_____. 2000. Mammals of Illinois. URL: http://www.inhs.uiuc.edu/cbd/ilspecies/mammalsplist.html. Champaign, IL.

Illinois Watershed Management Clearinghouse. 2000. Map Illinois for Watersheds. URL: http://lotus.itcs.uiuc.edu/website/MIW1/viewer.htm?Title=Map%20Illinois%20for%20Watersheds. University of Illinois, Urbana-Champaign, IL.

Johnson, T.R. 2000. The Amphibians and Reptiles of Missouri, second edition. Missouri Department of Conservation, Jefferson City, MO.

Korotev, R. 1998. A Field Checklist of Birds of the St. Louis Area. Webster Groves Nature Study Society, St. Louis, MO.

McClane, A.J. 1978. Field Guide to Freshwater Fishes of North America. Holt, Rinehart, and Winston, NY.

Missouri Department of Conservation. 2000. Missouri Fish and Wildlife Information System. URL: http://www.conservation.state.mo.us/nathiso/mofwis/. St. Louis, MO.

National Geographic Society. 1999. Field Guide to the Birds of North America. National Geographic Society, Washington, D.C.

Page, L.M. and B.M. Burr. 1991. Peterson Field Guides: A Field Guide to Freshwater Fishes. Houghton Mifflin Company, Boston, MA.

Phillips, C.A., R.A. Brandon, and E.O. Moll. 1999. Field Guide to Amphibians and Reptiles of Illinois. Illinois Natural History Survey Manual 8.

Schwartz, C.W. and E.R. Schwartz. 1981. The Wild Mammals of Missouri, revised edition. University of Missouri Press and Missouri Department of Conservation, Columbia, MO.

Shackleford, I, E. Padley, and J. Schultes. 1998. Noxious Weeds and Non-native Invasive Plants: Invasive plants reported within the Eastern Region, compiled from States' information. URL: http://www.fs.fed.us/r9/weed/Sec3A.htm.

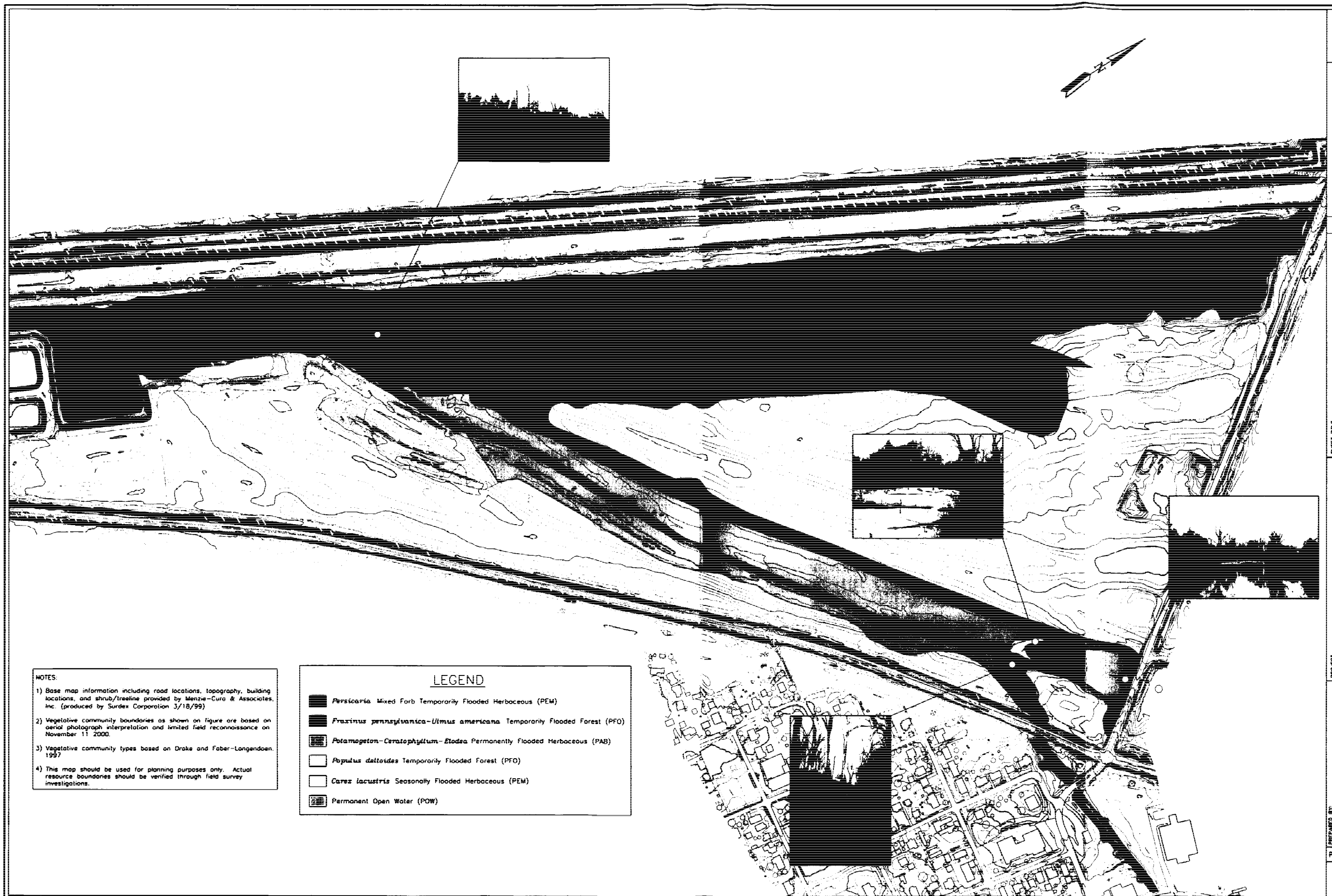
Smith, R.D., A. Ammann, C. Bartoldus, and M.M. Brinson. 1995. An Approach for Assessing Wetland Functions Using Hydrogeomorphic Classification, Reference Wetlands, and Functional Indeces. United States Corps of Engineers, Wetlands Research Program Technical Report WRP-DE-9.

Solutia, Inc. 2000. Solutia Begins Sauget/Cahokia Removal Project in Cooperation With EPA URL: http://www.solutia.com/newsreleases/communitynews/00-06-01saugetcahokia.html.

Thomas, J.W., R. Anderson, C. Maser, and E. Bull. 1979. Snags *in* Thomas, J.W., editor, Wildlife Habitats in Managed Forests—the Blue Mountains of Oregon and Washington. Agricultural Handbook 553. United States Department of Agriculture, Washington, D.C.

United States Army Corps of Engineers. 1987. Corps of Engineers Wetlands Delineation Manual, Technical Report Y-87-1. Department of the Army, Waterways Experiment Station, Vicksburg, Mississippi.

United States Environmental Protection Agency. 1996. NPL Site Narrative Listing: Sauget Area 1. URL: http://www.epa.gov/superfund/sites/npl/nar1476.htm.



NOTES:

1) Base map information including road locations, topography, building locations, and shrub/treeline provided by Menzie-Cura & Associates, Inc. (produced by Surdex Corporation 3/18/99)

2) Vegetative community boundaries as shown on figure are based on aerial photograph interpretation and limited field reconnoissance on November 11 2000.

3) Vegetative community types based on Drake and Faber-Langendoen, 1997

4) This map should be used for planning purposes only. Actual resource boundaries should be verified through field survey investigations.

LEGEND

- *Persicaria* Mixed Forb Temporarily Flooded Herbaceous (PEM)
- *Fraxinus pennsylvanica-Ulmus americana* Temporarily Flooded Forest (PFO)
- *Potamogeton-Ceratophyllum-Elodea* Permanently Flooded Herbaceous (PAB)
- *Populus deltoides* Temporarily Flooded Forest (PFO)
- *Carex lacustris* Seasonally Flooded Herbaceous (PEM)
- Permanent Open Water (POW)

NO.	REVISIONS	DATE

SHEET TITLE: Area-F and Borrow Pit Lake Vegetative Alliance Map

SCALE: 1"=400'

DATE: March 2001

PROJECT: Dead Creek Project Area Baseline Habitat Assessment

ADDRESS: Cahokia Illinois

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PROJ. NO. 100123

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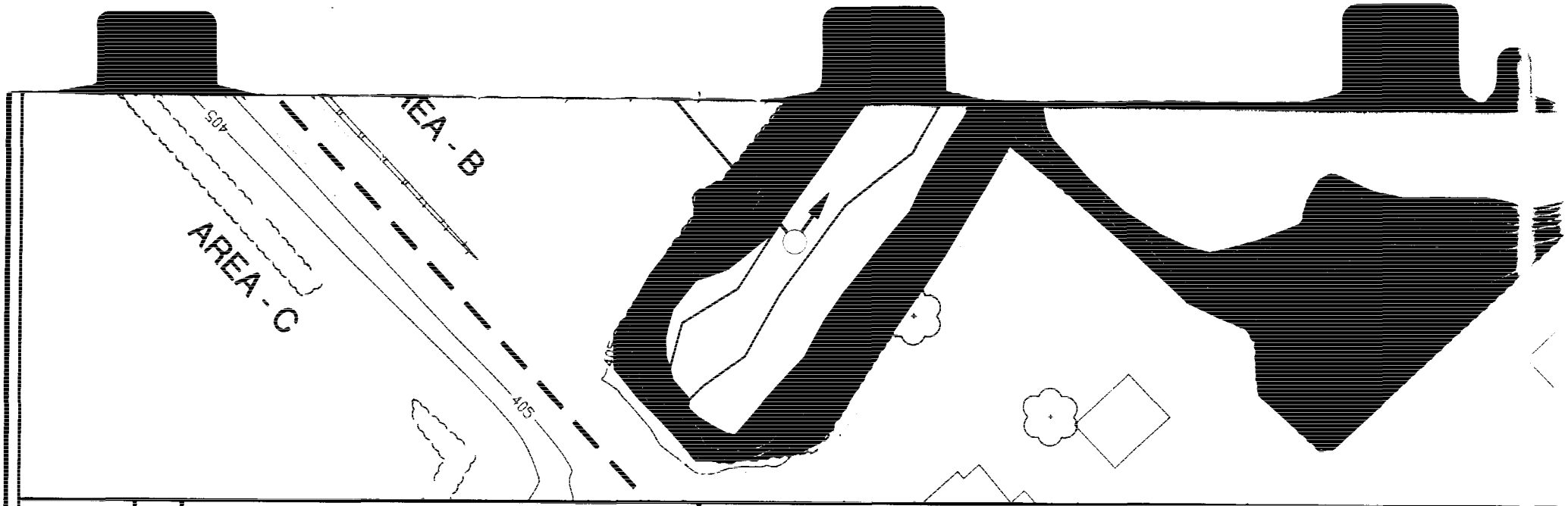

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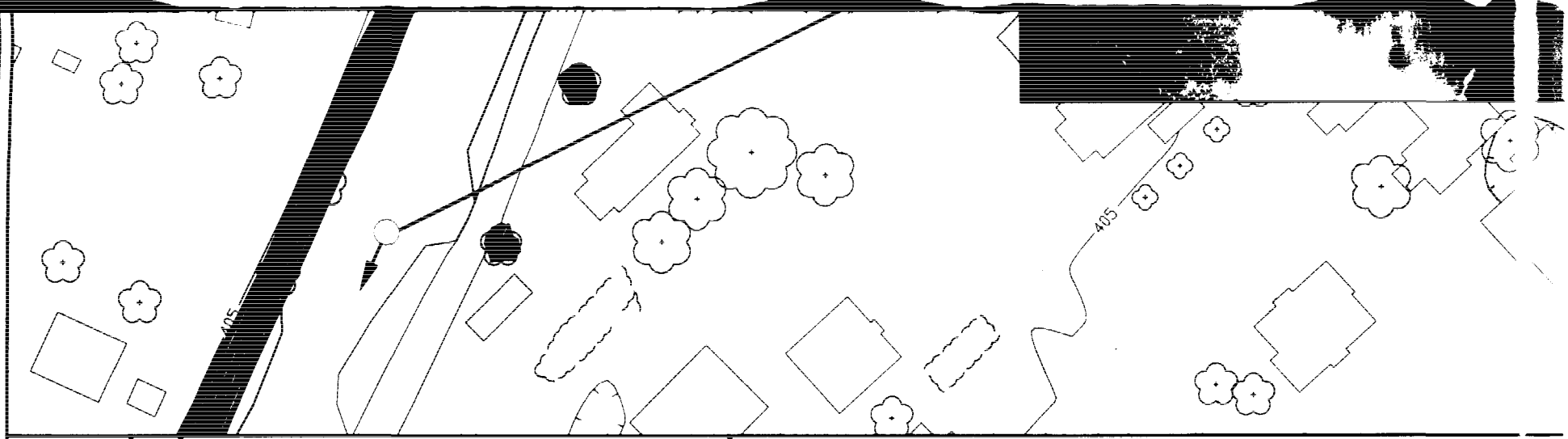

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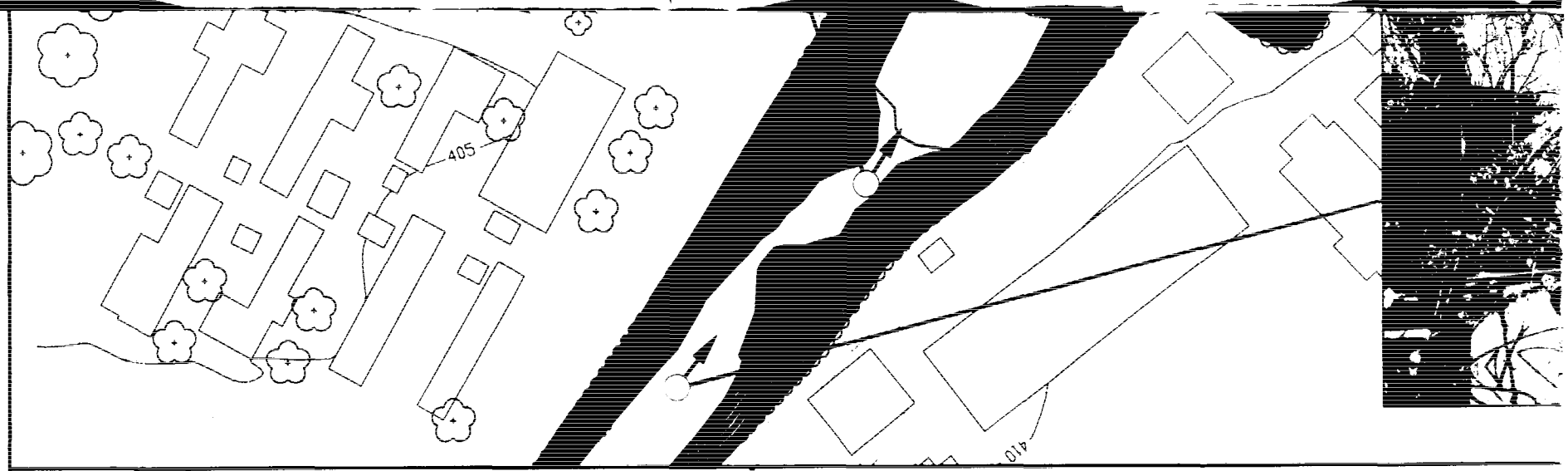

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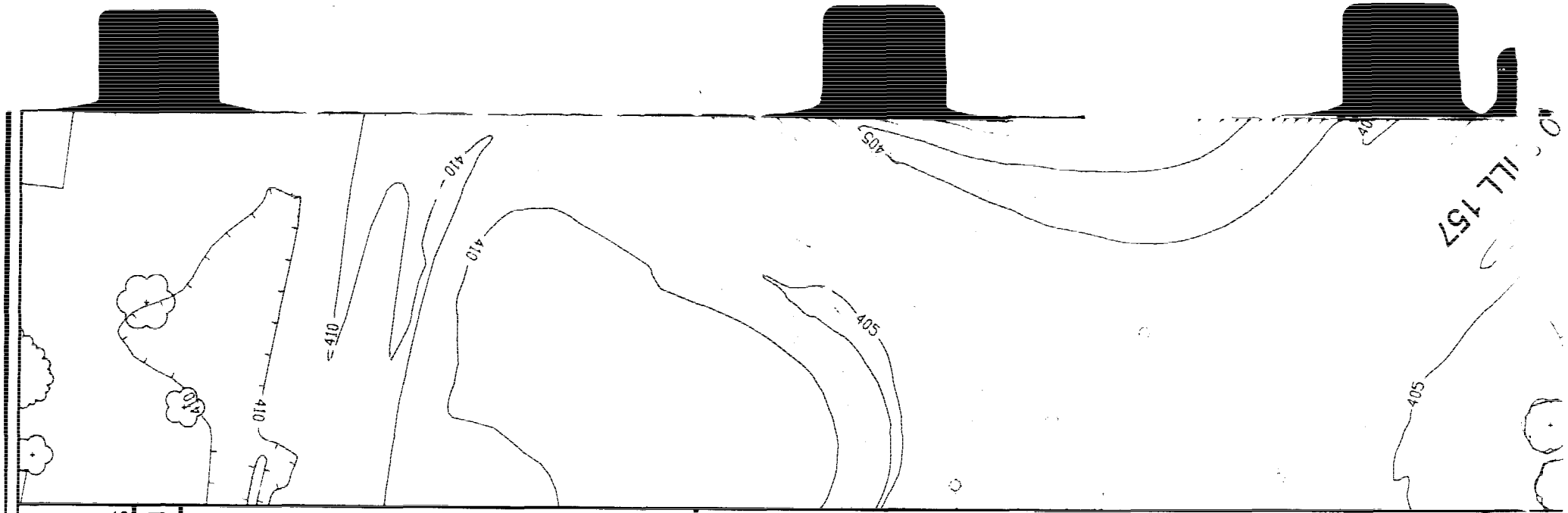

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SHEET NO. 5 of 5

APPENDIX 2

Specialized Seeding Specifications

SECTION 02933

SPECIALIZED SEEDING

PART 1 GENERAL

1.01 Description

This work shall consist of preparing the seed bed and placing the seed and other materials required in seeding operations on the shoulders, slopes, and any other designated areas of the project.

1.02 Definitions

A. Weeds: Inappropriate plants on this project which include - Jimsonweek, Quackgrass, Horsetail, Morning Glory, Mustard, Lambsquarter, Chickweek, Crabgrass, Canadian Thistle, Nutgrass, Poison Oak, Blackberry, Tansy Ragwort, Johnson Grass, Poison Ivy, Nut Sedge, Nimble Will, Bindweed, Perennial Sorrel, And Brome Grass.

1.03 Regulatory Requirements

A. Contractor shall submit maintenance requirements for continuing maintenance of established vegetated cover.

B. Contractor shall include maintenance instructions, cutting method and maximum grass height; types application frequency, and recommended coverage of fertilizer.

1.04 Delivery, Storage, And Handling

A. Products shall be delivered to site to support progress of work.

B. Products shall be stored and protected from deleterious conditions.

C. Grass seed mixture shall be delivered in sealed containers. Seed in damaged packaging is not acceptable.

1.05 Maintenance Period

A. Notwithstanding the Contractor's warranty, the Owner will pay the Contractor a lump sum price to maintain the Work in its accepted condition for two (2) growing seasons. The Maintenance Period shall start from the date of the Construction Manager's Final Acceptance. The Contractor's Maintenance Period Work shall include:

1. Establish and maintain successful revegetation of the cover in accordance with this specification.

B. The Contractor's Manager will inspect the grass growth at the end of the Maintenance Period. During the Maintenance Period, the Contractor shall mow the grass.

1.06 Submittals

A. Contractor shall submit certification that seed mixture conforms to this section and the requirements of the State of Illinois.

B. Contractor shall submit all material and workmanship warranties related to seeding.

PART 2 – MATERIALS AND EQUIPMENT

2.01 Seed Materials

The seed quantities indicated per hectare (acre) for Class 4A and 4B Seed Mixes shall be the amounts of pure, live seed (PLS) per hectare (acre) for each species listed. Seed which has actual PLS yield according to tests less than the intended yield, will have the specified quantity adjusted to meet the intended PLS yield.

Thirty days prior to the time of seeding, the Contractor shall provide for the approval of the Engineer, a written description of each of the seed mixes showing the percentage by mass (weight) of each of the kinds of seed. This description shall also include the following:

A. Name and location of the seed supplier,
B. Origin and date of harvest of each of the various kinds of seed,
C. A statement of the purity and germination of the seeds, and
D. The estimated number of seeds/kg (lb.) of each of the kinds of seed to be furnished.

2.02 Fertilizer and Agricultural Ground Limestone Application

No fertilizer nutrients or agricultural ground limestone shall be required for seeding or seedbed preparation on this project.

2.03 Equipment.

Equipment shall meet the requirements of the following.

A. Disk – The disk shall meet the approval of the Engineer and have sound unbroken blades, which have a minimum diameter of 375 mm (15 in.). The disk shall be weighted, if necessary, to obtain the require tillage depth if 75 mm (3in.).
B. Slope Harrow – Slope harrow shall consist of a rolling mass (weight) attached by heavy chain to a tractor. The chain shall be of suitable length, shall have picks welded to the links, and shall have a means of rotating the picks as the rolling mass (weight) is pulled in a direction parallel to the movement of the tractor.
C. Hydraulic Seeder – When hydraulic seeders are used, all seed and any inoculant required shall be applied in a single operation. Hydraulic seeding equipment shall include a pump rated and operated at no less than 375 L/min (100 gal/min) and no less than 690 kPa (100 psi) pressure. The tank shall have a mechanical agitator powerful enough to keep the seed and fertilizer in a uniform suspension in the water.
D. Rangeland Type Grass Drill and Interseeding Attachment – These seeders shall be designed specifically for the seeding of native prairie grasses and shall be approved by the Engineer prior to use. When seeding over existing turf, the rangeland type grass drill shall be equipped with a no-till interseeding attachment that is capable of cutting a slit in the soil free of leaves and debris, placing the seed in the slit, and compacting the seed into the soil of the slit.
E. Slit Seeder – These seeders shall be self-propelled or tractor drawn and shall be designed specifically for no-till interseeding of grass into existing turf.
F. Hand Held Fluffy and Small Seed Broadcaster – These seeders shall be designed specifically for extremely fluffy and small hard seeds. The seeder shall be able to accurately meter seed and shall have adequate controls and agitators to control the output of the small seeds.

PART 3 - EXECUTION

3.01 Seed Bed Preparation.

Seed bed preparation shall not be required for this project.

3.02 Seeding Methods.

No seed shall be sown during high winds or when the ground is not in a proper condition for seeding, nor shall any seed be sown until the purity test has been completed for the seeds to be used, and shows that the seed meets the noxious weed seed requirements. The seeding dates for identified seed mixtures shall be from May 15 to June 30 and from October 15 to December 1.

All equipment shall be approved by the Engineer prior to being used. Prior to starting work, seeders and interseeders shall be calibrated and adjusted to sow seeds at the required seeding rate. Equipment shall be operated in a manner to ensure complete coverage of the entire area to be seeded or interseeded. The Engineer shall be notified 48 hours prior to beginning the seeding operations so that the Engineer may determine by trial runs that a calibration of the seeder will provide uniform distribution at the specified rate per hectare (acre).

When seed is applied with a hydraulic seeder, the rate of application shall be not less than 9500 L (1000 gal) of slurry per hectare (acre). This slurry shall contain the proper quantity of seed.

Any and all seed that is recommended by the supplier to be inoculated with bacteria shall be inoculated with the proper bacteria in the amounts and manner recommended by the manufacturer of the inoculant before sowing or being mixed with other seeds for sowing. The inoculant shall be furnished by the Contractor and shall be approved by the Engineer. The seed shall be sown as soon as possible after inoculation. Seed that has been standing more than 24 hours after inoculation shall be reinoculated before sowing. If any inoculated seed is to be applied by a hydraulic seeder, three times the normal amount of inoculant shall be used.

A. Seeding - Seeding shall be done using one or more of the following methods unless otherwise specified or directed by the Engineer:
   - Method 1 - Seeding shall be sown with a rangeland type grass drill,
   - Method 2 - Seeding shall be sown with a hydraulic seeder (generally this will only apply to slopes that are impractical for Method 1 AND are generally unvegetated, and
   - Method 3 - Where Methods 1 and 2 are impractical, inaccessible or dangerous, seed may be sown "by hand" using a Hand Held Fluffy and Small Seed Broadcaster (such Seed Slinger™ Broadcaster or equal).

B. Interseeding - In any area shown to be seeded that has begun to establish an existing turf, such areas shall be interseeded. Prior to interseeding, all areas of existing turf to be interseeded except as listed below shall be mowed one or more times to a height of not more than 75 mm (3 in.). The equipment used shall be capable of completely severing all growth at the cutting height and distributing it evenly over the mowed area.

   The cut material shall not be windrowed or left in a lumpy or bunched condition. Additional mowing may be required, as directed by the Engineer, on certain areas in order to disperse the mowed material and allow penetration of the seed. The Contractor will not be required to mow areas which may be designated as not mowable by the Engineer.

   Debris encountered during the mowing and interseeding operations which hamper the operation or are visible from a roadway shall be removed and disposed of in a manner approved by the Engineer. Damage to the right of way and turf, such as ruts or wheel tracks more than 50 mm (2 in.) in depth, shall be repaired to the satisfaction of the Engineer prior to the time of interseeding.

   All interseeding shall be accomplished using a rangeland type grass drill with an interseeding attachment, except:
   1. When the use of a rangeland type grass drill is impracticable, inaccessible or dangerous, a slit seeder may be used to interseed the identified seed mixes,
   2. Broadcasting or hydraulic seeding will be allowed as approved by the Engineer on steep

slopes (1:3 (V:H) or steeper) or in inaccessible areas where use of the equipment specified is physically impossible. Sufficient water shall be applied to these areas to wash the seed down to the soil.

3.03 Seeding Mixtures.

The classes of seeding mixtures and combinations of mixtures will be designated in the plans.
When an area is to be seeded with two or more seeding classes, those mixtures shall be applied separately on the designated area within a seven-day period. All seeding shall occur prior to placement of mulch cover.

Seeding Mixtures

Mixture 4A - Low Profile Native Grass

Scientific Name	*Common Name*	*Seeds kg/hectare (lb./acre)*
Andropogon scoparius	Little Blue Stem	10 (10)
Boutelova curtipendula	Side-Oats Grama	5 (5)
Elymus canadensis	Wild Rye	1 (1)
Sporobolus heterolepsis	Prairie Dropseed	0.5 (0.5)
Annual Ryegrass		30 (25)
Oats, Spring		30 (25)
Perennial Ryegrass		15 (15)

Mixture 4B - Wetland Grass and Sedge Mixture

Temporary Grasses

Scientific Name	*Common Name*	*Seeds kg/hectare (lb./acre)*
Annual Ryegrass		30 (25)
Oats, Spring		30 (25)

Wetland Grasses

Scientific Name	*Common Name*	*Species % By Weight*
Calamagrostis canadensis	Blue Joint Grass	12
Carex lacustris	Lake-Bank Sedge	06
Carex slipata	Awl-Fruited Sedge	06
Carex stricta	Tussock Sedge	06
Carex vulpinoidea	Fox Sedge	06
Eleocharis aciculoris	Needle Spike Rush	03
Eleocharis obtusa	Blunt Spike Rush	03
Glyceria striata	Fowl Manna Grass	14
Juncus effusus	Common Rush	06
Juncus tenuis	Slender Rush	06
Juncus torreyi	Torrey's Rush	06
Leersia oryzoides	Rice Cut Grass	10
Scirpus acutus	Hard-Stemmed Bulrush	03
Scirpus atrovirens	Dark Green Rush	03
Scirpus fluviatilis	River Bulrush	03
Scirpus validus	Softstem Bulrush	03
Spartina pectinata	Prairie Cord Grass	04

Mixture 5 - Forb With Annuals Mixture

Apply at a rate of 4 kg/hectare (4 lb./acre).
Forb With Annuals Mixture shall consist of:

Annuals Mixture	- Approximately 50%
Forb Mixture	- Approximately 50%

Annuals Mixture - Mixture not exceeding 25% by weight of any one species, of the following:

Scientific Name	*Common Name*
Coreopsis lanceolata	Sand Coreopsis
Chrysanthemum maximum	Shasta Daisy
Gaillardia pulchelle	Blanket Flower
Ratibida columnitera	Long-Headed Coneflower
Rudbeckia hirta	Black-Eyed Susan

Forb Mixture - Mixture not exceeding 25% by weight of any one species, of the following:

Scientific Name	*Common Name*
Amorpha canescens	Lead Plant
Anemone cylindrica	Thimble Weed
Asclepias tuberosa	Butterfly-Weed
Aster azureus	Sky Blue Aster
Aster laevis	Smooth Aster
Aster novae-angliae	New England Aster
Baptisia leucantha	White Wild Indigo
Ceanothus americanus	New Jersey Tea
Coreopsis palmata	Prairie Coreopsis
Echinacea pallida	Pale Purple Coneflower
Eryngium yuccifolium	Rattlesnake Master
Helianthus mollis	Downy Sunflower
Heliopsis helianthoides	Ox-Eye
Heuchera richardsonii	Alum Root
Liatris aspera	Rough Blazing Star
Liatris pycnostachya	Prairie Blazing Star
Monarda fistulosa	Prairie Bergamont
Parthenium integrifolium	Wild Quinine
Pedicularis canadensis	Louse Wart
Petalostemum candidum	White Prairie Clover
Petalostemum purpureum	Purple Prairie Clover
Physostegia virginiana	False Dragonhead
Potentilla arguta	Prairie Cinquefoil
Ratibida pinnata	Yellow Coneflower
Rudbeckia subtomentosa	Fragrant Coneflower
Silphium laciniatum	Compass Plant
Silphium terebinthinaceum	Prairie Dock
Solidago rigida	Rigid Goldenrod
Tradescantia ohiensis	Spiderwort
Veronicastrum virginicum	Culver's Root

<u>Mixture 5A - Large Flower Forb Mixture</u>

Apply at a rate of 4 kg/hectare (4 lb./acre).

Native Forb Mixture - Mixture not exceeding 25% by weight of any one species, of the following:

Scientific Name	*Common Name*
Aster novae-angliae	New England Aster
Echinacea pallida	Pale Purple Coneflower
Helianthus mollis	Downy Sunflower
Heliopsis helianthoides	Ox-Eye
Liatris pycnostachya	Prairie Blazing Star
Ratibida pinnata	Yellow Coneflower

Rudbeckia hirta	Black-Eyed Susan
Silphium laciniatum	Compass Plant
Silphium terebinthinaceum	Prairie Dock
Solidago rigida	Rigid Goldenrod

Variation in the seed quantities or varieties will be allowed in the event of a crop failure or other unforeseen conditions. The Contractor shall provide for the approval of the Engineer a written description of the changed mixture, the reasons for the change, and the name of the seed supplier.

3.04 Maintenance

Post Planting Maintenance of Dead Creek Revegetation Areas: The Contractor shall be responsible for post planting maintenance for two seasons following the planting and seeding all riparian areas.

A. Seeded areas:

1. Contractor shall high-mow seeded areas (that is, mow at a height above the height of the majority of the seeded native species) in order to control non-native and weedy plants. Early in the season the Contractor is to mow when weedy growth reaches 12" - 15". Mow to a height of 4" - 6". Later in season mow plants to a height of 12" - 15" when weedy growth reaches a height of 24" - 30". These mowing heights should be above desired native species but low enough to remove weedy, invasive growth that can shade natives and/or produce seed heads.
2. Based on assessment of first growing season by the Engineer, Contractor may be required to overseed in first fall/winter with seed mix to be specified by project professional.
3. Early in second season mow natives to height of 12" - 15" when weedy growth reaches 24" - 30".
4. Throughout maintenance period spot weed or use selective herbicide treatment to eliminate invasive vegetation as needed.
5. Burn native plantings after second growing season. Burn timing, fall or spring, to be determined by prairie horticulturalist.
6. Throughout maintenance period spot weed, remove by hand any problem weeds.

3.05 Warranty Period

A. The warranty period shall extend for a period of 1 year after acceptance of conditions by the Engineer.

B. Contractor shall immediately reseed areas which show bare spots at no additional cost to the Owner.

3.06 Method of Measurement.

All materials, equipment, and work to be performed under this specification shall be accomplished on a LUMP SUM basis.

3.07 Basis of Payment.

This work will be paid for on a LUMP SUM basis. The costs of all installation work will be paid upon the approval of the Engineer. The costs of all maintenance work shall be paid upon the acceptance of the work at the end of the Warranty Period.

END OF SECTION 02933

APPENDIX 3

Mulching Specifications

SECTION 02934

MULCHING

PART 1 GENERAL

1.01 Description.

This work shall consist of furnishing, transporting, and placing mulch or erosion control blanket over seeded areas.

1.02 Area Requirements for Mulching.

All areas to be seeded as per Section 02933 - Specialized Seeding, that are determined by the engineer to be substantially unvegetated, will require mulching. Any area that has been interseeded into properly prepared existing vegetation, using either a rangeland drill or slit seeder, shall not be required to be mulched.

PART 2 – MATERIALS AND EQUIPMENT

2.01 Materials.

Materials shall meet the requirements of the following

A. Mulch Material – Mulching material shall be dry mulch consisting of straw or hay of one or more of the following types: oat, rye, wheat, and prairie straw. Only undeteriorated mulch can be readily incorporated and shall be used.

B. Bonded Fiber Matrix – Bonded Fiber Matrix materials shall be a hydraulically applied bonded wood fiber matrix held together with a bonding agent. The materials should form a porous, flexible structure that is non-toxic and biodegradable. Matrix material to be "Soil Guard" as manufactured by Mat, Inc. or approved equivalent.

C. Excelsior Blanket/Standard Erosion Control Blanket/Knitted Straw Mat – These materials can only be placed in the project area where no significant "water shear" concern occurs. Materials should be an S75BN Blanket as manufactured by North American Green, or appropriate equivalent.

D. Heavy Duty Erosion Control Blanket – These materials can be placed in the project area where "water shear" concerns occur and must be approved by the manufacturer for anticipated water shear. Materials are anticipated to generally be an S150BN Blanket as manufactured by North American Green, or appropriate equivalent. Manufacturer shall review site conditions and identify the blanket which will provide the appropriate control and warranty.

E. Staples – Unless otherwise noted by erosion control blanket manufacturer, staples shall be made from No. 11 gage or heavier uncoated black carbon steel wire of sufficient stiffness for soil penetration. They shall be of the "T" or "U" configuration with pointed ends, 25 to 50 mm (1 to 2 in.) wide at the top and a minimum overall length of 150 mm (6 in.) from top to bottom. The staples for Heavy Duty Erosion Control Blankets shall be a specified here except that the legs shall be 200 mm (8 in.) or longer. The staples shall be packaged in cartons.

PART 3 - EXECUTION

3.01 Mulching Seeded Areas.

Within 24 hours from the time seeding has been performed, the seeded area shall be given a covering of mulch by one of the following methods as designated on the plans. On slopes steeper than 1:3 (V:H), mulch shall be applied the same day as seeded. Mulch shall be applied uniformly at the rate specified.

A. Method 1 - This method shall not be used on slopes steeper than or equal to 1:3(V:H). This method shall consist of hand or machine application of straw mulch at the rate of 4.5 metric ton/ha (2 ton/acre). The mulch shall be loose enough to permit air to circulate but compact enough to reduce erosion. If baled mulch material is used, care shall be taken that the material is in a loosened condition and contains no lumps or knots of compacted material.
B. Method 2 - Method 2 shall consist of placing and stabilizing straw at the rate of 4.5 metric ton/ha (2 ton/acre) over seeded areas. All requirements of Method 1 must be met plus the mulch shall be thoroughly stabilized. The Contractor has the option of any of the following procedures for stabilizing the straw:
    1. Procedure 1 shall consist of anchoring the straw into the soil by means of a mechanical stabilizer with dull blades or disks. These blades or disks shall be without camber, approximately 500 mm (20 in.) in diameter, notches spaced at approximately 200 mm (8 in.) intervals and equipped with scrapers. The stabilizer shall measure approximately 450 kg (1000 lb.), have a working width not exceeding 1.8 m (72 in.) and shall be equipped with a ballast compartment, so that when directed, mass (weight) can be increased.
    2. Procedure 2 shall consist of stabilizing the straw mulch using an approved mulch blower with bonded fiber matrix simultaneously with the straw as in Procedure 1, above, or with chemical mulch binder applied as an overspray according to Procedure 2. The bonded fiber matrix shall be approved by the Engineer and shall be applied at the rate and in the manner recommended by the supplier and approved by the Engineer.
C. Method 3 - This method shall not be used on slopes steeper than or equal to 1:3(V:H). This method shall consist of machine application of wood or paper fiber hydraulic mulch at the specified rate using an approved hydraulic seeder. The hydraulic mulch shall be applied as a slurry of 2.25 metric tons (2000 lb.) of mulch and not less than 19000 L (2000 gal) of water/hectare (acre). The hydraulic mulch slurry shall be agitated a minimum of five minutes before application. The seeding shall not be applied concurrently with this operation.
D. Method 4 – This method may be used in any slope condition. Use of manufactured erosion control blankets, including Excelsior Blanket, Standard Erosion Control Blanket, Knitted Straw Mat, and Heavy Duty Erosion Control Blanket shall meet manufacturer's recommendations.

Following the mulching operation, foot and vehicular traffic, or the movement of equipment over the mulched area shall be prohibited. At any location where mulching has been displaced by any Contractor's equipment or personnel, the seeding and mulch or other work damaged as a result of that displacement shall be repaired or replaced immediately at the Contractor's expense, in a manner satisfactory to the Engineer.

3.02 Erosion Control Blanket.

Erosion control blanket may be placed using excelsior blanket, standard erosion control blanket, knitted straw blanket, or heavy duty erosion control blanket. The blanket shall be placed within 24 hours after seeding operations have been completed on the areas specified.

Prior to placing the blanket, the areas to be covered shall be relatively free of rocks or clods over 40 mm (1 1/2 in.) in diameter, and sticks or other foreign material which will prevent the close contact of the blanket with the seed bed. If, as a result of rain, the prepared seed bed becomes crusted or eroded, or if eroded places, ruts or depressions exist for any reason, the Contractor shall to rework the soil until it is smooth and to reseed such areas which are reworked. After the area has been properly shaped, fertilized and seeded, the blanket shall be laid out flat, evenly and smoothly, without stretching the material.

The blankets shall be placed so that the netting is on the top and the fibers are in contact with the soil. For placement in ditches, the erosion control blanket shall be unrolled parallel to the centerline of the ditch so that there are no longitudinal seams within 600 mm (2 ft) of the bottom centerline of the ditch. In ditches,

six staples shall be installed at uniform spacing across the upstream end of each roll. Placing and anchoring the blankets in ditches and on slopes shall be as follows:

A. Excelsior Blanket - For placement in ditches, the blankets shall be applied in the direction of the flow of the water and butted snugly against each other. The blankets shall be stapled in place, using six staples across the upstream end at the start of each roll and placing staples on 1.2 m (4 ft) centers along each side. A common row of staples shall be used along seams of adjoining blankets. Another roll of staples shall be used in the center of each roll and be alternately spaced between each side staple at 1.2 m (4 ft) centers. All seams shall overlap at least 50 mm (2 in.). On slopes, the blankets shall be applied either horizontally or vertically to the contour and stapled in place similar to ditch application except that the space interval shall be 1.8 m (6 ft).

B. Knitted Straw Blanket - The rolls shall be butted snugly together and stapled in place. The staples shall be driven through the blanket vertically into the ground for the full length. Each staple shall anchor the plastic mesh. The staples shall be spaced in a diamond pattern with the longer dimension in the direction of the slope and the shorter dimension across the slope. The longer dimension shall be a maximum of 1.8 m (6 ft) and the shorter dimension shall be a maximum of 900 mm (3 ft). A common row of staples may be used on adjoining rolls. For placement on slopes, knitted straw blanket shall be unrolled in the direction of the slope and shall extend a minimum of 900 mm (3 ft) over the crest of the slope. On slope applications, six staples shall be installed on uniform spacing across the uphill end of each roll. The downhill ends of the lowermost rolls across the slope also shall be anchored with six staples, placed on uniform spacing.

C. Heavy Duty Erosion Control Blanket - This blanket shall be installed according to Section 3.01, except that the following stapling pattern shall be used: place six staples across the start of each roll and continue this pattern along the roll at 600 mm (2 ft) intervals. Adjacent blankets shall overlap 50 mm (2 in.), and the edge staples shall penetrate both blankets. The center two staples shall be alternately spaced between each side staple. Staples shall be as specified in 2.01 except that the legs shall be 200 mm (8 in.) or longer.

3.03 Method of Measurement.

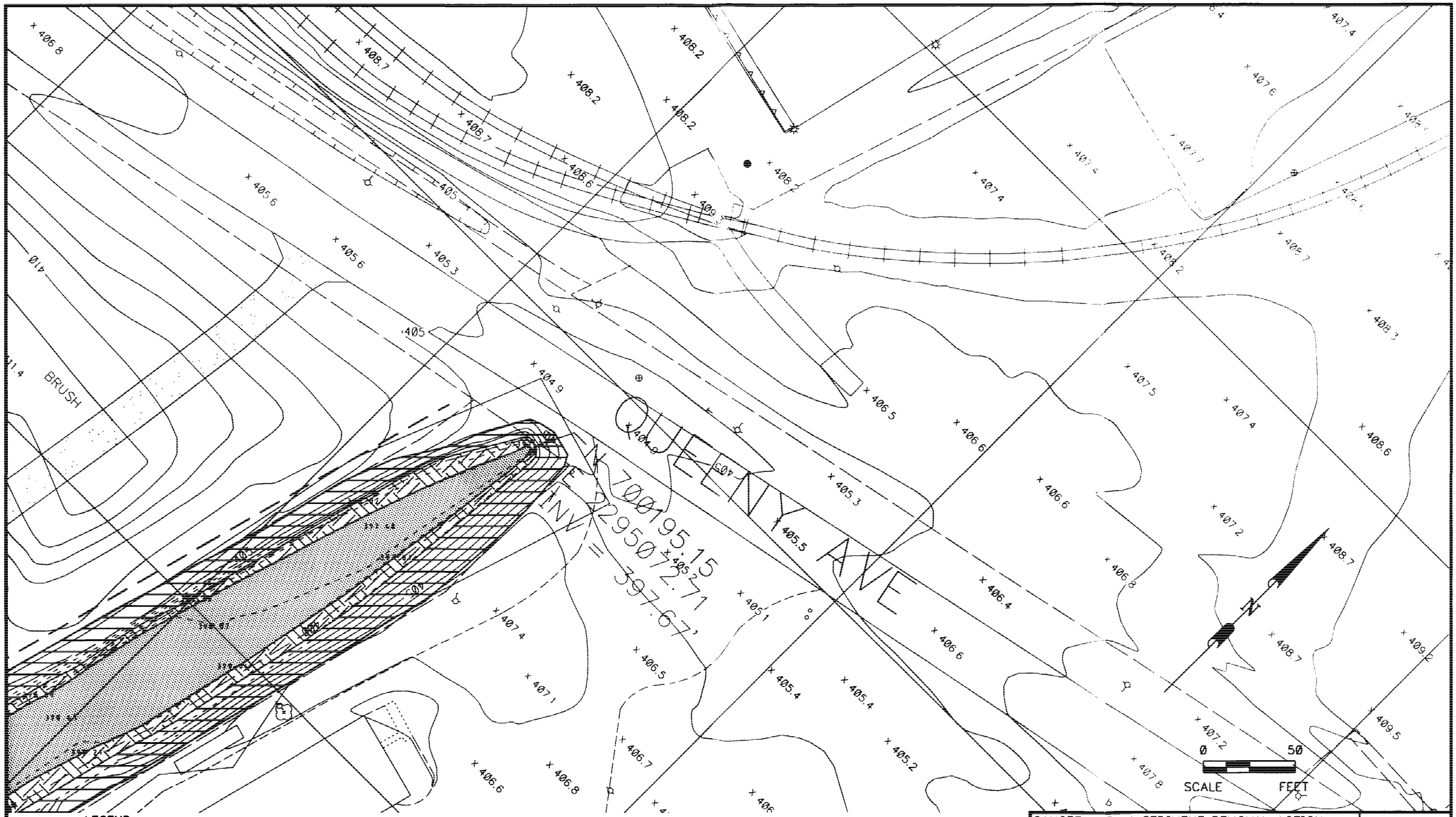
All materials, equipment, and work to be performed under this specification shall be accomplished on a LUMP SUM basis.

3.04 Basis of Payment.

This work will be paid for on a LUMP SUM basis.

END OF SECTION 02934

FIGURES



LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment B (North) Seeding Plan
	FIG. NO. 3-1

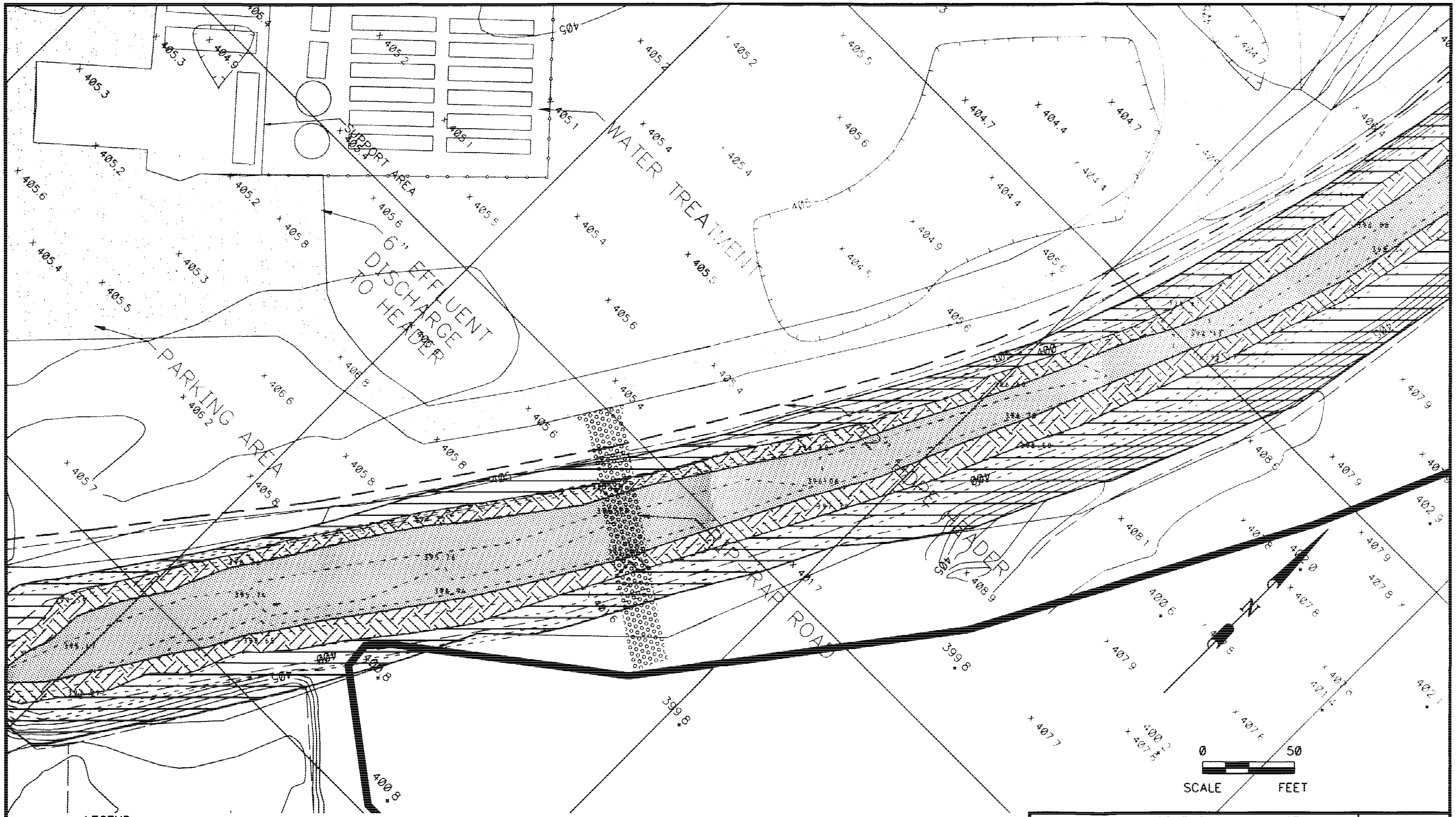
File: E:\2320020041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:05 p.m. by: PAFISCHO

LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment B (Center) Seeding Plan
	FIG. NO. 3-2

File: E:\2320020041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:23 p.m. by: PAFISCHO



LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL		PROJECT NO. 23-20020041.00
URS		
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment B (South) Seeding Plan	FIG. NO. 3-3

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SAUGET AREA 1 SEDIMENT REMOVAL ACTION
DEAD CREEK MITIGATION PLAN
SAUGET AND CAHOKIA, IL

PROJECT NO. 23-20020041.00

URS

DRN. BY: paf 5/16/02
DSGN. BY: mf
CHKD. BY: bv

Creek Segment C (North)
Seeding Plan

FIG. NO. 3-4

File: E:\2320020041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:24 p.m. by: PAFISCHO

LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: pof 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment C (South) Seeding Plan
	FIG. NO. 3-5

File: E:\232002041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:25 p.m. by: PAFISCHO

LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment D Seeding Plan
	FIG. NO. 3-6

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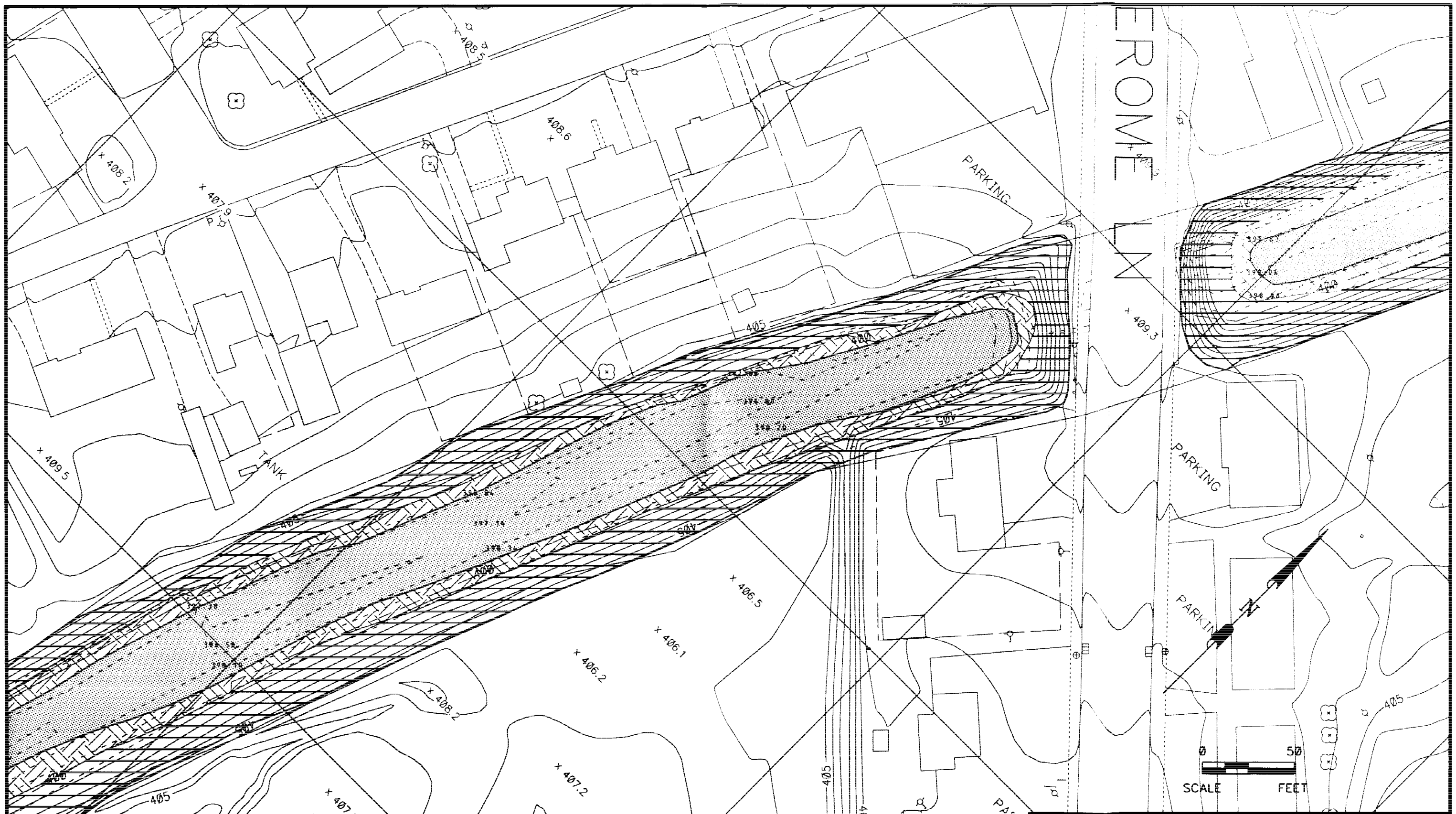

LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment E (Jerome Lane to Edgar Street) Seeding Plan
	FIG. NO. 3-7

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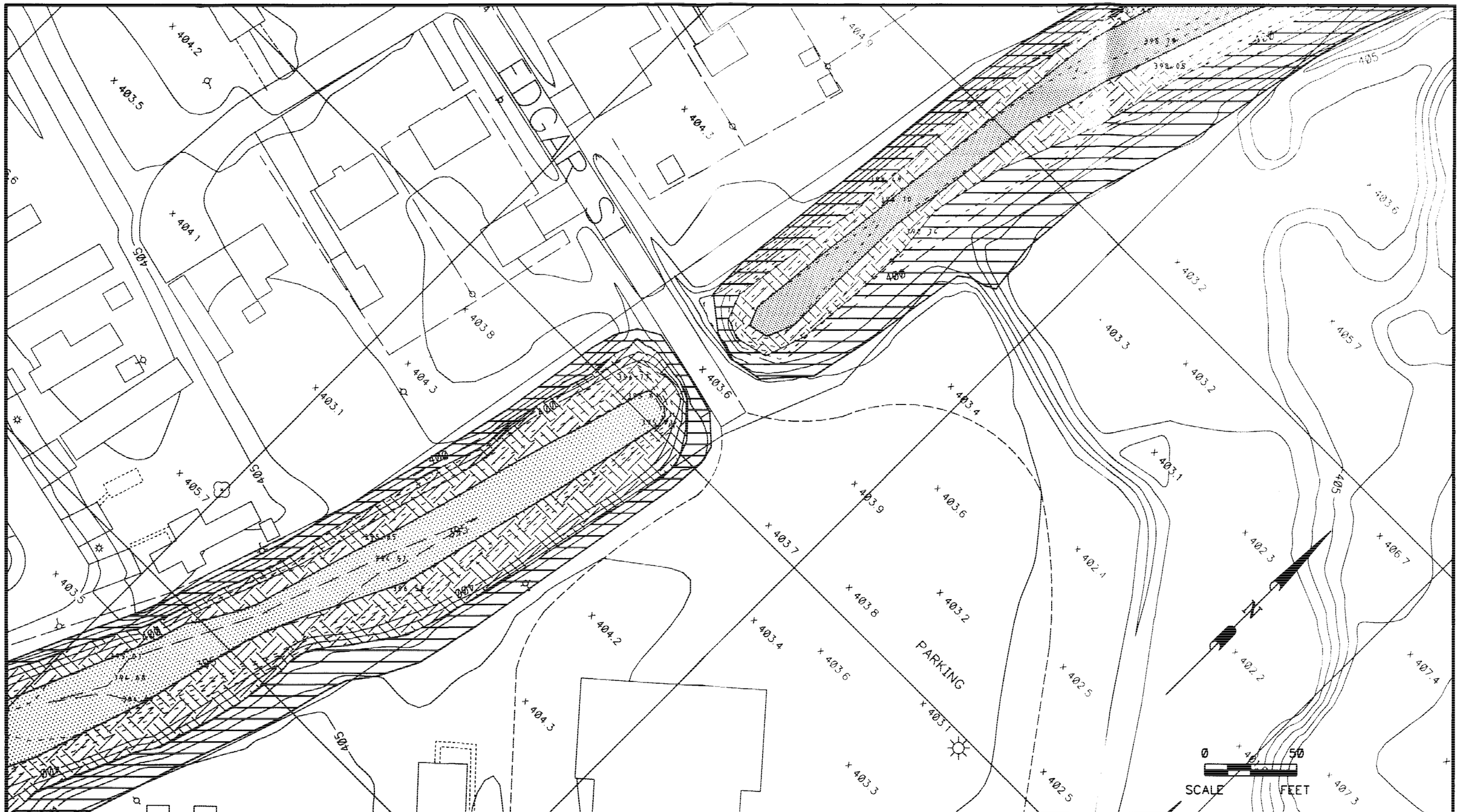

LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION
DEAD CREEK MITIGATION PLAN
SAUGET AND CAHOKIA, IL

PROJECT NO. 23-20020041.00

URS

DRN. BY: paf 5/16/02
DSGN. BY: mf
CHKD. BY: bv

Creek Segment E
(Edgar Street to Quail Run Trailer Park-North) Seeding Plan

FIG. NO. 3-8

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SAUGET AREA 1 SEDIMENT REMOVAL ACTION
DEAD CREEK MITIGATION PLAN
SAUGET AND CAHOKIA, IL

PROJECT NO.
23-20020041.00

URS

DRN. BY: paf 5/16/02
DSGN. BY: mf
CHKD. BY: bv

Creek Segment E
(Quail Run Trailer Park)
Seeding Plan

FIG. NO.
3-9

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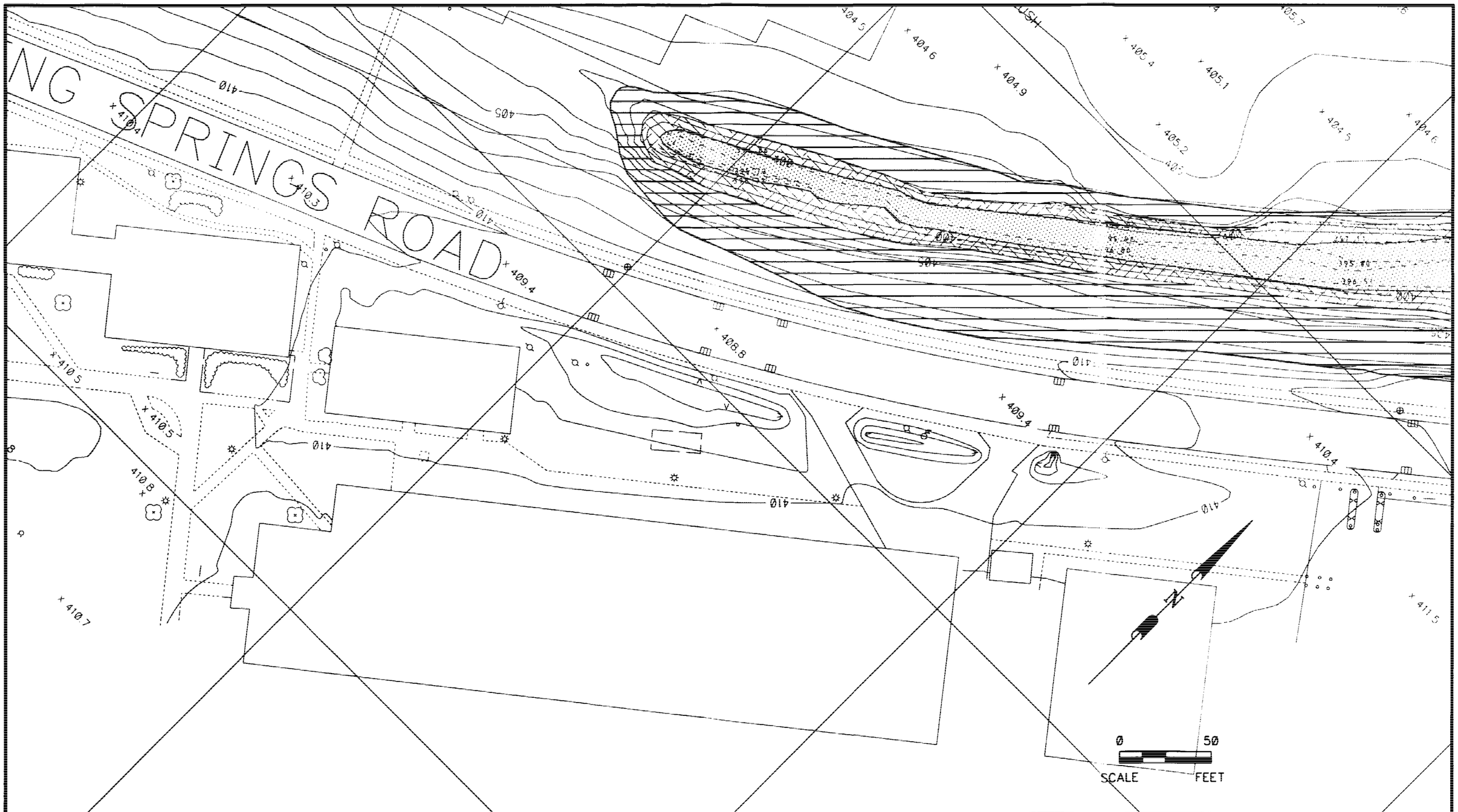

LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment E (Quail Run Trailer Park-South to Park College Parking Lot)Seeding Plan
	FIG. NO. 3-10

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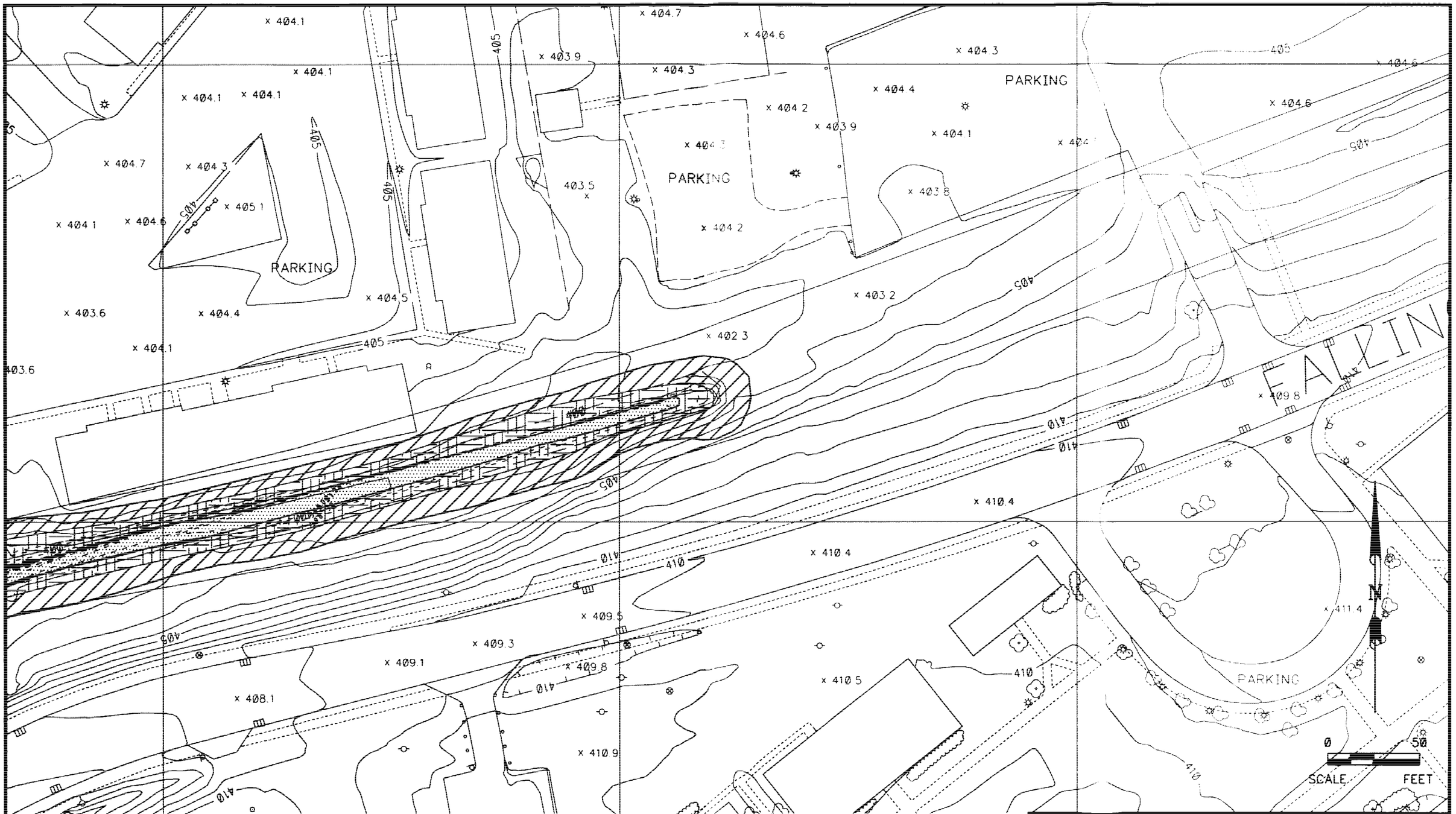

LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment E (Parks College Parking Lot to Cottonwood Apartment) Seeding Plan
	FIG. NO. 3-11

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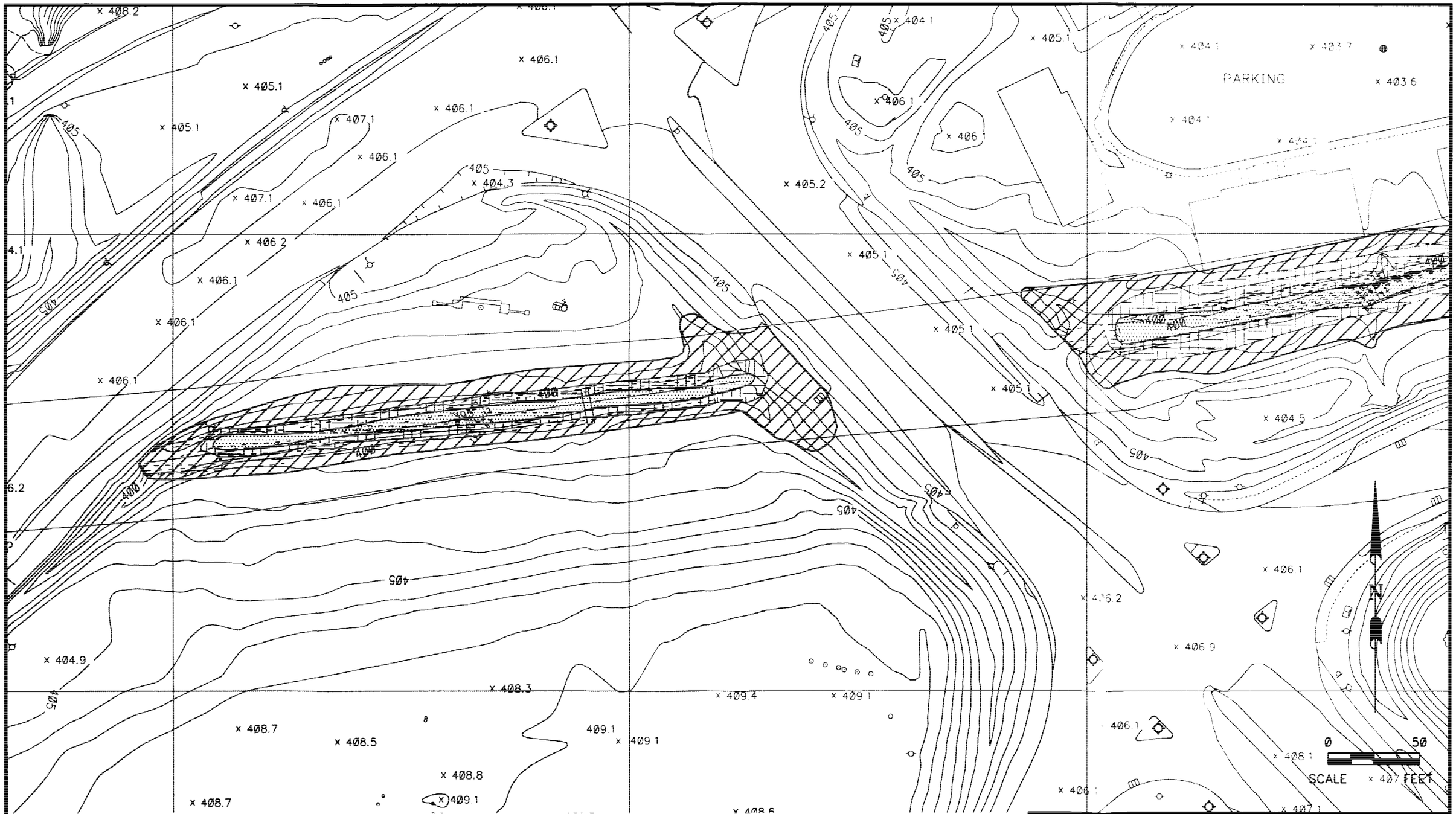
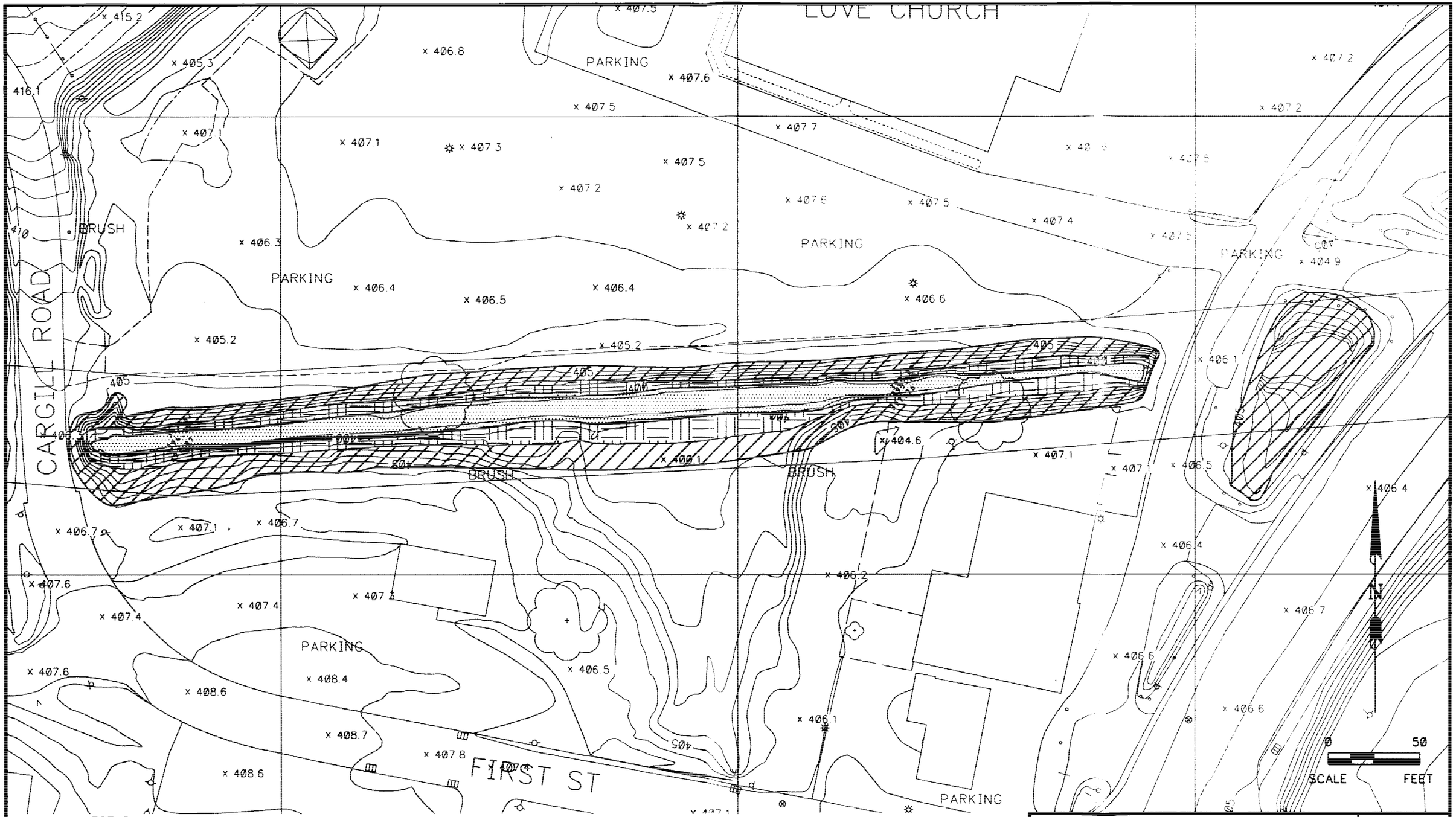


LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL		PROJECT NO. 23-20020041.00
URS		
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment E (Cottonwood Appt. to Route 157) and Creek Segment F (Route 157 to Route 3) Seeding Plan	FIG. NO. 3-12

File: E:\2320020041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:30 p.m. by: PAFISCHO

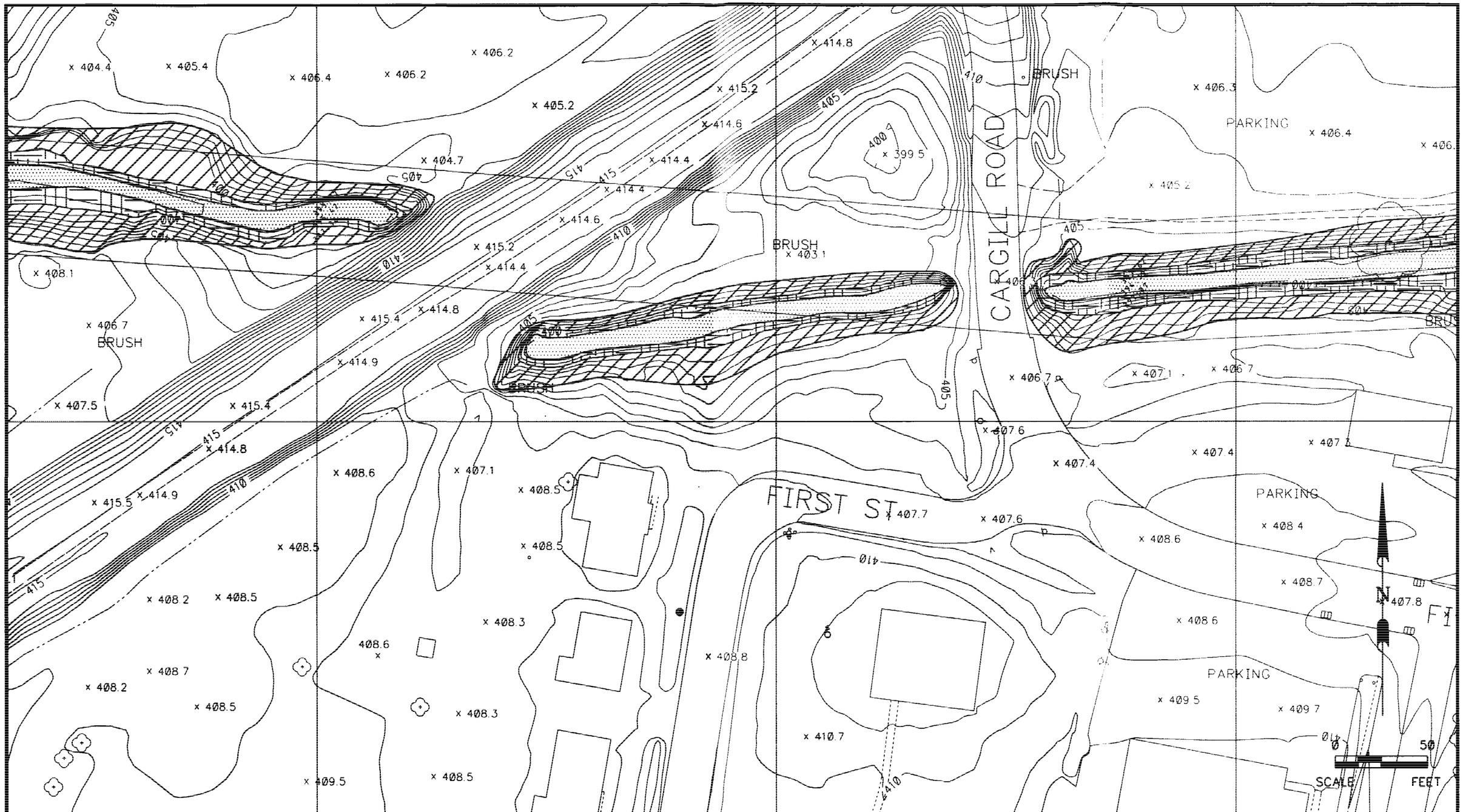


LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment F (Route 3 to Cargill Road) Seeding Plan
	FIG. NO. 3-13

File: E:\232002041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:30 p.m. by: PAFISCHO

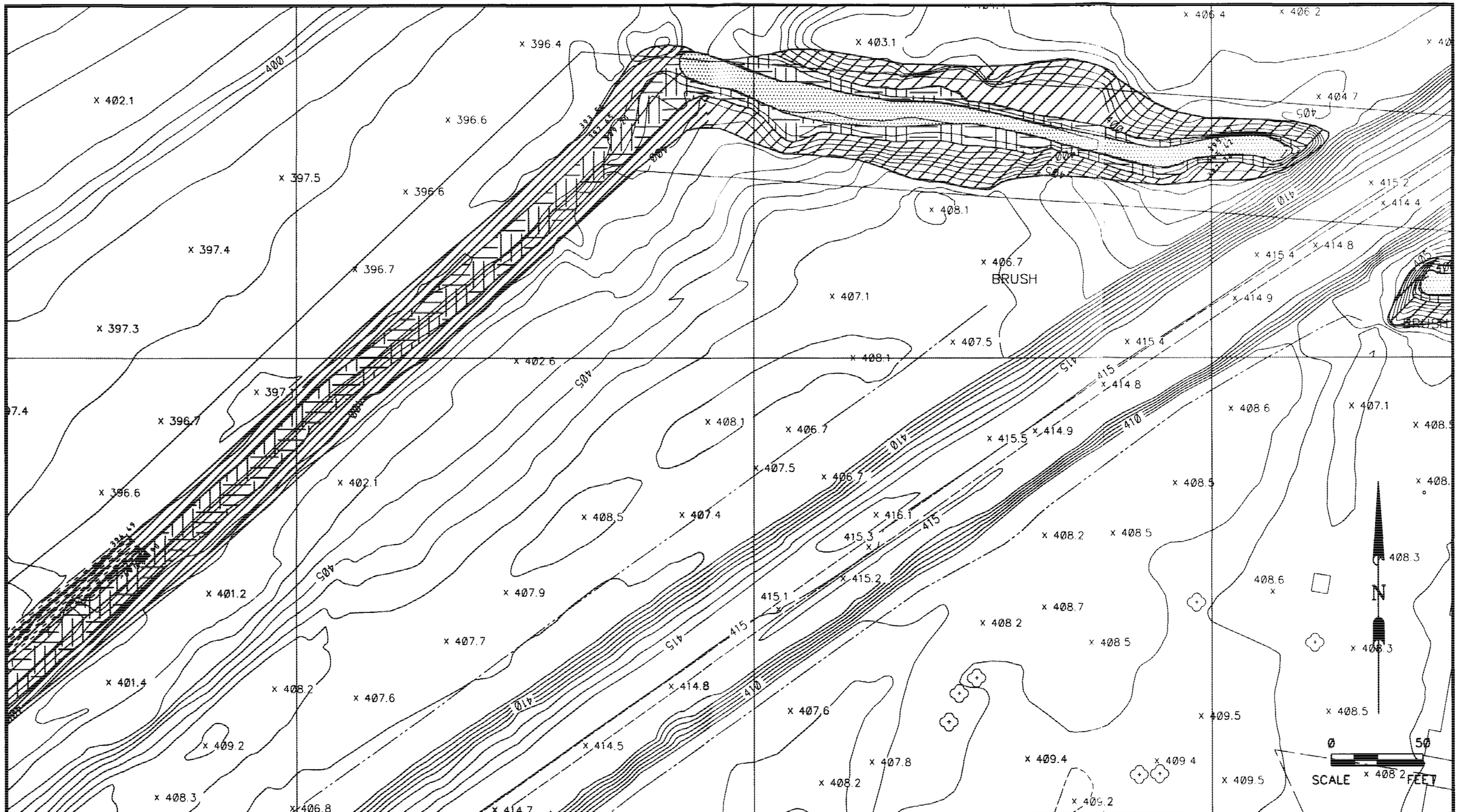


LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL		PROJECT NO. 23-20020041.00
URS		
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment F (Downgradient of Cargill Road North) Seeding Plan	FIG. NO. 3-14

File: E:\2320020041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:32 p.m. by: PAFISCHO

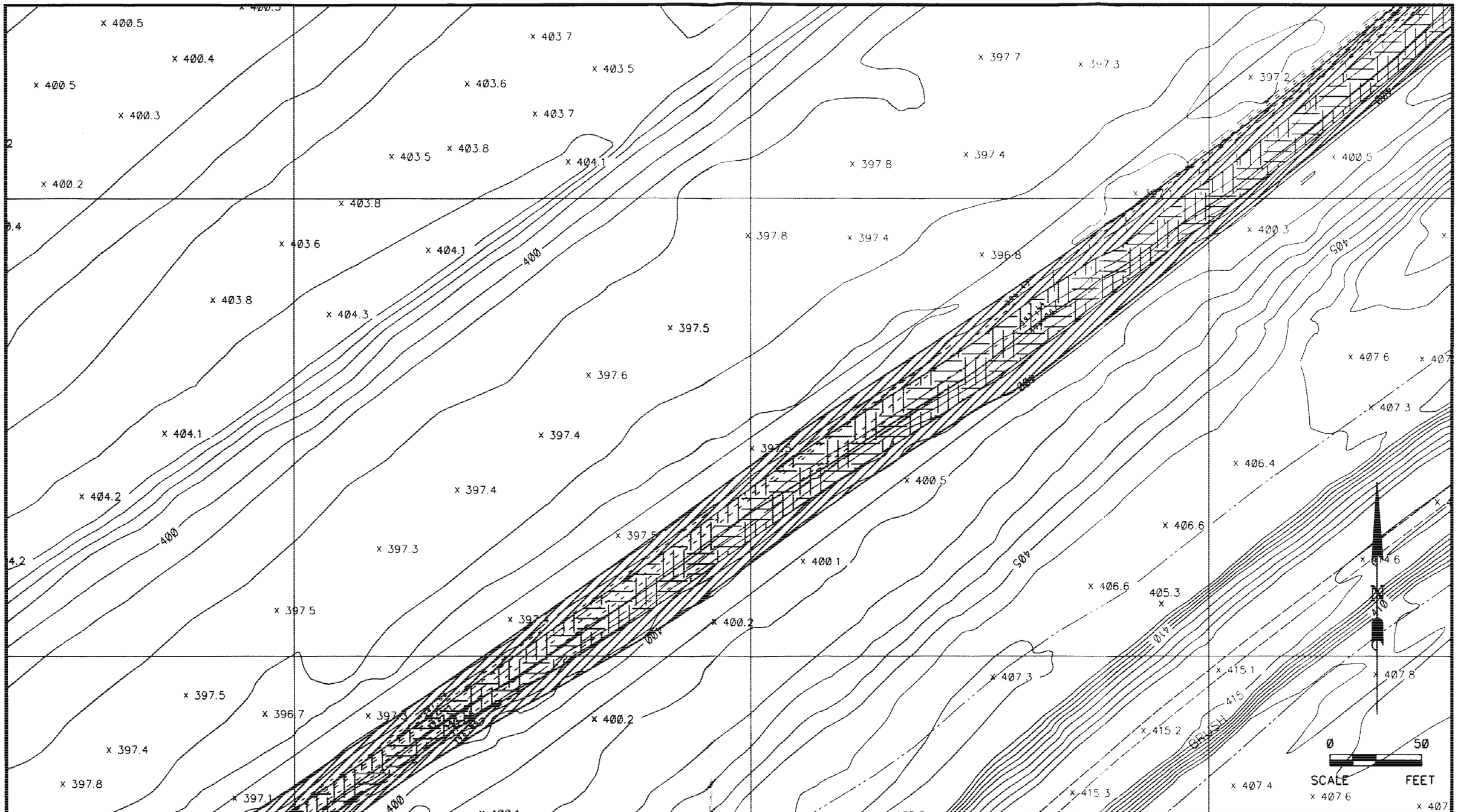


LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment F (Downgradient of Cargill Road North) Seeding Plan
	FIG. NO. 3-15

File: E:\2320020041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:32 p.m. by: PAFISCHO

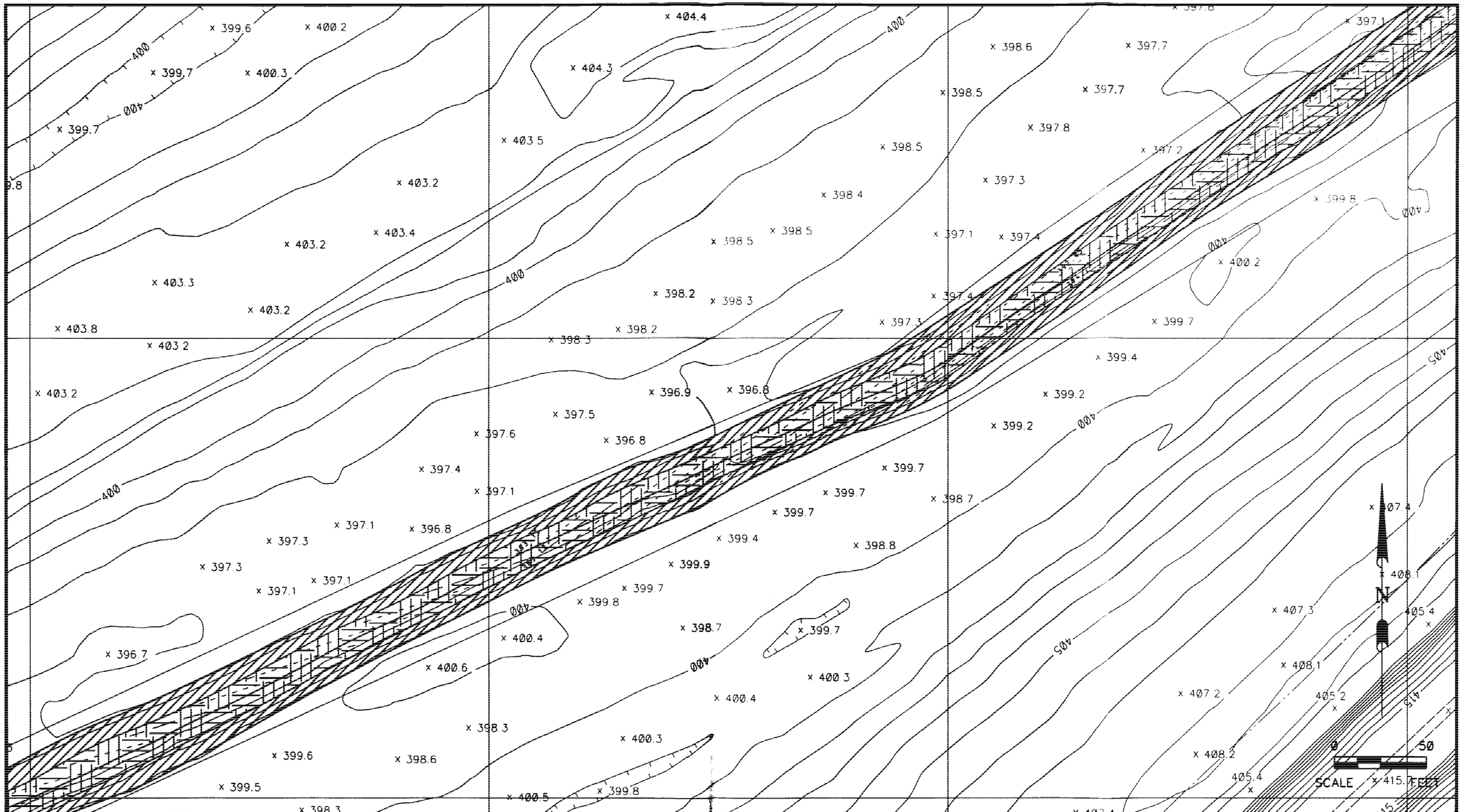


LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL		PROJECT NO. 23-20020041.00
URS		
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment F (Downgradient of Cargill Road North and Center) Seeding Plan	FIG. NO. 3-16

File: E:\2320020041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:32 p.m. by: PAFISCHO

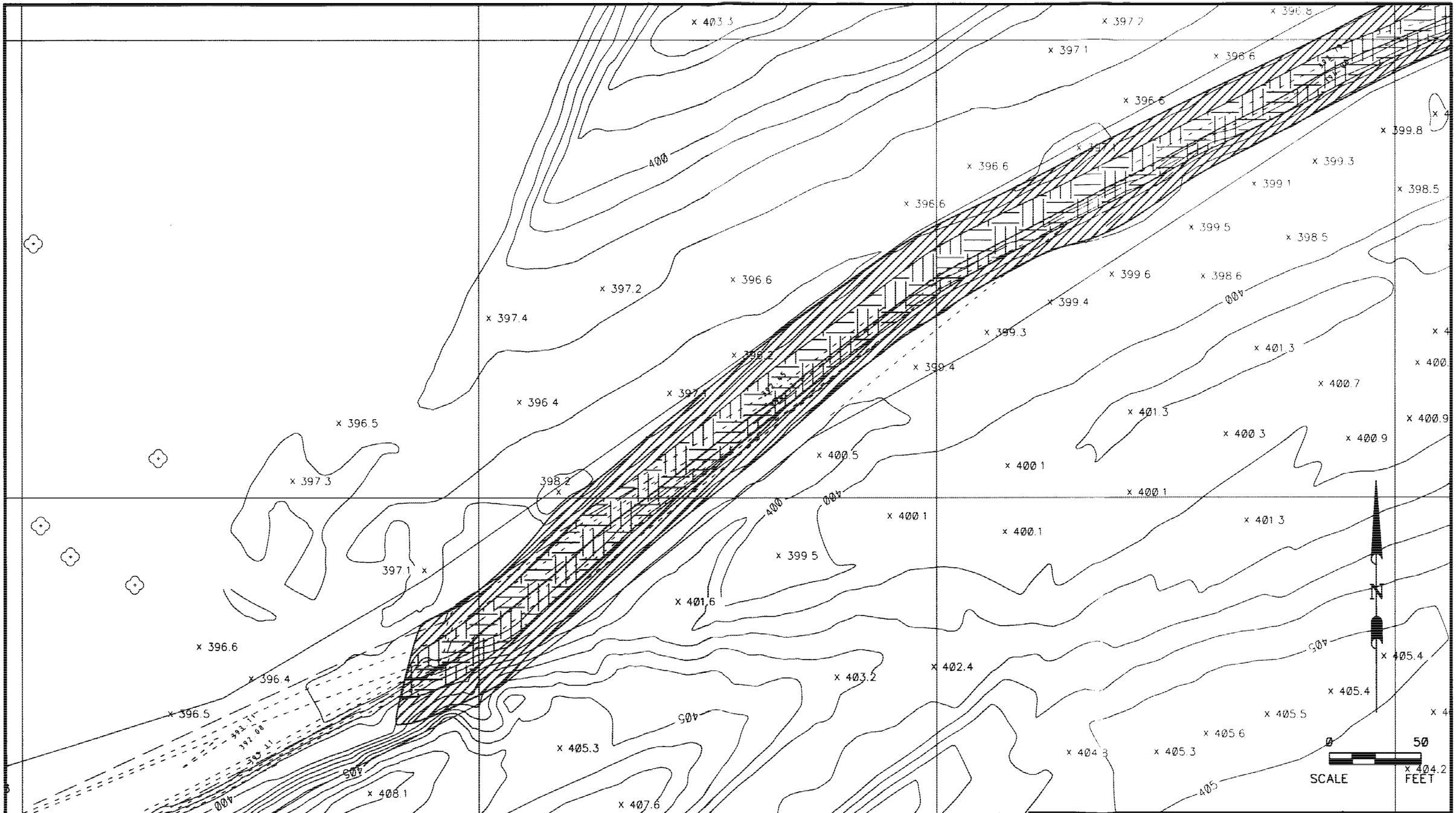


LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL		PROJECT NO. 23-20020041.00
URS		
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment F (Downgradient of Cargill Road Center) Seeding Plan	FIG. NO. 3-17

File: E:\232002041.00\PROJECT PLANS\COLORBASEMAP022002.DWG Last edited: OCT. 01, 02 @ 1:32 p.m. by: PAFISCHO



LEGEND

- 4A SEEDING MIX
- 4B SEEDING MIX
- BOTTOM OF CREEK BANK

SAUGET AREA 1 SEDIMENT REMOVAL ACTION DEAD CREEK MITIGATION PLAN SAUGET AND CAHOKIA, IL	PROJECT NO. 23-20020041.00
URS	
DRN. BY: paf 5/16/02 DSGN. BY: mf CHKD. BY: bv	Creek Segment F (Downgradient of Cargill Road South) Seeding Plan
	FIG. NO. 3-18

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APPENDIX 4

Sauget Area 1 Support Sampling Plan

Industry-Specific Sediment Analyses

O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	BPL-ESED-S1-0 2FT	BPL-ESED-S1-0 2FTFD	BPL-ESED-S2-0 2FT	BPL-ESED-S3-0 2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
1,1,1-Trichloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,1,2,2-Tetrachloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,1,2-Trichloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,1-Dichloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,1-Dichloroethene	24 UJ	19 UJ	23 UJ	27 UJ	10 U	7.9 U	5 U
1,2-Dichloroethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
1,2-Dichloropropane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
2-Butanone (MEK)	130 UJ	100 UJ	130 UJ	140 UJ	57 U	43 U	25 U
2-Hexanone	130 UJ	100 UJ	130 UJ	140 UJ	57 U	43 U	25 U
4-Methyl-2-pentanone (MIBK)	130 UJ	100 UJ	130 UJ	140 UJ	57 U	43 U	25 U
Acetone	260 UJ	210 UJ	250 UJ	290 UJ	41 J	86 U	50 U
Benzene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	1.2 U
Bromodichloromethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Bromoform	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Bromomethane	51 UJ	42 UJ	51 UJ	58 UJ	23 U	17 U	9.8 U
Carbon disulfide	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Carbon tetrachloride	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Chlorobenzene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Chloroethane	51 UJ	42 UJ	51 UJ	58 UJ	23 U	17 U	10 U
Chloroform	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Chloromethane	51 UJ	42 UJ	51 UJ	58 UJ	23 U	17 U	10 U
Cis/Trans-1,2-Dichloroethene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Dibromochloromethane	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Ethylbenzene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Methylene chloride (Dichloromethane)	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	1.6 J
Styrene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Tetrachloroethene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Toluene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
Trichloroethene	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	2.7 U
Vinyl chloride	51 UJ	42 UJ	51 UJ	58 UJ	23 U	17 U	10 U
Xylenes, Total	26 UJ	21 UJ	25 UJ	29 UJ	11 U	8.6 U	5 U
cis-1,3-Dichloropropene	20 UJ	17 UJ	20 UJ	23 UJ	9.2 U	6.8 U	1 U
trans-1,3-Dichloropropene	20 UJ	17 UJ	20 UJ	23 UJ	9.2 U	6.8 U	5 U
Total VOCs	ND	ND	ND	ND	41	ND	1.6

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0 2FTEB	SED-CSB-S1-0 2FT	SED-CSB-S1-0 2FTFD	SED-CSB-S2-0 2FT	SED-CSB-S3-0 2FT	SED-CSC-S1-0 2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,1,1-Trichloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,1,2,2-Tetrachloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,1,2-Trichloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,1-Dichloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,1-Dichloroethene	8.9 U	5.0 U	24 UJ	18 UJ	18 UJ	35 UJ	25 UJ
1,2-Dichloroethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
1,2-Dichloropropane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
2-Butanone (MEK)	48 U	25 U	130 UJ	99 UJ	98 UJ	190 UJ	31 J
2-Hexanone	48 U	25 U	130 UJ	99 UJ	21 J	190 UJ	130 UJ
4-Methyl-2-pentanone (MIBK)	48 U	25 U	130 UJ	99 UJ	98 UJ	190 UJ	130 UJ
Acetone	47 J	50 U	260 UJ	200 UJ	250 UJ	380 UJ	96 J
Benzene	9.6 U	1.2 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Bromodichloromethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Bromoform	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Bromomethane	19 U	9.8 U	52 UJ	40 UJ	39 UJ	76 UJ	54 UJ
Carbon disulfide	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Carbon tetrachloride	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Chlorobenzene	9.6 U	5.0 U	86 J	17 J	26 J	20 J	27 UJ
Chloroethane	19 U	10 U	52 UJ	40 UJ	39 UJ	76 UJ	54 UJ
Chloroform	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Chloromethane	19 U	10 U	52 UJ	40 UJ	39 UJ	76 UJ	54 UJ
Cis/Trans-1,2-Dichloroethene	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Dibromochloromethane	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Ethylbenzene	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Methylene chloride (Dichloromethane)	9.6 U	0.90 J	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Styrene	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Tetrachloroethene	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Toluene	6.4 J	5.0 U	26 UJ	20 UJ	20 J	38 UJ	27 UJ
Trichloroethene	9.6 U	2.7 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
Vinyl chloride	19 U	10 U	52 UJ	40 UJ	39 UJ	76 UJ	54 UJ
Xylenes, Total	9.6 U	5.0 U	26 UJ	20 UJ	20 UJ	38 UJ	27 UJ
cis-1,3-Dichloropropene	7.7 U	1.0 U	21 UJ	16 UJ	16 UJ	30 UJ	22 UJ
trans-1,3-Dichloropropene	7.7 U	5.0 U	21 UJ	16 UJ	16 UJ	30 UJ	22 UJ
Total VOCs	53.4	0.9	86	17	67	20	127

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	SED-CSC-S2-0 2FT	SED-CSC-S3-0 2FT	SED-CSD-S1-0 2FT	SED-CSD-S2-0 2FT	SED-CSD-S3-0 2FT	SED-CSE-S1-0 2FT	SED-CSE-S2-0 2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,1,1-Trichloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,1,2,2-Tetrachloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,1,2-Trichloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,1-Dichloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,1-Dichloroethene	20 UJ	27 UJ	37 UJ	38 UJ	19 UJ	27 UJ	17 UJ
1,2-Dichloroethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
1,2-Dichloropropane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
2-Butanone (MEK)	37 J	28 J	65 J	56 J	30 J	150 UJ	94 UJ
2-Hexanone	110 UJ	140 UJ	200 UJ	200 UJ	100 UJ	150 UJ	94 UJ
4-Methyl-2-pentanone (MIBK)	110 UJ	140 UJ	200 UJ	200 UJ	100 UJ	150 UJ	94 UJ
Acetone	130 J	100 J	190 J	170 J	84 J	430 UJ	190 UJ
Benzene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Bromodichloromethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Bromoform	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Bromomethane	45 UJ	58 UJ	80 UJ	82 UJ	41 UJ	60 UJ	38 UJ
Carbon disulfide	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Carbon tetrachloride	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Chlorobenzene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Chloroethane	45 UJ	58 UJ	80 UJ	82 UJ	41 UJ	60 UJ	38 UJ
Chloroform	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Chloromethane	45 UJ	58 UJ	80 UJ	82 UJ	41 UJ	60 UJ	38 UJ
Cis/Trans-1,2-Dichloroethene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Dibromochloromethane	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Ethylbenzene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Methylene chloride (Dichloromethane)	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Styrene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Tetrachloroethene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Toluene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Trichloroethene	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
Vinyl chloride	45 UJ	58 UJ	80 UJ	82 UJ	41 UJ	60 UJ	38 UJ
Xylenes, Total	22 UJ	29 UJ	40 UJ	41 UJ	20 UJ	30 UJ	19 UJ
cis-1,3-Dichloropropene	18 UJ	23 UJ	32 UJ	33 UJ	16 UJ	24 UJ	15 UJ
trans-1,3-Dichloropropene	18 UJ	23 UJ	32 UJ	33 UJ	16 UJ	24 UJ	15 UJ
Total VOCs	167	128	255	226	114	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	SED-CSE-S3-0 2FT	SED-CSF-S1-0 2FT	SED-CSF-S2-0 2FT	SED-CSF-S3-0 2FT	SED-M-S1-0 2FT	SED-RA1-S1-0 2FT	SED-RA1-S2-0 2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,1,1-Trichloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,1,2,2-Tetrachloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,1,2-Trichloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,1-Dichloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,1-Dichloroethene	23 UJ	16 UJ	38 UJ	24 UJ	38 UJ	8.7 U	17 UJ
1,2-Dichloroethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
1,2-Dichloropropane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
2-Butanone (MEK)	520 J	85 UJ	200 UJ	130 UJ	270 UJ	47 U	40 J
2-Hexanone	130 UJ	85 UJ	200 UJ	130 UJ	210 UJ	47 U	94 UJ
4-Methyl-2-pentanone (MIBK)	130 UJ	85 UJ	200 UJ	130 UJ	210 UJ	47 U	94 UJ
Acetone	1200 J	200 UJ	410 UJ	260 UJ	920 UJ	95 U	160 J
Benzene	25 UJ	17 UJ	41 UJ	26 UJ	17 J	9.5 U	19 UJ
Bromodichloromethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Bromoform	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Bromomethane	50 UJ	34 UJ	82 UJ	51 UJ	83 UJ	19 U	38 UJ
Carbon disulfide	25 UJ	17 UJ	41 UJ	26 UJ	49 J	9.5 U	19 UJ
Carbon tetrachloride	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Chlorobenzene	25 UJ	17 UJ	41 UJ	26 UJ	100 J	9.5 U	19 UJ
Chloroethane	50 UJ	34 UJ	82 UJ	51 UJ	83 UJ	19 U	38 UJ
Chloroform	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Chloromethane	50 UJ	34 UJ	82 UJ	51 UJ	83 UJ	19 U	38 UJ
Cis/Trans-1,2-Dichloroethene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Dibromochloromethane	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Ethylbenzene	25 UJ	17 UJ	41 UJ	11 J	42 UJ	9.5 U	19 UJ
Methylene chloride (Dichloromethane)	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Styrene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Tetrachloroethene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Toluene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Trichloroethene	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
Vinyl chloride	50 UJ	34 UJ	82 UJ	51 UJ	83 UJ	19 U	38 UJ
Xylenes, Total	25 UJ	17 UJ	41 UJ	26 UJ	42 UJ	9.5 U	19 UJ
cis-1,3-Dichloropropene	20 UJ	14 UJ	33 UJ	20 UJ	33 UJ	7.6 U	15 UJ
trans-1,3-Dichloropropene	20 UJ	14 UJ	33 UJ	20 UJ	33 UJ	7.6 U	15 UJ
Total VOCs	1720	ND	ND	11	166	ND	200

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-1
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8260B Volatile Organic Compound Data

Sample ID	SED-RA2-S1-0 2FT	SED-RA2-S1-0 2FTEB	SED-RA2-S1-0 2FTFD	SED-RA2-S2-0 2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/08/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
1,1,1-Trichloroethane	13 UJ	5 U	13 UJ	11 UJ
1,1,2,2-Tetrachloroethane	13 UJ	5 U	13 UJ	11 UJ
1,1,2-Trichloroethane	13 UJ	5 U	13 UJ	11 UJ
1,1-Dichloroethane	13 UJ	5 U	13 UJ	11 UJ
1,1-Dichloroethene	12 UJ	5 U	12 UJ	10 UJ
1,2-Dichloroethane	13 UJ	5 U	13 UJ	11 UJ
1,2-Dichloropropane	13 UJ	5 U	13 UJ	11 UJ
2-Butanone (MEK)	11 J	25 U	67 UJ	14 J
2-Hexanone	65 UJ	25 U	67 UJ	56 UJ
4-Methyl-2-pentanone (MIBK)	65 UJ	25 U	67 UJ	56 UJ
Acetone	38 J	50 U	130 UJ	52 J
Benzene	13 UJ	1.2 U	13 UJ	11 UJ
Bromodichloromethane	13 UJ	5 U	13 UJ	11 UJ
Bromoform	13 UJ	5 U	13 UJ	11 UJ
Bromomethane	26 UJ	9.8 U	27 UJ	22 UJ
Carbon disulfide	13 UJ	5 U	13 UJ	11 UJ
Carbon tetrachloride	13 UJ	5 U	13 UJ	11 UJ
Chlorobenzene	13 UJ	5 U	13 UJ	11 UJ
Chloroethane	26 UJ	10 U	27 UJ	22 UJ
Chloroform	13 UJ	5 U	13 UJ	11 UJ
Chloromethane	26 UJ	10 U	27 UJ	22 UJ
Cis/Trans-1,2-Dichloroethene	13 UJ	5 U	13 UJ	11 UJ
Dibromochloromethane	13 UJ	5 U	13 UJ	11 UJ
Ethylbenzene	13 UJ	5 U	13 UJ	11 UJ
Methylene chloride (Dichloromethane)	13 UJ	4.7 U	13 UJ	11 UJ
Styrene	13 UJ	5 U	13 UJ	11 UJ
Tetrachloroethene	13 UJ	5 U	13 UJ	11 UJ
Toluene	13 UJ	5 U	13 UJ	11 UJ
Trichloroethene	13 UJ	2.7 U	13 UJ	11 UJ
Vinyl chloride	26 UJ	10 U	27 UJ	22 UJ
Xylenes, Total	13 UJ	5 U	13 UJ	11 UJ
cis-1,3-Dichloropropene	10 UJ	1 U	11 UJ	9.1 UJ
trans-1,3-Dichloropropene	10 UJ	5 U	11 UJ	9.1 UJ
Total VOCs	49	ND	ND	66

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	BPL-ESED-S1-0 2FT	BPL-ESED-S1-0 2FTFD	BPL-ESED-S2-0 2FT	BPL-ESED-S3-0 2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
1,2,4-Trichlorobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
1,2-Dichlorobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
1,3-Dichlorobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
1,4-Dichlorobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
2,2'-Oxybis(1-Chloropropane)	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
2,4,5-Trichlorophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
2,4,6-Trichlorophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	2.1 U
2,4-Dichlorophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2,4-Dinitrophenol	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	14 U
2,4-Dinitrotoluene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
2,6-Dinitrotoluene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Chloronaphthalene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Chlorophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Methylnaphthalene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Methylphenol (o-cresol)	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
2-Nitroaniline	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	50 U
2-Nitrophenol	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
3,3'-Dichlorobenzidine	910 UJ	910 UJ	960 UJ	910 UJ	480 U	450 U	20 U
3-Methylphenol/4-Methylphenol	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
3-Nitroaniline	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 UJ	1100 U	50 U
4,6-Dinitro-2-methylphenol	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	13 U
4-Bromophenylphenyl ether	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	1 U
4-Chloro-3-methylphenol	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
4-Chloroaniline	910 UJ	910 UJ	960 UJ	910 UJ	480 U	450 U	20 U
4-Chlorophenylphenyl ether	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
4-Nitroaniline	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	50 U
4-Nitrophenol	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	50 U
Acenaphthene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Acenaphthylene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Anthracene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Benzo(a)anthracene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Benzo(a)pyrene	250 UJ	250 UJ	260 UJ	250 UJ	130 U	120 U	10 U
Benzo(b)fluoranthene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Benzo(g,h,i)perylene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	0.76 J
Benzo(k)fluoranthene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Date Printed: 08/30/00 14:52:42
DBF File: D:\25501\TEMPDATA.DBF
FXP File: D:\25501\TABLEPRS.FXP

File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0.2FT	BPL-ESED-S3-0.2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
Butylbenzylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Carbazole	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	3.4 U
Chrysene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Di-n-butylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Di-n-octylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Dibenzo(a,h)anthracene	250 UJ	250 UJ	260 UJ	250 UJ	130 UJ	120 U	10 U
Dibenzofuran	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Diethylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Dimethylphthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Fluoranthene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Fluorene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	1 U
Hexachlorobenzene	190 UJ	190 UJ	200 UJ	190 UJ	100 U	95 U	10 U
Hexachlorobutadiene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Hexachlorocyclopentadiene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
Hexachloroethane	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	1.9 U
Indeno(1,2,3-cd)pyrene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	0.61 J
Isophorone	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
N-Nitroso-di-n-propylamine	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
N-Nitrosodiphenylamine	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	5 U
Naphthalene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Nitrobenzene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	3.5 U
Pentachlorophenol	2300 UJ	2400 UJ	2500 UJ	2300 UJ	1200 U	1100 U	5 U
Phenanthrene	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Phenol	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	10 U
Pyrene	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
bis(2-Chloroethoxy)methane	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
bis(2-Chloroethyl)ether	470 UJ	470 UJ	500 UJ	470 UJ	250 U	230 U	10 U
bis(2-Ethylhexyl)phthalate	470 UJ	470 UJ	500 UJ	470 UJ	250 UJ	230 U	1.8 U
Total Semivolatiles	ND	ND	ND	ND	ND	ND	1.37

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0 2FTEB	SED-CSB-S1-0 2FT	SED-CSB-S1-0 2FTFD	SED-CSB-S2-0 2FT	SED-CSB-S3-0 2FT	SED-CSC-S1-0 2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,2,4-Trichlorobenzene	230 U	10 U	2600 UJ	2200 UJ	770 J	3300 UJ	3400 UJ
1,2-Dichlorobenzene	230 U	10 U	370 J	2200 UJ	2600 UJ	3300 UJ	3400 UJ
1,3-Dichlorobenzene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
1,4-Dichlorobenzene	230 U	10 U	1000 J	2200 UJ	520 J	3300 UJ	3400 UJ
2,2'-Oxybis(1-Chloropropane)	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,4,5-Trichlorophenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,4,6-Trichlorophenol	230 U	2.1 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,4-Dichlorophenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,4-Dinitrophenol	1200 U	14 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
2,4-Dinitrotoluene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2,6-Dinitrotoluene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Chloronaphthalene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Chlorophenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Methylnaphthalene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Methylphenol (o-cresol)	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
2-Nitroaniline	1200 U	50 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
2-Nitrophenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
3,3'-Dichlorobenzidine	450 U	20 U	5000 UJ	4200 UJ	5000 UJ	6300 UJ	6600 UJ
3-Methylphenol/4-Methylphenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
3-Nitroaniline	1200 U	50 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
4,6-Dinitro-2-methylphenol	1200 U	13 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
4-Bromophenylphenyl ether	230 U	1.0 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
4-Chloro-3-methylphenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
4-Chloroaniline	450 U	20 U	5000 UJ	4200 UJ	830 J	6300 UJ	6600 UJ
4-Chlorophenylphenyl ether	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
4-Nitroaniline	1200 U	50 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
4-Nitrophenol	1200 U	50 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
Acenaphthene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Acenaphthylene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Anthracene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Benzo(a)anthracene	230 U	10 U	960 J	600 J	870 J	680 J	530 J
Benzo(a)pyrene	120 U	10 U	1500 J	770 J	1200 J	730 J	1800 UJ
Benzo(b)fluoranthene	230 U	10 U	1700 J	1100 J	2000 J	1100 J	680 J
Benzo(g,h,i)perylene	230 U	10 U	1600 J	710 J	1600 J	790 J	3400 UJ
Benzo(k)fluoranthene	230 U	10 U	1500 J	920 J	1600 J	920 J	3400 UJ

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0 2FTEB	SED-CSB-S1-0 2FT	SED-CSB-S1-0 2FTFD	SED-CSB-S2-0.2FT	SED-CSB-S3-0 2FT	SED-CSC-S1-0 2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Butylbenzylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Carbazole	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Chrysene	230 U	10 U	1600 J	990 J	1800 J	1100 J	640 J
Di-n-butylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Di-n-octylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Dibenzo(a,h)anthracene	120 U	10 U	1400 UJ	1200 UJ	1400 UJ	1700 UJ	1800 UJ
Dibenzofuran	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Diethylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Dimethylphthalate	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Fluoranthene	230 U	10 U	2300 J	1700 J	1800 J	1900 J	780 J
Fluorene	230 U	1.0 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 U
Hexachlorobenzene	96 U	10 U	1000 UJ	900 UJ	1000 UJ	1300 UJ	1400 UJ
Hexachlorobutadiene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Hexachlorocyclopentadiene	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Hexachloroethane	230 U	1.9 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Indeno(1,2,3-cd)pyrene	230 U	10 U	1300 J	2200 UJ	1000 J	3300 UJ	3400 UJ
Isophorone	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
N-Nitroso-di-n-propylamine	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
N-Nitrosodiphenylamine	230 U	5.0 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Naphthalene	230 U	10 U	2600 UJ	2200 UJ	380 J	3300 UJ	3400 UJ
Nitrobenzene	230 U	3.5 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Pentachlorophenol	1200 U	5.0 U	13000 UJ	11000 UJ	13000 UJ	16000 UJ	17000 UJ
Phenanthrene	230 U	10 U	2600 UJ	810 J	930 J	910 J	530 J
Phenol	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Pyrene	230 U	10 U	3000 J	1800 J	2200 J	2000 J	940 J
bis(2-Chloroethoxy)methane	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
bis(2-Chloroethyl)ether	230 U	10 U	2600 UJ	2200 UJ	2600 UJ	3300 UJ	3400 UJ
bis(2-Ethylhexyl)phthalate	230 U	1.8 U	3000 J	2200 UJ	2600 UJ	3300 UJ	3400 UJ
Total Semivolatiles	ND	ND	19830	9400	17500	10130	4100

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-CSC-S2-0 2FT	SED-CSC-S3-0 2FT	SED-CSD-S1-0 2FT	SED-CSD-S2-0 2FT	SED-CSD-S3-0 2FT	SED-CSE-S1-0 2FT	SED-CSE-S2-0 2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,2,4-Trichlorobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
1,2-Dichlorobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
1,3-Dichlorobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
1,4-Dichlorobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,2'-Oxybis(1-Chloropropane)	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,4,5-Trichlorophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,4,6-Trichlorophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,4-Dichlorophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,4-Dinitrophenol	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
2,4-Dinitrotoluene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2,6-Dinitrotoluene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Chloronaphthalene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Chlorophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Methylnaphthalene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Methylphenol (o-cresol)	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
2-Nitroaniline	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
2-Nitrophenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
3,3'-Dichlorobenzidine	5500 UJ	7600 UJ	8400 UJ	9100 UJ	5700 UJ	1200 UJ	860 UJ
3-Methylphenol/4-Methylphenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
3-Nitroaniline	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
4,6-Dinitro-2-methylphenol	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
4-Bromophenylphenyl ether	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
4-Chloro-3-methylphenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
4-Chloroaniline	5500 UJ	7600 UJ	8400 UJ	9100 UJ	5700 UJ	1200 UJ	860 UJ
4-Chlorophenylphenyl ether	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
4-Nitroaniline	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
4-Nitrophenol	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
Acenaphthene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Acenaphthylene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Anthracene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Benzo(a)anthracene	2800 UJ	890 J	4300 UJ	4700 UJ	420 J	100 J	120 J
Benzo(a)pyrene	1500 UJ	1400 J	2300 UJ	2500 UJ	560 J	150 J	170 J
Benzo(b)fluoranthene	600 J	2000 J	970 J	780 J	910 J	170 J	260 J
Benzo(g,h,i)perylene	2800 UJ	1400 J	4300 UJ	4700 UJ	660 J	140 J	170 J
Benzo(k)fluoranthene	390 J	1200 J	660 J	520 J	610 J	600 UJ	170 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-CSC-S2-0 2FT	SED-CSC-S3-0 2FT	SED-CSD-S1-0 2FT	SED-CSD-S2-0 2FT	SED-CSD-S3-0 2FT	SED-CSE-S1-0 2FT	SED-CSE-S2-0 2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Butylbenzylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Carbazole	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Chrysene	500 J	1500 J	790 J	670 J	740 J	190 J	220 J
Di-n-butylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Di-n-octylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Dibenzo(a,h)anthracene	1500 UJ	2100 UJ	2300 UJ	2500 UJ	1600 UJ	320 UJ	240 UJ
Dibenzofuran	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Diethylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Dimethylphthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Fluoranthene	800 J	2200 J	1200 J	1000 J	1200 J	320 J	390 J
Fluorene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Hexachlorobenzene	1200 UJ	1600 UJ	1800 UJ	1900 UJ	1200 UJ	250 UJ	180 UJ
Hexachlorobutadiene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Hexachlorocyclopentadiene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Hexachloroethane	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Indeno(1,2,3-cd)pyrene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	130 J	150 J
Isophorone	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
N-Nitroso-di-n-propylamine	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
N-Nitrosodiphenylamine	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Naphthalene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Nitrobenzene	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Pentachlorophenol	14000 UJ	20000 UJ	22000 UJ	23000 UJ	15000 UJ	3000 UJ	2200 UJ
Phenanthrene	320 J	840 J	4300 UJ	4700 UJ	410 J	130 J	120 J
Phenol	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
Pyrene	660 J	2000 J	950 J	970 J	1100 J	250 J	310 J
bis(2-Chloroethoxy)methane	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
bis(2-Chloroethyl)ether	2800 UJ	3900 UJ	4300 UJ	4700 UJ	2900 UJ	600 UJ	440 UJ
bis(2-Ethylhexyl)phthalate	2800 UJ	3900 UJ	4300 UJ	4700 UJ	1200 J	600 UJ	260 J
Total Semivolatiles	3270	13430	4570	3940	7810	1580	2340

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-CSE-S3-0 2FT	SED-CSF-S1-0 2FT	SED-CSF-S2-0 2FT	SED-CSF-S3-0.2FT	SED-M-S1-0 2FT	SED-RA1-S1-0 2FT	SED-RA1-S2-0 2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
1,2,4-Trichlorobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
1,2-Dichlorobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
1,3-Dichlorobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
1,4-Dichlorobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,2'-Oxybis(1-Chloropropane)	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,4,5-Trichlorophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,4,6-Trichlorophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,4-Dichlorophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,4-Dinitrophenol	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
2,4-Dinitrotoluene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2,6-Dinitrotoluene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Chloronaphthalene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Chlorophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Methylnaphthalene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Methylphenol (o-cresol)	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
2-Nitroaniline	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
2-Nitrophenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
3,3'-Dichlorobenzidine	1100 UJ	770 UJ	1700 UJ	1200 UJ	9700 UJ	590 U	880 UJ
3-Methylphenol/4-Methylphenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
3-Nitroaniline	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
4,6-Dinitro-2-methylphenol	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
4-Bromophenylphenyl ether	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
4-Chloro-3-methylphenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
4-Chloroaniline	1100 UJ	770 UJ	1700 UJ	1200 UJ	2400 J	590 U	880 UJ
4-Chlorophenylphenyl ether	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
4-Nitroaniline	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
4-Nitrophenol	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
Acenaphthene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Acenaphthylene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Anthracene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Benzo(a)anthracene	340 J	400 UJ	890 UJ	620 UJ	1300 J	300 U	450 UJ
Benzo(a)pyrene	420 J	210 UJ	470 UJ	330 UJ	1500 J	160 U	240 UJ
Benzo(b)fluoranthene	520 J	400 UJ	890 UJ	620 UJ	1500 J	300 U	450 UJ
Benzo(g,h,i)perylene	350 J	400 UJ	890 UJ	620 UJ	1300 J	300 U	450 UJ
Benzo(k)fluoranthene	600 J	400 UJ	890 UJ	620 UJ	1800 J	300 U	450 UJ

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-CSE-S3-0 2FT	SED-CSF-S1-0 2FT	SED-CSF-S2-0 2FT	SED-CSF-S3-0 2FT	SED-M-S1-0 2FT	SED-RA1-S1-0 2FT	SED-RA1-S2-0 2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Butylbenzylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Carbazole	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Chrysene	660 J	74 J	890 UJ	620 UJ	1600 J	300 U	450 UJ
Di-n-butylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Di-n-octylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Dibenzo(a,h)anthracene	300 UJ	210 UJ	470 UJ	330 UJ	2600 UJ	160 U	240 UJ
Dibenzofuran	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Diethylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Dimethylphthalate	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Fluoranthene	1200 J	120 J	890 UJ	130 J	3000 J	300 U	450 UJ
Fluorene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Hexachlorobenzene	230 UJ	160 UJ	370 UJ	260 UJ	2000 UJ	120 U	190 UJ
Hexachlorobutadiene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Hexachlorocyclopentadiene	R	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Hexachloroethane	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Indeno(1,2,3-cd)pyrene	430 J	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Isophorone	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
N-Nitroso-di-n-propylamine	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
N-Nitrosodiphenylamine	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Naphthalene	560 UJ	400 UJ	890 UJ	620 UJ	1100 J	300 U	450 UJ
Nitrobenzene	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Pentachlorophenol	2800 UJ	2000 UJ	4500 UJ	3100 UJ	25000 UJ	1500 U	2300 UJ
Phenanthrene	510 J	400 UJ	890 UJ	620 UJ	1300 J	300 U	450 UJ
Phenol	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
Pyrene	1000 J	400 UJ	890 UJ	620 UJ	2200 J	300 U	450 UJ
bis(2-Chloroethoxy)methane	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
bis(2-Chloroethyl)ether	560 UJ	400 UJ	890 UJ	620 UJ	5000 UJ	300 U	450 UJ
bis(2-Ethylhexyl)phthalate	250 J	400 UJ	890 UJ	620 UJ	1400 J	300 U	450 UJ
Total Semivolatiles	6280	194	ND	130	20400	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
1,2,4-Trichlorobenzene	350 UJ	10 U	350 UJ	370 UJ
1,2-Dichlorobenzene	350 UJ	10 U	350 UJ	370 UJ
1,3-Dichlorobenzene	350 UJ	10 U	350 UJ	370 UJ
1,4-Dichlorobenzene	350 UJ	10 U	350 UJ	370 UJ
2,2'-Oxybis(1-Chloropropane)	350 UJ	10 U	350 UJ	370 UJ
2,4,5-Trichlorophenol	350 UJ	10 U	350 UJ	370 UJ
2,4,6-Trichlorophenol	350 UJ	2.1 U	350 UJ	370 UJ
2,4-Dichlorophenol	350 UJ	10 U	350 UJ	370 UJ
2,4-Dinitrophenol	1800 UJ	14 U	1800 UJ	1800 UJ
2,4-Dinitrotoluene	350 UJ	10 U	350 UJ	370 UJ
2,6-Dinitrotoluene	350 UJ	10 U	350 UJ	370 UJ
2-Chloronaphthalene	350 UJ	10 U	350 UJ	370 UJ
2-Chlorophenol	350 UJ	10 U	350 UJ	370 UJ
2-Methylnaphthalene	350 UJ	10 U	350 UJ	370 UJ
2-Methylphenol (o-cresol)	350 UJ	10 U	350 UJ	370 UJ
2-Nitroaniline	1800 UJ	50 U	1800 UJ	1800 UJ
2-Nitrophenol	350 UJ	10 U	350 UJ	370 UJ
3,3'-Dichlorobenzidine	680 UJ	20 U	690 UJ	710 UJ
3-Methylphenol/4-Methylphenol	350 UJ	10 U	350 UJ	370 UJ
3-Nitroaniline	1800 UJ	50 U	1800 UJ	1800 UJ
4,6-Dinitro-2-methylphenol	1800 UJ	13 U	1800 UJ	1800 UJ
4-Bromophenylphenyl ether	350 UJ	1 U	350 UJ	370 UJ
4-Chloro-3-methylphenol	350 UJ	10 U	350 UJ	370 UJ
4-Chloroaniline	680 UJ	1.2 J	690 UJ	710 UJ
4-Chlorophenylphenyl ether	350 UJ	10 U	350 UJ	370 UJ
4-Nitroaniline	1800 UJ	50 U	1800 UJ	1800 UJ
4-Nitrophenol	1800 UJ	50 U	1800 UJ	1800 UJ
Acenaphthene	350 UJ	10 U	350 UJ	370 UJ
Acenaphthylene	350 UJ	10 U	350 UJ	370 UJ
Anthracene	350 UJ	10 U	350 UJ	370 UJ
Benzo(a)anthracene	350 UJ	10 U	350 UJ	370 UJ
Benzo(a)pyrene	190 UJ	10 U	190 UJ	190 UJ
Benzo(b)fluoranthene	350 UJ	10 U	350 UJ	370 UJ
Benzo(g,h,i)perylene	350 UJ	10 U	350 UJ	370 UJ
Benzo(k)fluoranthene	350 UJ	10 U	350 UJ	370 UJ

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 5-2
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8270C Semivolatile Organic Compound Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
Butylbenzylphthalate	350 UJ	10 U	350 UJ	370 UJ
Carbazole	350 UJ	10 U	350 UJ	370 UJ
Chrysene	350 UJ	10 U	350 UJ	370 UJ
Di-n-butylphthalate	350 UJ	10 U	350 UJ	370 UJ
Di-n-octylphthalate	350 UJ	10 U	350 UJ	370 UJ
Dibenzo(a,h)anthracene	190 UJ	10 U	190 UJ	190 UJ
Dibenzofuran	350 UJ	10 U	350 UJ	370 UJ
Diethylphthalate	350 UJ	10 U	350 UJ	370 UJ
Dimethylphthalate	350 UJ	10 U	350 UJ	370 UJ
Fluoranthene	350 UJ	10 U	350 UJ	370 UJ
Fluorene	350 UJ	1 U	350 UJ	370 UJ
Hexachlorobenzene	140 UJ	10 U	140 UJ	150 UJ
Hexachlorobutadiene	350 UJ	10 U	350 UJ	370 UJ
Hexachlorocyclopentadiene	350 UJ	10 U	350 UJ	370 UJ
Hexachloroethane	350 UJ	1.9 U	350 UJ	370 UJ
Indeno(1,2,3-cd)pyrene	350 UJ	10 U	350 UJ	370 UJ
Isophorone	350 UJ	10 U	350 UJ	370 UJ
N-Nitroso-di-n-propylamine	350 UJ	10 U	350 UJ	370 UJ
N-Nitrosodiphenylamine	350 UJ	5 U	350 UJ	370 UJ
Naphthalene	350 UJ	10 U	350 UJ	370 UJ
Nitrobenzene	350 UJ	3.5 U	350 UJ	370 UJ
Pentachlorophenol	1800 UJ	5 U	1800 UJ	1800 UJ
Phenanthrene	350 UJ	10 U	350 UJ	370 UJ
Phenol	350 UJ	10 U	350 UJ	370 UJ
Pyrene	350 UJ	10 U	350 UJ	370 UJ
bis(2-Chloroethoxy)methane	350 UJ	10 U	350 UJ	370 UJ
bis(2-Chloroethyl)ether	350 UJ	10 U	350 UJ	370 UJ
bis(2-Ethylhexyl)phthalate	350 UJ	1.8 U	350 UJ	370 UJ
Total Semivolatiles	ND	1.2	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	BPL-ESED-S1-0 2FT	BPL-ESED-S1-0 2FTFD	BPL-ESED-S2-0 2FT	BPL-ESED-S3-0 2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
Decachlorobiphenyl	230 UJ	46 UJ	49 UJ	46 UJ	24 U	23 U	0.5 U
Dichlorobiphenyl	46 UJ	9.2 UJ	9.7 UJ	9.2 UJ	4.8 UJ	4.5 U	0.1 U
Heptachlorobiphenyl	140 UJ	28 UJ	29 UJ	28 UJ	15 UJ	14 U	0.3 U
Hexachlorobiphenyl	95 UJ	19 UJ	20 UJ	19 UJ	9.8 UJ	9.2 U	0.2 U
Monochlorobiphenyl	46 UJ	9.2 UJ	9.7 UJ	9.2 UJ	4.8 UJ	4.5 U	0.1 U
Nonachlorobiphenyl	230 UJ	46 UJ	49 UJ	46 UJ	24 UJ	23 U	0.5 U
Octachlorobiphenyl	140 UJ	28 UJ	29 UJ	28 UJ	15 UJ	14 U	0.3 U
Pentachlorobiphenyl	95 UJ	19 UJ	20 UJ	19 UJ	9.8 UJ	9.2 U	0.2 U
Tetrachlorobiphenyl	95 UJ	19 UJ	20 UJ	19 UJ	9.8 UJ	9.2 U	0.2 U
Trichlorobiphenyl	46 UJ	9.2 UJ	9.7 UJ	9.2 UJ	4.8 UJ	4.5 U	0.1 U
Total PCBs	ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0 2FTEB	SED-CSB-S1-0.2FT	SED-CSB-S1-0 2FTFD	SED-CSB-S2-0 2FT	SED-CSB-S3-0 2FT	SED-CSC-S1-0 2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	23 U	0.50 U	2500 UJ	2300 UJ	3400 J	2300 J	290 UJ
Dichlorobiphenyl	4.6 U	0.10 U	500 UJ	450 UJ	640 J	500 J	57 UJ
Heptachlorobiphenyl	14 U	0.30 U	980 J	1400 UJ	5300 J	1300 J	170 UJ
Hexachlorobiphenyl	9.3 U	0.20 U	5200 J	2600 J	21000 J	7600 J	160 J
Monochlorobiphenyl	4.6 U	0.10 U	500 UJ	450 UJ	500 UJ	670 UJ	57 UJ
Nonachlorobiphenyl	23 U	0.50 U	2500 UJ	2300 UJ	2500 UJ	3400 UJ	290 UJ
Octachlorobiphenyl	14 U	0.30 U	1500 UJ	1400 UJ	1800 J	2000 UJ	170 UJ
Pentachlorobiphenyl	9.3 U	0.20 U	34000 J	7500 J	66000 J	19000 J	110 UJ
Tetrachlorobiphenyl	9.3 U	0.20 U	88000 J	15000 J	98000 J	26000 J	110 UJ
Trichlorobiphenyl	4.6 U	0.10 U	34000 J	4800 J	30000 J	11000 J	57 UJ
Total PCBs	ND	ND	162180	29900	226140	67700	160

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	SED-CSC-S2-0 2FT	SED-CSC-S3-0 2FT	SED-CSD-S1-0 2FT	SED-CSD-S2-0 2FT	SED-CSD-S3-0 2FT	SED-CSE-S1-0 2FT	SED-CSE-S2-0 2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	2900 UJ	3900 UJ	170 J	230 J	300 UJ	140 J	440 UJ
Dichlorobiphenyl	570 UJ	770 UJ	87 UJ	96 UJ	59 UJ	12 UJ	87 UJ
Heptachlorobiphenyl	1700 UJ	2300 UJ	260 UJ	290 UJ	180 UJ	49 J	260 UJ
Hexachlorobiphenyl	720 J	2000 J	97 J	400 J	250 J	130 J	170 UJ
Monochlorobiphenyl	570 UJ	770 UJ	87 UJ	96 UJ	59 UJ	12 UJ	87 UJ
Nonachlorobiphenyl	2900 UJ	3900 UJ	440 UJ	480 UJ	300 UJ	60 UJ	440 UJ
Octachlorobiphenyl	1700 UJ	2300 UJ	260 UJ	290 UJ	180 UJ	36 UJ	260 UJ
Pentachlorobiphenyl	2200 J	2600 J	430 J	520 J	480 J	650 J	170 UJ
Tetrachlorobiphenyl	1200 UJ	1600 UJ	180 UJ	190 UJ	120 UJ	60 J	170 UJ
Trichlorobiphenyl	570 UJ	770 UJ	87 UJ	96 UJ	59 UJ	9.2 J	87 UJ
Total PCBs	2920	4600	697	1150	730	1038.2	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	56 UJ	39 UJ	88 UJ	310 UJ	5100 UJ	30 U	45 UJ
Dichlorobiphenyl	11 UJ	7.7 UJ	17 UJ	60 UJ	1000 UJ	5.9 U	8.9 UJ
Heptachlorobiphenyl	33 UJ	23 UJ	53 UJ	180 UJ	3000 UJ	18 U	27 UJ
Hexachlorobiphenyl	22 UJ	22 J	17 J	120 UJ	3000 J	12 U	18 UJ
Monochlorobiphenyl	11 UJ	7.7 UJ	17 UJ	60 UJ	1000 UJ	5.9 U	8.9 UJ
Nonachlorobiphenyl	56 UJ	39 UJ	88 UJ	310 UJ	5100 UJ	30 U	45 UJ
Octachlorobiphenyl	33 UJ	23 UJ	53 UJ	180 UJ	3000 UJ	18 U	27 UJ
Pentachlorobiphenyl	22 UJ	61 J	66 J	120 UJ	4800 J	12 U	18 UJ
Tetrachlorobiphenyl	22 UJ	16 UJ	35 UJ	120 UJ	3100 J	12 U	18 UJ
Trichlorobiphenyl	11 UJ	7.7 UJ	17 UJ	60 UJ	1300 J	5.9 U	8.9 UJ
Total PCBs	ND	83	83	ND	12200	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-3
Solutia
Sauget Area 1
Broad Scan Sediments
Method 680 Polychlorinated Biphenyl Data

Compound	Sample ID	SED-RA2-S1-0 2FT	SED-RA2-S1-0 2FTEB	SED-RA2-S1-0 2FTFD	SED-RA2-S2-0 2FT
	Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
	Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Decachlorobiphenyl		35 UJ	0.5 U	35 UJ	36 UJ
Dichlorobiphenyl		6.9 UJ	0.1 U	6.9 UJ	7.1 UJ
Heptachlorobiphenyl		21 UJ	0.3 U	21 UJ	22 UJ
Hexachlorobiphenyl		14 UJ	0.2 U	14 UJ	14 UJ
Monochlorobiphenyl		6.9 UJ	0.1 U	6.9 UJ	7.1 UJ
Nonachlorobiphenyl		35 UJ	0.5 U	35 UJ	36 UJ
Octachlorobiphenyl		21 UJ	0.3 U	21 UJ	22 UJ
Pentachlorobiphenyl		14 UJ	0.2 U	14 UJ	14 UJ
Tetrachlorobiphenyl		14 UJ	0.2 U	14 UJ	14 UJ
Trichlorobiphenyl		6.9 UJ	0.1 U	6.9 UJ	7.1 UJ
Total PCBs		ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

Compound	Sample ID	BPL-ESED-S1-0 2FT	BPL-ESED-S1-0 2FTFD	BPL-ESED-S2-0 2FT	BPL-ESED-S3-0 2FT	BSSED-PDC-DS-S-0-10IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
	Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
4,4'-DDD		18 UJ	9.1 UJ	19 UJ	18 UJ	4.8 U	4.5 U	0.1 U
4,4'-DDE		1.4 J	0.81 J	3.2 J	1.6 J	4.8 U	4.5 U	0.1 U
4,4'-DDT		1.9 J	0.38 J	19 UJ	1.4 J	4.8 U	4.5 U	0.1 U
Aldrin		9.4 UJ	4.7 UJ	9.9 UJ	9.4 UJ	2.4 U	2.3 U	0.05 U
Alpha Chlordane		0.52 J	0.43 J	3.2 J	1.2 J	2.4 U	2.3 U	0.05 U
Dieldrin		0.3 J	0.21 J	0.5 J	18 UJ	4.8 UJ	4.5 U	0.1 U
Endosulfan I		9.4 UJ	0.38 J	2.8 J	1 J	2.4 U	2.3 U	0.05 U
Endosulfan II		18 UJ	9.1 UJ	19 UJ	18 UJ	4.8 U	4.5 U	0.1 U
Endosulfan sulfate		18 UJ	0.94 J	1.4 J	18 UJ	4.8 U	4.5 U	0.1 U
Endrin		18 UJ	9.1 UJ	19 UJ	18 UJ	4.8 UJ	4.5 U	0.1 U
Endrin aldehyde		1.6 J	1.1 J	2.2 J	1.2 J	4.8 U	4.5 U	0.1 U
Endrin ketone		1 J	0.43 J	19 UJ	18 UJ	4.8 U	4.5 U	0.1 U
Gamma Chlordane		0.89 J	0.58 J	3 J	9.4 UJ	2.4 U	2.3 U	0.05 U
Heptachlor		9.4 UJ	4.7 UJ	9.9 UJ	9.4 UJ	2.4 U	2.3 U	0.05 U
Heptachlor epoxide		9.4 UJ	0.2 J	9.9 UJ	9.4 UJ	2.4 U	2.3 U	0.05 U
Methoxychlor		94 UJ	47 UJ	99 UJ	94 UJ	24 U	23 U	0.5 U
Toxaphene		940 UJ	470 UJ	990 UJ	940 UJ	240 U	230 U	5 U
alpha-BHC		2.8 UJ	1.4 UJ	2.9 UJ	2.8 UJ	0.72 U	0.68 U	0.039 U
beta-BHC		2.8 UJ	1.4 UJ	2.9 UJ	2.8 UJ	0.72 UJ	0.68 U	0.014 U
delta-BHC		2.8 UJ	1.4 UJ	2.9 UJ	2.8 UJ	2.4 U	2.3 U	0.012 U
gamma-BHC (Lindane)		9.4 UJ	0.16 J	9.9 UJ	9.4 UJ	2.4 U	2.3 U	0.019 U
Total Pesticides		7.61	5.62	16.3	6.4	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0 2FTEB	SED-CSB-S1-0 2FT	SED-CSB-S1-0 2FTFD	SED-CSB-S2-0 2FT	SED-CSB-S3-0 2FT	SED-CSC-S1-0 2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
4,4'-DDD	4.5 U	0.10 U	170 J	130 J	970 UJ	650 UJ	28 J
4,4'-DDE	4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	51 J
4,4'-DDT	4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Aldrin	2.3 U	0.050 U	1200 J	1000 J	980 J	410 J	25 J
Alpha Chlordane	2.3 U	0.050 U	500 UJ	440 UJ	500 UJ	330 UJ	37 J
Dieldrin	4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Endosulfan I	2.3 U	0.050 U	500 UJ	440 UJ	500 UJ	330 UJ	70 UJ
Endosulfan II	4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Endosulfan sulfate	4.5 U	0.0014 J	970 UJ	84 J	130 J	98 J	9 J
Endrin	4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Endrin aldehyde	4.5 U	0.10 U	520 J	860 UJ	970 UJ	650 UJ	140 UJ
Endrin ketone	4.5 U	0.10 U	970 UJ	860 UJ	970 UJ	650 UJ	140 UJ
Gamma Chlordane	2.3 U	0.050 U	760 J	680 J	500 UJ	330 UJ	110 J
Heptachlor	2.3 U	0.050 U	500 UJ	440 UJ	500 J	330 UJ	70 UJ
Heptachlor epoxide	2.3 U	0.050 U	500 UJ	440 UJ	500 UJ	330 UJ	70 UJ
Methoxychlor	23 U	0.50 U	5000 UJ	4400 UJ	5000 UJ	3300 UJ	700 UJ
Toxaphene	230 U	5.0 U	50000 UJ	44000 UJ	50000 UJ	33000 UJ	7000 UJ
alpha-BHC	0.69 U	0.039 U	150 UJ	130 UJ	150 UJ	98 UJ	21 UJ
beta-BHC	0.69 U	0.014 U	150 UJ	130 UJ	150 UJ	98 UJ	21 UJ
delta-BHC	2.3 U	0.0096 J	150 UJ	130 UJ	150 UJ	98 UJ	21 UJ
gamma-BHC (Lindane)	2.3 U	0.019 U	500 UJ	440 UJ	500 UJ	330 UJ	70 UJ
Total Pesticides	ND	0.011	2650	1894	1610	508	260

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

Sample ID	SED-CSC-S2-0 2FT	SED-CSC-S3-0 2FT	SED-CSD-S1-0 2FT	SED-CSD-S2-0 2FT	SED-CSD-S3-0 2FT	SED-CSE-S1-0 2FT	SED-CSE-S2-0 2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
4,4'-DDD	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	120 UJ	86 UJ
4,4'-DDE	270 UJ	380 UJ	20 J	14 J	4.4 J	15 J	3.4 J
4,4'-DDT	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	9.3 J	86 UJ
Aldrin	42 J	64 J	9.6 J	11 J	2.7 J	60 UJ	44 UJ
Alpha Chlordane	54 J	120 J	26 J	14 J	30 UJ	6.9 J	2.5 J
Dieldrin	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	9.4 J	1.7 J
Endosulfan I	140 UJ	200 UJ	44 UJ	48 UJ	30 UJ	60 UJ	44 UJ
Endosulfan II	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	12 J	2.3 J
Endosulfan sulfate	16 J	380 UJ	86 UJ	94 UJ	58 UJ	10 J	86 UJ
Endrin	270 UJ	380 UJ	86 UJ	94 UJ	58 UJ	4.6 J	86 UJ
Endrin aldehyde	270 UJ	380 UJ	86 UJ	94 UJ	16 J	22 J	3.6 J
Endrin ketone	270 UJ	380 UJ	86 UJ	94 UJ	5.5 J	17 J	6.8 J
Gamma Chlordane	140 J	250 J	49 J	29 J	6.7 J	14 J	5.9 J
Heptachlor	9.1 J	9.7 J	44 UJ	48 UJ	30 UJ	60 UJ	44 UJ
Heptachlor epoxide	140 UJ	200 UJ	44 UJ	48 UJ	30 UJ	5.2 J	44 UJ
Methoxychlor	1400 UJ	2000 UJ	440 UJ	480 UJ	300 UJ	39 J	440 UJ
Toxaphene	14000 UJ	20000 UJ	4400 UJ	4800 UJ	3000 UJ	6000 UJ	4400 UJ
alpha-BHC	41 UJ	58 UJ	13 UJ	14 UJ	8.8 UJ	18 UJ	13 UJ
beta-BHC	41 UJ	58 UJ	13 UJ	14 UJ	8.8 UJ	18 UJ	13 UJ
delta-BHC	41 UJ	18 J	16 J	14 UJ	1.5 J	1.3 J	13 UJ
gamma-BHC (Lindane)	140 UJ	200 UJ	44 UJ	48 UJ	30 UJ	60 UJ	44 UJ
Total Pesticides	261.1	461.7	120.6	68	36.8	165.7	26.2

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

Sample ID	SED-CSE-S3-0 2FT	SED-CSF-S1-0 2FT	SED-CSF-S2-0 2FT	SED-CSF-S3-0 2FT	SED-M-S1-0 2FT	SED-RA1-S1-0 2FT	SED-RA1-S2-0 2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
4,4'-DDD	22 UJ	3.8 J	35 UJ	24 UJ	770 UJ	5.8 U	8.8 UJ
4,4'-DDE	4.3 J	11 J	8.1 J	2.5 J	110 J	5.8 U	8.8 UJ
4,4'-DDT	22 UJ	4.5 J	35 UJ	24 UJ	44 J	5.8 U	8.8 UJ
Aldrin	11 UJ	4.1 J	18 UJ	12 UJ	120 J	3 U	4.6 UJ
Alpha Chlordane	3.9 J	4.6 J	5.3 J	0.84 J	400 UJ	3 U	4.6 UJ
Dieldrin	5.4 J	9.3 J	35 UJ	0.99 J	770 UJ	5.8 U	8.8 UJ
Endosulfan I	11 UJ	5.7 J	2 J	1.2 J	400 UJ	3 U	4.6 UJ
Endosulfan II	22 UJ	8.1 J	5.5 J	1.8 J	770 UJ	5.8 U	8.8 UJ
Endosulfan sulfate	22 UJ	2.8 J	35 UJ	24 UJ	50 J	5.8 U	8.8 UJ
Endrin	22 UJ	1.7 J	35 UJ	1.7 J	770 UJ	5.8 U	8.8 UJ
Endrin aldehyde	22 UJ	14 J	9 J	3.6 J	770 UJ	5.8 U	8.8 UJ
Endrin ketone	22 UJ	10 J	7.2 J	3.8 J	200 J	5.8 U	8.8 UJ
Gamma Chlordane	5.1 J	17 J	7.5 J	2.4 J	140 J	3 U	4.6 UJ
Heptachlor	0.53 J	7.8 UJ	18 UJ	0.93 J	59 J	3 U	4.6 UJ
Heptachlor epoxide	11 UJ	5.4 J	18 UJ	0.51 J	400 UJ	3 U	4.6 UJ
Methoxychlor	110 UJ	24 J	14 J	7.3 J	4000 UJ	30 U	46 UJ
Toxaphene	1100 UJ	780 UJ	1800 UJ	1200 UJ	40000 UJ	300 U	460 UJ
alpha-BHC	3.3 UJ	2.3 UJ	5.3 UJ	3.7 UJ	120 UJ	0.89 U	1.3 UJ
beta-BHC	3.3 UJ	2.3 UJ	5.3 UJ	3.7 UJ	120 UJ	0.89 U	1.3 UJ
delta-BHC	3.3 UJ	0.34 J	5.3 UJ	3.7 UJ	120 UJ	0.89 U	1.3 UJ
gamma-BHC (Lindane)	11 UJ	7.8 UJ	18 UJ	12 UJ	400 UJ	3 U	4.6 UJ
Total Pesticides	19.23	126.34	58.6	27.57	723	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-4
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8081A Pesticide Data

Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTEB	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
4,4'-DDD	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
4,4'-DDE	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
4,4'-DDT	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Aldrin	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Alpha Chlordane	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Dieldrin	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endosulfan I	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Endosulfan II	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endosulfan sulfate	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endrin	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endrin aldehyde	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Endrin ketone	6.8 UJ	0.1 U	6.8 UJ	7.2 UJ
Gamma Chlordane	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Heptachlor	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Heptachlor epoxide	3.5 UJ	0.05 U	3.5 UJ	3.7 UJ
Methoxychlor	35 UJ	0.5 U	35 UJ	37 UJ
Toxaphene	350 UJ	5 U	350 UJ	370 UJ
alpha-BHC	1 UJ	0.039 U	1 UJ	1.1 UJ
beta-BHC	1 UJ	0.014 U	1 UJ	1.1 UJ
delta-BHC	1 UJ	0.0089 J	1 UJ	1.1 UJ
gamma-BHC (Lindane)	3.5 UJ	0.019 U	3.5 UJ	3.7 UJ
Total Pesticides	ND	0.0089	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

Sample ID	BPL-ESED-S1-0.2FT	BPL-ESED-S1-0 2FTFD	BPL-ESED-S2-0 2FT	BPL-ESED-S3-0 2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/l
Compound							
2,4,5-T	23 UJ	23 UJ	24 UJ	23 UJ	12 U	11 U	0.5 U
2,4,5-TP (Silvex)	23 UJ	23 UJ	24 UJ	23 UJ	12 U	11 U	0.5 U
2,4-D	23 UJ	6.1 J	24 UJ	11 J	12 U	11 U	0.5 U
2,4-DB	23 UJ	23 UJ	24 UJ	23 UJ	12 U	11 U	0.5 U
Dalapon	180 UJ	180 UJ	190 UJ	180 UJ	97 U	90 U	120 U
Dicamba	55 UJ	55 UJ	58 UJ	56 UJ	30 U	27 U	1.2 U
Dichloroprop	280 UJ	270 UJ	290 UJ	280 UJ	140 U	140 U	6 U
Dinoseb	280 UJ	270 UJ	290 UJ	280 UJ	140 U	140 U	6 U
MCPA	5500 UJ	5500 UJ	5800 UJ	5600 UJ	2900 U	2700 U	120 U
MCPP	5500 UJ	5500 UJ	5800 UJ	5600 UJ	2900 U	2700 U	120 U
Pentachlorophenol	47 UJ	47 UJ	50 UJ	47 UJ	29 U	27 U	1 U
Total Herbicides	ND	6.1	ND	11	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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FXP File D:\25501\TABLEPRS.FXP

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O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0 2FTEB	SED-CSB-S1-0 2FT	SED-CSB-S1-0 2FTFD	SED-CSB-S2-0 2FT	SED-CSB-S3-0 2FT	SED-CSC-S1-0 2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
2,4,5-T	11 U	0.50 U	110 UJ	110 UJ	21 UJ	140 UJ	28 UJ
2,4,5-TP (Silvex)	11 U	0.50 U	110 UJ	110 UJ	21 UJ	140 UJ	28 UJ
2,4-D	11 U	0.50 U	110 UJ	110 UJ	21 UJ	140 UJ	28 UJ
2,4-DB	11 U	0.50 U	110 UJ	110 UJ	21 UJ	140 UJ	28 UJ
Dalapon	91 U	120 U	840 UJ	850 UJ	160 UJ	1100 UJ	220 UJ
Dicamba	28 U	1.2 U	260 UJ	260 UJ	50 UJ	350 UJ	68 UJ
Dichloroprop	140 U	6.0 U	1300 UJ	1300 UJ	250 UJ	1800 UJ	340 UJ
Dinoseb	140 U	6.0 U	1300 UJ	1300 UJ	250 UJ	1800 UJ	340 UJ
MCPA	2800 U	120 U	26000 UJ	26000 UJ	5000 UJ	35000 UJ	6800 UJ
MCPP	2800 U	120 U	26000 UJ	26000 UJ	5000 UJ	35000 UJ	6800 UJ
Pentachlorophenol	23 U	1.0 U	57 J	36 J	220 J	56 J	7.4 J
Total Herbicides	ND	ND	57	36	220	56	7.4

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

Sample ID	SED-CSC-S2-0 2FT	SED-CSC-S3-0 2FT	SED-CSD-S1-0 2FT	SED-CSD-S2-0 2FT	SED-CSD-S3-0 2FT	SED-CSE-S1-0 2FT	SED-CSE-S2-0 2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
2,4,5-T	24 UJ	180 UJ	190 UJ	220 UJ	24 UJ	170 U	130 UJ
2,4,5-TP (Silvex)	24 UJ	180 UJ	190 UJ	220 UJ	24 UJ	170 UJ	130 UJ
2,4-D	24 UJ	180 UJ	190 UJ	220 UJ	24 UJ	73 J	130 UJ
2,4-DB	24 UJ	180 UJ	190 UJ	220 UJ	24 UJ	150 J	130 UJ
Dalapon	180 UJ	1400 UJ	1500 UJ	1700 UJ	190 UJ	1300 UJ	990 UJ
Dicamba	57 UJ	440 UJ	460 UJ	13 J	59 UJ	410 UJ	300 UJ
Dichloroprop	280 UJ	2200 UJ	2300 UJ	2600 UJ	290 UJ	2100 UJ	1500 UJ
Dinoseb	280 UJ	2200 UJ	2300 UJ	2600 UJ	290 UJ	2100 UJ	1500 UJ
MCPA	5700 UJ	44000 UJ	46000 UJ	53000 UJ	5900 UJ	41000 UJ	30000 UJ
MCPP	5700 UJ	44000 UJ	46000 UJ	53000 UJ	5900 UJ	41000 UJ	30000 UJ
Pentachlorophenol	23 J	23 J	400 UJ	450 UJ	3.9 J	350 UJ	12 J
Total Herbicides	23	23	ND	13	3.9	223	12

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
2,4,5-T	140 UJ	110 UJ	240 UJ	30 UJ	220 UJ	15 U	22 UJ
2,4,5-TP (Silvex)	140 UJ	110 UJ	240 UJ	30 UJ	220 UJ	15 U	22 UJ
2,4-D	140 UJ	110 UJ	240 UJ	23 J	220 UJ	12 J	22 UJ
2,4-DB	140 UJ	110 UJ	240 UJ	30 UJ	220 UJ	15 U	22 UJ
Dalapon	1100 UJ	860 UJ	2000 UJ	240 UJ	1700 UJ	120 U	180 UJ
Dicamba	340 UJ	260 UJ	570 UJ	74 UJ	540 UJ	35 U	54 UJ
Dichloroprop	1700 UJ	1300 UJ	2900 UJ	370 UJ	2700 UJ	180 U	270 UJ
Dinoseb	R	1300 UJ	2900 UJ	370 UJ	2700 UJ	180 U	270 UJ
MCPA	34000 UJ	26000 UJ	57000 UJ	7400 UJ	54000 UJ	3500 UJ	5400 UJ
MCPP	34000 UJ	26000 UJ	57000 UJ	7400 UJ	54000 UJ	3500 U	5400 UJ
Pentachlorophenol	3.8 J	72 UJ	490 UJ	62 UJ	52 J	1.9 J	46 UJ
Total Herbicides	3.8	ND	ND	23	52	13.9	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-5
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8151A Herbicide Data

Sample ID	SED-RA2-S1-0 2FT	SED-RA2-S1-0 2FTEB	SED-RA2-S1-0 2FTFD	SED-RA2-S2-0 2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw
Compound				
2,4,5-T	17 UJ	0.5 U	17 UJ	18 UJ
2,4,5-TP (Silvex)	17 UJ	0.5 U	17 UJ	18 UJ
2,4-D	17 UJ	0.5 U	17 UJ	18 UJ
2,4-DB	17 UJ	0.5 U	17 UJ	18 UJ
Dalapon	130 UJ	120 U	130 UJ	120 UJ
Dicamba	42 UJ	1.2 U	42 UJ	43 UJ
Dichloroprop	210 UJ	6 U	210 UJ	220 UJ
Dinoseb	210 UJ	6 U	210 UJ	220 UJ
MCPA	4200 UJ	120 U	4200 UJ	4300 UJ
MCPP	4200 UJ	120 U	4200 UJ	4300 UJ
Pentachlorophenol	35 UJ	1.0 U	35 UJ	36 UJ
Total Herbicides	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Compound	Sample ID	BPL-ESED-S1-0 2FT	BPL-ESED-S1-0.2FTFD	BPL-ESED-S2-0 2FT	BPL-ESED-S3-0 2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
	Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/l
Aluminum		13000 J	15000 J	16000 J	11000 J	9800	11000	0.2 U
Antimony		1.9 J	5.1 UJ	5.9 UJ	1.5 J	2.7 UJ	2.5 UJ	0.02 U
Arsenic		16 J	17 J	17 J	13 J	7	6.6	0.01 U
Barium		360 J	410 J	420 J	240 J	140 J	130 J	0.01 U
Beryllium		0.72 J	0.76 J	0.82 J	0.58 J	0.48 J	0.54	0.004 U
Cadmium		1.9 J	2 J	2.7 J	1.6 J	0.67 U	0.62 U	0.005 U
Calcium		16000 J	17000 J	16000 J	11000 J	5300	3300	0.15 J
Chromium		20 J	22 J	26 J	18 J	15 J	16 J	0.01 U
Cobalt		9.3 J	10 J	10 J	7.1 J	6.7	7.4	0.01 U
Copper		43 J	48 J	64 J	36 J	14	14	0.02 U
Cyanide, Total		1.4 UJ	1.4 UJ	1.5 UJ	1.4 UJ	0.74 U	0.68 U	0.01 U
Iron		34000 J	37000 J	38000 J	28000 J	16000	16000	0.05 U
Lead		49 J	54 J	58 J	34 J	16	15	0.005 U
Magnesium		5500 J	5700 J	4800 J	3600 J	2900	2600	0.5 U
Manganese		1200 J	1300 J	1400 J	940 J	430 J	540 J	0.01 U
Mercury		0.091 J	0.11 J	0.16 J	0.11 J	0.025	0.023	0.0002 U
Molybdenum		0.52 J	0.47 J	0.92 J	0.37 J	0.45 J	0.58 J	0.01 U
Nickel		51 J	54 J	54 J	35 J	15	16	0.04 U
Potassium		2000 J	2300 J	2200 J	1500 J	1200 J	1200 J	1 U
Selenium		2.8 UJ	2.8 UJ	2.9 UJ	2.5 UJ	1.3 U	1.2 U	0.01 U
Silver		2.8 UJ	2.8 UJ	0.79 J	2.5 UJ	1.3 U	1.2 U	0.01 U
Sodium		200 UJ	180 UJ	230 UJ	140 UJ	92	80	0.58
Thallium		2.8 UJ	2.8 UJ	2.9 UJ	2.5 UJ	1.3 U	1.2 UJ	0.01 U
Vanadium		35 J	38 J	40 J	28 J	25	29	0.01 U
Zinc		290 J	320 J	370 J	250 J	58	59	0.02 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0 2FTEB	SED-CSB-S1-0 2FT	SED-CSB-S1-0 2FTFD	SED-CSB-S2-0.2FT	SED-CSB-S3-0.2FT	SED-CSC-S1-0 2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	mg/kg dw	mg/l	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Aluminum	13000	0.20 U	6900 J	6200 J	8300 J	12000 J	15000 J
Antimony	2.5 UJ	0.020 U	9.2 J	8.6 J	6.3 J	6.8 J	1.8 J
Arsenic	7.8	0.010 U	35 J	31 J	38 J	25 J	28 J
Barium	140 J	0.0030 J	950 J	550 J	3300 J	1700 J	470 J
Beryllium	0.58	0.0040 U	1 UJ	0.96 UJ	1 UJ	1.2 UJ	1.2 UJ
Cadmium	0.63 U	0.0050 U	17 J	13 J	25 J	25 J	20 J
Calcium	4000	0.41 J	180000 J	180000 J	87000 J	100000 J	28000 J
Chromium	18 J	0.010 U	49 J	34 J	76 J	78 J	50 J
Cobalt	7.7	0.010 U	7.2 J	6.7 J	9.9 J	12 J	17 J
Copper	15	0.0062 J	5100 J	4600 J	11000 J	6700 J	1400 J
Cyanide, Total	0.69 U	0.010 U	1.2 UJ	1.1 UJ	1.2 UJ	1.7 UJ	1.7 UJ
Iron	18000	0.042 J	14000 J	12000 J	29000 J	25000 J	27000 J
Lead	16	0.0019 J	630 J	490 J	1000 J	750 J	270 J
Magnesium	2800	0.50 U	20000 J	20000 J	10000 J	11000 J	5500 J
Manganese	670 J	0.010 U	250 J	240 J	210 J	230 J	290 J
Mercury	0.023	0.00020 U	0.96 J	0.56 J	1.5 J	1.4 J	0.66 J
Molybdenum	0.68 J	0.010 U	7.2 J	6.8 J	4.3 J	4.8 J	3.4 J
Nickel	17	0.040 U	88 J	67 J	500 J	380 J	370 J
Potassium	1500 J	1.0 U	1700 J	1600 J	1700 J	2400 J	3000 J
Selenium	1.3 U	0.010 U	4.1 J	1.7 J	5.1 J	3.5 J	2.8 UJ
Silver	1.3 U	0.010 U	6.7 J	6.7 J	15 J	8.9 J	1.2 J
Sodium	71	0.39 J	340 UJ	310 UJ	270 UJ	290 UJ	300 UJ
Thallium	1.3 U	0.010 U	2.5 UJ	2.2 UJ	2.3 UJ	2.1 J	3.1 UJ
Vanadium	33	0.010 U	29 J	26 J	37 J	41 J	48 J
Zinc	63	0.023	2000 J	1600 J	7900 J	4800 J	2900 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Sample ID	SED-CSC-S2-0 2FT	SED-CSC-S3-0 2FT	SED-CSD-S1-0 2FT	SED-CSD-S2-0 2FT	SED-CSD-S3-0 2FT	SED-CSE-S1-0 2FT	SED-CSE-S2-0 2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Aluminum	12000 J	9700 J	13000 J	16000 J	13000 J	15000 J	13000 J
Antimony	1.3 J	2.2 J	8.7 UJ	8.7 UJ	5.9 UJ	2.7 J	2 J
Arsenic	17 J	16 J	16 J	17 J	10 J	16 J	12 J
Barium	680 J	800 J	380 J	400 J	310 J	340 J	290 J
Beryllium	0.93 UJ	1 UJ	1.2 UJ	1.3 UJ	1 UJ	0.84 J	0.75 J
Cadmium	19 J	16 J	15 J	13 J	10 J	14 J	11 J
Calcium	23000 J	47000 J	28000 J	30000 J	26000 J	43000 J	80000 J
Chromium	93 J	47 J	56 J	60 J	67 J	71 J	49 J
Cobalt	12 J	9.7 J	12 J	12 J	8.8 J	10 J	9.2 J
Copper	2200 J	2100 J	740 J	730 J	320 J	570 J	350 J
Cyanide, Total	1.4 UJ	1.9 UJ	2.2 UJ	2.4 UJ	1.5 UJ	1.8 UJ	1.3 UJ
Iron	21000 J	24000 J	22000 J	25000 J	19000 J	24000 J	20000 J
Lead	330 J	480 J	260 J	230 J	170 J	310 J	190 J
Magnesium	3600 J	6400 J	6700 J	7500 J	6600 J	9200 J	13000 J
Manganese	240 J	330 J	250 J	320 J	270 J	310 J	320 J
Mercury	0.64 J	0.58 J	0.5 J	0.42 J	0.35 J	0.51 J	0.3 J
Molybdenum	2.2 J	1.7 UJ	3 UJ	2.6 UJ	1.7 UJ	2.6 J	1.6 J
Nickel	580 J	550 J	260 J	260 J	150 J	190 J	130 J
Potassium	2400 J	2100 J	2900 J	3200 J	2700 J	3100 J	2600 J
Selenium	13 UJ	2.4 UJ	2 UJ	2.5 UJ	2.9 UJ	2.6 UJ	1.5 UJ
Silver	1.8 J	1.6 J	4.3 UJ	4.3 UJ	2.9 UJ	1.1 J	0.67 J
Sodium	320 UJ	340 UJ	240 UJ	250 UJ	190 UJ	250 UJ	300 UJ
Thallium	2.6 UJ	3.5 UJ	4.3 UJ	4.3 UJ	2.9 UJ	1.9 J	2.6 UJ
Vanadium	36 J	34 J	44 J	51 J	37 J	51 J	40 J
Zinc	4500 J	3300 J	2500 J	2700 J	1800 J	2300 J	1800 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Aluminum	11000 J	7800 J	14000 J	17000 J	8900 J	15000 J	12000 J
Antimony	6.1 UJ	R	2.6 J	2.5 J	6.6 J	3.2 UJ	1.3 J
Arsenic	9.3 J	8 J	19 J	15 J	35 J	8	7 J
Barium	190 J	150 J	250 J	270 J	700 J	230 J	210 J
Beryllium	0.9 UJ	0.53 J	0.85 J	0.89 J	1.3 UJ	0.8	0.7 J
Cadmium	7.7 J	7.4 J	47 J	14 J	17 J	0.38 J	0.34 J
Calcium	26000 J	11000 J	13000 J	11000 J	100000 J	18000 J	12000 J
Chromium	31 J	19 J	38 J	30 J	48 J	21 J	17 J
Cobalt	7.4 J	5.5 J	13 J	11 J	15 J	9.8	7.1 J
Copper	150 J	160 J	410 J	240 J	4200 J	20 J	17 J
Cyanide, Total	1.7 UJ	1.2 UJ	2.6 UJ	1.9 UJ	2.5 UJ	0.89 U	1.4 UJ
Iron	17000 J	14000 J	22000 J	26000 J	34000 J	22000 J	19000 J
Lead	140 J	110 J	320 J	110 J	530 J	23 J	22 J
Magnesium	7400 J	4100 J	6800 J	5300 J	7400 J	6500	5000 J
Manganese	170 J	170 J	230 J	510 J	370 J	720 J	770 J
Mercury	0.3 J	0.3 J	1.1 J	0.45 J	1 J	0.042	0.063 J
Molybdenum	3.2 J	0.7 J	3.7 J	0.76 J	17 J	0.37 J	0.49 J
Nickel	51 J	90 J	390 J	180 J	190 J	23	19 J
Potassium	2400 J	1600 J	2900 J	2700 J	2000 J	2300	1900 J
Selenium	3 UJ	2.3 UJ	4.8 UJ	3.7 UJ	3.8 J	1.8 U	2.5 UJ
Silver	3 UJ	2.3 UJ	4.8 UJ	3.7 UJ	7.3 J	1.8 U	2.5 UJ
Sodium	180 UJ	210 UJ	350 UJ	230 UJ	290 UJ	150 U	180 UJ
Thallium	3 UJ	2.3 UJ	4.8 UJ	3.7 UJ	5 UJ	1.8 U	2.5 UJ
Vanadium	37 J	25 J	51 J	41 J	45 J	36	30 J
Zinc	980 J	950 J	3700 J	1600 J	2400 J	95 J	82 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-6
Solutia
Sauget Area 1
Broad Scan Sediments
Method 6010B/7470A/7471A/9010B Inorganic Data

Compound	Sample ID	SED-RA2-S1-0 2FT	SED-RA2-S1-0 2FTEB	SED-RA2-S1-0 2FTFD	SED-RA2-S2-0 2FT
	Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
	Units	mg/kg dw	mg/l	mg/kg dw	mg/kg dw
Aluminum		11000 J	0.2 U	13000 J	19000 J
Antimony		1 J	0.02 U	3.8 UJ	R
Arsenic		6.5 J	0.01 U	6.9 J	7 J
Barium		160 J	0.013	170 J	220 J
Beryllium		0.6 J	0.004 U	0.64 J	1 J
Cadmium		0.26 J	0.005 U	0.32 J	0.65 J
Calcium		11000 J	24	13000 J	12000 J
Chromium		16 J	0.01 U	18 J	25 J
Cobalt		7.3 J	0.01 U	7.7 J	10 J
Copper		16 J	0.0038 J	16 J	23 J
Cyanide, Total		1 UJ	0.01 U	1 UJ	1.1 UJ
Iron		17000 J	0.05 U	18000 J	24000 J
Lead		16 J	0.005 U	17 J	26 J
Magnesium		3100 J	8	3400 J	5800 J
Manganese		560 J	0.0026 J	580 J	770 J
Mercury		0.046 J	0.0002 U	0.048 J	0.04 J
Molybdenum		0.35 J	0.01 U	0.43 J	0.53 J
Nickel		17 J	0.04 U	18 J	26 J
Potassium		1500 J	2.3	1700 J	2600 J
Selenium		1.9 UJ	0.01 U	1.9 UJ	2 UJ
Silver		1.9 UJ	0.01 U	1.9 UJ	2 UJ
Sodium		140 UJ	13	130 UJ	210 UJ
Thallium		1.9 UJ	0.01 U	1.9 UJ	2 UJ
Vanadium		28 J	0.01 U	31 J	44 J
Zinc		57 J	0.0072 J	61 J	96 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 5-7
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8290 PCDD/PCDF Data

Compound	Sample ID	BPL-ESED-S1-0 2FT	BPL-ESED-S1-0 2FTFD	BPL-ESED-S2-0 2FT	BPL-ESED-S3-0 2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
	Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/l
1,2,3,4,6,7,8,9-OCDD		8.39 J	8.86 J	17.25 J	15.5 J	9.35	12.24	0.0000276
1,2,3,4,6,7,8,9-OCDF		0.236 J	0.234 J	0.658 J	0.756 J	0.0082	0.0074	0.0000077 U
1,2,3,4,6,7,8-HpCDD		0.225 J	0.251 J	0.425 J	0.443 J	0.106	0.0778	0.0000057 U
1,2,3,4,6,7,8-HpCDF		0.052 J	0.0576 J	0.126 J	0.159 J	0.0044	0.0031	0.0000046 U
1,2,3,4,7,8,9-HpCDF		0.0134 JM	0.0053 J	0.0117 J	0.0109 J	0.0002 U	0.0002 U	0.0000066 U
1,2,3,4,7,8-HxCDD		0.0027 JM	0.0034 J	0.0049 J	0.0041 JM	0.0015	0.0011	0.0000044 U
1,2,3,4,7,8-HxCDF		0.0049 J	0.0052 J	0.0092 J	0.0072 J	0.00049	0.00048	0.0000025 U
1,2,3,6,7,8-HxCDD		0.0078 J	0.0081 J	0.0162 J	0.013 J	0.0019	0.0013	0.0000041 U
1,2,3,6,7,8-HxCDF		0.0028 J	0.0031 J	0.0059 J	0.0041 J	0.00006 U	0.00026 M	0.0000023 U
1,2,3,7,8,9-HxCDD		0.0099 J	0.0096 J	0.0173 J	0.013 J	0.0041	0.0026	0.0000044 U
1,2,3,7,8,9-HxCDF		0.006 J	0.00039 JM	0.0036 J	0.00074 J	0.00008 U	0.00008 U	0.000003 U
1,2,3,7,8-PeCDD		0.0022 J	0.002 J	0.0035 J	0.0023 J	0.00058	0.00047	0.0000018 U
1,2,3,7,8-PeCDF		0.0019 JM	0.002 J	0.0027 J	0.0018 JM	0.00006 U	0.00039 JM	0.0000016 U
2,3,4,6,7,8-HxCDF		0.0038 JM	0.0051 J	0.0073 J	0.0064 J	0.00006 U	0.00038	0.0000048
2,3,4,7,8-PeCDF		0.0036 J	0.0043 J	0.0042 J	0.0029 J	0.00031	0.00031	0.0000017 U
2,3,7,8-TCDD		0.0013 J	0.001 JM	0.0122 J	0.0026 J	0.00021	0.00008 U	0.0000027 U
2,3,7,8-TCDF		0.0099 J	0.0104 J	0.0094 J	0.0062 J	0.00057	0.00051	0.0000028 U
1998 Total TEQ w/ EMPC as ND		0.0135021	0.0133079	0.0327328	0.0194186	0.00385332	0.00336349	0.0000044577

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-7
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8290 PCDD/PCDF Data

Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0 2FTEB	SED-CSB-S1-0.2FT	SED-CSB-S1-0.2FTFD	SED-CSB-S2-0 2FT	SED-CSB-S3-0 2FT	SED-CSC-S1-0 2FT
Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
Units	ug/kg	ug/l	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	12.39	0.0000276	1298.83 J	1169.13 J	3415.6 J	2362.98 J	283.53 J
1,2,3,4,6,7,8,9-OCDF	0.0098 J	0.000014 U	161.98 J	151.21 J	1126.74 J	806.88 J	93.75 J
1,2,3,4,6,7,8-HpCDD	0.111	0.0000119 U	131.19 J	99.99 J	396.91 J	265.54 J	31.72 J
1,2,3,4,6,7,8-HpCDF	0.0042	0.0000082 U	39.76 J	27.7 J	187.96 J	130.97 J	17.73 J
1,2,3,4,7,8,9-HpCDF	0.0002 U	0.0000107 U	3.27 J	2.65 J	13.14 J	8.73 J	0.663 J
1,2,3,4,7,8-HxCDD	0.0013	0.0000071 U	1.26 J	0.825 J	2.31 J	1.57 J	0.0916 J
1,2,3,4,7,8-HxCDF	0.00071	0.0000068 U	2.31 J	1.93 J	6.41 J	4.22 J	0.353 J
1,2,3,6,7,8-HxCDD	0.0019	0.0000067 U	4.62 J	3.21 J	13.18 J	8.49 J	0.657 J
1,2,3,6,7,8-HxCDF	0.00036	0.0000063 U	1.13 J	0.837 J	2.54 J	1.7 J	0.195 J
1,2,3,7,8,9-HxCDD	0.0039	0.0000069 U	3.42 J	2.73 J	7.54 J	5.6 J	0.322 J
1,2,3,7,8,9-HxCDF	0.0001 U	0.0000076 U	0.0296 J	0.0206 J	0.119 J	0.0583 J	0.0083 J
1,2,3,7,8-PeCDD	0.00069 M	0.0000082 U	0.975 J	0.583 J	1.48 J	1.97 J	0.0781 J
1,2,3,7,8-PeCDF	0.00085	0.0000057 U	0.272 J	0.224 J	0.842 J	0.603 J	0.0643 J
2,3,4,6,7,8-HxCDF	0.00049	0.0000067 U	1.6 J	1.26 J	3.91 J	2.36 J	0.25 J
2,3,4,7,8-PeCDF	0.0005	0.000006 U	0.691 J	0.546 J	1.28 J	0.835 J	0.097 J
2,3,7,8-TCDD	0.00021	0.000008 U	0.306 J	0.221 J	0.441 JM	0.63 JM	0.0176 JM
2,3,7,8-TCDF	0.00063	0.0000077 U	0.335 J	0.257 J	0.788 J	0.811 J	0.109 J
1998 Total TEQ w/ EMPC as ND	0.00417448	0.00001269	4.998841	3.630594	12.496634	9.582966	0.876063

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 5-7
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8290 PCDD/PCDF Data

Sample ID	SED-CSC-S2-0 2FT	SED-CSC-S3-0 2FT	SED-CSD-S1-0 2FT	SED-CSD-S2-0 2FT	SED-CSD-S3-0 2FT	SED-CSE-S1-0 2FT	SED-CSE-S2-0 2FT
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	483.88 J	880.64 J	209.03 J	182.84 J	91.25 J	60.65 J	91.45 J
1,2,3,4,6,7,8,9-OCDF	178.41 J	398.07 J	63.97 J	51.28 J	26.62 J	24.02 J	28.71 J
1,2,3,4,6,7,8-HpCDD	55.25 J	101.1 J	21.45 J	20.14 J	10.81 J	6.77 J	9.45 J
1,2,3,4,6,7,8-HpCDF	33.37 J	62.04 J	12.1 J	10.92 J	6.14 J	5.13 J	5.94 J
1,2,3,4,7,8,9-HpCDF	1.81 J	4.27 J	0.538 J	0.414 J	0.305 J	0.673 J	0.276 J
1,2,3,4,7,8-HxCDD	0.143 J	0.314 J	0.0968 J	0.107 J	0.0962 J	0.13 J	0.0574 J
1,2,3,4,7,8-HxCDF	0.915 J	1.36 J	0.297 J	0.245 J	0.166 J	0.364 J	0.127 J
1,2,3,6,7,8-HxCDD	1.64 J	2.79 J	0.587 J	0.529 J	0.396 J	0.704 J	0.282 J
1,2,3,6,7,8-HxCDF	0.328 J	0.698 J	0.178 J	0.146 J	0.118 J	0.222 J	0.116 J
1,2,3,7,8,9-HxCDD	0.587 J	1.03 J	0.318 J	0.34 J	0.363 J	0.415 J	0.176 J
1,2,3,7,8,9-HxCDF	0.0153 J	0.0466 J	0.0076 J	0.009 J	0.0074 J	0.0175 J	0.0082 J
1,2,3,7,8-PeCDD	0.135 J	0.219 J	0.0741 J	0.0785 J	0.0811 J	0.0696 J	0.0244 J
1,2,3,7,8-PeCDF	0.134 JM	0.151 J	0.0575 J	0.0569 J	0.0377 J	0.051 J	0.0268 J
2,3,4,6,7,8-HxCDF	0.479 J	1.09 J	0.233 J	0.182 J	0.153 J	0.274 J	0.13 J
2,3,4,7,8-PeCDF	0.188 J	0.25 J	0.0792 J	0.0624 J	0.0461 J	0.0658 J	0.0283 J
2,3,7,8-TCDD	0.0297 JM	0.0489 JM	0.0129 JM	0.0138 JM	0.0134 J	0.0172 JM	0.0075 J
2,3,7,8-TCDF	0.174 J	0.28 J	0.0983 J	0.0911 J	0.064 J	0.0921 J	0.0457 J
1998 Total TEQ w/ EMPC as ND	1.645859	2.938831	0.672775	0.622507	0.440132	0.469707	0.310296

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 5-7
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8290 PCDD/PCDF Data

Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	30.57 J	38.7 J	88.43 J	47.36 J	1210.54 J	3.47	4.95 J
1,2,3,4,6,7,8,9-OCDF	9.75 J	15.01 J	32.61 J	19.26 J	297.31 J	0.128	0.136 J
1,2,3,4,6,7,8-HpCDD	3.26 J	4.03 J	9.44 J	4.44 J	121.89 J	0.155	0.162 J
1,2,3,4,6,7,8-HpCDF	1.64 J	2.38 J	5.08 J	2.9 J	49.36 J	0.0254	0.0307 J
1,2,3,4,7,8,9-HpCDF	0.0956 J	0.198 J	0.32 J	0.157 J	4.09 J	0.0017 M	0.003 J
1,2,3,4,7,8-HxCDD	0.0232 JM	0.0228 J	0.0688 J	0.0291 J	0.754 J	0.0011	0.0018 J
1,2,3,4,7,8-HxCDF	0.053 J	0.0842 J	0.162 J	0.0874 J	2.23 J	0.0019 M	0.0029 J
1,2,3,6,7,8-HxCDD	0.113 J	0.141 J	0.32 J	0.159 J	3.41 J	0.0046	0.0044 J
1,2,3,6,7,8-HxCDF	0.0344 J	0.0325 J	0.0719 J	0.0367 J	0.996 J	0.00075 M	0.0011 JM
1,2,3,7,8,9-HxCDD	0.0825 J	0.0667 J	0.221 J	0.0911 J	2.07 J	0.0034	0.0048 J
1,2,3,7,8,9-HxCDF	0.0045 J	0.0085 J	0.0109 J	0.0223 J	0.0184 J	0.0002 U	0.00002 U
1,2,3,7,8-PeCDD	0.0147 J	0.0145 J	0.0389 J	0.0232 J	0.564 J	0.00092 M	0.0017 JM
1,2,3,7,8-PeCDF	0.0141 J	0.0118 J	0.0333 JM	0.0124 J	0.257 J	0.0002 U	0.00082 JM
2,3,4,6,7,8-HxCDF	0.0447 J	0.0503 J	0.0899 J	0.0473 J	1.45 J	0.0011 M	0.0018 J
2,3,4,7,8-PeCDF	0.0105 J	0.0147 J	0.0333 J	0.0179 J	0.581 J	0.00094 M	0.0011 JM
2,3,7,8-TCDD	0.004 J	0.0083 J	0.016 J	0.0055 J	0.193 JM	0.0035	0.00064 J
2,3,7,8-TCDF	0.0106 J	0.016 J	0.0448 J	0.0304 J	0.4 J	0.0013 J	0.0014 J
1998 Total TEQ w/ EMPC as ND	0.114073	0.144391	0.3318165	0.170232	4.000875	0.0076098	0.0060171

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-7
Solutia
Sauget Area 1
Broad Scan Sediments
Method 8290 PCDD/PCDF Data

Sample ID	SED-RA2-S1-0 2FT	SED-RA2-S1-0 2FTEB	SED-RA2-S1-0 2FTFD	SED-RA2-S2-0 2FT
Sample Date	10/08/99	10/08/99	10/08/99	10/09/99
Units	ug/kg	ug/l	ug/kg	ug/kg
Compound				
1,2,3,4,6,7,8,9-OCDD	9.19 J	0.000131	7.94 J	3.98 J
1,2,3,4,6,7,8,9-OCDF	0.0164	0.0000468	0.0122	0.107 J
1,2,3,4,6,7,8-HpCDD	0.144	0.0000138 M	0.136	0.128 J
1,2,3,4,6,7,8-HpCDF	0.0063	0.0000095	0.0054	0.0283 J
1,2,3,4,7,8,9-HpCDF	0.00057 M	0.0000024 U	0.0007 U	0.0021 JM
1,2,3,4,7,8-HxCDD	0.0023 M	0.0000019 U	0.0021	0.0014 JM
1,2,3,4,7,8-HxCDF	0.0012 M	0.0000012 U	0.00093 M	0.003 J
1,2,3,6,7,8-HxCDD	0.0035	0.0000019 U	0.0031	0.004 J
1,2,3,6,7,8-HxCDF	0.00062 M	0.0000011 U	0.0004 U	0.0013 J
1,2,3,7,8,9-HxCDD	0.0051	0.000002 U	0.005	0.0043 J
1,2,3,7,8,9-HxCDF	0.0004 U	0.0000015 U	0.0005 U	0.0002 UJ
1,2,3,7,8-PeCDD	0.0014	0.0000021 U	0.0015	0.0013 J
1,2,3,7,8-PeCDF	0.0005 M	0.0000012 U	0.0004 U	0.0011 J
2,3,4,6,7,8-HxCDF	0.00072 M	0.0000012 U	0.0004 U	0.0016 J
2,3,4,7,8-PeCDF	0.00067 M	0.0000012 U	0.00062 M	0.0013 J
2,3,7,8-TCDD	0.0004 U	0.0000014 U	0.0006 U	0.0005 JM
2,3,7,8-TCDF	0.00077 J	0.0000013 U	0.00075 J	0.0014 J
1998 Total TEQ w/ EMPC as ND	0.00540549	0.0000028788	0.00538422	0.0058772

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 5-8
Solutia
Sauget Area 1
Broad Scan Sediments
Method 9060 and SW9045 Data

	Sample ID	BPL-ESED-S1-0 2FT	BPL-ESED-S1-0 2FTFD	BPL-ESED-S2-0 2FT	BPL-ESED-S3-0 2FT	BSSED-PDC-DS-S-0-30IN	BSSED-PDC-US-N-0-20IN	BSSED-PDC-US-N-0-20INEB
	Sample Date	10/06/99	10/06/99	10/07/99	10/06/99	02/07/00	02/07/00	02/04/00
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound								
Total Organic Carbon		84000 J	50000 J	45000 J	33000 J	3600	4100	1 U
pH		7.12	6.93	7.06	6.74	---	---	---

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-8
Solutia
Sauget Area 1
Broad Scan Sediments
Method 9060 and SW9045 Data

	Sample ID	BSSED-PDC-US-N-0-20INFD	SED-CSB-0 2FTEB	SED-CSB-S1-0 2FT	SED-CSB-S1-0.2FTFD	SED-CSB-S2-0 2FT	SED-CSB-S3-0 2FT	SED-CSC-S1-0 2FT
	Sample Date	02/07/00	10/05/99	10/05/99	10/05/99	10/05/99	10/05/99	10/04/99
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound								
Total Organic Carbon		5200	---	100000 J	60000 J	95000 J	67000 J	95000 J
pH		---	---	6.77	6.66	6.64	6.6	6.87

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 5-8
Solutia
Sauget Area 1
Broad Scan Sediments
Method 9060 and SW9045 Data

	Sample ID	SED-CSC-S2-0 2FT	SED-CSC-S3-0 2FT	SED-CSD-S1-0 2FT	SED-CSD-S2-0 2FT	SED-CSD-S3-0 2FT	SED-CSE-S1-0 2FT	SED-CSE-S2-0 2FT
	Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/06/99	10/06/99
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound								
Total Organic Carbon		84000 J	89000 J	73000 J	72000 J	32000 J	92000 J	82000 J
pH		6.92	6.78	6.84	6.82	6.75	6.7	6.83

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 5-8
Solutia
Sauget Area 1
Broad Scan Sediments
Method 9060 and SW9045 Data

	Sample ID	SED-CSE-S3-0.2FT	SED-CSF-S1-0.2FT	SED-CSF-S2-0.2FT	SED-CSF-S3-0.2FT	SED-M-S1-0.2FT	SED-RA1-S1-0.2FT	SED-RA1-S2-0.2FT
	Sample Date	10/06/99	10/07/99	10/07/99	10/07/99	10/05/99	10/08/99	10/08/99
	Units	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L	mg/L
Compound								
Total Organic Carbon		70000 J	40000 J	140000 J	61000 J	75000 J	12000	23000 J
pH		6.78	6.85	6.71	6.87	6.81	7.31	6.92

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

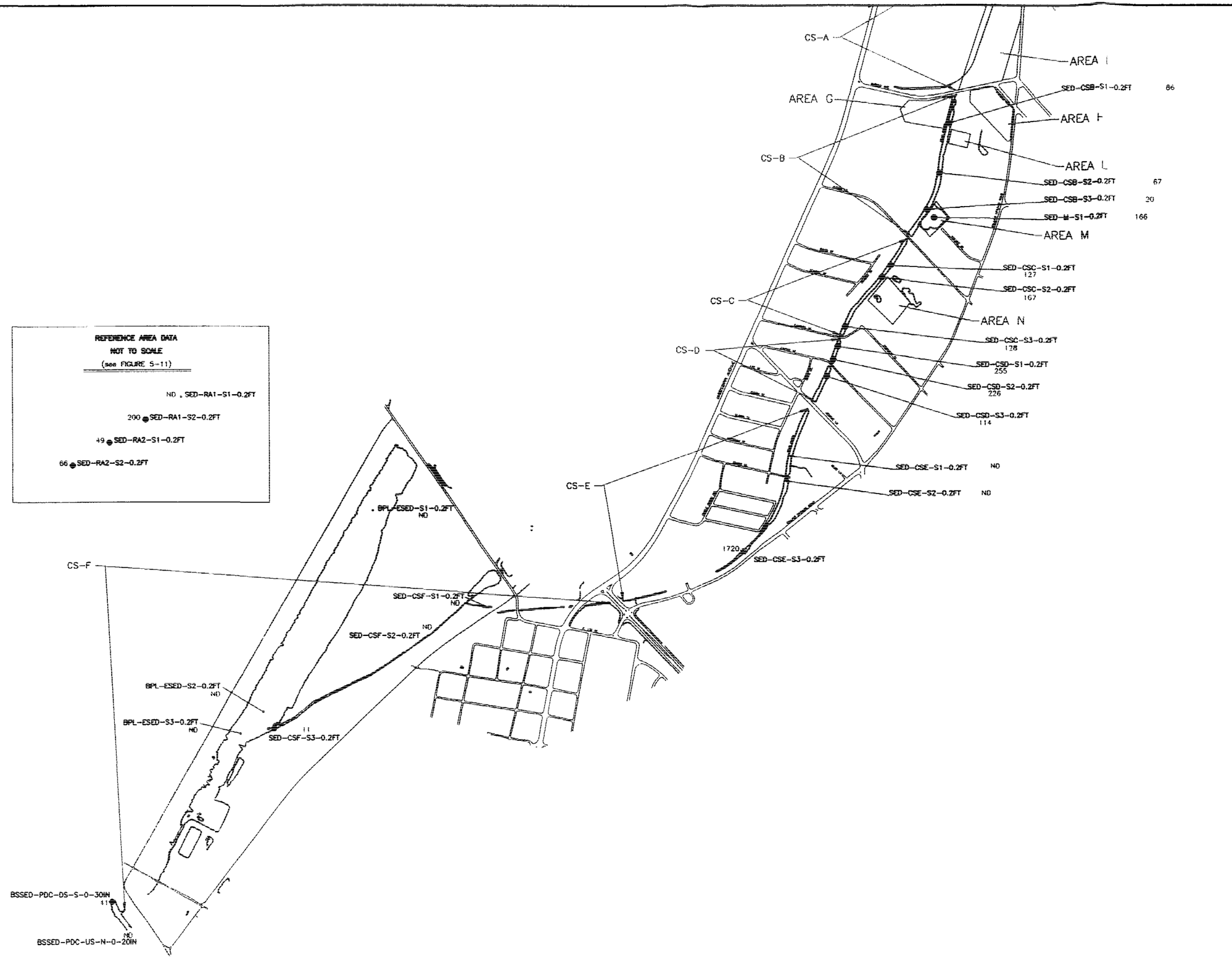
Table 5-8
Solutia
Sauget Area 1
Broad Scan Sediments
Method 9060 and SW9045 Data

	Sample ID	SED-RA2-S1-0.2FT	SED-RA2-S1-0.2FTFD	SED-RA2-S2-0.2FT
	Sample Date	10/08/99	10/08/99	10/09/99
	Units	mg/L	mg/L	mg/L
Compound				
Total Organic Carbon		13000 J	13000 J	20000 J
pH		6.68	6.92	7.24

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

FIGURES

FIGURE 5-1



LEGEND

- NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = ug/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

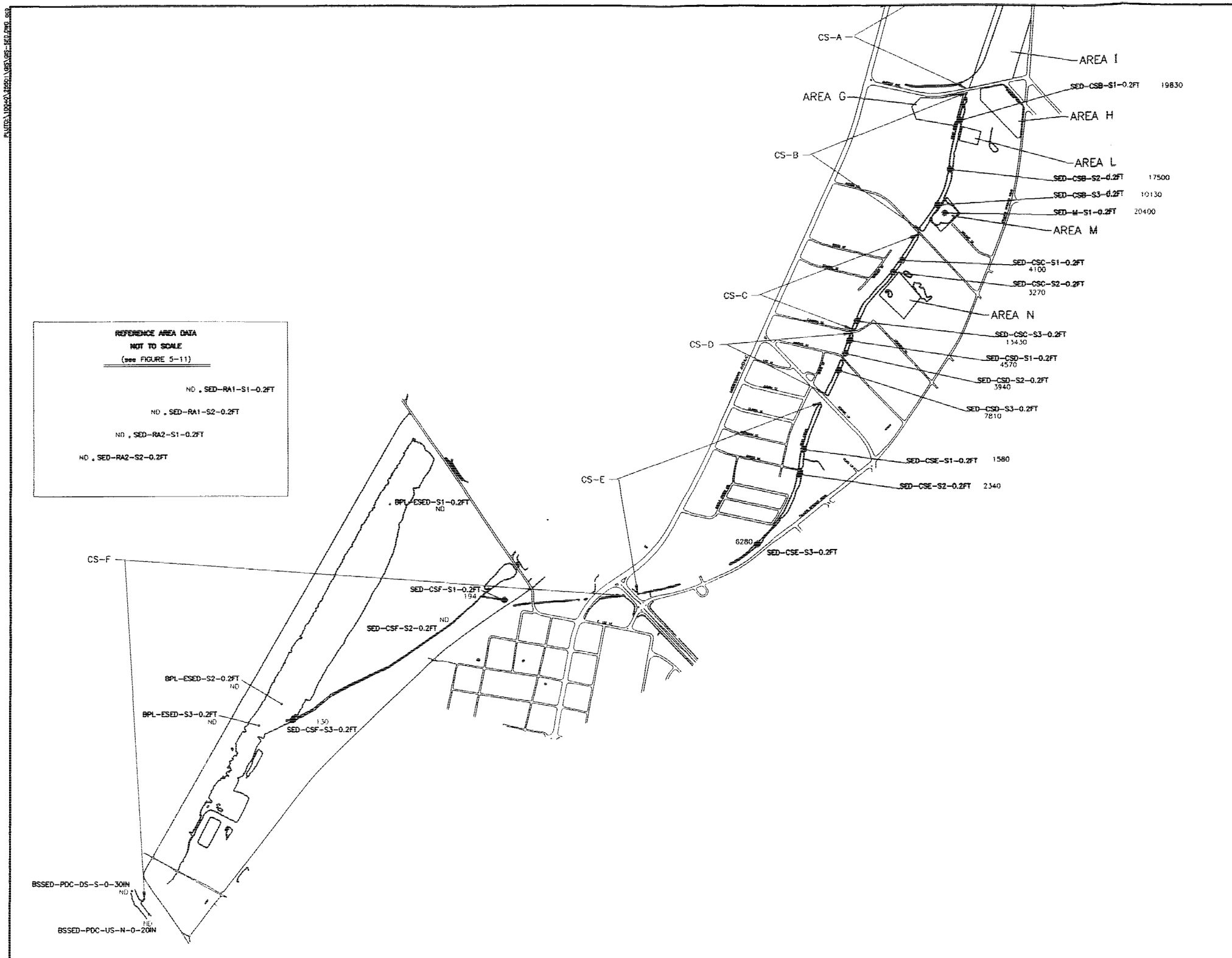
BROAD SCAN/ECOLOGICAL SEDIMENTS TOTAL VOCs

600 0 600
SCALE IN FEET

FILE NO. 25501.SED.A
August 2000

OMEN & GERE ENGINEERS, INC.

FIGURE 5-2



LEGEND

- • NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = ug/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

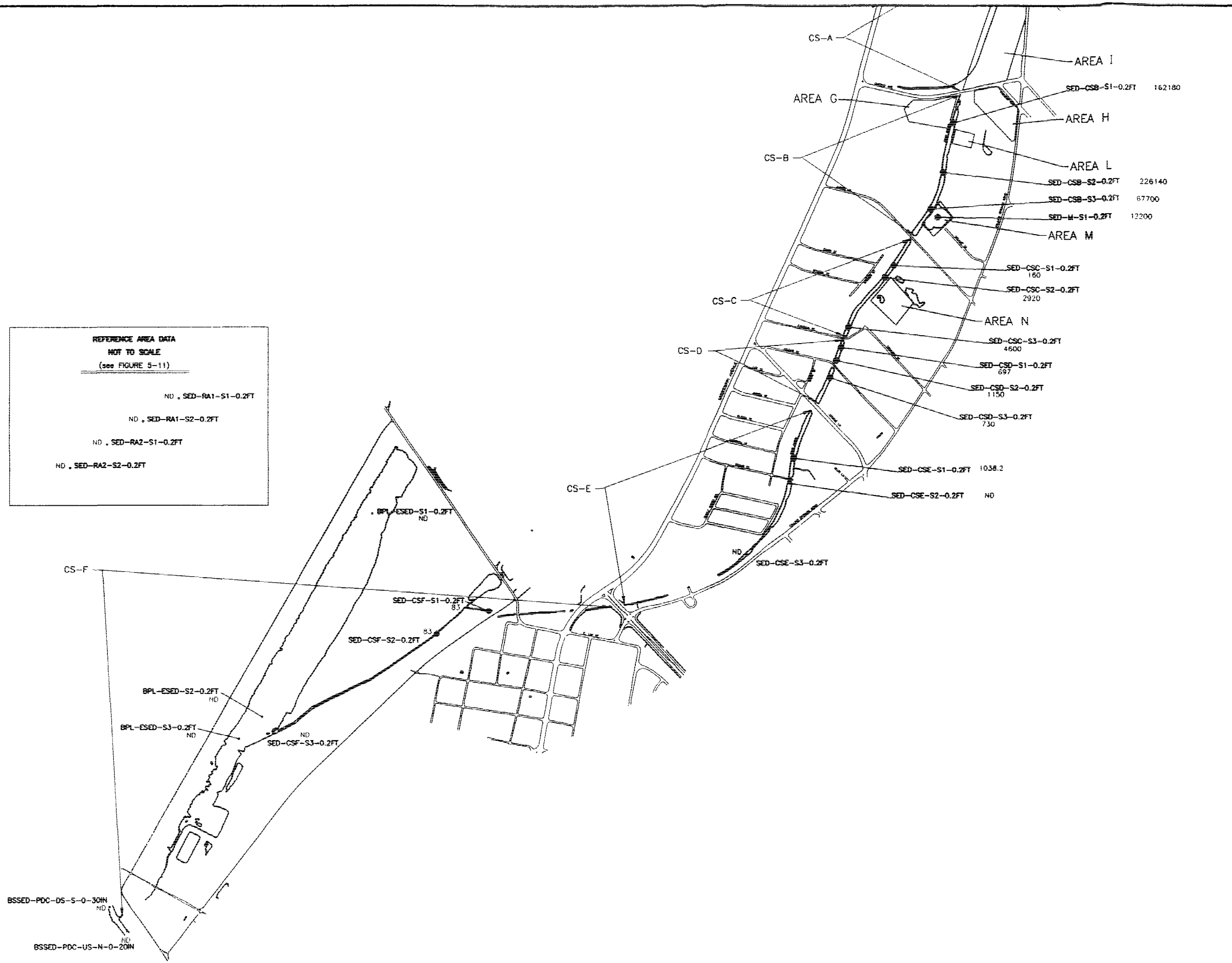
BROAD SCAN/ECOLOGICAL SEDIMENTS TOTAL SVOCs

600 0 600
SCALE IN FEET

FILE NO. 25501.SED.B
August 2000

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 5-3



LEGEND

- NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = ug/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

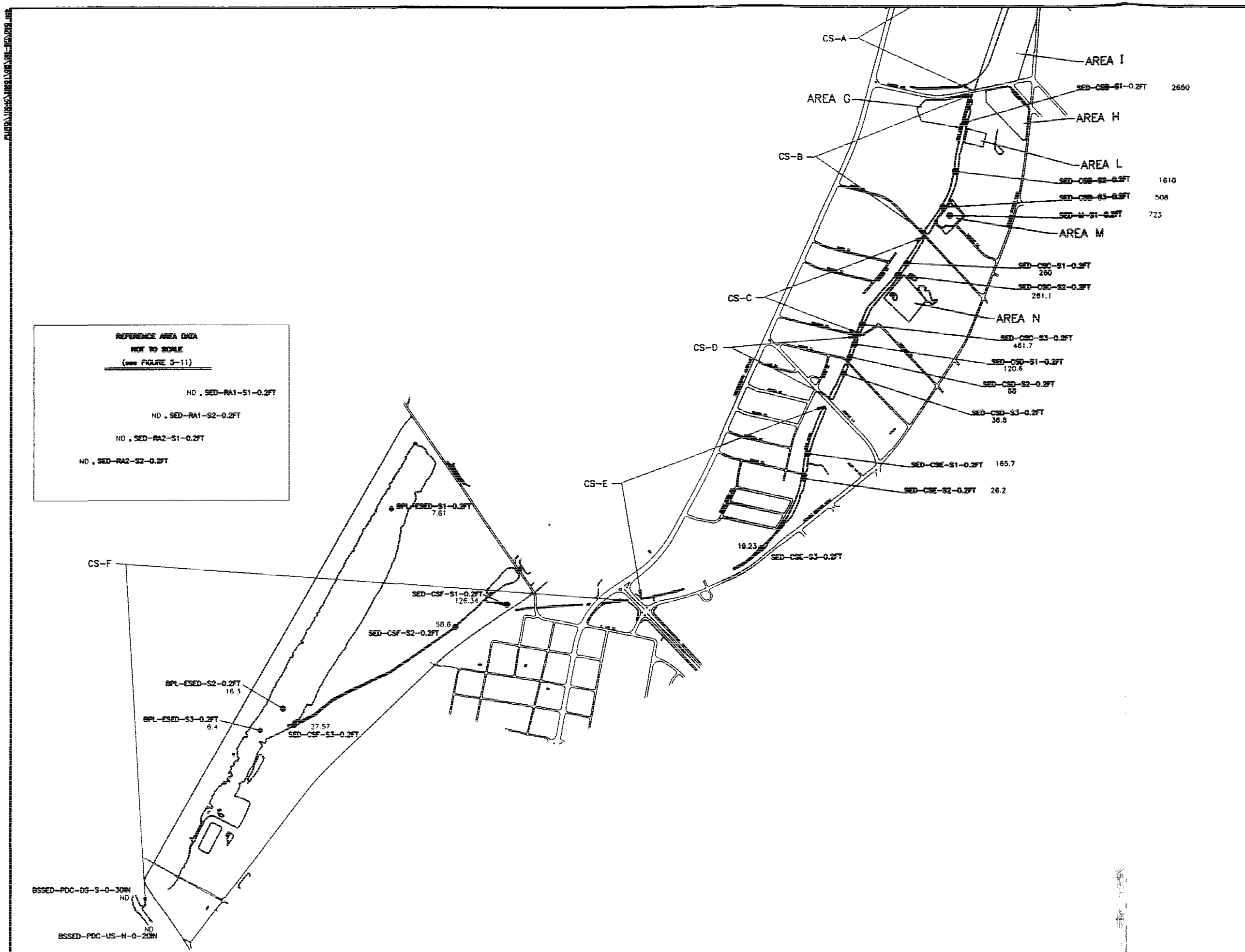
BROAD SCAN/ECOLOGICAL SEDIMENTS TOTAL PCBs

600 0 600
SCALE IN FEET

FILE NO. 25501.SED.C
August 2000

ENGINEERS, INC.

FIGURE 5-4



LEGEND

- NOT DETECTED
- < 1
- 1 - 10
- 10 - 100
- 100 - 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = ug/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

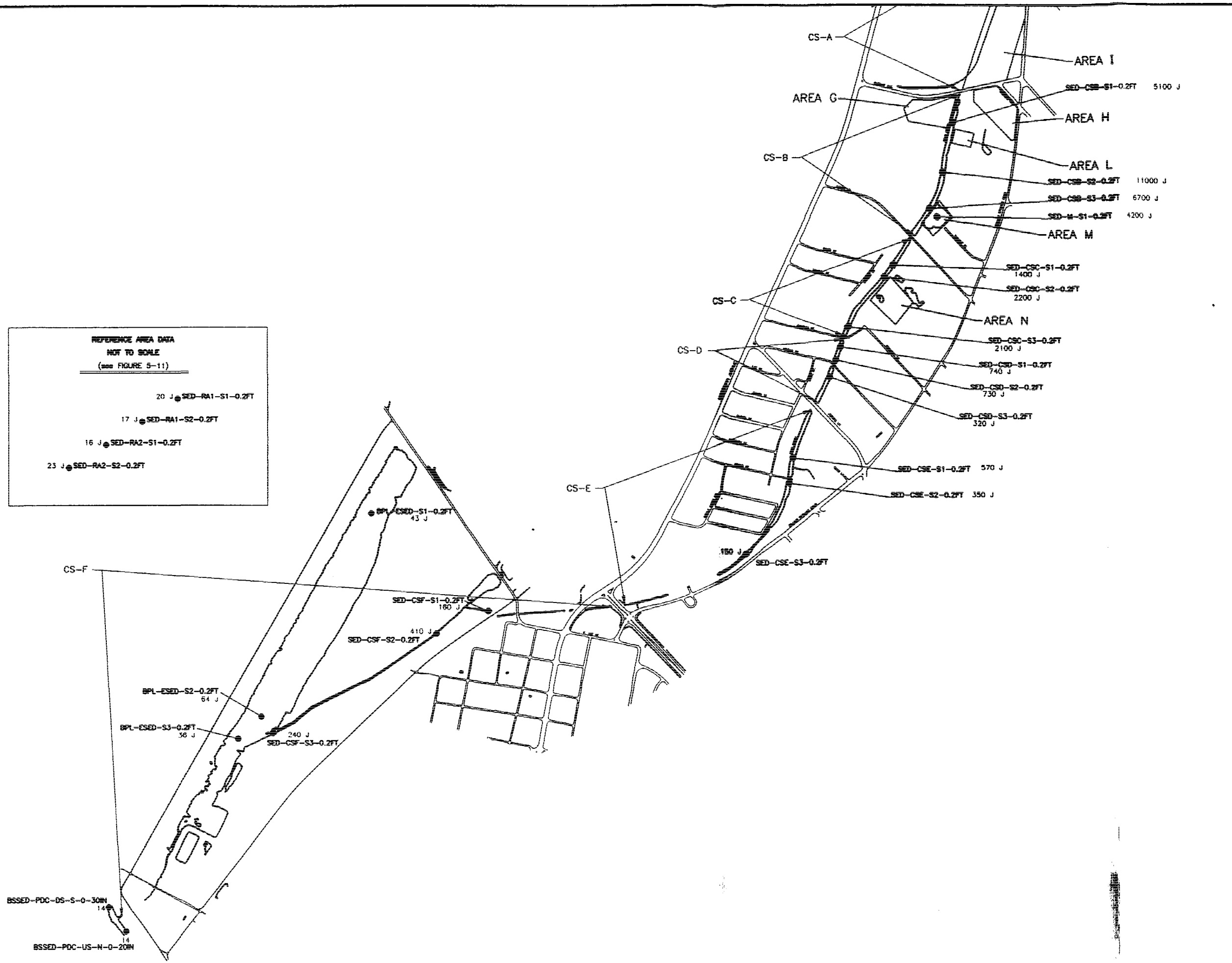
BROAD SCAN/ECOLOGICAL
SEDIMENTS
TOTAL PESTICIDES

600 0 600
SCALE IN FEET

FILE NO. 25501.SED.D
August 2000

ENGINEERS, INC.

FIGURE 5-6



LEGEND

- NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = mg/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

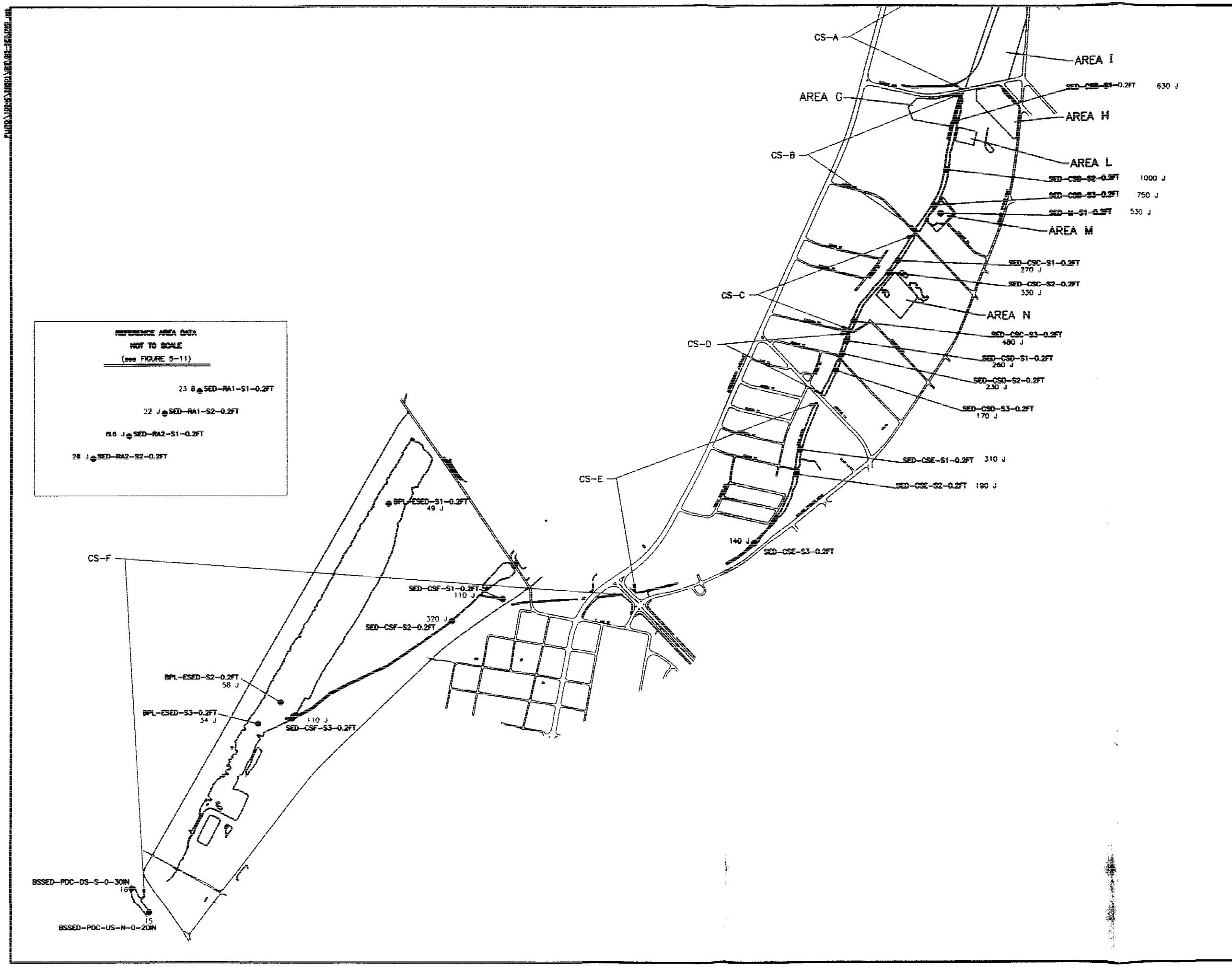
BROAD SCAN/ECOLOGICAL
SEDIMENTS
COPPER

600 0 600
SCALE IN FEET

FILE NO. 25501.SED.F
August 2000

CUNNINGHAME ENGINEERS, INC.

FIGURE 5-7



LEGEND

- NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEDIMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = mg/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

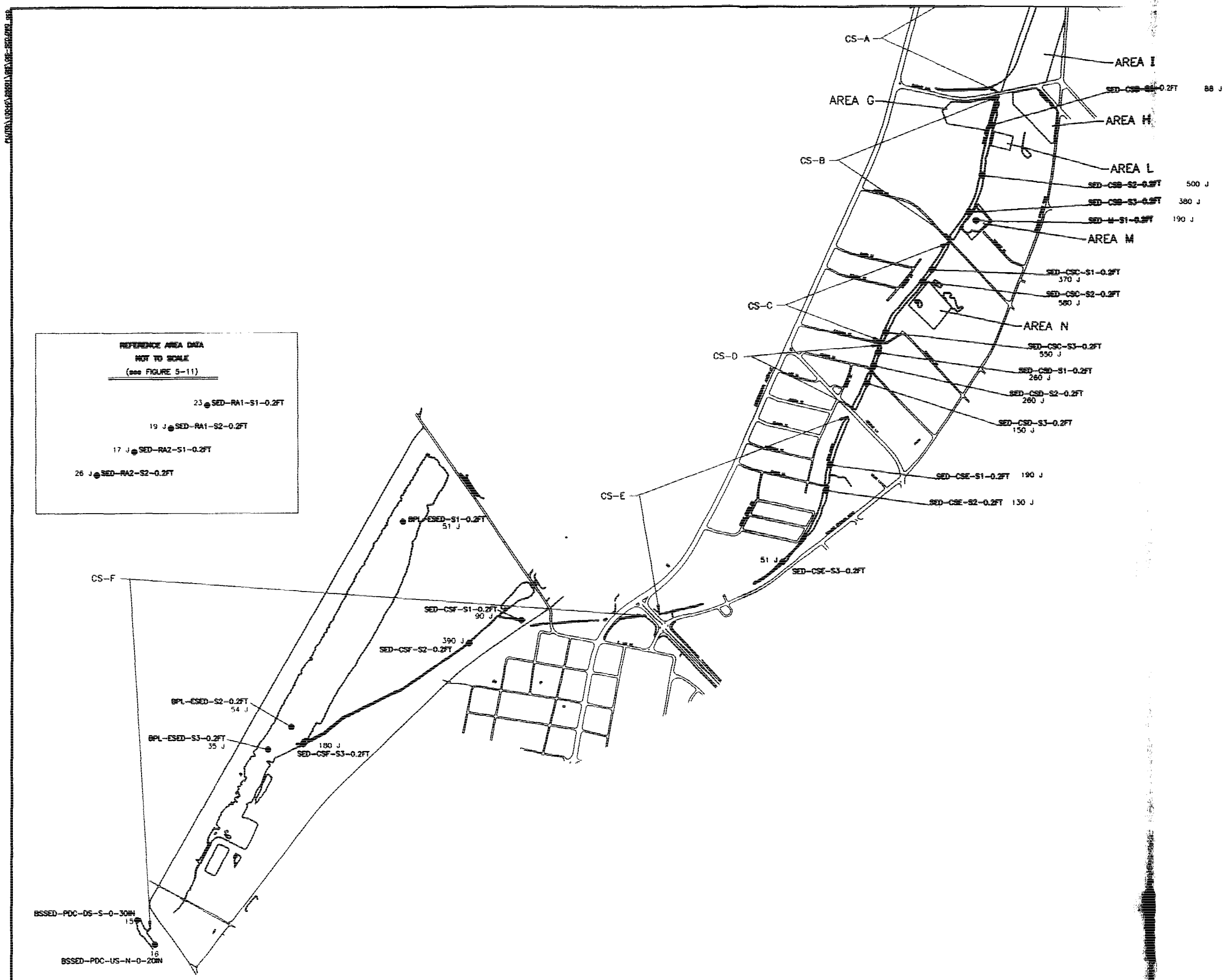
BROAD SCAN/ECOLOGICAL
SEDIMENTS
LEAD

600 0 600
SCALE IN FEET

FILE NO. 25501.SED.G
August 2000

GREENSFELDER ENGINEERS, INC.

FIGURE 5-8



LEGEND

- NOT DETECTED
- < 1
- 1 - 10
- 10 - 100
- 100 - 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = mg/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

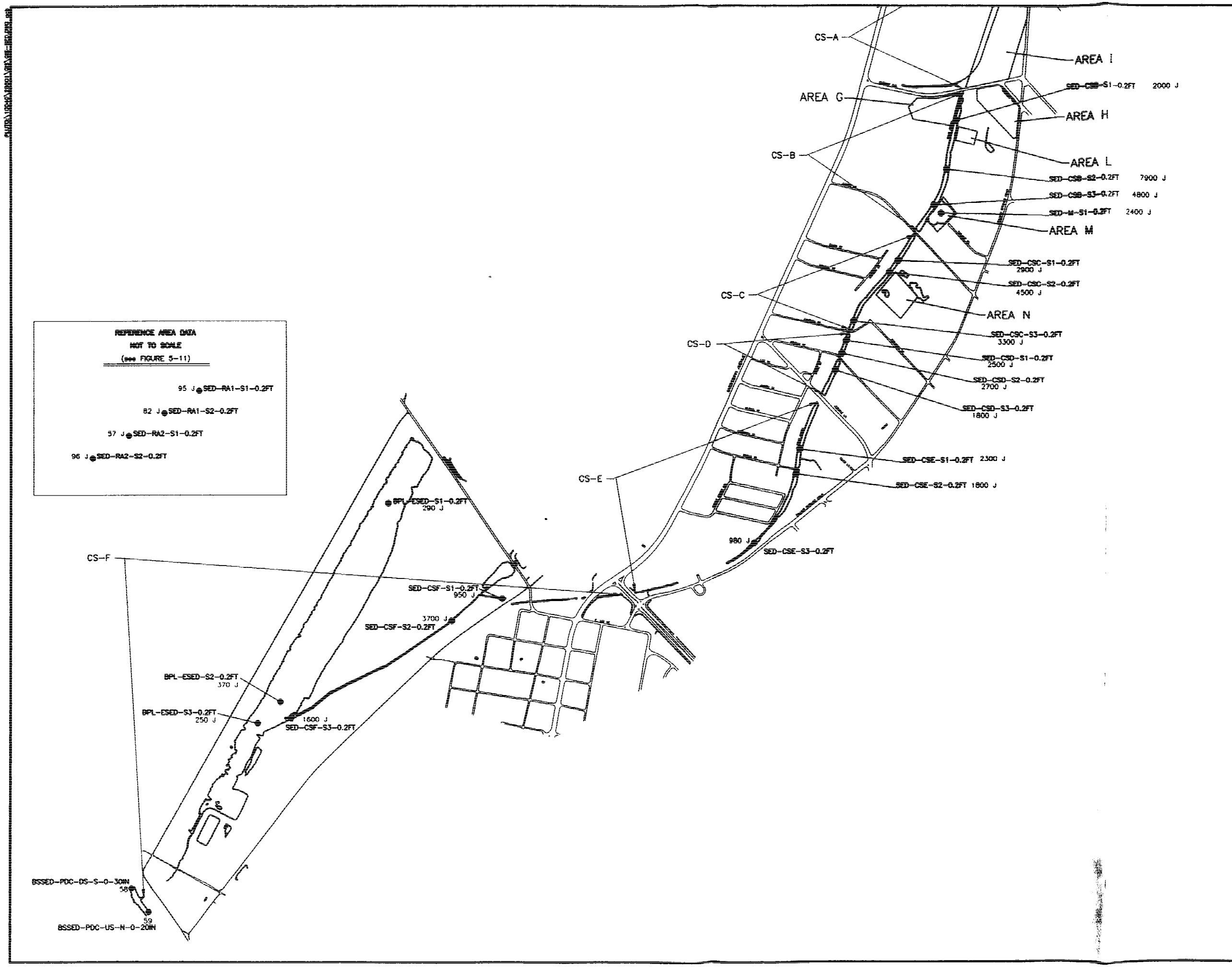
BROAD SCAN/ECOLOGICAL
SEDIMENTS
NICKEL

600 0 600
SCALE IN FEET

FILE NO. 25501.SED.H
August 2000

ENGINEERS, INC.

FIGURE 5-9



LEGEND

- NOT DETECTED
- < 1
- 1 - 10
- 10 - 100
- 100 - 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = mg/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

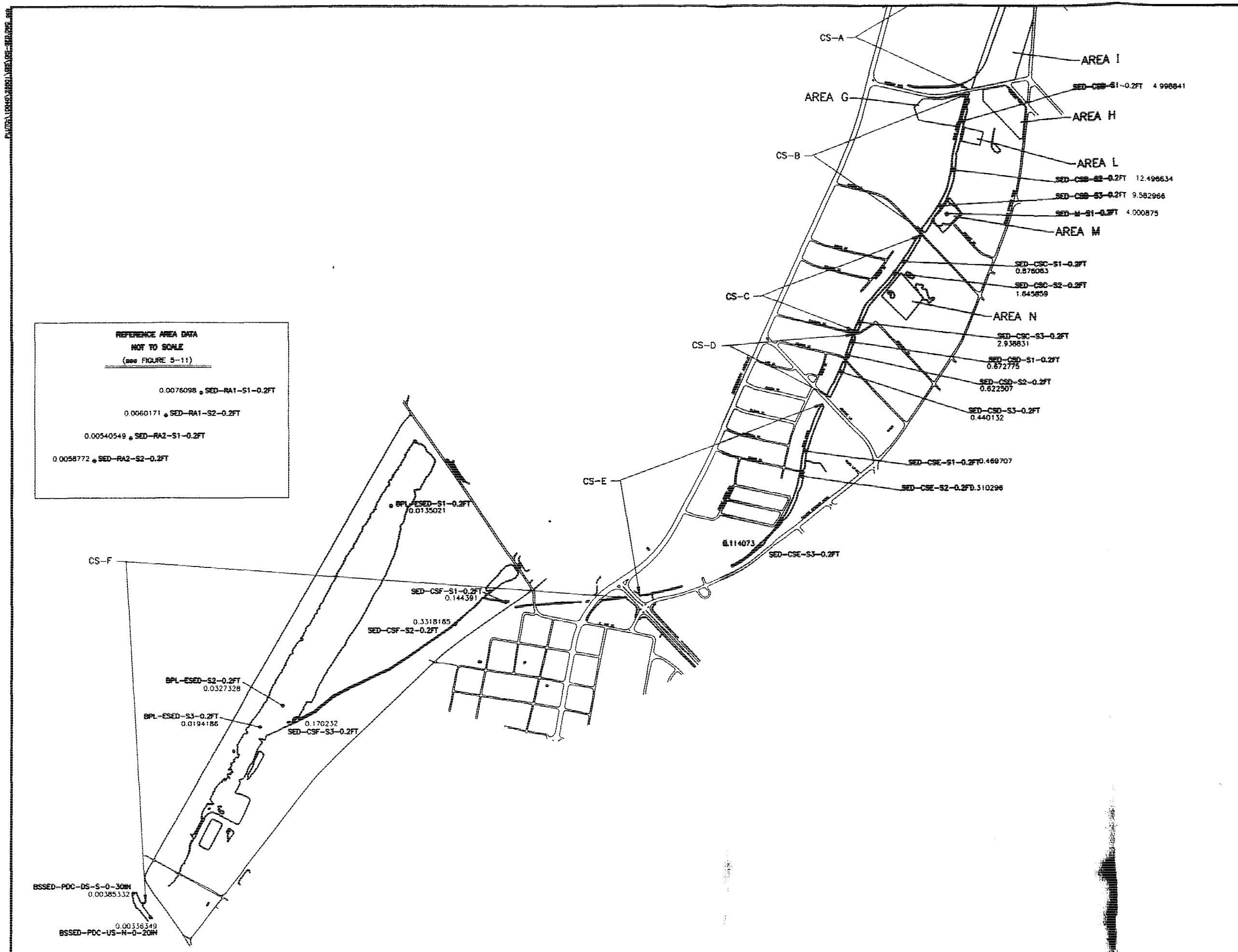
BROAD SCAN/ECOLOGICAL SEDIMENTS ZINC

600 0 600
SCALE IN FEET

FILE NO. 25501.SED.I
August 2000

ENGINEERS, INC.

FIGURE 5-10



LEGEND

- NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = ppb

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

BROAD SCAN/ECOLOGICAL
SEDIMENTS
PCDD/PCDF TEQs

600 0 600
SCALE IN FEET

FILE NO. 25501.SED.J
August 2000

ENGINEERS, INC.

FIGURE 5-11

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

BROAD SCAN/ECOLOGICAL SEDIMENTS REFERENCE AREA LOCATION MAP

1 0 1 2
SCALE IN MILES

FILE NO. 25501.SED-BIG
August 2000

ENGINEERS, INC.

APPENDIX 5

Sauget Area 1 Support Sampling Plan

Broad Scan Sediment Analyses

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-BPL-S1-0-10IN	FASED-BPL-S1-0-10INEB	FASED-BPL-S2-0-10IN	FASED-BPL-S3-0-8IN	FASED-BPL-S4-0-10IN	FASED-BPL-S5-0-9IN	FASED-BPL-S6-0-11IN
Sample Date	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00
Units	ug/kg dw	ug/l	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	20 U	0.5 U	22 U	24 U	22 U	22 U	22 U
Dichlorobiphenyl	3.9 U	0.1 U	4.3 U	4.8 U	4.4 U	4.3 U	4.3 U
Heptachlorobiphenyl	12 U	0.3 U	13 U	15 U	13 U	13 U	13 U
Hexachlorobiphenyl	7.9 U	0.2 U	8.8 U	9.8 U	8.9 U	8.7 U	8.8 U
Monochlorobiphenyl	3.9 U	0.1 U	4.3 U	4.8 U	4.4 U	4.3 U	4.3 U
Nonachlorobiphenyl	20 U	0.5 U	22 U	24 U	22 U	22 U	22 U
Octachlorobiphenyl	12 U	0.3 U	13 U	15 U	13 U	13 U	13 U
Pentachlorobiphenyl	7.9 U	0.2 U	8.8 U	9.8 U	8.9 U	8.7 U	8.8 U
Tetrachlorobiphenyl	7.9 U	0.2 U	8.8 U	9.8 U	8.9 U	8.7 U	8.8 U
Trichlorobiphenyl	3.9 U	0.1 U	4.3 U	4.8 U	4.4 U	4.3 U	4.3 U
Total PCBs	ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	FASED-BPL-S6-0-11INFD	FASED-BPL-S7-0-9IN	FASED-BPL-S8-0-9IN	FASED-CSB-S10W-0-9IN	FASED-CSB-S10W-0-9INFD	FASED-CSB-S1W-0-25IN	FASED-CSB-S2-0-23IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/02/00	02/02/00	02/01/00	02/01/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		24 U	22 U	24 U	100 U	70 J	730	2300 U
Dichlorobiphenyl		4.8 U	4.4 U	4.8 U	20 U	19 U	100 U	460 U
Heptachlorobiphenyl		14 U	13 U	14 U	700	860	2100	1400 U
Hexachlorobiphenyl		9.7 U	8.9 U	9.7 U	1200	1500	6600	3400
Monochlorobiphenyl		4.8 U	4.4 U	4.8 U	20 U	19 U	100 U	460 U
Nonachlorobiphenyl		24 U	22 U	24 U	100 U	72 J	510 U	2300 U
Octachlorobiphenyl		14 U	13 U	14 U	190	360	380	1400 U
Pentachlorobiphenyl		9.7 U	8.9 U	9.7 U	740	800	7300	3800
Tetrachlorobiphenyl		9.7 U	8.9 U	9.7 U	320	680	5400	5700
Trichlorobiphenyl		4.8 U	4.4 U	4.8 U	20	35	840	1400
Total PCBs		ND	ND	ND	3170	4377	23350	14300

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSB-S3-0-26IN	FASED-CSB-S4W-0-23IN	FASED-CSB-S5-0-22IN	FASED-CSB-S6-0-20IN	FASED-CSB-S7-0-18IN	FASED-CSB-S8E-0-22IN	FASED-CSB-S9W-0-9IN
Sample Date	02/01/00	02/01/00	02/01/00	02/02/00	02/02/00	02/02/00	02/02/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	140 J	280 J	620	250 J	18 J	150	490 U
Dichlorobiphenyl	72	66 U	210	180	9.1	27 U	97 U
Heptachlorobiphenyl	96 U	170 J	500	160 J	15 U	57 J	490
Hexachlorobiphenyl	400	1300	2800	1100	22	360	1800
Monochlorobiphenyl	32 U	66 U	63 U	62 U	5	27 U	97 U
Nonachlorobiphenyl	160 U	330 U	320 U	310 U	25 U	140 U	490 U
Octachlorobiphenyl	96 U	200 U	190 U	190 U	15 U	82 U	100 J
Pentachlorobiphenyl	290	3300	4800	3500	60	700	1900
Tetrachlorobiphenyl	650	7500	3400	14000	240	750	16000
Trichlorobiphenyl	330	2300	1200	5100	68	55	2200
Total PCBs	1882	14850	13530	24290	422.1	2072	22490

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSC-S1-0-13IN	FASED-CSC-S10-0-28IN	FASED-CSC-S11-0-25IN	FASED-CSC-S11-0-25INFD	FASED-CSC-S12E-0-18IN	FASED-CSC-S2-0-28IN	FASED-CSC-S2-0-28INFD
Sample Date	01/31/00	02/01/00	02/01/00	02/01/00	02/01/00	01/31/00	01/31/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	500 J	320 J	1800	4300 U	3600	540 J	1900
Dichlorobiphenyl	230 U	130 U	260	850 U	66 U	140 U	140 J
Heptachlorobiphenyl	690 U	250 J	1000	2600 U	4300	420 U	1600
Hexachlorobiphenyl	780	2400	6300	1600 J	14000	970	6500
Monochlorobiphenyl	230 U	130 U	260	850 U	66 U	140 U	150 U
Nonachlorobiphenyl	1200 U	680 J	1000 U	4300 U	900	700 U	350 J
Octachlorobiphenyl	690 U	410 U	600 U	2600 U	1000	420 U	320 J
Pentachlorobiphenyl	1100	3600	9300	2700	13000	1700	9000
Tetrachlorobiphenyl	460 U	2800	7300	1700 U	11000	730	6400
Trichlorobiphenyl	230 U	960	1000	850 U	450	190	1800
Total PCBs	2380	11010	27220	4300	48250	4130	28010

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Compound	Sample ID	FASED-CSC-S3-0-20IN	FASED-CSC-S4-0-22IN	FASED-CSC-S5W-0-26IN	FASED-CSC-S6W-0-26IN	FASED-CSC-S7-0-29IN	FASED CSC-S8-0-16IN	FASED-CSC-S9-0-27IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	02/01/00	02/01/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Decachlorobiphenyl		1400 J	260	1200	1100	410 J	490 J	2000 J
Dichlorobiphenyl		330 U	38 U	130 U	50 U	140	180 U	850 J
Heptachlorobiphenyl		1000 U	120	630	700	360 U	540 U	2900 U
Hexachlorobiphenyl		2800	1000	4100	3500	480	2000	7800
Monochlorobiphenyl		330 U	38 U	130 U	50 U	120 U	180 U	940 U
Nonachlorobiphenyl		1700 U	190	680 U	140 J	600 U	900 U	4800 U
Octachlorobiphenyl		1000 U	110 U	410 U	190	360 U	540 U	2900 U
Pentachlorobiphenyl		3800	2100	3900	4600	240 U	2800	9100
Tetrachlorobiphenyl		1900	950	3500	2500	240 U	1500	4700
Trichlorobiphenyl		570	110	300	80	240	420	2300
Total PCBs		10470	4730	13630	12810	1270	7210	26750

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSC-S9-0-27INFD	FASED-CSD-S1W-0-24IN	FASED-CSD-S2-0-15IN	FASED-CSD-S3-0-21IN	FASED-CSD-S4-0-23IN	FASED-CSD-S5-0-10IN	FASED-CSD-S6E-0-13IN
Sample Date	02/01/00	02/02/00	01/27/00	01/27/00	01/27/00	01/31/00	01/28/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	470	140 U	720	370	780	8.7 J	12 J
Dichlorobiphenyl	67	27 U	66	53 U	57 J	4.5 U	5.5 U
Heptachlorobiphenyl	340	82 U	210	270	480	14 U	17 U
Hexachlorobiphenyl	2600	96	720	2200	1800	18	39
Monochlorobiphenyl	60 U	27 U	49 U	53 U	61 U	4.5 U	5.5 U
Nonachlorobiphenyl	120 J	140 U	670	260 J	520	23 U	28 U
Octachlorobiphenyl	61 J	82 U	57 J	160 U	69 J	14 U	17 U
Pentachlorobiphenyl	4000	110	440	3000	4300	9.6	66
Tetrachlorobiphenyl	2800	55 U	610	1800	2200	9.2 U	11 U
Trichlorobiphenyl	380	27 U	470	190	410	4.5 U	5.5 U
Total PCBs	10838	206	3963	8090	10616	36.3	117

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSD-S7-0-33IN	FASED-CSD-S8-0-29IN	FASED-CSD-S9W-0-23IN	FASED-CSE-S1-0-12IN	FASED-CSE-S10W-0-27IN	FASED-CSE-S11W-0-22IN	FASED-CSE-S12-0-21IN
Sample Date	01/31/00	01/31/00	01/31/00	01/19/00	01/24/00	01/24/00	01/24/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	1800	540 J	320	270 U	360 U	150 U	1400 U
Dichlorobiphenyl	280 U	120 U	52 U	54 U	72 U	30 U	280 U
Heptachlorobiphenyl	860 U	370 U	160 U	160 U	220 U	92 U	860 U
Hexachlorobiphenyl	1400	140 J	470	110 U	150 U	62 U	580 U
Monochlorobiphenyl	280 U	120 U	52 U	54 U	72 U	30 U	280 U
Nonachlorobiphenyl	720 J	620 U	110 J	270 U	360 U	150 U	1400 U
Octachlorobiphenyl	860 U	370 U	160 U	160 U	220 U	92 U	860 U
Pentachlorobiphenyl	490 J	250 U	450	110 U	150 U	62 U	580 U
Tetrachlorobiphenyl	580 U	250 U	70 J	110 U	150 U	62 U	580 U
Trichlorobiphenyl	1400	250	61	54 U	72 U	30 U	280 U
Total PCBs	5810	930	1481	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Compound	Sample ID	FASED-CSE-S13E-0-21IN	FASED-CSE-S14W-0-31IN	FASED-CSE-S14W-0-31IN	FASED-CSE-S15-0-19IN	FASED-CSE-S16E-0-21IN	FASED-CSE-S17-0-28IN	FASED-CSE-S18-0-25IN
	Sample Date	01/24/00	01/24/00	01/24/00	01/25/00	01/25/00	01/25/00	01/25/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Decachlorobiphenyl		120 U	2000 U	---	1700 U	660	270 U	1600 U
Dichlorobiphenyl		24 U	400 U	---	330 U	66 U	53 U	320 U
Heptachlorobiphenyl		100	1200 U	---	1000 U	160 J	160 U	980 U
Hexachlorobiphenyl		300	820 U	---	670 U	2000	110 U	660 U
Monochlorobiphenyl		24 U	400 U	---	330 U	66 U	53 U	320 U
Nonachlorobiphenyl		120 U	2000 U	---	1700 U	28 J	140 J	1600 U
Octachlorobiphenyl		71 U	1200 U	---	1000 U	200 U	160 U	980 U
Pentachlorobiphenyl		50 U	820 U	---	670 U	4300	48 J	660 U
Tetrachlorobiphenyl		50 U	820 U	---	670 U	1500	110 U	660 U
Trichlorobiphenyl		24 U	400 U	---	330 U	110	53 U	320 U
Total PCBs		400	---	ND	ND	8758	188	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSE-S19E-0-28IN	FASED-CSE-S19E-0-28INFD	FASED-CSE-S20E-0-33IN	FASED-CSE-S21-0-28IN	FASED-CSE-S22E-0-26IN	FASED-CSE-S23-0-23IN	FASED-CSE-S24W-0-27IN
Sample Date	01/25/00	01/25/00	01/25/00	01/26/00	01/26/00	01/26/00	01/26/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	26 U	14 J	24 U	57	20 J	3600 U	58
Dichlorobiphenyl	5.2 U	5.1 U	4.8 U	5.9 U	4.9 U	720 U	5.1 J
Heptachlorobiphenyl	16 U	15 U	15 U	28	15 U	2200 U	73
Hexachlorobiphenyl	10 U	17	9.8 U	220	58	1400 U	340
Monochlorobiphenyl	5.2 U	5.1 U	4.8 U	5.9 U	4.9 U	720 U	5.4 U
Nonachlorobiphenyl	26 U	14 J	24 U	33	25 U	3600 U	26 J
Octachlorobiphenyl	16 U	15 U	15 U	18 U	15 U	2200 U	20
Pentachlorobiphenyl	10 U	26	9.8 U	360	92	1400 U	730
Tetrachlorobiphenyl	10 U	10 U	9.8 U	96	15	1400 U	400
Trichlorobiphenyl	5.2 U	5.1 U	4.8 U	6.3	4.9 U	720 U	50
Total PCBs	ND	71	ND	800.3	185	ND	1702.1

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSE-S25W-0-29IN	FASED-CSE-S26E-0-12IN	FASED-CSE-S2W-0-19IN	FASED-CSE-S3-0-13IN	FASED-CSE-S4E-0-17IN	FASED-CSE-S5E-0-24IN	FASED-CSE-S6W-0-35IN
Sample Date	01/26/00	01/27/00	01/19/00	01/20/00	01/20/00	01/20/00	01/20/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	24 U	22 U	500 U	120 U	110 U	1600 U	89 J
Dichlorobiphenyl	4.6 U	4.4 U	98 U	24 U	22 U	320 U	20 J
Heptachlorobiphenyl	14 U	13 U	300 U	74 U	68 U	960 U	71 U
Hexachlorobiphenyl	19	4.2 J	200 U	49 U	45 U	640 U	400
Monochlorobiphenyl	4.6 U	4.4 U	98 U	24 U	22 U	320 U	24
Nonachlorobiphenyl	13 J	22 U	500 U	56 J	110 U	1600 U	120 U
Octachlorobiphenyl	14 U	13 U	300 U	74 U	68 U	960 U	71 U
Pentachlorobiphenyl	20	3.8 J	200 U	49 U	45 U	640 U	680
Tetrachlorobiphenyl	9.4 U	8.9 U	200 U	49 U	45 U	640 U	250
Trichlorobiphenyl	4.6 U	4.4 U	98 U	24 U	22 U	320 U	24 U
Total PCBs	52	8	ND	56	ND	ND	1463

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSE-S6W-0-35INFD	FASED-CSE-S7W-0-13IN	FASED-CSE-S8-0-32IN	FASED-CSE-S9-0-31IN	FASED-CSF-S10-0-9IN	FASED-CSF-S11W-0-10IN	FASED-CSF-S12-0-15IN
Sample Date	01/20/00	01/20/00	01/21/00	01/21/00	01/12/00	01/12/00	01/12/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	210	790 U	240 U	310 U	25 U	29 U	28 U
Dichlorobiphenyl	43	160 U	48 U	62 U	4.9 U	5.7 U	5.6 U
Heptachlorobiphenyl	43 J	480 U	90 J	190 U	15 U	17 U	17 U
Hexachlorobiphenyl	570	640	520	230	10 U	12 U	11 U
Monochlorobiphenyl	32	160 U	48 U	62 U	4.9 U	5.7 U	5.6 U
Nonachlorobiphenyl	120 J	490 J	240 U	310 U	25 U	29 U	28 U
Octachlorobiphenyl	75 U	480 U	140 U	190 U	15 U	17 U	17 U
Pentachlorobiphenyl	930	1200	710	500	10 U	12 U	11 U
Tetrachlorobiphenyl	380	320 U	140	130 U	10 U	12 U	11 U
Trichlorobiphenyl	76	160 U	48 U	62 U	4.9 U	5.7 U	5.6 U
Total PCBs	2404	2330	1460	730	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	FASED-CSF-S12-0-15INFD	FASED-CSF-S13W-0-15IN	FASED-CSF-S14W-0-15IN	FASED-CSF-S15W-0-28IN	FASED-CSF-S16-0-23IN	FASED-CSF-S17W-0-16IN	FASED-CSF-S18E-0-14IN
	Sample Date	01/12/00	01/12/00	01/12/00	01/13/00	01/13/00	01/13/00	01/13/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		28 U	33 J	57 J	310 U	30 U	160	52
Dichlorobiphenyl		5.5 U	7 UJ	6.7 UJ	61 U	5.9 U	6.1 U	6.2 U
Heptachlorobiphenyl		17 U	21 UJ	13 J	180 U	18 U	15 J	19 U
Hexachlorobiphenyl		11 U	14 UJ	14 UJ	120 U	12 U	12 U	13 U
Monochlorobiphenyl		5.5 U	7 UJ	6.7 UJ	61 U	5.9 U	6.1 U	6.2 U
Nonachlorobiphenyl		28 U	35 UJ	24 J	310 U	30 U	24 J	21 J
Octachlorobiphenyl		17 U	21 UJ	20 UJ	180 U	18 U	12 J	19 U
Pentachlorobiphenyl		11 U	160 J	250 J	64 J	13	220	170
Tetrachlorobiphenyl		11 U	48 J	93 J	120 U	12 U	44	18
Trichlorobiphenyl		5.5 U	7 UJ	6.7 UJ	61 U	5.9 U	6.1 U	6.2 U
Total PCBs		ND	241	437	64	13	475	261

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSF-S19-0-13IN	FASED-CSF-S1E-0-8IN	FASED-CSF-S2-0-7IN	FASED-CSF-S20-0-12IN	FASED-CSF-S21-0-13IN	FASED-CSF-S21-0-13INFD	FASED-CSF-S22E-0-20IN
Sample Date	01/17/00	01/11/00	01/11/00	01/17/00	01/17/00	01/17/00	01/17/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	85 J	25 U	450 U	50	96	150 J	76
Dichlorobiphenyl	6.6 UJ	4.9 U	89 U	5.6 U	5.9 U	6.7 UJ	5.7 U
Heptachlorobiphenyl	51 J	15 U	270 U	13 J	15 J	31 J	49
Hexachlorobiphenyl	13 UJ	10 U	180 U	11 U	12 U	14 UJ	12 U
Monochlorobiphenyl	6.6 UJ	4.9 U	89 U	5.6 U	5.9 U	6.7 UJ	5.7 U
Nonachlorobiphenyl	32 J	25 U	250 J	28 U	37	50 J	28 J
Octachlorobiphenyl	6.6 J	15 U	270 U	17 U	18 U	14 J	5.8 J
Pentachlorobiphenyl	720 J	10 U	140 J	300	310	420 J	680
Tetrachlorobiphenyl	340 J	10 U	180 U	93	65	110 J	250
Trichlorobiphenyl	8.3 J	4.9 U	89 U	5.6 U	5.9 U	6.7 UJ	6.4
Total PCBs	1242.9	ND	390	456	523	775	1095.2

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSF-S23-0-15IN	FASED-CSF-S24W-0-13IN	FASED-CSF-S25E-0-10IN	FASED-CSF-S26W-0-13IN	FASED-CSF-S27E-0-16IN	FASED-CSF-S28-0-10IN	FASED-CSF-S29W-0-10IN
Sample Date	01/17/00	01/17/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound							
Decachlorobiphenyl	93 J	32 J	190 J	75	98	460 J	24 UJ
Dichlorobiphenyl	6.3 UJ	6.5 U	7.2 UJ	5.4 U	6 U	61 UJ	4.8 UJ
Heptachlorobiphenyl	62 J	20 U	50 J	40	110	260 J	15 UJ
Hexachlorobiphenyl	13 UJ	13 U	19 J	11 U	12 U	120 UJ	9.8 UJ
Monochlorobiphenyl	6.3 UJ	6.5 U	7.2 UJ	5.4 U	6 U	61 UJ	4.8 UJ
Nonachlorobiphenyl	35 J	33 U	67 J	26 J	33	270 J	24 UJ
Octachlorobiphenyl	21 J	20 U	20 J	11 J	27	180 UJ	15 UJ
Pentachlorobiphenyl	770 J	160	550 J	330	1100	3700 J	9.8 UJ
Tetrachlorobiphenyl	400 J	13 U	150 J	91	420	1600 J	9.8 UJ
Trichlorobiphenyl	16 J	6.5 U	7.2 UJ	5.4 U	17	61 UJ	4.8 UJ
Total PCBs	1397	192	1046	573	1805	6290	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Compound	Sample ID	FASED-CSF-S30N-0-8IN	FASED-CSF-S31N-0-13IN	FASED-CSF-S32S-0-11IN	FASED-CSF-S32S-0-11INFD	FASED-CSF-S33-0-13IN	FASED-CSF-S34S-0-14IN	FASED-CSF-S35S-0-21IN
	Sample Date	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	02/02/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Decachlorobiphenyl		15 J	560 UJ	130 U	250 U	24 J	120 U	120 U
Dichlorobiphenyl		5.2 UJ	110 UJ	26 U	50 U	6.1 U	24 U	23 U
Heptachlorobiphenyl		16 UJ	330 UJ	78 U	150 U	14 J	74 U	69 U
Hexachlorobiphenyl		10 UJ	220 UJ	52 U	100 U	6.4 J	49 U	46 U
Monochlorobiphenyl		5.2 UJ	110 UJ	26 U	50 U	6.1 U	24 U	23 U
Nonachlorobiphenyl		20 J	560 UJ	130 U	250 U	31 U	120 U	120 U
Octachlorobiphenyl		16 UJ	330 UJ	78 U	150 U	18 U	74 U	69 U
Pentachlorobiphenyl		10 UJ	220 UJ	87	100 U	78	49 U	46 U
Tetrachlorobiphenyl		10 UJ	220 UJ	52 U	100 U	9.3 J	49 U	46 U
Trichlorobiphenyl		5.2 UJ	110 UJ	26 U	50 U	6.1 U	24 U	23 U
Total PCBs		35	ND	87	ND	131.7	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

	Sample ID	FASED-CSF-S36N-0-12IN	FASED-CSF-S36N-0-12INFD	FASED-CSF-S37N-0-13IN	FASED-CSF-S38S-0-14IN	FASED-CSF-S39S-0-26IN	FASED-CSF-S3E-0-6IN	FASED-CSF-S4-0-7IN
	Sample Date	01/18/00	01/18/00	01/18/00	01/19/00	01/19/00	01/11/00	01/11/00
	Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound								
Decachlorobiphenyl		25	250 U	50 U	15 J	60	22 U	22 U
Dichlorobiphenyl		4.9 U	48 U	9.8 U	4.6 U	6.1 U	4.4 U	4.4 U
Heptachlorobiphenyl		40	150 U	30 U	8.1 J	20	14 U	13 U
Hexachlorobiphenyl		10 U	98 U	13 J	9.3 U	12 U	9 U	8.9 U
Monochlorobiphenyl		4.9 U	48 U	9.8 U	4.6 U	6.1 UJ	4.4 U	4.4 U
Nonachlorobiphenyl		25 U	250 U	50 U	23 U	22 J	22 U	22 U
Octachlorobiphenyl		23	150 U	30 U	14 U	18 UJ	14 U	13 U
Pentachlorobiphenyl		170	98 U	20	140	340 J	9 U	8.9 U
Tetrachlorobiphenyl		39	98 U	20 U	100	120 J	9 U	8.9 U
Trichlorobiphenyl		4.9 U	48 U	9.8 U	7.4	6.1 U	4.4 U	4.4 U
Total PCBs		297	ND	33	270.5	562	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-1
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 680 Polychlorinated Biphenyl Data

Sample ID	FASED-CSF-S40-0-20IN	FASED-CSF-S5W-0-10IN	FASED-CSF-S6E-0-10IN	FASED-CSF-S7E-0-11IN	FASED-CSF-S8-0-15IN	FASED-CSF-S9-0-11IN
Sample Date	01/19/00	01/11/00	01/11/00	01/11/00	01/12/00	01/12/00
Units	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw	ug/kg dw
Compound						
Decachlorobiphenyl	46 UJ	24 U	24 U	23 U	24 U	29 U
Dichlorobiphenyl	9.2 UJ	4.8 U	4.7 U	4.5 U	4.8 U	5.7 U
Heptachlorobiphenyl	28 UJ	14 U	14 U	14 U	15 U	17 U
Hexachlorobiphenyl	19 UJ	9.7 U	9.6 U	9.2 U	9.8 U	12 U
Monochlorobiphenyl	9.2 UJ	4.8 U	4.7 U	4.5 U	4.8 U	5.7 U
Nonachlorobiphenyl	46 UJ	10 J	24 U	23 U	24 U	29 U
Octachlorobiphenyl	28 UJ	14 U	14 U	14 U	15 U	17 U
Pentachlorobiphenyl	23 J	9.7 U	9.6 U	9.2 U	9.8 U	12 U
Tetrachlorobiphenyl	19 UJ	9.7 U	9.6 U	9.2 U	9.8 U	12 U
Trichlorobiphenyl	9.2 UJ	4.8 U	4.7 U	4.5 U	4.8 U	5.7 U
Total PCBs	23	10	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-BPL-S1-0-10IN	FASED-BPL-S1-0-10INEB	FASED-BPL-S2-0-10IN	FASED-BPL-S3-0-8IN	FASED-BPL-S4-0-10IN	FASED-BPL-S5-0-9IN	FASED-BPL-S6-0-11IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00
	Units	mg/kg dw	mg/l	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		9.9	0.02 U	15	14	13	13	15
Zinc		380	0.02 U	230	300	360	280	220

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-BPL-S6-0-11INFD	FASED-BPL-S7-0-9IN	FASED-BPL-S8-0-9IN	FASED-CSB-S10W-0-9IN	FASED-CSB-S10W-0-9INFD	FASED-CSB-S1W-0-25IN	FASED-CSB-S2-0-23IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/02/00	02/02/00	02/01/00	02/01/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		19	18	21	1800	670	2200	19000
Zinc		450	410	490	800	260	3600	25000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSB-S3-0-26IN	FASED-CSB-S4W-0-23IN	FASED-CSB-S5-0-22IN	FASED-CSB-S6-0-20IN	FASED-CSB-S7-0-18IN	FASED-CSB-S8E-0-22IN	FASED-CSB-S9W-0-9IN
	Sample Date	02/01/00	02/01/00	02/01/00	02/02/00	02/02/00	02/02/00	02/02/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		750	19000	4500	4900	480	6700	2000
Zinc		11000	21000	12000	20000	3100	12000	26000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, ER - equipment blank, FD - field duplicate

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Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

Compound	Sample ID	FASED-CSC-S1-0-13IN	FASED-CSC-S10-0-28IN	FASED-CSC-S11-0-25IN	FASED-CSC-S11-0-25INFD	FASED-CSC-S12E-0-18IN	FASED-CSC-S2-0-28IN	FASED-CSC-S2-0-28INFD
	Sample Date	01/31/00	02/01/00	02/01/00	02/01/00	02/01/00	01/31/00	01/31/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Copper		2200	640	13000	6900	16000	4500	6400
Zinc		2300	17000	37000	20000	4700	11000	13000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

Sample ID	FASED-CSC-S3-0-20IN	FASED-CSC-S4-0-22IN	FASED-CSC-S5W-0-26IN	FASED-CSC-S6W-0-26IN	FASED-CSC-S7-0-29IN	FASED-CSC-S8-0-16IN	FASED-CSC-S9-0-27IN
Sample Date	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	02/01/00	02/01/00
Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound							
Copper	4200	5600	9500	2600	1400	14000	31000
Zinc	10000	11000	13000	3400	3100	33000	76000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSC-S9-0-27INFD	FASED-CSD-S1W-0-24IN	FASED-CSD-S2-0-15IN	FASED-CSD-S3-0-21IN	FASED-CSD-S4-0-23IN	FASED-CSD-S5-0-10IN	FASED-CSD-S6E-0-13IN
	Sample Date	02/01/00	02/02/00	01/27/00	01/27/00	01/27/00	01/31/00	01/28/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		3500	840	1500	1100	18000	220	1100
Zinc		6700	4500	1600	2000	19000	360	3300

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

Compound	Sample ID	FASED-CSD-S7-0-33IN	FASED-CSD-S8-0-29IN	FASED-CSD-S9W-0-23IN	FASED-CSE-S1-0-12IN	FASED-CSE-S10W-0-27IN	FASED-CSE-S11W-0-22IN	FASED-CSE-S12-0-21IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/19/00	01/24/00	01/24/00	01/24/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Copper		1400	770	3800	44	970	150	480
Zinc		13000	16000	6100	660	4200	1000	1400

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSE-S13E-0-21IN	FASED-CSE-S14W-0-31IN	FASED-CSE-S15-0-19IN	FASED-CSE-S16E-0-21IN	FASED-CSE-S17-0-28IN	FASED-CSE-S18-0-25IN	FASED-CSE-S19E-0-28IN
	Sample Date	01/24/00	01/24/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		120	13000	11000	3600	460	2200	1600
Zinc		1100	32000	150000	6600	3200	6800	3000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSE-S19E-0-28INFD	FASED-CSE-S20E-0-33IN	FASED-CSE-S21-0-28IN	FASED-CSE-S22E-0-26IN	FASED-CSE-S23-0-23IN	FASED-CSE-S24W-0-27IN	FASED-CSE-S25W-0-29IN
	Sample Date	01/25/00	01/25/00	01/26/00	01/26/00	01/26/00	01/26/00	01/26/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		440	24	330	42	2900	810	690
Zinc		3100	2900	8600	2800	5200	2900	3100

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

Compound	Sample ID	FASED-CSE-S26E-0-12IN	FASED-CSE-S2W-0-19IN	FASED-CSE-S3-0-13IN	FASED-CSE-S4E-0-17IN	FASED-CSE-S5E-0-24IN	FASED-CSE-S6W-0-35IN	FASED-CSE-S6W-0-35INFD
	Sample Date	01/27/00	01/19/00	01/20/00	01/20/00	01/20/00	01/20/00	01/20/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Copper		57	34	65	45	3900	440	6500
Zinc		810	490	590	500	8500	1900	11000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSE-S7W-0-13IN	FASED-CSE-S8-0-32IN	FASED-CSE-S9-0-31IN	FASED-CSF-S10-0-9IN	FASED-CSF-S11W-0-10IN	FASED-CSF-S12-0-15IN	FASED-CSF-S12-0-15INFD
	Sample Date	01/20/00	01/21/00	01/21/00	01/12/00	01/12/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		35000	270	1200	33	88	80	72
Zinc		55000	4200	3900	250	690	680	690

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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DBF File D:\25501\TEMPDATA.DBF
FXP File D:\25501\TABLEPRS.FXP

File Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSF-S13W-0-15IN	FASED-CSF-S14W-0-15IN	FASED-CSF-S15W-0-28IN	FASED-CSF-S16-0-23IN	FASED-CSF-S17W-0-16IN	FASED-CSF-S18E-0-14IN	FASED-CSF-S19-0-13IN
	Sample Date	01/12/00	01/12/00	01/13/00	01/13/00	01/13/00	01/13/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		370	460	430	33	1400	1700	5400
Zinc		2100	3200	7700	3900	11000	9100	10000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSF-S1E-0-8IN	FASED-CSF-S2-0-7IN	FASED-CSF-S20-0-12IN	FASED-CSF-S21-0-13IN	FASED-CSF-S21-0-13INFD	FASED-CSF-S22E-0-20IN	FASED-CSF-S23-0-15IN
	Sample Date	01/11/00	01/11/00	01/17/00	01/17/00	01/17/00	01/17/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		17	12	710	920	1200	420	1400
Zinc		88	53	2300	4500	4400	4800	5400

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSF-S24W-0-13IN	FASED-CSF-S25E-0-10IN	FASED-CSF-S26W-0-13IN	FASED-CSF-S27E-0-16IN	FASED-CSF-S28-0-10IN	FASED-CSF-S29W-0-10IN	FASED-CSF-S30N-0-8IN
	Sample Date	01/17/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		530	2500	930	1900	1200	26	54
Zinc		3200	6200	4700	6200	3200	510	850

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

Compound	Sample ID	FASED-CSF-S31N-0-13IN	FASED-CSF-S32S-0-11IN	FASED-CSF-S32S-0-11INFD	FASED-CSF-S33-0-13IN	FASED-CSF-S34S-0-14IN	FASED-CSF-S35S-0-21IN	FASED-CSF-S36N-0-12IN
	Sample Date	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	02/02/00	01/18/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Copper		130	81	59	200	92	44	78
Zinc		2400	1600	1200	1700	3900	540	1000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

Date Printed: 08/30/00 14:54:52
DBF File: D:\25501\TEMPDATA.DBF
EXP File: D:\25501\TABLEPRS.EXP

File Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSF-S36N-0-12INFD	FASED-CSF-S37N-0-13IN	FASED-CSF-S38S-0-14IN	FASED-CSF-S39S-0-26IN	FASED-CSF-S3E-0-6IN	FASED-CSF-S4-0-7IN	FASED-CSF-S40-0-20IN
	Sample Date	01/18/00	01/18/00	01/19/00	01/19/00	01/11/00	01/11/00	01/19/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Copper		68	43	89	1100	17	10	39
Zinc		720	920	860	5300	63	50	690

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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Date Printed: 08 14:54:52
DBF File: D:\25 .DATA.DBF
FXP File: D:\25 LEPRS.FXP

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-2
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 7211/7951 Inorganic Data

	Sample ID	FASED-CSF-S5W-0-10IN	FASED-CSF-S6E-0-10IN	FASED-CSF-S7E-0-11IN	FASED-CSF-S8-0-15IN	FASED-CSF-S9-0-11IN
	Sample Date	01/11/00	01/11/00	01/11/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound						
Copper		13	17	21	34	78
Zinc		62	85	84	160	400

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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DBF File: D:\25501\TEMPDATA.DBF
FXP File: D:\25501\TABLEPRS.FXP

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-BPL-S1-0-10IN	FASED-BPL-S1-0-10INEB	FASED-BPL-S2-0-10IN	FASED-BPL-S3-0-8IN	FASED-BPL-S4-0-10IN	FASED-BPL-S5-0-9IN	FASED-BPL-S6-0-11IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00
	Units	mg/kg dw	mg/l	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		23	0.1 U	10	4.6	4	6.6	8.1
Hydrocarbons as GRO		0.28 U	0.05 U	0.33 U	0.37 U	0.33 U	0.31 U	0.33 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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Date Printed: 08/30/00 14:55:03
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FXP File: D:\25501\TABLEPRS.FXP

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-BPL-S6-0-11INFD	FASED-BPL-S7-0-9IN	FASED-BPL-S8-0-9IN	FASED-CSB-S10W-0-9IN	FASED-CSB-S10W-0-9INFD	FASED-CSB-S1W-0-25IN	FASED-CSB-S2-0-23IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/02/00	02/02/00	02/01/00	02/01/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		6	4.3	5.5	370	150	2400	2000
Hydrocarbons as GRO		0.36 U	0.33 U	0.36 U	0.3 U	0.29 U	0.69	9.9

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSB-S3-0-26IN	FASED-CSB-S4W-0-23IN	FASED-CSB-S5-0-22IN	FASED-CSB-S6-0-20IN	FASED-CSB-S7-0-18IN	FASED-CSB-S8E-0-22IN	FASED-CSB-S9W-0-9IN
	Sample Date	02/01/00	02/01/00	02/01/00	02/02/00	02/02/00	02/02/00	02/02/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		700	800	2100	2500	67	460	5200
Hydrocarbons as GRO		8.8	0.37	0.44	3.9	3.7	0.34	1.9

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSC-S1-0-13IN	FASED-CSC-S10-0-28IN	FASED-CSC-S11-0-25IN	FASED-CSC-S11-0-25INFD	FASED-CSC-S12E-0-18IN	FASED-CSC-S2-0-28IN	FASED-CSC-S2-0-28INFD
	Sample Date	01/31/00	02/01/00	02/01/00	02/01/00	02/01/00	01/31/00	01/31/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		540	2400	2600	5200	930	800	1000
Hydrocarbons as GRO		0.34 U	0.52	8.3	9.8	2.1	4.1	0.51

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSC-S3-0-20IN	FASED-CSC-S4-0-22IN	FASED-CSC-S5W-0-26IN	FASED-CSC-S6W-0-26IN	FASED-CSC-S7-0-29IN	FASED-CSC-S8-0-16IN	FASED-CSC-S9-0-27IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	02/01/00	02/01/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		1200	1100	880	160	430	2500	5000
Hydrocarbons as GRO		1.4	2.3	3	0.15	6.3	2	9.6

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

Compound	Sample ID	FASED-CSC-S9-0-27INFD	FASED-CSD-S1W-0-24IN	FASED-CSD-S2-0-15IN	FASED-CSD-S3-0-21IN	FASED-CSD-S4-0-23IN	FASED-CSD-S5-0-10IN	FASED-CSD-S6E-0-13IN
	Sample Date	02/01/00	02/02/00	01/27/00	01/27/00	01/27/00	01/31/00	01/28/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Hydrocarbons as DRO		930	74	220	280	920	53	30
Hydrocarbons as GRO		6.3	0.41 U	0.36 U	0.4	0.66 U	0.34 U	0.42 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSD-S7-0-33IN	FASED-CSD-S8-0-29IN	FASED-CSD-S9W-0-23IN	FASED-CSE-S1-0-12IN	FASED-CSE-S10W-0-27IN	FASED-CSE-S11W-0-22IN	FASED-CSE-S12-0-21IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/19/00	01/24/00	01/24/00	01/24/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		1200	750	61	98	870	320	410
Hydrocarbons as GRO		0.52	0.84	0.64	0.5 U	2.5	0.16	0.43 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

Date Printed: 08/30/00 14:55:03
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FXP File: D:\25501\TABLEPRS.FXP

File Number: 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSE-S13E-0-21IN	FASED-CSE-S14W-0-31IN	FASED-CSE-S15-0-19IN	FASED-CSE-S16E-0-21IN	FASED-CSE-S17-0-28IN	FASED-CSE-S18-0-25IN	FASED-CSE-S19E-0-28IN
	Sample Date	01/24/00	01/24/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		56	830	860	290	110	290	5.2 U
Hydrocarbons as GRO		0.36 U	0.36	0.32	0.27	0.27	0.3	0.39 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSE-S19E-0-28INFD	FASED-CSE-S20E-0-33IN	FASED-CSE-S21-0-28IN	FASED-CSE-S22E-0-26IN	FASED-CSE-S23-0-23IN	FASED-CSE-S24W-0-27IN	FASED-CSE-S25W-0-29IN
	Sample Date	01/25/00	01/25/00	01/26/00	01/26/00	01/26/00	01/26/00	01/26/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		41	4.8 U	310	15	3600	82	11
Hydrocarbons as GRO		0.31	0.27	0.45 U	0.37 U	0.26	0.18	0.35 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSE-S26E-0-12IN	FASED-CSE-S2W-0-19IN	FASED-CSE-S3-0-13IN	FASED-CSE-S4E-0-17IN	FASED-CSE-S5E-0-24IN	FASED-CSE-S6W-0-35IN	FASED-CSE-S6W-0-35INFD
	Sample Date	01/27/00	01/19/00	01/20/00	01/20/00	01/20/00	01/20/00	01/20/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		420	50	460	1100	2100	1700	1100
Hydrocarbons as GRO		0.22	0.43 U	0.42 U	0.38 U	5.6	8.4	4.9

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

Date Printed: 0 14:55:03
DBF File: D:\ .PDATA.DBF
FXP File: D:\ ABLEPRS.FXP

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O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSE-S7W-0-13IN	FASED-CSE-S8-0-32IN	FASED-CSE-S9-0-31IN	FASED-CSF-S10-0-9IN	FASED-CSF-S11W-0-10IN	FASED-CSF-S12-0-15IN	FASED-CSF-S12-0-15INFD
	Sample Date	01/20/00	01/21/00	01/21/00	01/12/00	01/12/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		3200	550	930	17	11	16	17
Hydrocarbons as GRO		3.9	6	1.4	0.46 U	0.63 U	0.53 U	0.6 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

Date Printed: 08/30/00 14:55:03
DBF File: D:\25501\TEMPDATA.DBF
FXP File: D:\25501\TABLEPRS.FXP

File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

Compound	Sample ID	FASED-CSF-S13W-0-15IN	FASED-CSF-S14W-0-15IN	FASED-CSF-S15W-0-28IN	FASED-CSF-S16-0-23IN	FASED-CSF-S17W-0-16IN	FASED-CSF-S18E-0-14IN	FASED-CSF-S19-0-13IN
	Sample Date	01/12/00	01/12/00	01/13/00	01/13/00	01/13/00	01/13/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Hydrocarbons as DRO		77	91	31	18	100	110	74
Hydrocarbons as GRO		0.8 U	0.69 U	0.68 U	0.74 U	0.77 U	0.79 U	0.15

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

Date Printed: 14:55:03
DBF File: D MPDATA DBF
FXP File: D, ABLEPRS FXP

Number: 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S1E-0-8IN	FASED-CSF-S2-0-7IN	FASED-CSF-S20-0-12IN	FASED-CSF-S21-0-13IN	FASED-CSF-S21-0-13INFD	FASED-CSF-S22E-0-20IN	FASED-CSF-S23-0-15IN
	Sample Date	01/11/00	01/11/00	01/17/00	01/17/00	01/17/00	01/17/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		7.4	920	50	87	25	50	49
Hydrocarbons as GRO		0.26	31	0.5 U	0.57 U	0.77 U	0.18	0.14

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

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File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S24W-0-13IN	FASED-CSF-S25E-0-10IN	FASED-CSF-S26W-0-13IN	FASED-CSF-S27E-0-16IN	FASED-CSF-S28-0-10IN	FASED-CSF-S29W-0-10IN	FASED-CSF-S30N-0-8IN
	Sample Date	01/17/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		47	71	75	44	220	21	20
Hydrocarbons as GRO		0.14	0.13	0.52 U	0.53 U	0.17	0.38 U	0.1

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S31N-0-13IN	FASED-CSF-S32S-0-11IN	FASED-CSF-S32S-0-11INFD	FASED-CSF-S33-0-13IN	FASED-CSF-S34S-0-14IN	FASED-CSF-S35S-0-21IN	FASED-CSF-S36N-0-12IN
	Sample Date	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	02/02/00	01/18/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		49	75	190	440	40	170	120
Hydrocarbons as GRO		0.38	0.43	0.11	0.26	0.17	0.35 U	0.15

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S36N-0-12INFD	FASED-CSF-S37N-0-13IN	FASED-CSF-S38S-0-14IN	FASED-CSF-S39S-0-26IN	FASED-CSF-S1E-0-6IN	FASED-CSF-S4-0-7IN	FASED-CSF-S40-0-20IN
	Sample Date	01/18/00	01/18/00	01/19/00	01/19/00	01/11/00	01/11/00	01/19/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Hydrocarbons as DRO		150	160	44	300	3.8	2.7	170
Hydrocarbons as GRO		0.1	0.44 U	0.33 U	0.55 U	0.3 U	0.56 U	0.35 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-3
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 8015 Total Petroleum Hydrocarbons Data

	Sample ID	FASED-CSF-S5W-0-10IN	FASED-CSF-S6E-0-10IN	FASED-CSF-S7E-0-11IN	FASED-CSF-S8-0-15IN	FASED-CSF-S9-0-11IN
	Sample Date	01/11/00	01/11/00	01/11/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound						
Hydrocarbons as DRO		3	3.4	5.7	8.6	24
Hydrocarbons as GRO		0.38 U	0.36 U	0.34 U	0.36 U	0.63 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

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FXP File: D:\25501\TABLEPRS.FXP

File Number: 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-BPL-S1-0-10IN	FASED-BPL-S1-0-10INEB	FASED-BPL-S2-0-10IN	FASED-BPL-S3-0-8IN	FASED-BPL-S4-0-10IN	FASED-BPL-S5-0-9IN	FASED-BPL-S6-0-11IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00	02/03/00
	Units	mg/kg dw	mg/l	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		12000	1 U	3900	16000	7600	7600	11000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

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DBF File D:\25501\TEMPDATA.DBF
FXP File D:\25501\TABLEPRS.FXP

File Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-BPL-S6-0-11INFD	FASED-BPL-S7-0-9IN	FASED-BPL-S8-0-9IN	FASED-CSB-S10W-0-9IN	FASED-CSB-S10W-0-9INFD	FASED-CSB-S1W-0-25IN	FASED-CSB-S2-0-23IN
	Sample Date	02/03/00	02/03/00	02/03/00	02/02/00	02/02/00	02/01/00	02/01/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		16000	9200	11000	30000	28000	71000	60000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSB-S3-0-26IN	FASED-CSB-S4W-0-23IN	FASED-CSB-S5-0-22IN	FASED-CSB-S6-0-20IN	FASED-CSB-S7-0-18IN	FASED-CSB-S8E-0-22IN	FASED-CSB-S9W-0-9IN
	Sample Date	02/01/00	02/01/00	02/01/00	02/02/00	02/02/00	02/02/00	02/02/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		110000	25000	89000	130000	30000	53000	370000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSC-S1-0-13IN	FASED-CSC-S10-0-28IN	FASED-CSC-S11-0-25IN	FASED-CSC-S11-0-25INFD	FASED-CSC-S12E-0-18IN	FASED-CSC-S2-0-28IN	FASED-CSC-S2-0-28INFD
	Sample Date	01/31/00	02/01/00	02/01/00	02/01/00	02/01/00	01/31/00	01/31/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		34000	75000	230000	150000	130000	74000	81000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

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FXP File: D:\ ABLEPRS.FXP

Number: 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSC-S3-0-20IN	FASED-CSC-S4-0-22IN	FASED-CSC-S5W-0-26IN	FASED-CSC-S6W-0-26IN	FASED-CSC-S7-0-29IN	FASED-CSC-S8-0-16IN	FASED-CSC-S9-0-27IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	02/01/00	02/01/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		120000	100000	72000	44000	47000	88000	26000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

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DBF File D:\25501\TEMPDATA.DBF
FXP File D:\25501\TABLEPRS.FXP

File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSC-S9-0-27INFD	FASED-CSD-S1W-0-24IN	FASED-CSD-S2-0-15IN	FASED-CSD-S3-0-21IN	FASED-CSD-S4-0-23IN	FASED-CSD-S5-0-10IN	FASED-CSD-S6E-0-13IN
	Sample Date	02/01/00	02/02/00	01/27/00	01/27/00	01/27/00	01/31/00	01/28/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		120000	31000	60000	69000	110000	170000	47000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

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Number: 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSD-S7-0-33IN	FASED-CSD-S8-0-29IN	FASED-CSD-S9W-0-23IN	FASED-CSE-S1-0-12IN	FASED-CSE-S10W-0-27IN	FASED-CSE-S11W-0-22IN	FASED-CSE-S12-0-21IN
	Sample Date	01/31/00	01/31/00	01/31/00	01/19/00	01/24/00	01/24/00	01/24/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		62000	58000	54000	39000	44000	51000	67000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

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FXP File D:\2550\TABLEPRS.FXP

File Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSE-S13E-0-21IN	FASED-CSE-S14W-0-31IN	FASED-CSE-S15-0-19IN	FASED-CSE-S16E-0-21IN	FASED-CSE-S17-0-28IN	FASED-CSE-S18-0-25IN	FASED-CSE-S19E-0-28IN
	Sample Date	01/24/00	01/24/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		33000	47000	66000	52000	18000	52000	16000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

Date Printed: 14:55:14
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FXP File: D:\ ABLEPRS.FXP

Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSE-S19E-0-28INFD	FASED-CSE-S20E-0-33IN	FASED-CSE-S21-0-28IN	FASED-CSE-S22E-0-26IN	FASED-CSE-S23-0-23IN	FASED-CSE-S24W-0-27IN	FASED-CSE-S25W-0-29IN
	Sample Date	01/25/00	01/25/00	01/26/00	01/26/00	01/26/00	01/26/00	01/26/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		32000	19000	35000	23000	49000	55000	15000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSE-S26E-0-12IN	FASED-CSE-S2W-0-19IN	FASED-CSE-S3-0-13IN	FASED-CSE-S4E-0-17IN	FASED-CSE-S5E-0-24IN	FASED-CSE-S6W-0-35IN	FASED-CSE-S6W-0-35INFD
	Sample Date	01/27/00	01/19/00	01/20/00	01/20/00	01/20/00	01/20/00	01/20/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		51000	42000	53000	14000	63000	89000	51000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSE-S7W-0-13IN	FASED-CSE-S8-0-32IN	FASED-CSE-S9-0-31IN	FASED-CSF-S10-0-9IN	FASED-CSF-S11W-0-10IN	FASED-CSF-S12-0-15IN	FASED-CSF-S12-0-15INFD
	Sample Date	01/20/00	01/21/00	01/21/00	01/12/00	01/12/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		89000	26000	74000	19000	23000	22000	17000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

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File Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSF-S13W-0-15IN	FASED-CSF-S14W-0-15IN	FASED-CSF-S15W-0-28IN	FASED-CSF-S16-0-23IN	FASED-CSF-S17W-0-16IN	FASED-CSF-S18E-0-14IN	FASED-CSF-S19-0-13IN
	Sample Date	01/12/00	01/12/00	01/13/00	01/13/00	01/13/00	01/13/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		42000	43000	41000	34000	43000	56000	66000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

Date Printed: 14:55:14
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FXP File: D:\ ...gLEPRS.FXP

Number 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSF-S1E-0-8IN	FASED-CSF-S2-0-7IN	FASED-CSF-S20-0-12IN	FASED-CSF-S21-0-13IN	FASED-CSF-S21-0-13INFD	FASED-CSF-S22E-0-20IN	FASED-CSF-S23-0-15IN
	Sample Date	01/11/00	01/11/00	01/17/00	01/17/00	01/17/00	01/17/00	01/17/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		21000	12000	52000	71000	32000	51000	73000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

Date Printed 08/30/00 14:55:14
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FXP File D:\25501\TABLEPRS.FXP

File Number 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSF-S24W-0-13IN	FASED-CSF-S25E-0-10IN	FASED-CSF-S26W-0-13IN	FASED-CSF-S27E-0-16IN	FASED-CSF-S28-0-10IN	FASED-CSF-S29W-0-10IN	FASED-CSF-S30N-0-8IN
	Sample Date	01/17/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		30000	70000	68000	59000	56000	15000	30000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSF-S31N-0-13IN	FASED-CSF-S32S-0-11IN	FASED-CSF-S32S-0-11INFD	FASED-CSF-S33-0-13IN	FASED-CSF-S34S-0-14IN	FASED-CSF-S35S-0-21IN	FASED-CSF-S36N-0-12IN
	Sample Date	01/18/00	01/18/00	01/18/00	01/18/00	01/18/00	02/02/00	01/18/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		36000	38000	41000	44000	48000	25000	28000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated

Date Printed: 08/30/00 14:55:14
DBF File: D:\25501\TEMPDATA.DBF
FXP File: D:\25501\TABLEPRS.FXP

File Number: 10040.25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSF-S36N-0-12INFD	FASED-CSF-S37N-0-13IN	FASED-CSF-S38S-0-14IN	FASED-CSF-S39S-0-26IN	FASED-CSF-S3E-0-6IN	FASED-CSF-S4-0-7IN	FASED-CSF-S40-0-20IN
	Sample Date	01/18/00	01/18/00	01/19/00	01/19/00	01/11/00	01/11/00	01/19/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound								
Total Organic Carbon		38000	23000	21000	53000	11000	11000	25000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

Data is not validated.

Date Printed: 14:55:14
DBF File: D: PDATA.DBF
FXP File: D:\ ABLEPRS.FXP

umber 10040 25501

O'BRIEN & GERE ENGINEERS, INC.

Table 6-4
Solutia
Sauget Area 1
Developed Area, Undeveloped Area, and Borrow Pit Lake Industry Specific Sediments
Method 9060 TOC Data

	Sample ID	FASED-CSF-S5W-0-10IN	FASED-CSF-S6E-0-10IN	FASED-CSF-S7E-0-11IN	FASED-CSF-S8-0-15IN	FASED-CSF-S9-0-11IN
	Sample Date	01/11/00	01/11/00	01/11/00	01/12/00	01/12/00
	Units	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw	mg/kg dw
Compound						
Total Organic Carbon		24000	14000	16000	20000	36000

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

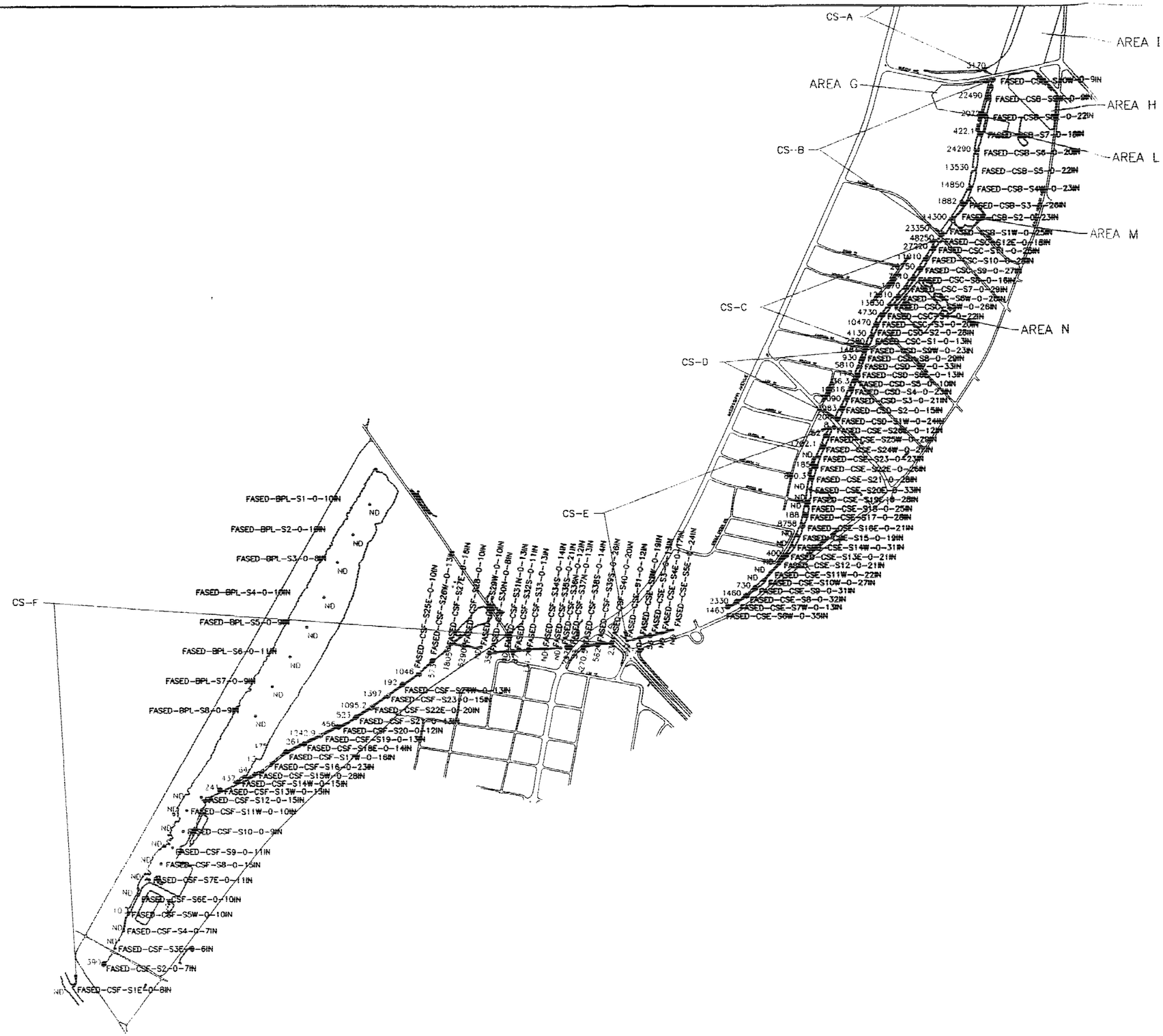
Data is not validated.

Date Printed 08/30/00 14:55:14
DBF File: D:\25501\TEMPDATA.DBF
FXP File: D:\25501\TABLEPRS.FXP

File Number 10040.25501

FIGURES

FIGURE 6-1



LEGEND

- NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = ug/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

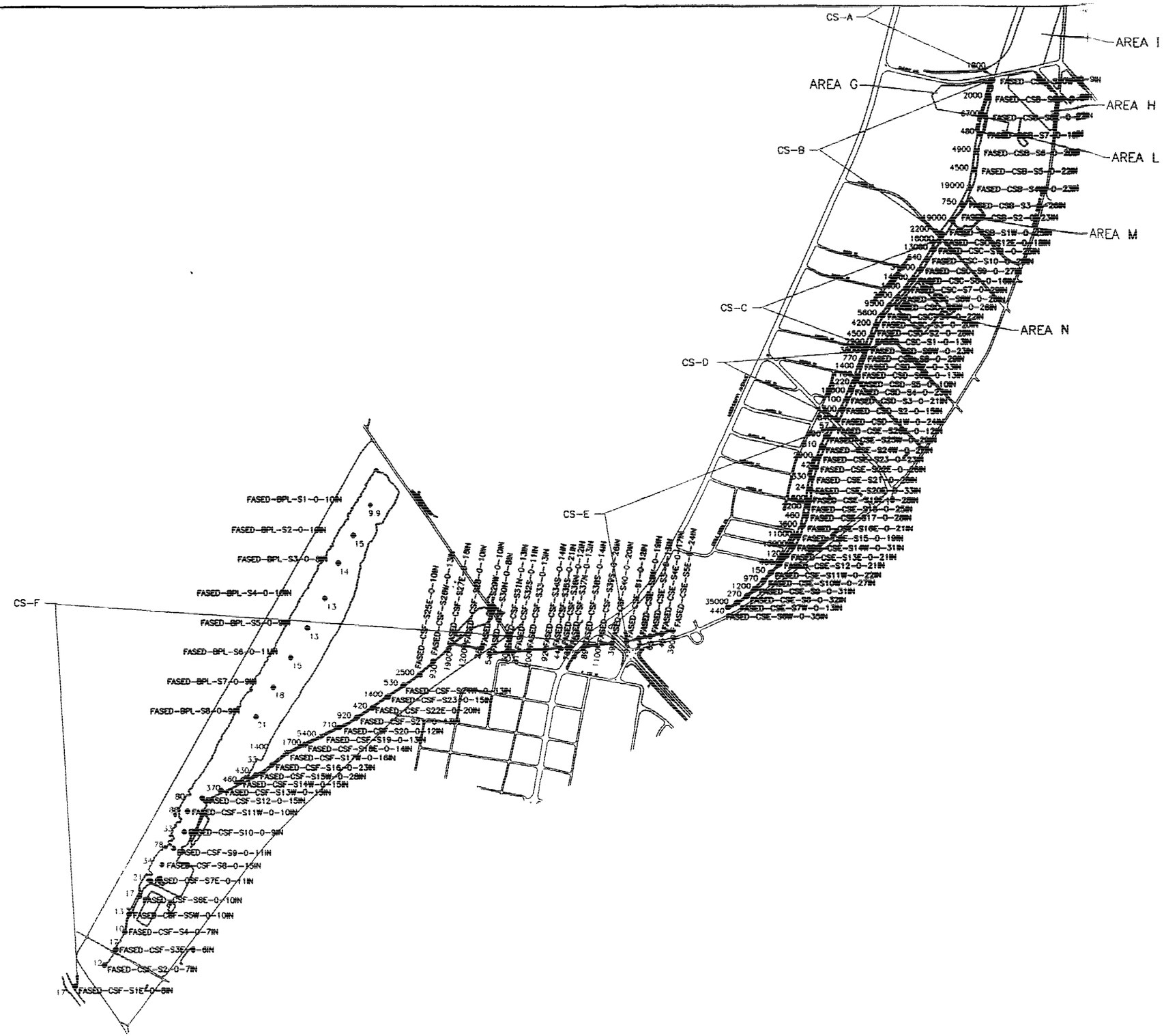
INDUSTRY SPECIFIC SEDIMENTS TOTAL PCBs

600 0 600
SCALE IN FEET

FILE NO. 25501.FACE.A
August 2000

O'BRIEN & GERE ENGINEERS, INC.

FIGURE 6-2



LEGEND

- NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = mg/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

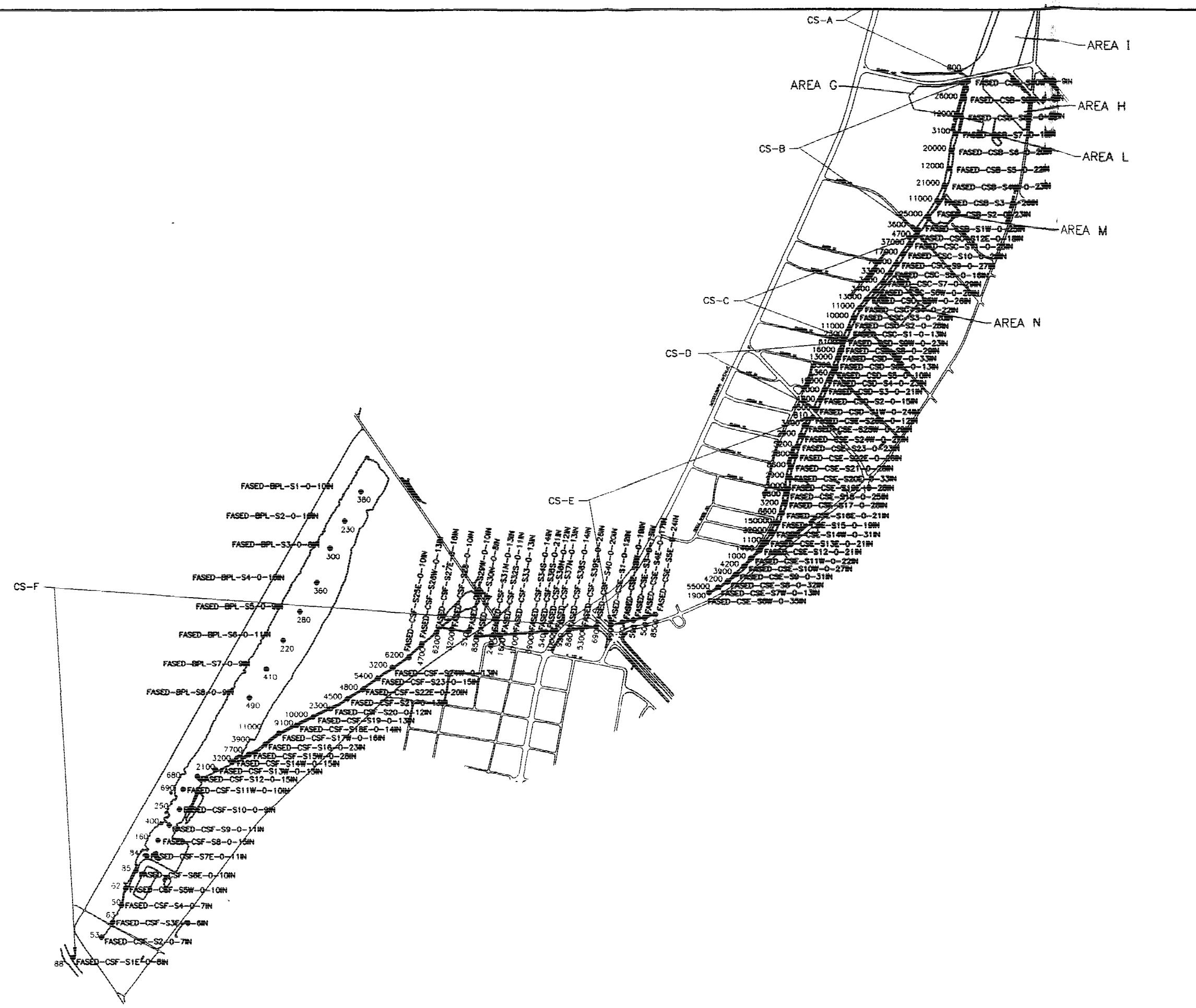
INDUSTRY SPECIFIC SEDIMENTS COPPER

600 0 600
SCALE IN FEET

FILE NO. 25501.FASE.B
August 2000

ENGINEERS, INC.

FIGURE 6-3



LEGEND

- NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = mg/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

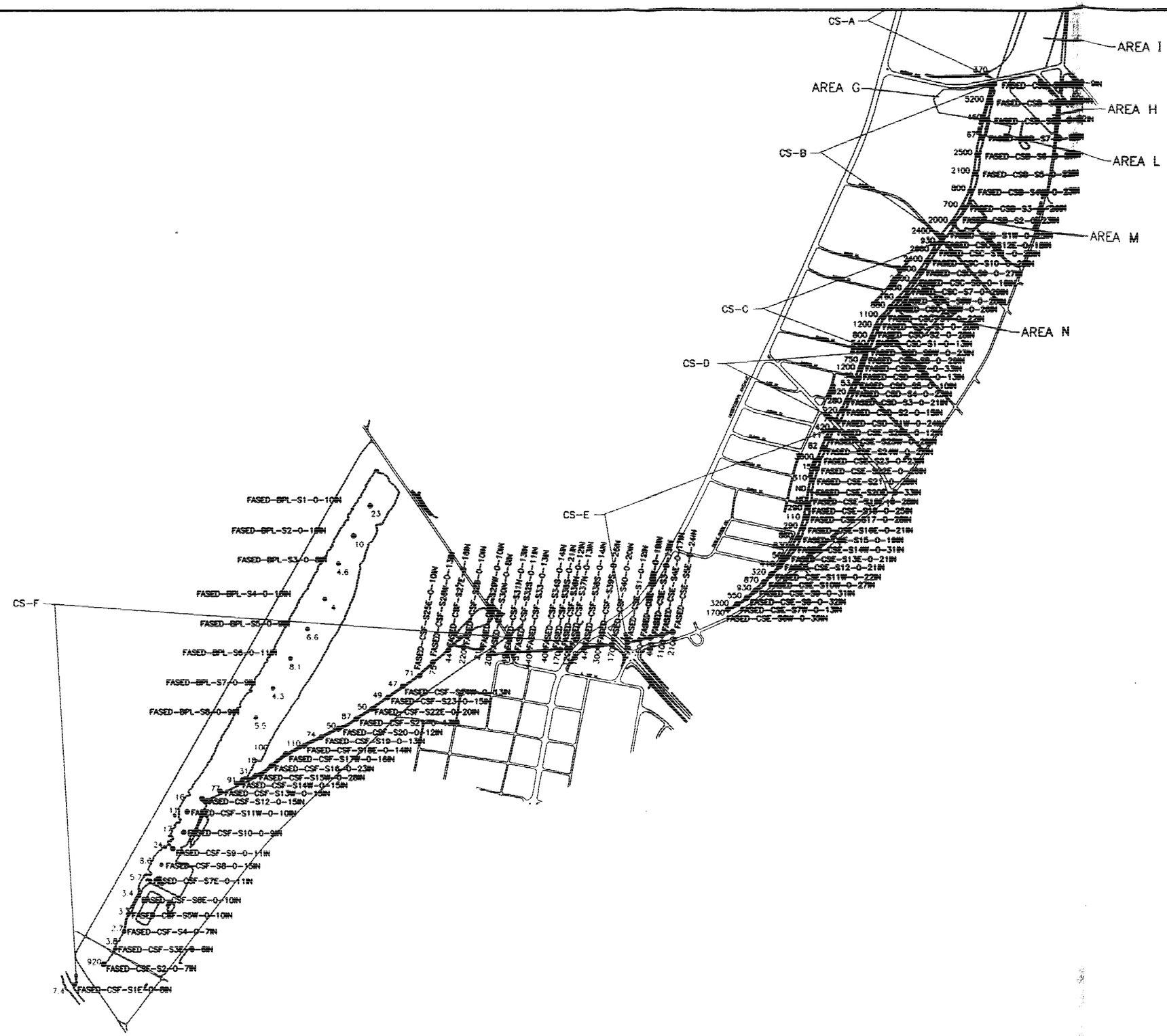
INDUSTRY SPECIFIC SEDIMENTS ZINC

600 0 600
SCALE IN FEET

FILE NO. 25501.FASE.C
August 2000

GREENSCAPE ENGINEERS, INC.

FIGURE 6-4



LEGEND

- NOT DETECTED
- < 1
- 1 – 10
- 10 – 100
- 100 – 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = mg/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

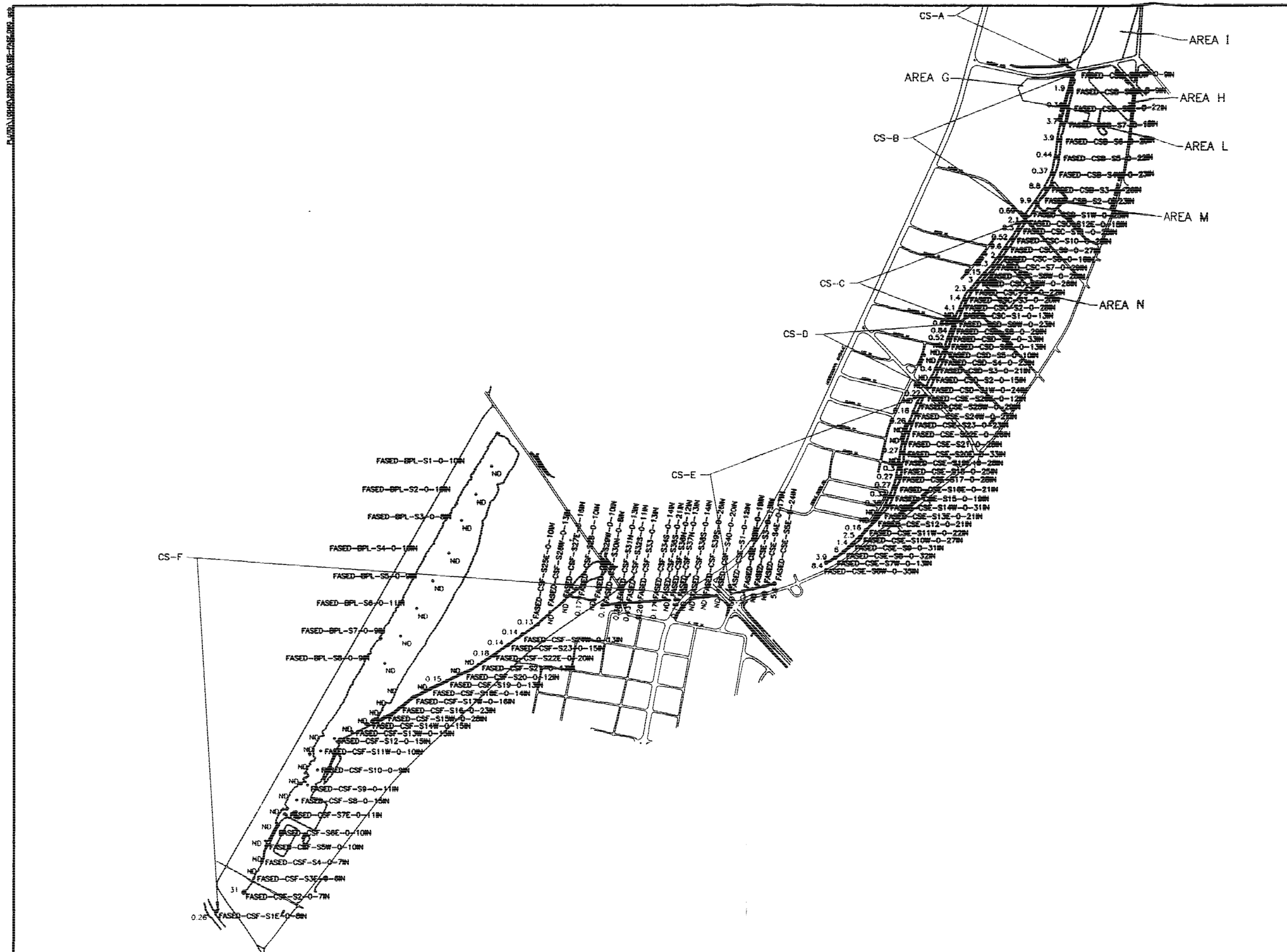
INDUSTRY SPECIFIC SEDIMENTS
DIESEL RANGE ORGANICS

600 0 600
SCALE IN FEET

FILE NO. 25501.FASE.D
August 2000

GARRIN & GERE ENGINEERS, INC.

FIGURE 6-5



LEGEND

- NOT DETECTED
- < 1
- 1 - 10
- 10 - 100
- 100 - 1000
- > 1000

CS-A CREEK SEGMENT

AREA H FILL AREA

WATER BODY

NOTE: UNITS = mg/Kg

SOLUTIA INC.
REMEDIATION TECHNOLOGY GROUP
ST. LOUIS, MISSOURI

SAUGET AREA 1
SUPPORT SAMPLING PLAN
SAUGET AND CAHOKIA, ILLINOIS

INDUSTRY SPECIFIC SEDIMENTS
GASOLINE RANGE ORGANICS

600 0 600
SCALE IN FEET

FILE NO. 25501.FASE.E
August 2000

ENGINEERS, INC.

APPENDIX 6

Sauget Area 1 Support Sampling Plan

Biota Analyses

APPENDIX 6A

Sauget Area 1 Support Sampling Plan

Biota Analyses - Fish Fillets

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	BB BP COMP 1	BB BP COMP 2	BB BP COMP 3	BB REF 1-2 COMP 1	BB REF 1-2 COMP 2	BB REF 2-2 COMP 1	CLAM BP-1 COMP 01
Sample Date	11/01/99	10/07/99	10/07/99	10/08/99	10/08/99	11/02/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,2-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,3-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,4-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,2'-Oxybis(1-Chloropropane)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4,5-Trichlorophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4,6-Trichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dinitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,6-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chloronaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylnaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylphenol (o-cresol)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2-Nitrophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3,3'-Dichlorobenzidine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Methylphenol/4-Methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4,6-Dinitro-2-methylphenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Bromophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloro-3-methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloroaniline	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chlorophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Nitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
Acenaphthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Acenaphthylene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)pyrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(b)fluoranthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(g,h,i)perylene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(k)fluoranthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	BB BP COMP 1	BB BP COMP 2	BB BP COMP 3	BB REF 1-2 COMP 1	BB REF 1-2 COMP 2	BB REF 2-2 COMP 1	CLAM BP-1 COMP 01
Sample Date	11/01/99	10/07/99	10/07/99	10/08/99	10/08/99	11/02/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Butylbenzylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Carbazole	170 U	170 U	---	170 U	170 U	---	170 U
Chrysene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Di-n-butylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Di-n-octylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dibenzo(a,h)anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dibenzofuran	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Diethylphthalate	18	170 U	170 U	25	170 U	170 U	53
Dimethylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluoranthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluorene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobutadiene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorocyclopentadiene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachloroethane	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Isophorone	170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitroso-di-n-propylamine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitrosodiphenylamine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Naphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Nitrobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pentachlorophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
Phenanthrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pyrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Chloroethoxy)methane	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Chloroethyl)ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Ethylhexyl)phthalate	97	170 U	170 U	170 U	46	47 J	73 J
Total Semivolatiles	115	ND	ND	25	46	47	126

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	CLAM BP-2 COMP 01	CLAM BP-3 COMP 01	CLAM REF-1 COMP 01	CLAM REF2-2 COMP 01	CLAM REF2-2 COMP 02	F.F. BP COMP 1	F.F. BP COMP 2
Sample Date	10/07/99	10/06/99	10/08/99	10/08/99	10/09/99	10/04/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
1,2-Dichlorobenzene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
1,3-Dichlorobenzene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
1,4-Dichlorobenzene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2,2'-Oxybis(1-Chloropropane)	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2,4,5-Trichlorophenol	840 U	420 U	420 U	420 U	420 U	420 U	840 U
2,4,6-Trichlorophenol	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2,4-Dichlorophenol	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2,4-Dinitrophenol	840 U	420 U	420 U	420 U	420 U	420 U	840 U
2,4-Dinitrotoluene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2,6-Dinitrotoluene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2-Chloronaphthalene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2-Chlorophenol	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2-Methylnaphthalene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2-Methylphenol (o-cresol)	340 U	170 U	170 U	170 U	170 U	170 U	340 U
2-Nitroaniline	840 U	420 U	420 U	420 U	420 U	420 U	840 U
2-Nitrophenol	340 U	170 U	170 U	170 U	170 U	170 U	340 U
3,3'-Dichlorobenzidine	340 U	170 U	170 U	170 U	170 U	170 U	340 U
3-Methylphenol/4-Methylphenol	340 U	170 U	170 U	170 U	170 U	170 U	340 U
3-Nitroaniline	840 U	420 U	420 U	420 U	420 U	420 U	840 U
4,6-Dinitro-2-methylphenol	840 U	420 U	420 U	420 U	420 U	420 U	840 U
4-Bromophenylphenyl ether	340 U	170 U	170 U	170 U	170 U	170 U	340 U
4-Chloro-3-methylphenol	340 U	170 U	170 U	170 U	170 U	170 U	340 U
4-Chloroaniline	340 U	170 U	170 U	170 U	170 U	170 U	340 U
4-Chlorophenylphenyl ether	340 U	170 U	170 U	170 U	170 U	170 U	340 U
4-Nitroaniline	840 U	420 U	420 U	420 U	420 U	420 U	840 U
4-Nitrophenol	840 U	420 U	420 U	420 U	420 U	420 U	840 U
Acenaphthene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Acenaphthylene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Anthracene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Benzo(a)anthracene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Benzo(a)pyrene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Benzo(b)fluoranthene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Benzo(g,h,i)perylene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Benzo(k)fluoranthene	340 U	170 U	170 U	170 U	170 U	170 U	340 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	CLAM BP-2 COMP 01	CLAM BP-3 COMP 01	CLAM REF-1 COMP 01	CLAM REF2-2 COMP 01	CLAM REF2-2 COMP 02	F.F. BP COMP 1	F.F. BP COMP 2
Sample Date	10/07/99	10/06/99	10/08/99	10/08/99	10/09/99	10/04/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Butylbenzylphthalate	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Carbazole	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Chrysene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Di-n-butylphthalate	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Di-n-octylphthalate	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Dibenzo(a,h)anthracene	340 U	170 U	170 U	170 U	170 U	170 U	48
Dibenzofuran	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Diethylphthalate	120	53	59	52	49	19	37
Dimethylphthalate	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Fluoranthene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Fluorene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Hexachlorobenzene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Hexachlorobutadiene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Hexachlorocyclopentadiene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Hexachloroethane	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Indeno(1,2,3-cd)pyrene	340 U	170 U	170 U	170 U	170 U	170 U	54
Isophorone	340 U	170 U	170 U	170 U	170 U	170 U	340 U
N-Nitroso-di-n-propylamine	340 U	170 U	170 U	170 U	170 U	170 U	340 U
N-Nitrosodiphenylamine	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Naphthalene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Nitrobenzene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Pentachlorophenol	840 U	420 U	420 U	420 U	420 U	420 U	840 U
Phenanthrene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Phenol	340 U	170 U	170 U	170 U	170 U	170 U	340 U
Pyrene	340 U	170 U	170 U	170 U	170 U	170 U	340 U
bis(2-Chloroethoxy)methane	340 U	170 U	170 U	170 U	170 U	170 U	340 U
bis(2-Chloroethyl)ether	340 U	170 U	170 U	170 U	170 U	170 U	340 U
bis(2-Ethylhexyl)phthalate	170 J	55 J	73 J	47 J	66 J	150	230
Total Semivolatiles	290	108	132	99	115	169	369

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Tabl. [illegible]
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	F.F. BP COMP 3	F.F. CS B COMP 1	F F CS-D COMP 1	F.F. REF 1 COMP 1	F F REF 2 COMP 1	F.F. REF 2 COMP 2	FF REF 2 COMP 3
Sample Date	10/06/99	10/05/99	10/04/99	10/08/99	10/08/99	10/08/99	10/08/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
1,2-Dichlorobenzene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
1,3-Dichlorobenzene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
1,4-Dichlorobenzene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2,2'-Oxybis(1-Chloropropane)	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2,4,5-Trichlorophenol	840 U	840 U	420 U	420 U	420 U	840 U	420 U
2,4,6-Trichlorophenol	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2,4-Dichlorophenol	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2,4-Dinitrophenol	840 U	840 U	420 U	420 U	420 U	840 U	420 U
2,4-Dinitrotoluene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2,6-Dinitrotoluene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2-Chloronaphthalene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2-Chlorophenol	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2-Methylnaphthalene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2-Methylphenol (o-cresol)	340 U	340 U	170 U	170 U	170 U	340 U	170 U
2-Nitroaniline	840 U	840 U	420 U	420 U	420 U	840 U	420 U
2-Nitrophenol	340 U	340 U	170 U	170 U	170 U	340 U	170 U
3,3'-Dichlorobenzidine	340 U	340 U	170 U	170 U	170 U	340 U	170 U
3-Methylphenol/4-Methylphenol	340 U	340 U	170 U	170 U	170 U	340 U	170 U
3-Nitroaniline	840 U	840 U	420 U	420 U	420 U	840 U	420 U
4,6-Dinitro-2-methylphenol	840 U	840 U	420 U	420 U	420 U	840 U	420 U
4-Bromophenylphenyl ether	340 U	340 U	170 U	170 U	170 U	340 U	170 U
4-Chloro-3-methylphenol	340 U	340 U	170 U	170 U	170 U	340 U	170 U
4-Chloroaniline	340 U	340 U	170 U	170 U	170 U	340 U	170 U
4-Chlorophenylphenyl ether	340 U	340 U	170 U	170 U	170 U	340 U	170 U
4-Nitroaniline	840 U	840 U	420 U	420 U	420 U	840 U	420 U
4-Nitrophenol	840 U	840 U	420 U	420 U	420 U	840 U	420 U
Acenaphthene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Acenaphthylene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Anthracene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Benzo(a)anthracene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Benzo(a)pyrene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Benzo(b)fluoranthene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Benzo(g,h,i)perylene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Benzo(k)fluoranthene	340 U	340 U	170 U	170 U	170 U	340 U	170 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	F.F. BP COMP 3	F.F. CS B COMP 1	F.F. CS-D COMP 1	F.F. REF 1 COMP 1	F.F. REF 2 COMP 1	F.F. REF 2 COMP 2	FF REF 2 COMP 3
Sample Date	10/06/99	10/05/99	10/04/99	10/08/99	10/08/99	10/08/99	10/08/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Butylbenzylphthalate	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Carbazole	340 U	340 U	170 U	170 U	170 U	340 U	---
Chrysene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Di-n-butylphthalate	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Di-n-octylphthalate	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Dibenzo(a,h)anthracene	340 U	340 U	22	170 U	170 U	340 U	170 U
Dibenzofuran	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Diethylphthalate	36	93	22	18	20	340 U	37 J
Dimethylphthalate	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Fluoranthene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Fluorene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Hexachlorobenzene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Hexachlorobutadiene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Hexachlorocyclopentadiene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Hexachloroethane	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Indeno(1,2,3-cd)pyrene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Isophorone	340 U	340 U	170 U	170 U	170 U	340 U	170 U
N-Nitroso-di-n-propylamine	340 U	340 U	170 U	170 U	170 U	340 U	170 U
N-Nitrosodiphenylamine	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Naphthalene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Nitrobenzene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Pentachlorophenol	840 U	840 U	420 U	420 U	420 U	840 U	420 U
Phenanthrene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Phenol	340 U	340 U	170 U	170 U	170 U	340 U	170 U
Pyrene	340 U	340 U	170 U	170 U	170 U	340 U	170 U
bis(2-Chloroethoxy)methane	340 U	340 U	170 U	170 U	170 U	340 U	170 U
bis(2-Chloroethyl)ether	340 U	340 U	170 U	170 U	170 U	340 U	170 U
bis(2-Ethylhexyl)phthalate	340 U	340 U	130	170	280	99	140 J
Total Semivolatiles	36	93	174	188	300	99	177

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
Sample Date	10/04/99	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	---	---	---	---	---	---	---
1,2-Dichlorobenzene	---	---	---	---	---	---	---
1,3-Dichlorobenzene	---	---	---	---	---	---	---
1,4-Dichlorobenzene	---	---	---	---	---	---	---
2,2'-Oxybis(1-Chloropropane)	---	---	---	---	---	---	---
2,4,5-Trichlorophenol	---	---	---	---	---	---	---
2,4,6-Trichlorophenol	---	---	---	---	---	---	---
2,4-Dichlorophenol	---	---	---	---	---	---	---
2,4-Dinitrophenol	---	---	---	---	---	---	---
2,4-Dinitrotoluene	---	---	---	---	---	---	---
2,6-Dinitrotoluene	---	---	---	---	---	---	---
2-Chloronaphthalene	---	---	---	---	---	---	---
2-Chlorophenol	---	---	---	---	---	---	---
2-Methylnaphthalene	---	---	---	---	---	---	---
2-Methylphenol (o-cresol)	---	---	---	---	---	---	---
2-Nitroaniline	---	---	---	---	---	---	---
2-Nitrophenol	---	---	---	---	---	---	---
3,3'-Dichlorobenzidine	---	---	---	---	---	---	---
3-Methylphenol/4-Methylphenol	---	---	---	---	---	---	---
3-Nitroaniline	---	---	---	---	---	---	---
4,6-Dinitro-2-methylphenol	---	---	---	---	---	---	---
4-Bromophenylphenyl ether	---	---	---	---	---	---	---
4-Chloro-3-methylphenol	---	---	---	---	---	---	---
4-Chloroaniline	---	---	---	---	---	---	---
4-Chlorophenylphenyl ether	---	---	---	---	---	---	---
4-Nitroaniline	---	---	---	---	---	---	---
4-Nitrophenol	---	---	---	---	---	---	---
Acenaphthene	---	---	---	---	---	---	---
Acenaphthylene	---	---	---	---	---	---	---
Anthracene	---	---	---	---	---	---	---
Benzo(a)anthracene	---	---	---	---	---	---	---
Benzo(a)pyrene	---	---	---	---	---	---	---
Benzo(b)fluoranthene	---	---	---	---	---	---	---
Benzo(g,h,i)perylene	---	---	---	---	---	---	---
Benzo(k)fluoranthene	---	---	---	---	---	---	---

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
Sample Date	10/04/99	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Butylbenzylphthalate	---	---	---	---	---	---	---
Carbazole	---	---	---	---	---	---	---
Chrysene	---	---	---	---	---	---	---
Di-n-butylphthalate	---	---	---	---	---	---	---
Di-n-octylphthalate	---	---	---	---	---	---	---
Dibenzo(a,h)anthracene	---	---	---	---	---	---	---
Dibenzofuran	---	---	---	---	---	---	---
Diethylphthalate	---	---	---	---	---	---	---
Dimethylphthalate	---	---	---	---	---	---	---
Fluoranthene	---	---	---	---	---	---	---
Fluorene	---	---	---	---	---	---	---
Hexachlorobenzene	---	---	---	---	---	---	---
Hexachlorobutadiene	---	---	---	---	---	---	---
Hexachlorocyclopentadiene	---	---	---	---	---	---	---
Hexachloroethane	---	---	---	---	---	---	---
Indeno(1,2,3-cd)pyrene	---	---	---	---	---	---	---
Isophorone	---	---	---	---	---	---	---
N-Nitroso-di-n-propylamine	---	---	---	---	---	---	---
N-Nitrosodiphenylamine	---	---	---	---	---	---	---
Naphthalene	---	---	---	---	---	---	---
Nitrobenzene	---	---	---	---	---	---	---
Pentachlorophenol	---	---	---	---	---	---	---
Phenanthrene	---	---	---	---	---	---	---
Phenol	---	---	---	---	---	---	---
Pyrene	---	---	---	---	---	---	---
bis(2-Chloroethoxy)methane	---	---	---	---	---	---	---
bis(2-Chloroethyl)ether	---	---	---	---	---	---	---
bis(2-Ethylhexyl)phthalate	---	---	---	---	---	---	---
Total Semivolatiles	ND	ND	32	19	20	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	PTISS B-1 DC B	PTISS B-2 DC B	PTISS B-3 DC B	PTISS C-1 DC C	PTISS C-2 DC C	PTISS C-3 DC C	PTISS D-1 DC D
Sample Date	10/05/99	10/05/99	10/05/99	10/04/99	10/04/99	10/04/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,2-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,3-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,4-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,2'-Oxybis(1-Chloropropane)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4,5-Trichlorophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4,6-Trichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dinitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,6-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chloronaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylnaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylphenol (o-cresol)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2-Nitrophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3,3'-Dichlorobenzidine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Methylphenol/4-Methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4,6-Dinitro-2-methylphenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Bromophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloro-3-methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloroaniline	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chlorophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Nitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
Acenaphthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Acenaphthylene	69 J	170 U	170 U	170 U	170 U	170 U	170 U
Anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)pyrene	670	170 U	170 U	18 J	170 U	170 U	170 U
Benzo(b)fluoranthene	430	170 U	170 U	26 J	18 J	170 U	170 U
Benzo(g,h,i)perylene	500	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(k)fluoranthene	320	170 U	170 U	25 J	30 J	170 U	170 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	PTISS B-1 DC B	PTISS B-2 DC B	PTISS B-3 DC B	PTISS C-1 DC C	PTISS C-2 DC C	PTISS C-3 DC C	PTISS D-1 DC D
Sample Date	10/05/99	10/05/99	10/05/99	10/04/99	10/04/99	10/04/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Butylbenzylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Carbazole	---	---	---	---	---	---	---
Chrysene	170 U	170 U	170 U	22 J	25 J	170 U	170 U
Di-n-butylphthalate	170 U	170 U	170 U	170 U	170 U	14 J	170 U
Di-n-octylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dibenzo(a,h)anthracene	110 J	170 U	170 U	170 U	170 U	170 U	170 U
Dibenzofuran	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Diethylphthalate	15 J	170 U	170 U	170 U	170 U	13 J	170 U
Dimethylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluoranthene	170 U	170 U	170 U	25 J	32 J	170 U	170 U
Fluorene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobutadiene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorocyclopentadiene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachloroethane	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	520	170 U	170 U	30 J	23 J	170 U	170 U
Isophorone	170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitroso-di-n-propylamine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitrosodiphenylamine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Naphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Nitrobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pentachlorophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
Phenanthrene	170 U	170 U	170 U	17 J	16 J	170 U	170 U
Phenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pyrene	170 U	170 U	170 U	22 J	29 J	170 U	170 U
bis(2-Chloroethoxy)methane	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Chloroethyl)ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Ethylhexyl)phthalate	170 U	170 U	94 J	53 J	93 J	170 U	170 U
Total Semivolatiles	2729	ND	94	238	266	27	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	PTISS D-2 DC D	PTISS D-3 DC D	PTISS E-1 DC E	PTISS E-2 DC E	PTISS F-1 DC F	PTISS F-3 DC F	PTISS PRAIRIE DUPONT R2
Sample Date	10/04/99	10/04/99	10/06/99	10/06/99	10/07/99	10/07/99	10/08/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,2-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,3-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,4-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,2'-Oxybis(1-Chloropropane)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4,5-Trichlorophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4,6-Trichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dinitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,6-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chloronaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylnaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylphenol (o-cresol)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2-Nitrophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3,3'-Dichlorobenzidine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Methylphenol/4-Methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4,6-Dinitro-2-methylphenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Bromophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloro-3-methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloroaniline	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chlorophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Nitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
Acenaphthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Acenaphthylene	170 U	170 U	170 U	170 U	32 J	170 U	170 U
Anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)pyrene	170 U	34 J	170 U	170 U	140 J	170 U	37 J
Benzo(b)fluoranthene	170 U	170 U	170 U	170 U	59 J	170 U	16 J
Benzo(g,h,i)perylene	170 U	68 J	170 U	39 J	360	170 U	390
Benzo(k)fluoranthene	170 U	25 J	170 U	170 U	52 J	170 U	21 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	PTISS D-2 DC D	PTISS D-3 DC D	PTISS E-1 DC E	PTISS E-2 DC E	PTISS F-1 DC F	PTISS F-3 DC F	PTISS PRAIRIE DUPONT R2
Sample Date	10/04/99	10/04/99	10/06/99	10/06/99	10/07/99	10/07/99	10/08/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Butylbenzylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Carbazole	---	---	---	---	---	---	---
Chrysene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Di-n-butylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Di-n-octylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dibenzo(a,h)anthracene	170 U	68 J	170 U	30 J	76 J	170 U	400
Dibenzofuran	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Diethylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dimethylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluoranthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluorene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobutadiene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorocyclopentadiene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachloroethane	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	170 U	78 J	170 U	38 J	300	170 U	440
Isophorone	170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitroso-di-n-propylamine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitrosodiphenylamine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Naphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Nitrobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pentachlorophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
Phenanthrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pyrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Chloroethoxy)methane	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Chloroethyl)ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Ethylhexyl)phthalate	170 U	170 U	50 J	170 U	170 U	170 U	170 U
Total Semivolatiles	ND	273	50	107	1070	ND	1304

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	PTISS REF 2-1 RC	SHRIMP BP COMP	SHRIMP REF1 COMP	SHRIMP REF2 COMP	SN REF1 COMP 1	SN REF2-1 COMP1	SNCS-B COMP1
Sample Date	10/08/99	10/06/99	10/07/99	10/08/99	10/08/99	10/08/99	10/05/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
1,2-Dichlorobenzene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
1,3-Dichlorobenzene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
1,4-Dichlorobenzene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2,2'-Oxybis(1-Chloropropane)	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2,4,5-Trichlorophenol	420 U	840 U	840 U	840 U	840 U	420 U	420 U
2,4,6-Trichlorophenol	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2,4-Dichlorophenol	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2,4-Dinitrophenol	420 U	840 U	840 U	840 U	840 U	420 U	420 U
2,4-Dinitrotoluene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2,6-Dinitrotoluene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2-Chloronaphthalene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2-Chlorophenol	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2-Methylnaphthalene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2-Methylphenol (o-cresol)	170 U	340 U	340 U	340 U	340 U	170 U	170 U
2-Nitroaniline	420 U	840 U	840 U	840 U	840 U	420 U	420 U
2-Nitrophenol	170 U	340 U	340 U	340 U	340 U	170 U	170 U
3,3'-Dichlorobenzidine	170 U	340 U	340 U	340 U	340 U	170 U	170 U
3-Methylphenol/4-Methylphenol	170 U	340 U	340 U	340 U	140 J	170 U	63 J
3-Nitroaniline	420 U	840 U	840 U	840 U	840 U	420 U	420 U
4,6-Dinitro-2-methylphenol	420 U	840 U	840 U	840 U	840 U	420 U	420 U
4-Bromophenylphenyl ether	170 U	340 U	340 U	340 U	340 U	170 U	170 U
4-Chloro-3-methylphenol	170 U	340 U	340 U	340 U	340 U	170 U	170 U
4-Chloroaniline	170 U	340 U	340 U	340 U	340 U	170 U	170 U
4-Chlorophenylphenyl ether	170 U	340 U	340 U	340 U	340 U	170 U	170 U
4-Nitroaniline	420 U	840 U	840 U	840 U	840 U	420 U	420 U
4-Nitrophenol	420 U	840 U	840 U	840 U	840 U	420 U	420 U
Acenaphthene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Acenaphthylene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Anthracene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Benzo(a)anthracene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Benzo(a)pyrene	15 J	340 U	340 U	340 U	340 U	170 U	170 U
Benzo(b)fluoranthene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Benzo(g,h,i)perylene	240	340 U	340 U	340 U	340 U	170 U	170 U
Benzo(k)fluoranthene	170 U	340 U	340 U	340 U	340 U	170 U	170 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	PTISS REF 2-1 RC	SHRIMP BP COMP	SHRIMP REF1 COMP	SHRIMP REF2 COMP	SN REF1 COMP 1	SN REF2-1 COMP1	SNCS-B COMP1
Sample Date	10/08/99	10/06/99	10/07/99	10/08/99	10/08/99	10/08/99	10/05/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Butylbenzylphthalate	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Carbazole	---	340 U	340 U	340 U	340 U	170 U	170 U
Chrysene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Di-n-butylphthalate	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Di-n-octylphthalate	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Dibenzo(a,h)anthracene	180	340 U	340 U	340 U	340 U	170 U	170 U
Dibenzofuran	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Diethylphthalate	170 U	44	59	57	62	58	54
Dimethylphthalate	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Fluoranthene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Fluorene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Hexachlorobenzene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Hexachlorobutadiene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Hexachlorocyclopentadiene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Hexachloroethane	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	220	340 U	340 U	340 U	340 U	170 U	170 U
Isophorone	170 U	340 U	340 U	340 U	340 U	170 U	170 U
N-Nitroso-di-n-propylamine	170 U	340 U	340 U	340 U	340 U	170 U	170 U
N-Nitrosodiphenylamine	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Naphthalene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Nitrobenzene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Pentachlorophenol	420 U	840 U	840 U	840 U	840 U	420 U	420 U
Phenanthrene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Phenol	170 U	340 U	340 U	340 U	340 U	170 U	170 U
Pyrene	170 U	340 U	340 U	340 U	340 U	170 U	170 U
bis(2-Chloroethoxy)methane	170 U	340 U	340 U	340 U	340 U	170 U	170 U
bis(2-Chloroethyl)ether	170 U	340 U	340 U	340 U	340 U	170 U	170 U
bis(2-Ethylhexyl)phthalate	170 U	340 U	98 J	92 J	150 J	78 J	110 J
Total Semivolatiles	655	44	157	149	352	136	227

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	SNCS-C COMP1	SNCS-D COMP1	SRM (NIST 1974)	WC BP COMP 1	WC BP COMP 2	WC BP-COMP 3	WC REF1 COMP 1
Sample Date	10/04/99	10/04/99	01/26/00	10/04/99	11/01/99	11/01/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	170 U	170 U	170 U	---	---	---	---
1,2-Dichlorobenzene	170 U	170 U	170 U	---	---	---	---
1,3-Dichlorobenzene	170 U	170 U	170 U	---	---	---	---
1,4-Dichlorobenzene	170 U	170 U	170 U	---	---	---	---
2,2'-Oxybis(1-Chloropropane)	170 U	170 U	170 U	---	---	---	---
2,4,5-Trichlorophenol	420 U	420 U	420 U	---	---	---	---
2,4,6-Trichlorophenol	170 U	170 U	170 U	---	---	---	---
2,4-Dichlorophenol	170 U	170 U	170 U	---	---	---	---
2,4-Dinitrophenol	420 U	420 U	420 U	---	---	---	---
2,4-Dinitrotoluene	170 U	170 U	170 U	---	---	---	---
2,6-Dinitrotoluene	170 U	170 U	170 U	---	---	---	---
2-Chloronaphthalene	170 U	170 U	170 U	---	---	---	---
2-Chlorophenol	170 U	170 U	170 U	---	---	---	---
2-Methylnaphthalene	170 U	170 U	170 U	---	---	---	---
2-Methylphenol (o-cresol)	170 U	170 U	170 U	---	---	---	---
2-Nitroaniline	420 U	420 U	420 U	---	---	---	---
2-Nitrophenol	170 U	170 U	170 U	---	---	---	---
3,3'-Dichlorobenzidine	170 U	170 U	170 U	---	---	---	---
3-Methylphenol/4-Methylphenol	170 U	8200	170 U	---	---	---	---
3-Nitroaniline	420 U	420 U	420 U	---	---	---	---
4,6-Dinitro-2-methylphenol	420 U	420 U	420 U	---	---	---	---
4-Bromophenylphenyl ether	170 U	170 U	170 U	---	---	---	---
4-Chloro-3-methylphenol	170 U	170 U	170 U	---	---	---	---
4-Chloroaniline	170 U	170 U	170 U	---	---	---	---
4-Chlorophenylphenyl ether	170 U	170 U	170 U	---	---	---	---
4-Nitroaniline	420 U	420 U	420 U	---	---	---	---
4-Nitrophenol	420 U	420 U	420 U	---	---	---	---
Acenaphthene	170 U	170 U	170 U	---	---	---	---
Acenaphthylene	170 U	170 U	170 U	---	---	---	---
Anthracene	170 U	170 U	170 U	---	---	---	---
Benzo(a)anthracene	170 U	170 U	170 U	---	---	---	---
Benzo(a)pyrene	31 J	170 U	170 U	---	---	---	---
Benzo(b)fluoranthene	79 J	170 U	170 U	---	---	---	---
Benzo(g,h,i)perylene	170 U	170 U	170 U	---	---	---	---
Benzo(k)fluoranthene	170 U	170 U	170 U	---	---	---	---

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	SNCS-C COMP1	SNCS-D COMP1	SRM (NIST 1974)	WC BP COMP 1	WC BP COMP 2	WC BP-COMP 3	WC REF1 COMP 1
Sample Date	10/04/99	10/04/99	01/26/00	10/04/99	11/01/99	11/01/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Butylbenzylphthalate	170 U	170 U	170 U	---	---	---	---
Carbazole	170 U	170 U	170 U	---	---	---	---
Chrysene	34 J	170 U	170 U	---	---	---	---
Di-n-butylphthalate	170 U	170 U	170 U	---	---	---	---
Di-n-octylphthalate	170 U	170 U	170 U	---	---	---	---
Dibenzo(a,h)anthracene	170 U	170 U	170 U	---	---	---	---
Dibenzofuran	170 U	170 U	170 U	---	---	---	---
Diethylphthalate	63	57	32	---	---	---	---
Dimethylphthalate	170 U	170 U	170 U	---	---	---	---
Fluoranthene	170 U	170 U	170 U	---	---	---	---
Fluorene	170 U	170 U	170 U	---	---	---	---
Hexachlorobenzene	170 U	170 U	170 U	---	---	---	---
Hexachlorobutadiene	170 U	170 U	170 U	---	---	---	---
Hexachlorocyclopentadiene	170 U	170 U	170 U	---	---	---	---
Hexachloroethane	170 U	170 U	170 U	---	---	---	---
Indeno(1,2,3-cd)pyrene	170 U	170 U	170 U	---	---	---	---
Isophorone	170 U	170 U	170 U	---	---	---	---
N-Nitroso-di-n-propylamine	170 U	170 U	170 U	---	---	---	---
N-Nitrosodiphenylamine	170 U	170 U	170 U	---	---	---	---
Naphthalene	170 U	170 U	170 U	---	---	---	---
Nitrobenzene	170 U	170 U	170 U	---	---	---	---
Pentachlorophenol	420 U	420 U	420 U	---	---	---	---
Phenanthrene	170 U	170 U	170 U	---	---	---	---
Phenol	170 U	170 U	170 U	---	---	---	---
Pyrene	170 U	170 U	170 U	---	---	---	---
bis(2-Chloroethoxy)methane	170 U	170 U	170 U	---	---	---	---
bis(2-Chloroethyl)ether	170 U	170 U	170 U	---	---	---	---
bis(2-Ethylhexyl)phthalate	97 J	230	67 J	---	---	---	---
Total Semivolatiles	304	8487	332	27	130	100	84

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

Sample ID	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2
Sample Date	11/01/99	11/02/99	11/02/99
Units	ug/kg	ug/kg	ug/kg
Compound			
1,2,4-Trichlorobenzene	---	---	---
1,2-Dichlorobenzene	---	---	---
1,3-Dichlorobenzene	---	---	---
1,4-Dichlorobenzene	---	---	---
2,2'-Oxybis(1-Chloropropane)	---	---	---
2,4,5-Trichlorophenol	---	---	---
2,4,6-Trichlorophenol	---	---	---
2,4-Dichlorophenol	---	---	---
2,4-Dinitrophenol	---	---	---
2,4-Dinitrotoluene	---	---	---
2,6-Dinitrotoluene	---	---	---
2-Chloronaphthalene	---	---	---
2-Chlorophenol	---	---	---
2-Methylnaphthalene	---	---	---
2-Methylphenol (o-cresol)	---	---	---
2-Nitroaniline	---	---	---
2-Nitrophenol	---	---	---
3,3'-Dichlorobenzidine	---	---	---
3-Methylphenol/4-Methylphenol	---	---	---
3-Nitroaniline	---	---	---
4,6-Dinitro-2-methylphenol	---	---	---
4-Bromophenylphenyl ether	---	---	---
4-Chloro-3-methylphenol	---	---	---
4-Chloroaniline	---	---	---
4-Chlorophenylphenyl ether	---	---	---
4-Nitroaniline	---	---	---
4-Nitrophenol	---	---	---
Acenaphthene	---	---	---
Acenaphthylene	---	---	---
Anthracene	---	---	---
Benzo(a)anthracene	---	---	---
Benzo(a)pyrene	---	---	---
Benzo(b)fluoranthene	---	---	---
Benzo(g,h,i)perylene	---	---	---
Benzo(k)fluoranthene	---	---	---

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-1
Solutia
Sauget Area 1
Biota
Method 8270C Semivolatile Organic Compound Data

	Sample ID	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2
	Sample Date	11/01/99	11/02/99	11/02/99
	Units	ug/kg	ug/kg	ug/kg
Compound				
Butylbenzylphthalate		---	---	---
Carbazole		---	---	---
Chrysene		---	---	---
Di-n-butylphthalate		---	---	---
Di-n-octylphthalate		---	---	---
Dibenzo(a,h)anthracene		---	---	---
Dibenzofuran		---	---	---
Diethylphthalate		---	---	---
Dimethylphthalate		---	---	---
Fluoranthene		---	---	---
Fluorene		---	---	---
Hexachlorobenzene		---	---	---
Hexachlorobutadiene		---	---	---
Hexachlorocyclopentadiene		---	---	---
Hexachloroethane		---	---	---
Indeno(1,2,3-cd)pyrene		---	---	---
Isophorone		---	---	---
N-Nitroso-di-n-propylamine		---	---	---
N-Nitrosodiphenylamine		---	---	---
Naphthalene		---	---	---
Nitrobenzene		---	---	---
Pentachlorophenol		---	---	---
Phenanthrene		---	---	---
Phenol		---	---	---
Pyrene		---	---	---
bis(2-Chloroethoxy)methane		---	---	---
bis(2-Chloroethyl)ether		---	---	---
bis(2-Ethylhexyl)phthalate		---	---	---
Total Semivolatiles		100	95	140

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 11-2
Solutia
Sauget Area 1
Biota
Method 680 Polychlorinated Biphenyl Data

Sample ID	BB BP COMP 1	BB BP COMP 2	BB BP COMP 3	BB REF 1-2 COMP 1	BB REF 1-2 COMP 2	BB REF 2-2 COMP 1	CLAM BP-1 COMP 01
Sample Date	11/01/99	10/07/99	10/07/99	10/08/99	10/08/99	11/02/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Decachlorobiphenyl	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Dichlorobiphenyl	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Heptachlorobiphenyl	30 U	30 U	30 U	30 U	30 U	30 U	30 U
Hexachlorobiphenyl	52	43	20 U	20 U	20 U	20 U	20 U
Monochlorobiphenyl	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nonachlorobiphenyl	50 U	50 U	50 U	50 U	50 U	50 U	50 U
Octachlorobiphenyl	30 U	30 U	30 U	30 U	30 U	30 U	30 U
Pentachlorobiphenyl	52	33	20 U	20 U	20 U	20 U	20 U
Tetrachlorobiphenyl	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Trichlorobiphenyl	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total PCBs	104	76	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-2
Solutia
Sauget Area 1
Biota
Method 680 Polychlorinated Biphenyl Data

Sample ID	CLAM BP-2 COMP 01	CLAM BP-3 COMP 01	CLAM REF-1 COMP 01	CLAM REF2-2 COMP 01	CLAM REF2-2 COMP 02	F.F. BP COMP 1	F.F. BP COMP 2
Sample Date	10/07/99	10/06/99	10/08/99	10/08/99	10/09/99	10/04/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Decachlorobiphenyl	100 U	50 U	50 U	50 U	50 U	50 U	100 U
Dichlorobiphenyl	20 U	10 U	10 U	10 U	10 U	10 U	20 U
Heptachlorobiphenyl	60 U	30 U	30 U	30 U	30 U	30 U	60 U
Hexachlorobiphenyl	40 U	20 U	20 U	20 U	20 U	22	19 J
Monochlorobiphenyl	20 U	10 U	10 U	10 U	10 U	10 U	20 U
Nonachlorobiphenyl	100 U	50 U	50 U	50 U	50 U	50 U	100 U
Octachlorobiphenyl	60 U	30 U	30 U	30 U	30 U	30 U	60 U
Pentachlorobiphenyl	40 U	20 U	20 U	20 U	20 U	8.7 J	40 U
Tetrachlorobiphenyl	40 U	20 U	20 U	20 U	20 U	20 U	40 U
Trichlorobiphenyl	20 U	10 U	10 U	10 U	10 U	10 U	20 U
Total PCBs	ND	ND	ND	ND	ND	30.7	19

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-2
Solutia
Sauget Area 1
Biota
Method 680 Polychlorinated Biphenyl Data

Sample ID	F.F. BP COMP 3	F.F. CS B COMP 1	F.F. CS-D COMP 1	F.F. REF 1 COMP 1	F.F. REF 2 COMP 1	F.F. REF 2 COMP 2	FF REF 2 COMP 3
Sample Date	10/06/99	10/05/99	10/04/99	10/08/99	10/08/99	10/08/99	10/08/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Decachlorobiphenyl	100 U	100 U	50 U	50 U	100 U	100 U	100 U
Dichlorobiphenyl	20 U	20 U	10 U	10 U	20 U	20 U	20 U
Heptachlorobiphenyl	60 U	460	44	30 U	60 U	60 U	60 U
Hexachlorobiphenyl	40 U	1000	380	20 U	40 U	40 U	40 U
Monochlorobiphenyl	20 U	20 U	10 U	10 U	20 U	20 U	20 U
Nonachlorobiphenyl	100 U	100 U	50 U	50 U	100 U	100 U	100 U
Octachlorobiphenyl	60 U	130	30 U	30 U	60 U	60 U	60 U
Pentachlorobiphenyl	40 U	2100	510	20 U	40 U	40 U	40 U
Tetrachlorobiphenyl	40 U	3200	240	20 U	40 U	40 U	40 U
Trichlorobiphenyl	20 U	600	13	10 U	20 U	20 U	20 U
Total PCBs	ND	7490	1187	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-2
Solutia
Sauget Area 1
Biota
Method 680 Polychlorinated Biphenyl Data

	Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
	Sample Date	10/04/99	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound								
Decachlorobiphenyl		---	---	---	---	---	---	---
Dichlorobiphenyl		---	---	---	---	---	---	---
Heptachlorobiphenyl		---	---	---	---	---	---	---
Hexachlorobiphenyl		---	---	---	---	---	---	---
Monochlorobiphenyl		---	---	---	---	---	---	---
Nonachlorobiphenyl		---	---	---	---	---	---	---
Octachlorobiphenyl		---	---	---	---	---	---	---
Pentachlorobiphenyl		---	---	---	---	---	---	---
Tetrachlorobiphenyl		---	---	---	---	---	---	---
Trichlorobiphenyl		---	---	---	---	---	---	---
Total PCBs		292	74	320	ND	18.8	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-2
Solutia
Sauget Area 1
Biota
Method 680 Polychlorinated Biphenyl Data

Sample ID	PTISS B-1 DC B	PTISS B-2 DC B	PTISS B-3 DC B	PTISS C-1 DC C	PTISS C-2 DC C	PTISS C-3 DC C	PTISS D-1 DC D
Sample Date	10/05/99	10/05/99	10/05/99	10/04/99	10/04/99	10/04/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Decachlorobiphenyl	50 U	50 U	50 U	20 J	35 J	50 U	100 U
Dichlorobiphenyl	10 U	10 U	10 U	10 U	10 U	10 U	20 U
Heptachlorobiphenyl	30 U	30 U	30 U	30 U	30 U	30 U	60 U
Hexachlorobiphenyl	20 U	20 U	20 U	26	34	20 U	40 U
Monochlorobiphenyl	10 U	10 U	10 U	10 U	10 U	10 U	20 U
Nonachlorobiphenyl	50 U	50 U	50 U	50 U	50 U	50 U	100 U
Octachlorobiphenyl	30 U	30 U	30 U	30 U	30 U	30 U	60 U
Pentachlorobiphenyl	20 U	20 U	20 U	34	54	20 U	40 U
Tetrachlorobiphenyl	20 U	20 U	20 U	20 U	20 U	20 U	40 U
Trichlorobiphenyl	10 U	10 U	10 U	10 U	10 U	10 U	20 U
Total PCBs	ND	ND	ND	80	123	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-2
Solutia
Sauget Area 1
Biota
Method 680 Polychlorinated Biphenyl Data

Compound	Sample ID	PTISS D-2 DC D	PTISS D-3 DC D	PTISS E-1 DC E	PTISS E-2 DC E	PTISS F-1 DC F	PTISS F-3 DC F	PTISS PRAIRIE DUPONT R2
	Sample Date	10/04/99	10/04/99	10/06/99	10/06/99	10/07/99	10/07/99	10/08/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Decachlorobiphenyl		50 U	50 U	50 U	50 U	50 U	50 U	50 U
Dichlorobiphenyl		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Heptachlorobiphenyl		30 U	30 U	30 U	30 U	30 U	30 U	30 U
Hexachlorobiphenyl		20 U	20 U	20 U	20 U	20 U	20 U	20 U
Monochlorobiphenyl		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Nonachlorobiphenyl		50 U	50 U	50 U	50 U	50 U	50 U	50 U
Octachlorobiphenyl		30 U	30 U	30 U	30 U	30 U	30 U	30 U
Pentachlorobiphenyl		20 U	20 U	20 U	20 U	20 U	20 U	20 U
Tetrachlorobiphenyl		20 U	20 U	20 U	20 U	20 U	20 U	20 U
Trichlorobiphenyl		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Total PCBs		ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-2
Solutia
Sauget Area 1
Biota
Method 680 Polychlorinated Biphenyl Data

Sample ID	PTISS REF 2-1 RC	SHRIMP BP COMP	SHRIMP REF1 COMP	SHRIMP REF2 COMP	SN REF1 COMP 1	SN REF2-1 COMP1	SNCS-B COMP1
Sample Date	10/08/99	10/06/99	10/07/99	10/08/99	10/08/99	10/08/99	10/05/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Decachlorobiphenyl	50 U	100 U	100 U	100 U	100 U	50 U	50 U
Dichlorobiphenyl	10 U	20 U	20 U	20 U	20 U	10 U	10 U
Heptachlorobiphenyl	30 U	60 U	60 U	60 U	60 U	30 U	30 U
Hexachlorobiphenyl	20 U	40 U	40 U	40 U	40 U	20 U	79
Monochlorobiphenyl	10 U	20 U	20 U	20 U	20 U	10 U	10 U
Nonachlorobiphenyl	50 U	100 U	100 U	100 U	100 U	50 U	50 U
Octachlorobiphenyl	30 U	60 U	60 U	60 U	60 U	30 U	30 U
Pentachlorobiphenyl	20 U	40 U	22 J	40 U	40 U	20 U	170
Tetrachlorobiphenyl	20 U	40 U	40 U	40 U	40 U	20 U	200
Trichlorobiphenyl	10 U	20 U	20 U	20 U	20 U	10 U	22
Total PCBs	ND	ND	22	ND	ND	ND	471

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-2
Solutia
Sauget Area 1
Biota
Method 680 Polychlorinated Biphenyl Data

	Sample ID	SNCS-C COMP1	SNCS-D COMP1	WC BP COMP 1	WC BP COMP 2	WC BP-COMP 3	WC REF1 COMP 1	WC REF1 COMP 2
	Sample Date	10/04/99	10/04/99	10/04/99	11/01/99	11/01/99	10/04/99	11/01/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound								
Decachlorobiphenyl		50 U	50 U	---	---	---	---	---
Dichlorobiphenyl		10 U	10 U	---	---	---	---	---
Heptachlorobiphenyl		30 U	30 U	---	---	---	---	---
Hexachlorobiphenyl		110	26	---	---	---	---	---
Monochlorobiphenyl		10 U	10 U	---	---	---	---	---
Nonachlorobiphenyl		50 U	50 U	---	---	---	---	---
Octachlorobiphenyl		30 U	30 U	---	---	---	---	---
Pentachlorobiphenyl		250	51	---	---	---	---	---
Tetrachlorobiphenyl		76	20 U	---	---	---	---	---
Trichlorobiphenyl		10 U	10 U	---	---	---	---	---
Total PCBs		436	77	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-2
Solutia
Sauget Area 1
Biota
Method 680 Polychlorinated Biphenyl Data

	Sample ID	WC REF2 COMP 1	WC REF2 COMP 2
	Sample Date	11/02/99	11/02/99
	Units	ug/kg	ug/kg
Compound			
Decachlorobiphenyl		---	---
Dichlorobiphenyl		---	---
Heptachlorobiphenyl		---	---
Hexachlorobiphenyl		---	---
Monochlorobiphenyl		---	---
Nonachlorobiphenyl		---	---
Octachlorobiphenyl		---	---
Pentachlorobiphenyl		---	---
Tetrachlorobiphenyl		---	---
Trichlorobiphenyl		---	---
Total PCBs		ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-3
Solutia
Sauget Area 1
Biota
Method 8081A Pesticide Data

Sample ID	BB BP COMP 1	BB BP COMP 2	BB BP COMP 3	BB REF 1-2 COMP 1	BB REF 1-2 COMP 2	BB REF 2-2 COMP 1	CLAM BP-1 COMP 01
Sample Date	11/01/99	10/07/99	10/07/99	10/08/99	10/08/99	11/02/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
4,4'-DDD	13 U	13 U	26 U	1.2 J	1.8 J	26 U	5.3 U
4,4'-DDE	21	29	3.4 J	12 J	9.8 J	4.7 J	5.3 U
4,4'-DDT	13 U	13 U	26 U	13 U	13 U	26 U	5.3 U
Aldrin	6.8 U	6.8 U	14 U	6.8 U	6.8 U	14 U	2.7 U
Alpha Chlordane	6.8 U	12	14 U	1.1 J	1.1 J	2.5 J	2.7 U
Dieldrin	13 U	13 U	26 U	2.8 J	1.7 J	3.8 J	5.3 U
Endosulfan I	6.8 U	6.8 U	14 U	6.8 U	6.8 U	14 U	2.7 U
Endosulfan II	13 U	13 U	26 U	13 U	13 U	14 U	5.3 U
Endosulfan sulfate	13 U	13 U	26 U	13 U	13 U	26 U	5.3 U
Endrin	13 U	13 U	26 U	2.6 J	13 U	26 U	5.3 U
Endrin aldehyde	13 U	13 U	26 U	13 U	13 U	26 U	5.3 U
Endrin ketone	13 U	13 U	26 U	13 U	6.8 U	26 U	5.3 U
Gamma Chlordane	11	6.8 U	14 U	6.2 J	6.1 J	14 U	2.7 U
Heptachlor	6.8 U	6.8 U	2.8 J	6.8 U	6.8 U	14 U	2.7 U
Heptachlor epoxide	6.8 U	6.8 U	14 U	6.8 U	6.8 U	14 U	2.7 U
Methoxychlor	68 U	68 U	140 U	68 U	68 U	140 U	27 U
Toxaphene	680 U	680 U	720 U	680 U	680 U	720 U	140 U
alpha-BHC	6.8 U	6.8 U	14 U	6.8 U	6.8 U	14 U	2.7 U
beta-BHC	6.8 U	6.8 U	14 U	6.8 U	6.8 U	14 U	2.7 U
delta-BHC	6.8 U	6.8 U	14 U	6.8 U	6.8 U	14 U	2.7 U
gamma-BHC (Lindane)	6.8 U	6.8 U	14 U	0.94 J	1.2 J	14 U	2.7 U
Total Pesticides	32	41	6.2	26.84	21.7	11	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-3
Solutia
Sauget Area 1
Biota
Method 8081A Pesticide Data

Sample ID	CLAM BP-2 COMP 01	CLAM BP-3 COMP 01	CLAM REF-1 COMP 01	CLAM REF2-2 COMP 01	CLAM REF2-2 COMP 02	F F. BP COMP 1	F F. BP COMP 2
Sample Date	10/07/99	10/06/99	10/08/99	10/08/99	10/09/99	10/04/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
4,4'-DDD	40 U	26 U	26 U	26 U	5.3 U	13 U	20 U
4,4'-DDE	40 U	26 U	26 U	26 U	5.3 U	4.1 J	9.1 J
4,4'-DDT	40 U	26 U	26 U	26 U	5.3 U	13 U	20 U
Aldrin	20 U	14 U	14 U	14 U	2.7 U	6.8 U	10 U
Alpha Chlordane	20 U	14 U	14 U	14 U	2.7 U	6.8 U	10 U
Dieldrin	40 U	26 U	26 U	26 U	5.3 U	13 U	20 U
Endosulfan I	20 U	14 U	14 U	14 U	2.7 U	6.8 U	10 U
Endosulfan II	40 U	26 U	26 U	26 U	5.3 U	13 U	20 U
Endosulfan sulfate	40 U	26 U	26 U	26 U	5.3 U	13 U	20 U
Endrin	40 U	26 U	26 U	26 U	5.3 U	13 U	20 U
Endrin aldehyde	40 U	26 U	26 U	26 U	5.3 U	13 U	20 U
Endrin ketone	40 U	26 U	26 U	26 U	5.3 U	13 U	20 U
Gamma Chlordane	20 U	14 U	14 U	14 U	2.7 U	6.8 U	10 U
Heptachlor	2.3 J	14 U	14 U	14 U	2.7 U	6.8 U	10 U
Heptachlor epoxide	20 U	14 U	14 U	14 U	2.7 U	6.8 U	10 U
Methoxychlor	5.4 J	140 U	140 U	140 U	27 U	68 U	100 U
Toxaphene	1100 U	720 U	720 U	720 U	140 U	680 U	1000 U
alpha-BHC	20 U	14 U	14 U	14 U	2.7 U	6.8 U	10 U
beta-BHC	20 U	14 U	14 U	14 U	2.7 U	6.8 U	10 U
delta-BHC	20 U	14 U	14 U	14 U	2.7 U	6.8 U	10 U
gamma-BHC (Lindane)	20 U	14 U	14 U	14 U	2.7 U	6.8 U	10 U
Total Pesticides	7.7	ND	ND	ND	ND	4.1	9.1

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-3
Solutia
Sauget Area 1
Biota
Method 8081A Pesticide Data

Sample ID	F.F. BP COMP 3	F.F. CS-D COMP 1	F.F. REF 1 COMP 1	F.F. REF 2 COMP 1	F.F. REF 2 COMP 2	LMB BP COMP 1	LMB BP COMP 2
Sample Date	10/06/99	10/04/99	10/08/99	10/08/99	10/08/99	10/04/99	11/03/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
4,4'-DDD	20 U	13 U	13 U	20 U	20 U	---	---
4,4'-DDE	10 J	13 U	3.5 J	20 U	1.3 J	---	---
4,4'-DDT	20 U	13 U	13 U	20 U	20 U	---	---
Aldrin	10 U	6.8 U	6.8 U	10 U	10 U	---	---
Alpha Chlordane	10 U	6.8 U	6.8 U	10 U	10 U	---	---
Dieldrin	20 U	13 U	4.7 J	20 U	1.6 J	---	---
Endosulfan I	10 U	6.8 U	6.8 U	10 U	10 U	---	---
Endosulfan II	20 U	13 U	13 U	20 U	20 U	---	---
Endosulfan sulfate	20 U	13 U	13 U	20 U	20 U	---	---
Endrin	20 U	13 U	13 U	20 U	20 U	---	---
Endrin aldehyde	20 U	13 U	13 U	20 U	20 U	---	---
Endrin ketone	20 U	13 U	13 U	20 U	20 U	---	---
Gamma Chlordane	10 U	6.8 U	6.8 U	10 U	1.2 J	---	---
Heptachlor	10 U	6.8 U	6.8 U	10 U	10 U	---	---
Heptachlor epoxide	10 U	6.8 U	6.8 U	10 U	10 U	---	---
Methoxychlor	100 U	68 U	68 U	100 U	100 U	---	---
Toxaphene	1000 U	680 U	680 U	1000 U	1000 U	---	---
alpha-BHC	10 U	6.8 U	6.8 U	10 U	10 U	---	---
beta-BHC	10 U	6.8 U	6.8 U	10 U	10 U	---	---
delta-BHC	10 U	6.8 U	6.8 U	10 U	10 U	---	---
gamma-BHC (Lindane)	10 U	6.8 U	6.8 U	10 U	10 U	---	---
Total Pesticides	10	ND	8.2	ND	4.1	20.5	15

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-3
Solutia
Sauget Area 1
Biota
Method 8081A Pesticide Data

Sample ID	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2	PTISS B-1 DC B	PTISS B-2 DC B
Sample Date	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99	10/05/99	10/05/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
4,4'-DDD	---	---	---	---	---	26 U	26 U
4,4'-DDE	---	---	---	---	---	1.7 J	1.2 J
4,4'-DDT	---	---	---	---	---	26 U	26 U
Aldrin	---	---	---	---	---	5.4 J	2.8 J
Alpha Chlordane	---	---	---	---	---	14 U	14 U
Dieldrin	---	---	---	---	---	26 U	26 U
Endosulfan I	---	---	---	---	---	14 U	14 U
Endosulfan II	---	---	---	---	---	26 U	26 U
Endosulfan sulfate	---	---	---	---	---	26 U	26 U
Endrin	---	---	---	---	---	26 U	26 U
Endrin aldehyde	---	---	---	---	---	26 U	26 U
Endrin ketone	---	---	---	---	---	26 U	26 U
Gamma Chlordane	---	---	---	---	---	3.6 J	2.1 J
Heptachlor	---	---	---	---	---	14 U	14 U
Heptachlor epoxide	---	---	---	---	---	7.7 J	2.5 J
Methoxychlor	---	---	---	---	---	140 U	140 U
Toxaphene	---	---	---	---	---	720 U	720 U
alpha-BHC	---	---	---	---	---	14 U	14 U
beta-BHC	---	---	---	---	---	14 U	14 U
delta-BHC	---	---	---	---	---	14 U	14 U
gamma-BHC (Lindane)	---	---	---	---	---	14 U	14 U
Total Pesticides	36	5.2	3.5	11.5	11.9	18.4	8.6

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-3
Solutia
Sauget Area 1
Biota
Method 8081A Pesticide Data

Sample ID	PTISS B-3 DC B	PTISS C-1 DC C	PTISS C-2 DC C	PTISS C-3 DC C	PTISS D-1 DC D	PTISS D-2 DC D	PTISS D-3 DC D
Sample Date	10/05/99	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
4,4'-DDD	26 U	26 U	26 U	26 U	40 U	26 U	26 U
4,4'-DDE	2.1 J	8.2 J	20 J	26 U	40 U	26 U	26 U
4,4'-DDT	26 U	2.9 J	11 J	26 U	40 U	26 U	26 U
Aldrin	3 J	4.8 J	12 J	14 U	20 U	14 U	14 U
Alpha Chlordane	14 U	14 U	14 U	14 U	20 U	14 U	14 U
Dieldrin	26 U	26 U	26 U	26 U	40 U	26 U	26 U
Endosulfan I	14 U	14 U	14 U	14 U	20 U	14 U	14 U
Endosulfan II	26 U	26 U	26 U	26 U	40 U	26 U	26 U
Endosulfan sulfate	26 U	26 U	26 U	26 U	40 U	26 U	26 U
Endrin	26 U	26 U	26 U	26 U	40 U	26 U	26 U
Endrin aldehyde	26 U	6.5 J	16 J	26 U	40 U	26 U	26 U
Endrin ketone	26 U	26 U	26 U	26 U	40 U	26 U	26 U
Gamma Chlordane	2.8 J	3.9 J	10 J	14 U	20 U	14 U	14 U
Heptachlor	14 U	14 U	14 U	14 U	20 U	14 U	14 U
Heptachlor epoxide	4.4 J	6.8 J	15	14 U	20 U	14 U	14 U
Methoxychlor	140 U	140 U	26 J	140 U	200 U	140 U	140 U
Toxaphene	720 U	720 U	720 U	720 U	1100 U	720 U	720 U
alpha-BHC	14 U	14 U	14 U	14 U	20 U	14 U	14 U
beta-BHC	14 U	14 U	14 U	14 U	20 U	14 U	14 U
delta-BHC	14 U	14 U	14 U	14 U	20 U	14 U	14 U
gamma-BHC (Lindane)	14 U	14 U	14 U	14 U	20 U	14 U	14 U
Total Pesticides	12.3	33.1	110	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-3
Solutia
Sauget Area 1
Biota
Method 8081A Pesticide Data

Sample ID	PTISS E-1 DC E	PTISS E-2 DC E	PTISS F-1 DC F	PTISS F-3 DC F	PTISS PRAIRIE DUPONT R2	PTISS REF 2-1 RC	SHRIMP BP COMP
Sample Date	10/06/99	10/06/99	10/07/99	10/07/99	10/08/99	10/08/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
4,4'-DDD	26 U	26 U	26 U	26 U	26 U	26 U	4.0 U
4,4'-DDE	26 U	26 U	26 U	26 U	26 U	26 U	4.0 U
4,4'-DDT	26 U	26 U	26 U	26 U	26 U	26 U	4.0 U
Aldrin	14 U	1 J	14 U	0.81 J	14 U	1 J	2.0 U
Alpha Chlordane	14 U	14 U	14 U	14 U	14 U	14 U	2.0 U
Dieldrin	26 U	26 U	26 U	26 U	26 U	26 U	4.0 U
Endosulfan I	14 U	14 U	14 U	14 U	14 U	14 U	2.0 U
Endosulfan II	26 U	26 U	26 U	26 U	26 U	26 U	4.0 U
Endosulfan sulfate	26 U	26 U	26 U	26 U	26 U	26 U	4.0 U
Endrin	26 U	26 U	26 U	26 U	26 U	26 U	4.0 U
Endrin aldehyde	26 U	26 U	26 U	26 U	26 U	26 U	4.0 U
Endrin ketone	26 U	26 U	26 U	26 U	26 U	26 U	4.0 U
Gamma Chlordane	14 U	14 U	3.1 J	14 U	14 U	14 U	2.0 U
Heptachlor	14 U	2.9 J	1.8 J	1.9 J	14 U	3.8 J	2.0 U
Heptachlor epoxide	14 U	14 U	14 U	14 U	14 U	14 U	2.0 U
Methoxychlor	140 U	140 U	140 U	140 U	140 U	140 U	20 U
Toxaphene	720 U	720 U	720 U	720 U	720 U	720 U	110 U
alpha-BHC	14 U	14 U	14 U	14 U	14 U	14 U	2.0 U
beta-BHC	14 U	14 U	14 U	14 U	14 U	14 U	2.0 U
delta-BHC	14 U	14 U	14 U	14 U	14 U	14 U	2.0 U
gamma-BHC (Lindane)	14 U	14 U	14 U	14 U	14 U	14 U	2.0 U
Total Pesticides	ND	3.9	4.9	2.71	ND	4.8	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-3
Solutia
Sauget Area 1
Biota
Method 8081A Pesticide Data

Sample ID	SHRIMP REF1 COMP	SHRIMP REF2 COMP	SN REF1 COMP 1	SN REF2-1 COMP1	SNCS-B COMP1	SNCS-C COMP1	SNCS-D COMP1
Sample Date	10/07/99	10/08/99	10/08/99	10/08/99	10/05/99	10/04/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
4,4'-DDD	4.0 U	4.0 U	7.9 U	5.3 U	26 U	26 U	26 U
4,4'-DDE	4.0 U	4.0 U	7.9 U	5.3 U	30	29	26 U
4,4'-DDT	4.0 U	4.0 U	7.9 U	5.3 U	26 U	26 U	26 U
Aldrin	2.0 U	2.0 U	4.1 U	2.7 U	14 U	14 U	14 U
Alpha Chlordane	2.0 U	2.0 U	4.1 U	2.7 U	14 U	14 U	14 U
Dieldrin	4.0 U	4.0 U	7.9 U	5.3 U	26 U	26 U	26 U
Endosulfan I	2.0 U	2.0 U	4.1 U	2.7 U	14 U	14 U	14 U
Endosulfan II	4.0 U	4.0 U	7.9 U	5.3 U	26 U	26 U	26 U
Endosulfan sulfate	4.0 U	4.0 U	3.7 J	5.3 U	26 U	26 U	26 U
Endrin	4.0 U	4.0 U	7.9 U	5.3 U	26 U	26 U	26 U
Endrin aldehyde	4.0 U	4.0 U	7.9 U	5.3 U	26 U	26 U	26 U
Endrin ketone	4.0 U	4.0 U	7.9 U	5.3 U	26 U	7.1 J	26 U
Gamma Chlordane	2.0 U	2.0 U	4.1 U	2.7 U	41	22	9.5 J
Heptachlor	2.0 U	2.0 U	4.1 U	2.7 U	14 U	14 U	14 U
Heptachlor epoxide	2.0 U	2.0 U	4.1 U	2.7 U	66	24	14 U
Methoxychlor	20 U	20 U	41 U	27 U	140 U	140 U	140 U
Toxaphene	110 U	110 U	220 U	140 U	720 U	720 U	720 U
alpha-BHC	2.0 U	2.0 U	4.1 U	2.7 U	14 U	14 U	14 U
beta-BHC	2.0 U	2.0 U	4.1 U	2.7 U	14 U	14 U	14 U
delta-BHC	2.0 U	2.0 U	4.1 U	2.7 U	14 U	14 U	14 U
gamma-BHC (Lindane)	2.0 U	2.0 U	4.1 U	2.7 U	14 U	14 U	14 U
Total Pesticides	ND	ND	3.7	ND	137	82.1	9.5

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-3
Solutia
Sauget Area 1
Biota
Method 8081A Pesticide Data

Compound	Sample ID	SRM (NIST 1974)	WB BP FILLET 2	WC BP COMP 1	WC BP COMP 2	WC REF1 COMP 1	WC REF1 COMP 2	WC REF2 COMP 1
	Sample Date	01/26/00	10/04/99	10/04/99	11/01/99	10/04/99	11/01/99	11/02/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
4,4'-DDD		39	---	---	---	---	---	---
4,4'-DDE		17	---	---	---	---	---	---
4,4'-DDT		4.2 J	---	---	---	---	---	---
Aldrin		6.2 U	---	---	---	---	---	---
Alpha Chlordane		6.2 U	---	---	---	---	---	---
Dieldrin		12 U	---	---	---	---	---	---
Endosulfan I		6.2 U	---	---	---	---	---	---
Endosulfan II		12 U	---	---	---	---	---	---
Endosulfan sulfate		12 U	---	---	---	---	---	---
Endrin		12 U	---	---	---	---	---	---
Endrin aldehyde		12 U	---	---	---	---	---	---
Endrin ketone		12 U	---	---	---	---	---	---
Gamma Chlordane		6.2 U	---	---	---	---	---	---
Heptachlor		6.2 U	---	---	---	---	---	---
Heptachlor epoxide		15	---	---	---	---	---	---
Methoxychlor		62 U	---	---	---	---	---	---
Toxaphene		330 U	---	---	---	---	---	---
alpha-BHC		6.2 U	---	---	---	---	---	---
beta-BHC		6.2 U	---	---	---	---	---	---
delta-BHC		2.6 J	---	---	---	---	---	---
gamma-BHC (Lindane)		5.2 J	---	---	---	---	---	---
Total Pesticides		303.2	13.9	ND	ND	2.5	1.9	1.8

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-3
Solutia
Sauget Area 1
Biota
Method 8081A Pesticide Data

	Sample ID	WC REF2 COMP 2
	Sample Date	11/02/99
	Units	ug/kg
Compound		
4,4'-DDD		---
4,4'-DDE		---
4,4'-DDT		---
Aldrin		---
Alpha Chlordane		---
Dieldrin		---
Endosulfan I		---
Endosulfan II		---
Endosulfan sulfate		---
Endrin		---
Endrin aldehyde		---
Endrin ketone		---
Gamma Chlordane		---
Heptachlor		---
Heptachlor epoxide		---
Methoxychlor		---
Toxaphene		---
alpha-BHC		---
beta-BHC		---
delta-BHC		---
gamma-BHC (Lindane)		---
Total Pesticides		ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-4
Solutia
Sauget Area 1
Biota
Method 8151A Herbicide Data

Sample ID	BB BP COMP 1	BB BP COMP 2	BB BP COMP 3	BB REF 1-2 COMP 1	BB REF 1-2 COMP 2	BB REF 2-2 COMP 1	CLAM BP-1 COMP 01
Sample Date	11/01/99	10/07/99	10/07/99	10/08/99	10/08/99	11/02/99	10/06/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
2,4,5-T	10 U	10 U	10 U	20 U	10 U	10 U	100 U
2,4,5-TP (Silvex)	10 U	10 U	10 U	20 U	10 U	10 U	100 U
2,4-D	10 U	10 U	10 U	20 U	10 U	10 U	100 U
2,4-DB	10 U	10 U	10 U	20 U	10 U	10 U	100 U
Dalapon	2000 U	2000 U	2000 U	4000 U	2000 U	2000 U	20000 U
Dicamba	10 U	20 U	20 U	40 U	20 U	20 U	200 U
Dichloroprop	100 U	100 U	6.6 J	200 U	100 U	100 U	32 J
Dinoseb	100 U	100 U	100 U	200 U	100 U	100 U	1000 U
MCPA	2000 U	2000 U	2000 U	8600	2000 U	2000 U	20000 U
MCPP	2000 U	2000 U	2000 U	4000 U	2000 U	2000 U	20000 U
Pentachlorophenol	20 U	20 U	20 U	40 U	20 U	20 U	200 U
Total Herbicides	ND	ND	6.6	8600	ND	ND	32

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 11-4
Solutia
Sauget Area 1
Biota
Method 8151A Herbicide Data

	Sample ID	CLAM BP-2 COMP 01	CLAM BP-3 COMP 01	CLAM REF-1 COMP 01	CLAM REF2-2 COMP 01	CLAM REF2-2 COMP 02	F.F. BP COMP 1	F F BP COMP 2
	Sample Date	10/07/99	10/06/99	10/08/99	10/08/99	10/09/99	10/04/99	10/06/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound								
2,4,5-T		10 U	20 U	10 U	10 U	100 U	10 U	10 U
2,4,5-TP (Silvex)		10 U	20 U	10 U	10 U	100 U	10 U	10 U
2,4-D		10 U	20 U	10 U	10 U	100 U	10 U	10 U
2,4-DB		10 U	20 U	10 U	10 U	100 U	10	6.5
Dalapon		2000 U	4000 U	2000 U	2000 U	20000 U	2000 U	2000 U
Dicamba		10 U	40 U	20 U	20 U	200 U	2.6 J	20 U
Dichloroprop		20 J	3.2 J	6.5 J	10 J	87 J	6.7 J	100 U
Dinoseb		100 U	200 U	100 U	100 U	1000 U	100 U	100 U
MCPA		2000 U	4000 U	2000 U	1400	40000 U	3100	3300
MCPP		2000 U	4000	2000 U	2000 U	40000 U	2000 U	2000 U
Pentachlorophenol		20 U	40 U	20 U	20 U	200 U	2.2 J	1 J
Total Herbicides		20	4003.2	6.5	1410	87	3121.5	3307.5

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-4
Solutia
Sauget Area 1
Biota
Method 8151A Herbicide Data

Sample ID	F.F. BP COMP 3	F.F. CS-D COMP 1	F.F. REF 1 COMP 1	F.F. REF 2 COMP 1	F.F. REF 2 COMP 2	FF REF 2 COMP 3	LMB BP COMP 1
Sample Date	10/06/99	10/04/99	10/08/99	10/08/99	10/08/99	10/08/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
2,4,5-T	20 U	10 U	10 U	10 U	10 U	10 U	---
2,4,5-TP (Silvex)	20 U	10 U	10 U	10 U	10 U	10 U	---
2,4-D	20 U	10 U	10 U	10 U	10 U	10 U	---
2,4-DB	20 U	10 U	10	10 U	10 U	10 U	---
Dalapon	4000 U	2000 U	2000 U	2000 U	2000 U	2000 U	---
Dicamba	40 U	20 U	20 U	20 U	20 U	20 U	---
Dichloroprop	200 U	100 U	5.1 J	100 U	100 U	100 U	---
Dinoseb	200 U	100 U	100 U	100 U	100 U	100 U	---
MCPA	4000 U	2000 U	2400	2000 U	2000 U	2000 U	---
MCPP	4000 U	2000 U	2000 U	2000 U	2000 U	2000 U	---
Pentachlorophenol	40 U	5.8 J	2.2 J	6.8 U	1.5 J	20 U	---
Total Herbicides	ND	5.8	2417.3	ND	1.5	ND	1.9

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-4
Solutia
Sauget Area 1
Biota
Method 8151A Herbicide Data

Compound	Sample ID	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2	PTISS B-1 DC B
	Sample Date	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99	10/05/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
2,4,5-T		---	---	---	---	---	---	1.1 J
2,4,5-TP (Silvex)		---	---	---	---	---	---	10 U
2,4-D		---	---	---	---	---	---	10 U
2,4-DB		---	---	---	---	---	---	10 U
Dalapon		---	---	---	---	---	---	2000 U
Dicamba		---	---	---	---	---	---	4.3 J
Dichloroprop		---	---	---	---	---	---	100 U
Dinoseb		---	---	---	---	---	---	100 U
MCPA		---	---	---	---	---	---	2000 U
MCPP		---	---	---	---	---	---	1100
Pentachlorophenol		---	---	---	---	---	---	1.6 J
Total Herbicides		ND	1800	ND	ND	ND	ND	1107

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-4
Solutia
Sauget Area 1
Biota
Method 8151A Herbicide Data

Sample ID	PTISS B-2 DC B	PTISS B-3 DC B	PTISS C-1 DC C	PTISS C-2 DC C	PTISS C-3 DC C	PTISS D-1 DC D	PTISS D-2 DC D
Sample Date	10/05/99	10/05/99	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
2,4,5-T	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-TP (Silvex)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-D	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-DB	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dalapon	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Dicamba	20 U	20 U	20 U	20 U	20 U	20 U	20 U
Dichloroprop	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Dinoseb	100 U	100 U	100 U	100 U	100 U	100 U	100 U
MCPA	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
MCPP	2000 U	2000 U	1300	1800	2000 U	680 J	2000 U
Pentachlorophenol	2.8 J	4.9 J	9.7	16	2.7 J	1.2 J	20 U
Total Herbicides	2.8	4.9	1309.7	1816	2.7	681.2	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-4
Solutia
Sauget Area 1
Biota
Method 8151A Herbicide Data

Sample ID	PTISS D-3 DC D	PTISS E-1 DC E	PTISS E-2 DC E	PTISS F-1 DC F	PTISS F-3 DC F	PTISS PRAIRIE DUPONT R2	PTISS REF 2-1 RC
Sample Date	10/04/99	10/06/99	10/06/99	10/07/99	10/07/99	10/08/99	10/08/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
2,4,5-T	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-TP (Silvex)	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-D	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-DB	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dalapon	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Dicamba	20 U	20 U	20 U	20 U	20 U	20 U	1.8 J
Dichloroprop	100 U	100 U	100 U	7 J	100 U	100 U	100 U
Dinoseb	100 U	100 U	100 U	100 U	100 U	100 U	100 U
MCPA	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
MCPP	400 J	2000 U	2000 U	2000 U	2000 U	2000 U	1300
Pentachlorophenol	20 U	20 U	20 U	20 U	20 U	20 U	2 J
Total Herbicides	400	ND	ND	7	ND	ND	1303.8

NOTES: *U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.*

O'BRIEN & GERE ENGINEERS, INC.

Table 11-4
Solutia
Sauget Area 1
Biota
Method 8151A Herbicide Data

Sample ID	SHRIMP BP COMP	SHRIMP REF1 COMP	SHRIMP REF2 COMP	SN REF1 COMP 1	SN REF2-1 COMP1	SNCS-B COMP1	SNCS-C COMP1
Sample Date	10/06/99	10/07/99	10/08/99	10/08/99	10/08/99	10/05/99	10/04/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
2,4,5-T	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4,5-TP (Silvex)	10 U	10 U	1.3 J	6.3 J	10 U	10 U	10 U
2,4-D	10 U	10 U	10 U	10 U	10 U	10 U	10 U
2,4-DB	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Dalapon	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U	2000 U
Dicamba	20 U	20 U	20 U	20 U	8.4	20 U	20 U
Dichloroprop	100 U	100 U	100 U	100 U	100 U	100 U	100 U
Dinoseb	100 U	100 U	100 U	100 U	100 U	2000 U	100 U
MCPA	2000 U	2000 U	2000 U	6400	2000 U	2000 U	2000 U
MCPP	2000 U	2000 U	4400	2600	2000 U	3300	2000 U
Pentachlorophenol	1.8 J	3.9 J	1.5 J	15	20 U	1.1 J	5.8 J
Total Herbicides	1.8	3.9	4402.8	9021.3	8.4	3301.1	5.8

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-4
Solutia
Sauget Area 1
Biota
Method 8151A Herbicide Data

Sample ID	SNCS-D COMP1	WB BP FILLET 1	WB BP FILLET 2	WC BP COMP 1	WC REF1 COMP 1	WC REF1 COMP 2	WC REF2 COMP 1
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	10/04/99	11/01/99	11/02/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
2,4,5-T	10 U	---	---	---	---	---	---
2,4,5-TP (Silvex)	10 U	---	---	---	---	---	---
2,4-D	10 U	---	---	---	---	---	---
2,4-DB	10 U	---	---	---	---	---	---
Dalapon	2000 U	---	---	---	---	---	---
Dicamba	20 U	---	---	---	---	---	---
Dichloroprop	100 U	---	---	---	---	---	---
Dinoseb	100 U	---	---	---	---	---	---
MCPA	2000 U	---	---	---	---	---	---
MCPP	2000 U	---	---	---	---	---	---
Pentachlorophenol	20 U	---	---	---	---	---	---
Total Herbicides	ND	ND	ND	ND	ND	ND	3.8

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-4
Solutia
Sauget Area 1
Biota
Method 8151A Herbicide Data

	Sample ID	WC REF2 COMP 2
	Sample Date	11/02/99
	Units	ug/kg
Compound		
2,4,5-T		---
2,4,5-TP (Silvex)		---
2,4-D		---
2,4-DB		---
Dalapon		---
Dicamba		---
Dichloroprop		---
Dinoseb		---
MCPA		---
MCPP		---
Pentachlorophenol		---
Total Herbicides		ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 11-5
Solutia
Sauget Area 1
Biota
Method 6010B/7471A/9010B Inorganic Data

Sample ID	BB BP COMP 1	BB BP COMP 2	BB BP COMP 3	BB REF 1-2 COMP 1	BB REF 1-2 COMP 2	BB REF 2-2 COMP 1	CLAM BP-1 COMP 01
Sample Date	11/01/99	10/07/99	10/07/99	10/08/99	10/08/99	11/02/99	10/06/99
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Compound							
Aluminum	12	7.7 J	18	66	31	5.9 J	7.5 J
Antimony	0.18 U	0.18 U	0.2 U	0.18 U	0.18 U	0.18 U	0.18 U
Arsenic	1.8 U	5 U	1.8 U	1.8 U	4.5 U	0.91 U	4.5 U
Beryllium	0.91 U	0.91 U	1 U	0.91 U	0.91 U	0.91 U	0.91 U
Cadmium	0.45 U	0.45 U	0.5 U	0.45 U	0.45 U	0.45 U	0.45 U
Chromium	0.29 J	0.27 J	0.7	0.4 J	0.48	0.34 J	0.22 J
Copper	0.79 J	0.85 J	0.89 J	1 J	1.1 J	1.1 J	0.60 J
Cyanide, Total	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead	0.25 J	0.45 U	0.5 U	0.23 J	0.18 J	0.45 U	0.45 U
Mercury	0.05 J	0.075 J	0.26	0.1	0.086 J	0.05 J	0.074 U
Nickel	9.1 U	9.1 U	10 U	9.1 U	9.1 U	9.1 U	9.1 U
Selenium	0.45 U	0.45 U	0.5 U	0.45 U	0.5	0.48	0.45 U
Silver	0.091 U	0.1 U	0.1 U	0.091 U	0.091 U	0.091 U	0.015 J
Zinc	19	22	18	20	24	16	8.9

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 11-5
Solutia
Sauget Area 1
Biota
Method 6010B/7471A/9010B Inorganic Data

Compound	Sample ID	CLAM BP-2 COMP 01	CLAM BP-3 COMP 01	CLAM REF-1 COMP 01	CLAM REF2-2 COMP 01	CLAM REF2-2 COMP 02	F.F. BP COMP 1	F.F. BP COMP 2
	Sample Date	10/07/99	10/06/99	10/08/99	10/08/99	10/09/99	10/04/99	10/06/99
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum		11	13	14	15	26	24	52
Antimony		0.18 U	0.18 U	0.18 U	0.18 U	0.20 U	0.18 U	0.2 U
Arsenic		4.5 U	0.96 J	4.2 U	0.65 J	5.0 U	5 U	1 U
Beryllium		0.91 U	0.91 U	0.91 U	0.91 U	1.0 U	0.91 U	1 U
Cadmium		0.074 J	0.12 J	0.53	0.16 J	0.61	0.45 U	0.5 U
Chromium		0.72	1.1	0.79	1.5	2.2	0.32 J	0.3 J
Copper		0.98 J	0.99 J	2.4	1.6 J	2.4	0.5 J	0.78 J
Cyanide, Total		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead		0.45 U	0.25 J	0.44 J	0.45 U	0.59	0.45 U	0.5 U
Mercury		0.091 U	0.10 U	0.095 U	0.074 U	0.077 U	0.052 J	0.6
Nickel		9.1 U	9.1 U	9.1 U	9.1 U	10 U	9.1 U	10 U
Selenium		0.45 U	0.45 U	0.45 U	0.45 U	0.48 J	0.54	0.5 U
Silver		0.091 U	0.091 U	0.091 U	0.091 U	0.10 U	0.1 U	0.1 U
Zinc		14	22	52	21	35	24	33

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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Table 11-5
Solutia
Sauget Area 1
Biota
Method 6010B/7471A/9010B Inorganic Data

Compound	Sample ID	F.F. BP COMP 3	F.F. CS B COMP 1	F.F. CS-D COMP 1	F.F. REF 1 COMP 1	F.F. REF 2 COMP 1	F.F. REF 2 COMP 2	FF REF 2 COMP 3
	Sample Date	10/06/99	10/05/99	10/04/99	10/08/99	10/08/99	10/08/99	10/08/99
	Units	mg/kg	mg/kg dw	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum		44	9.8 J	22	13	80	100	8.3 J
Antimony		0.18 U	0.2 U	0.18 U	0.18 U	0.18 U	0.18 U	0.2 U
Arsenic		2 U	5 U	5 U	1.8 U	2 U	2 U	5 U
Beryllium		0.91 U	1 U	0.91 U	0.91 U	0.91 U	0.91 U	1 U
Cadmium		0.45 U	0.5 U	0.45 U	0.45 U	0.45 U	0.45 U	0.5 U
Chromium		0.26 J	0.4 J	0.37 J	0.24 J	0.44 J	0.47	1.7
Copper		1.7 J	9	1.5 J	0.45 J	0.42 J	0.75 J	0.54 J
Cyanide, Total		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead		0.59	1.1	0.48	0.45 U	0.45 U	0.37 J	0.5 U
Mercury		0.1 U	0.095 U	0.018 J	0.05 J	0.051 J	0.064 J	0.046 J
Nickel		9.1 U	10 U	9.1 U	9.1 U	9.1 U	9.1 U	10 U
Selenium		0.53	0.5 U	0.46	0.45 U	0.56	0.65	0.5 U
Silver		0.1 U	0.1 U	0.1 U	0.091 U	0.1 U	0.1 U	0.1 U
Zinc		32	46	53	17	33	27	25

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-5
Solutia
Sauget Area 1
Biota
Method 6010B/7471A/9010B Inorganic Data

Sample ID	PTISS B-1 DC B	PTISS B-2 DC B	PTISS B-3 DC B	PTISS C-1 DC C	PTISS C-2 DC C	PTISS C-3 DC C	PTISS D-1 DC D
Sample Date	10/05/99	10/05/99	10/05/99	10/04/99	10/04/99	10/04/99	10/04/99
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Compound							
Aluminum	43	23	170	1400	1400	38	120
Antimony	0.21	0.15 J	0.2 U	0.71	1.2	0.2 U	0.2 U
Arsenic	0.25 J	0.91 U	0.91 U	2.4	4.3	0.43 J	0.32 J
Beryllium	0.91 U	0.91 U	1 U	1 U	0.14 J	0.91 U	1 U
Cadmium	1.2	0.72	0.39 J	3.5	5.3	0.06 J	0.29 J
Chromium	0.26 J	0.17 J	2.6	7.1	9	0.19 J	0.59
Copper	63	30	35	250	390	8.1	10
Cyanide, Total	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead	6	3.9	3.8	47	76	2.4	4.4
Mercury	0.0031 J	0.0082 J	0.011 J	0.011 J	0.028	0.02 U	0.018 U
Nickel	1.7 J	1.6 J	6.3 J	80	110	2.7 J	3.5 J
Selenium	0.45 U	0.45 U	0.5 U	0.5 U	0.45 U	0.45 U	0.5 U
Silver	0.023 J	0.025 J	0.028 J	0.19	0.5	0.1 U	0.02 J
Zinc	56	46	77	590	610	27	54

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-5
Solutia
Sauget Area 1
Biota
Method 6010B/7471A/9010B Inorganic Data

Compound	Sample ID	PTISS D-2 DC D	PTISS D-3 DC D	PTISS E-1 DC E	PTISS E-2 DC E	PTISS F-1 DC F	PTISS F-3 DC F	PTISS PRAIRIE DUPONT R2
	Sample Date	10/04/99	10/04/99	10/06/99	10/06/99	10/07/99	10/07/99	10/08/99
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum		93	110	21	17	44	30	160
Antimony		0.15 J	0.18 U	0.13 J	0.2 U	0.2 U	0.13 J	0.2 U
Arsenic		1 U	1 U	1 U	0.91 U	0.56 J	0.42 J	0.91 U
Beryllium		0.91 U	0.91 U	0.91 U	1 U	1 U	1 U	1 U
Cadmium		0.45 U	0.45 U	0.13 J	0.5 U	0.5 U	0.097 J	0.5 U
Chromium		0.36 J	0.53	0.45 U	0.5 U	0.5 U	0.5 U	0.25 J
Copper		4.8	3.5	1.8 J	2.9	1.9 J	2.1	0.95 J
Cyanide, Total		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead		1.5	2.3	0.66	0.51	1.2	0.44 J	0.3 J
Mercury		0.017 U	0.018 U	0.02 U	0.018 U	0.02 U	0.017 U	0.018 U
Nickel		1.6 J	2.5 J	9.1 U	10 U	2.6 J	1.2 J	10 U
Selenium		0.45 U	0.45 U	0.45 U	0.5 U	0.5 U	0.5 U	0.5 U
Silver		0.1 U	0.1 U	0.1 U	0.091 U	0.091 U	0.083 U	0.091 U
Zinc		28	27	23	27	20	26	8.3

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-5
Solutia
Sauget Area 1
Biota
Method 6010B/7471A/9010B Inorganic Data

Sample ID	PTISS REF 2-1 RC	SHRIMP BP COMP	SHRIMP REF1 COMP	SHRIMP REF2 COMP	SN REF1 COMP 1	SN REF2-1 COMP1	SNCS-B COMP1
Sample Date	10/08/99	10/06/99	10/07/99	10/08/99	10/08/99	10/08/99	10/05/99
Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Compound							
Aluminum	360	28	60	100	710	590	400
Antimony	0.2 U	0.16 J	0.18 U	0.17 U	0.17 U	0.18 U	0.18 U
Arsenic	1.1 J	2.0 U	2.0 U	1.2 J	1.5	1.6	2.0
Beryllium	1 U	1.0 U	0.91 U	0.83 U	0.83 U	0.91 U	0.91 U
Cadmium	0.5 U	0.50 U	0.45 U	0.42 U	0.42 U	0.069 J	0.16 J
Chromium	0.53	0.23 J	0.26 J	0.28 J	1.9	1.2	0.89
Copper	1.3 J	8.3	8.5	16	12	10	31
Cyanide, Total	10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead	0.64	0.39 J	0.38 J	0.61	3.0	2.3	2.6
Mercury	0.017 U	0.095 U	0.091 U	0.083 U	0.087 U	0.091 U	0.071 U
Nickel	10 U	10 U	9.1 U	8.3 U	1.9 J	1.7 J	2.0 J
Selenium	0.5 U	0.50 U	0.47	0.61	0.42 U	0.49	0.45 U
Silver	0.1 U	0.090 J	0.059 J	0.062 J	0.023 J	0.018 J	0.065 J
Zinc	6.8	16	15	17	12	12	16

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-5
Solutia
Sauget Area 1
Biota
Method 6010B/7471A/9010B Inorganic Data

Compound	Sample ID	SNCS-C COMP1	SNCS-D COMP1	SRM (NIST 2976)
	Sample Date	10/04/99	10/04/99	01/26/00
	Units	mg/kg	mg/kg	mg/kg
Aluminum		320	500	120
Antimony		0.12 J	0.20 U	0.20 U
Arsenic		1.6	1.8	11
Beryllium		0.91 U	1.0 U	1.0 U
Cadmium		0.60	0.67	0.81
Chromium		3.1	2.2	0.56
Copper		120	73	4.2
Cyanide, Total		10 U	10 U	---
Lead		11	7.2	1.3
Mercury		0.077 U	0.077 U	0.056 J
Nickel		21	11	10 U
Selenium		0.45 U	0.50 U	2.8
Silver		0.063 J	0.068 J	0.10 U
Zinc		110	90	140

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-6
Solutia
Sauget Area 1
Biota
Method 8290 PCDD/PCDF Data

Sample ID	BB BP COMP 1	BB BP COMP 1FD	BB BP COMP 2	BB BP COMP 3	BB REF 1-2 COMP 1	BB REF 1-2 COMP 2	BB REF 2-2 COMP 1
Sample Date	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	0.0109	0.012	0.0102	0.011	0.0208	0.0207	0.0027
1,2,3,4,6,7,8,9-OCDF	0.00061	0.0007	0.0012	0.00076	0.0016	0.0008 U	0.00052
1,2,3,4,6,7,8-HpCDD	0.0024	0.002	0.003	0.0015	0.0018	0.003	0.00081
1,2,3,4,6,7,8-HpCDF	0.00056	0.00053	0.001 U	0.0002 U	0.0004 U	0.0004 U	0.0002 U
1,2,3,4,7,8,9-HpCDF	0.0002 U	0.0003 U	0.0013 U	0.0003 U	0.0005 U	0.0005 U	0.0002 U
1,2,3,4,7,8-HxCDD	0.0002 U	0.00026	0.001 U	0.0002 U	0.0004 U	0.0004 U	0.0002 U
1,2,3,4,7,8-HxCDF	0.001	0.00093	0.0014	0.00059	0.00049	0.00048	0.00026
1,2,3,6,7,8-HxCDD	0.0015	0.0013	0.0024	0.00078	0.00062	0.0012	0.00039
1,2,3,6,7,8-HxCDF	0.00022	0.00027	0.0007 U	0.0002 U	0.0003 U	0.0003 U	0.0001 U
1,2,3,7,8,9-HxCDD	0.0002 U	0.0002 U	0.001 U	0.0003 U	0.0004 U	0.0004 U	0.0002 U
1,2,3,7,8,9-HxCDF	0.0002 U	0.0002 U	0.0009 U	0.00069	0.0003 U	0.0004 U	0.0001 U
1,2,3,7,8-PeCDD	0.00088	0.00086	0.0011	0.00042	0.0004 U	0.0005 U	0.0002 U
1,2,3,7,8-PeCDF	0.0002 U	0.0001 U	0.0006 U	0.0002 U	0.0003 U	0.0003 U	0.0001 U
2,3,4,6,7,8-HxCDF	0.00037	0.00027	0.0008 U	0.00016	0.0003 U	0.0003 U	0.0001 U
2,3,4,7,8-PeCDF	0.0016	0.0015	0.0016	0.00077	0.00033	0.0003 U	0.0001 U
2,3,7,8-TCDD	0.00087	0.0008	0.001 U	0.00033	0.00042	0.0005 U	0.0002
2,3,7,8-TCDF	0.0034	0.0032	0.0036	0.0016	0.0003 U	0.00075	0.0001 U
1998 Total TEQ w/ EMPC as ND	0.003605751	0.00339357	0.00382764	0.001661676	0.00102824	0.00104311	0.000442922

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-6
Solutia
Sauget Area 1
Biota
Method 8290 PCDD/PCDF Data

Sample ID	CLAM BP-1 COMP 01	CLAM BP-2 COMP 01	CLAM BP-3 COMP 01	CLAM REF-1 COMP 01	CLAM REF2-2 COMP 01	CLAM REF2-2 COMP 02	F F. BP COMP 1
Sample Date	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	0.0034	0.0151	0.0057	0.0124	0.0102	0.0068	0.0089
1,2,3,4,6,7,8,9-OCDF	0.0003 U	0.0012 U	0.0007 U	0.0011 U	0.0018	0.0004 U	0.0044
1,2,3,4,6,7,8-HpCDD	0.0003 U	0.0014	0.0006 U	0.0008 U	0.001	0.00059	0.0012
1,2,3,4,6,7,8-HpCDF	0.0002 U	0.0005 U	0.0003 U	0.0005 U	0.0003 U	0.0002 U	0.001
1,2,3,4,7,8,9-HpCDF	0.0002 U	0.0008 U	0.0005 U	0.0007 U	0.0005 U	0.0003 U	0.00058
1,2,3,4,7,8-HxCDD	0.0002 U	0.0006 U	0.0004 U	0.0005 U	0.0003 U	0.0002 U	0.0002 U
1,2,3,4,7,8-HxCDF	0.0001 U	0.0004 U	0.0002 U	0.0003 U	0.0002 U	0.0001 U	0.00077
1,2,3,6,7,8-HxCDD	0.0002 U	0.0005 U	0.0003 U	0.0005 U	0.0003 U	0.0002 U	0.0006
1,2,3,6,7,8-HxCDF	0.0001 U	0.0003 U	0.0002 U	0.0003 U	0.0002 U	0.0001 U	0.0001 U
1,2,3,7,8,9-HxCDD	0.0002 U	0.0006 U	0.0004 U	0.0006 U	0.0004 U	0.0002 U	0.0002 U
1,2,3,7,8,9-HxCDF	0.0001 U	0.0004 U	0.0003 U	0.0004 U	0.0003 U	0.0002 U	0.0002 U
1,2,3,7,8-PeCDD	0.0001 U	0.0004 U	0.0003 U	0.0004 U	0.0003 U	0.0002 U	0.0002 U
1,2,3,7,8-PeCDF	0.0001 U	0.0003 U	0.0002 U	0.0003 U	0.0002 U	0.0001 U	0.0001 U
2,3,4,6,7,8-HxCDF	0.0001 U	0.0003 U	0.0002 U	0.0003 U	0.0002 U	0.0001 U	0.0001 U
2,3,4,7,8-PeCDF	0.0001 U	0.0003 U	0.0002 U	0.0003 U	0.0002 U	0.0001 U	0.00046
2,3,7,8-TCDD	0.0001 U	0.0003 U	0.0002 U	0.0003 U	0.0002 U	0.0001 U	0.00072
2,3,7,8-TCDF	0.00031	0.0015	0.00066	0.0003 U	0.0002 U	0.00025	0.0067
1998 Total TEQ w/ EMPC as ND	0.000212355	0.00085957	0.000478605	0.000603795	0.0004252	0.0002666	0.00270863

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 11-6
Solutia
Sauget Area 1
Biota
Method 8290 PCDD/PCDF Data

Sample ID	F F BP COMP 2	F F BP COMP 3	F F CS B COMP 1	F F CS-D COMP 1	F F REF 1 COMP 1	F F REF 2 COMP 1	F F REF 2 COMP 2
Sample Date	01/26/00	01/26/00	01/25/00	01/26/00	01/25/00	01/25/00	01/25/00
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	0.0269	0.0238	1.68	0.213	0.0223	0.0526	0.0233
1,2,3,4,6,7,8,9-OCDF	0.0011 U	0.0013	0.57	0.0481	0.0016	0.018	0.0014
1,2,3,4,6,7,8-HpCDD	0.0018	0.0016	0.211	0.0274	0.0018	0.0047	0.0023
1,2,3,4,6,7,8-HpCDF	0.0005 U	0.0004 U	0.0994	0.0154	0.0002 U	0.0016	0.0004 U
1,2,3,4,7,8,9-HpCDF	0.0009 U	0.0006 U	0.0073	0.0011	0.0003 U	0.0007 U	0.0007 U
1,2,3,4,7,8-HxCDD	0.0006 U	0.0004 U	0.0053	0.0012	0.0003 U	0.0005 U	0.0005 U
1,2,3,4,7,8-HxCDF	0.0004 U	0.00041	0.0096	0.0028	0.0004	0.00057	0.0003 U
1,2,3,6,7,8-HxCDD	0.0005 U	0.0004 U	0.0323	0.0073	0.00058	0.00066	0.00067
1,2,3,6,7,8-HxCDF	0.0003 U	0.0003 U	0.0041	0.001	0.0002 U	0.0003 U	0.0003 U
1,2,3,7,8,9-HxCDD	0.0006 U	0.0005 U	0.0103	0.0018	0.0003 U	0.0005 U	0.0005 U
1,2,3,7,8,9-HxCDF	0.0005 U	0.0004 U	0.0002 U	0.0003 U	0.0002 U	0.0004 U	0.0004 U
1,2,3,7,8-PeCDD	0.0006 U	0.0005 U	0.021	0.0035	0.0003 U	0.00095	0.0005 U
1,2,3,7,8-PeCDF	0.0004 U	0.0003 U	0.0052	0.0003 U	0.0002 U	0.0004 U	0.0004 U
2,3,4,6,7,8-HxCDF	0.0004 U	0.0003 U	0.006	0.0013	0.0002 U	0.0004 U	0.0003 U
2,3,4,7,8-PeCDF	0.0004 U	0.0003 U	0.0127	0.0026	0.0002 U	0.0004 U	0.0004 U
2,3,7,8-TCDD	0.0005 U	0.0004 U	0.0188	0.0022	0.00046	0.00086	0.0005 U
2,3,7,8-TCDF	0.0034	0.0036	0.0595	0.0148	0.0028	0.0013	0.0005 U
1998 Total TEQ w/ EMPC as ND	0.001652745	0.00159201	0.073832	0.01363761	0.00142589	0.00247156	0.00084797

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-6
Solutia
Sauget Area 1
Biota
Method 8290 PCDD/PCDF Data

Compound	Sample ID	F.F. REF 2 COMP 3	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1
	Sample Date	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
	Units	ug/kg	ppb	ppb	ppb	ppb	ppb	ppb
1,2,3,4,6,7,8,9-OCDD		0.068	---	---	---	---	---	---
1,2,3,4,6,7,8,9-OCDF		0.0006 U	---	---	---	---	---	---
1,2,3,4,6,7,8-HpCDD		0.0042	---	---	---	---	---	---
1,2,3,4,6,7,8-HpCDF		0.0003 U	---	---	---	---	---	---
1,2,3,4,7,8,9-HpCDF		0.0005 U	---	---	---	---	---	---
1,2,3,4,7,8-HxCDD		0.0003 U	---	---	---	---	---	---
1,2,3,4,7,8-HxCDF		0.00023	---	---	---	---	---	---
1,2,3,6,7,8-HxCDD		0.00044	---	---	---	---	---	---
1,2,3,6,7,8-HxCDF		0.0002 U	---	---	---	---	---	---
1,2,3,7,8,9-HxCDD		0.0004 U	---	---	---	---	---	---
1,2,3,7,8,9-HxCDF		0.0003 U	---	---	---	---	---	---
1,2,3,7,8-PeCDD		0.0003 U	---	---	---	---	---	---
1,2,3,7,8-PeCDF		0.0002 U	---	---	---	---	---	---
2,3,4,6,7,8-HxCDF		0.0002 U	---	---	---	---	---	---
2,3,4,7,8-PeCDF		0.0003 U	---	---	---	---	---	---
2,3,7,8-TCDD		0.00048	---	---	---	---	---	---
2,3,7,8-TCDF		0.00095	---	---	---	---	---	---
1998 Total TEQ w/ EMPC as ND		0.00099483	0.00294793	0.002113305	0.002776225	0.00077673	0.00046505	0.00079906

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-6
Solutia
Sauget Area 1
Biota
Method 8290 PCDD/PCDF Data

Sample ID	LMB REF 2 COMP 2	PTISS B-1 DC B	PTISS B-2 DC B	PTISS B-3 DC B	PTISS C-1 DC C	PTISS C-2 DC C	PTISS C-3 DC C
Sample Date	01/25/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00
Units	ppb	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	---	1.39	3.57	2.17	22.73	15.06	1.09
1,2,3,4,6,7,8,9-OCDF	---	0.14	0.89	0.252	13.88	7.93	0.64
1,2,3,4,6,7,8-HpCDD	---	0.155	0.393	0.288	5.23	2.81	0.125
1,2,3,4,6,7,8-HpCDF	---	0.0403	0.165	0.076	2.81	1.75	0.0759
1,2,3,4,7,8,9-HpCDF	---	0.0034	0.0151	0.0039	0.148	0.104	0.0052
1,2,3,4,7,8-HxCDD	---	0.0022	0.0045	0.0087	0.0294	0.0263	0.0011
1,2,3,4,7,8-HxCDF	---	0.0033	0.0074	0.0068	0.0834	0.0574	0.0022
1,2,3,6,7,8-HxCDD	---	0.0053	0.0133	0.0169	0.167	0.104	0.0045
1,2,3,6,7,8-HxCDF	---	0.0016	0.0033	0.0165	0.0456	0.0359	0.0019
1,2,3,7,8,9-HxCDD	---	0.0052	0.0101	0.0283	0.1	0.0843	0.0022
1,2,3,7,8,9-HxCDF	---	0.0002 U	0.00024	0.0006 U	0.005	0.0036	0.0001 U
1,2,3,7,8-PeCDD	---	0.0014	0.002	0.0134	0.0199	0.015	0.0001 U
1,2,3,7,8-PeCDF	---	0.0005	0.0018	0.0012	0.008	0.0089	0.00072
2,3,4,6,7,8-HxCDF	---	0.0026	0.0058	0.026	0.0619	0.0498	0.0032
2,3,4,7,8-PeCDF	---	0.0017	0.0063	0.0035	0.0205	0.018	0.00096
2,3,7,8-TCDD	---	0.0003 U	0.00072	0.0062	0.006	0.0039	0.0001 U
2,3,7,8-TCDF	---	0.0048	0.0043	0.0047	0.047	0.0225	0.0022
1998 Total TEQ w/ EMPC as ND	0.00137105	0.007315	0.017771	0.0370112	0.178501	0.120344	0.004695

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-6
Solutia
Sauget Area 1
Biota
Method 8290 PCDD/PCDF Data

	Sample ID	PTISS D-1 DC D	PTISS D-2 DC D	PTISS D-3 DC D	PTISS E-1 DC E	PTISS E-2 DC E	PTISS F-1 DC F	PTISS F-3 DC F
	Sample Date	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00	01/31/00
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound								
1,2,3,4,6,7,8,9-OCDD		0.343	0.599	0.773	0.278	0.0344	0.0833	0.0569
1,2,3,4,6,7,8,9-OCDF		0.125	0.222	0.247	0.0817	0.0085	0.0335	0.0226
1,2,3,4,6,7,8-HpCDD		0.0352	0.0703	0.0977	0.0319	0.004	0.0116	0.0074
1,2,3,4,6,7,8-HpCDF		0.0195	0.0348	0.0472	0.0173	0.0023	0.0074	0.0057
1,2,3,4,7,8,9-HpCDF		0.0014	0.0027	0.0028	0.0013	0.0007 U	0.0006 U	0.0006 U
1,2,3,4,7,8-HxCDD		0.0001 U	0.00067	0.0012	0.0004 U	0.0006 U	0.0005 U	0.0005 U
1,2,3,4,7,8-HxCDF		0.00094	0.0014	0.0017	0.00091	0.0004 U	0.0004 U	0.0004 U
1,2,3,6,7,8-HxCDD		0.0011	0.0026	0.0044	0.0004 U	0.0005 U	0.0005 U	0.0005 U
1,2,3,6,7,8-HxCDF		0.0014	0.001	0.0015	0.0003 U	0.0004 U	0.0003 U	0.0003 U
1,2,3,7,8,9-HxCDD		0.00089	0.0016	0.0044	0.0004 U	0.0005 U	0.0005 U	0.0005 U
1,2,3,7,8,9-HxCDF		0.0001 U	0.0001 U	0.0001 U	0.0003 U	0.0005 U	0.0004 U	0.0004 U
1,2,3,7,8-PeCDD		0.0002 U	0.00048	0.0002 U	0.0003 U	0.0005 U	0.0004 U	0.0004 U
1,2,3,7,8-PeCDF		0.0001 U	0.0001 U	0.0001 U	0.0003 U	0.0004 U	0.0003 U	0.0004 U
2,3,4,6,7,8-HxCDF		0.0015	0.0011	0.0018	0.0003 U	0.0004 U	0.0003 U	0.0004 U
2,3,4,7,8-PeCDF		0.0001 U	0.00064	0.00066	0.0003 U	0.0004 U	0.0003 U	0.0004 U
2,3,7,8-TCDD		0.0002 U	0.0002 U	0.0002 U	0.0004 U	0.0005 U	0.0004 U	0.0005 U
2,3,7,8-TCDF		0.00046	0.0011	0.0015	0.0003 U	0.0005 U	0.0004 U	0.0004 U
1998 Total TEQ w/ EMPC as ND		0.0015743	0.0032046	0.0039965	0.00172155	0.00087079	0.00085218	0.00087195

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-6
Solutia
Sauget Area 1
Biota
Method 8290 PCDD/PCDF Data

Sample ID	PTISS PRAIRIE DUPONT R2	PTISS REF 2-1 RC	SHRIMP BP COMP	SHRIMP REF 1 COMP	SHRIMP REF 2 COMP	SN FEF1 COMP 1	SN REF2-1 COMP 1
Sample Date	01/31/00	01/31/00	01/26/00	01/25/00	01/25/00	01/25/00	01/25/00
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	0.0871	0.0832	0.0198	0.0166	0.0299	0.288	0.323
1,2,3,4,6,7,8,9-OCDF	0.0085	0.00062	0.0043	0.0011	0.0005 U	0.0021	0.0014
1,2,3,4,6,7,8-HpCDD	0.0061	0.0021	0.0031	0.0011	0.0024	0.0077	0.0085
1,2,3,4,6,7,8-HpCDF	0.0014	0.0002 U	0.0015	0.0003 U	0.0002 U	0.0002 U	0.0002 U
1,2,3,4,7,8,9-HpCDF	0.001 U	0.0002 U	0.0004 U	0.0005 U	0.0003 U	0.0004 U	0.0003 U
1,2,3,4,7,8-HxCDD	0.0009 U	0.0002 U	0.0003 U	0.0004 U	0.0003 U	0.0002 U	0.0002 U
1,2,3,4,7,8-HxCDF	0.0006 U	0.0001 U	0.0002 U	0.0002 U	0.0002 U	0.0001 U	0.0001 U
1,2,3,6,7,8-HxCDD	0.0008 U	0.0002 U	0.0002 U	0.0003 U	0.0003 U	0.0002 U	0.0002 U
1,2,3,6,7,8-HxCDF	0.0006 U	0.0001 U	0.0002 U	0.0002 U	0.0002 U	0.0001 U	0.0001 U
1,2,3,7,8,9-HxCDD	0.0008 U	0.0002 U	0.0003 U	0.0004 U	0.00069	0.0002 U	0.0002 U
1,2,3,7,8,9-HxCDF	0.0007 U	0.0001 U	0.0002 U	0.0003 U	0.0002 U	0.0002 U	0.0002 U
1,2,3,7,8-PeCDD	0.0007 U	0.0002 U	0.0003 U	0.0004 U	0.0003 U	0.0002 U	0.0002 U
1,2,3,7,8-PeCDF	0.0006 U	0.0001 U	0.0002 U	0.0003 U	0.0002 U	0.0001 U	0.0001 U
2,3,4,6,7,8-HxCDF	0.0006 U	0.0001 U	0.0002 U	0.0002 U	0.0002 U	0.0001 U	0.0001 U
2,3,4,7,8-PeCDF	0.0006 U	0.0001 U	0.0002 U	0.0003 U	0.0002 U	0.0001 U	0.0002 U
2,3,7,8-TCDD	0.0008 U	0.0001 U	0.0002 U	0.0003 U	0.0003 U	0.0001 U	0.0002 U
2,3,7,8-TCDF	0.0007 U	0.0001 U	0.0016	0.0002 U	0.0002 U	0.0001 U	0.0001 U
1998 Total TEQ w/ EMPC as ND	0.00128956	0.000263882	0.00077541	0.00055927	0.000533515	0.00034651	0.00043244

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-6
Solutia
Sauget Area 1
Biota
Method 8290 PCDD/PCDF Data

Compound	Sample ID	SNCS-B COMP 1	SNCS-C COMP 1	SNCS-D COMP 1	WC BP COMP 1	WC BP COMP 2	WC BP COMP 3	WC REF1 COMP 1
	Sample Date	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
	Units	ug/kg	ug/kg	ug/kg	ppb	ppb	ppb	ppb
1,2,3,4,6,7,8,9-OCDD		1.36	12.95	3.4	---	---	---	---
1,2,3,4,6,7,8,9-OCDF		0.405	6.02	1.2	---	---	---	---
1,2,3,4,6,7,8-HpCDD		0.164	1.56	0.436	---	---	---	---
1,2,3,4,6,7,8-HpCDF		0.0837	1.05	0.249	---	---	---	---
1,2,3,4,7,8,9-HpCDF		0.0054	0.0733	0.013	---	---	---	---
1,2,3,4,7,8-HxCDD		0.0022	0.0071	0.0047	---	---	---	---
1,2,3,4,7,8-HxCDF		0.0043	0.029	0.0078	---	---	---	---
1,2,3,6,7,8-HxCDD		0.0085	0.0599	0.0173	---	---	---	---
1,2,3,6,7,8-HxCDF		0.0015	0.0121	0.0044	---	---	---	---
1,2,3,7,8,9-HxCDD		0.0066	0.0239	0.0118	---	---	---	---
1,2,3,7,8,9-HxCDF		0.0002 U	0.0012	0.0002 U	---	---	---	---
1,2,3,7,8-PeCDD		0.0026	0.006	0.003	---	---	---	---
1,2,3,7,8-PeCDF		0.0006	0.0023	0.0011	---	---	---	---
2,3,4,6,7,8-HxCDF		0.0028	0.0207	0.0087	---	---	---	---
2,3,4,7,8-PeCDF		0.0021	0.0109	0.0045	---	---	---	---
2,3,7,8-TCDD		0.0012	0.0014	0.00061	---	---	---	---
2,3,7,8-TCDF		0.0028	0.0118	0.0061	---	---	---	---
1998 Total TEQ w/ EMPC as ND		0.0109575	0.060475	0.020275	0.02362395	0.00051373	0.00037507	0.00028342

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-6
Solutia
Sauget Area 1
Biota
Method 8290 PCDD/PCDF Data

Compound	Sample ID	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2	WC REF2 COMP 2FD
	Sample Date	01/25/00	01/25/00	01/25/00	01/25/00
	Units	ppb	ppb	ppb	ppb
1,2,3,4,6,7,8,9-OCDD		---	---	---	---
1,2,3,4,6,7,8,9-OCDF		---	---	---	---
1,2,3,4,6,7,8-HpCDD		---	---	---	---
1,2,3,4,6,7,8-HpCDF		---	---	---	---
1,2,3,4,7,8,9-HpCDF		---	---	---	---
1,2,3,4,7,8-HxCDD		---	---	---	---
1,2,3,4,7,8-HxCDF		---	---	---	---
1,2,3,6,7,8-HxCDD		---	---	---	---
1,2,3,6,7,8-HxCDF		---	---	---	---
1,2,3,7,8,9-HxCDD		---	---	---	---
1,2,3,7,8,9-HxCDF		---	---	---	---
1,2,3,7,8-PeCDD		---	---	---	---
1,2,3,7,8-PeCDF		---	---	---	---
2,3,4,6,7,8-HxCDF		---	---	---	---
2,3,4,7,8-PeCDF		---	---	---	---
2,3,7,8-TCDD		---	---	---	---
2,3,7,8-TCDF		---	---	---	---
1998 Total TEQ w/ EMPC as ND		0.00062849	0.00036404	0.000298635	0.000194025

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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Table 11-7
Solutia
Sauget Area 1
Biota
Method EX41 Lipids Data

	Sample ID	BB BP COMP 1	BB BP COMP 2	BB BP COMP 3	BB REF 1-2 COMP 1	BB REF 1-2 COMP 2	BB REF 2-2 COMP 1	CLAM BP-1 COMP 01
	Sample Date	11/01/99	10/07/99	10/07/99	10/08/99	10/08/99	11/02/99	10/06/99
	Units	%	%	%	%	%	%	%
Compound								
% Lipids		1.4	1.7	0.3	1	1.4	1	0.09

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 11-7
Solutia
Sauget Area 1
Biota
Method EX41 Lipids Data

	Sample ID	CLAM BP-2 COMP 01	CLAM BP-3 COMP 01	CLAM REF-1 COMP 01	CLAM REF2-2 COMP 01	CLAM REF2-2 COMP 02	F.F. BP COMP 1	F.F BP COMP 2
	Sample Date	10/07/99	10/06/99	10/08/99	10/08/99	10/09/99	10/04/99	10/06/99
	Units	%	%	%	%	%	%	%
Compound								
% Lipids		0.23	0.05	0.12	0.12	0.09	1.5	1.8

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 11-7
Solutia
Sauget Area 1
Biota
Method EX41 Lipids Data

	Sample ID	F.F. BP COMP 3	F F CS B COMP 1	F F CS-D COMP 1	F.F. REF 1 COMP 1	F.F. REF 2 COMP 1	F.F. REF 2 COMP 2	FF REF 2 COMP 3
	Sample Date	10/06/99	10/05/99	10/04/99	10/08/99	10/08/99	10/08/99	10/08/99
	Units	%	%	%	%	%	%	%
Compound								
% Lipids		1.6	1.1	1.3	2.6	1	1.1	1.7

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 11-7
Solutia
Sauget Area 1
Biota
Method EX41 Lipids Data

	Sample ID	SHRIMP BP COMP	SHRIMP REF1 COMP	SHRIMP REF2 COMP	SN REF1 COMP 1	SN REF2-1 COMP1	SNCS-B COMP1	SNCS-C COMP1
	Sample Date	10/06/99	10/07/99	10/08/99	10/08/99	10/08/99	10/05/99	10/04/99
	Units	%	%	%	%	%	%	%
Compound								
% Lipids		0.03	0.27	0.38	0.13	0.16	0.09	0.17

NOTES: *U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate*

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O'BRIEN & GERE ENGINEERS, INC.

Table 11-7
Solutia
Sauget Area 1
Biota
Method EX41 Lipids Data

	Sample ID	SNCS-D COMP1	SRM (NIST 1974)
	Sample Date	10/04/99	01/26/00
	Units	%	%
Compound			
% Lipids		0.26	0.38

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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APPENDIX 6B

Sauget Area 1 Support Sampling Plan

Biota Analyses - Fish, Clams, Snails and Plants

O'BRIEN & GERE ENGINEERS, INC.

Table 10-1
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8270C Semivolatile Organic Compound Data

Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
Sample Date	10/04/99	11/01/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,2-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,3-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,4-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,2'-Oxybis(1-Chloropropane)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4,5-Trichlorophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4,6-Trichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dinitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,6-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chloronaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylnaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylphenol (o-cresol)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2-Nitrophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3,3'-Dichlorobenzidine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Methylphenol/4-Methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4,6-Dinitro-2-methylphenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Bromophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloro-3-methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloroaniline	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chlorophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Nitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
Acenaphthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Acenaphthylene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)pyrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(b)fluoranthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(g,h,i)perylene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(k)fluoranthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 10-1
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8270C Semivolatile Organic Compound Data

Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
Sample Date	10/04/99	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Butylbenzylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Carbazole	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Chrysene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Di-n-butylphthalate	170 U	170 U	32 J	19 J	20 J	170 U	170 U
Di-n-octylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dibenzo(a,h)anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dibenzofuran	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Diethylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dimethylphthalate	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluoranthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluorene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobutadiene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorocyclopentadiene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachloroethane	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Indeno(1,2,3-cd)pyrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Isophorone	170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitroso-di-n-propylamine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitrosodiphenylamine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Naphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Nitrobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pentachlorophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
Phenanthrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pyrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Chloroethoxy)methane	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Chloroethyl)ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Ethylhexyl)phthalate	170 U	170 U	210 U	170 U	170 U	170 U	170 U
Total Semivolatiles	ND	ND	32	19	20	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 10-1
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8270C Semivolatile Organic Compound Data

Sample ID	WC BP COMP 1	WC BP COMP 2	WC BP-COMP 3	WC REF1 COMP 1	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2
Sample Date	10/04/99	11/01/99	11/01/99	10/04/99	11/01/99	11/02/99	11/02/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,4-Trichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,2-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,3-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
1,4-Dichlorobenzene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,2'-Oxybis(1-Chloropropane)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4,5-Trichlorophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4,6-Trichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dichlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,4-Dinitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2,4-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2,6-Dinitrotoluene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chloronaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Chlorophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylnaphthalene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Methylphenol (o-cresol)	170 U	170 U	170 U	170 U	170 U	170 U	170 U
2-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
2-Nitrophenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3,3'-Dichlorobenzidine	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Methylphenol/4-Methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
3-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4,6-Dinitro-2-methylphenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Bromophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloro-3-methylphenol	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chloroaniline	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Chlorophenylphenyl ether	170 U	170 U	170 U	170 U	170 U	170 U	170 U
4-Nitroaniline	420 U	420 U	420 U	420 U	420 U	420 U	420 U
4-Nitrophenol	420 U	420 U	420 U	420 U	420 U	420 U	420 U
Acenaphthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Acenaphthylene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)anthracene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(a)pyrene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(b)fluoranthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(g,h,i)perylene	170 U	170 U	170 U	170 U	170 U	170 U	170 U
Benzo(k)fluoranthene	170 U	170 U	170 U	170 U	170 U	170 U	170 U

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 10-1
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8270C Semivolatile Organic Compound Data

Compound	Sample ID	WC BP COMP 1	WC BP COMP 2	WC BP-COMP 3	WC REF1 COMP 1	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2
	Sample Date	10/04/99	11/01/99	11/01/99	10/04/99	11/01/99	11/02/99	11/02/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Butylbenzylphthalate		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Carbazole		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Chrysene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Di-n-butylphthalate		27 J	170 U	170 U	170 U	170 U	170 U	170 U
Di-n-octylphthalate		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dibenzo(a,h)anthracene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dibenzofuran		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Diethylphthalate		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Dimethylphthalate		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluoranthene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Fluorene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobenzene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorobutadiene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachlorocyclopentadiene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Hexachloroethane		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Indeno(1,2,3-cd)pyrene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Isophorone		170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitroso-di-n-propylamine		170 U	170 U	170 U	170 U	170 U	170 U	170 U
N-Nitrosodiphenylamine		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Naphthalene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Nitrobenzene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pentachlorophenol		420 U	420 U	420 U	420 U	420 U	420 U	420 U
Phenanthrene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Phenol		170 U	170 U	170 U	170 U	170 U	170 U	170 U
Pyrene		170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Chloroethoxy)methane		170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Chloroethyl)ether		170 U	170 U	170 U	170 U	170 U	170 U	170 U
bis(2-Ethylhexyl)phthalate		170 U	130 J	100 J	84 J	100 J	95 J	140 J
Total Semivolatiles		27	130	100	84	100	95	140

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 10-2
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 680 Polychlorinated Biphenyl Data

Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
Sample Date	10/04/99	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Decachlorobiphenyl	50 U	50 UJ	50 U	50 U	50 U	50 UJ	50 UJ
Dichlorobiphenyl	10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 UJ
Heptachlorobiphenyl	16 J	30 UJ	21 J	30 U	30 U	30 UJ	30 UJ
Hexachlorobiphenyl	120 J	44 J	150	20 U	9.3 J	20 UJ	20 UJ
Monochlorobiphenyl	10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 UJ
Nonachlorobiphenyl	50 U	50 UJ	50 U	50 U	50 U	50 UJ	50 UJ
Octachlorobiphenyl	30 U	30 UJ	30 U	30 U	30 U	30 UJ	30 UJ
Pentachlorobiphenyl	110 J	30 J	130	20 U	9.5 J	20 UJ	20 UJ
Tetrachlorobiphenyl	46 J	20 UJ	19 J	20 U	20 U	20 UJ	20 UJ
Trichlorobiphenyl	10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 UJ
Total PCBs	292	74	320	ND	18.8	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, ER - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 10-2
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 680 Polychlorinated Biphenyl Data

Sample ID	WC BP COMP 1	WC BP COMP 2	WC BP-COMP 3	WC REF1 COMP 1	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2
Sample Date	10/04/99	11/01/99	11/01/99	10/04/99	11/01/99	11/02/99	11/02/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
Decachlorobiphenyl	50 U	100 U	100 U	50 U	50 U	50 U	50 U
Dichlorobiphenyl	10 U	20 U	20 U	10 U	10 U	10 U	10 U
Heptachlorobiphenyl	30 U	60 U	60 U	30 U	30 U	30 U	30 U
Hexachlorobiphenyl	20 U	40 U	40 U	20 U	20 U	20 U	20 U
Monochlorobiphenyl	10 U	20 U	20 U	10 U	10 U	10 U	10 U
Nonachlorobiphenyl	50 U	100 U	100 U	50 U	50 U	50 U	50 U
Octachlorobiphenyl	30 U	60 U	60 U	30 U	30 U	30 U	30 U
Pentachlorobiphenyl	20 U	40 U	40 U	20 U	20 U	20 U	20 U
Tetrachlorobiphenyl	20 U	40 U	40 U	20 U	20 U	20 U	20 U
Trichlorobiphenyl	10 U	20 U	20 U	10 U	10 U	10 U	10 U
Total PCBs	ND	ND	ND	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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Table 10-3
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8081A Pesticide Data

Compound	Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
	Sample Date	10/04/99	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
4,4'-DDD		13 U	13 U	13 U	13 U	5.3 U	13 U	13 U
4,4'-DDE		13 U	15	21	5.2 J	3.5 J	5.9 J	6.6 J
4,4'-DDT		13 U	13 U	13 U	13 U	5.3 U	13 U	13 U
Aldrin		6.8 U	6.8 U	6.8 U	6.8 U	2.7 U	6.8 U	6.8 U
Alpha Chlordane		6.8 U	6.8 U	6.8 U	6.8 U	2.7 U	6.8 U	6.8 U
Dieldrin		13 U	13 U	13 U	13 U	5.3 U	5.6 J	5.3 J
Endosulfan I		6.8 U	6.8 U	6.8 U	6.8 U	2.7 U	6.8 U	6.8 U
Endosulfan II		13 U	13 U	13 U	13 U	5.3 U	13 U	13 U
Endosulfan sulfate		13 U	13 U	13 U	13 U	5.3 U	13 U	13 U
Endrin		13 U	13 U	13 U	13 U	5.3 U	13 U	13 U
Endrin aldehyde		13 U	13 U	13 U	13 U	5.3 U	13 U	13 U
Endrin ketone		13 U	13 U	13 U	13 U	5.3 U	13 U	13 U
Gamma Chlordane		19 J	6.8 U	15	6.8 U	2.7 U	6.8 U	6.8 U
Heptachlor		1.5 J	6.8 U	6.8 U	6.8 U	2.7 U	6.8 U	6.8 U
Heptachlor epoxide		6.8 U	6.8 U	6.8 U	6.8 U	2.7 U	6.8 U	6.8 U
Methoxychlor		68 U	68 U	68 U	68 U	27 U	68 U	68 U
Toxaphene		680 U	680 U	680 U	680 U	270 U	680 U	680 U
alpha-BHC		6.8 U	6.8 U	6.8 U	6.8 U	2.7 U	6.8 U	6.8 U
beta-BHC		6.8 U	6.8 U	6.8 U	6.8 U	2.7 U	6.8 U	6.8 U
delta-BHC		6.8 U	6.8 U	6.8 U	6.8 U	2.7 U	6.8 U	6.8 U
gamma-BHC (Lindane)		6.8 U	6.8 U	6.8 U	6.8 U	2.7 U	6.8 U	6.8 U
Total Pesticides		20.5	15	36	5.2	3.5	11.5	11.9

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 10-3
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8081A Pesticide Data

Compound	Sample ID	WB BP FILLET 2	WC BP COMP 1	WC BP COMP 2	WC REF1 COMP 1	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2
	Sample Date	10/04/99	10/04/99	11/01/99	10/04/99	11/01/99	11/02/99	11/02/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
4,4'-DDD		4.0 U	13 U	4.0 U	2.6 U	2.6 U	2.6 U	2.6 U
4,4'-DDE		9.2 J	13 U	4.0 U	1.2 J	0.80 J	2.6 U	2.6 U
4,4'-DDT		4.0 U	13 U	4.0 U	2.6 U	2.6 U	2.6 U	2.6 U
Aldrin		2.0 U	6.8 U	2.0 U	1.4 U	1.4 U	1.4 U	1.4 U
Alpha Chlordane		2.0 U	6.8 U	2.0 U	1.4 U	1.4 U	1.4 U	1.4 U
Dieldrin		4.0 U	13 U	4.0 U	2.6 U	2.6 U	2.6 U	2.6 U
Endosulfan I		2.0 U	6.8 U	2.0 U	1.4 U	1.4 U	1.4 U	1.4 U
Endosulfan II		4.0 U	13 U	4.0 U	2.6 U	2.6 U	2.6 U	2.6 U
Endosulfan sulfate		4.0 U	13 U	4.0 U	2.6 U	2.6 U	2.6 U	2.6 U
Endrin		4.0 U	13 U	4.0 U	2.6 U	2.6 U	2.6 U	2.6 U
Endrin aldehyde		4.0 U	13 U	4.0 U	2.6 U	2.6 U	2.6 U	2.6 U
Endrin ketone		4.0 U	13 U	4.0 U	2.6 U	2.6 U	2.6 U	2.6 U
Gamma Chlordane		4.7 J	6.8 U	2.0 U	1.4 U	1.4 U	1.4 U	1.4 U
Heptachlor		2.0 U	6.8 U	2.0 U	1.3 J	1.1 J	1.8 J	1.4 U
Heptachlor epoxide		2.0 U	6.8 U	2.0 U	1.4 U	1.4 U	1.4 U	1.4 U
Methoxychlor		20 UJ	68 U	20 UJ	14 U	14 U	14 U	14 U
Toxaphene		110 U	680 U	110 U	72 U	72 U	72 U	72 U
alpha-BHC		2.0 U	6.8 U	2.0 U	1.4 U	1.4 U	1.4 U	1.4 U
beta-BHC		2.0 U	6.8 U	2.0 U	1.4 U	1.4 U	1.4 U	1.4 U
delta-BHC		2.0 U	6.8 U	2.0 U	1.4 U	1.4 U	1.4 U	1.4 U
gamma-BHC (Lindane)		2.0 U	6.8 U	2.0 U	1.4 U	1.4 U	1.4 U	1.4 U
Total Pesticides		13.9	ND	ND	2.5	1.9	1.8	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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O'BRIEN & GERE ENGINEERS, INC.

Table 10-4
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8151A Herbicide Data

Compound	Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
	Sample Date	10/04/99	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
2,4,5-T		10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 U
2,4,5-TP (Silvex)		10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 U
2,4-D		10 U	10 UJ	10 U	10 U	10 U	10 UJ	10 U
2,4-DB		10 UJ	10 UJ	10 U	10 U	10 U	10 UJ	10 U
Dalapon		2000 UJ	2000 UJ	2000 U	2000 U	2000 U	2000 UJ	2000 U
Dicamba		1.9 J	20 UJ	10 U	20 U	20 U	20 UJ	20 U
Dichloroprop		100 UJ	100 UJ	100 U	100 U	100 U	100 UJ	100 U
Dinoseb		100 UJ	100 UJ	100 U	100 U	100 U	100 UJ	100 U
MCPA		2000 U	2000 UJ	1800 J	2000 U	2000 U	2000 UJ	2000 U
MCPP		2000 U	2000 UJ	2000 U	2000 U	2000 U	2000 UJ	2000 U
Pentachlorophenol		10 U	20 UJ	10 U	10 U	10 U	20 UJ	10 U
Total Herbicides		1.9	ND	1800	ND	ND	ND	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 10-4
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8151A Herbicide Data

Sample ID	WB BP FILLET 1	WB BP FILLET 2	WC BP COMP 1	WC REF1 COMP 1	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2
Sample Date	10/04/99	10/04/99	10/04/99	10/04/99	11/01/99	11/02/99	11/02/99
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
2,4,5-T	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
2,4,5-TP (Silvex)	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
2,4-D	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
2,4-DB	10 U	10 U	10 UJ	10 U	10 U	10 U	10 U
Dalapon	2000 U	2000 U	2000 UJ	2000 U	2000 U	2000 U	2000 U
Dicamba	20 U	20 U	20 UJ	20 U	20 U	20 U	20 U
Dichloroprop	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U
Dinoseb	100 U	100 U	100 UJ	100 U	100 U	100 U	100 U
MCPA	2000 U	2000 U	2000 UJ	2000 U	2000 U	2000 U	2000 U
MCPP	2000 U	2000 U	2000 UJ	2000 U	2000 U	2000 U	2000 U
Pentachlorophenol	20 U	20 U	20 UJ	20 U	20 U	3.8 J	20 U
Total Herbicides	ND	ND	ND	ND	ND	3.8	ND

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 10-5
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 6010B/7471A/9010B Inorganic Data

	Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
	Sample Date	10/04/99	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
	Units	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg	mg/kg
Compound								
Aluminum		13 U	19 J	33 J	35 J	81 J	22 J	27 J
Antimony		0.18 U	0.18 U	0.2 U	0.2 U	0.18 U	0.18 U	0.17 U
Arsenic		4.5 UJ	10 UJ	4.5 UJ	5 UJ	5 UJ	1.8 UJ	5 UJ
Beryllium		0.91 U	0.91 U	1 U	1 U	0.91 U	0.91 U	0.83 U
Cadmium		0.45 U	0.45 U	0.5 U	0.5 U	0.45 U	0.45 U	0.42 U
Chromium		0.55	0.45 J	0.93	0.35 J	0.36 J	0.19 J	0.22 J
Copper		0.41 J	0.52 J	0.68 J	0.84 J	0.48 J	0.36 J	0.4 J
Cyanide, Total		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead		0.45 U	0.45 U	0.5 U	0.5 U	0.45 U	0.45 U	0.42 U
Mercury		0.016 UJ	0.057 J	0.064 J	0.097 J	0.14 J	0.1 J	0.1 J
Nickel		9.1 U	9.1 U	10 U	10 U	9.1 U	9.1 U	8.3 U
Selenium		0.63	0.45 U	0.6	0.5 U	0.53	0.75	0.86
Silver		0.091 U	0.1 U	0.091 U	0.1 U	0.091 U	0.091 U	0.1 U
Zinc		15 J	17 J	19 J	15 J	13 J	9.2 J	8.5 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 10-5
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 6010B/7471A/9010B Inorganic Data

Compound	Sample ID	WC BP COMP 1	WC BP COMP 2	WC BP-COMP 3	WC REF1 COMP 1	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2
	Sample Date	10/04/99	11/01/99	11/01/99	10/04/99	11/01/99	11/02/99	11/02/99
	Units	mg/kg	mg/kg	mg/kg dw	mg/kg	mg/kg	mg/kg	mg/kg
Aluminum		5.8 UJ	5.8 UJ	8.6 U	5.0 UJ	9.4 U	5.7 UJ	4.9 U
Antimony		0.18 U	0.18 U	0.17 U	0.17 U	0.18 U	0.20 U	0.18 U
Arsenic		0.45 J	1.8 UJ	1.7 UJ	2.0 UJ	1.0 UJ	2.0 UJ	0.91 UJ
Beryllium		0.91 U	0.91 U	0.83 U	0.83 U	0.91 U	1.0 U	0.91 U
Cadmium		0.45 U	0.45 U	0.42 U	0.42 U	0.45 U	0.50 U	0.45 U
Chromium		0.45 U	0.22 J	0.42 U	0.42 U	0.21 J	0.50 U	0.45 U
Copper		0.25 J	0.57 J	1.7 U	0.32 J	0.23 J	2.0 U	0.21 J
Cyanide, Total		10 U	10 U	10 U	10 U	10 U	10 U	10 U
Lead		0.45 U	0.45 U	0.42 U	0.42 U	0.45 U	0.50 U	0.45 U
Mercury		0.02 UJ	0.10 UJ	0.027 J	0.037 J	0.052 J	0.052 J	0.041 J
Nickel		9.1 U	9.1 U	8.3 U	8.3 U	9.1 U	10 U	9.1 U
Selenium		0.45 U	0.45 U	0.42 U	0.42 U	0.45 U	0.73	0.45 U
Silver		0.091 U	0.091 U	0.083 U	0.083 U	0.091 U	0.10 U	0.091 U
Zinc		7.9 J	7.1 J	9.2 J	7.1 J	7.0 J	6.4 J	5.4 J

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

O'BRIEN & GERE ENGINEERS, INC.

Table 10-6
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8290 PCDD/PCDF Data

Compound	Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
	Sample Date	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
	Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
1,2,3,4,6,7,8,9-OCDD		0.0086 M	0.0161 M	0.0145 M	0.0123	0.0105	0.0106	0.0055
1,2,3,4,6,7,8,9-OCDF		0.0017 M	0.0021 M	0.0025 M	0.001 U	0.0007 U	0.0008 U	0.0018 U
1,2,3,4,6,7,8-HpCDD		0.0014 M	0.002 M	0.0018 M	0.0008 U	0.0005 U	0.0007 U	0.0014 U
1,2,3,4,6,7,8-HpCDF		0.0001 U	0.0002 U	0.0003 U	0.0005 U	0.0003 U	0.0004 U	0.0007 U
1,2,3,4,7,8,9-HpCDF		0.0002 U	0.0003 U	0.0005 U	0.0008 U	0.0005 U	0.0006 U	0.0012 U
1,2,3,4,7,8-HxCDD		0.0002 U	0.0003 U	0.0004 U	0.0006 U	0.0003 U	0.0004 U	0.001 U
1,2,3,4,7,8-HxCDF		0.00048	0.0002 U	0.0003 U	0.00084	0.0002 U	0.0011	0.0011
1,2,3,6,7,8-HxCDD		0.00054	0.00038 M	0.0003 U	0.0005 U	0.0003 U	0.0003 U	0.0008 U
1,2,3,6,7,8-HxCDF		0.00023	0.0002 U	0.0002 U	0.0003 U	0.0002 U	0.0002 U	0.0006 U
1,2,3,7,8,9-HxCDD		0.0001 U	0.0003 U	0.0004 U	0.0007 U	0.0003 U	0.0004 U	0.0011 U
1,2,3,7,8,9-HxCDF		0.0001 U	0.0002 U	0.0003 U	0.0005 U	0.0003 U	0.0003 U	0.0008 U
1,2,3,7,8-PeCDD		0.00076 M	0.00063 M	0.00081	0.0006 U	0.0004 U	0.0005 U	0.0011 U
1,2,3,7,8-PeCDF		0.00008 U	0.0001 U	0.0011	0.0004 U	0.0002 U	0.0003 U	0.0006 U
2,3,4,6,7,8-HxCDF		0.00038	0.0002 U	0.0003 U	0.0004 U	0.0002 U	0.0003 U	0.0007 U
2,3,4,7,8-PeCDF		0.00071	0.00062 M	0.00097	0.0004 U	0.0002 U	0.0003 U	0.0006 U
2,3,7,8-TCDD		0.0009	0.00075	0.0011 M	0.0004 U	0.0003 U	0.0003 U	0.0008 U
2,3,7,8-TCDF		0.0114	0.0083	0.0081	0.0003 U	0.0002 U	0.0016 J	0.0006 U
1998 Total TEQ w/ EMPC as ND		0.00294793	0.002113305	0.002776225	0.00077673	0.00046505	0.00079906	0.00137105

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 10-6
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8290 PCDD/PCDF Data

Sample ID	WC BP COMP 1	WC BP COMP 2	WC BP COMP 3	WC REF1 COMP 1	WC REF1 COMP 2	WC REF2 COMP 1	WC REF2 COMP 2
Sample Date	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00	01/25/00
Units	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg	ug/kg
Compound							
1,2,3,4,6,7,8,9-OCDD	0.099 M	0.0046 M	0.0014 M	0.0184 M	0.0098 M	0.0008 U	0.0027 M
1,2,3,4,6,7,8,9-OCDF	0.0212 M	0.0006 U	0.0004 U	0.0038 M	0.0016 M	0.0006 U	0.0006 U
1,2,3,4,6,7,8-HpCDD	0.0134	0.0005 U	0.0003 U	0.0023 M	0.0012 M	0.0005 U	0.0005 U
1,2,3,4,6,7,8-HpCDF	0.0025	0.0002 U	0.0002 U	0.0002 U	0.0004 U	0.0003 U	0.0002 U
1,2,3,4,7,8,9-HpCDF	0.0004 U	0.0004 U	0.0003 U	0.0003 U	0.0006 U	0.0004 U	0.0003 U
1,2,3,4,7,8-HxCDD	0.0003 U	0.0003 U	0.0002 U	0.0003 U	0.0005 U	0.0003 U	0.0002 U
1,2,3,4,7,8-HxCDF	0.0002 U	0.0002 U	0.0001 U	0.0002 U	0.0003 U	0.0002 U	0.0001 U
1,2,3,6,7,8-HxCDD	0.0003 U	0.0003 U	0.0002 U	0.0002 U	0.0004 U	0.0003 U	0.0002 U
1,2,3,6,7,8-HxCDF	0.0002 U	0.0002 U	0.0001 U	0.0001 U	0.0003 U	0.0002 U	0.0001 U
1,2,3,7,8,9-HxCDD	0.0003 U	0.0003 U	0.0002 U	0.0003 U	0.0005 U	0.0003 U	0.0002 U
1,2,3,7,8,9-HxCDF	0.0002 U	0.0002 U	0.0002 U	0.0002 U	0.0004 U	0.0002 U	0.0002 U
1,2,3,7,8-PeCDD	0.0003 U	0.0003 U	0.0002 U	0.0002 U	0.0004 U	0.0003 U	0.0002 U
1,2,3,7,8-PeCDF	0.0002 U	0.0002 U	0.0001 U	0.0002 M	0.0013	0.0002 U	0.0002 U
2,3,4,6,7,8-HxCDF	0.0002 U	0.0002 U	0.0001 U	0.0002 U	0.0003 U	0.0002 U	0.0002 U
2,3,4,7,8-PeCDF	0.0002 U	0.0002 U	0.0001 U	0.0001 U	0.0003 U	0.0002 U	0.0002 U
2,3,7,8-TCDD	0.0231	0.0002 U	0.0002 U	0.0002 U	0.0004 U	0.0002 U	0.0002 U
2,3,7,8-TCDF	0.0011	0.0016	0.0012	0.0001 U	0.0003 U	0.0002 U	0.0002 U
1998 Total TEQ w/ EMPC as ND	0.02362395	0.00051373	0.00037507	0.00028342	0.00062849	0.00036404	0.000298635

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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O'BRIEN & GERE ENGINEERS, INC.

Table 10-6
Solutia
Sauget Area 1
Biota - Fish Fillets
Method 8290 PCDD/PCDF Data

	Sample ID	WC REF2 COMP 2FD
	Sample Date	01/25/00
	Units	ug/kg
Compound		
1,2,3,4,6,7,8,9-OCDD		0.0005 U
1,2,3,4,6,7,8,9-OCDF		0.0004 U
1,2,3,4,6,7,8-HpCDD		0.0003 U
1,2,3,4,6,7,8-HpCDF		0.0002 U
1,2,3,4,7,8,9-HpCDF		0.0003 U
1,2,3,4,7,8-HxCDD		0.0002 U
1,2,3,4,7,8-HxCDF		0.0001 U
1,2,3,6,7,8-HxCDD		0.0002 U
1,2,3,6,7,8-HxCDF		0.0001 U
1,2,3,7,8,9-HxCDD		0.0002 U
1,2,3,7,8,9-HxCDF		0.0002 U
1,2,3,7,8-PeCDD		0.0001 U
1,2,3,7,8-PeCDF		0.0001 U
2,3,4,6,7,8-HxCDF		0.0001 U
2,3,4,7,8-PeCDF		0.0001 U
2,3,7,8-TCDD		0.0001 U
2,3,7,8-TCDF		0.00039
1998 Total TEQ w/ EMPC as ND		0.000194025

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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Table 10-7
Solutia
Sauget Area 1
Biota - Fish Fillets
Method EX41 Lipids Data

	Sample ID	LMB BP COMP 1	LMB BP COMP 2	LMB BP COMP 3	LMB REF 1 COMP 1	LMB REF 1 COMP 2	LMB REF 2 COMP 1	LMB REF 2 COMP 2
	Sample Date	10/04/99	11/03/99	11/02/99	11/01/99	11/01/99	10/08/99	11/02/99
	Units	%	%	%	%	%	%	%
Compound								
% Lipids		1.8	1.5	1.5	0.87	0.66	2.4	0.83

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate.

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Table 10-7
Solutia
Sauget Area 1
Biota - Fish Fillets
Method EX41 Lipids Data

	Sample ID	WB BP FILLET 1	WB BP FILLET 2	WC BP COMP 1	WC BP COMP 2	WC BP-COMP 3	WC REF1 COMP 1	WC REF1 COMP 2
	Sample Date	10/04/99	10/04/99	10/04/99	11/01/99	11/01/99	10/04/99	11/01/99
	Units	%	%	%	%	%	%	%
Compound								
% Lipids		0.20	1.5	0.15	0.18	0.16	0.56	0.25

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

O'BRIEN & GERE ENGINEERS, INC.

Table 10-7
Solutia
Sauget Area 1
Biota - Fish Fillets
Method EX41 Lipids Data

	Sample ID	WC REF2 COMP 1	WC REF2 COMP 2
	Sample Date	11/02/99	11/02/99
	Units	%	%
Compound			
% Lipids		0.59	0.48

NOTES: U - not detected, J - estimated value, N - tentatively identified, R - rejected, M - EMPC, D - result from diluted analysis, EB - equipment blank, FD - field duplicate

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