LEGEND

- Interstate 10
- Original (1966) Perimeter of the Impoundments
- USEPA's Preliminary Site Perimeter

NOTES:

1. Aerial Imagery: Copyright 2010 i-cubed.
2. Hog Island location source: Google Earth, 2011.

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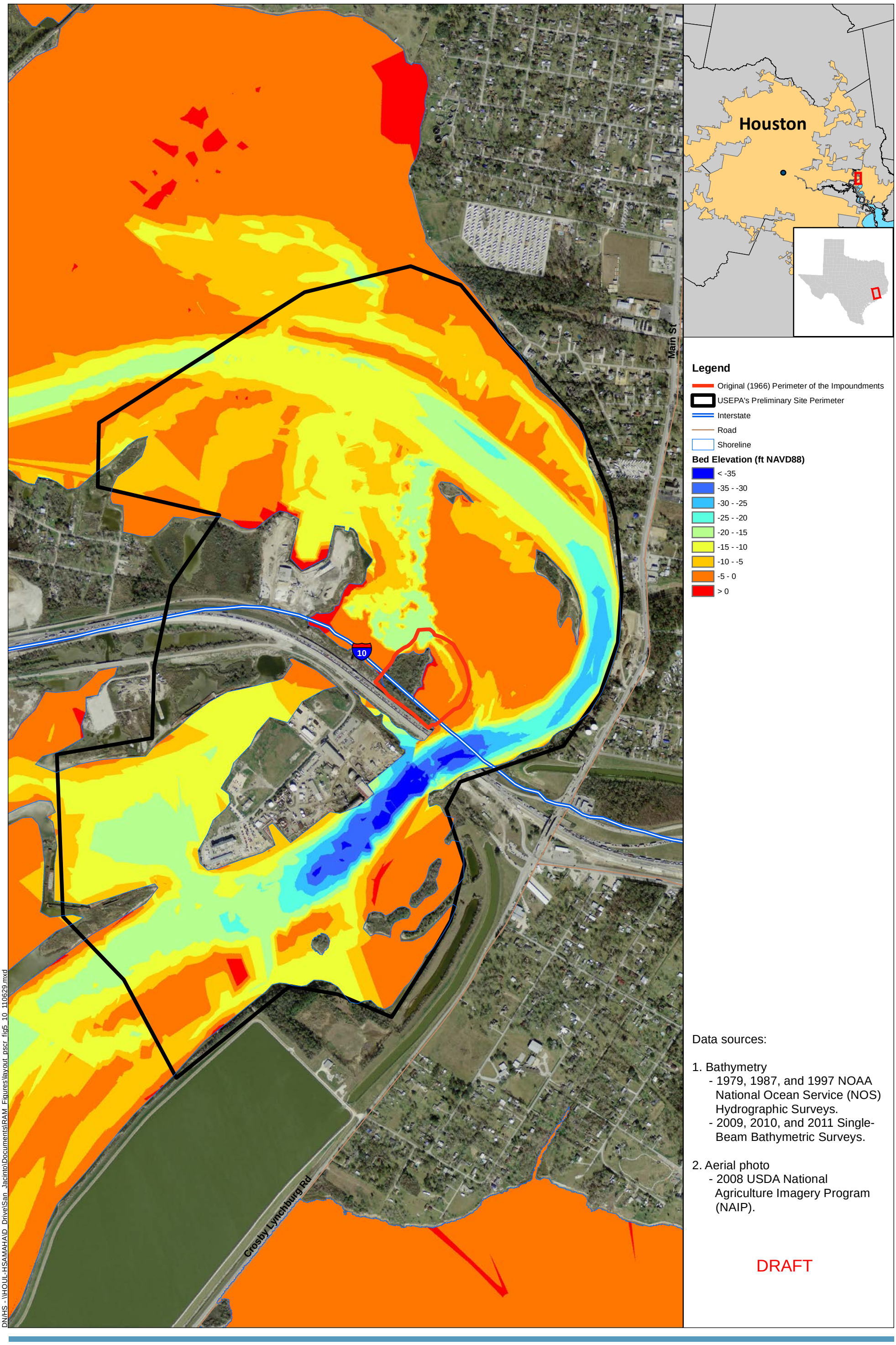
ANCHOR QEA

integral consulting inc.

0 1,500 3,000 Feet

9644032

Figure 2-1
Site Features
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC



ANCHOR QEA integral consulting inc.

0 1,000 2,000 Feet

Figure 2-2
Spatial Distribution of Bed Elevation (Bathymetry) in the Study Area
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

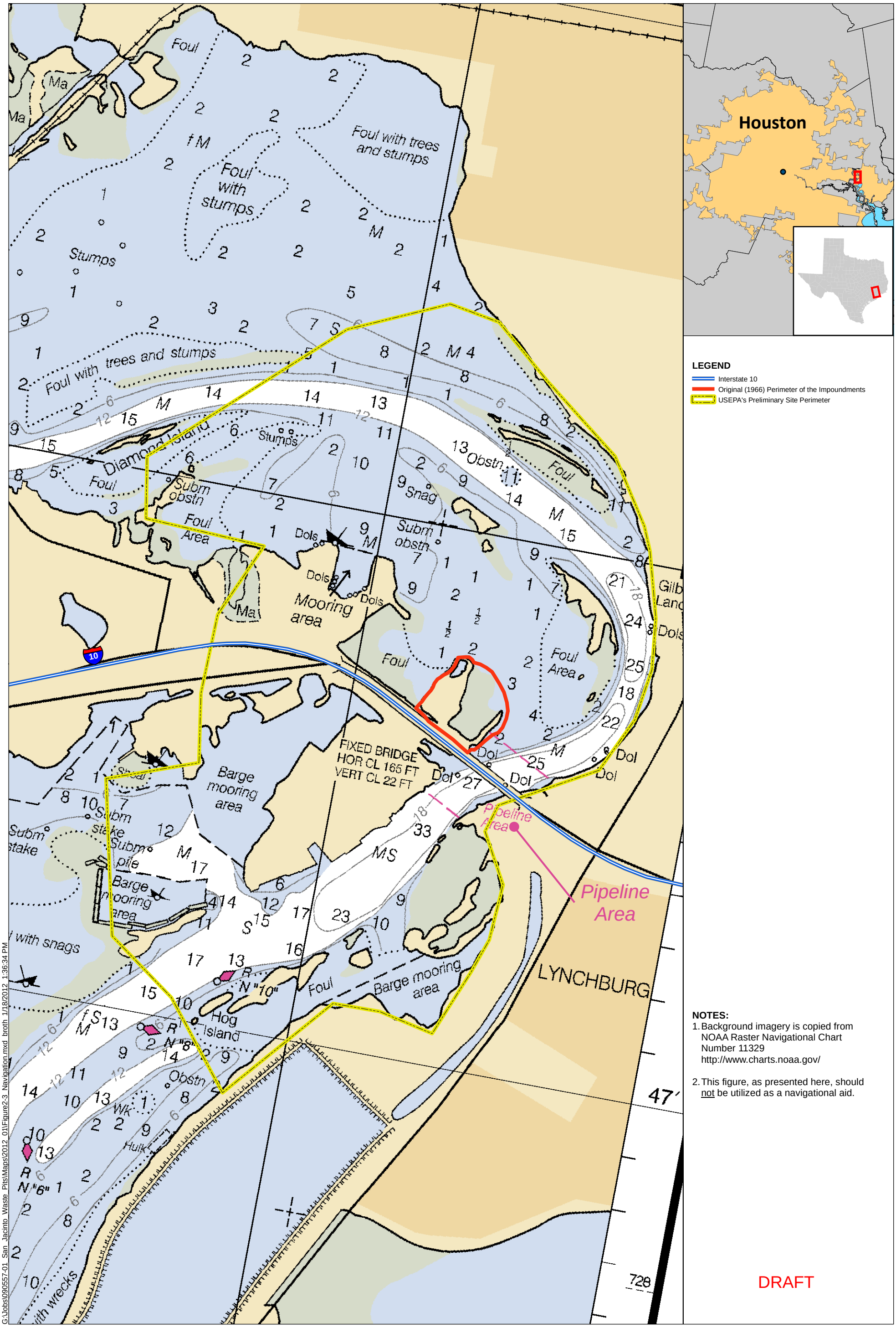


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Figure 2-3
Navigation in the Vicinity of the Site
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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integral consulting inc

0 1,000
Feet

USEPA's Preliminary Site Perimeter

Topography

Elevation (FT NAVD88)

High : 70

Low : 0

FEATURE SOURCES:
Topography: LiDAR (2008)

Figure 2-4
Site Topography
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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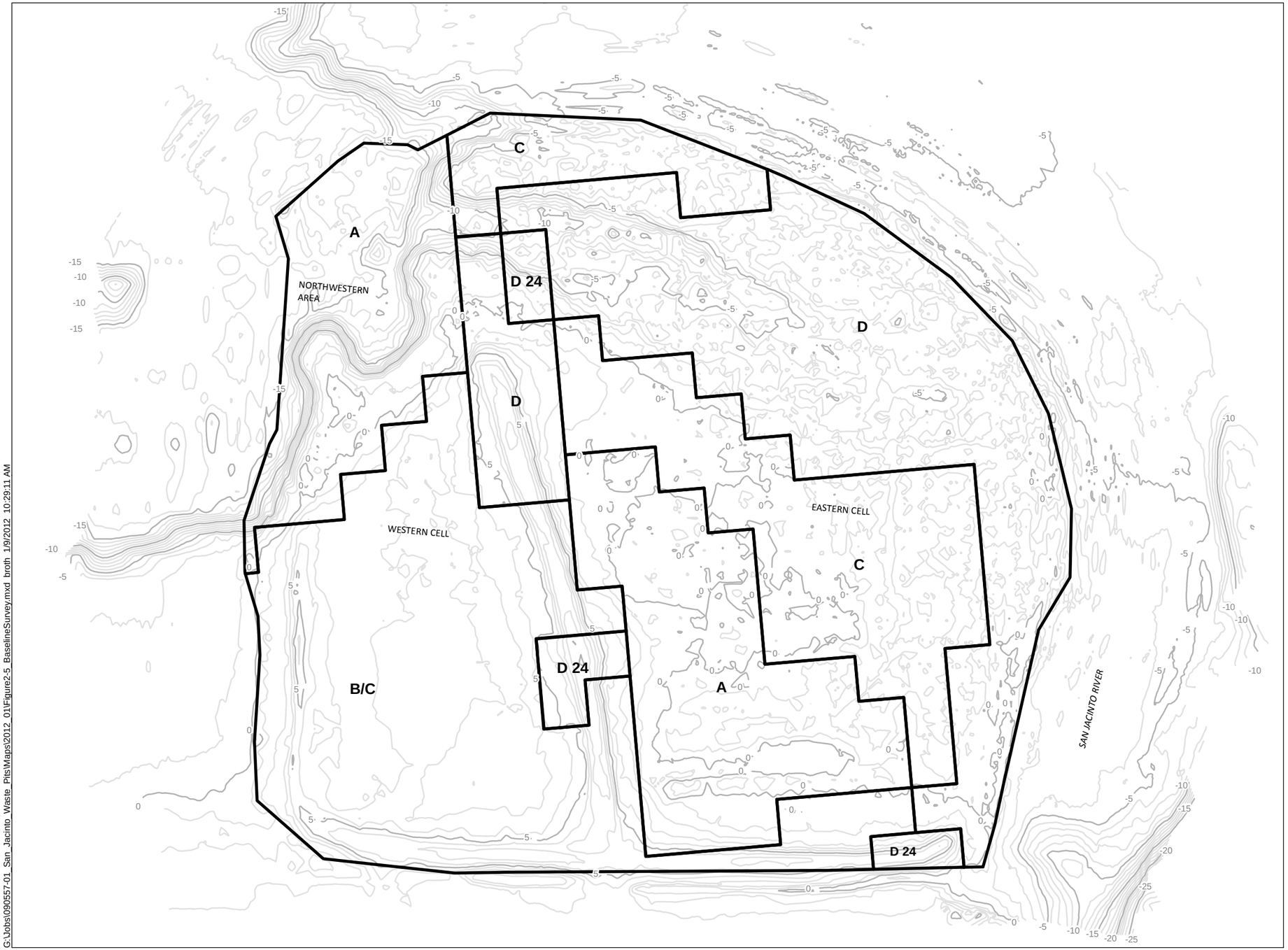

LEGEND

Post-Construction Contour, September 2011

5 ft

1 ft

NOTES:

1. Survey performed by: Hydrographic Consultants, Ltd.
2. Survey Dates: August 19, 2011 to September 2, 2011.
3. Horizontal Datum: State Plane, Texas South Central, 4204 NAD83 (ft).
4. Vertical Datum: NAVD88 (ft).

Feet

0 100 200

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Figure 2-5
TCRA Baseline Post-Construction Survey
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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USEPA's Preliminary Site Perimeter
Tax Parcel Boundary

0 0.5
Scale in Miles

FEATURE SOURCES:
Zoning: Houston-Galveston Area Council
Parcel Boundaries: Harris County Appraisal District

Figure 2-6
Land Use in the Vicinity of the Site
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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Photo 1 – Concrete Dock and Boat Slip North of I-10

Photo 2 – Shipyard South of I-10

Figure 2-7
Examples of Existing Structures
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

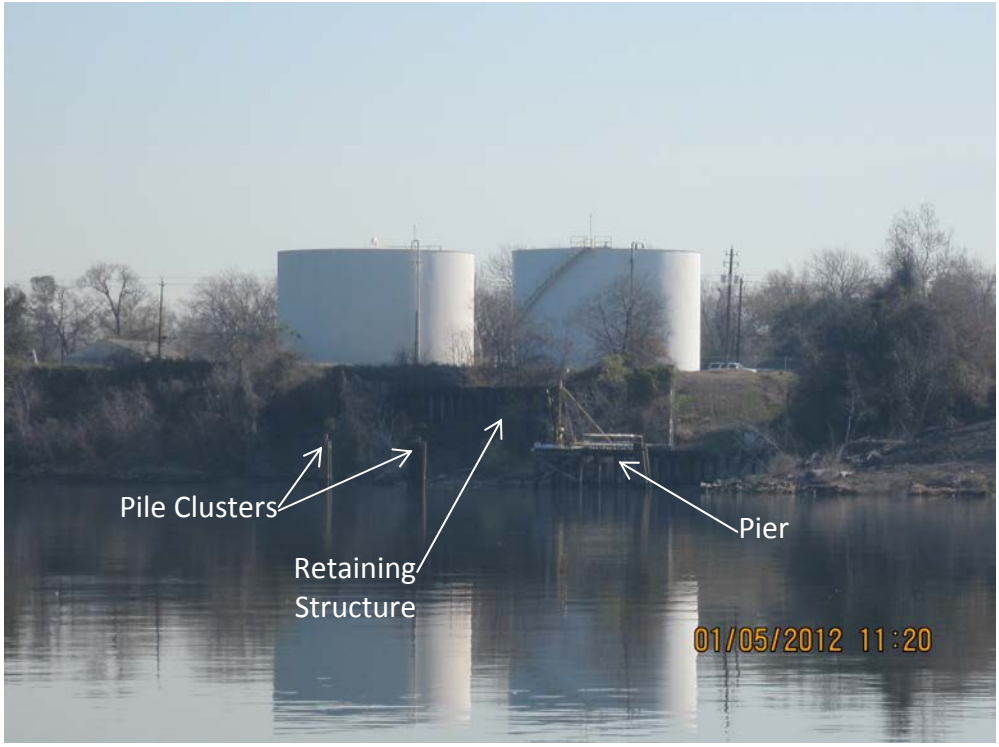


Photo 1 – Shoreline structures near tanks north of I-10

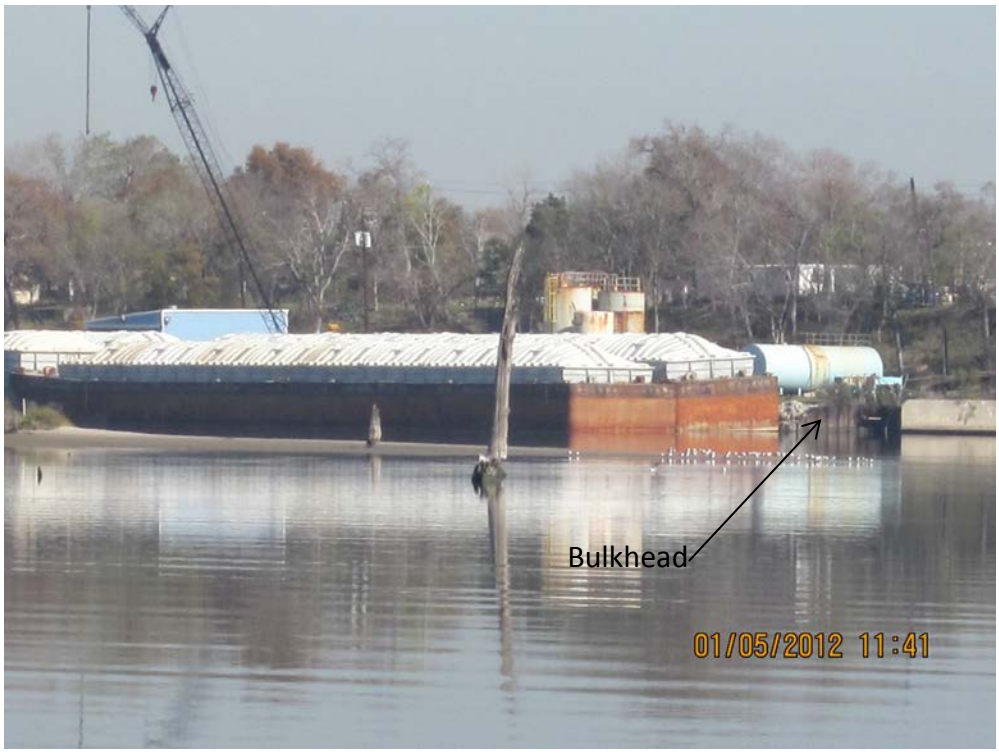
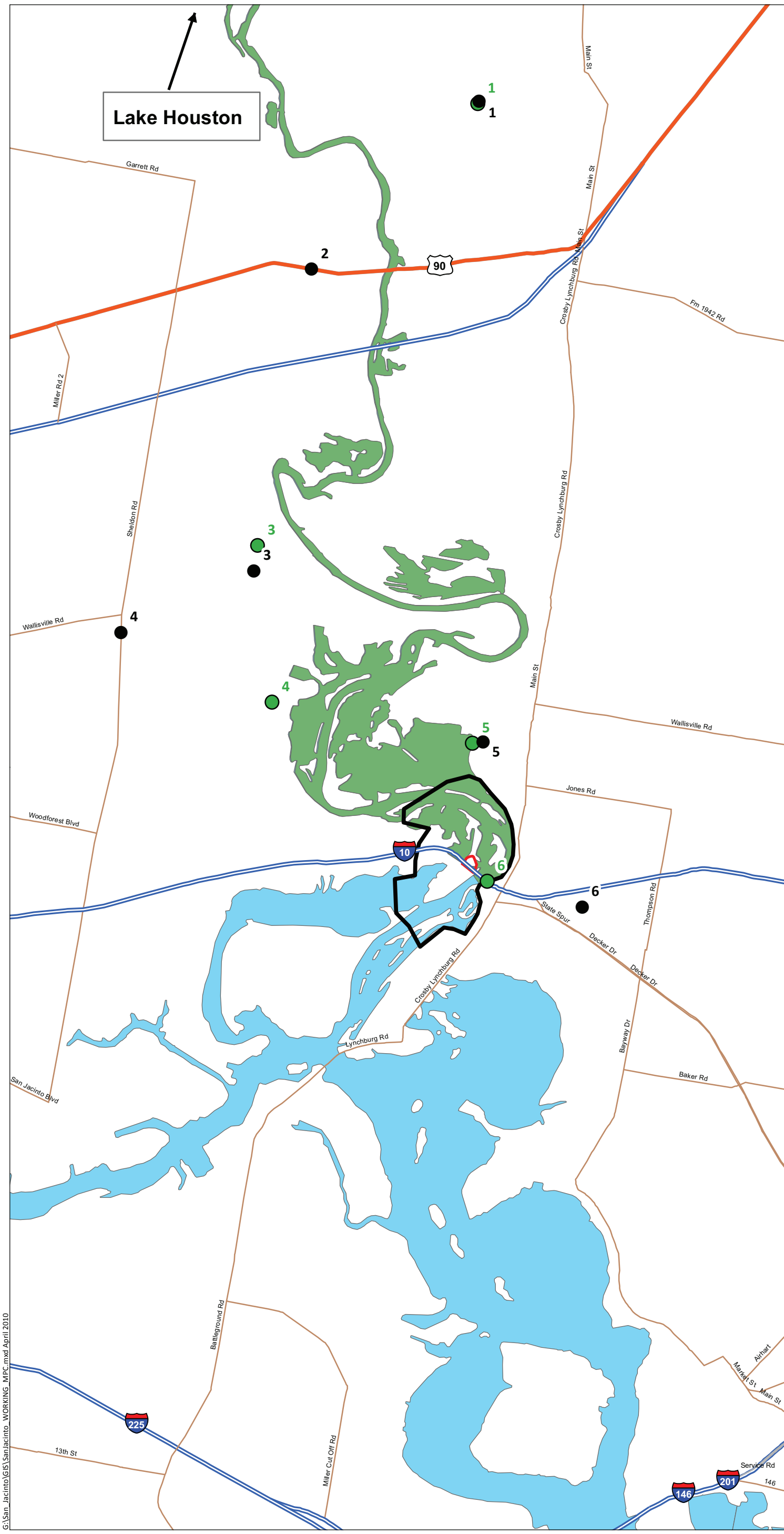


Photo 2 –Bulkhead at recycling company north of I-10

Figure 2-8
Examples of Shoreline Structures
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC



NOTES:
Approximate San Jacinto River segments shown, as defined in "Draft Texas 303(d)" published February 5, 2010.

Numbers shown correspond to Table 2-1 in text.

Legend

- Original (1966) Impoundments Perimeter
- USEPA's Preliminary Site Perimeter
- SJR Segment 1001
- Other River Segments
- Permitted Facility
- Sludge or Effluent Sampling Location

DRAFT

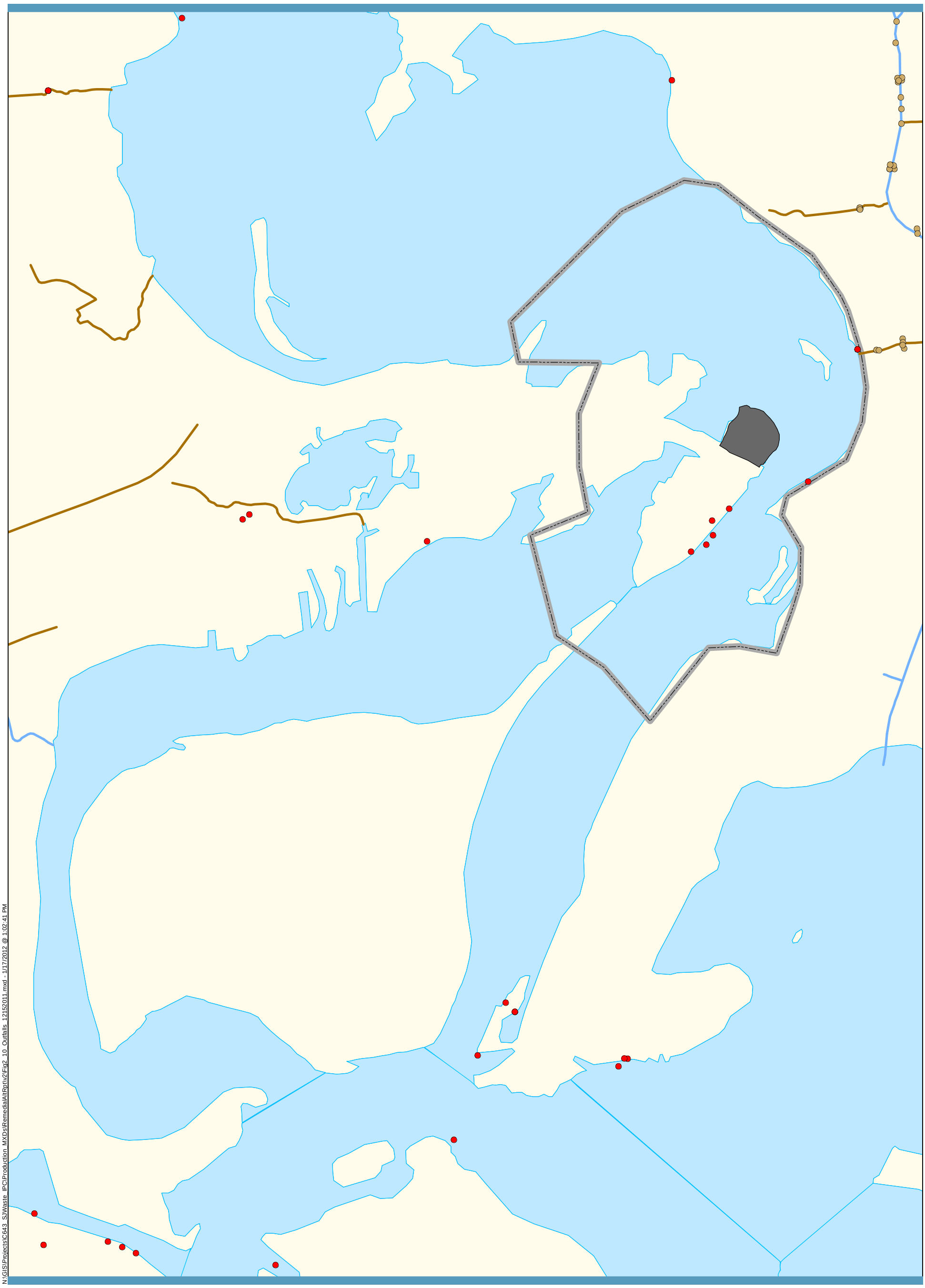
G:\San_Jacinto\GIS\Sanjacinto_WORKING_MPC.mxd April 2010

ANCHOR QEA

integral consulting inc

Miles 0 0.5 1

Figure 2-9
Permitted Dischargers and TMDL Sampling Locations
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC



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ANCHOR QEA

integral consulting inc.

0 2,000
Feet

Outfalls
- Permitted Wastewater Outfalls
- Stormwater Outfalls (HCFCD 2011)

Stormwater Drainage Ditches (HCFCD 2011)
- Man-Made
- Natural

Area Within the Original (1966) Perimeter of the North Impoundments

USEPA's Preliminary Site Perimeter

Figure 2-10
Locations of Known Stormwater and Permitted Outfalls in the Vicinity of the Site
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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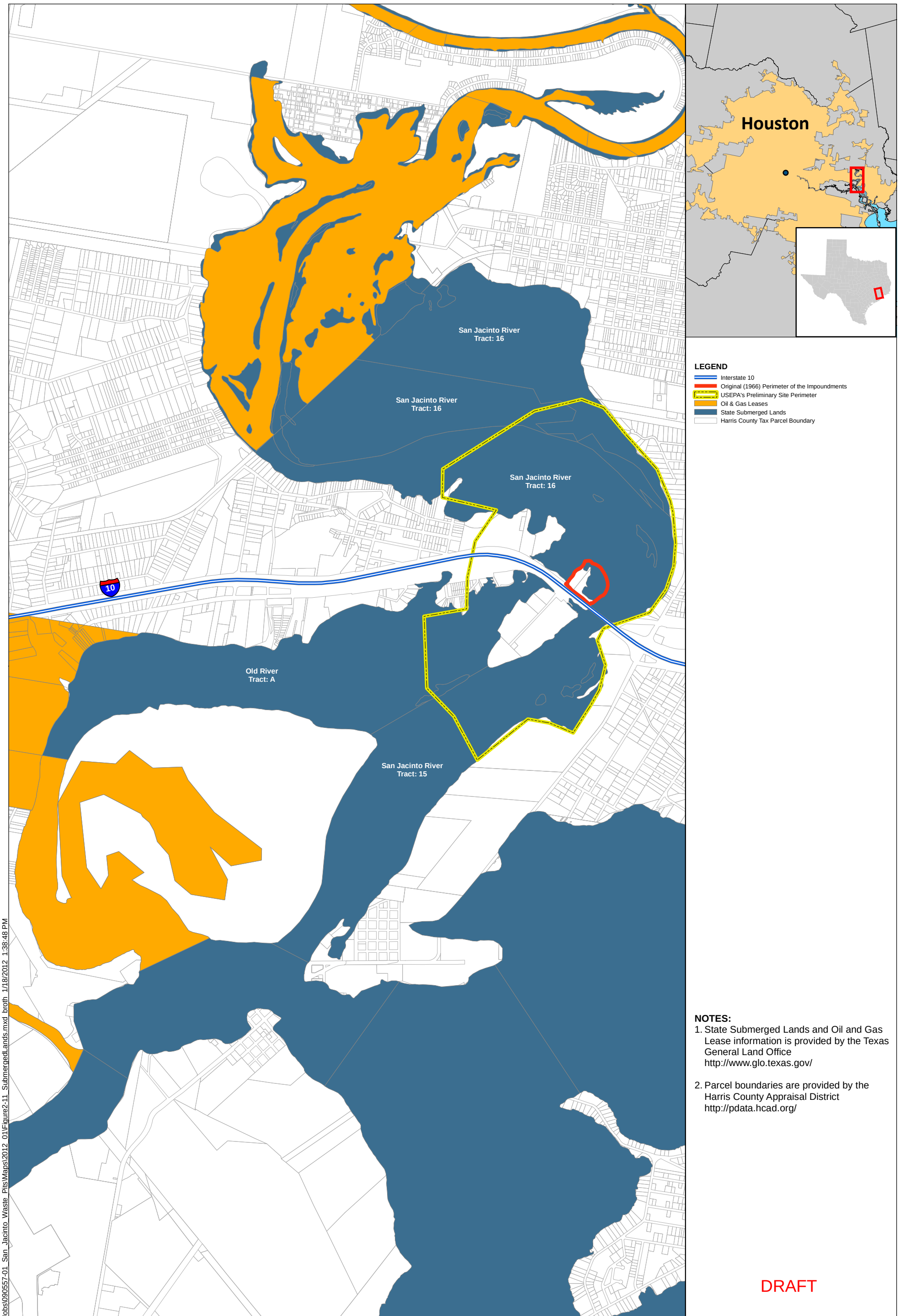

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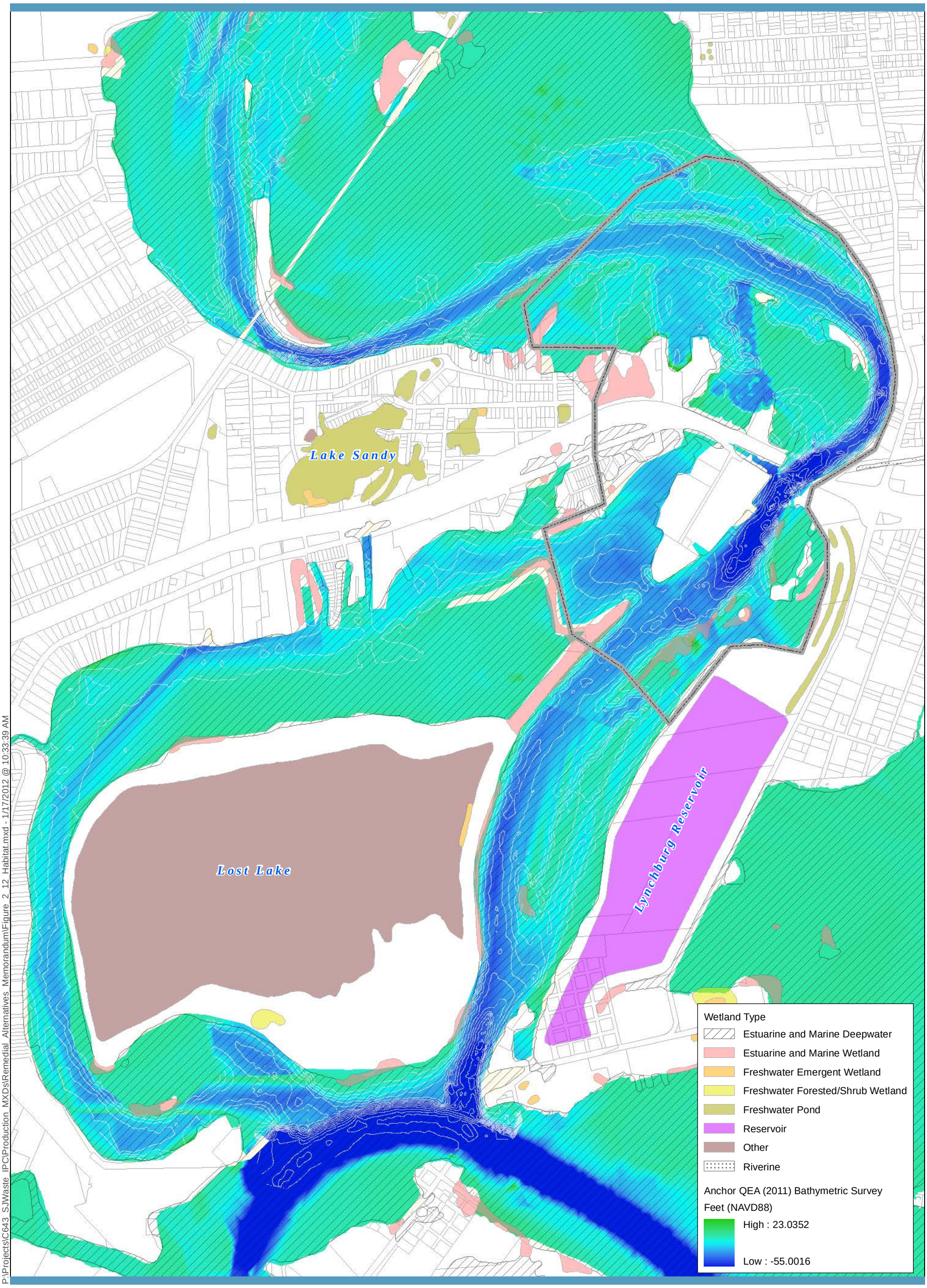
ANCHOR QEA

integral consulting inc.

0 1,500 3,000 Feet

Figure 2-11
State of Texas Submerged Lands
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC



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ANCHOR QEA integral consulting inc

USEPA's Preliminary Site Perimeter
1-Meter 1995 Bathymetric Contour
Parcel Boundary

0 0.5
Miles

FEATURE SOURCES:
Bathymetry and Contours: Anchor QEA 2011
Wetlands: Modified from U.S. Fish and Wildlife Service.
Parcel Boundaries: Harris County Appraisal District.

Figure 2-12
Habitats in the Vicinity of the Site
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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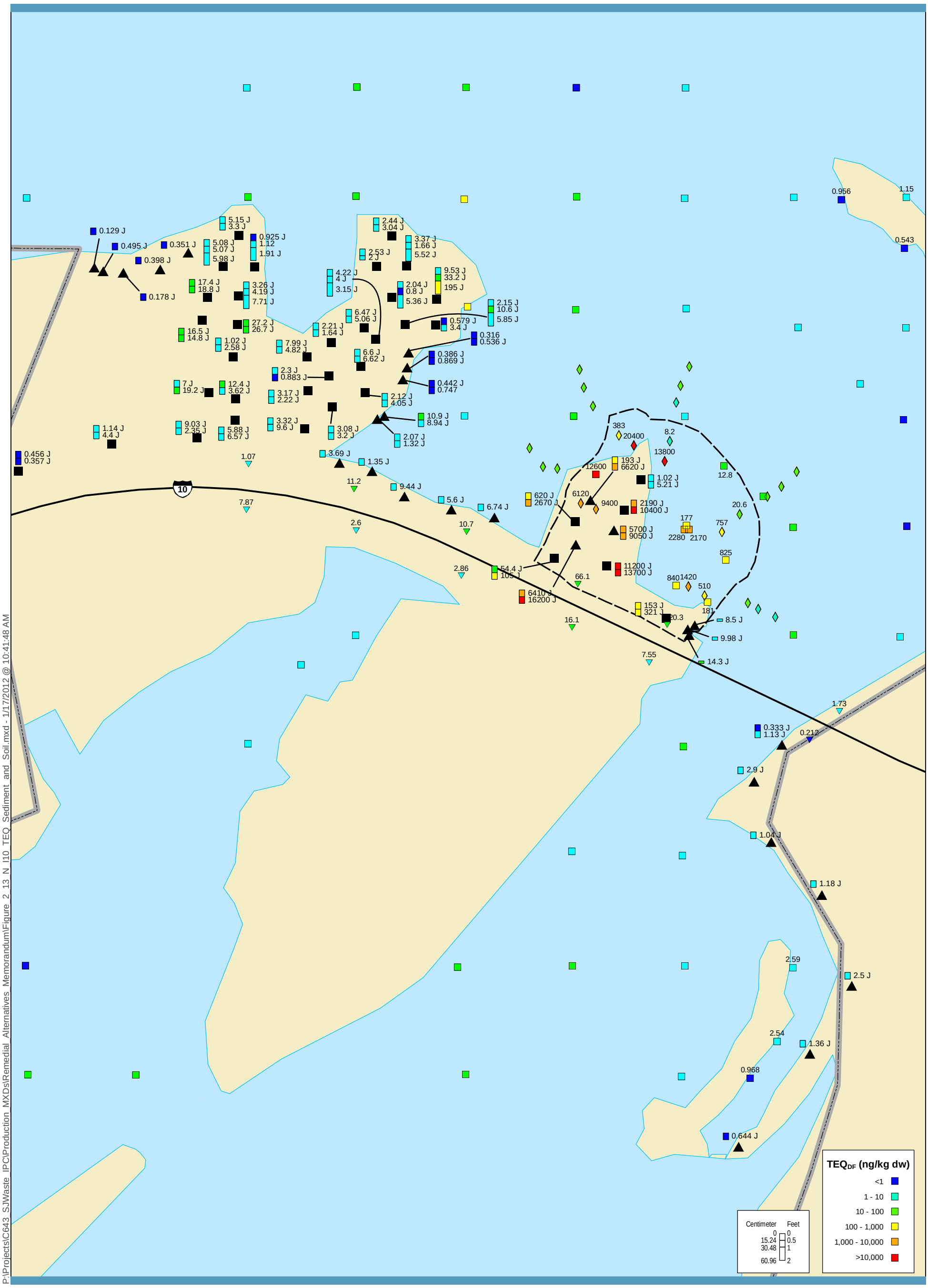

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integral consulting inc

0 400

Scale in Feet

USEPA's Preliminary Site Perimeter

Original (1966) Perimeter of the Northern Impoundments

Core Location (Sediment)

Core Location (Soil)

RI Sediment Station

TCRA Sediment Station

TCRA Soil Station

Notes:

TEQ_{DF} = toxicity equivalent for dioxins and furans using mammalian TEFs from van den Berg, et al. (2006) (non detect =1/2 detection limit).

J=Estimated. One or more congeners used to calculate the TEQ_{DF} was not detected.

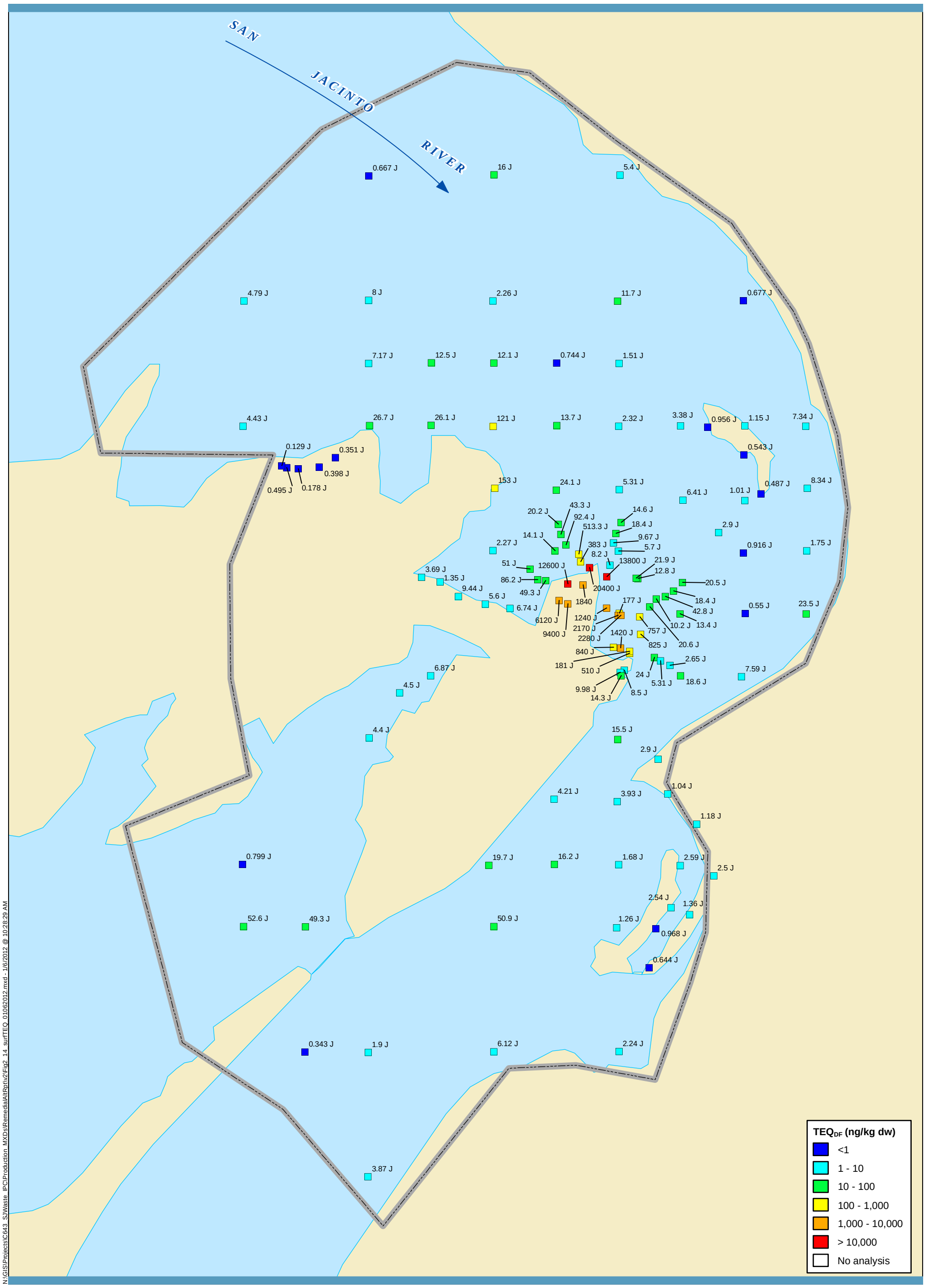
Figure 2-13

TEQ_{DF} Concentrations (ng/kg dw) in Intertidal Sediment and Soil Samples

Draft Remedial Alternatives Memorandum

SJRWP Superfund/MIMC and IPC

DRAFT



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ANCHOR QEA integral consulting inc

USEPA's Preliminary Site Perimeter

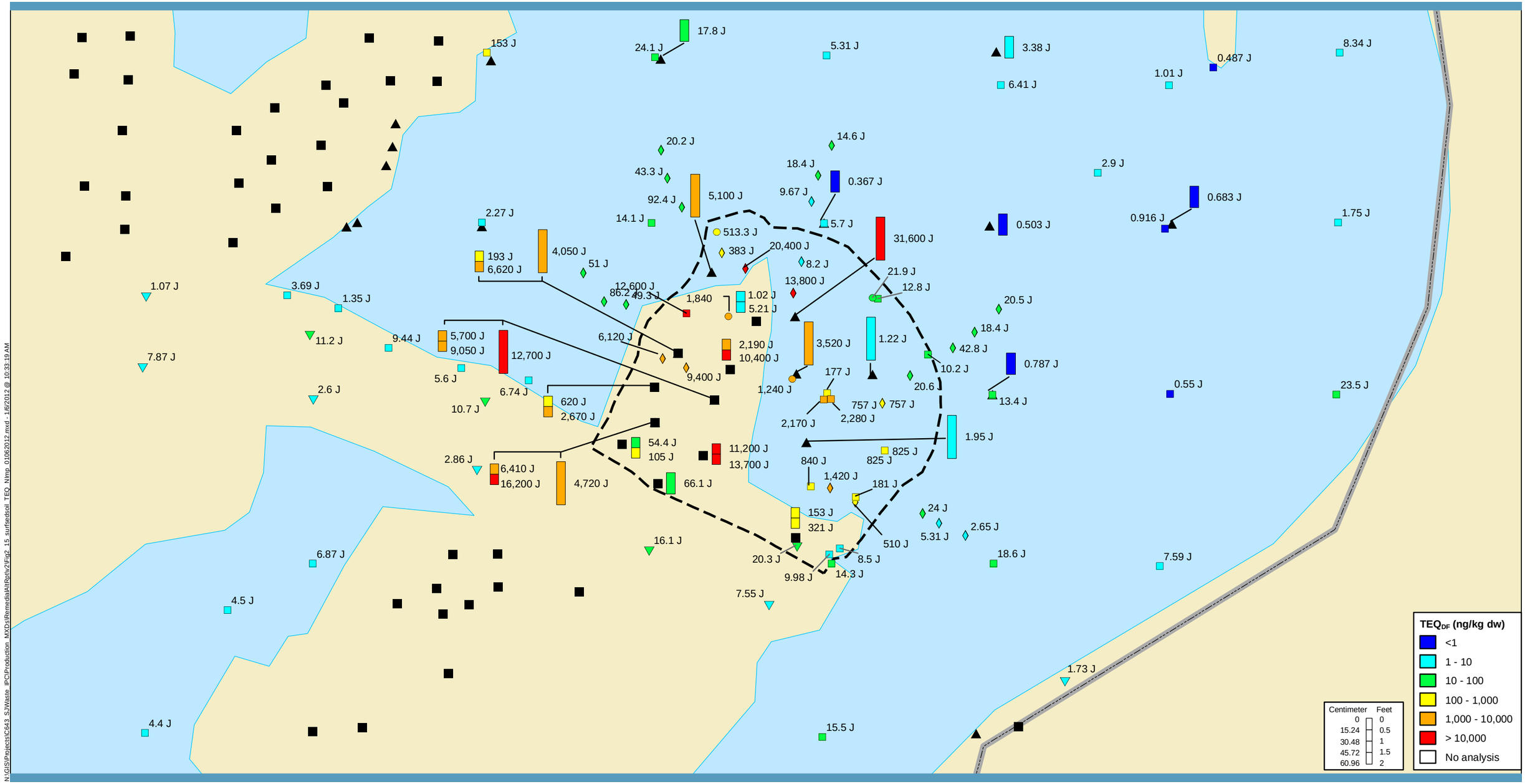
0 1,000
Feet

Notes:
TEQ_{DF} = toxicity equivalent for dioxins and furans
using mammalian TEFs from van den Berg, et al. (2006) (non detect = 1/2 detection limit).

J = Estimated. One or more congeners used to calculate the TEQ_{DF} was not detected.

Figure 2-14
TEQ_{DF} Concentrations (ng/kg dw)
in Surface Sediment
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

DRAFT



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USEPA's Preliminary Site Perimeter
Original (1966) Perimeter of the North Impoundments
Core Location (Sediment)
Core Location (Soil)
RI Sediment Station
TCRA Sediment Station
TCRA Soil Station

0 500
Feet

Notes:
TEQ_{DF} = toxicity equivalent for dioxins and furans
using mammalian TEFs from van den Berg, et al. (2006) (non detect = 1/2 detection limit).

J = Estimated. One or more congeners used to calculate the TEQ_{DF} was not detected.

Figure 2-15
TEQ_{DF} Concentrations (ng/kg dw) in Surface Sediment and Soils
Within and In the Vicinity of the Northern Impoundments
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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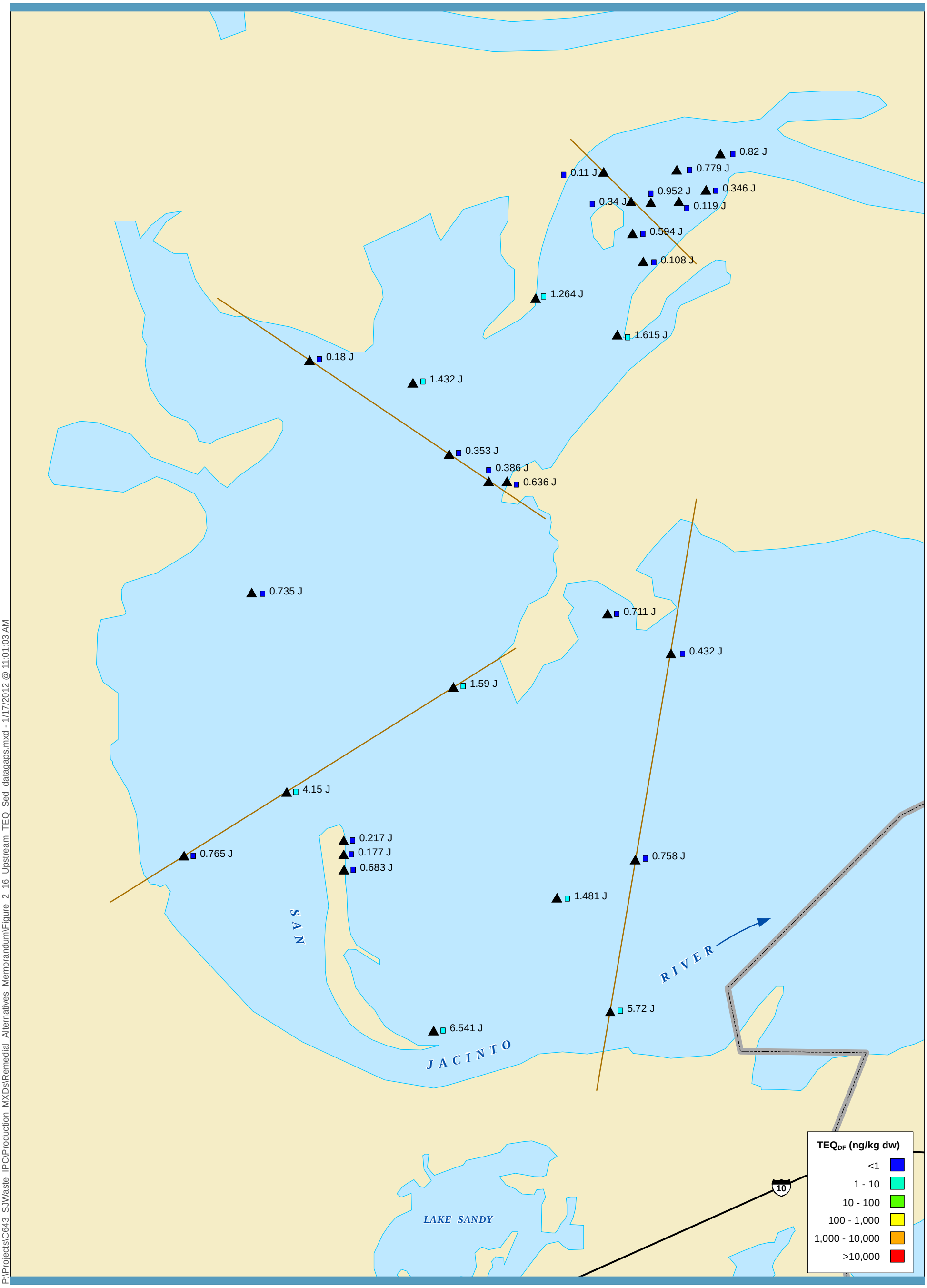

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USEPA's Preliminary Site Perimeter
Sampling Transect
Core Location (Sediment)

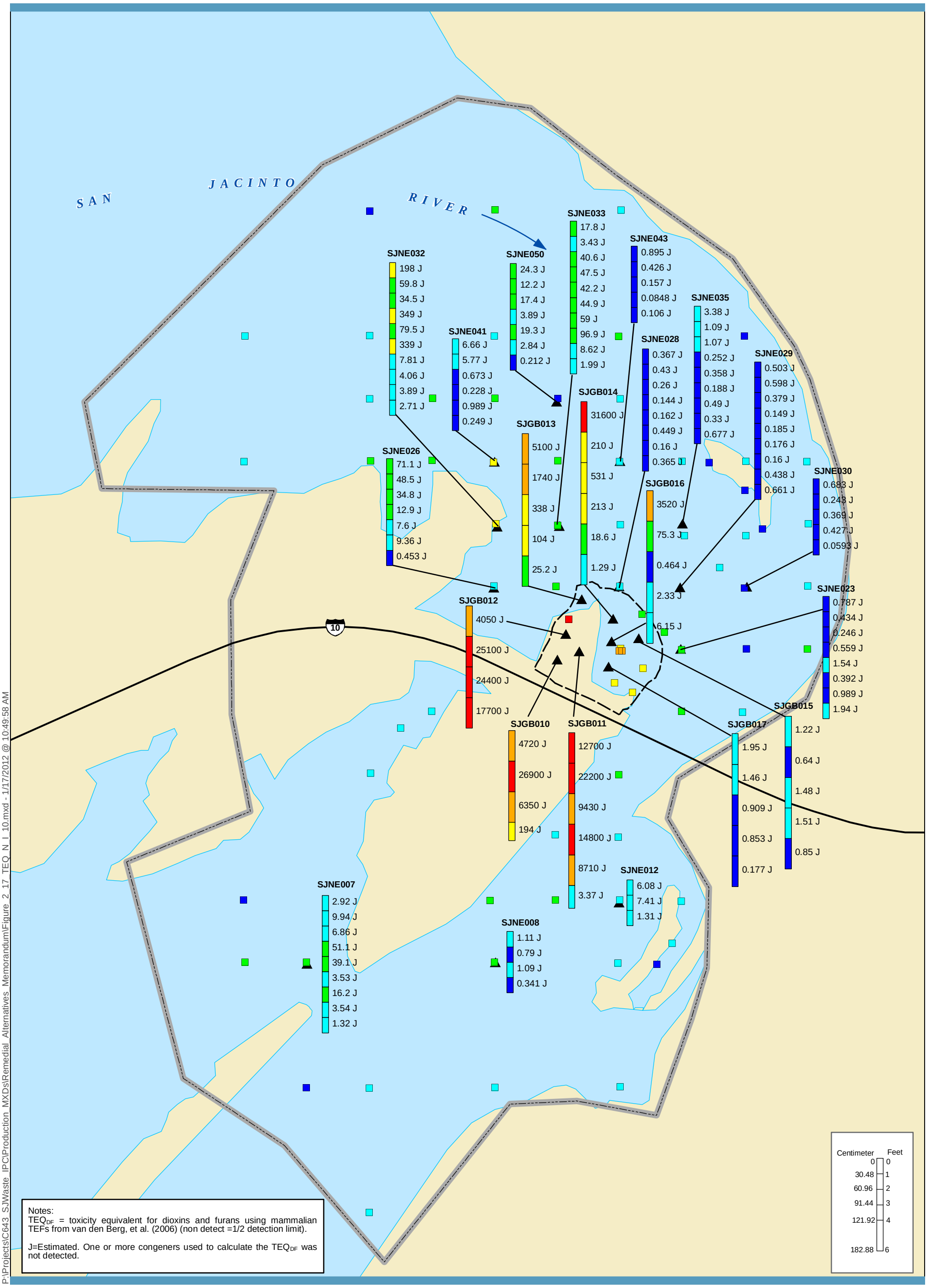
0 800
Scale in Feet

Figure 2-16
TEQ_{DF} Concentrations (ng/kg dw)
in Surface Sediment, Upstream Background
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

Notes:
TEQ_{DF} = toxicity equivalent for dioxins and furans
using mammalian TEFs from van den Berg, et al. (2006) (non detect =1/2 detection limit).

J=Estimated. One or more congeners used to calculate the TEQ_{DF} was not detected.

DRAFT



Notes:
TEQ_{DF} = toxicity equivalent for dioxins and furans using mammalian TEFs from van den Berg, et al. (2006) (non detect =1/2 detection limit).

J=Estimated. One or more congeners used to calculate the TEQ_{DF} was not detected.

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0 800
Scale in Feet

USEPA's Preliminary Site Perimeter
Original (1966) Perimeter of the Northern Impoundments
Core Location

TEQ_{DF} (ng/kg dw)
Surface
- <1
- 1 - 10
- 10 - 100
- 100 - 1000
- 1000 - 10000
- >10000

TEQ_{DF} (ng/kg dw)
Cores
- <1
- 1 - 10
- 10 - 100
- 100 - 1000
- 1000 - 10000
- >10000

Figure 2-17
TEQ_{DF} Concentrations (ng/kg dw) in Sediment Cores
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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ANCHOR QEA

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0 500
Feet

- Groundwater Well/Soil Boring Sample Station
- Groundwater Well/Shallow Soil Sample Station
- TCRA Soil Sample Station, TxDOT ROW
- TCRA Soil Sample Station, Upland Sand Separation Area
- Soil Core at 2 foot Intervals (Surface, Shallow and Deep Subsurface Sample Intervals: 0-6, 6-12, and 12-24 inches)
- Surface and Shallow Subsurface Sample Stations (0-6 and 6-12 inches)
- Soil Core at 2 foot Intervals (Dioxins and Furans Only)
- Deep Subsurface Sample Stations (12-24 inches)
- Soil Sampling Areas
- USEPA's Preliminary Site Perimeter

Figure 2-18

Soil Investigation Areas and Soil Sampling Locations Within the USEPA's Preliminary Site Perimeter
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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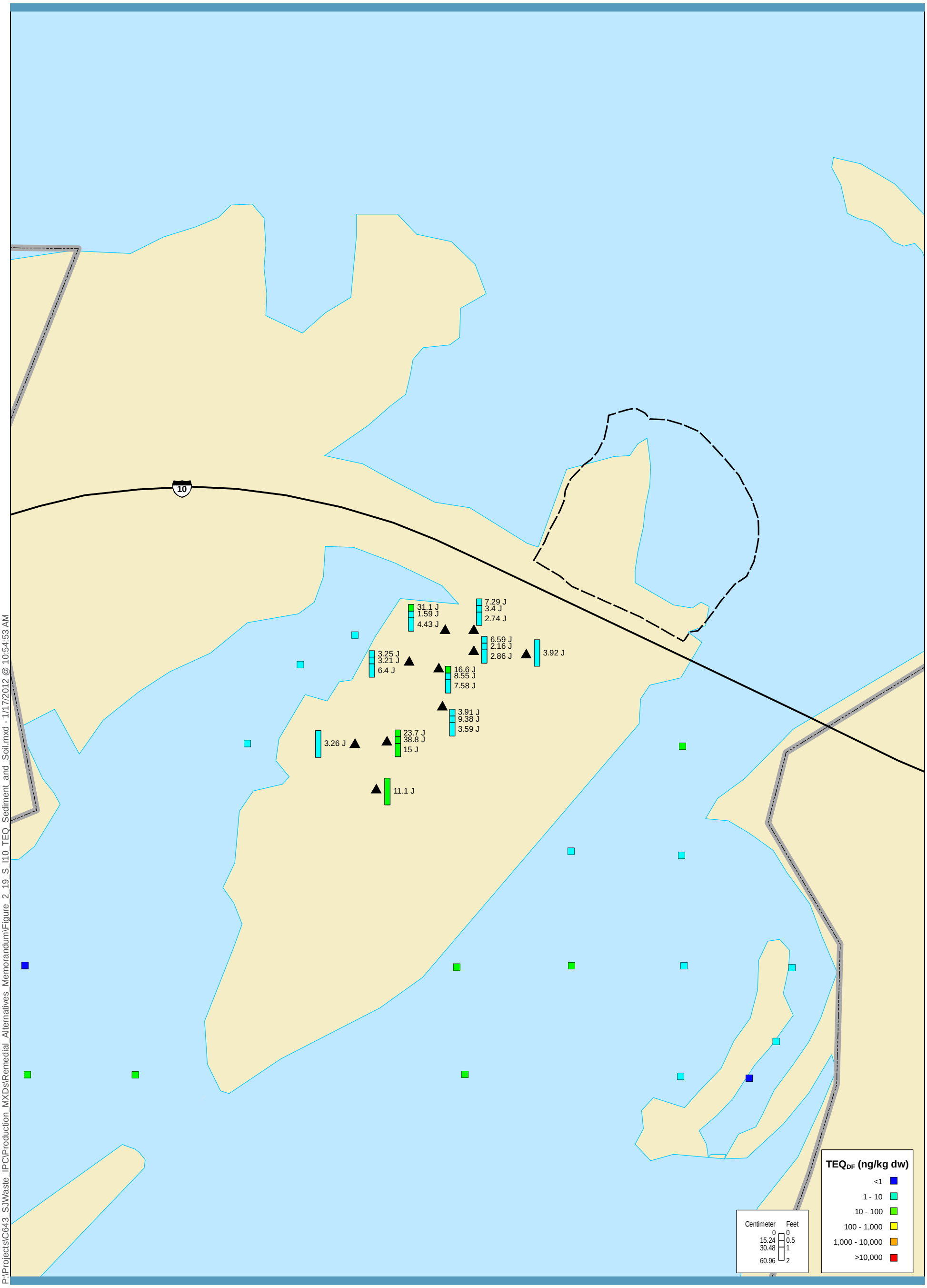

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USEPA's Preliminary Site Perimeter
Original (1966) Perimeter of the Northern Impoundments
Core Location (Sediment)
RI Sediment Station

0 400
Scale in Feet

Figure 2-19
TEQ_{DF} Concentrations (ng/kg dw)
in Soil Samples, South of I-10
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

Notes:
TEQ_{DF} = toxicity equivalent for dioxins and furans
using mammalian TEFs from van den Berg, et al. (2006) (non detect =1/2 detection limit).

J=Estimated. One or more congeners used to calculate the TEQ_{DF} was not detected.

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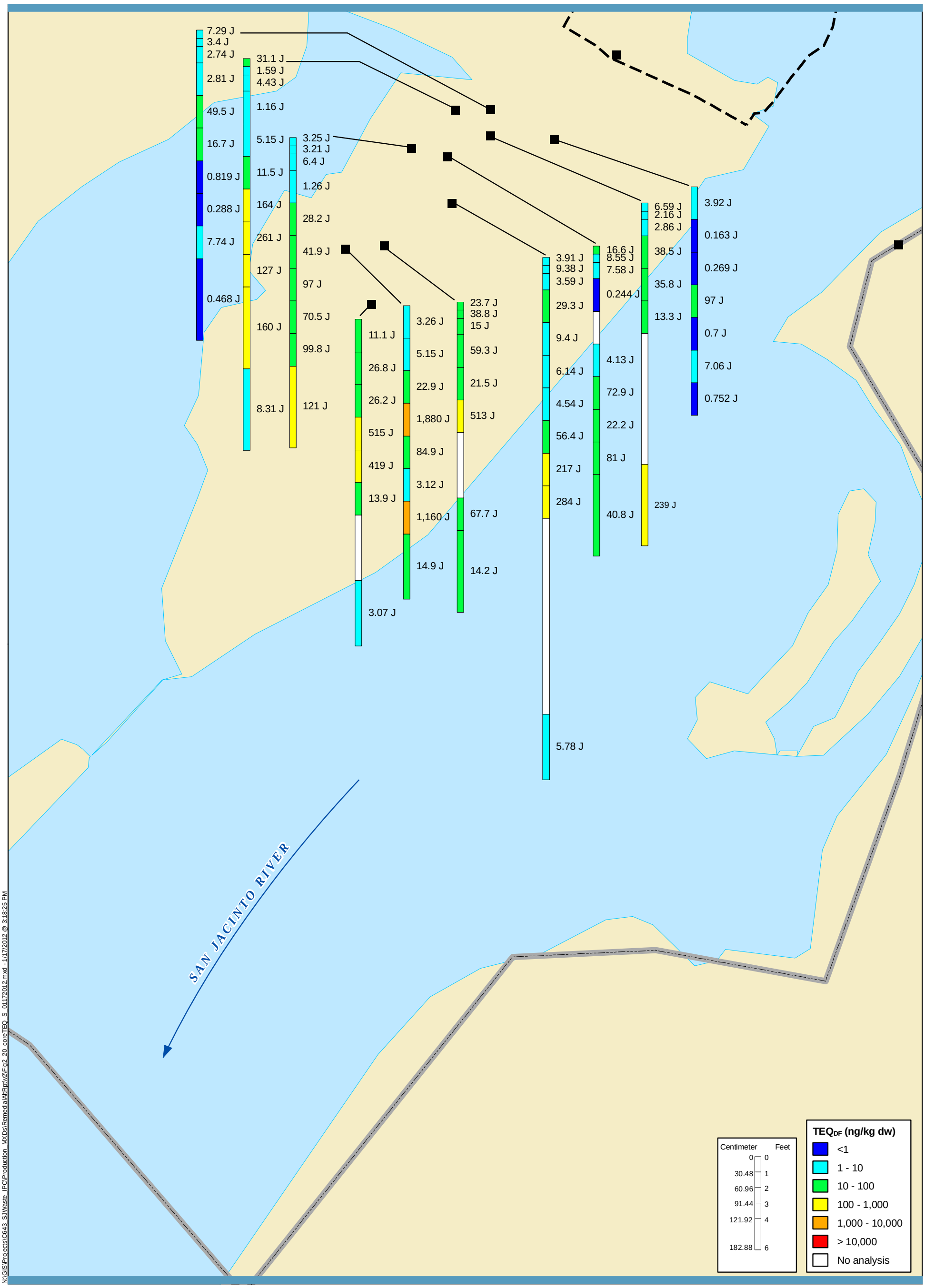

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ANCHOR QEA integral consulting inc

0 500
Feet

Core Location (Soil)
Original (1966) Perimeter of the North Impoundments
USEPA's Preliminary Site Perimeter

Notes:
TEQ_{DF} = toxicity equivalent for dioxins and furans
using mammalian TEFs from van den Berg, et al. (2006) (non detect = 1/2 detection limit).

J = Estimated. One or more congeners used to calculate the TEQ_{DF} was not detected.

Figure 2-20
TEQ_{DF} Concentrations (ng/kg dw)
in Soil Cores, South of I-10
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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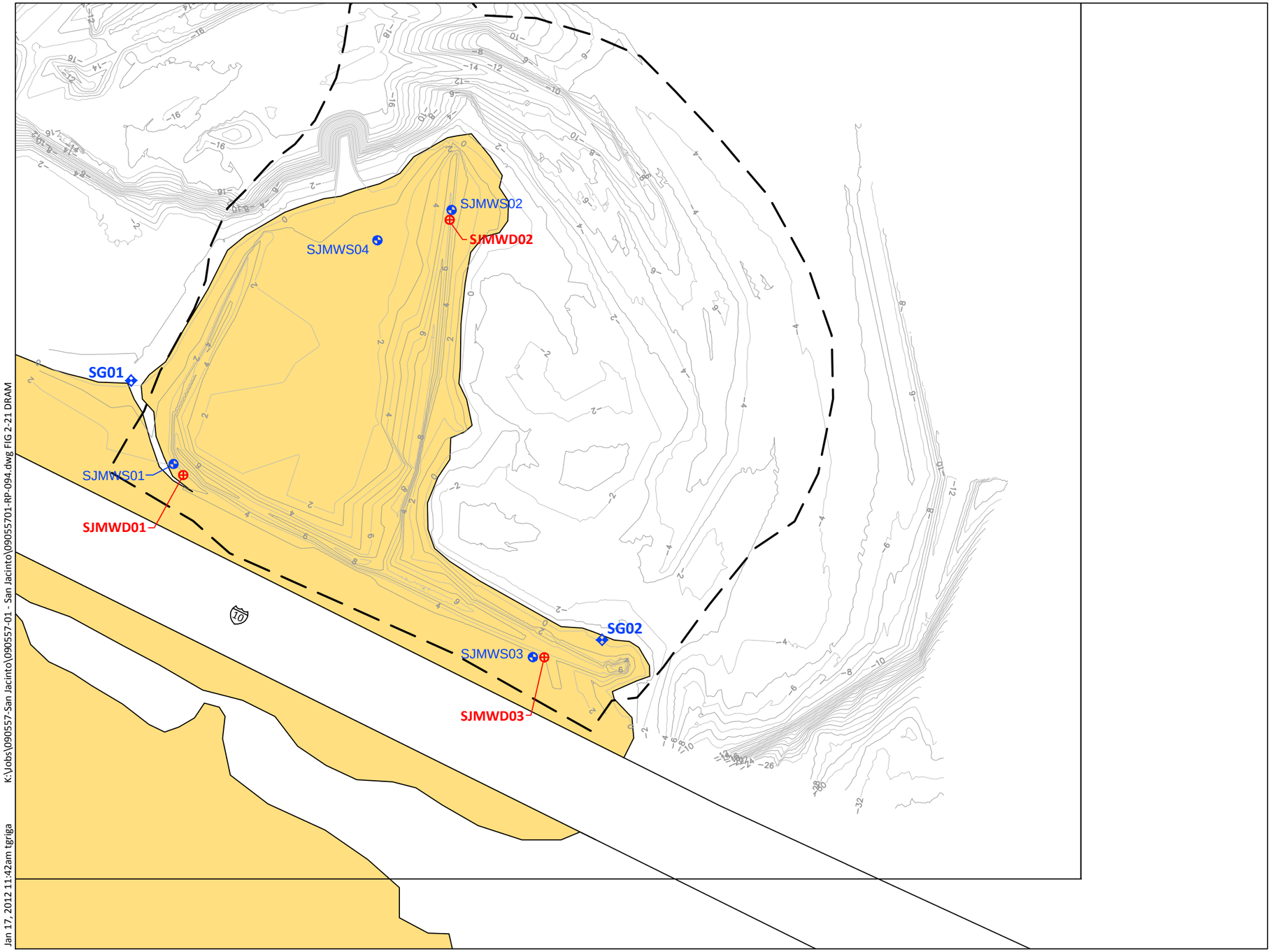

Number	Easting	Northing
SJMWS01	3216654.64	13857356.47
SJMWD01	3216668.35	13857340.83
SJMWS02	3217048.21	13857716.27
SJMWD02	3217045.49	13857702.27
SJMWS03	3217163.24	13857082.92
SJMWD03	3217179.41	13857082.67
SJMWS04	3216943.21	13857673.38
SJPERM-01	3216788.39	13857460.49
SJPERM-02	3216916.93	13857543.05
SJPERM-3A	3216948.14	13857701.19
SG01	3216594.63	13857474.61
SG02	3217261.16	13857107.46

LEGEND:

Original 1966 Berm Impoundment Perimeter

Approximate Limit of Pre-TCRA Vegetated Area (Shoreline)

SG02 Staff Gauge

SJMWS03 Shallow Monitoring Well

SJMWD03 Deep Monitoring Well

0 150
Scale in Feet

SOURCE: Drawing prepared from electronic file provided by US Army Corps of Engineers.
HORIZONTAL DATUM: Texas South Central NAD 83, US Survey Feet.
VERTICAL DATUM: NAVD 88.

K:\Jobs\090557-San Jacinto\090557-01 - San Jacinto\09055701-RP-094.dwg FIG 2-21 DRAM
Jan 17, 2012 11:42am tgriga

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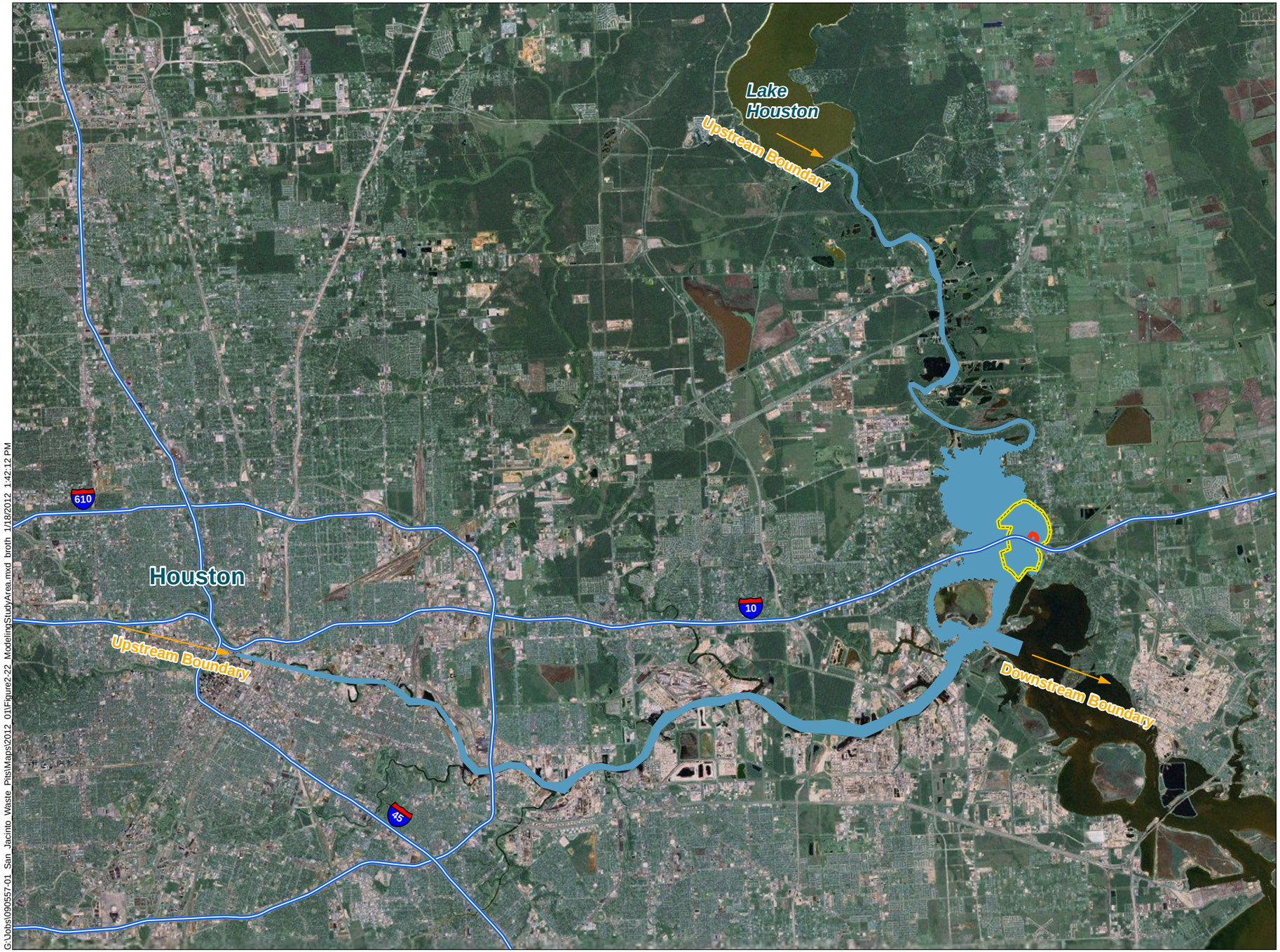
Figure 2-21
Groundwater Sampling Locations
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC



LEGEND

- Interstate 10
- Original (1966) Perimeter of the Impoundments
- USEPA's Preliminary Site Perimeter
- Modeling Study Area

NOTES:
1. Aerial Imagery: Copyright 2010 i-cubed.

Miles
0 2 4

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ANCHOR QEA integral consulting inc.

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Figure 2-22
Modeling Study Area
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

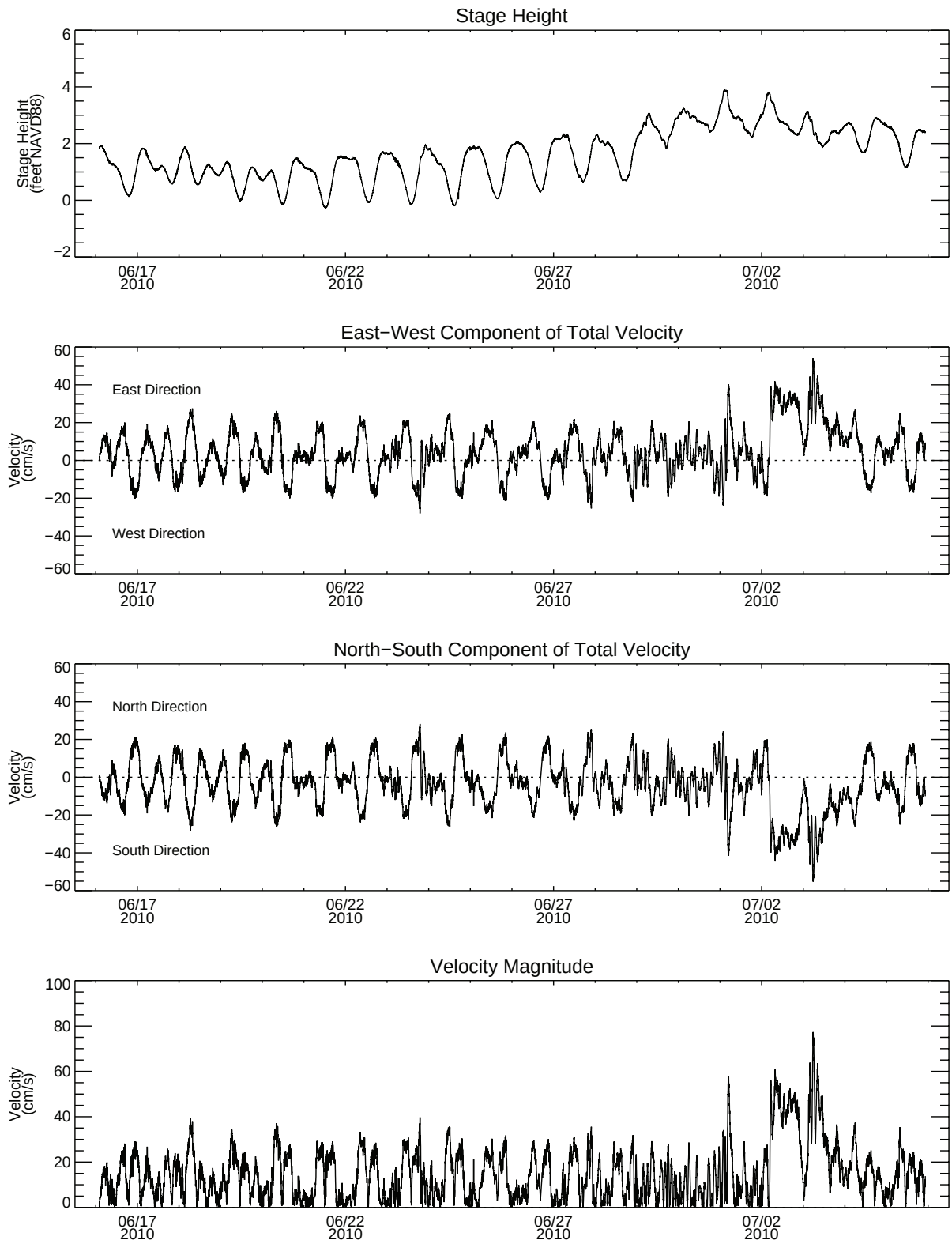

Figure 2−23

Observed Water Surface Elevation and
Depth−Averaged Current Velocity During June/July 2010
Draft Remedial Alternatives Memorandum
SJRWP Superfund/MIMC and IPC

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