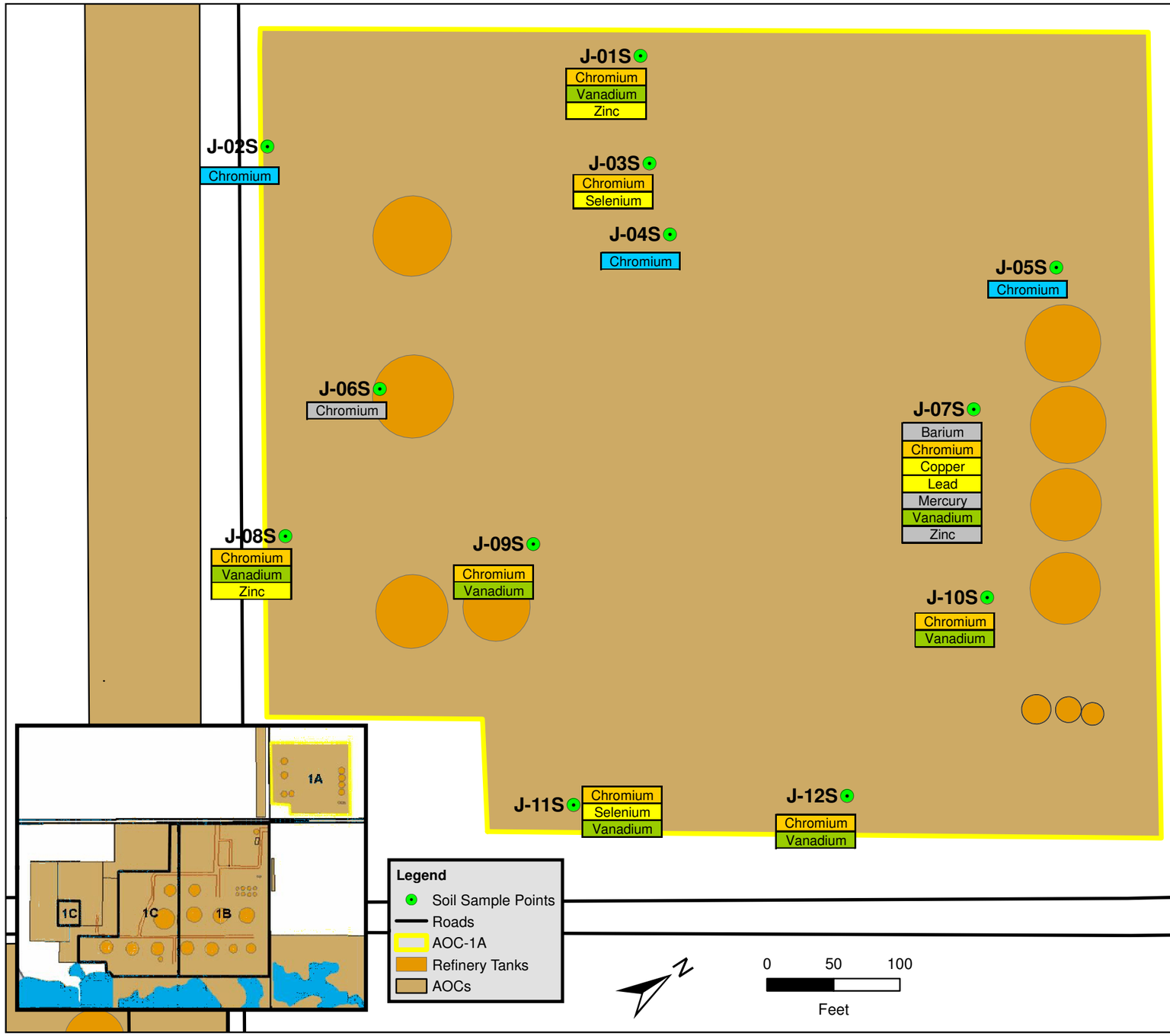


J-01 S FR-013	
Aluminum	3010
Arsenic	0.51 B
Barium	86.4
Beryllium	0.1 B
Chromium	2.8
Cobalt	0.74 B
Copper	1.7 B
Iron	1760
Lead	7
Manganese	66.4
Mercury	0.0083 B
Nickel	1 B
Selenium	0.33 U
Vanadium	4.7 B
Zinc	40.7

J-02 S FR-016	
Aluminum	820
Barium	31.4
Beryllium	0.023 B
Chromium	0.9
Hex Chrom	1.3
Copper	0.99 B
Iron	540
Lead	4.6
Manganese	21.1
Mercury	0.0069 B
Nickel	0.29 B
Selenium	0.26 B
Vanadium	1.1 B
Zinc	23.6

J-03 S FR-009A	
Aluminum	509.5
Barium	24.3 B
Chromium	1.25
Copper	1.025 B
Iron	444.5
Lead	4.4
Manganese	11.9
Mercury	0.0096 B
Nickel	0.33 B
Selenium	0.305 B
Vanadium	1.15 B
Zinc	11.8

J-04 S FR-007	
Aluminum	786
Arsenic	0.23 B
Barium	23.4
Chromium	0.92 B
Copper	0.93 B
Iron	480
Lead	3.6
Manganese	15.7
Mercury	0.007 B
Nickel	0.35 B
Vanadium	1.3 B
Zinc	8.7

J-05 S FR-033	
Aluminum	1250
Arsenic	0.29 B
Barium	19 B
Beryllium	0.087 B
Chromium	0.77 B
Cobalt	0.47 B
Copper	0.93 B
Iron	1740
Lead	4.8
Manganese	11.5
Mercury	0.0014 B
Nickel	0.56 B
Selenium	0.31 U
Vanadium	1.7 B
Zinc	10.4

J-06 S FR-019A	
Aluminum	609
Barium	6.25 B
Chromium	50.5 B
Copper	0.685 B
Iron	331
Lead	2.15
Manganese	9.3
Mercury	0.00535 B
Vanadium	0.985 B
Zinc	3.1

J-07 S FR-030	
Aluminum	2900
Antimony	0.54 B
Arsenic	2
Barium	1250
Beryllium	0.13 B
Cadmium	0.56
Chromium	13.3
Cobalt	2.5 B
Copper	23.5
Iron	4500
Lead	80.6
Manganese	39.6
Mercury	0.74
Nickel	4.3 B
Vanadium	5.1 B
Zinc	232

J-08 S FR-022	
Aluminum	5020
Arsenic	0.83 B
Barium	91.8
Beryllium	0.2 B
Chromium	3.6
Cobalt	1.3 B
Copper	3.2
Iron	3560
Lead	8.3
Manganese	102
Mercury	0.0014 B
Nickel	2.1 B
Vanadium	6.1
Zinc	80.3

J-09 S FR-025	
Aluminum	5460
Arsenic	1.2
Barium	25.9
Beryllium	0.24 B
Chromium	4.5
Hex Chrom	1.4
Cobalt	1.3 B
Copper	2.7
Iron	4280
Lead	8.9
Manganese	43.6
Mercury	0.013 B
Nickel	2.2 B
Vanadium	7.7
Zinc	16.6

J-10 S FR-027	
Aluminum	1670
Arsenic	0.31 B
Barium	13.9 B
Beryllium	0.094 B
Chromium	2.9
Hex Chrom	1.9
Cobalt	0.43 B
Copper	0.86 B
Iron	2170
Lead	6.9
Manganese	21.5
Mercury	0.0047 B
Nickel	0.76 B
Vanadium	2.4 B
Zinc	22.8

J-11 S FR-001	
Aluminum	14300
Arsenic	2.6
Barium	165
Beryllium	0.49
Chromium	11.3
Hex Chrom	3.1
Cobalt	3.3 B
Copper	5.1
Iron	7560
Lead	6
Manganese	121
Mercury	0.0037 B
Nickel	5.1
Selenium	0.37 B
Vanadium	22.3
Zinc	25.2

J-12 S FR-004	
Aluminum	3550
Arsenic	0.57 B
Barium	36
Beryllium	0.092 B
Chromium	2.3
Cobalt	0.61 B
Copper	1.1 B
Iron	1860
Lead	3.4
Manganese	37.3
Mercury	0.0065 B
Nickel	1.3 B
Vanadium	5.1
Zinc	6.1

9568460

Notes:

1. Results are posted in mg/kg
2. Qualifiers:
   - U = Undetected at the sample detection limit (SDL)
   - B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- Exceeds Earthworm Limit
- Exceeds Plant Limit
- Exceeds Median Background Limit
- Exceeds Earthworm and Plant Limits
- Exceeds Earthworm, Plant, and Median Background Limits
- SDL Exceeds Median Background Screening Level

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

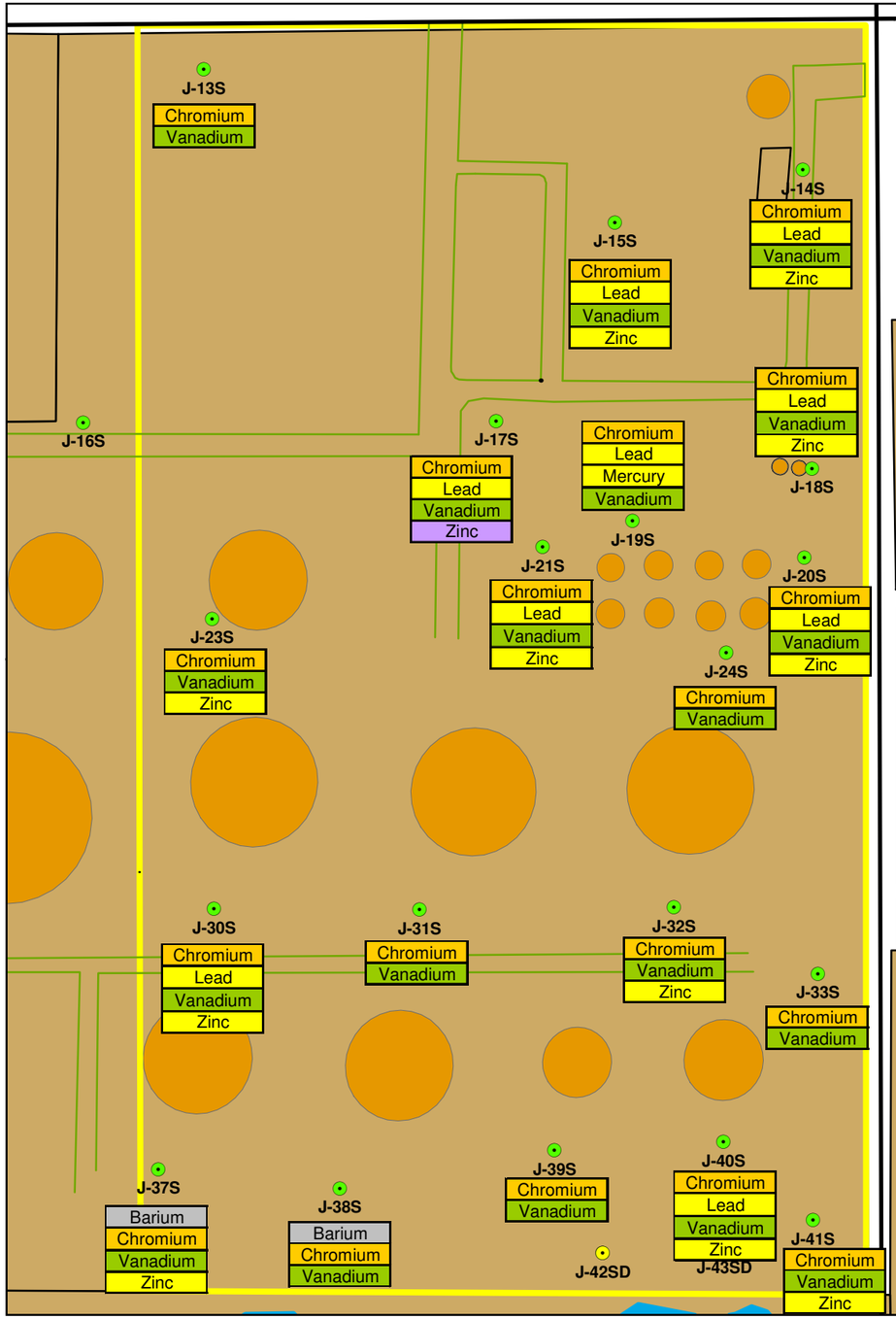
AOC-1A
Ecological
Metal Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
21A



J-13 S FR-064	
Aluminum	2590
Arsenic	0.22 B
Barium	13.7 B
Beryllium	0.041 B
Chromium	1.4
Cobalt	0.2 B
Copper	1 B
Iron	928
Lead	2.6
Manganese	10
Nickel	0.27 B
Vanadium	2.4 B
Zinc	17.2

J-14 S FR-061	
Aluminum	2710
Arsenic	0.66 B
Barium	88.9
Beryllium	0.049 B
Cadmium	0.17 B
Chromium	5.1
Cobalt	1.3 B
Copper	10.7
Iron	3820
Lead	55.8
Manganese	47.3
Mercury	0.0054 B
Nickel	1.7 B
Vanadium	4.1 B
Zinc	92.6

J-15 S FR-035	
Aluminum	1440
Arsenic	2.6
Barium	26.9
Beryllium	0.078 B
Chromium	7.4
Cobalt	0.36 B
Copper	5.7
Iron	2430
Lead	18.9
Manganese	26.4
Mercury	0.011 B
Nickel	1.1 B
Vanadium	2.1 B
Zinc	31.1

J-17 S FR-046	
Aluminum	7070
Arsenic	2
Barium	200
Beryllium	0.19 B
Cadmium	0.23 B
Chromium	9
Cobalt	1.7 B
Copper	8.1
Iron	8120
Lead	16.1
Manganese	146
Mercury	0.024
Nickel	8.6
Vanadium	10.6
Zinc	143

J-18 S FR-050	
Aluminum	3030
Arsenic	0.58 B
Barium	64.5
Beryllium	0.056 B
Cadmium	0.12 B
Chromium	2.8
Cobalt	0.62 B
Copper	2.5 B
Iron	2010
Lead	80.7
Manganese	49.4
Mercury	0.0088 B
Nickel	1.2 B
Vanadium	4.1 B
Zinc	35

J-19 S FR-039A	
Aluminum	4375
Arsenic	1.8
Barium	93.95
Beryllium	0.2 B
Chromium	3.8
Cobalt	1.45 B
Copper	3.25
Iron	3095
Lead	19.75
Manganese	49.4
Mercury	0.049
Nickel	1.8 B
Vanadium	5.25
Zinc	26.15

J-20 S FR-044	
Aluminum	4570
Arsenic	0.86 B
Barium	61.5
Beryllium	0.22 B
Chromium	4
Cobalt	1.1 B
Copper	3.6
Iron	4620
Lead	17.1
Manganese	73.6
Mercury	0.013 B
Nickel	3.4 B
Vanadium	5.8
Zinc	30.2

J-21 S FR-037	
Aluminum	4470
Arsenic	0.93 B
Barium	67.1
Beryllium	0.2 B
Chromium	8.3
Cobalt	1.3 B
Copper	2.5 B
Iron	3050
Lead	17.7
Manganese	77
Mercury	0.016 B
Nickel	4.1
Vanadium	4.9 B
Zinc	39.5

J-23 S FR-054	
Aluminum	8090
Arsenic	1.7
Barium	66.6
Beryllium	0.23 B
Chromium	6.9
Hex Chrom	1.8
Cobalt	1.8 B
Copper	3.6
Iron	4900
Lead	9.9
Manganese	141
Mercury	0.012 B
Nickel	3.3 B
Vanadium	9.6
Zinc	44.1

J-24 S FR-042	
Aluminum	2110
Arsenic	0.35 B
Barium	36.1
Beryllium	0.11 B
Chromium	1.6
Cobalt	0.53 B
Copper	2.2 B
Iron	1560
Lead	7.2
Manganese	41
Mercury	0.026
Nickel	0.81 B
Vanadium	2.3 B
Zinc	22.2

J-30 S FR-094	
Aluminum	14400
Arsenic	3.1
Barium	98.6
Beryllium	0.52 B
Cadmium	0.14 B
Chromium	10.4
Cobalt	2.5 B
Copper	6.9
Iron	8740
Lead	23.8
Manganese	143
Mercury	0.024
Nickel	5.2
Selenium	0.31 U
Vanadium	16.6
Zinc	79

J-31 S FR-099A	
Aluminum	15650
Arsenic	1.6
Barium	61.7
Beryllium	0.46 B
Chromium	9.6
Cobalt	2.2 B
Copper	4.7
Iron	8115
Lead	14.75
Manganese	77.5
Mercury	0.0215
Nickel	4.55 B
Vanadium	17.25
Zinc	26.05

J-32 S FR-096	
Aluminum	14200
Arsenic	2.5
Barium	160
Beryllium	0.52 B
Chromium	8.9
Cobalt	3 B
Copper	5.2
Iron	7850
Lead	11.6
Manganese	191
Mercury	0.007 B
Nickel	5.3
Vanadium	16.2
Zinc	59

J-33 S FR-105	
Aluminum	2600
Arsenic	1.4
Barium	41.4
Beryllium	0.075 B
Chromium	2
Cobalt	1 B
Copper	2.4 B
Iron	2050
Lead	5.4
Manganese	207
Mercury	0.0076 B
Nickel	1.3 B
Vanadium	4.8 B
Zinc	11.1

J-37 S FR-119	
Aluminum	6190
Arsenic	2.2
Barium	381
Beryllium	0.27 B
Chromium	4.9
Cobalt	1.5 B
Copper	3.4
Iron	4810
Lead	6.7
Manganese	106
Mercury	0.0013 B
Nickel	2.5 B
Vanadium	13.2
Zinc	48.5

J-38 S FR-116	
Aluminum	9900
Arsenic	2.4
Barium	944
Beryllium	0.37 B
Chromium	6.4
Hex Chrom	1.2
Cobalt	2.3 B
Copper	4.2
Iron	6570
Lead	8
Manganese	110
Mercury	0.0054 B
Nickel	3.5 B
Vanadium	16
Zinc	29.8

J-39 S FR-113	
Aluminum	5110
Arsenic	1.5
Barium	63.5
Beryllium	0.12 B
Chromium	4.5
Cobalt	1.3 B
Copper	3.7
Iron	3560
Lead	6.9
Manganese	102
Mercury	0.019 B
Nickel	2.4 B
Vanadium	7.8
Zinc	25.9

J-40 S FR-109	
Aluminum	9850
Arsenic	2.8
Barium	177
Beryllium	0.34 B
Chromium	7.8
Cobalt	2.8 B
Copper	4.5
Iron	7510
Lead	20.9
Manganese	155
Mercury	0.0079 B
Nickel	4.2 B
Vanadium	15.8
Zinc	31.8

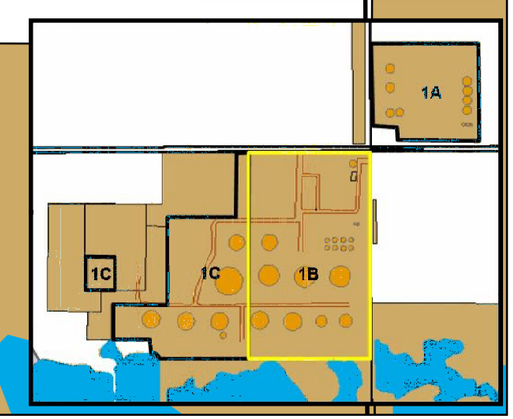
J-41 S FR-102	
Aluminum	4830
Arsenic	1.3
Barium	69.1
Beryllium	0.16 B
Cadmium	1.1
Chromium	3.7
Cobalt	1.2 B
Copper	4.8
Iron	3860
Lead	9.2
Manganese	65.6
Mercury	0.013 B
Nickel	2 B
Vanadium	7
Zinc	85.3

Legend

- Soil Sample Points
- Sediment Sample Points
- Roads
- Gravel/Dirt Road
- AOC-1B
- Refinery Tanks
- AOCs
- Wetland

N

0 100 200
Feet



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- Exceeds Plant Limit
- Exceeds Median Background Limit
- Exceeds Earthworm and Plant Limits
- Exceeds Earthworm and Median Background Limits
- Exceeds Earthworm, Plant, and Median Background Limits
- SDL Exceeds Median Background Screening Level

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

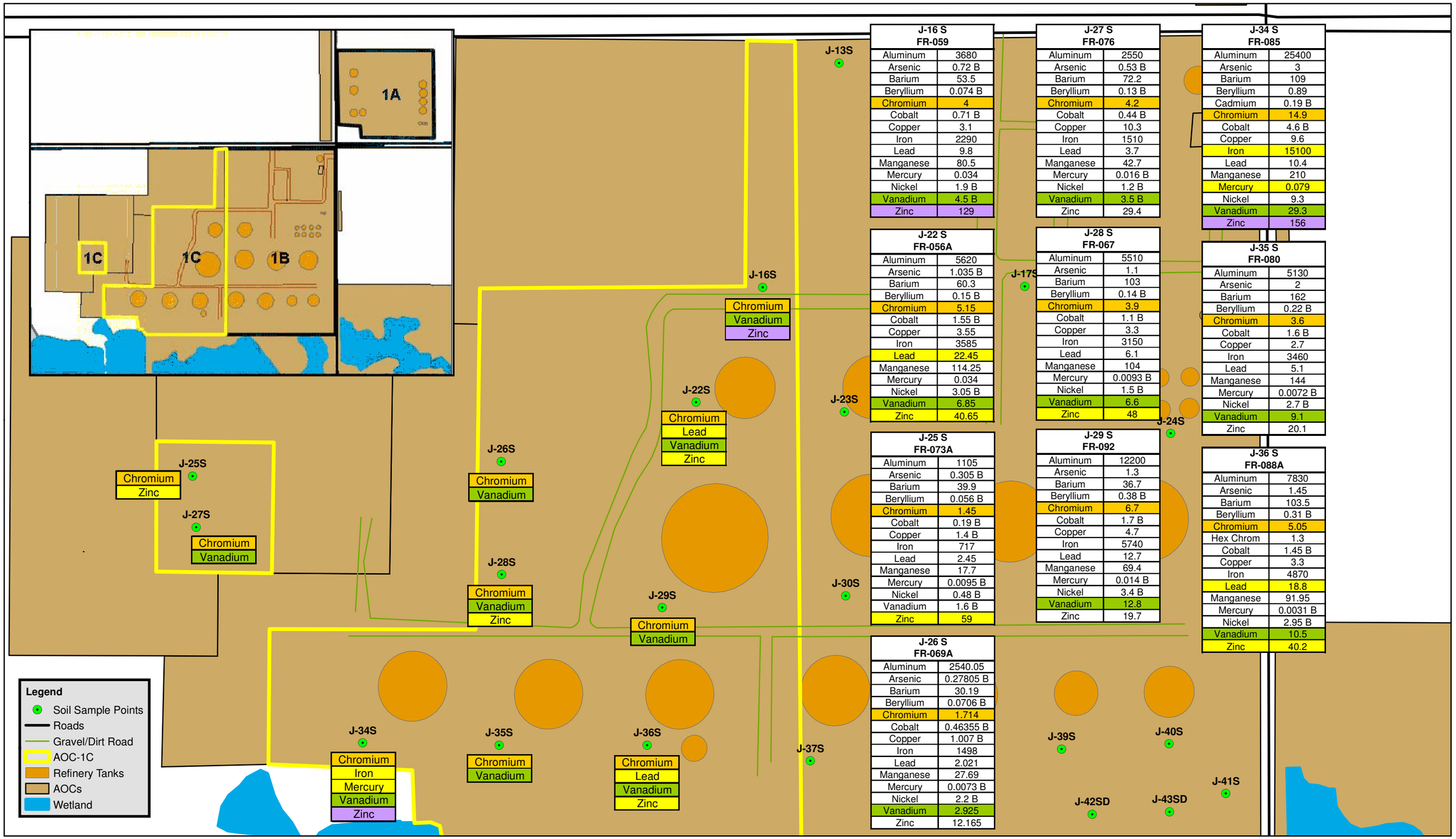
AOC-1B
Ecological
Metal Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
21B



J-16 S
FR-059

Aluminum	3680
Arsenic	0.72 B
Barium	53.5
Beryllium	0.074 B
Chromium	4
Cobalt	0.71 B
Copper	3.1
Iron	2290
Lead	9.8
Manganese	80.5
Mercury	0.034
Nickel	1.9 B
Vanadium	4.5 B
Zinc	129

J-27 S
FR-076

Aluminum	2550
Arsenic	0.53 B
Barium	72.2
Beryllium	0.13 B
Chromium	4.2
Cobalt	0.44 B
Copper	10.3
Iron	1510
Lead	3.7
Manganese	42.7
Mercury	0.016 B
Nickel	1.2 B
Vanadium	3.5 B
Zinc	29.4

J-34 S
FR-085

Aluminum	25400
Arsenic	3
Barium	109
Beryllium	0.89
Cadmium	0.19 B
Chromium	14.9
Cobalt	4.6 B
Copper	9.6
Iron	15100
Lead	10.4
Manganese	210
Mercury	0.079
Nickel	9.3
Vanadium	29.3
Zinc	156

J-22 S
FR-056A

Aluminum	5620
Arsenic	1.035 B
Barium	60.3
Beryllium	0.15 B
Chromium	5.15
Cobalt	1.55 B
Copper	3.55
Iron	3585
Lead	22.45
Manganese	114.25
Mercury	0.034
Nickel	3.05 B
Vanadium	6.85
Zinc	40.65

J-28 S
FR-067

Aluminum	5510
Arsenic	1.1
Barium	103
Beryllium	0.14 B
Chromium	3.9
Cobalt	1.1 B
Copper	3.3
Iron	3150
Lead	6.1
Manganese	104
Mercury	0.0093 B
Nickel	1.5 B
Vanadium	6.6
Zinc	48

J-35 S
FR-080

Aluminum	5130
Arsenic	2
Barium	162
Beryllium	0.22 B
Chromium	3.6
Cobalt	1.6 B
Copper	2.7
Iron	3460
Lead	5.1
Manganese	144
Mercury	0.0072 B
Nickel	2.7 B
Vanadium	9.1
Zinc	20.1

J-25 S
FR-073A

Aluminum	1105
Arsenic	0.305 B
Barium	39.9
Beryllium	0.056 B
Chromium	1.45
Cobalt	0.19 B
Copper	1.4 B
Iron	717
Lead	2.45
Manganese	17.7
Mercury	0.0095 B
Nickel	0.48 B
Vanadium	1.6 B
Zinc	59

J-29 S
FR-092

Aluminum	12200
Arsenic	1.3
Barium	36.7
Beryllium	0.38 B
Chromium	6.7
Cobalt	1.7 B
Copper	4.7
Iron	5740
Lead	12.7
Manganese	69.4
Mercury	0.014 B
Nickel	3.4 B
Vanadium	12.8
Zinc	19.7

J-36 S
FR-088A

Aluminum	7830
Arsenic	1.45
Barium	103.5
Beryllium	0.31 B
Chromium	5.05
Hex Chrom	1.3
Cobalt	1.45 B
Copper	3.3
Iron	4870
Lead	18.8
Manganese	91.95
Mercury	0.0031 B
Nickel	2.95 B
Vanadium	10.5
Zinc	40.2

J-26 S
FR-069A

Aluminum	2540.05
Arsenic	0.27805 B
Barium	30.19
Beryllium	0.0706 B
Chromium	1.714
Cobalt	0.46355 B
Copper	1.007 B
Iron	1498
Lead	2.021
Manganese	27.69
Mercury	0.0073 B
Nickel	2.2 B
Vanadium	2.925
Zinc	12.165

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit
Exceeds Median Background Limit
Exceeds Earthworm and Plant Limits
Exceeds Earthworm and Median Background Limits

N

0 90 180
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

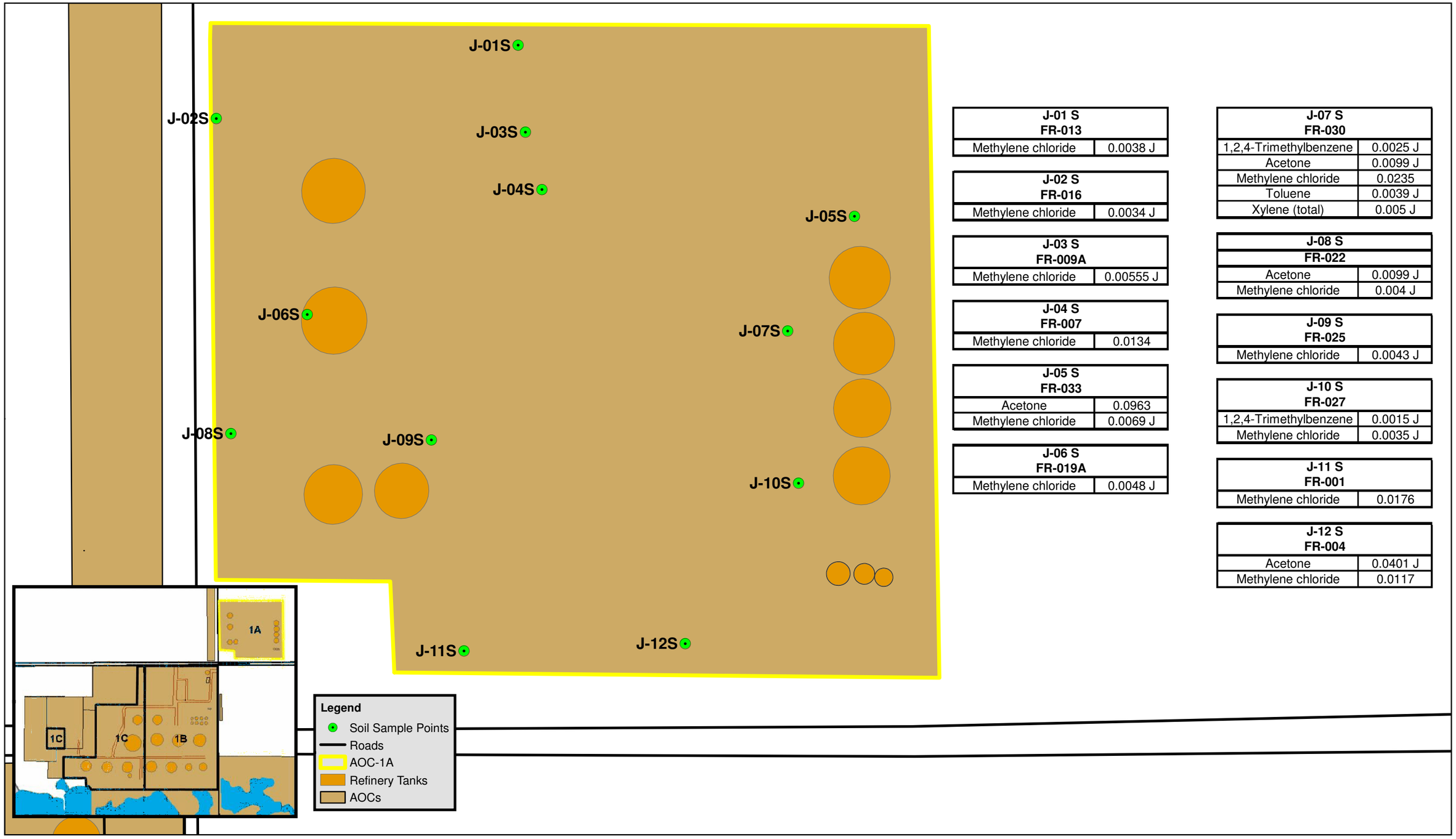
AOC-1C
Ecological
Metal Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
21C



J-01 S FR-013	
Methylene chloride	0.0038 J

J-02 S FR-016	
Methylene chloride	0.0034 J

J-03 S FR-009A	
Methylene chloride	0.00555 J

J-04 S FR-007	
Methylene chloride	0.0134

J-05 S FR-033	
Acetone	0.0963
Methylene chloride	0.0069 J

J-06 S FR-019A	
Methylene chloride	0.0048 J

J-07 S FR-030	
1,2,4-Trimethylbenzene	0.0025 J
Acetone	0.0099 J
Methylene chloride	0.0235
Toluene	0.0039 J
Xylene (total)	0.005 J

J-08 S FR-022	
Acetone	0.0099 J
Methylene chloride	0.004 J

J-09 S FR-025	
Methylene chloride	0.0043 J

J-10 S FR-027	
1,2,4-Trimethylbenzene	0.0015 J
Methylene chloride	0.0035 J

J-11 S FR-001	
Methylene chloride	0.0176

J-12 S FR-004	
Acetone	0.0401 J
Methylene chloride	0.0117

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 50 100
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

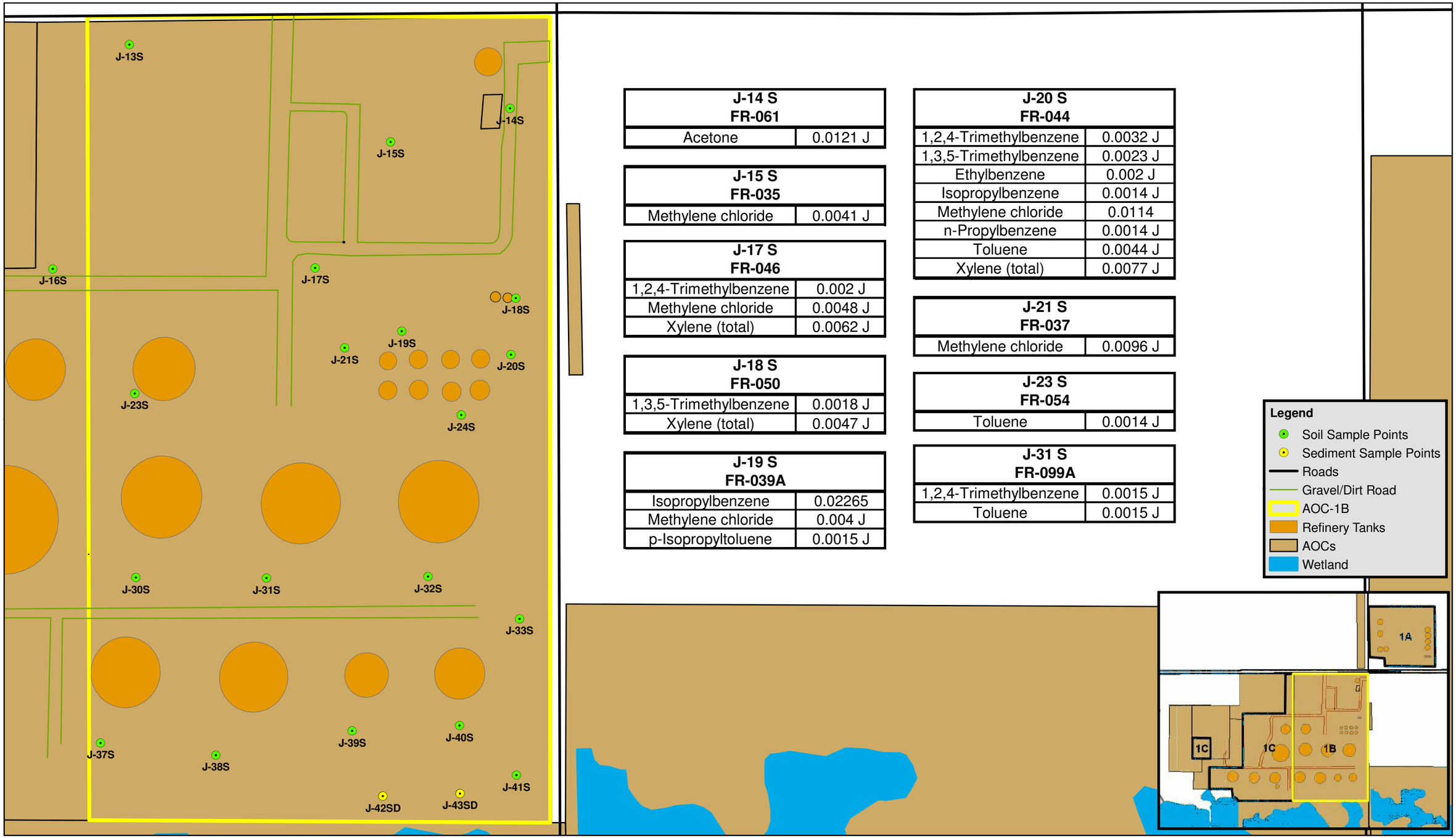
AOC-1A
Ecological
VOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
21D



J-14 S FR-061	
Acetone	0.0121 J

J-15 S FR-035	
Methylene chloride	0.0041 J

J-17 S FR-046	
1,2,4-Trimethylbenzene	0.002 J
Methylene chloride	0.0048 J
Xylene (total)	0.0062 J

J-18 S FR-050	
1,3,5-Trimethylbenzene	0.0018 J
Xylene (total)	0.0047 J

J-19 S FR-039A	
Isopropylbenzene	0.02265
Methylene chloride	0.004 J
p-Isopropyltoluene	0.0015 J

J-20 S FR-044	
1,2,4-Trimethylbenzene	0.0032 J
1,3,5-Trimethylbenzene	0.0023 J
Ethylbenzene	0.002 J
Isopropylbenzene	0.0014 J
Methylene chloride	0.0114
n-Propylbenzene	0.0014 J
Toluene	0.0044 J
Xylene (total)	0.0077 J

J-21 S FR-037	
Methylene chloride	0.0096 J

J-23 S FR-054	
Toluene	0.0014 J

J-31 S FR-099A	
1,2,4-Trimethylbenzene	0.0015 J
Toluene	0.0015 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

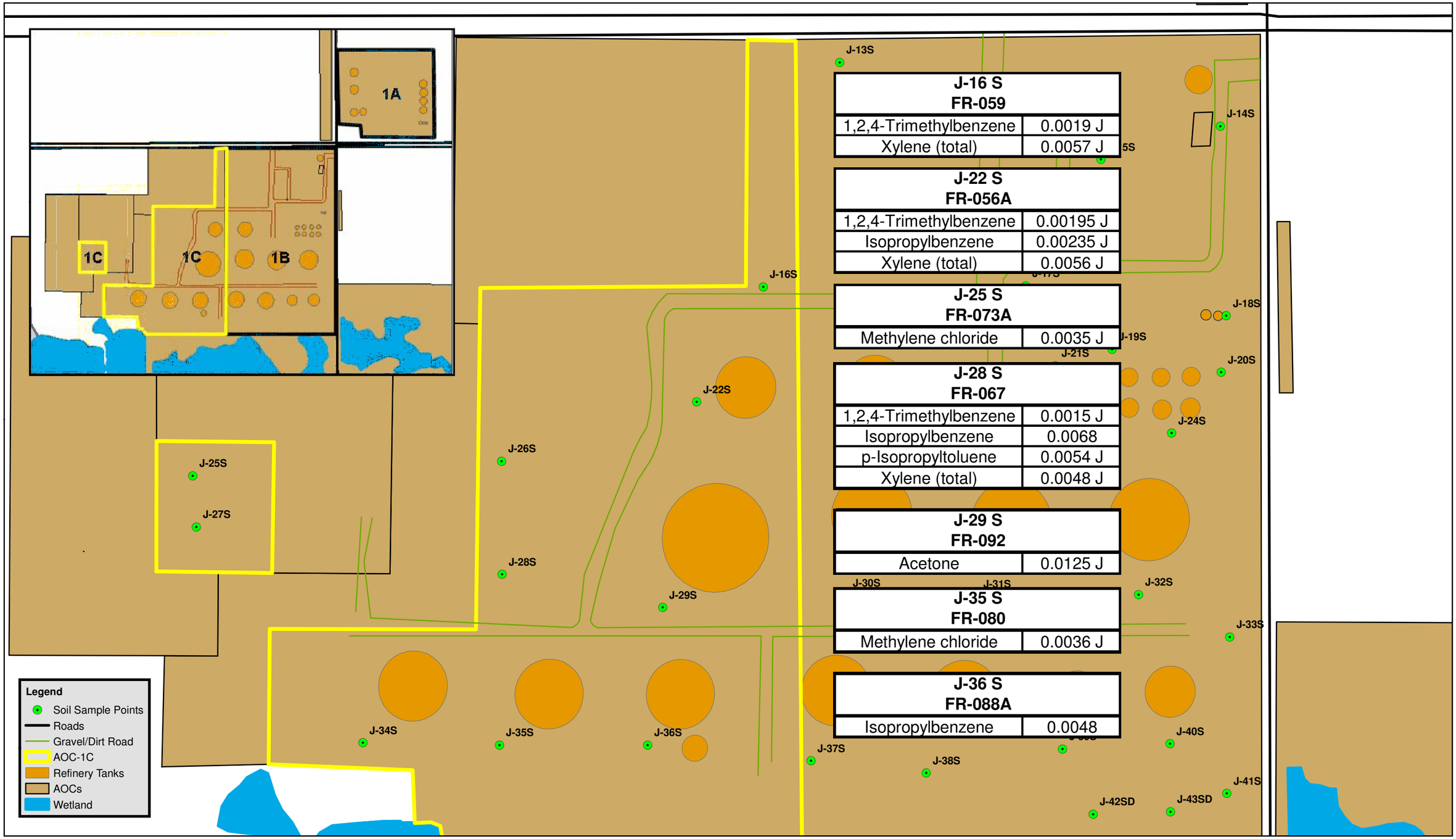
AOC-1B
Ecological
VOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
21E



J-16 S FR-059	
1,2,4-Trimethylbenzene	0.0019 J
Xylene (total)	0.0057 J

J-22 S FR-056A	
1,2,4-Trimethylbenzene	0.00195 J
Isopropylbenzene	0.00235 J
Xylene (total)	0.0056 J

J-25 S FR-073A	
Methylene chloride	0.0035 J

J-28 S FR-067	
1,2,4-Trimethylbenzene	0.0015 J
Isopropylbenzene	0.0068
p-Isopropyltoluene	0.0054 J
Xylene (total)	0.0048 J

J-29 S FR-092	
Acetone	0.0125 J

J-35 S FR-080	
Methylene chloride	0.0036 J

J-36 S FR-088A	
Isopropylbenzene	0.0048

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

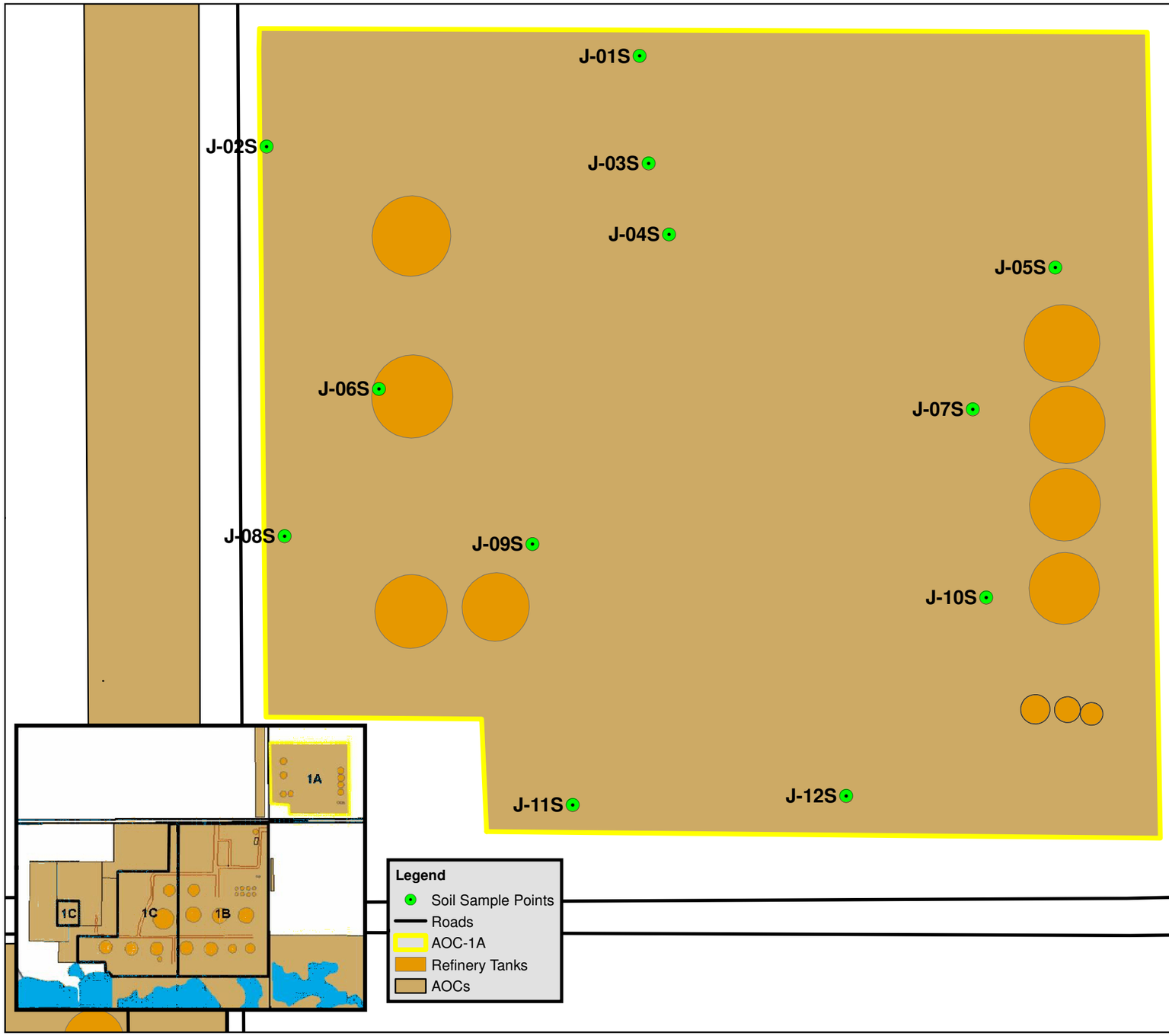
AOC-1C
Ecological
VOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
21F



J-03 S FR-009A	
6-Methyl Chrysene	3.93
Anthracene	3.245
Benzo(a)anthracene	2.07
bis(2-Ethylhexyl)phthalate	0.3395 J
Carbazole	0.325 J
Chrysene	18.905
Fluorene	0.25 J
Phenanthrene	1.1935
Pyrene	0.3825 J

J-04 S FR-007	
6-Methyl Chrysene	17.3
Anthracene	5.33
Benzo(a)anthracene	3.97
Benzo(a)pyrene	0.766 J
Chrysene	41.2
Phenanthrene	2.06 J

J-09 S FR-025	
Anthracene	0.107 J
Benzo(a)anthracene	0.648
Benzo(a)pyrene	0.775
Benzo(b)fluoranthene	1.03
Benzo(g,h,i)perylene	0.629
Benzo(k)fluoranthene	0.326
Chrysene	0.773
Dibenzo(a,h)anthracene	0.281
Fluoranthene	1.42
Indeno(1,2,3-cd)pyrene	0.813
Phenanthrene	0.679
Pyrene	1.58

J-12 S FR-004	
Benzo(a)anthracene	0.121 J
Benzo(a)pyrene	0.172 J
Benzo(b)fluoranthene	0.218
Benzo(g,h,i)perylene	0.295
Chrysene	0.163 J
Fluoranthene	0.192
Indeno(1,2,3-cd)pyrene	0.192
Pyrene	0.237

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 50 100
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

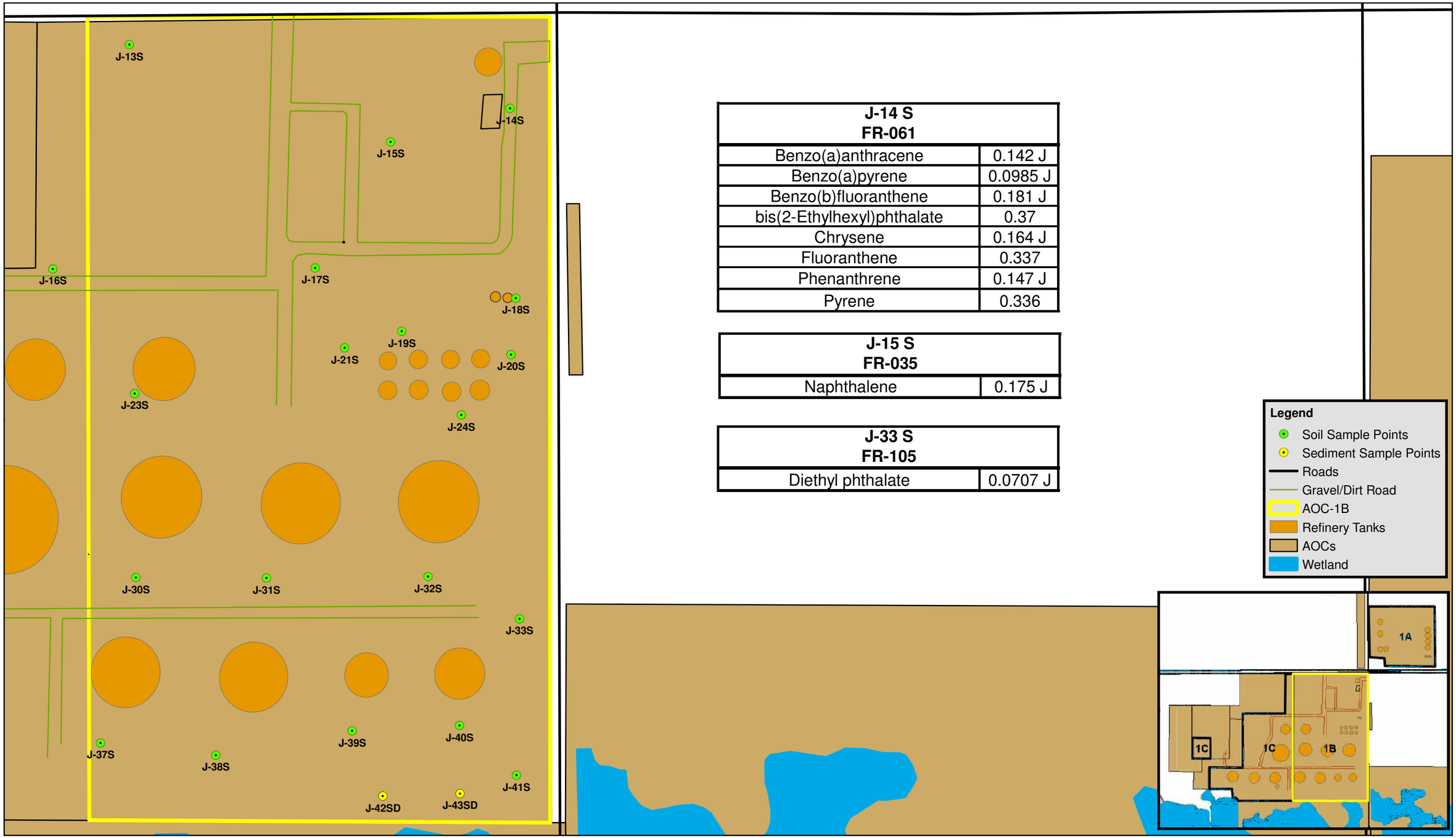
AOC-1A
Ecological
SVOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
21G



J-14 S FR-061	
Benzo(a)anthracene	0.142 J
Benzo(a)pyrene	0.0985 J
Benzo(b)fluoranthene	0.181 J
bis(2-Ethylhexyl)phthalate	0.37
Chrysene	0.164 J
Fluoranthene	0.337
Phenanthrene	0.147 J
Pyrene	0.336

J-15 S FR-035	
Naphthalene	0.175 J

J-33 S FR-105	
Diethyl phthalate	0.0707 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

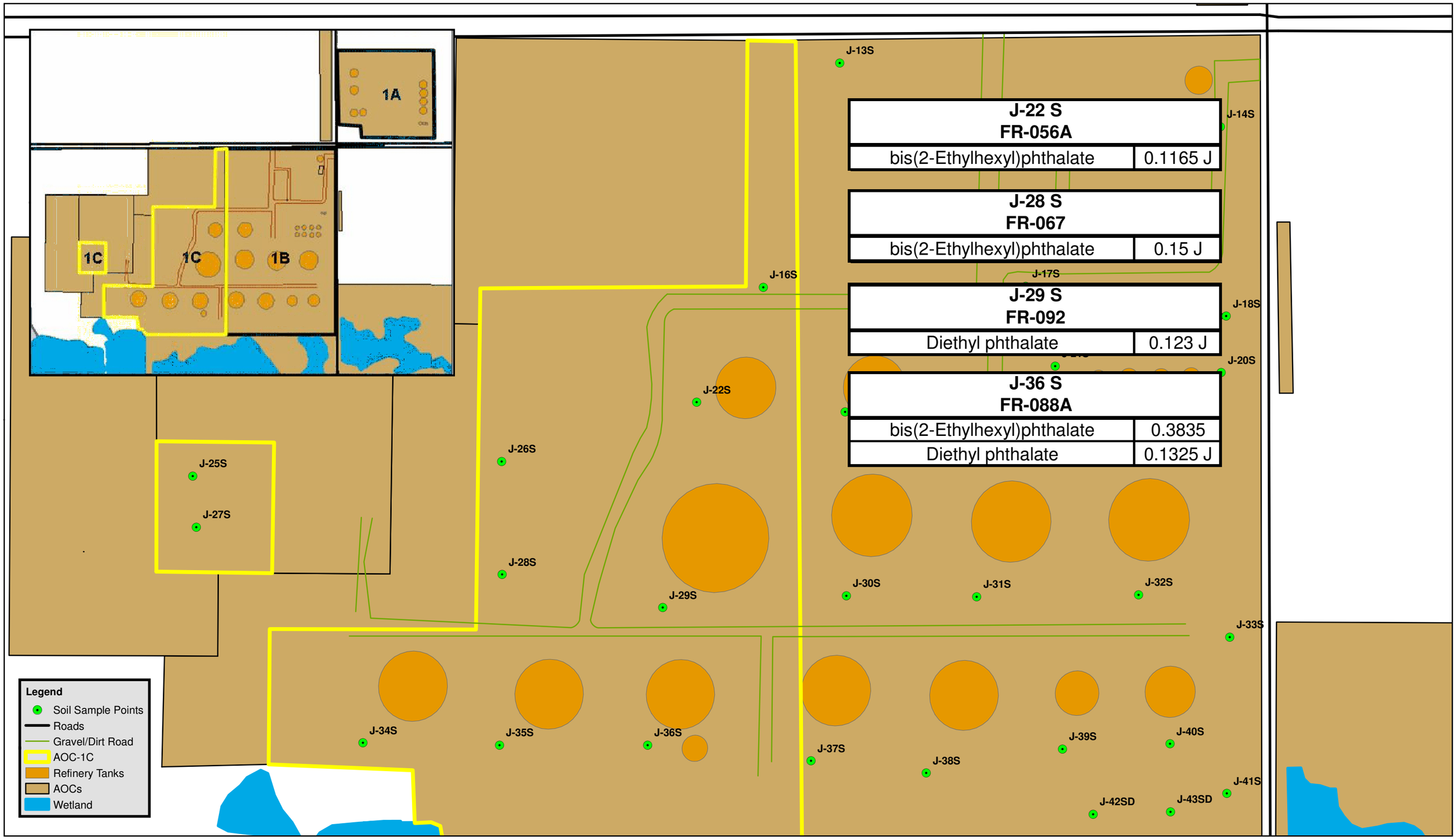
AOC-1B
Ecological
SVOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
21H



J-22 S FR-056A	
bis(2-Ethylhexyl)phthalate	0.1165 J

J-28 S FR-067	
bis(2-Ethylhexyl)phthalate	0.15 J

J-29 S FR-092	
Diethyl phthalate	0.123 J

J-36 S FR-088A	
bis(2-Ethylhexyl)phthalate	0.3835
Diethyl phthalate	0.1325 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

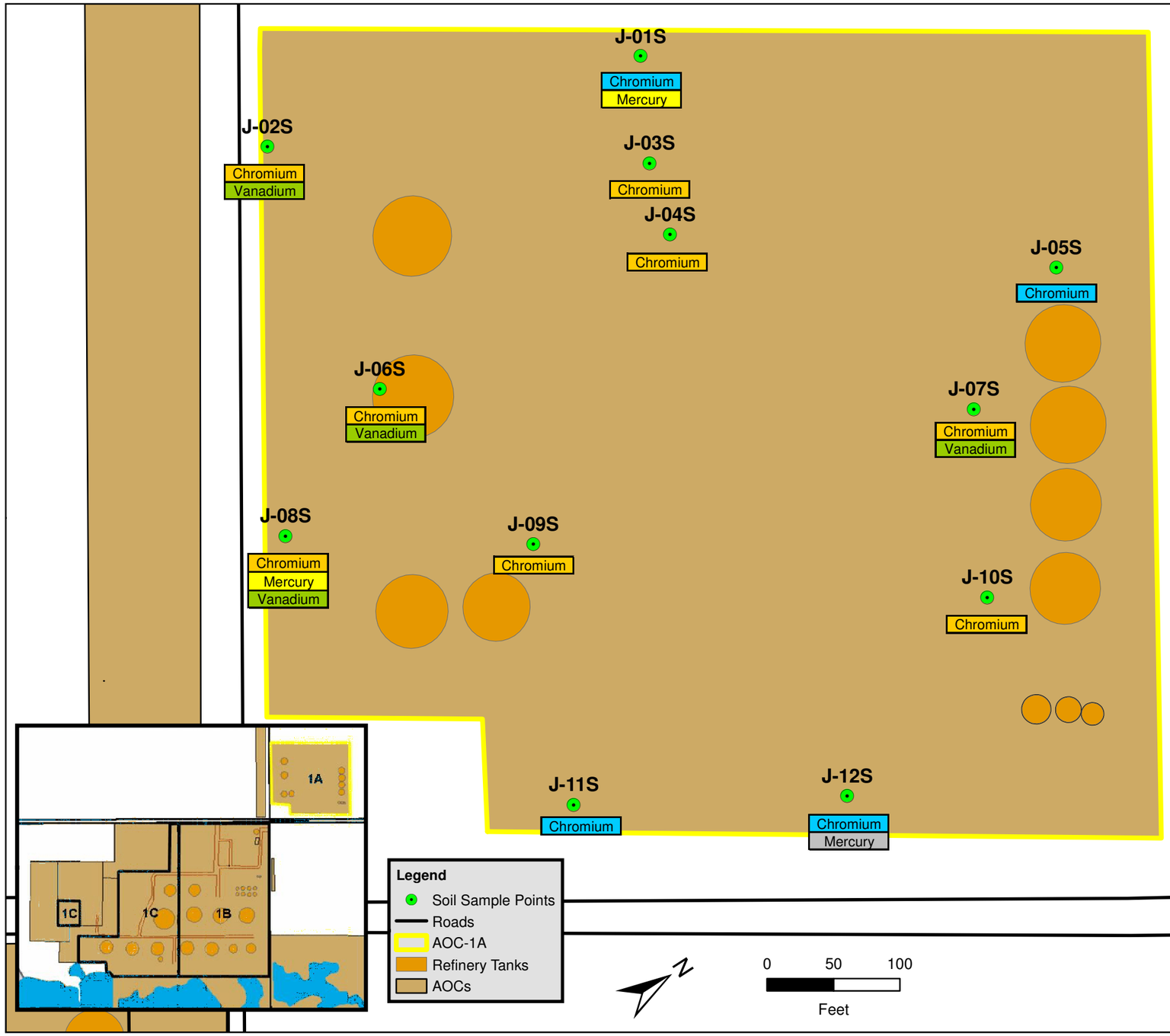
AOC-1C
Ecological
SVOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
21I



J-01 S FR-014	
Aluminum	1200
Barium	7.7 B
Chromium	0.63 B
Copper	0.59 B
Iron	235
Lead	1.9
Manganese	4.4
Mercury	0.055
Nickel	0.18 B
Vanadium	0.97 B
Zinc	1.6 B

J-02 S FR-017	
Aluminum	7690
Arsenic	0.34 B
Barium	31.1
Beryllium	0.15 B
Chromium	3.9
Cobalt	0.44 B
Copper	1.5 B
Iron	1900
Lead	3.8
Manganese	12.9
Mercury	0.019
Nickel	1.8 B
Vanadium	5
Zinc	7.3

J-03 S FR-011	
Aluminum	2250
Barium	11.8 B
Beryllium	0.035 B
Chromium	1.2
Copper	0.58 B
Iron	494
Lead	2.4
Manganese	5.1
Mercury	0.0051 B
Nickel	0.46 B
Vanadium	1.7 B
Zinc	2.2

J-04 S FR-008	
Aluminum	747
Barium	8.6 B
Chromium	2.1
Copper	0.79 B
Iron	363
Lead	2.3
Manganese	6.2
Nickel	0.32 B
Vanadium	1 B
Zinc	2.9

J-05 S FR-034	
Aluminum	959
Barium	8.5 B
Beryllium	0.042 B
Chromium	0.8
Copper	0.44 B
Iron	624
Lead	2.7
Manganese	4.6
Mercury	0.0021 B
Nickel	0.28 B
Vanadium	0.77 B
Zinc	3.6

J-06 S FR-021	
Aluminum	6880
Arsenic	0.23 B
Barium	23.1
Beryllium	0.13 B
Chromium	3.7
Cobalt	0.35 B
Copper	1.3 B
Iron	2000
Lead	3.2
Manganese	9.9
Mercury	0.033
Nickel	1.3 B
Vanadium	5.3
Zinc	7

J-07 S FR-031	
Aluminum	11400
Arsenic	0.47 B
Barium	52.4
Beryllium	0.28 B
Chromium	4.3
Cobalt	0.56 B
Copper	1.6 B
Iron	2680
Lead	4.3
Manganese	10.8
Mercury	0.012 B
Nickel	1.8 B
Vanadium	7.1
Zinc	10.3

J-08 S FR-023	
Aluminum	10900
Arsenic	0.29 B
Barium	29.3
Beryllium	0.25 B
Chromium	5.2
Cobalt	0.72 B
Copper	2
Iron	4410
Lead	4.1
Manganese	13.9
Mercury	0.048
Nickel	1.8 B
Vanadium	5.7
Zinc	15

J-09 S FR-026	
Aluminum	858
Barium	5.4 B
Beryllium	0.035 B
Chromium	1.8
Copper	0.48 B
Iron	341
Lead	1.5
Manganese	4.1
Nickel	0.22 B
Vanadium	0.95 B
Zinc	1.6 B

J-10 S FR-028	
Aluminum	1090
Barium	6.7 B
Beryllium	0.047 B
Chromium	1
Copper	0.35 B
Iron	258
Lead	1.7
Manganese	3.1
Nickel	0.21 B
Vanadium	0.83 B
Zinc	3.1

J-11 S FR-002	
Aluminum	1110
Arsenic	0.26 B
Barium	10.2 B
Beryllium	0.1 B
Chromium	0.98 B
Copper	0.49 B
Iron	224
Lead	2.3
Manganese	3.5
Mercury	0.0017 B
Nickel	0.26 B
Vanadium	0.89 B
Zinc	1.5 B

J-12 S FR-005	
Aluminum	748
Barium	4.2 B
Chromium	0.58 B
Copper	0.47 B
Iron	174
Lead	1.3
Manganese	2.7
Mercury	0.59
Selenium	0.22 B
Vanadium	0.65 B
Zinc	1.5 B

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- Exceeds Earthworm Limit
- Exceeds Plant Limit
- Exceeds Median Background Limit
- Exceeds Earthworm and Plant Limits
- Exceeds Earthworm, Plant, and Median Background Limits

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

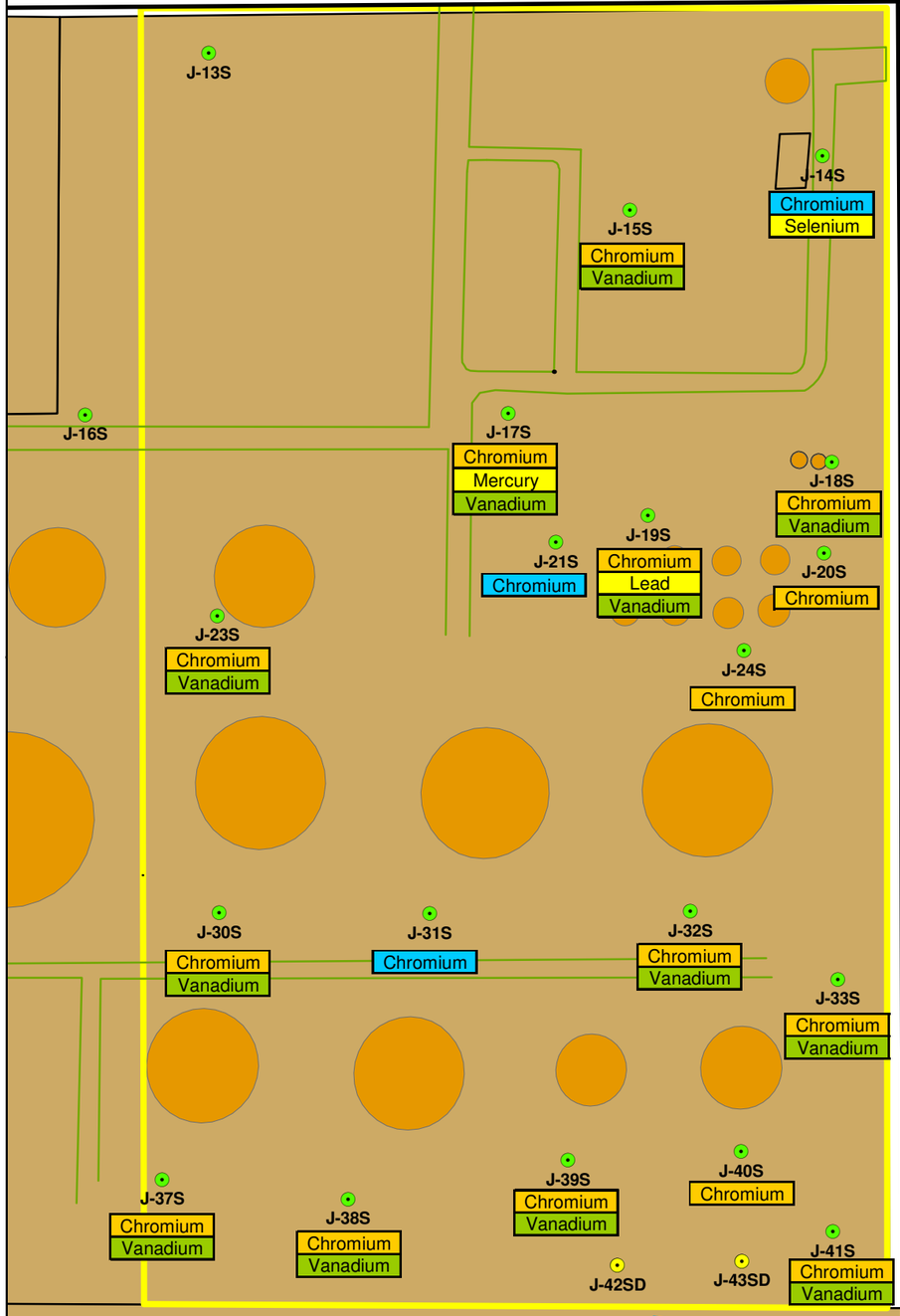
AOC-1A
Ecological
Metal Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
22A



J-14 S FR-062	
Aluminum	917
Barium	7.4 B
Chromium	0.6 B
Hex Chrom	1.3 B
Copper	0.39 B
Iron	270
Lead	1.8
Manganese	5.5
Selenium	0.36 B
Vanadium	1.3 B
Zinc	2.1 B

J-15 S FR-036	
Aluminum	5880
Arsenic	0.38 B
Barium	26.5
Beryllium	0.32 B
Chromium	3.4
Cobalt	0.58 B
Copper	3.8
Iron	2220
Lead	3.5
Manganese	11.9
Mercury	0.013 B
Nickel	1.5 B
Vanadium	4.4 B
Zinc	8.1

J-17 S FR-047	
Aluminum	1130
Arsenic	0.41 B
Barium	11.4 B
Chromium	2.4
Cobalt	0.24 B
Copper	0.45 B
Iron	1230
Lead	2.3
Manganese	9.9
Mercury	0.055
Nickel	0.29 B
Selenium	0.31 U
Vanadium	2.1 B
Zinc	2.3 B

J-18 S FR-051	
Aluminum	3510
Arsenic	0.44 B
Barium	21.5 B
Beryllium	0.086 B
Chromium	3.2
Hex Chrom	1.6 B
Cobalt	0.25 B
Copper	0.89 B
Iron	1270
Lead	4.2
Manganese	10.1
Mercury	0.0048 B
Nickel	0.36 B
Vanadium	3.6 B
Zinc	4.4

J-19 S FR-041	
Aluminum	1760
Arsenic	1.7
Barium	98.7
Beryllium	0.13 B
Chromium	15
Cobalt	0.69 B
Copper	5.9
Iron	3080
Lead	26
Manganese	19.7
Mercury	0.0065 B
Nickel	5.9
Vanadium	3.2 B
Zinc	18.9

J-20 S FR-045	
Aluminum	915
Barium	11.5 B
Chromium	2.5
Copper	0.62 B
Iron	548
Lead	2.1
Manganese	7.5
Nickel	0.22 B
Vanadium	1.8 B
Zinc	3.2

J-21 S FR-038	
Aluminum	648
Barium	4.6 B
Beryllium	0.054 B
Chromium	0.59 B
Hex Chrom	1.2 B
Copper	0.39 B
Iron	381
Lead	1.5
Manganese	4.5
Vanadium	1.1 B
Zinc	4.4

J-23 S FR-055	
Aluminum	4180
Arsenic	1.4
Barium	41.8
Beryllium	0.1 B
Chromium	3.5
Cobalt	1.2 B
Copper	2.4 B
Iron	2590
Lead	3.6
Manganese	130
Mercury	0.0077 B
Nickel	2.6 B
Vanadium	6.7
Zinc	11

J-24 S FR-043	
Aluminum	790
Arsenic	0.3 B
Barium	12 B
Beryllium	0.064 B
Chromium	1.2
Copper	0.9 B
Iron	529
Lead	3.1
Manganese	9.1
Mercury	0.012 B
Nickel	0.23 B
Vanadium	1.2 B
Zinc	5.7

J-30 S FR-095	
Aluminum	1770
Arsenic	0.54 B
Barium	25.1
Beryllium	0.11 B
Chromium	2.2
Cobalt	0.56 B
Copper	1.1 B
Iron	1130
Lead	2.7
Manganese	69.5
Mercury	0.0043 B
Nickel	1 B
Vanadium	2.4 B
Zinc	7

J-31 S FR-101	
Aluminum	1390
Arsenic	0.23 B
Barium	13.5 B
Beryllium	0.023 B
Chromium	0.76 B
Cobalt	0.31 B
Copper	1.2 B
Iron	693
Lead	1.7
Manganese	9
Mercury	0.0026 B
Nickel	0.26 B
Vanadium	1.7 B
Zinc	8.3

J-32 S FR-097	
Aluminum	2460
Arsenic	1.1
Barium	39.6
Beryllium	0.12 B
Chromium	2.9
Cobalt	0.55 B
Copper	1.1 B
Iron	1790
Lead	2.7
Manganese	29
Nickel	1.3 B
Vanadium	3.7 B
Zinc	6.4

J-33 S FR-106	
Aluminum	1240
Arsenic	0.81 B
Barium	36.2
Beryllium	0.044 B
Chromium	1.9
Cobalt	0.84 B
Copper	1 B
Iron	1400
Lead	5.9
Manganese	73
Mercury	0.0048 B
Nickel	0.36 B
Vanadium	2 B
Zinc	2.8

J-37 S FR-120	
Aluminum	8450
Arsenic	2.1
Barium	97.8
Beryllium	0.29 B
Chromium	8.8
Cobalt	1.5 B
Copper	4.4
Iron	5250
Lead	6
Manganese	112
Nickel	2.9 B
Vanadium	12.1
Zinc	16.6

J-38 S FR-117	
Aluminum	3310
Arsenic	2.2
Barium	25
Beryllium	0.11 B
Chromium	2.5
Cobalt	0.58 B
Copper	1.9 B
Iron	1930
Lead	5.7
Manganese	153
Mercury	0.0013 B
Nickel	1.4 B
Vanadium	5.8
Zinc	7.2

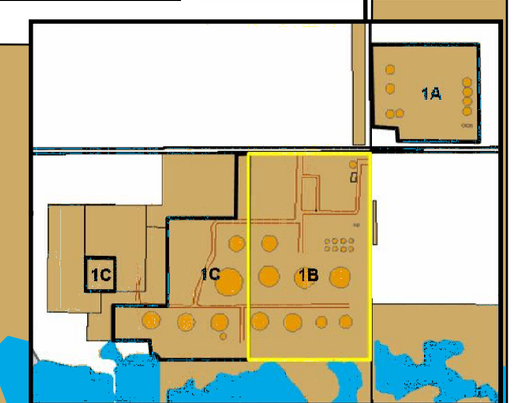
J-39 S FR-114	
Aluminum	1160
Arsenic	0.7 B
Barium	16.3 B
Beryllium	0.041 B
Chromium	1.4
Cobalt	0.26 B
Copper	0.61 B
Iron	954
Lead	1.6
Manganese	76.3
Mercury	0.014 B
Nickel	0.39 B
Vanadium	2.4 B
Zinc	2.3

J-40 S FR-110A	
Aluminum	1495
Arsenic	0.62 B
Barium	59.65
Beryllium	0.0445 B
Chromium	2.3
Cobalt	0.715 B
Copper	0.725 B
Iron	1350
Lead	2.15
Manganese	70.05
Mercury	0.0046 B
Nickel	0.66 B
Vanadium	1.95 B
Zinc	3.1

J-41 S FR-103	
Aluminum	2480
Arsenic	1.7
Barium	26.4
Beryllium	0.067 B
Chromium	2.2
Cobalt	0.78 B
Copper	1.9 B
Iron	1780
Lead	6.3
Manganese	134
Mercury	0.0053 B
Nickel	0.99 B
Vanadium	4.3 B
Zinc	6.7

Legend

- Soil Sample Points
- Sediment Sample Points
- Roads
- Gravel/Dirt Road
- AOC-1B
- Refinery Tanks
- AOCs
- Wetland



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- Exceeds Earthworm Limit
- Exceeds Plant Limit
- Exceeds Median Background Limit
- Exceeds Earthworm and Plant Limits
- SDL Exceeds Median Background Screening Level

N

0 100 200

Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-1B Ecological Metal Subsurface Soil Distribution Map

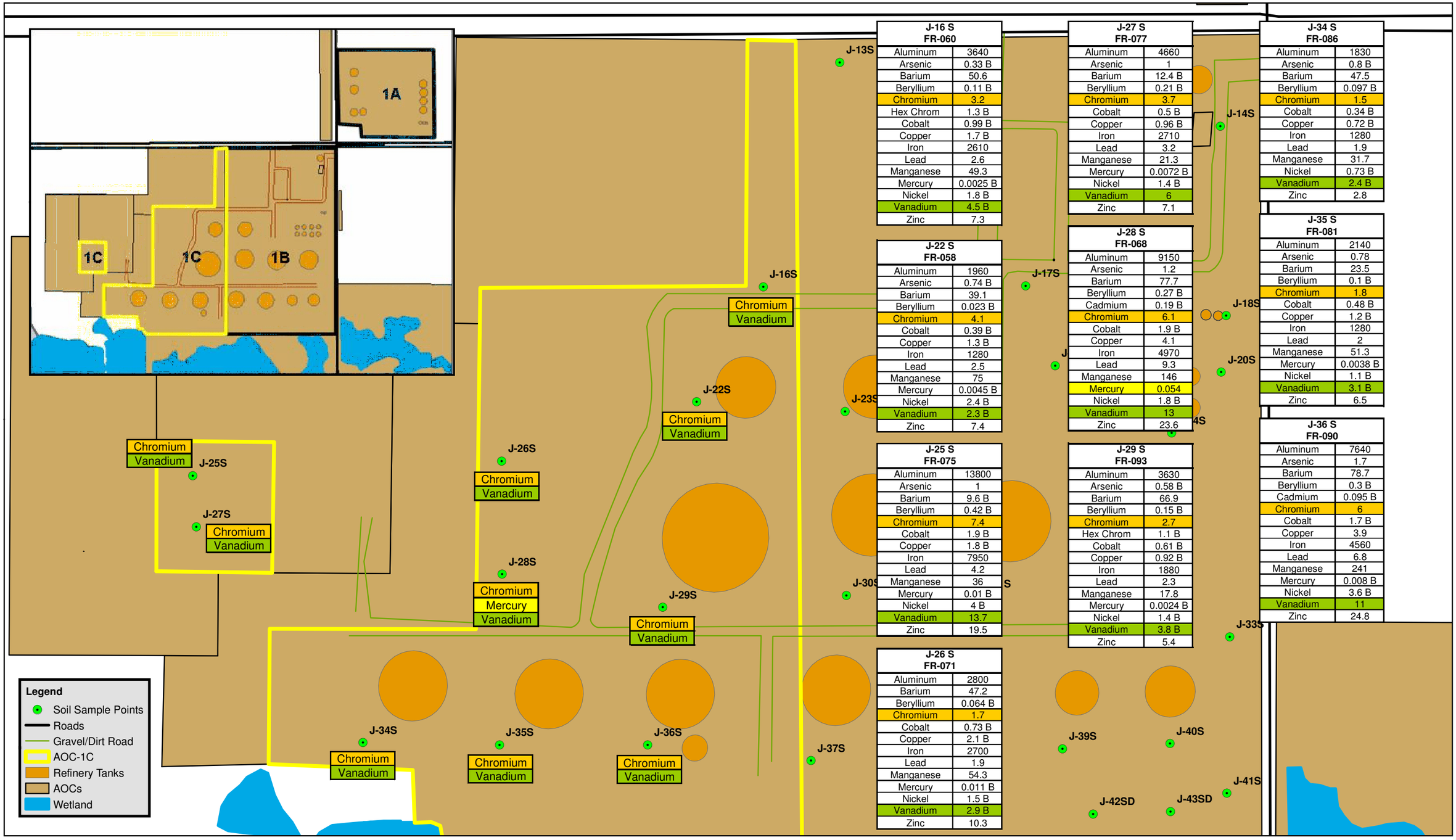
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

22B



J-16 S FR-060	
Aluminum	3640
Arsenic	0.33 B
Barium	50.6
Beryllium	0.11 B
Chromium	3.2
Hex Chrom	1.3 B
Cobalt	0.99 B
Copper	1.7 B
Iron	2610
Lead	2.6
Manganese	49.3
Mercury	0.0025 B
Nickel	1.8 B
Vanadium	4.5 B
Zinc	7.3

J-22 S FR-058	
Aluminum	1960
Arsenic	0.74 B
Barium	39.1
Beryllium	0.023 B
Chromium	4.1
Cobalt	0.39 B
Copper	1.3 B
Iron	1280
Lead	2.5
Manganese	75
Mercury	0.0045 B
Nickel	2.4 B
Vanadium	2.3 B
Zinc	7.4

J-25 S FR-075	
Aluminum	13800
Arsenic	1
Barium	9.6 B
Beryllium	0.42 B
Chromium	7.4
Cobalt	1.9 B
Copper	1.8 B
Iron	7950
Lead	4.2
Manganese	36
Mercury	0.01 B
Nickel	4 B
Vanadium	13.7
Zinc	19.5

J-26 S FR-071	
Aluminum	2800
Barium	47.2
Beryllium	0.064 B
Chromium	1.7
Cobalt	0.73 B
Copper	2.1 B
Iron	2700
Lead	1.9
Manganese	54.3
Mercury	0.011 B
Nickel	1.5 B
Vanadium	2.9 B
Zinc	10.3

J-27 S FR-077	
Aluminum	4660
Arsenic	1
Barium	12.4 B
Beryllium	0.21 B
Chromium	3.7
Cobalt	0.5 B
Copper	0.96 B
Iron	2710
Lead	3.2
Manganese	21.3
Mercury	0.0072 B
Nickel	1.4 B
Vanadium	6
Zinc	7.1

J-28 S FR-068	
Aluminum	9150
Arsenic	1.2
Barium	77.7
Beryllium	0.27 B
Cadmium	0.19 B
Chromium	6.1
Cobalt	1.9 B
Copper	4.1
Iron	4970
Lead	9.3
Manganese	146
Mercury	0.054
Nickel	1.8 B
Vanadium	13
Zinc	23.6

J-29 S FR-093	
Aluminum	3630
Arsenic	0.58 B
Barium	66.9
Beryllium	0.15 B
Chromium	2.7
Hex Chrom	1.1 B
Cobalt	0.61 B
Copper	0.92 B
Iron	1880
Lead	2.3
Manganese	17.8
Mercury	0.0024 B
Nickel	1.4 B
Vanadium	3.8 B
Zinc	5.4

J-34 S FR-086	
Aluminum	1830
Arsenic	0.8 B
Barium	47.5
Beryllium	0.097 B
Chromium	1.5
Cobalt	0.34 B
Copper	0.72 B
Iron	1280
Lead	1.9
Manganese	31.7
Nickel	0.73 B
Vanadium	2.4 B
Zinc	2.8

J-35 S FR-081	
Aluminum	2140
Arsenic	0.78
Barium	23.5
Beryllium	0.1 B
Chromium	1.8
Cobalt	0.48 B
Copper	1.2 B
Iron	1280
Lead	2
Manganese	51.3
Mercury	0.0038 B
Nickel	1.1 B
Vanadium	3.1 B
Zinc	6.5

J-36 S FR-090	
Aluminum	7640
Arsenic	1.7
Barium	78.7
Beryllium	0.3 B
Cadmium	0.095 B
Chromium	6
Cobalt	1.7 B
Copper	3.9
Iron	4560
Lead	6.8
Manganese	241
Mercury	0.008 B
Nickel	3.6 B
Vanadium	11
Zinc	24.8

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit
Exceeds Median Background Limit
Exceeds Earthworm and Plant Limits

0 90 180
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

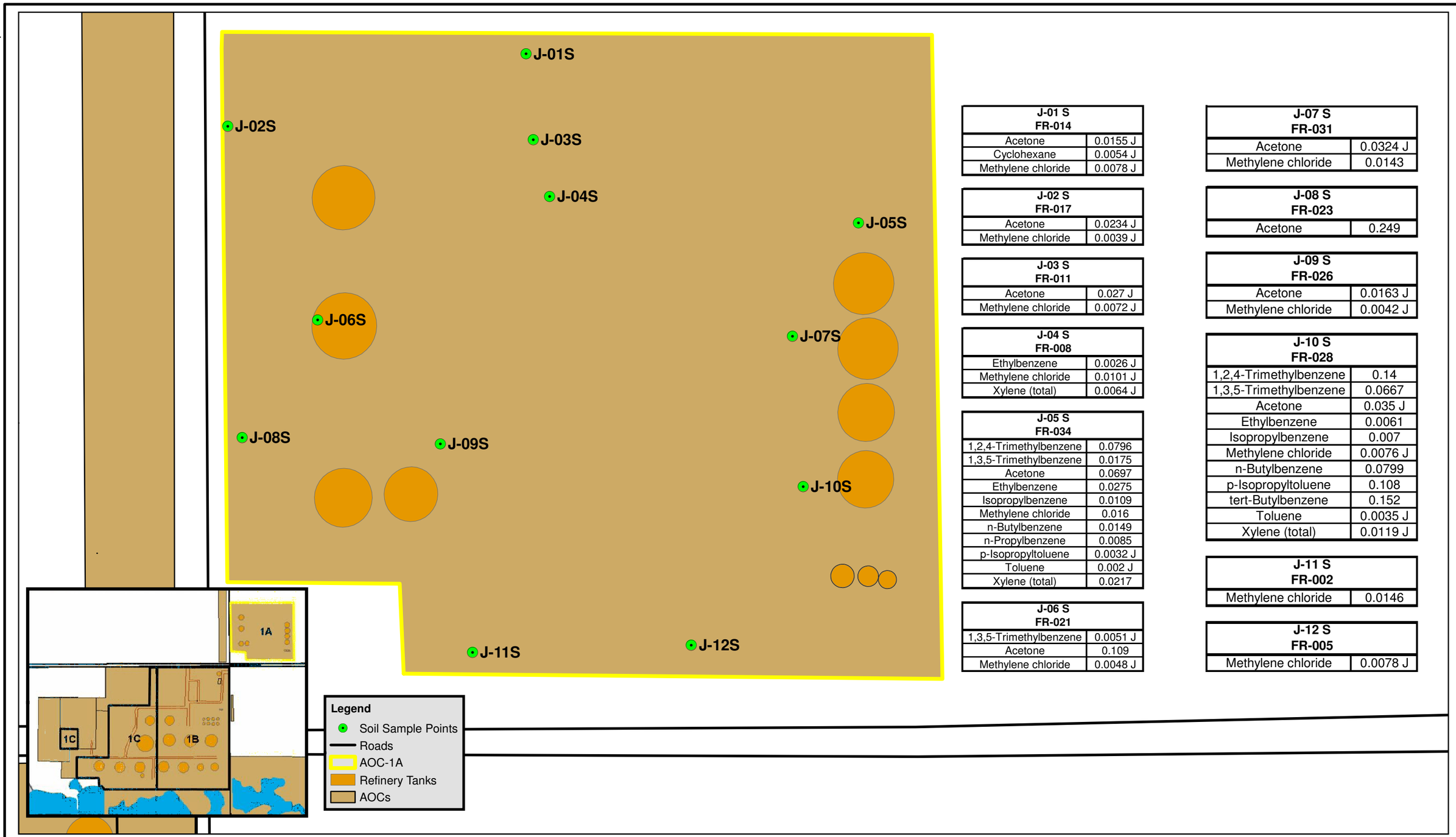
AOC-1C
Ecological
Metal Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
22C



J-01 S FR-014	
Acetone	0.0155 J
Cyclohexane	0.0054 J
Methylene chloride	0.0078 J

J-02 S FR-017	
Acetone	0.0234 J
Methylene chloride	0.0039 J

J-03 S FR-011	
Acetone	0.027 J
Methylene chloride	0.0072 J

J-04 S FR-008	
Ethylbenzene	0.0026 J
Methylene chloride	0.0101 J
Xylene (total)	0.0064 J

J-05 S FR-034	
1,2,4-Trimethylbenzene	0.0796
1,3,5-Trimethylbenzene	0.0175
Acetone	0.0697
Ethylbenzene	0.0275
Isopropylbenzene	0.0109
Methylene chloride	0.016
n-Butylbenzene	0.0149
n-Propylbenzene	0.0085
p-Isopropyltoluene	0.0032 J
Toluene	0.002 J
Xylene (total)	0.0217

J-06 S FR-021	
1,3,5-Trimethylbenzene	0.0051 J
Acetone	0.109
Methylene chloride	0.0048 J

J-07 S FR-031	
Acetone	0.0324 J
Methylene chloride	0.0143

J-08 S FR-023	
Acetone	0.249

J-09 S FR-026	
Acetone	0.0163 J
Methylene chloride	0.0042 J

J-10 S FR-028	
1,2,4-Trimethylbenzene	0.14
1,3,5-Trimethylbenzene	0.0667
Acetone	0.035 J
Ethylbenzene	0.0061
Isopropylbenzene	0.007
Methylene chloride	0.0076 J
n-Butylbenzene	0.0799
p-Isopropyltoluene	0.108
tert-Butylbenzene	0.152
Toluene	0.0035 J
Xylene (total)	0.0119 J

J-11 S FR-002	
Methylene chloride	0.0146

J-12 S FR-005	
Methylene chloride	0.0078 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 50 100
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

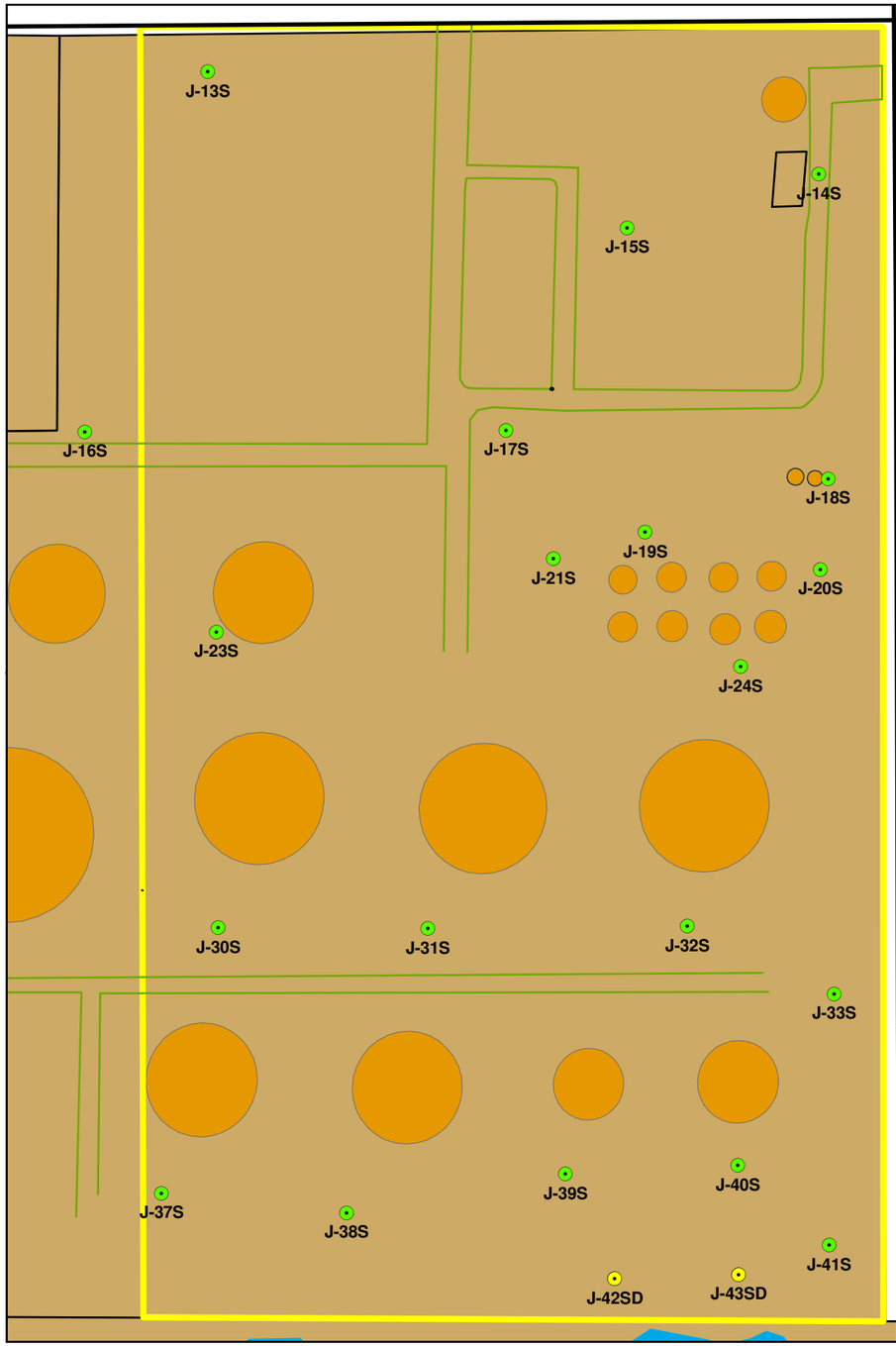
AOC-1A
Ecological
VOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
22D



J-13 S FR-065	
Acetone	0.0092 J

J-14 S FR-062	
Acetone	0.0127 J

J-15 S FR-036	
Acetone	0.0337 J
Methylene chloride	0.003 J

J-17 S FR-047	
Acetone	0.0265 J
Carbon disulfide	0.0021 J
Methylene chloride	0.0049 J

J-18 S FR-051	
Acetone	0.0219 J
Methylene chloride	0.006 J

J-19 S FR-041	
Carbon disulfide	0.002 J
Ethyl Ether	0.0133
Methylene chloride	0.0999

J-20 S FR-045	
Acetone	0.047 J
Methylene chloride	0.0334

J-23 S FR-055	
Acetone	0.0675

J-24 S FR-043	
Methylene chloride	0.0034 J

J-30 S FR-095	
Acetone	0.0109 J
Carbon disulfide	0.0023 J
Methylene chloride	0.0058 J

J-31 S FR-101	
Acetone	0.01 J

J-32 S FR-097	
Methylene chloride	0.0044 J

J-33 S FR-106	
Acetone	0.0127 J

J-37 S FR-120	
Acetone	0.0268 J
Carbon disulfide	0.0041 J
Methylene chloride	0.0031 J

J-38 S FR-117	
Acetone	0.0326 J
Carbon disulfide	0.0016 J

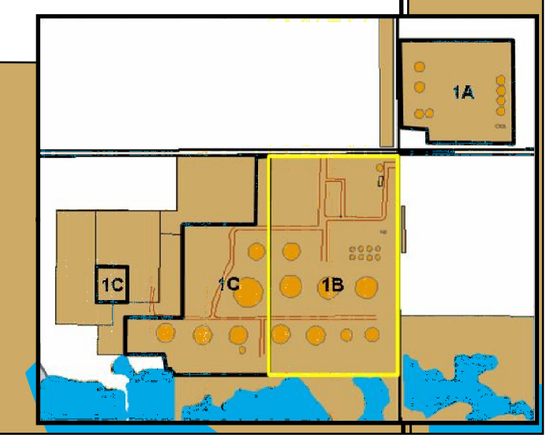
J-39 S FR-114	
Acetone	0.0228 J

J-40 S FR-110A	
Acetone	0.01985 J
Carbon disulfide	0.00155 J

J-41 S FR-103	
Acetone	0.0082 J

Legend

- Soil Sample Points
- Sediment Sample Points
- Roads
- Gravel/Dirt Road
- AOC-1B
- Refinery Tanks
- AOCs
- Wetland



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

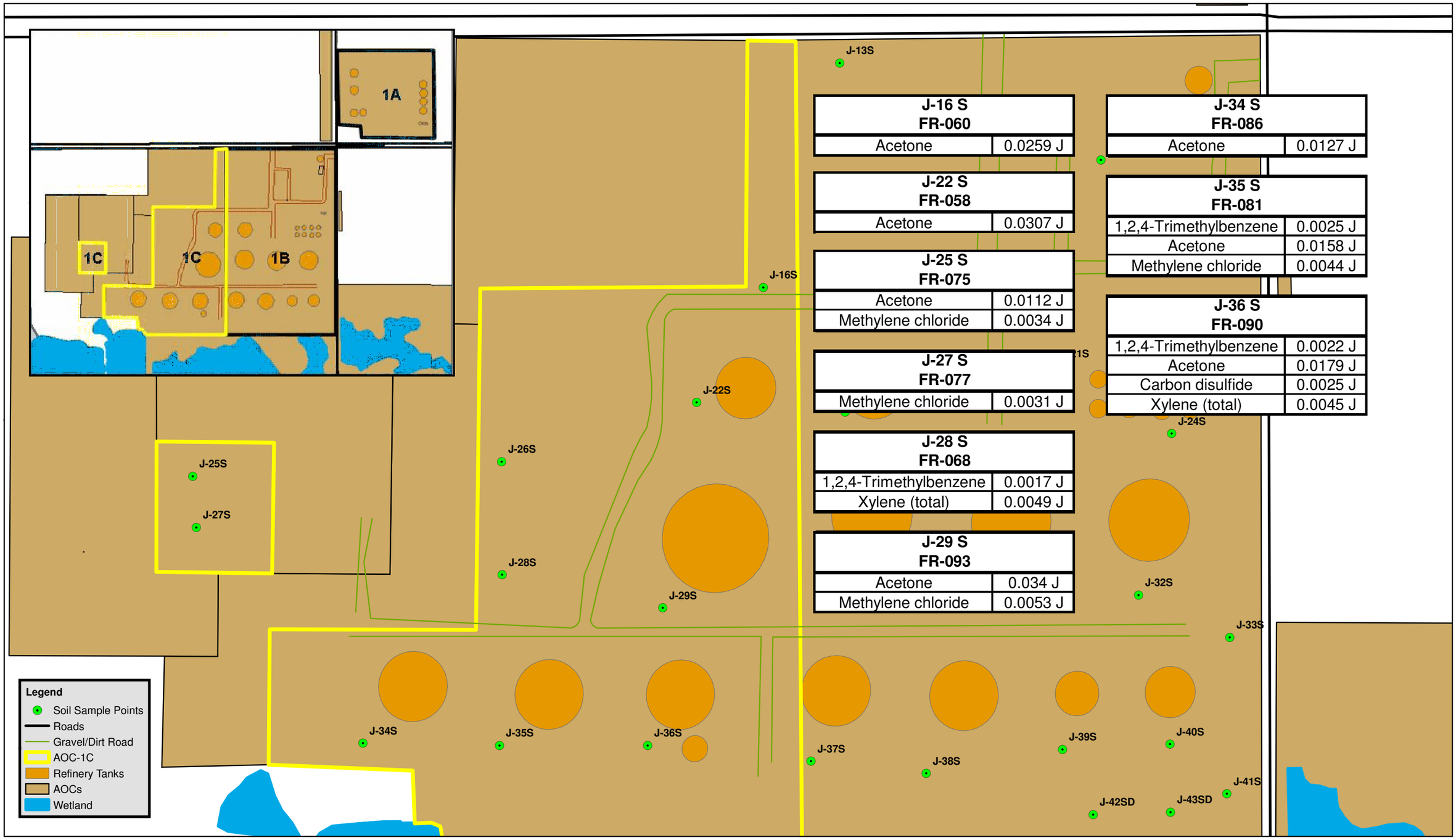
AOC-1B
Ecological
VOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
22E



J-16 S FR-060	
Acetone	0.0259 J

J-22 S FR-058	
Acetone	0.0307 J

J-25 S FR-075	
Acetone	0.0112 J
Methylene chloride	0.0034 J

J-27 S FR-077	
Methylene chloride	0.0031 J

J-28 S FR-068	
1,2,4-Trimethylbenzene	0.0017 J
Xylene (total)	0.0049 J

J-29 S FR-093	
Acetone	0.034 J
Methylene chloride	0.0053 J

J-34 S FR-086	
Acetone	0.0127 J

J-35 S FR-081	
1,2,4-Trimethylbenzene	0.0025 J
Acetone	0.0158 J
Methylene chloride	0.0044 J

J-36 S FR-090	
1,2,4-Trimethylbenzene	0.0022 J
Acetone	0.0179 J
Carbon disulfide	0.0025 J
Xylene (total)	0.0045 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

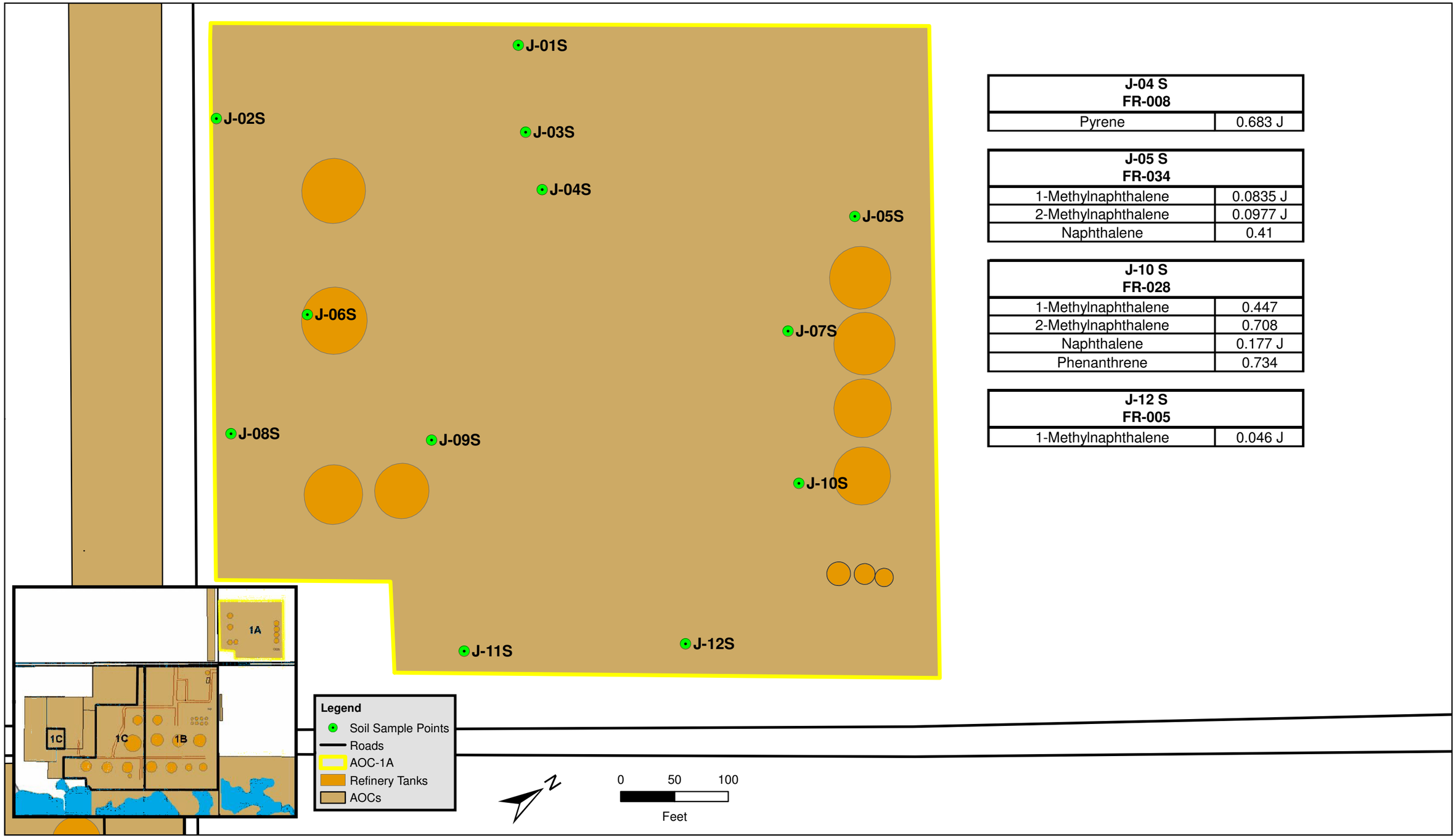
AOC-1C
Ecological
VOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
22F



J-04 S FR-008	
Pyrene	0.683 J

J-05 S FR-034	
1-Methylnaphthalene	0.0835 J
2-Methylnaphthalene	0.0977 J
Naphthalene	0.41

J-10 S FR-028	
1-Methylnaphthalene	0.447
2-Methylnaphthalene	0.708
Naphthalene	0.177 J
Phenanthrene	0.734

J-12 S FR-005	
1-Methylnaphthalene	0.046 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 50 100

Feet

DATE DRAWN: 4/30/08	DATE REVISED:	
DRAFTED BY:	C. SEATON	
CHECKED BY:	S. HALASZ	
APPROVED BY:		

AOC-1A
Ecological
SVOC Subsurface Soil Distribution Map

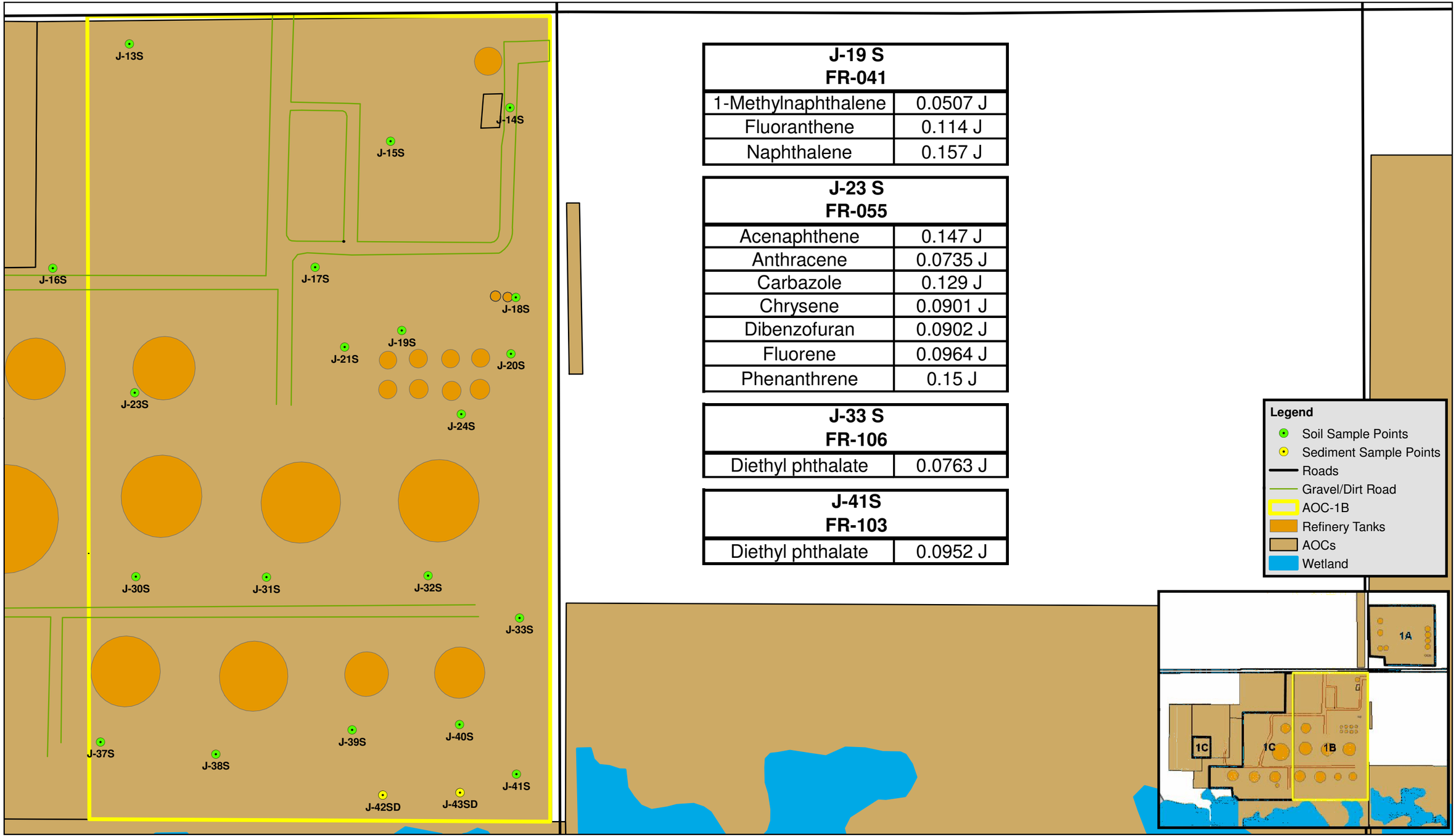
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

22G



J-19 S FR-041	
1-Methylnaphthalene	0.0507 J
Fluoranthene	0.114 J
Naphthalene	0.157 J

J-23 S FR-055	
Acenaphthene	0.147 J
Anthracene	0.0735 J
Carbazole	0.129 J
Chrysene	0.0901 J
Dibenzofuran	0.0902 J
Fluorene	0.0964 J
Phenanthrene	0.15 J

J-33 S FR-106	
Diethyl phthalate	0.0763 J

J-41S FR-103	
Diethyl phthalate	0.0952 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

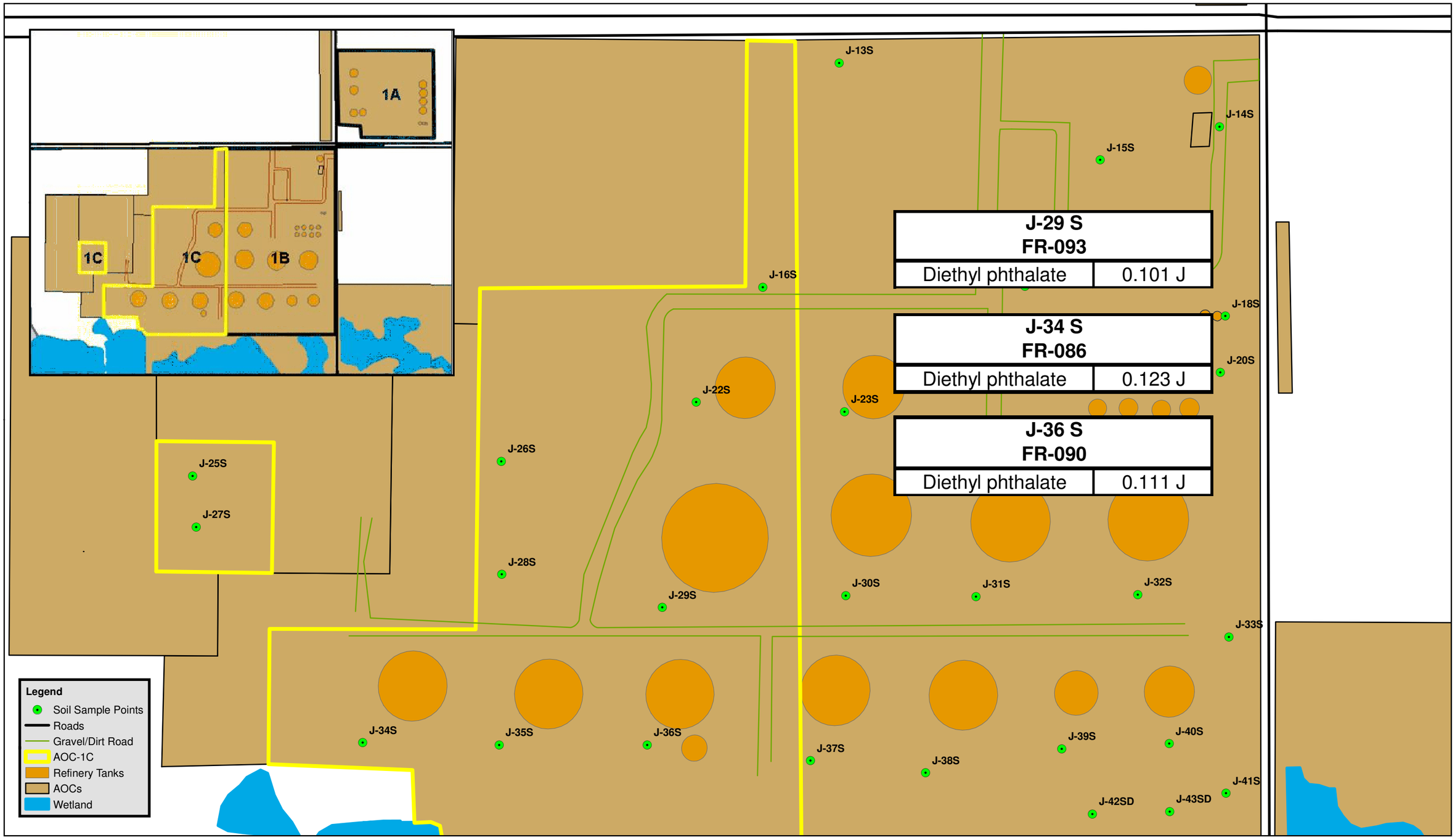
AOC-1B
Ecological
SVOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
22H



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

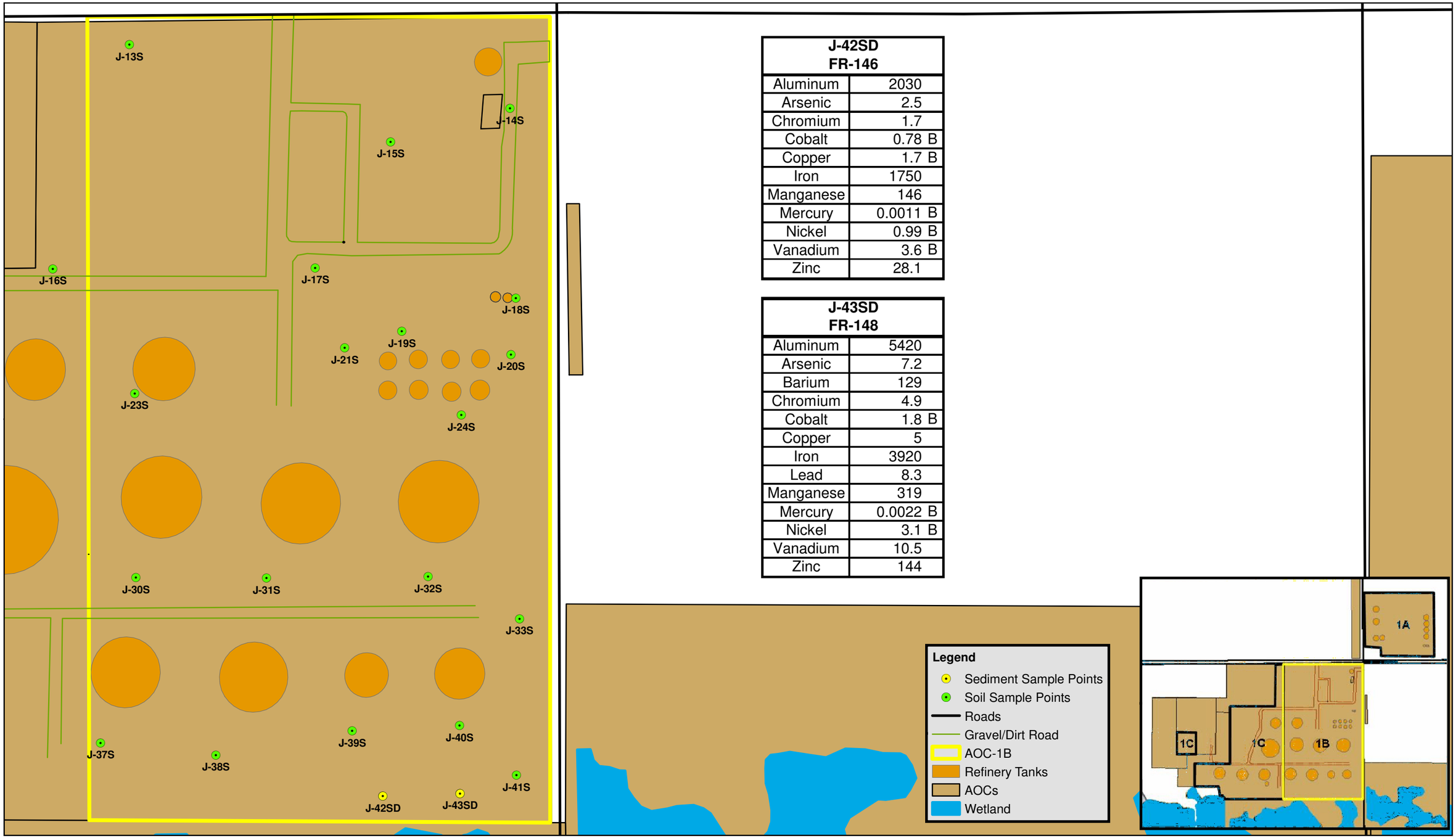
AOC-1C
Ecological
SVOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
22I



J-42SD FR-146	
Aluminum	2030
Arsenic	2.5
Chromium	1.7
Cobalt	0.78 B
Copper	1.7 B
Iron	1750
Manganese	146
Mercury	0.0011 B
Nickel	0.99 B
Vanadium	3.6 B
Zinc	28.1

J-43SD FR-148	
Aluminum	5420
Arsenic	7.2
Barium	129
Chromium	4.9
Cobalt	1.8 B
Copper	5
Iron	3920
Lead	8.3
Manganese	319
Mercury	0.0022 B
Nickel	3.1 B
Vanadium	10.5
Zinc	144

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

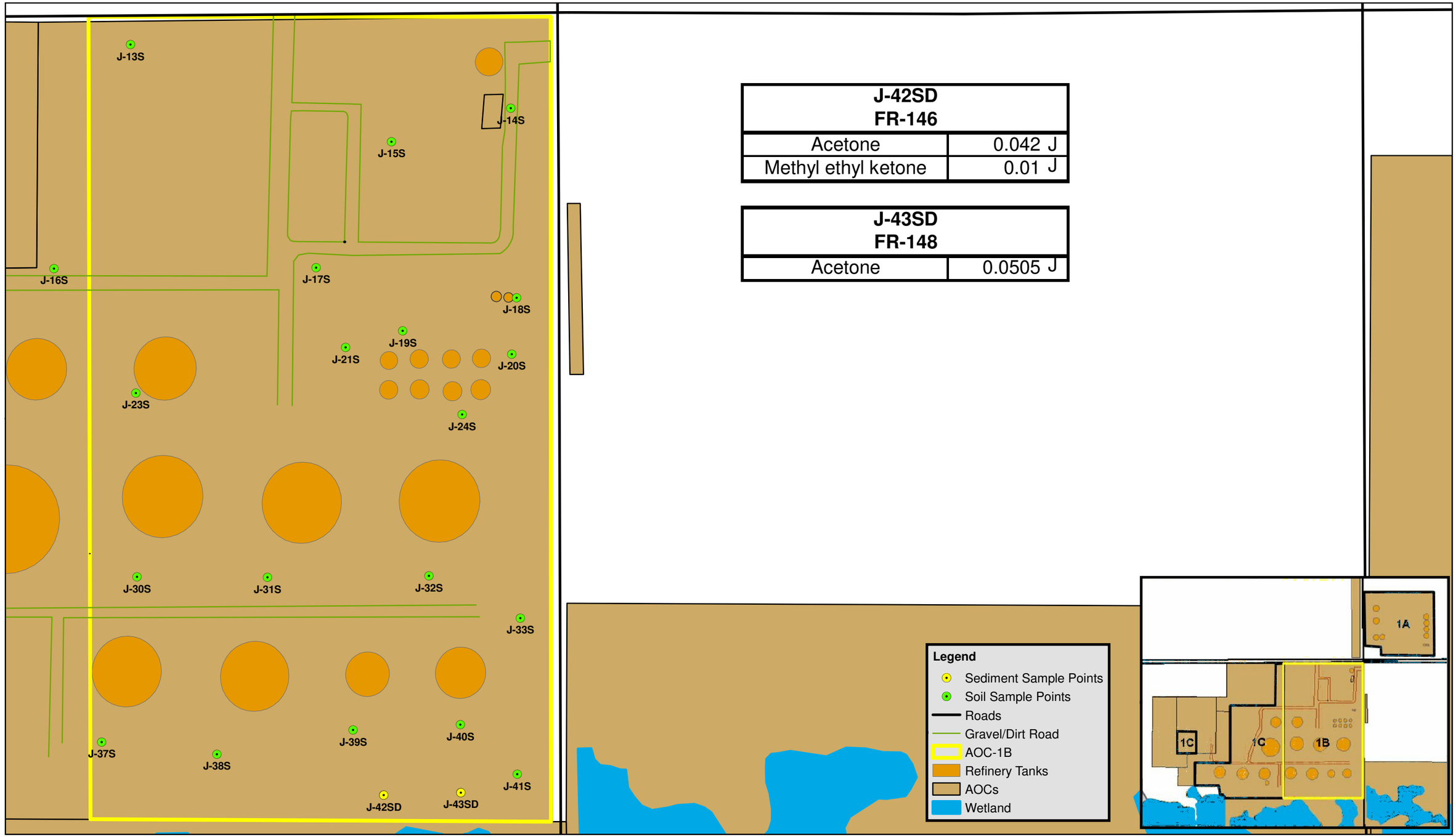
AOC-1B
Ecological
Metal Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
23A



J-42SD FR-146	
Acetone	0.042 J
Methyl ethyl ketone	0.01 J

J-43SD FR-148	
Acetone	0.0505 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

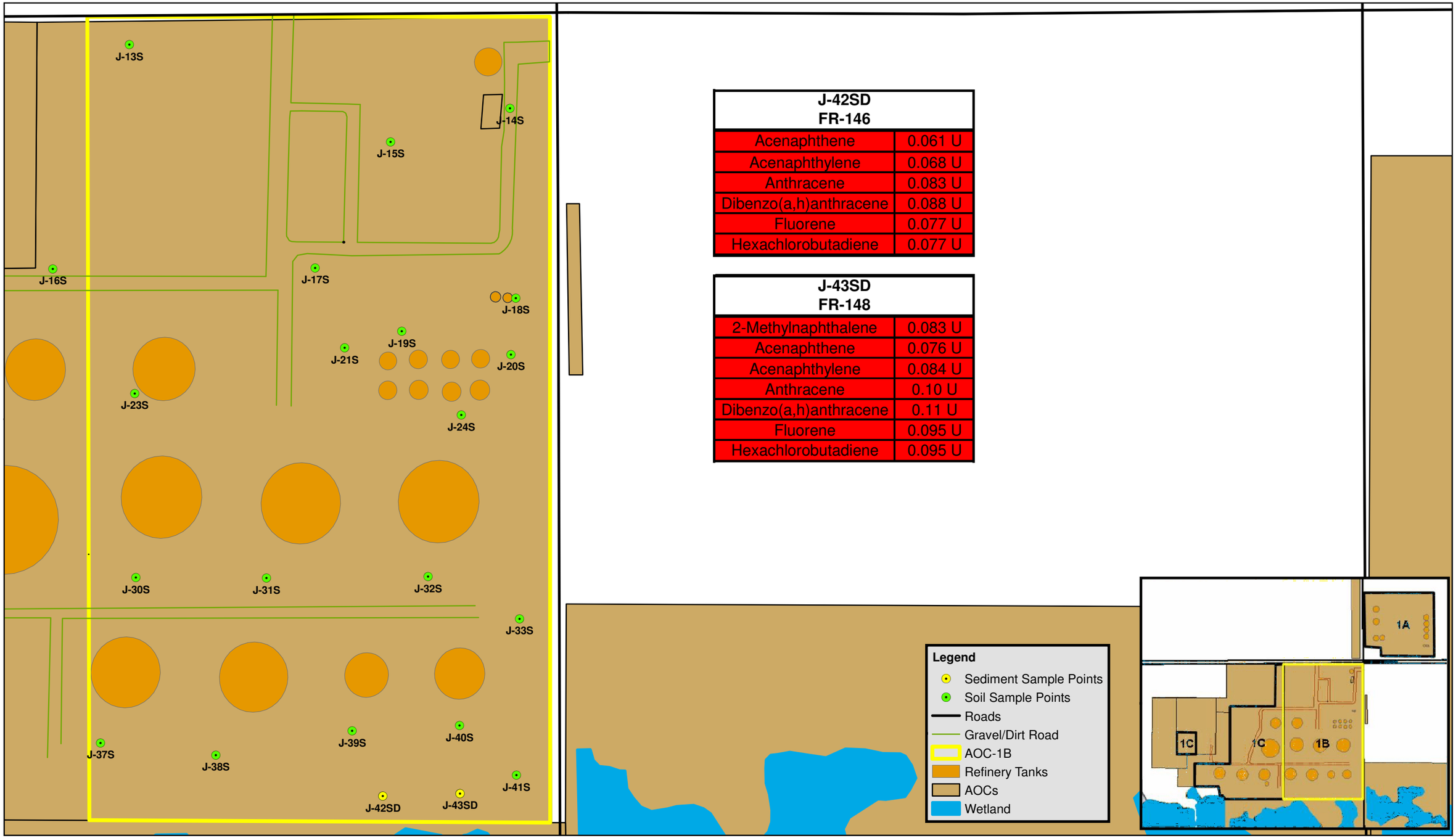
AOC-1B
Ecological
VOC Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
23B



J-42SD FR-146	
Acenaphthene	0.061 U
Acenaphthylene	0.068 U
Anthracene	0.083 U
Dibenzo(a,h)anthracene	0.088 U
Fluorene	0.077 U
Hexachlorobutadiene	0.077 U

J-43SD FR-148	
2-Methylnaphthalene	0.083 U
Acenaphthene	0.076 U
Acenaphthylene	0.084 U
Anthracene	0.10 U
Dibenzo(a,h)anthracene	0.11 U
Fluorene	0.095 U
Hexachlorobutadiene	0.095 U

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   U = Undetected at the sample detection limit (SDL)

Exceeds Sediment Marine Screening Level

0 90 180
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

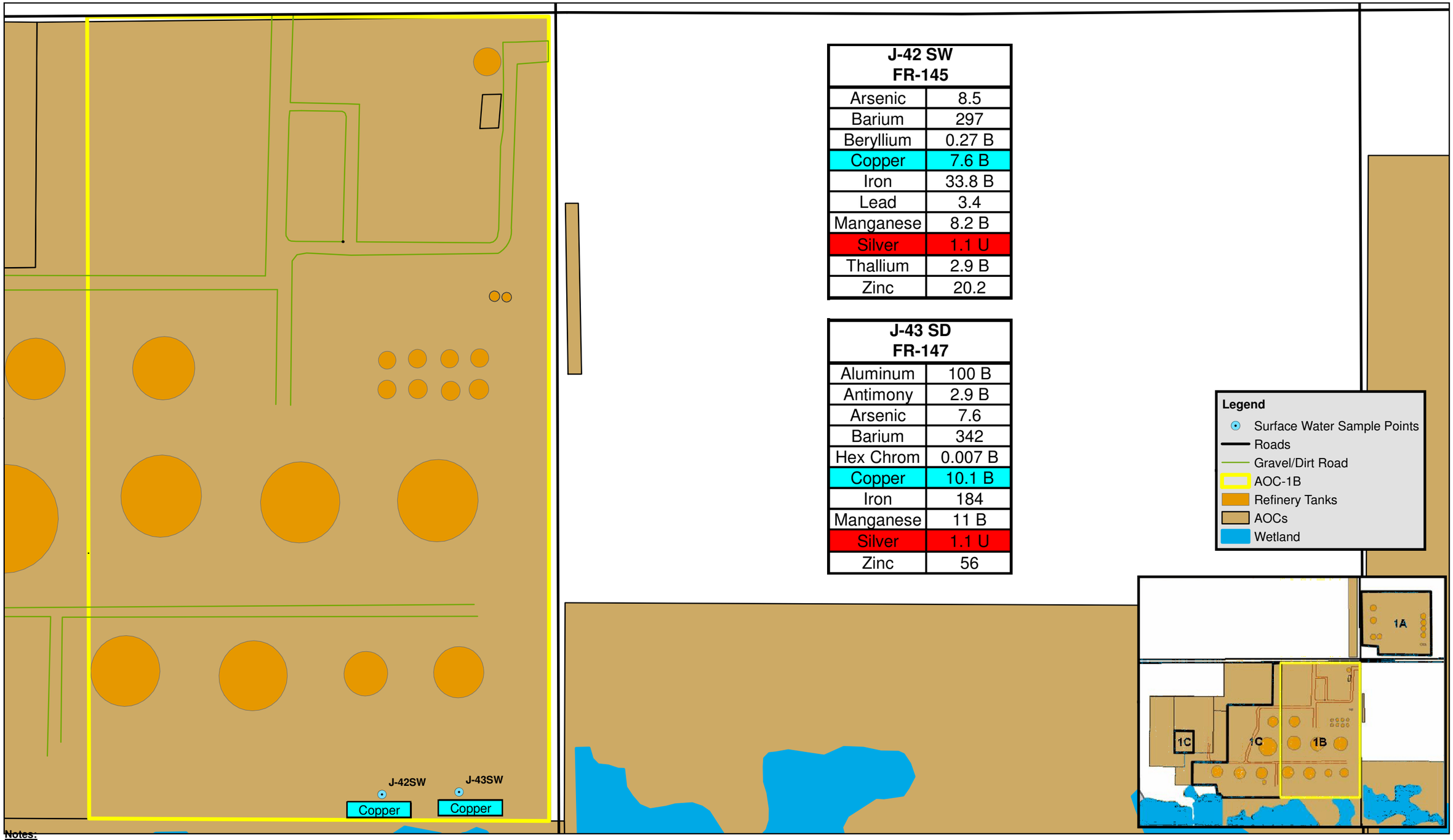
AOC-1B
Ecological
SVOC Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
23C



J-42 SW FR-145	
Arsenic	8.5
Barium	297
Beryllium	0.27 B
Copper	7.6 B
Iron	33.8 B
Lead	3.4
Manganese	8.2 B
Silver	1.1 U
Thallium	2.9 B
Zinc	20.2

J-43 SD FR-147	
Aluminum	100 B
Antimony	2.9 B
Arsenic	7.6
Barium	342
Hex Chrom	0.007 B
Copper	10.1 B
Iron	184
Manganese	11 B
Silver	1.1 U
Zinc	56

Notes:

1. Results are posted in µg/l
   Hex Chrom posted in mg/l
2. Qualifiers:
   U = Undetected at the sample detection limit (SDL)
   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Marine Limit

Exceeds Marine Screening Level

N

0 90 180

Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-1B
Ecological
Metal Surface Water Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

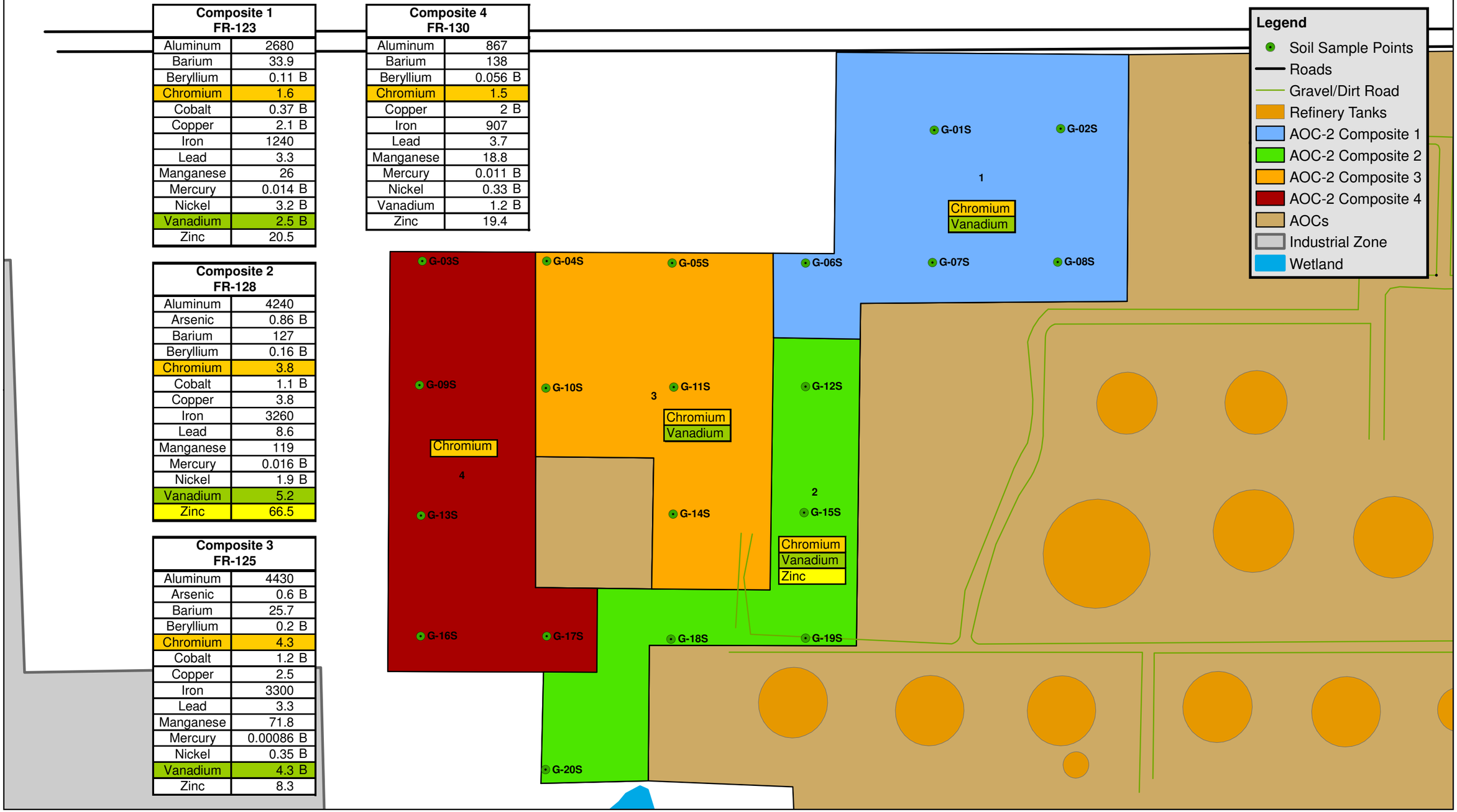
24

Composite 1 FR-123	
Aluminum	2680
Barium	33.9
Beryllium	0.11 B
Chromium	1.6
Cobalt	0.37 B
Copper	2.1 B
Iron	1240
Lead	3.3
Manganese	26
Mercury	0.014 B
Nickel	3.2 B
Vanadium	2.5 B
Zinc	20.5

Composite 4 FR-130	
Aluminum	867
Barium	138
Beryllium	0.056 B
Chromium	1.5
Copper	2 B
Iron	907
Lead	3.7
Manganese	18.8
Mercury	0.011 B
Nickel	0.33 B
Vanadium	1.2 B
Zinc	19.4

Composite 2 FR-128	
Aluminum	4240
Arsenic	0.86 B
Barium	127
Beryllium	0.16 B
Chromium	3.8
Cobalt	1.1 B
Copper	3.8
Iron	3260
Lead	8.6
Manganese	119
Mercury	0.016 B
Nickel	1.9 B
Vanadium	5.2
Zinc	66.5

Composite 3 FR-125	
Aluminum	4430
Arsenic	0.6 B
Barium	25.7
Beryllium	0.2 B
Chromium	4.3
Cobalt	1.2 B
Copper	2.5
Iron	3300
Lead	3.3
Manganese	71.8
Mercury	0.00086 B
Nickel	0.35 B
Vanadium	4.3 B
Zinc	8.3



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit
Exceeds Median Background Limit
Exceeds Earthworm and Plant Limits

N

0 100 200
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-2
Ecological
Metal Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

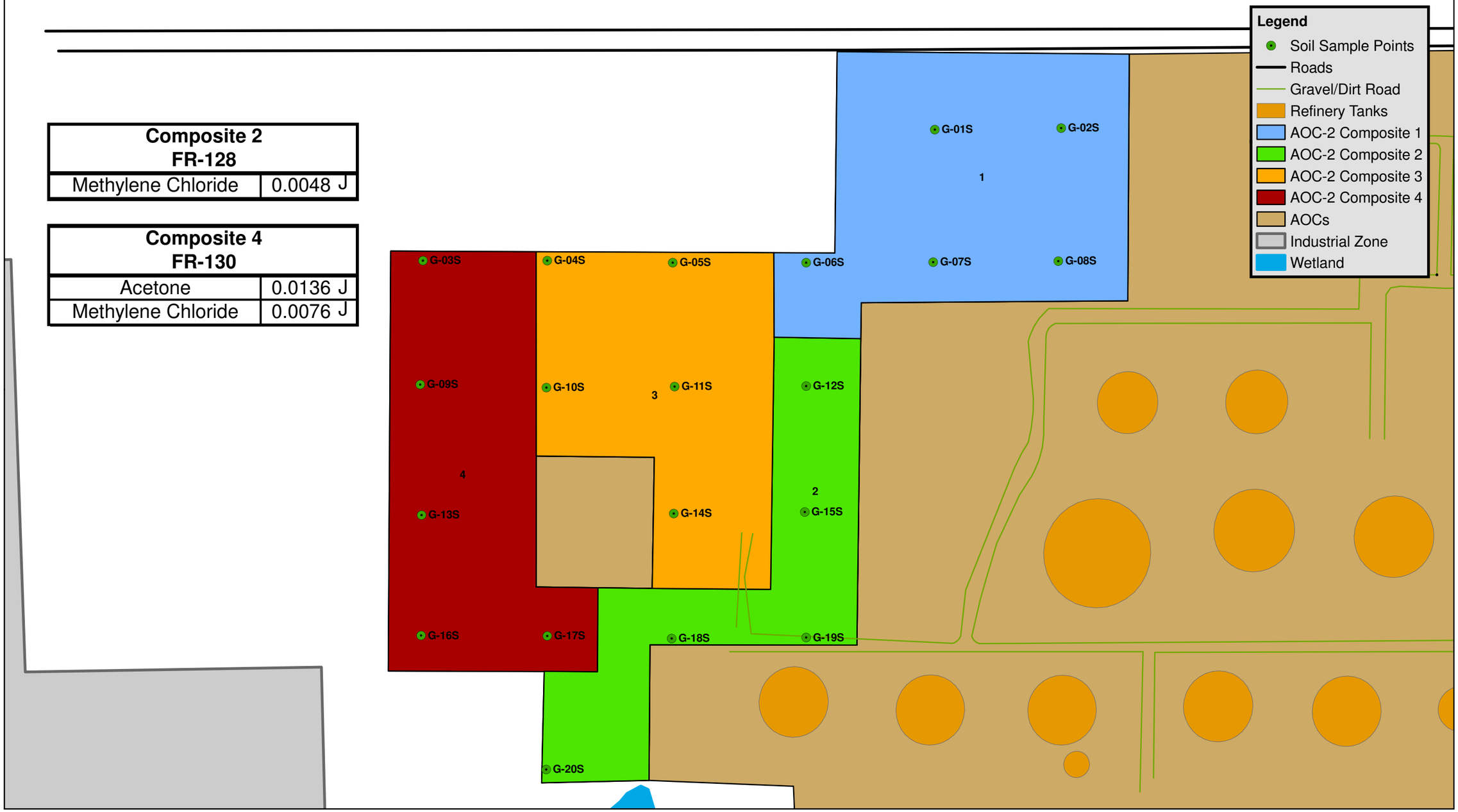
PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
25A

Composite 2 FR-128	
Methylene Chloride	0.0048 J

Composite 4 FR-130	
Acetone	0.0136 J
Methylene Chloride	0.0076 J



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-2
Ecological
VOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

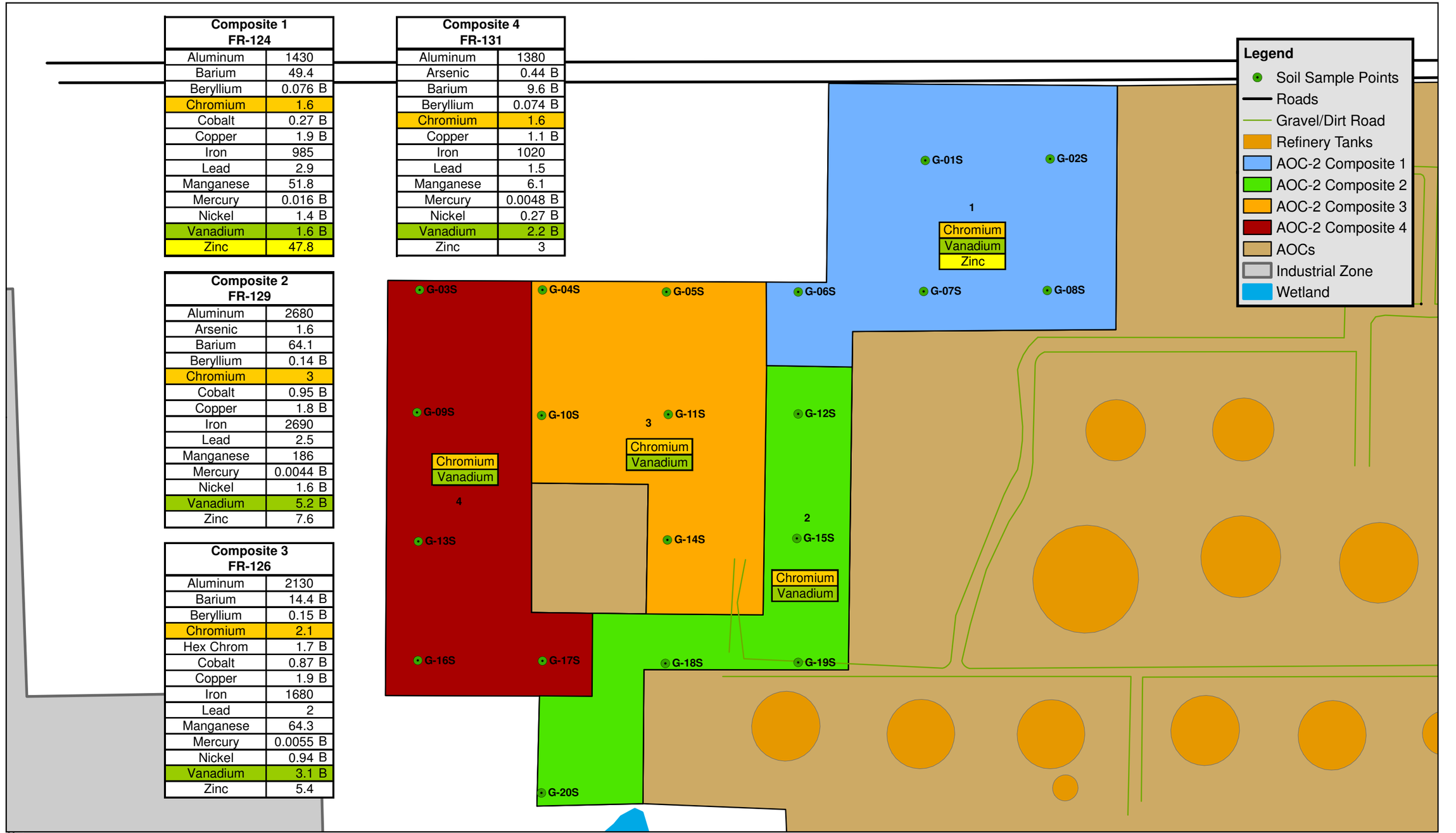
FIGURE
25B

Composite 1 FR-124	
Aluminum	1430
Barium	49.4
Beryllium	0.076 B
Chromium	1.6
Cobalt	0.27 B
Copper	1.9 B
Iron	985
Lead	2.9
Manganese	51.8
Mercury	0.016 B
Nickel	1.4 B
Vanadium	1.6 B
Zinc	47.8

Composite 4 FR-131	
Aluminum	1380
Arsenic	0.44 B
Barium	9.6 B
Beryllium	0.074 B
Chromium	1.6
Copper	1.1 B
Iron	1020
Lead	1.5
Manganese	6.1
Mercury	0.0048 B
Nickel	0.27 B
Vanadium	2.2 B
Zinc	3

Composite 2 FR-129	
Aluminum	2680
Arsenic	1.6
Barium	64.1
Beryllium	0.14 B
Chromium	3
Cobalt	0.95 B
Copper	1.8 B
Iron	2690
Lead	2.5
Manganese	186
Mercury	0.0044 B
Nickel	1.6 B
Vanadium	5.2 B
Zinc	7.6

Composite 3 FR-126	
Aluminum	2130
Barium	14.4 B
Beryllium	0.15 B
Chromium	2.1
Hex Chrom	1.7 B
Cobalt	0.87 B
Copper	1.9 B
Iron	1680
Lead	2
Manganese	64.3
Mercury	0.0055 B
Nickel	0.94 B
Vanadium	3.1 B
Zinc	5.4



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit
Exceeds Median Background Limit
Exceeds Earthworm and Plant Limits

N

0 90 180
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-2
Ecological
Metal Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

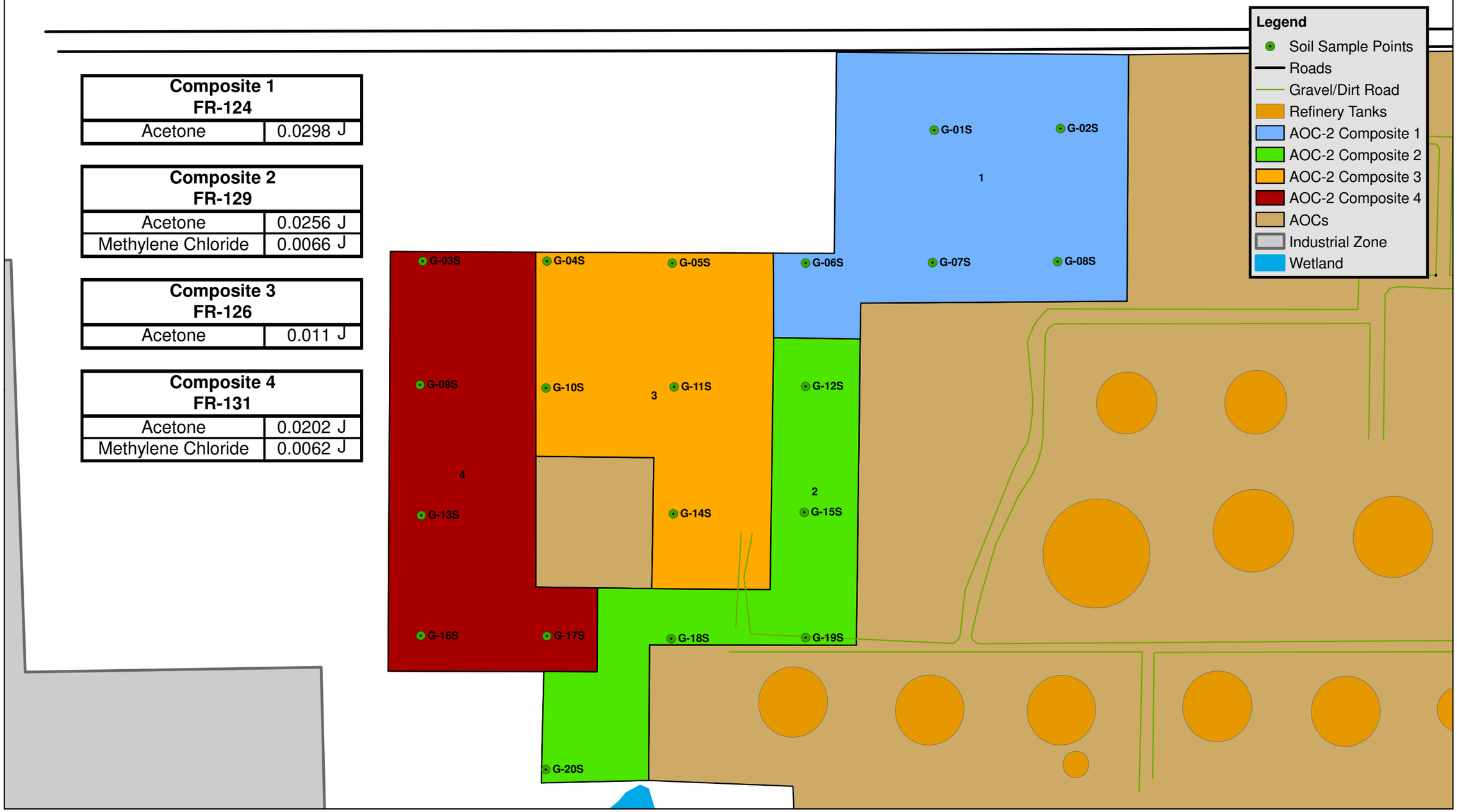
FIGURE
26A

Composite 1 FR-124	
Acetone	0.0298 J

Composite 2 FR-129	
Acetone	0.0256 J
Methylene Chloride	0.0066 J

Composite 3 FR-126	
Acetone	0.011 J

Composite 4 FR-131	
Acetone	0.0202 J
Methylene Chloride	0.0062 J



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 4/30/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

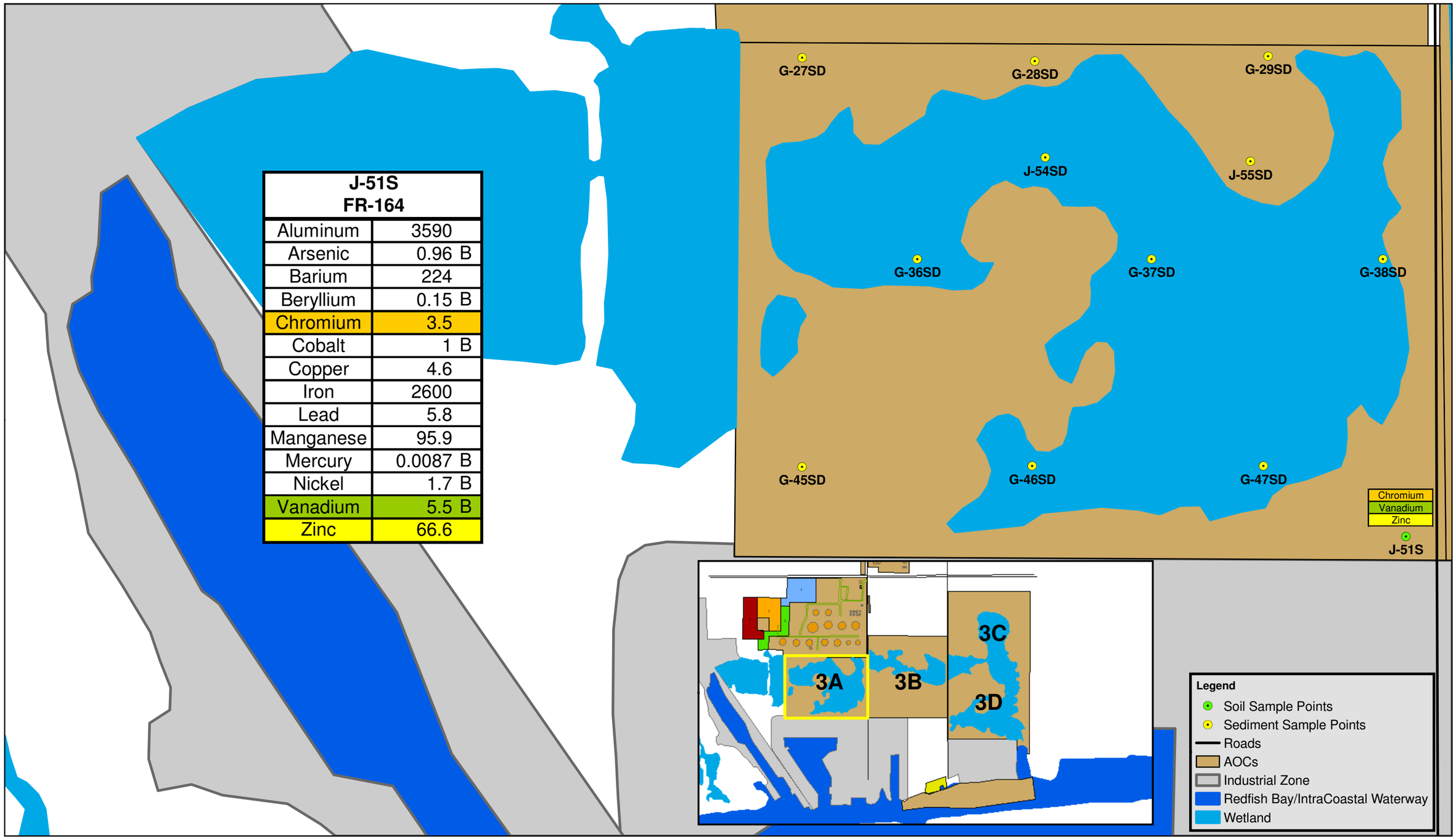
AOC-2
Ecological
VOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
26B



J-51S FR-164	
Aluminum	3590
Arsenic	0.96 B
Barium	224
Beryllium	0.15 B
Chromium	3.5
Cobalt	1 B
Copper	4.6
Iron	2600
Lead	5.8
Manganese	95.9
Mercury	0.0087 B
Nickel	1.7 B
Vanadium	5.5 B
Zinc	66.6

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit
Exceeds Median Background Limit
Exceeds Earthworm and Plant Limits

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

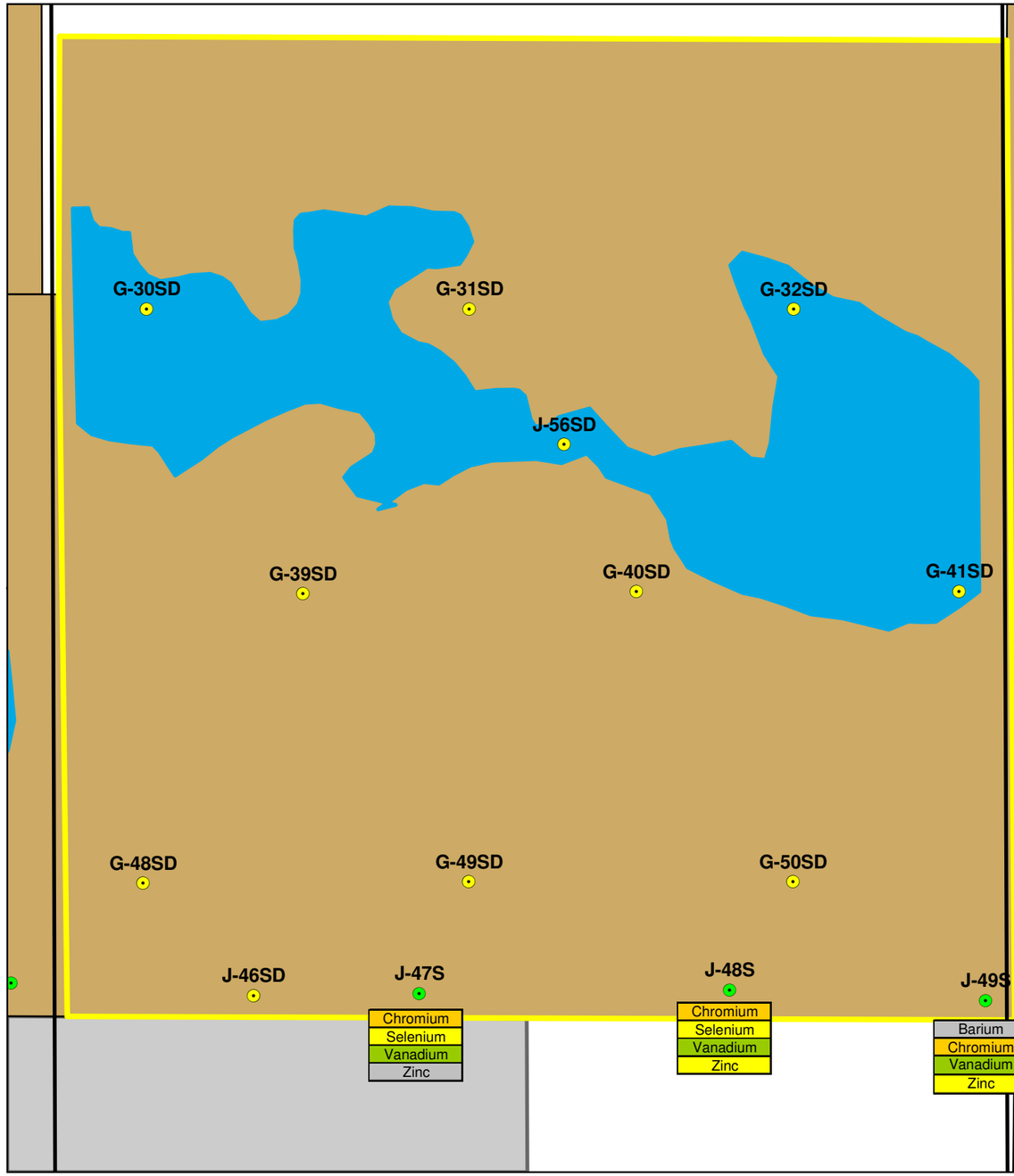
AOC-3A
Ecological
Metal Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

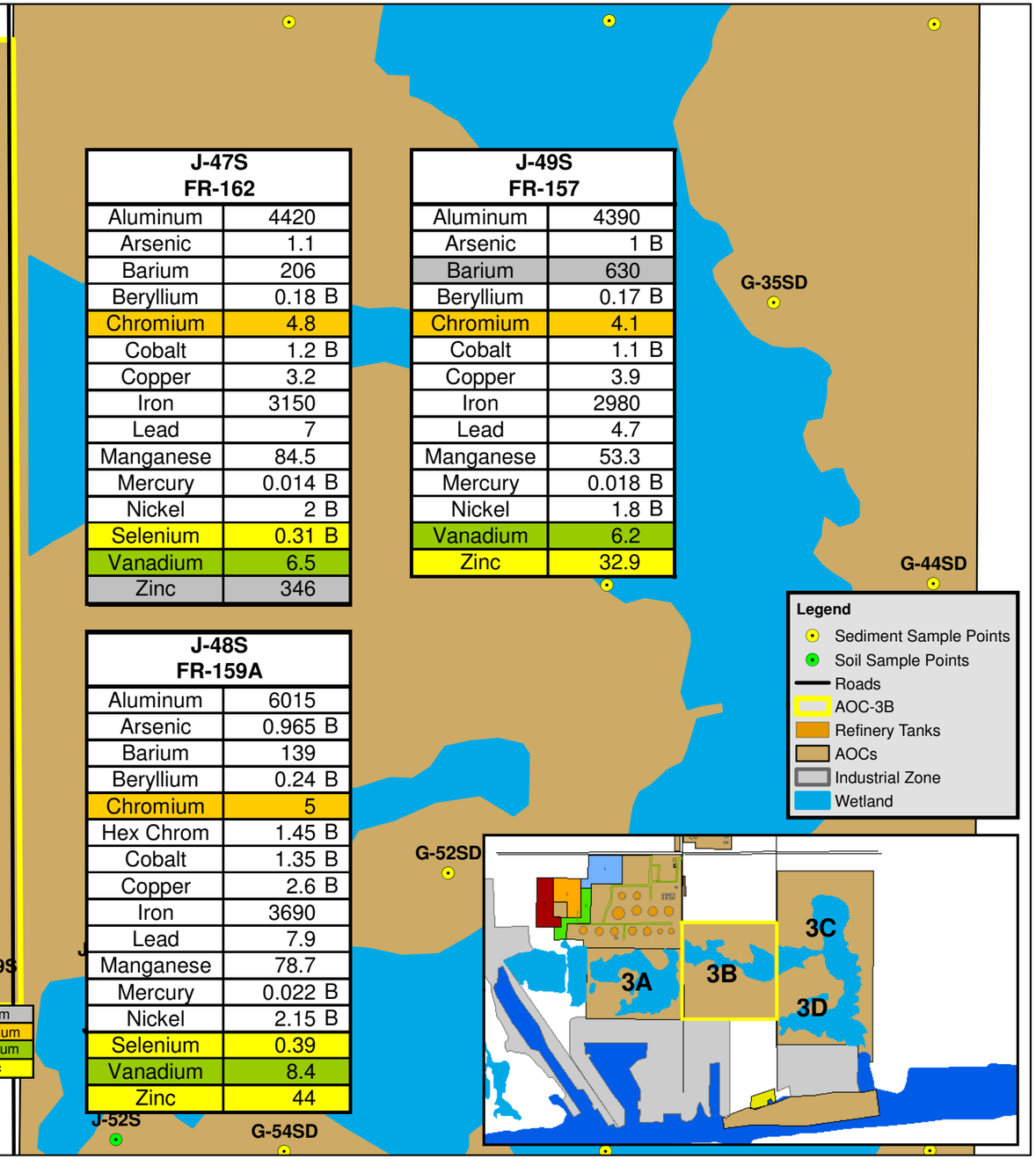
FIGURE
27A



J-47S FR-162	
Aluminum	4420
Arsenic	1.1
Barium	206
Beryllium	0.18 B
Chromium	4.8
Cobalt	1.2 B
Copper	3.2
Iron	3150
Lead	7
Manganese	84.5
Mercury	0.014 B
Nickel	2 B
Selenium	0.31 B
Vanadium	6.5
Zinc	346

J-49S FR-157	
Aluminum	4390
Arsenic	1 B
Barium	630
Beryllium	0.17 B
Chromium	4.1
Cobalt	1.1 B
Copper	3.9
Iron	2980
Lead	4.7
Manganese	53.3
Mercury	0.018 B
Nickel	1.8 B
Vanadium	6.2
Zinc	32.9

J-48S FR-159A	
Aluminum	6015
Arsenic	0.965 B
Barium	139
Beryllium	0.24 B
Chromium	5
Hex Chrom	1.45 B
Cobalt	1.35 B
Copper	2.6 B
Iron	3690
Lead	7.9
Manganese	78.7
Mercury	0.022 B
Nickel	2.15 B
Selenium	0.39
Vanadium	8.4
Zinc	44



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- Exceeds Plant Limit
- Exceeds Median Background Limit
- Exceeds Earthworm and Plant Limits
- Exceeds Earthworm, Plant, and Median Background Limits

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

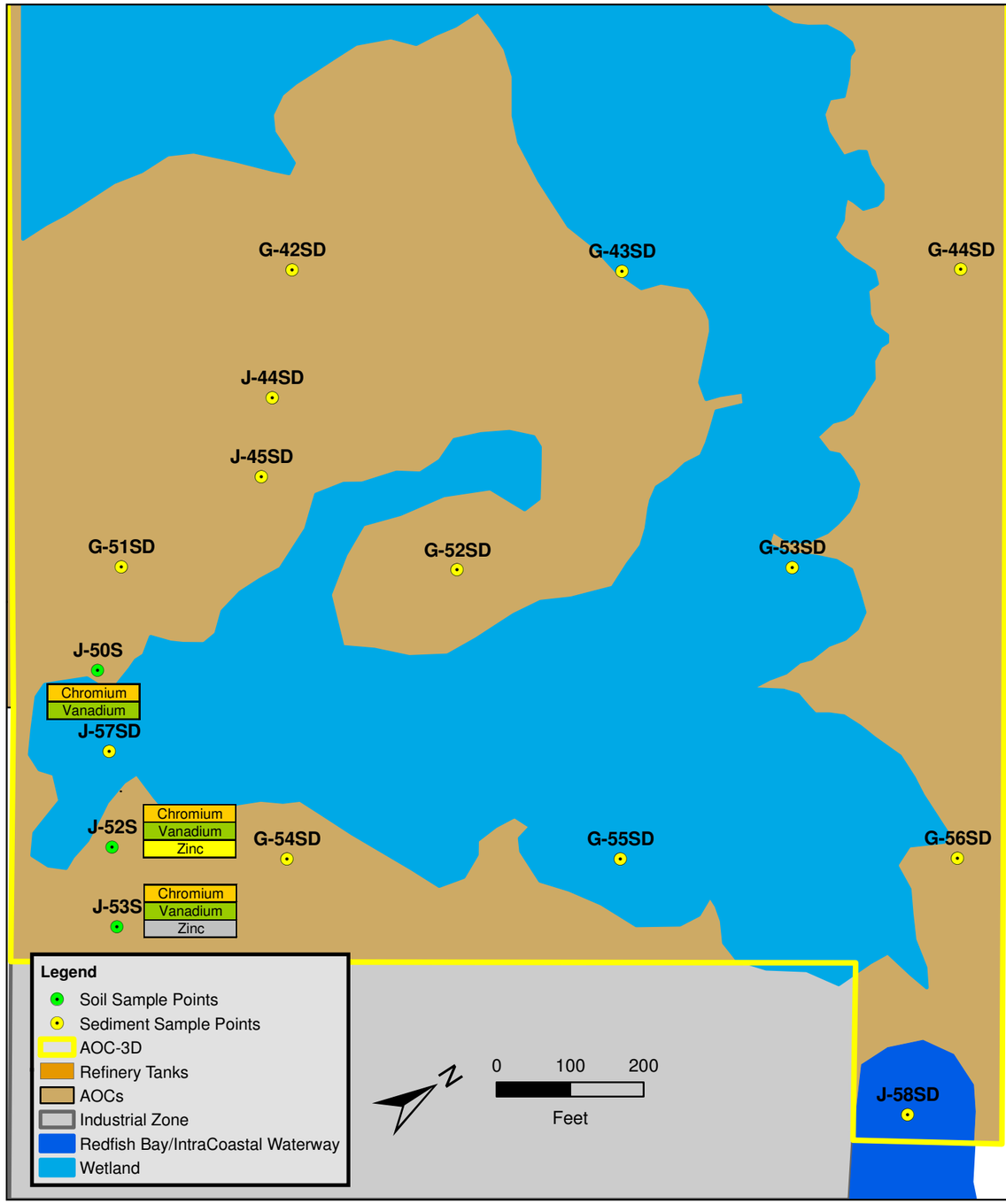
AOC-3B
Ecological
Metal Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

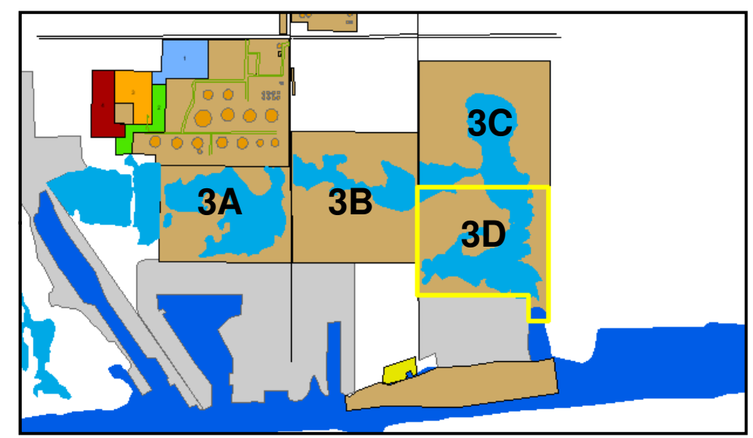
FIGURE
27B



J-50S FR-155	
Aluminum	1760
Arsenic	0.72 B
Barium	16.6 B
Beryllium	0.074 B
Chromium	1.4
Cobalt	0.36 B
Copper	2.5 B
Iron	1160
Lead	3.3
Manganese	226
Mercury	0.008 B
Nickel	0.59 B
Vanadium	2.5 B
Zinc	23.9

J-53S FR-136	
Aluminum	3420
Arsenic	2.5
Barium	74.4
Beryllium	0.21 B
Chromium	5.9
Cobalt	0.93 B
Copper	3.9
Iron	3050
Lead	13.5
Manganese	113
Mercury	0.0049 B
Nickel	2.5 B
Vanadium	6.3
Zinc	279

J-52S FR-138	
Aluminum	4590
Arsenic	1 B
Barium	37.9
Beryllium	0.23 B
Chromium	3.6
Cobalt	0.92 B
Copper	4.2
Iron	2450
Lead	4.5
Manganese	100
Mercury	0.008 B
Nickel	2.1 B
Selenium	0.32 U
Vanadium	6.1 B
Zinc	32.8



Notes:

1. Results are posted in mg/kg
2. Qualifiers:
   - U = Undetected at the sample detection limit (SDL)
   - B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- Exceeds Plant Limit
- Exceeds Median Background Limit
- Exceeds Earthworm and Plant Limits
- Exceeds Earthworm, Plant, and Median Background Limits
- SDL Exceeds Median Background Screening Level

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

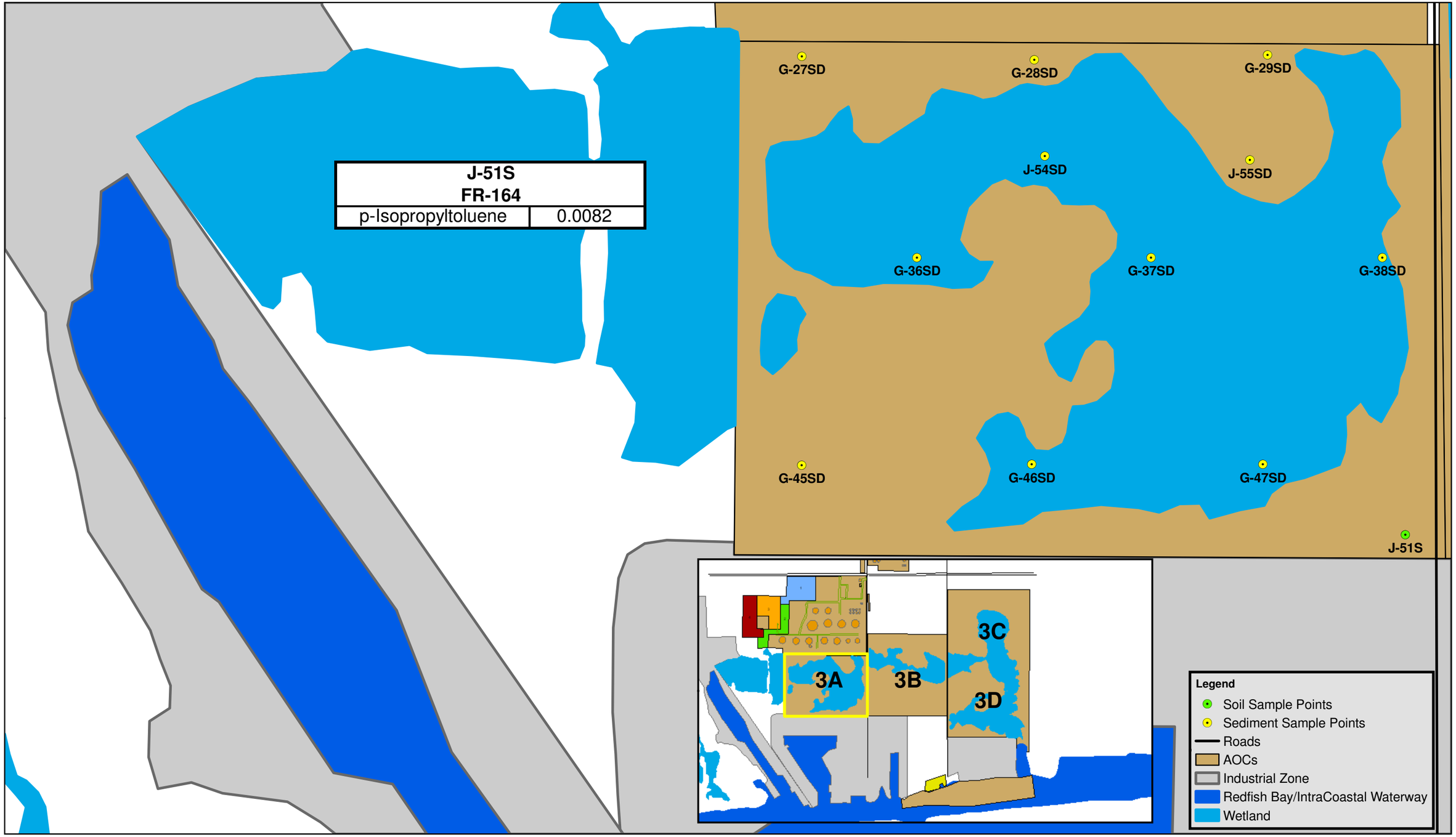
AOC-3D
Ecological
Metal Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
27C



Notes:

1. Results are posted in mg/kg

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

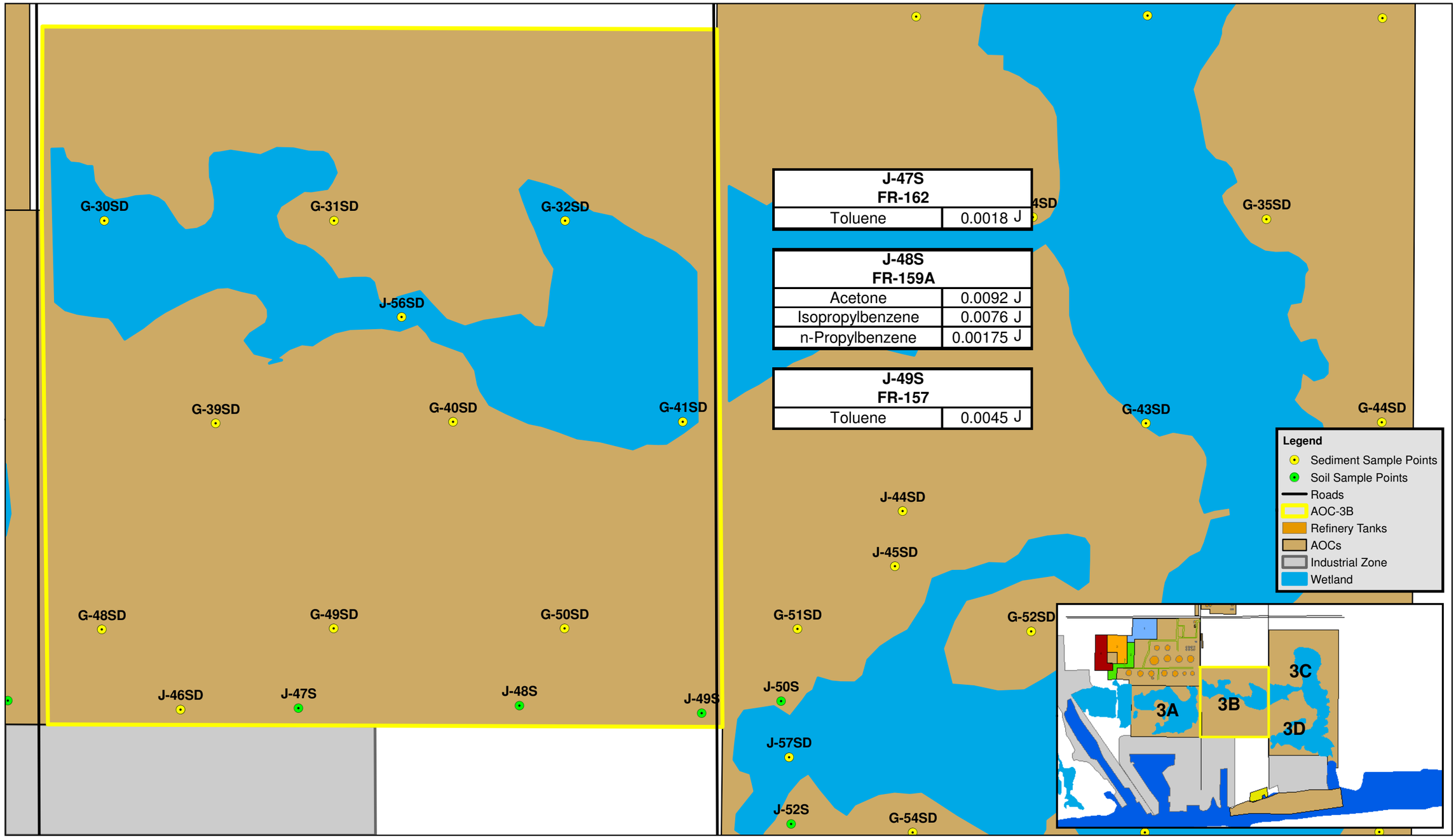
AOC-3A
Ecological
VOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
27D



J-47S FR-162	
Toluene	0.0018 J

J-48S FR-159A	
Acetone	0.0092 J
Isopropylbenzene	0.0076 J
n-Propylbenzene	0.00175 J

J-49S FR-157	
Toluene	0.0045 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

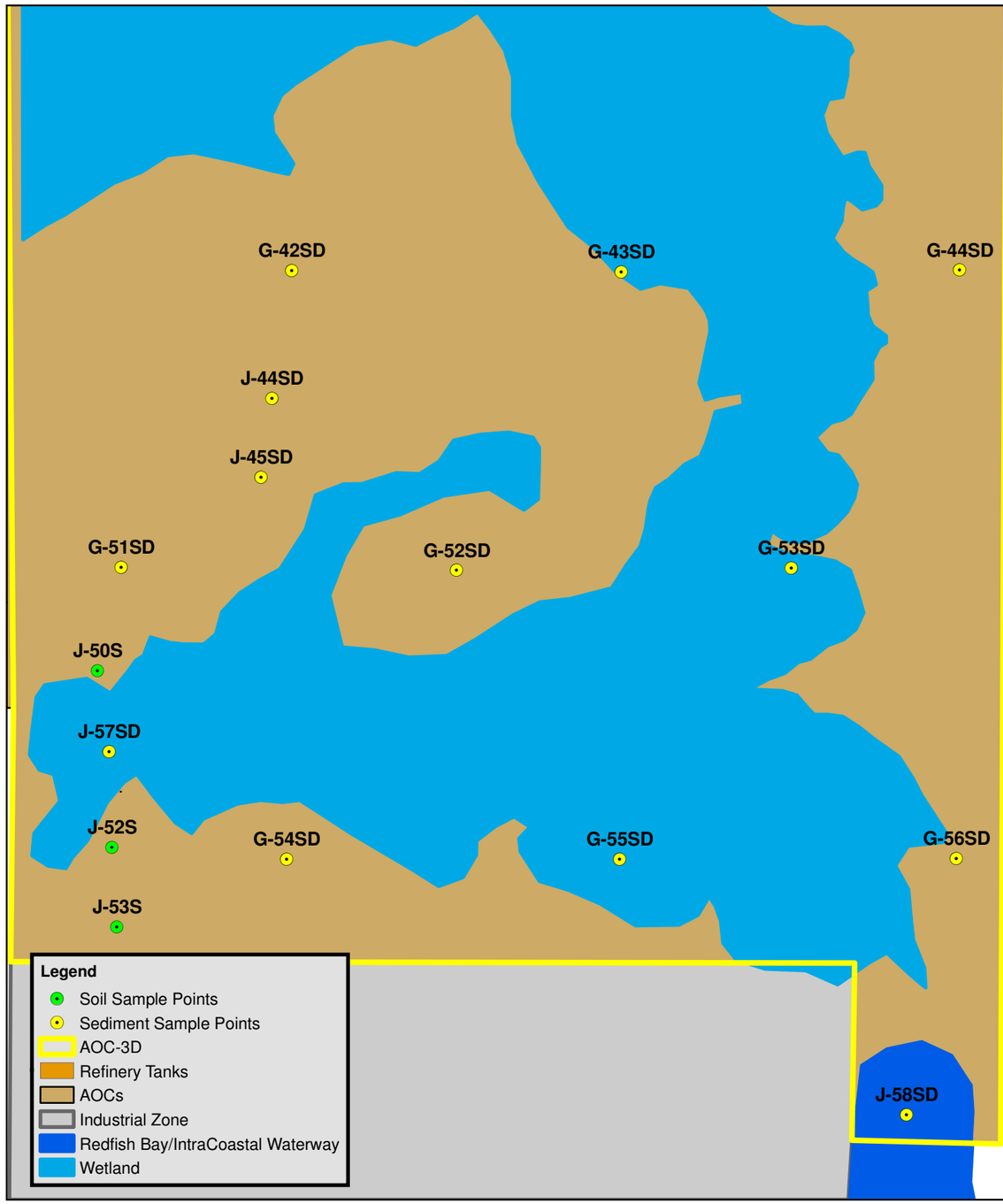
AOC-3B
Ecological
VOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

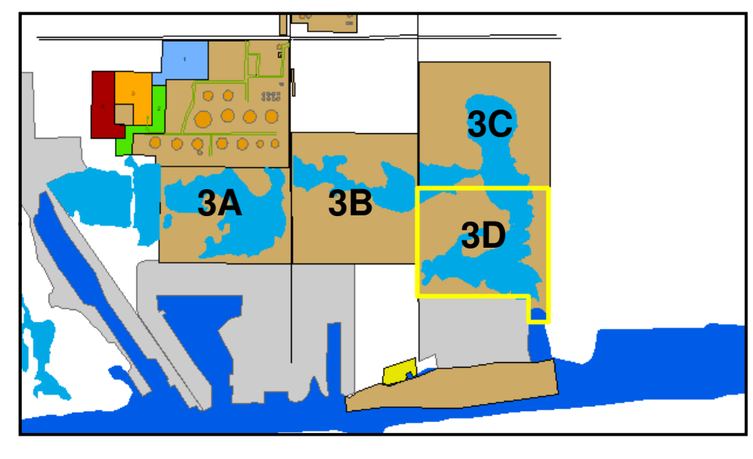
FIGURE
27E



J-50S FR-155	
Toluene	0.0021 J

J-52S FR-138	
p-Isopropyltoluene	0.0019 J

J-53S FR-136	
Methylene chloride	0.0052 J



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

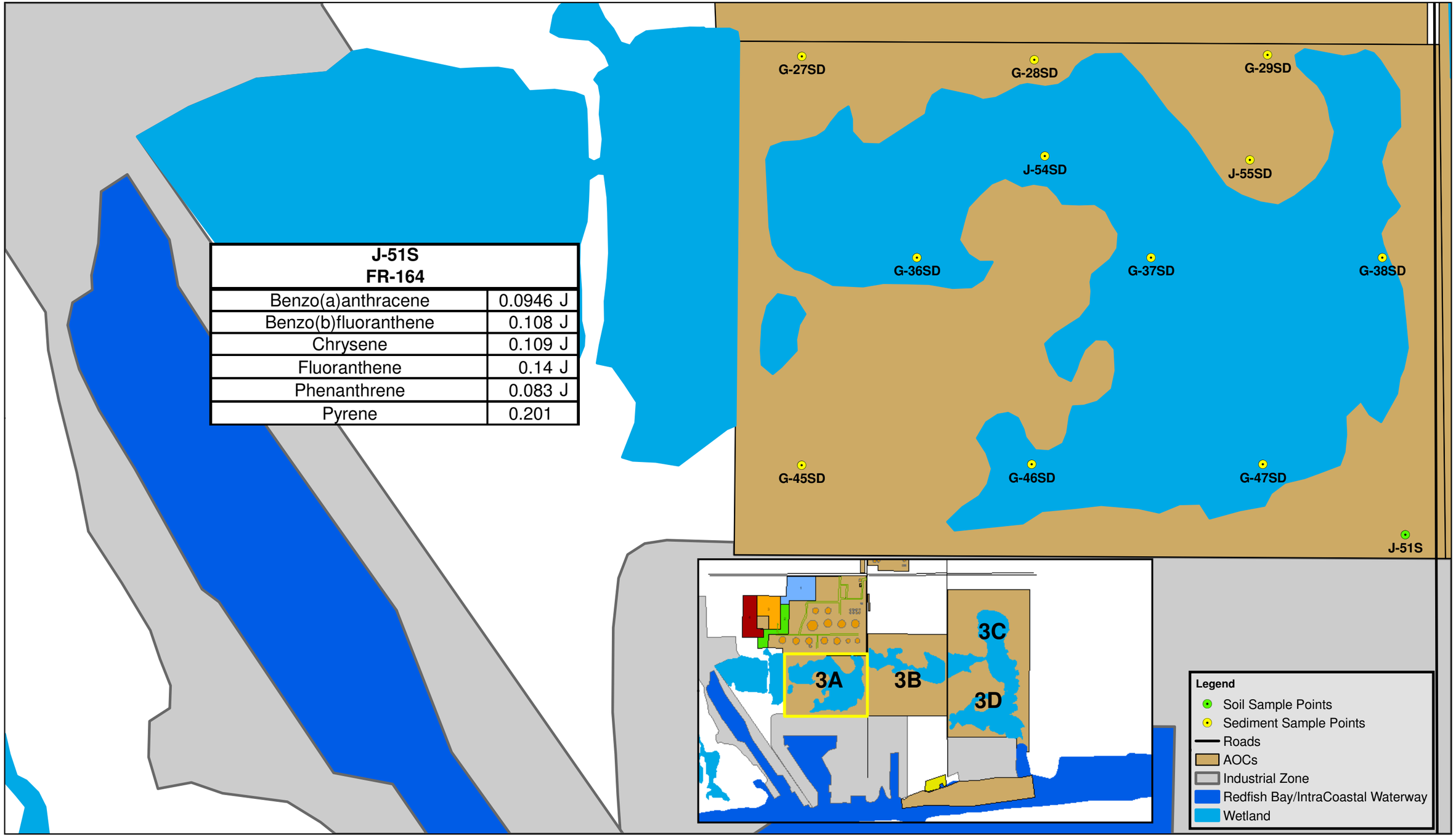
AOC-3D
Ecological
VOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
27F



J-51S FR-164	
Benzo(a)anthracene	0.0946 J
Benzo(b)fluoranthene	0.108 J
Chrysene	0.109 J
Fluoranthene	0.14 J
Phenanthrene	0.083 J
Pyrene	0.201

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

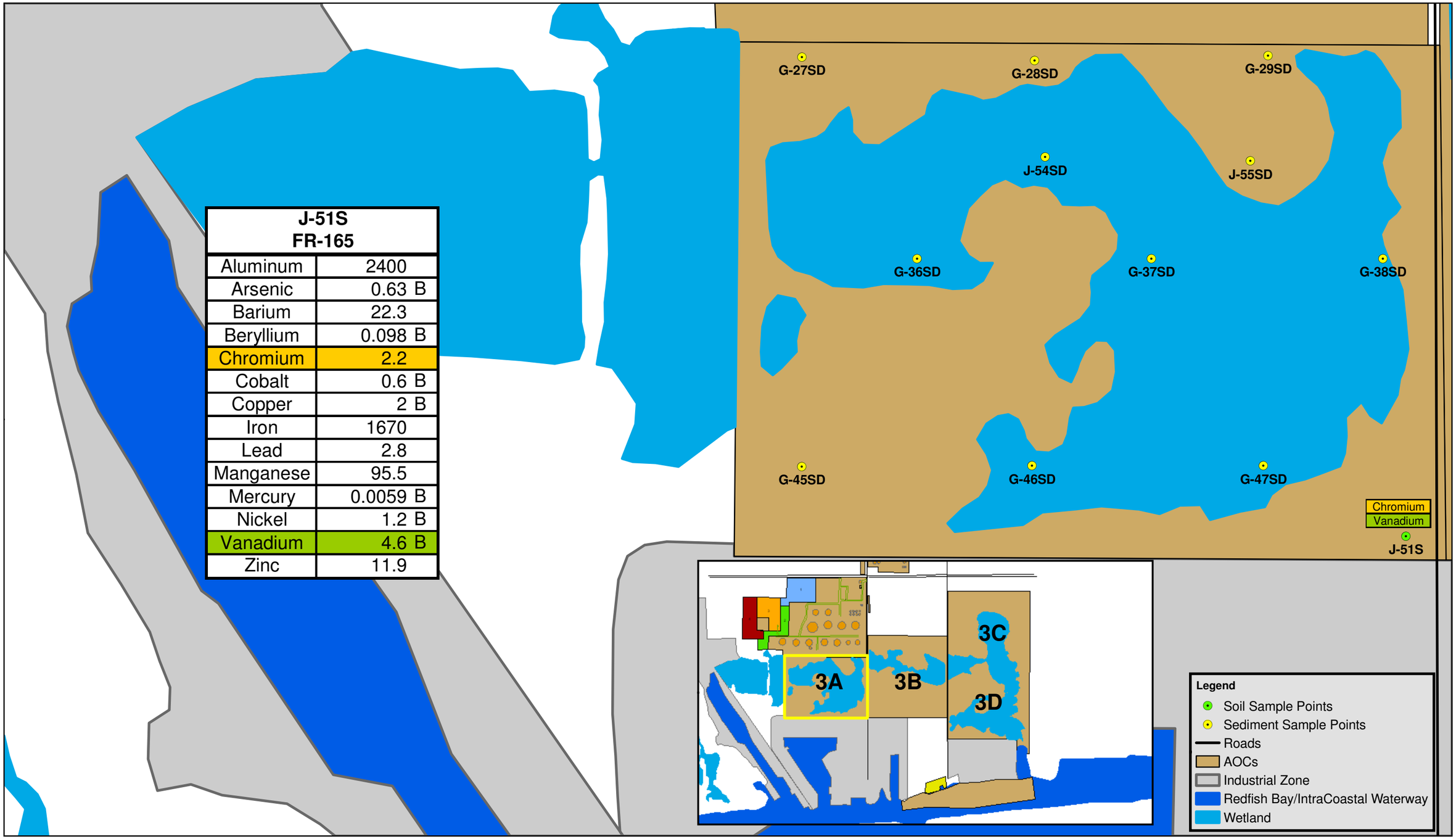
AOC-3A
Ecological
SVOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
27G



J-51S FR-165	
Aluminum	2400
Arsenic	0.63 B
Barium	22.3
Beryllium	0.098 B
Chromium	2.2
Cobalt	0.6 B
Copper	2 B
Iron	1670
Lead	2.8
Manganese	95.5
Mercury	0.0059 B
Nickel	1.2 B
Vanadium	4.6 B
Zinc	11.9

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit

Exceeds Earthworm and Plant Limits

N

0 110 220

Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-3A
Ecological
Metal Subsurface Soil Distribution Map

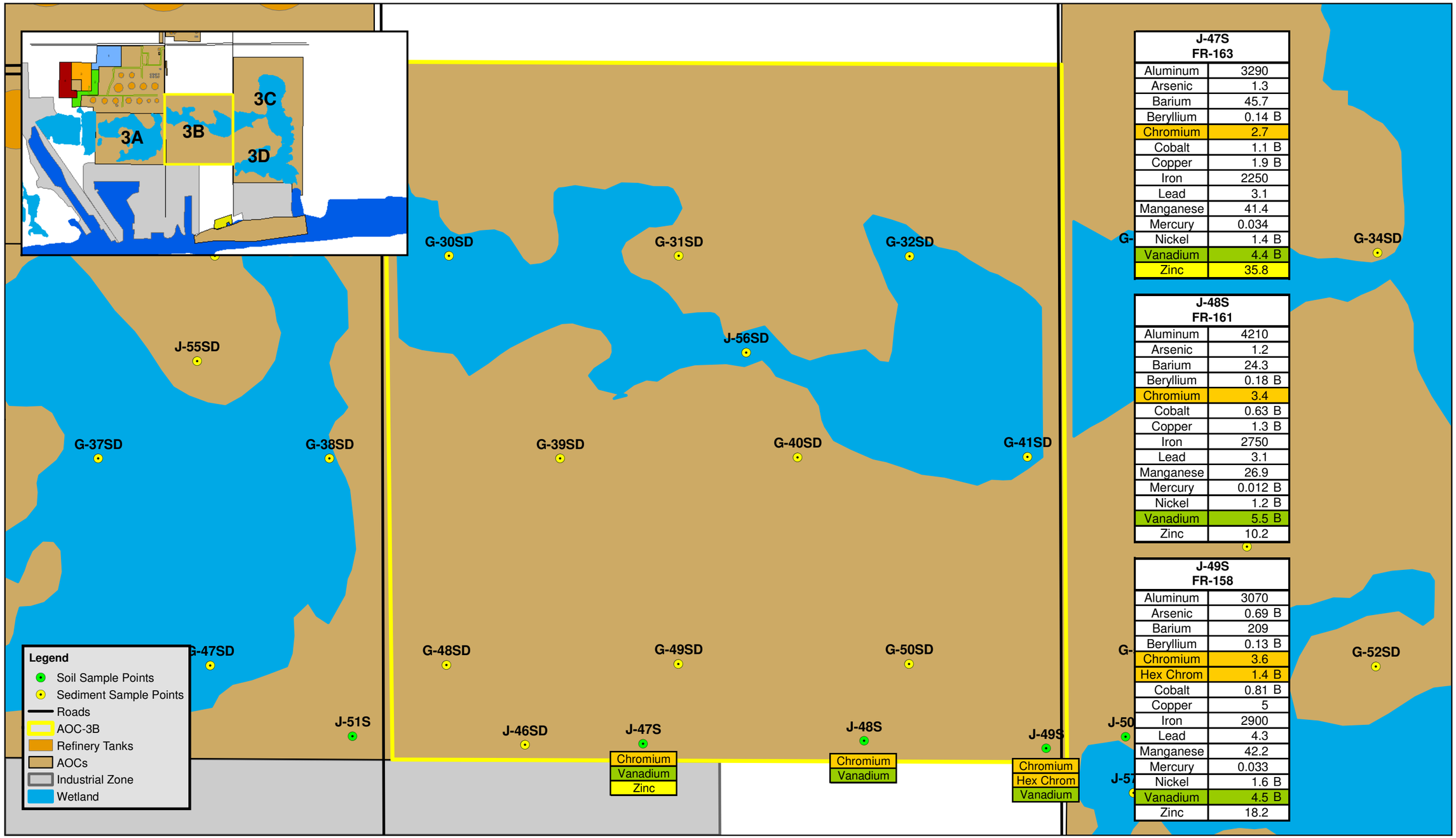
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

28A



J-47S FR-163	
Aluminum	3290
Arsenic	1.3
Barium	45.7
Beryllium	0.14 B
Chromium	2.7
Cobalt	1.1 B
Copper	1.9 B
Iron	2250
Lead	3.1
Manganese	41.4
Mercury	0.034
Nickel	1.4 B
Vanadium	4.4 B
Zinc	35.8

J-48S FR-161	
Aluminum	4210
Arsenic	1.2
Barium	24.3
Beryllium	0.18 B
Chromium	3.4
Cobalt	0.63 B
Copper	1.3 B
Iron	2750
Lead	3.1
Manganese	26.9
Mercury	0.012 B
Nickel	1.2 B
Vanadium	5.5 B
Zinc	10.2

J-49S FR-158	
Aluminum	3070
Arsenic	0.69 B
Barium	209
Beryllium	0.13 B
Chromium	3.6
Hex Chrom	1.4 B
Cobalt	0.81 B
Copper	5
Iron	2900
Lead	4.3
Manganese	42.2
Mercury	0.033
Nickel	1.6 B
Vanadium	4.5 B
Zinc	18.2

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit
Exceeds Median Background Limit
Exceeds Earthworm and Plant Limits

0 110 220
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

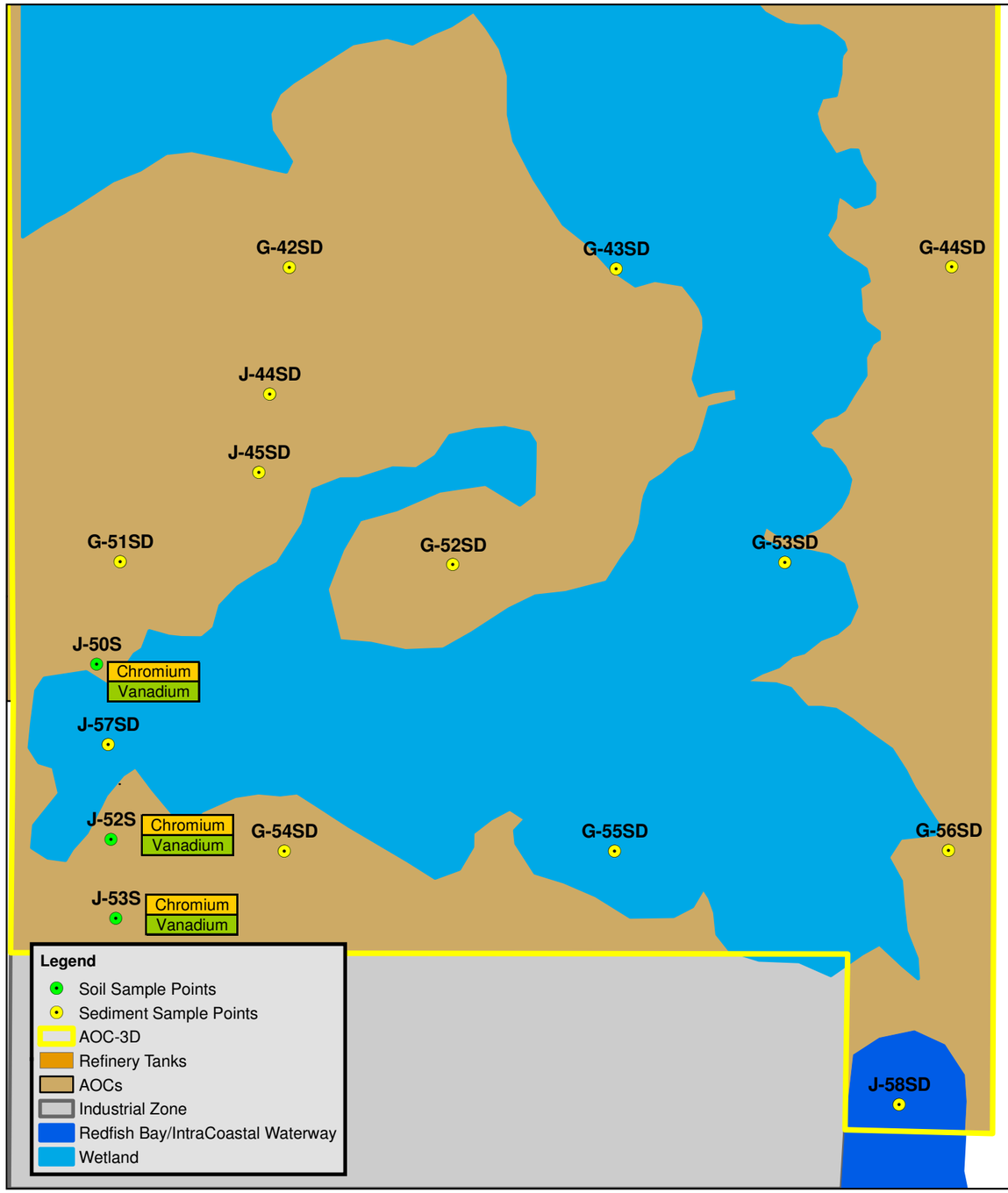
AOC-3B
Ecological
Metal Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

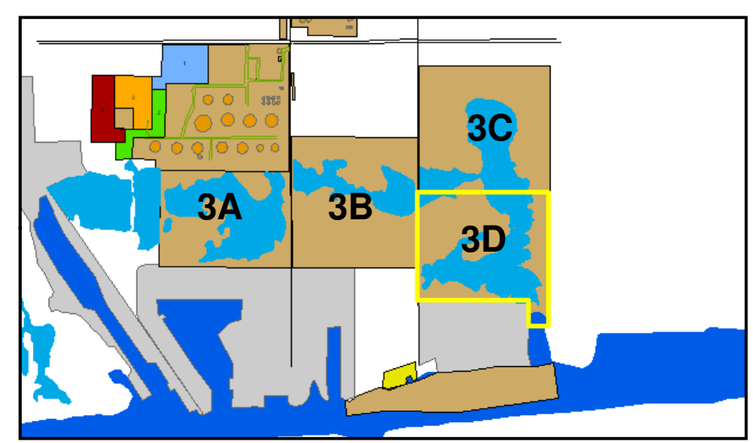
FIGURE
28B



J-50S FR-156	
Aluminum	4600
Arsenic	0.52 B
Barium	45.5
Beryllium	0.19 B
Chromium	3.2
Cobalt	1.1 B
Copper	2.6 B
Iron	3060
Lead	2.7
Manganese	76.3
Mercury	0.0065 B
Nickel	1.8 B
Vanadium	5.1 B
Zinc	13.7

J-53S FR-137	
Aluminum	4260
Arsenic	2.4
Barium	17.9 B
Beryllium	0.2 B
Chromium	3.9
Cobalt	0.88 B
Copper	2.3 B
Iron	2680
Lead	2.5
Manganese	113
Mercury	0.002 B
Nickel	2.3 B
Vanadium	7.9
Zinc	17.5

J-52S FR-139	
Aluminum	3570
Arsenic	1.1 B
Barium	21.6 B
Beryllium	0.19 B
Chromium	4
Cobalt	0.8 B
Copper	2 B
Iron	2300
Lead	2.4
Manganese	114
Mercury	0.0023 B
Nickel	1.9 B
Vanadium	5.3 B
Zinc	8.9



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit

Exceeds Earthworm and Plant Limits

N

0 110 220

Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-3D
Ecological
Metal Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

28C

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200

Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-3A
Ecological
VOC Subsurface Soil Distribution Map

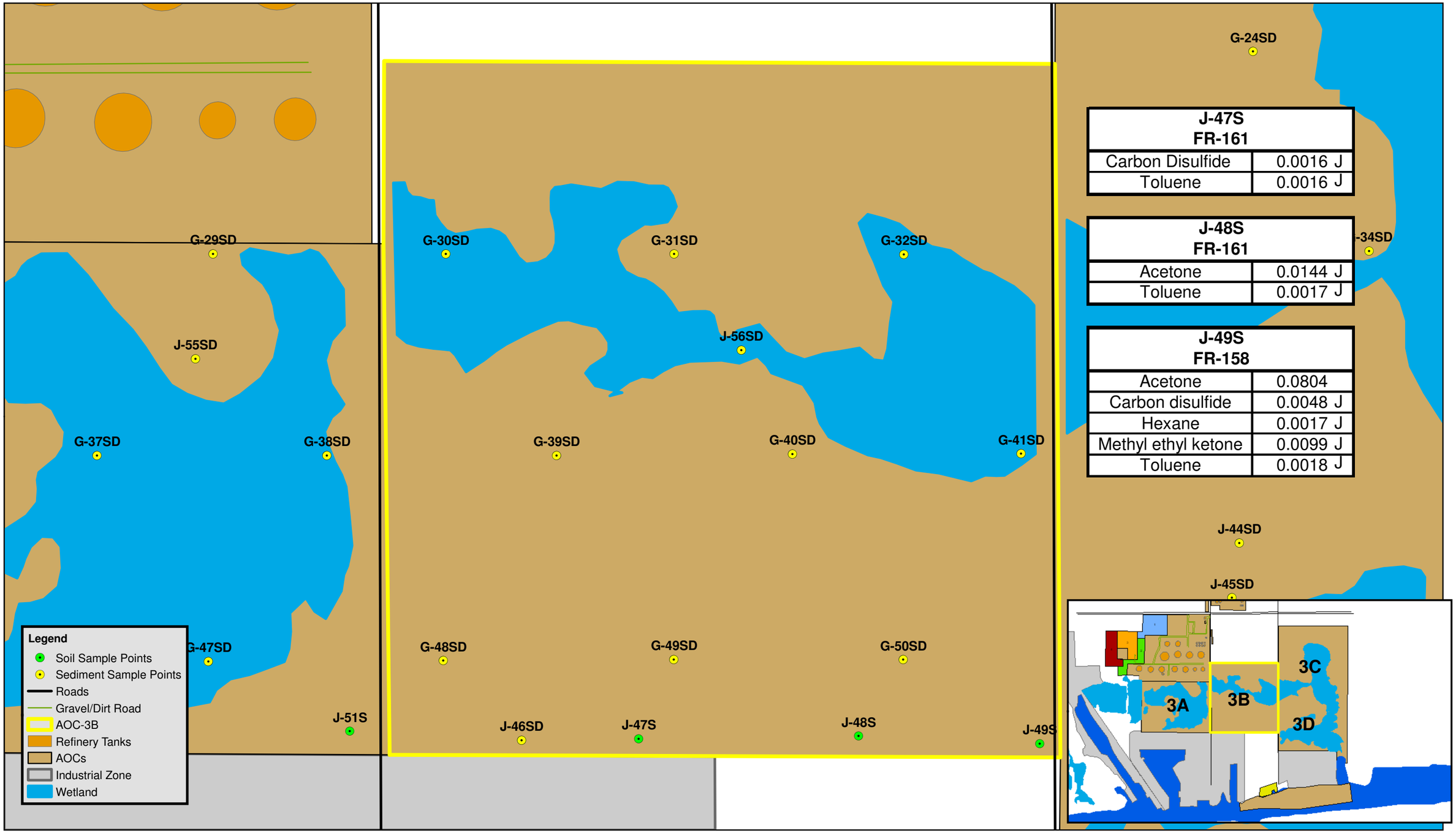
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

28D



J-47S FR-161	
Carbon Disulfide	0.0016 J
Toluene	0.0016 J

J-48S FR-161	
Acetone	0.0144 J
Toluene	0.0017 J

J-49S FR-158	
Acetone	0.0804
Carbon disulfide	0.0048 J
Hexane	0.0017 J
Methyl ethyl ketone	0.0099 J
Toluene	0.0018 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the sample detection limit (SDL) but less than the method

N

0 90 180
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

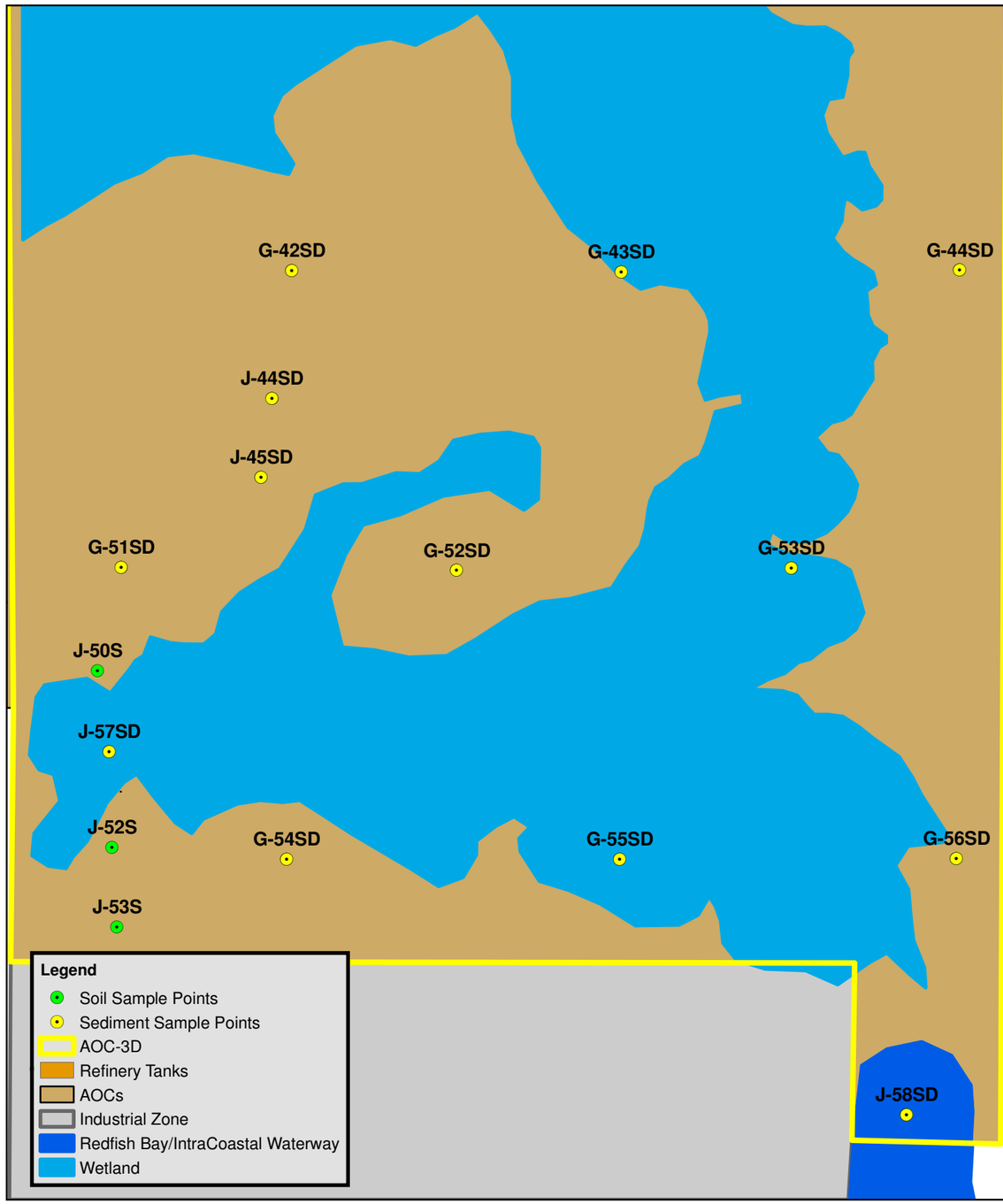
AOC-3B
Ecological
VOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

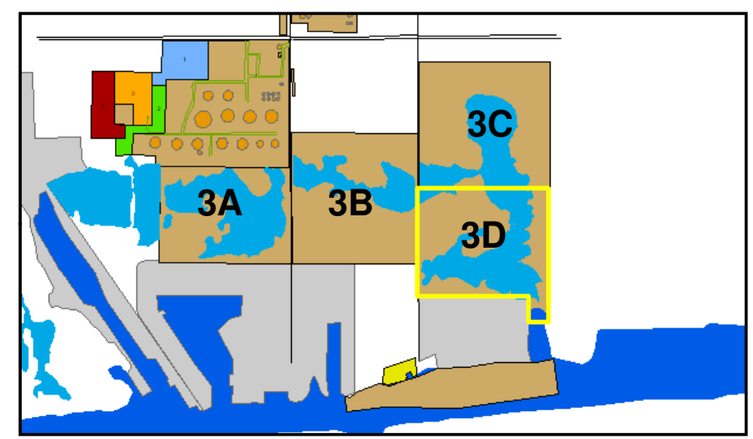
FIGURE
28E



J-50S FR-156	
Acetone	0.0164 J
Toluene	0.0017 J

J-52S FR-139	
Acetone	0.0165 J
Carbon disulfide	0.0023 J

J-53S FR-137	
Acetone	0.0094 J



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-3D
Ecological
VOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
28F

G-27SD FR-141	
Aluminum	2390
Arsenic	1.6
Barium	514
Beryllium	0.11 B
Chromium	2.4
Cobalt	0.95 B
Copper	2.8
Iron	2260
Lead	4.2
Manganese	77
Nickel	1.3 B
Vanadium	6
Zinc	29.6

G-28SD FR-142A	
Aluminum	6165
Arsenic	1.6
Barium	118
Beryllium	0.225 B
Chromium	4.45
Cobalt	1.4 B
Copper	2.95
Iron	3990
Lead	6.7
Manganese	100.6
Mercury	0.00335 B
Nickel	2.45 B
Selenium	1.065
Vanadium	9.6
Zinc	32.25

G-29SD FR-144	
Aluminum	1490
Arsenic	1.7
Barium	63.9
Beryllium	0.064 B
Chromium	1.3
Cobalt	0.46 B
Copper	2.6 B
Iron	1190
Lead	2.4
Manganese	54.9
Nickel	0.83 B
Vanadium	3 B
Zinc	34.5

G-36SD FR-168	
Aluminum	11700
Arsenic	3.3
Barium	211
Beryllium	0.43 B
Chromium	9.2
Cobalt	2.8 B
Copper	7.7
Iron	7580
Lead	11.9
Manganese	352
Mercury	0.021 B
Nickel	5.4
Vanadium	16.1
Zinc	119

G-37SD FR-170	
Aluminum	10300
Arsenic	4.7
Barium	277
Beryllium	0.4 B
Chromium	9.4
Cobalt	2.5 B
Copper	8
Iron	6910
Lead	12.4
Manganese	270
Mercury	0.015 B
Nickel	4.9 B
Vanadium	16.8
Zinc	187

G-38SD FR-171	
Aluminum	5620
Arsenic	2.4
Barium	404
Beryllium	0.21 B
Chromium	5.7
Cobalt	1.4 B
Copper	4.2
Iron	3830
Lead	10.6
Manganese	177
Mercury	0.0085 B
Nickel	2.7 B
Selenium	0.34 B
Vanadium	8.3
Zinc	122

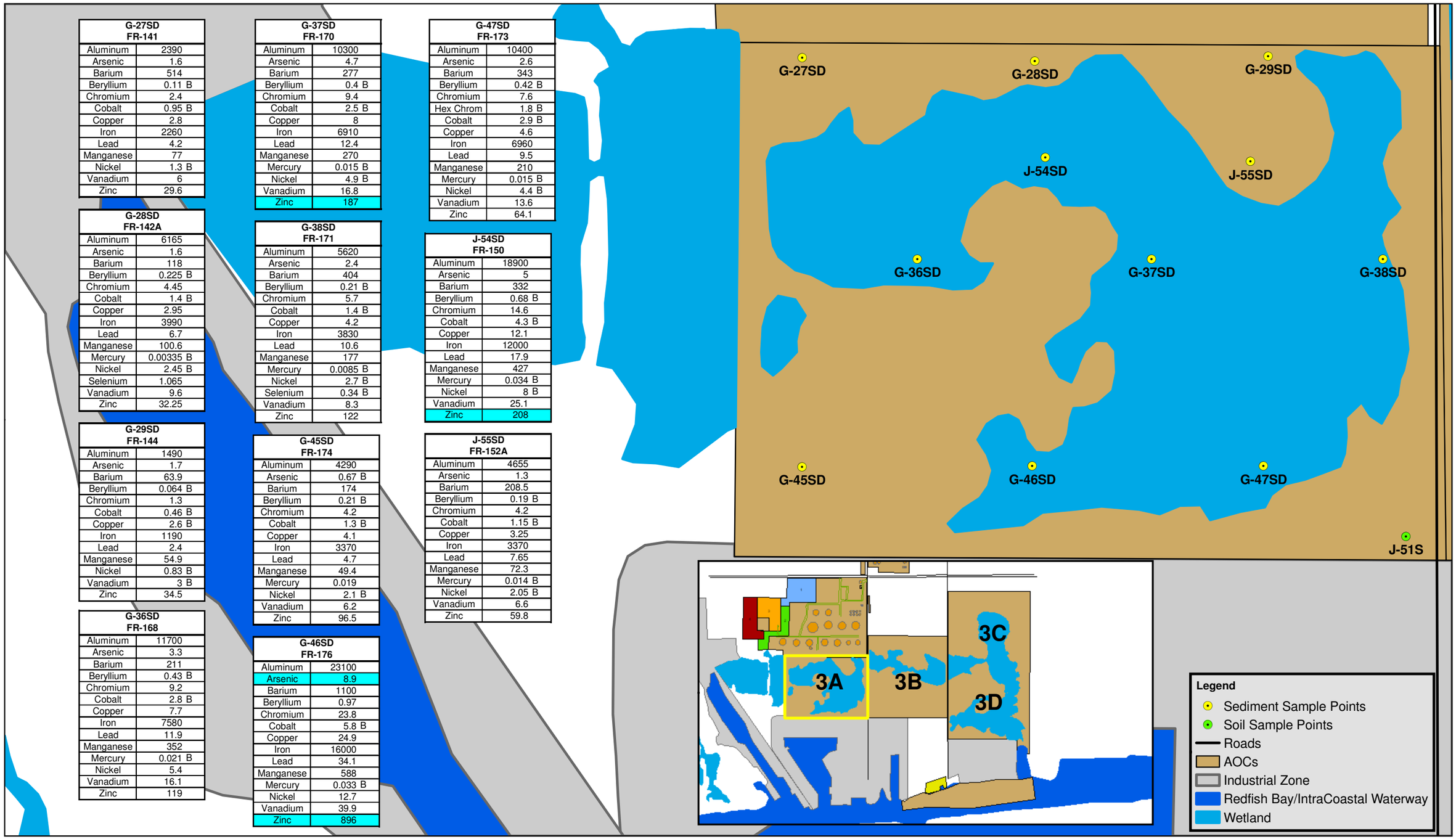
G-45SD FR-174	
Aluminum	4290
Arsenic	0.67 B
Barium	174
Beryllium	0.21 B
Chromium	4.2
Cobalt	1.3 B
Copper	4.1
Iron	3370
Lead	4.7
Manganese	49.4
Mercury	0.019
Nickel	2.1 B
Vanadium	6.2
Zinc	96.5

G-46SD FR-176	
Aluminum	23100
Arsenic	8.9
Barium	1100
Beryllium	0.97
Chromium	23.8
Cobalt	5.8 B
Copper	24.9
Iron	16000
Lead	34.1
Manganese	588
Mercury	0.033 B
Nickel	12.7
Vanadium	39.9
Zinc	896

G-47SD FR-173	
Aluminum	10400
Arsenic	2.6
Barium	343
Beryllium	0.42 B
Chromium	7.6
Hex Chrom	1.8 B
Cobalt	2.9 B
Copper	4.6
Iron	6960
Lead	9.5
Manganese	210
Mercury	0.015 B
Nickel	4.4 B
Vanadium	13.6
Zinc	64.1

J-54SD FR-150	
Aluminum	18900
Arsenic	5
Barium	332
Beryllium	0.68 B
Chromium	14.6
Cobalt	4.3 B
Copper	12.1
Iron	12000
Lead	17.9
Manganese	427
Mercury	0.034 B
Nickel	8 B
Vanadium	25.1
Zinc	208

J-55SD FR-152A	
Aluminum	4655
Arsenic	1.3
Barium	208.5
Beryllium	0.19 B
Chromium	4.2
Cobalt	1.15 B
Copper	3.25
Iron	3370
Lead	7.65
Manganese	72.3
Mercury	0.014 B
Nickel	2.05 B
Vanadium	6.6
Zinc	59.8



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Sediment Marine Limit

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

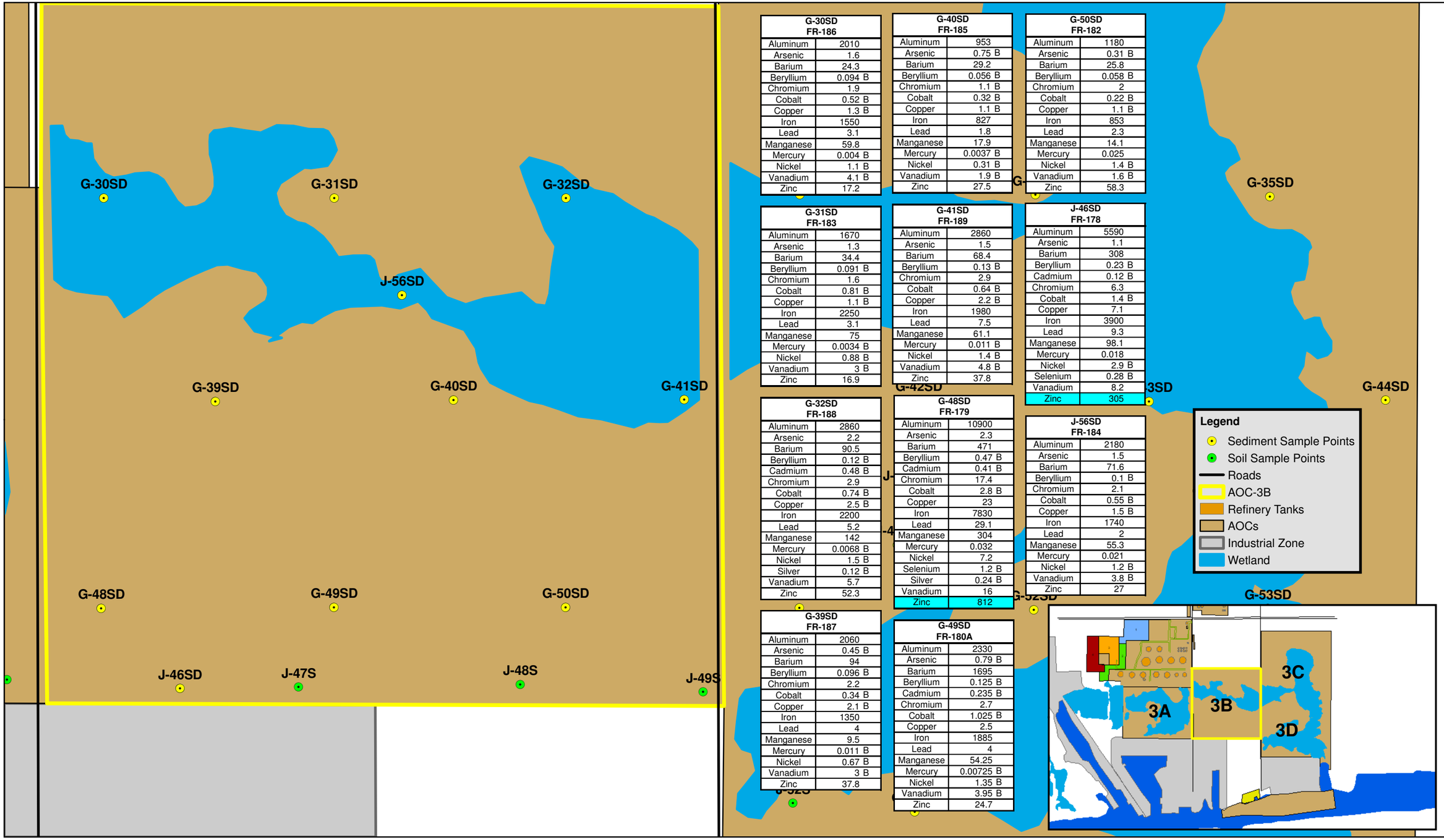
AOC-3A
Ecological
Metal Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29A



G-30SD FR-186	
Aluminum	2010
Arsenic	1.6
Barium	24.3
Beryllium	0.094 B
Chromium	1.9
Cobalt	0.52 B
Copper	1.3 B
Iron	1550
Lead	3.1
Manganese	59.8
Mercury	0.004 B
Nickel	1.1 B
Vanadium	4.1 B
Zinc	17.2

G-40SD FR-185	
Aluminum	953
Arsenic	0.75 B
Barium	29.2
Beryllium	0.056 B
Chromium	1.1 B
Cobalt	0.32 B
Copper	1.1 B
Iron	827
Lead	1.8
Manganese	17.9
Mercury	0.0037 B
Nickel	0.31 B
Vanadium	1.9 B
Zinc	27.5

G-50SD FR-182	
Aluminum	1180
Arsenic	0.31 B
Barium	25.8
Beryllium	0.058 B
Chromium	2
Cobalt	0.22 B
Copper	1.1 B
Iron	853
Lead	2.3
Manganese	14.1
Mercury	0.025
Nickel	1.4 B
Vanadium	1.6 B
Zinc	58.3

G-31SD FR-183	
Aluminum	1670
Arsenic	1.3
Barium	34.4
Beryllium	0.091 B
Chromium	1.6
Cobalt	0.81 B
Copper	1.1 B
Iron	2250
Lead	3.1
Manganese	75
Mercury	0.0034 B
Nickel	0.88 B
Vanadium	3 B
Zinc	16.9

G-41SD FR-189	
Aluminum	2860
Arsenic	1.5
Barium	68.4
Beryllium	0.13 B
Chromium	2.9
Cobalt	0.64 B
Copper	2.2 B
Iron	1980
Lead	7.5
Manganese	61.1
Mercury	0.011 B
Nickel	1.4 B
Vanadium	4.8 B
Zinc	37.8

J-46SD FR-178	
Aluminum	5590
Arsenic	1.1
Barium	308
Beryllium	0.23 B
Cadmium	0.12 B
Chromium	6.3
Cobalt	1.4 B
Copper	7.1
Iron	3900
Lead	9.3
Manganese	98.1
Mercury	0.018
Nickel	2.9 B
Selenium	0.28 B
Vanadium	8.2
Zinc	305

G-32SD FR-188	
Aluminum	2860
Arsenic	2.2
Barium	90.5
Beryllium	0.12 B
Cadmium	0.48 B
Chromium	2.9
Cobalt	0.74 B
Copper	2.5 B
Iron	2200
Lead	5.2
Manganese	142
Mercury	0.0068 B
Nickel	1.5 B
Silver	0.12 B
Vanadium	5.7
Zinc	52.3

G-48SD FR-179	
Aluminum	10900
Arsenic	2.3
Barium	471
Beryllium	0.47 B
Cadmium	0.41 B
Chromium	17.4
Cobalt	2.8 B
Copper	23
Iron	7830
Lead	29.1
Manganese	304
Mercury	0.032
Nickel	7.2
Selenium	1.2 B
Silver	0.24 B
Vanadium	16
Zinc	812

J-56SD FR-184	
Aluminum	2180
Arsenic	1.5
Barium	71.6
Beryllium	0.1 B
Chromium	2.1
Cobalt	0.55 B
Copper	1.5 B
Iron	1740
Lead	2
Manganese	55.3
Mercury	0.021
Nickel	1.2 B
Vanadium	3.8 B
Zinc	27

G-39SD FR-187	
Aluminum	2060
Arsenic	0.45 B
Barium	94
Beryllium	0.096 B
Chromium	2.2
Cobalt	0.34 B
Copper	2.1 B
Iron	1350
Lead	4
Manganese	9.5
Mercury	0.011 B
Nickel	0.67 B
Vanadium	3 B
Zinc	37.8

G-49SD FR-180A	
Aluminum	2330
Arsenic	0.79 B
Barium	1695
Beryllium	0.125 B
Cadmium	0.235 B
Chromium	2.7
Cobalt	1.025 B
Copper	2.5
Iron	1885
Lead	4
Manganese	54.25
Mercury	0.00725 B
Nickel	1.35 B
Vanadium	3.95 B
Zinc	24.7

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Sediment Marine Limit

0 110 220
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

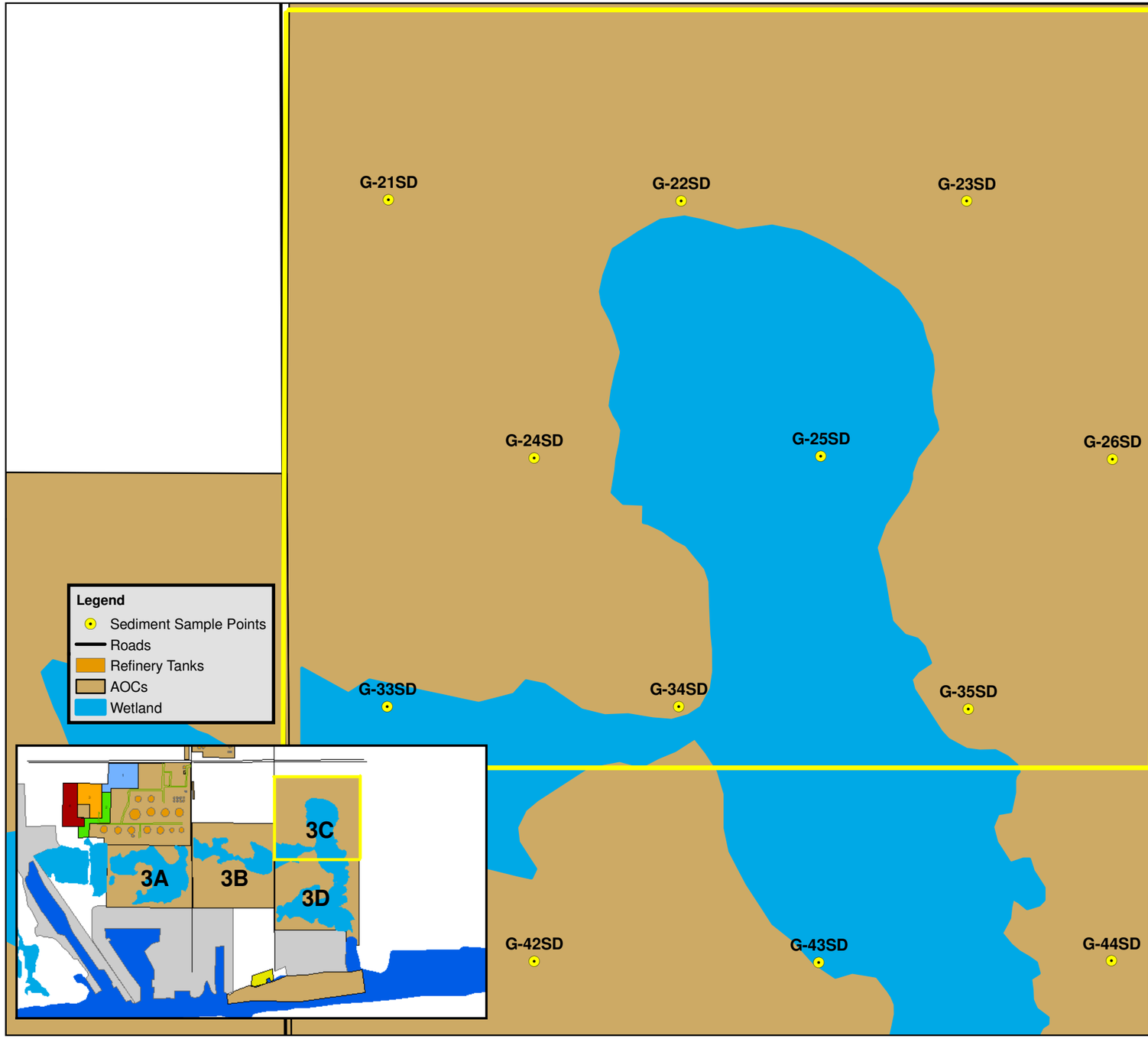
AOC-3B Ecological Metal Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29B



G-21SD FR-210	
Aluminum	971
Arsenic	0.33 B
Barium	22.8
Beryllium	0.051 B
Chromium	1.2
Cobalt	0.2 B
Copper	1.1 B
Iron	676
Lead	9.1
Manganese	21.7
Mercury	0.0081 B
Nickel	0.72 B
Silver	0.093 B
Vanadium	1.2 B
Zinc	134

G-22SD FR-209	
Aluminum	34700
Arsenic	17.3
Barium	95.2 B
Beryllium	1.3 B
Cadmium	0.67 B
Chromium	29.9
Cobalt	10.4 B
Copper	57.1
Iron	23200
Lead	30.5
Manganese	171
Mercury	0.11
Nickel	23.5
Selenium	2.2 B
Silver	1.3 B
Vanadium	58.9
Zinc	611

G-23SD FR-208	
Aluminum	35900
Arsenic	6.3
Barium	310
Beryllium	1.4
Cadmium	0.32 B
Chromium	28.9
Cobalt	9
Copper	21.2
Iron	23700
Lead	18.1
Manganese	398
Mercury	0.046
Nickel	18.1
Selenium	1 B
Silver	1.1 B
Vanadium	48.2
Zinc	207

G-24SD FR-204	
Aluminum	2600
Arsenic	1.4
Barium	47.4
Beryllium	0.14 B
Chromium	2.4
Cobalt	1.1 B
Copper	3.3
Iron	2120
Lead	4.9
Manganese	79.6
Mercury	0.0021 B
Nickel	1.8 B
Vanadium	4.8 B
Zinc	53.4

G-25SD FR-205	
Aluminum	5490
Arsenic	2.4
Barium	45.1
Beryllium	0.22 B
Chromium	4.7
Cobalt	1.6 B
Copper	5.3
Iron	3870
Lead	6.2
Manganese	162
Mercury	0.0097 B
Nickel	3.1 B
Silver	0.27 B
Vanadium	8.5
Zinc	68.2

G-26SD FR-206A	
Aluminum	6525
Arsenic	2.13 B
Barium	133.15
Beryllium	0.2565 B
Cadmium	0.21 B
Chromium	7.55
Cobalt	1.72 B
Copper	15.85 B
Iron	5635
Lead	6.55
Manganese	240.85
Mercury	0.0072 B
Nickel	8.735 B
Selenium	0.445 B
Silver	0.175 B
Vanadium	10.25
Zinc	257.6

G-33SD FR-190	
Aluminum	3810
Arsenic	2.8
Barium	72.4
Beryllium	0.15 B
Chromium	3.5
Cobalt	0.93 B
Copper	4.4
Iron	2780
Lead	14
Manganese	95.9
Mercury	0.0071 B
Nickel	2.1 B
Vanadium	6.4
Zinc	91.2

G-34SD FR-191	
Aluminum	4560
Arsenic	0.86 B
Barium	7.8 B
Beryllium	0.19 B
Chromium	3.3
Cobalt	0.91 B
Copper	1.1 B
Iron	2880
Lead	2.5
Manganese	32.2
Mercury	0.0029 B
Nickel	1.3 B
Vanadium	5.1 B
Zinc	11.2

G-35SD FR-192	
Aluminum	2220
Arsenic	1.4
Barium	10.4 B
Beryllium	0.1 B
Chromium	2
Cobalt	0.57 B
Copper	1.9 B
Iron	1490
Lead	3.9
Manganese	91.5
Mercury	0.0051 B
Nickel	1.1 B
Silver	0.11 B
Vanadium	3.6 B
Zinc	40

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Sediment Marine Limit

N

0 100 200

Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-3C
Ecological
Metal Sediment Distribution Map

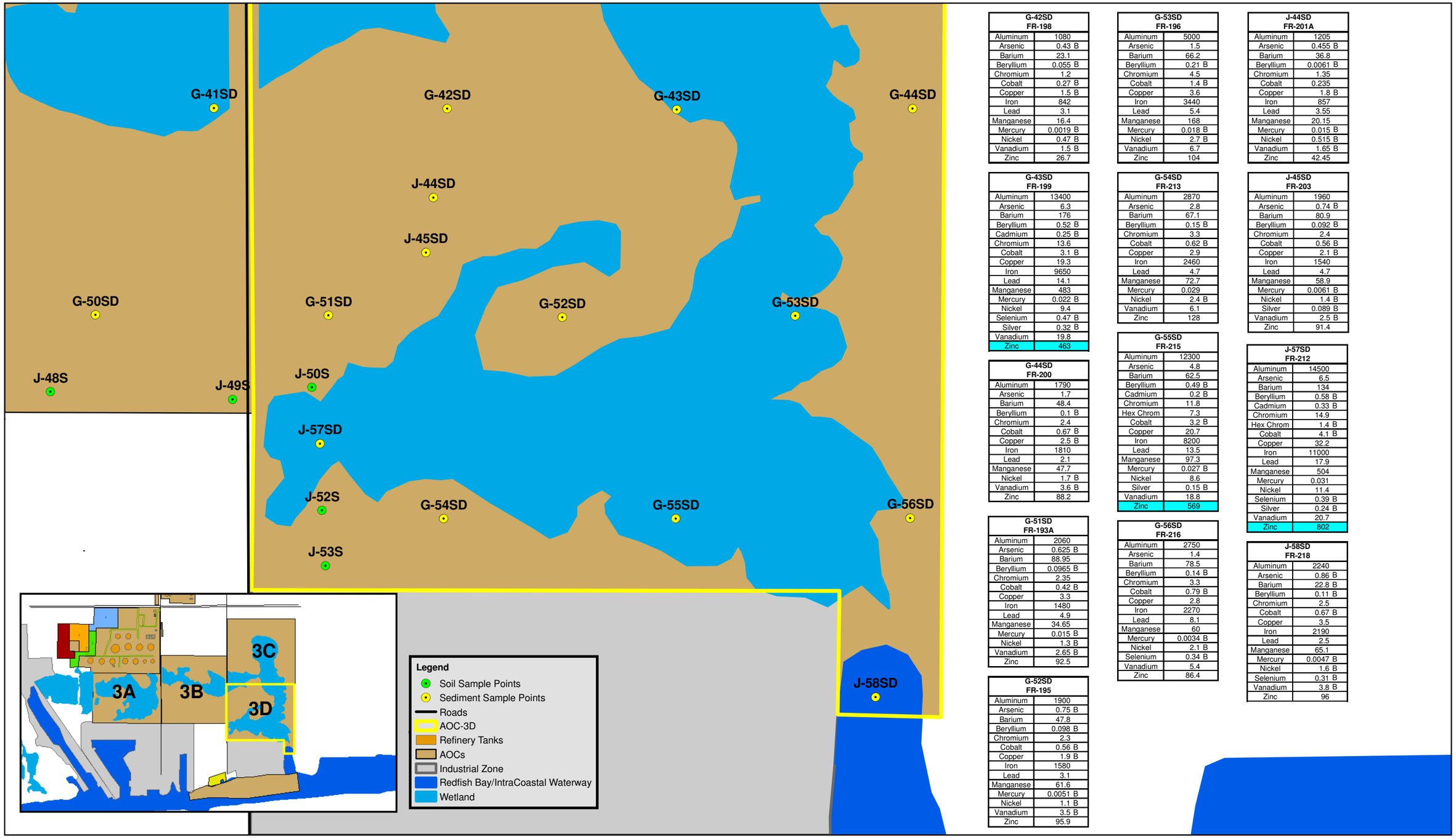
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

29C



G-42SD FR-198	
Aluminum	1080
Arsenic	0.43 B
Barium	23.1
Beryllium	0.055 B
Chromium	1.2
Cobalt	0.27 B
Copper	1.5 B
Iron	842
Lead	3.1
Manganese	16.4
Mercury	0.0019 B
Nickel	0.47 B
Vanadium	1.5 B
Zinc	26.7

G-43SD FR-199	
Aluminum	13400
Arsenic	6.3
Barium	176
Beryllium	0.52 B
Cadmium	0.25 B
Chromium	13.6
Cobalt	3.1 B
Copper	19.3
Iron	9650
Lead	14.1
Manganese	483
Mercury	0.022 B
Nickel	9.4
Selenium	0.47 B
Silver	0.32 B
Vanadium	19.8
Zinc	463

G-44SD FR-200	
Aluminum	1790
Arsenic	1.7
Barium	48.4
Beryllium	0.1 B
Chromium	2.4
Cobalt	0.67 B
Copper	2.5 B
Iron	1810
Lead	2.1
Manganese	47.7
Nickel	1.7 B
Vanadium	3.6 B
Zinc	88.2

G-51SD FR-193A	
Aluminum	2060
Arsenic	0.625 B
Barium	88.95
Beryllium	0.0965 B
Chromium	2.35
Cobalt	0.42 B
Copper	3.3
Iron	1480
Lead	4.9
Manganese	34.65
Mercury	0.015 B
Nickel	1.3 B
Vanadium	2.65 B
Zinc	92.5

G-52SD FR-195	
Aluminum	1900
Arsenic	0.75 B
Barium	47.8
Beryllium	0.098 B
Chromium	2.3
Cobalt	0.56 B
Copper	1.9 B
Iron	1580
Lead	3.1
Manganese	61.6
Mercury	0.0051 B
Nickel	1.1 B
Vanadium	3.5 B
Zinc	95.9

G-53SD FR-196	
Aluminum	5000
Arsenic	1.5
Barium	66.2
Beryllium	0.21 B
Chromium	4.5
Cobalt	1.4 B
Copper	3.6
Iron	3440
Lead	5.4
Manganese	168
Mercury	0.018 B
Nickel	2.7 B
Vanadium	6.7
Zinc	104

G-54SD FR-213	
Aluminum	2870
Arsenic	2.8
Barium	67.1
Beryllium	0.15 B
Chromium	3.3
Cobalt	0.62 B
Copper	2.9
Iron	2460
Lead	4.7
Manganese	72.7
Mercury	0.029
Nickel	2.4 B
Vanadium	6.1
Zinc	128

G-55SD FR-215	
Aluminum	12300
Arsenic	4.8
Barium	62.5
Beryllium	0.49 B
Cadmium	0.2 B
Chromium	11.8
Hex Chrom	7.3
Cobalt	3.2 B
Copper	20.7
Iron	8200
Lead	13.5
Manganese	97.3
Mercury	0.027 B
Nickel	8.6
Silver	0.15 B
Vanadium	18.8
Zinc	569

G-56SD FR-216	
Aluminum	2750
Arsenic	1.4
Barium	78.5
Beryllium	0.14 B
Chromium	3.3
Cobalt	0.79 B
Copper	2.8
Iron	2270
Lead	8.1
Manganese	60
Mercury	0.0034 B
Nickel	2.1 B
Selenium	0.34 B
Vanadium	5.4
Zinc	86.4

J-44SD FR-201A	
Aluminum	1205
Arsenic	0.455 B
Barium	36.8
Beryllium	0.0061 B
Chromium	1.35
Cobalt	0.235
Copper	1.8 B
Iron	857
Lead	3.55
Manganese	20.15
Mercury	0.015 B
Nickel	0.515 B
Vanadium	1.65 B
Zinc	42.45

J-45SD FR-203	
Aluminum	1960
Arsenic	0.74 B
Barium	80.9
Beryllium	0.092 B
Chromium	2.4
Cobalt	0.56 B
Copper	2.1 B
Iron	1540
Lead	4.7
Manganese	58.9
Mercury	0.0061 B
Nickel	1.4 B
Silver	0.089 B
Vanadium	2.5 B
Zinc	91.4

J-57SD FR-212	
Aluminum	14500
Arsenic	6.5
Barium	134
Beryllium	0.58 B
Cadmium	0.33 B
Chromium	14.9
Hex Chrom	1.4 B
Cobalt	4.1 B
Copper	32.2
Iron	11000
Lead	17.9
Manganese	504
Mercury	0.031
Nickel	11.4
Selenium	0.39 B
Silver	0.24 B
Vanadium	20.7
Zinc	802

J-58SD FR-218	
Aluminum	2240
Arsenic	0.86 B
Barium	22.8 B
Beryllium	0.11 B
Chromium	2.5
Cobalt	0.67 B
Copper	3.5
Iron	2190
Lead	2.5
Manganese	65.1
Mercury	0.0047 B
Nickel	1.6 B
Selenium	0.31 B
Vanadium	3.8 B
Zinc	96

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Sediment Marine Limit

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

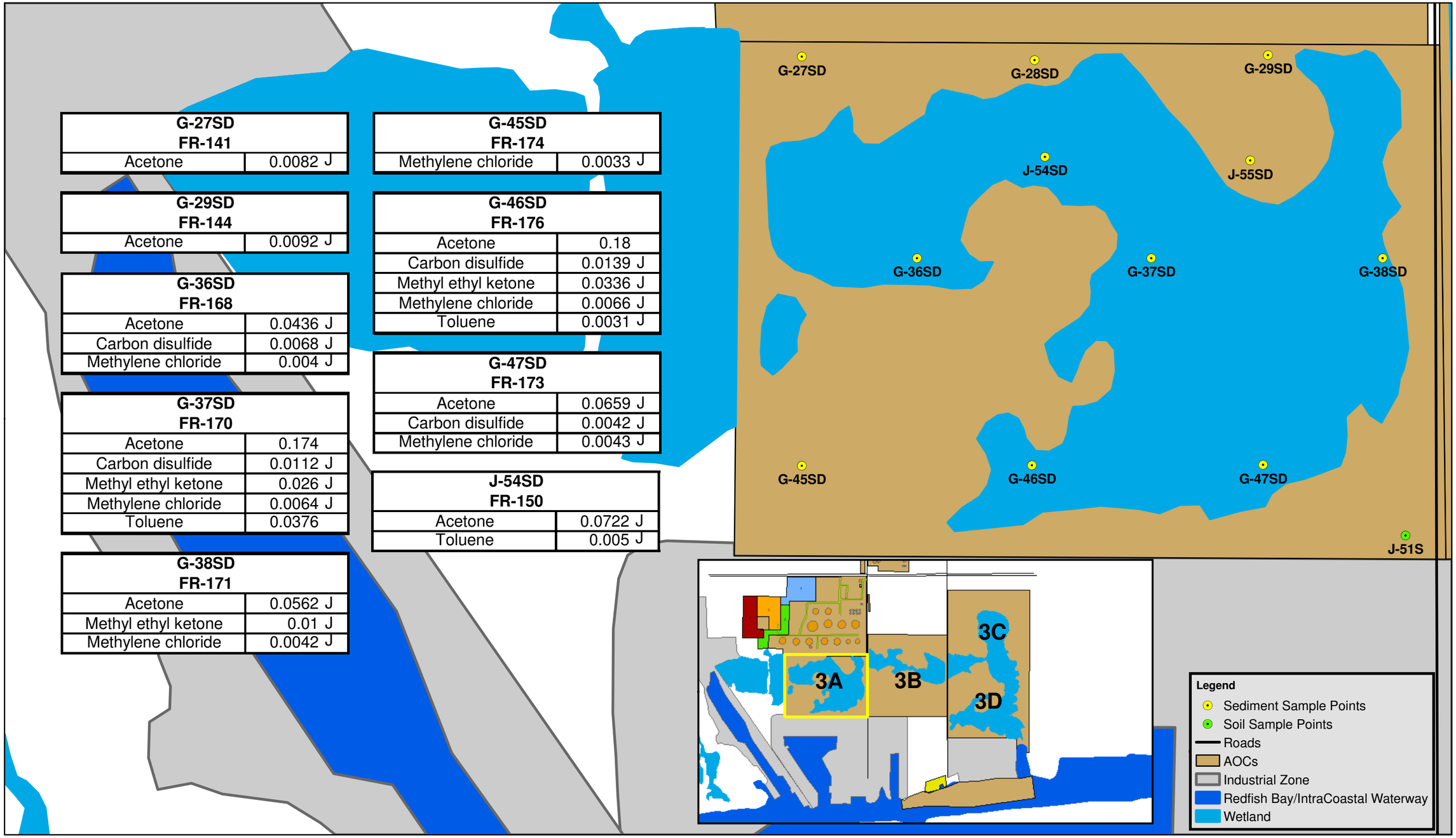
AOC-3D
Ecological
Metal Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29D



G-27SD FR-141	
Acetone	0.0082 J

G-29SD FR-144	
Acetone	0.0092 J

G-36SD FR-168	
Acetone	0.0436 J
Carbon disulfide	0.0068 J
Methylene chloride	0.004 J

G-37SD FR-170	
Acetone	0.174
Carbon disulfide	0.0112 J
Methyl ethyl ketone	0.026 J
Methylene chloride	0.0064 J
Toluene	0.0376

G-38SD FR-171	
Acetone	0.0562 J
Methyl ethyl ketone	0.01 J
Methylene chloride	0.0042 J

G-45SD FR-174	
Methylene chloride	0.0033 J

G-46SD FR-176	
Acetone	0.18
Carbon disulfide	0.0139 J
Methyl ethyl ketone	0.0336 J
Methylene chloride	0.0066 J
Toluene	0.0031 J

G-47SD FR-173	
Acetone	0.0659 J
Carbon disulfide	0.0042 J
Methylene chloride	0.0043 J

J-54SD FR-150	
Acetone	0.0722 J
Toluene	0.005 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

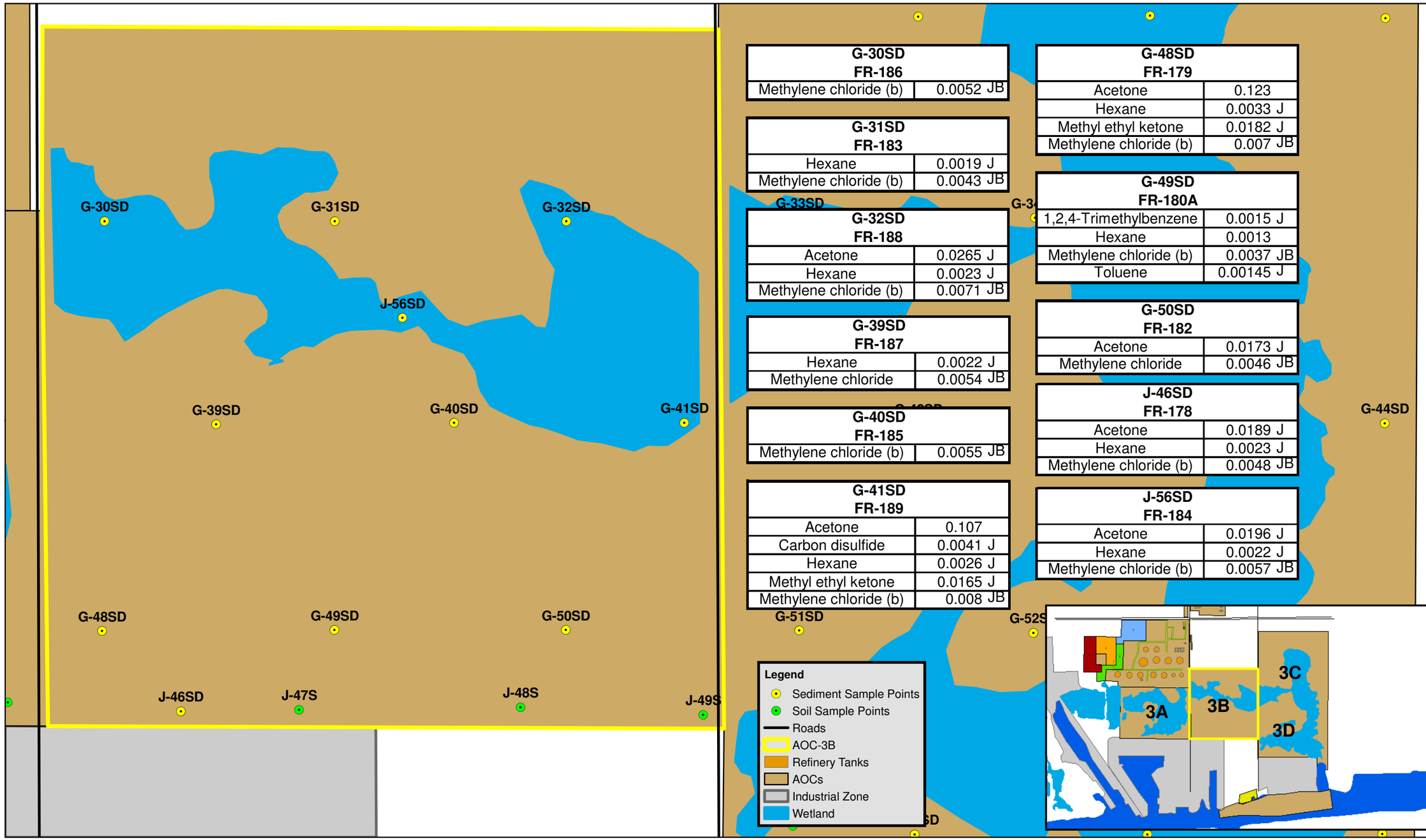
AOC-3A
Ecological
VOC Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29E



G-30SD FR-186	
Methylene chloride (b)	0.0052 JB

G-31SD FR-183	
Hexane	0.0019 J
Methylene chloride (b)	0.0043 JB

G-32SD FR-188	
Acetone	0.0265 J
Hexane	0.0023 J
Methylene chloride (b)	0.0071 JB

G-39SD FR-187	
Hexane	0.0022 J
Methylene chloride	0.0054 JB

G-40SD FR-185	
Methylene chloride (b)	0.0055 JB

G-41SD FR-189	
Acetone	0.107
Carbon disulfide	0.0041 J
Hexane	0.0026 J
Methyl ethyl ketone	0.0165 J
Methylene chloride (b)	0.008 JB

G-48SD FR-179	
Acetone	0.123
Hexane	0.0033 J
Methyl ethyl ketone	0.0182 J
Methylene chloride (b)	0.007 JB

G-49SD FR-180A	
1,2,4-Trimethylbenzene	0.0015 J
Hexane	0.0013
Methylene chloride (b)	0.0037 JB
Toluene	0.00145 J

G-50SD FR-182	
Acetone	0.0173 J
Methylene chloride	0.0046 JB

J-46SD FR-178	
Acetone	0.0189 J
Hexane	0.0023 J
Methylene chloride (b)	0.0048 JB

J-56SD FR-184	
Acetone	0.0196 J
Hexane	0.0022 J
Methylene chloride (b)	0.0057 JB

Notes:

1. Results are posted in mg/kg
2. Qualifiers:
   - J = Concentration greater than the SDL but less than the method quantitation limit (MQL)
   - B = Analyte found in associated method blank

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

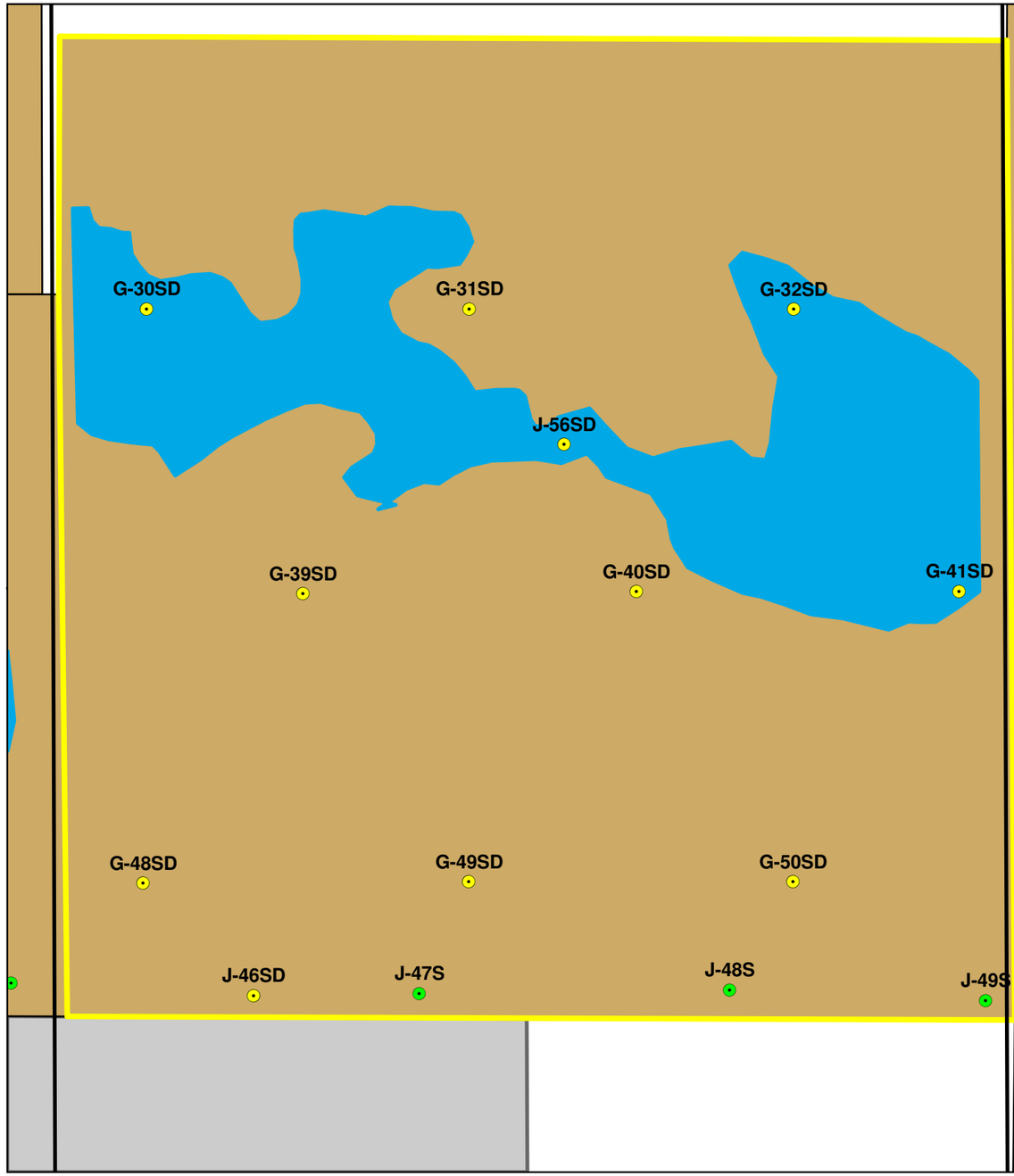
AOC-3B
Ecological
VOC Sediment Distribution Map

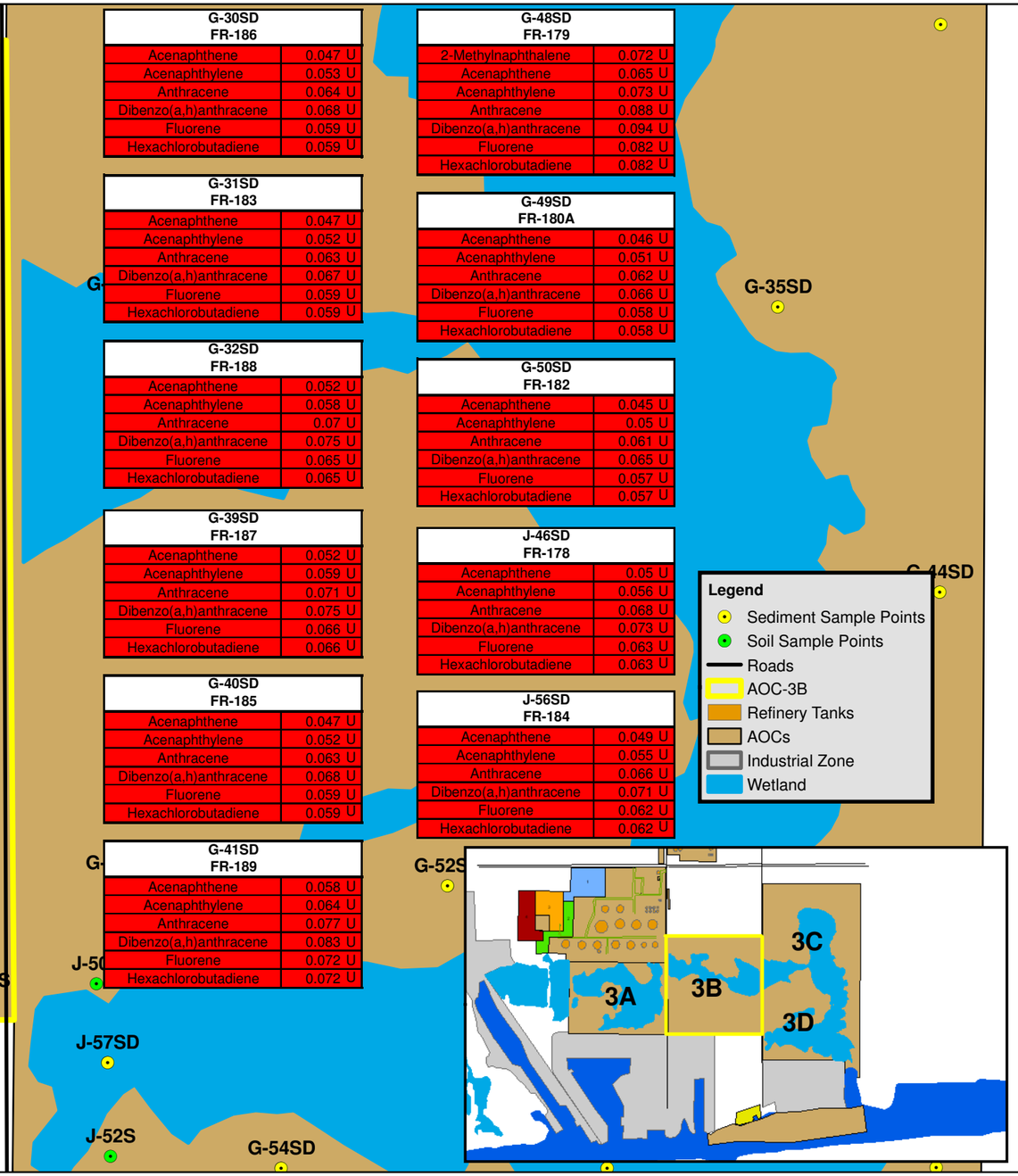
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29F





G-30SD FR-186	
Acenaphthene	0.047 U
Acenaphthylene	0.053 U
Anthracene	0.064 U
Dibenzo(a,h)anthracene	0.068 U
Fluorene	0.059 U
Hexachlorobutadiene	0.059 U

G-31SD FR-183	
Acenaphthene	0.047 U
Acenaphthylene	0.052 U
Anthracene	0.063 U
Dibenzo(a,h)anthracene	0.067 U
Fluorene	0.059 U
Hexachlorobutadiene	0.059 U

G-32SD FR-188	
Acenaphthene	0.052 U
Acenaphthylene	0.058 U
Anthracene	0.07 U
Dibenzo(a,h)anthracene	0.075 U
Fluorene	0.065 U
Hexachlorobutadiene	0.065 U

G-39SD FR-187	
Acenaphthene	0.052 U
Acenaphthylene	0.059 U
Anthracene	0.071 U
Dibenzo(a,h)anthracene	0.075 U
Fluorene	0.066 U
Hexachlorobutadiene	0.066 U

G-40SD FR-185	
Acenaphthene	0.047 U
Acenaphthylene	0.052 U
Anthracene	0.063 U
Dibenzo(a,h)anthracene	0.068 U
Fluorene	0.059 U
Hexachlorobutadiene	0.059 U

G-41SD FR-189	
Acenaphthene	0.058 U
Acenaphthylene	0.064 U
Anthracene	0.077 U
Dibenzo(a,h)anthracene	0.083 U
Fluorene	0.072 U
Hexachlorobutadiene	0.072 U

G-48SD FR-179	
2-Methylnaphthalene	0.072 U
Acenaphthene	0.065 U
Acenaphthylene	0.073 U
Anthracene	0.088 U
Dibenzo(a,h)anthracene	0.094 U
Fluorene	0.082 U
Hexachlorobutadiene	0.082 U

G-49SD FR-180A	
Acenaphthene	0.046 U
Acenaphthylene	0.051 U
Anthracene	0.062 U
Dibenzo(a,h)anthracene	0.066 U
Fluorene	0.058 U
Hexachlorobutadiene	0.058 U

G-50SD FR-182	
Acenaphthene	0.045 U
Acenaphthylene	0.05 U
Anthracene	0.061 U
Dibenzo(a,h)anthracene	0.065 U
Fluorene	0.057 U
Hexachlorobutadiene	0.057 U

J-46SD FR-178	
Acenaphthene	0.05 U
Acenaphthylene	0.056 U
Anthracene	0.068 U
Dibenzo(a,h)anthracene	0.073 U
Fluorene	0.063 U
Hexachlorobutadiene	0.063 U

J-56SD FR-184	
Acenaphthene	0.049 U
Acenaphthylene	0.055 U
Anthracene	0.066 U
Dibenzo(a,h)anthracene	0.071 U
Fluorene	0.062 U
Hexachlorobutadiene	0.062 U

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   U = Undetected at the sample detection limit (SDL)

Exceeds Sediment Marine Screening Level

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

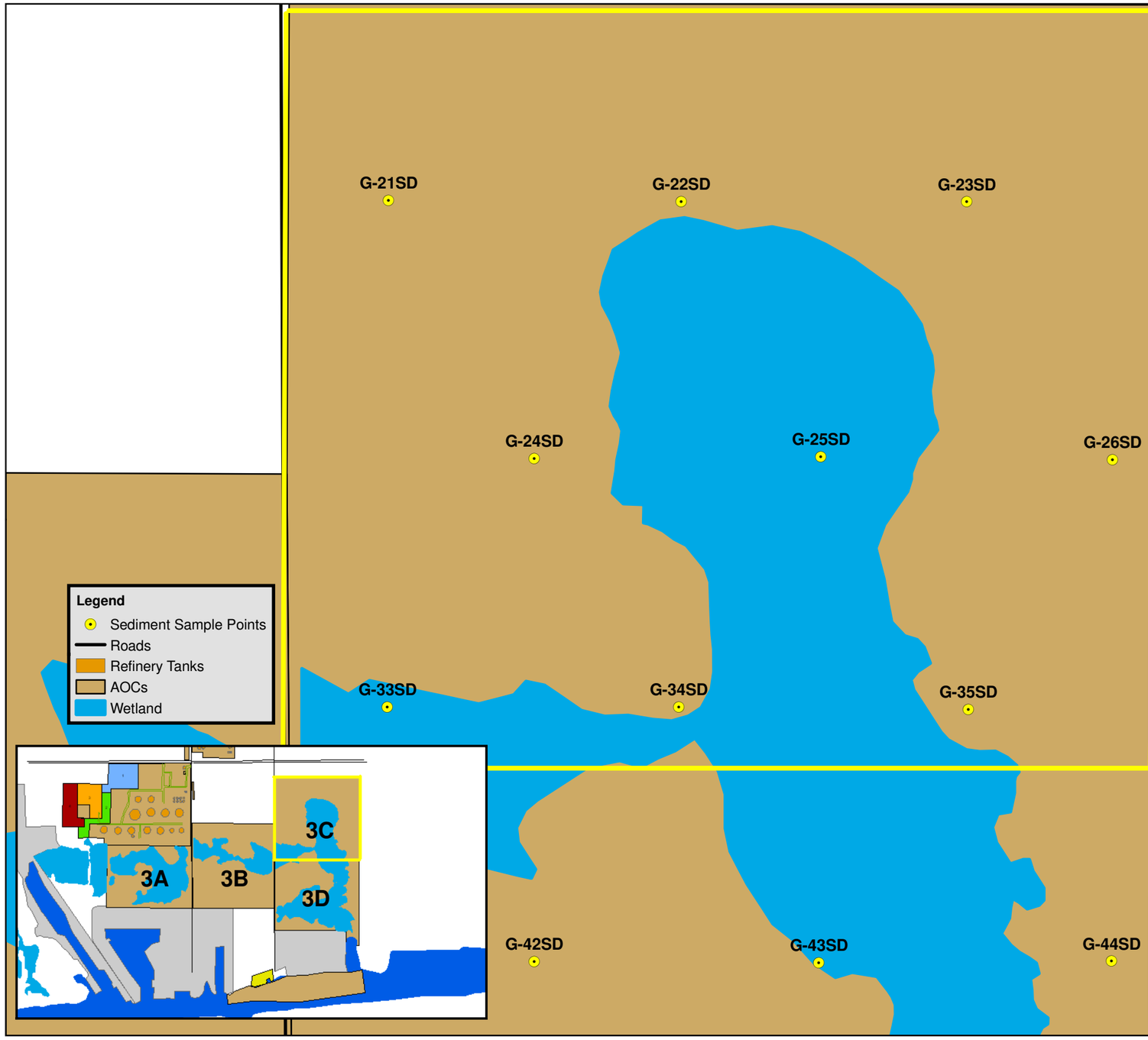
AOC-3B
Ecological
SVOC Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29J



G-21SD FR-210	
Acetone	0.048 J
Methylene chloride (b)	0.0038 JB

G-22SD FR-209	
Acetone	0.668
Carbon disulfide	0.0241 J
Hexane	0.0086 J
Naphthalene	0.21 U
Methyl ethyl ketone	0.135 J
Methylene chloride (b)	0.0199 JB

G-23SD FR-208	
Methylene chloride (b)	0.0079 JB

G-24SD FR-204	
Methylene chloride	0.0058 J

G-25SD FR-205	
Acetone	0.0135 J
Methylene chloride	0.0037 J

G-26SD FR-206A	
Methylene chloride	0.0057 J

G-33SD FR-190	
Acetone	0.151
Carbon disulfide	0.0029 J
Hexane	0.0026 J
Methyl ethyl ketone	0.029 J
Methylene chloride (b)	0.0063 JB

G-34SD FR-191	
Methylene chloride (b)	0.0059 JB

G-35SD FR-192	
Methylene chloride (b)	0.0064 JB

Notes:

1. Results are posted in mg/kg
2. Qualifiers:
   - U = Undetected at the sample detection limit (SDL)
   - J = Concentration greater than the SDL but less than the method quantitation limit (MQL)
   - B = Analyte found in associated method blank

Exceeds Sediment Marine Screening Level

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

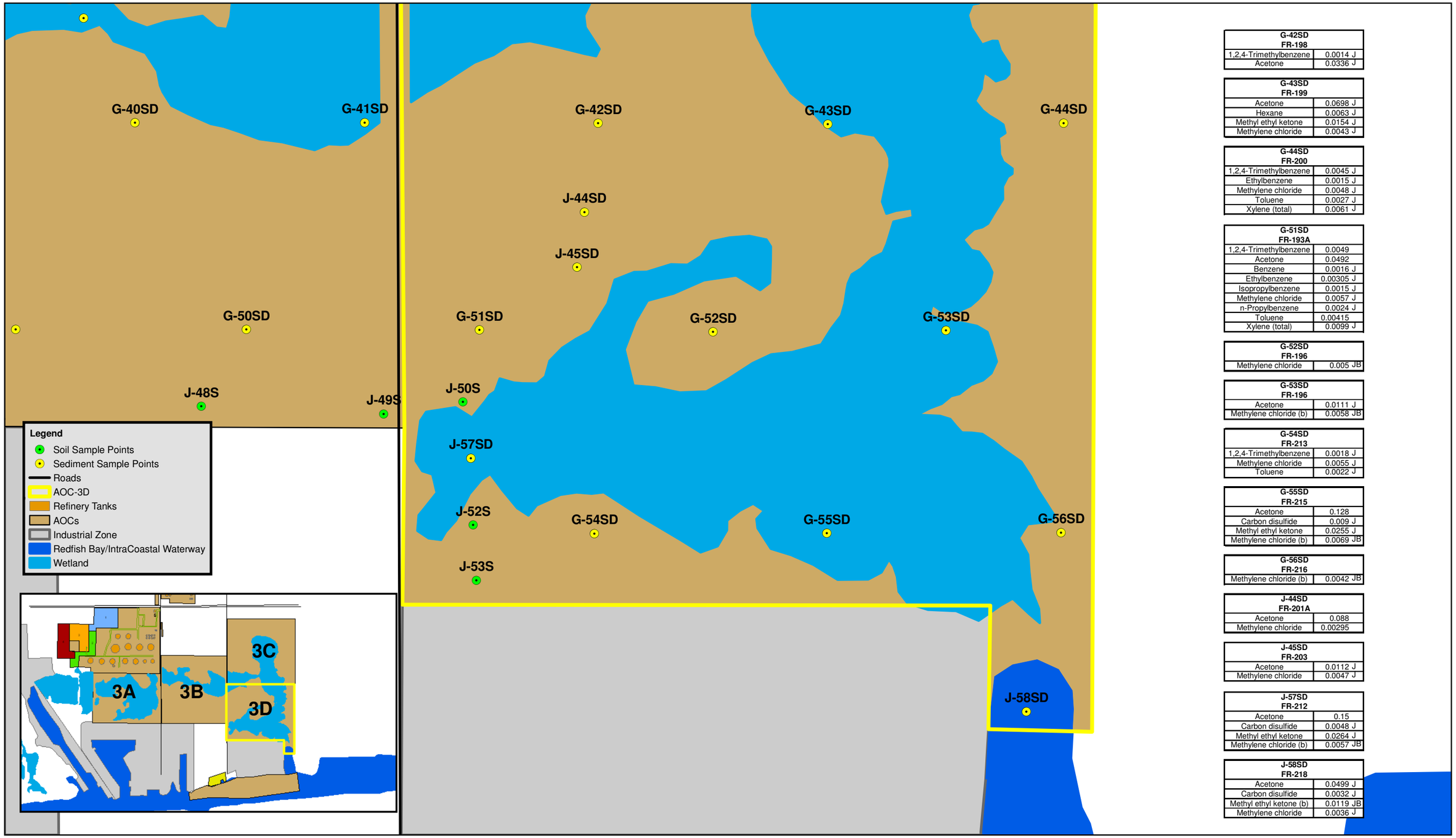
AOC-3C
Ecological
VOC Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29G



G-42SD FR-198	
1,2,4-Trimethylbenzene	0.0014 J
Acetone	0.0336 J

G-43SD FR-199	
Acetone	0.0698 J
Hexane	0.0063 J
Methyl ethyl ketone	0.0154 J
Methylene chloride	0.0043 J

G-44SD FR-200	
1,2,4-Trimethylbenzene	0.0045 J
Ethylbenzene	0.0015 J
Methylene chloride	0.0048 J
Toluene	0.0027 J
Xylene (total)	0.0061 J

G-51SD FR-193A	
1,2,4-Trimethylbenzene	0.0049
Acetone	0.0492
Benzene	0.0016 J
Ethylbenzene	0.00305 J
Isopropylbenzene	0.0015 J
Methylene chloride	0.0057 J
n-Propylbenzene	0.0024 J
Toluene	0.00415
Xylene (total)	0.0099 J

G-52SD FR-196	
Methylene chloride	0.005 JB

G-53SD FR-196	
Acetone	0.0111 J
Methylene chloride (b)	0.0058 JB

G-54SD FR-213	
1,2,4-Trimethylbenzene	0.0018 J
Methylene chloride	0.0055 J
Toluene	0.0022 J

G-55SD FR-215	
Acetone	0.128
Carbon disulfide	0.009 J
Methyl ethyl ketone	0.0255 J
Methylene chloride (b)	0.0069 JB

G-56SD FR-216	
Methylene chloride (b)	0.0042 JB

J-44SD FR-201A	
Acetone	0.088
Methylene chloride	0.00295

J-45SD FR-203	
Acetone	0.0112 J
Methylene chloride	0.0047 J

J-57SD FR-212	
Acetone	0.15
Carbon disulfide	0.0048 J
Methyl ethyl ketone	0.0264 J
Methylene chloride (b)	0.0057 JB

J-58SD FR-218	
Acetone	0.0499 J
Carbon disulfide	0.0032 J
Methyl ethyl ketone (b)	0.0119 JB
Methylene chloride	0.0036 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

B = Analyte found in associated method blank

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

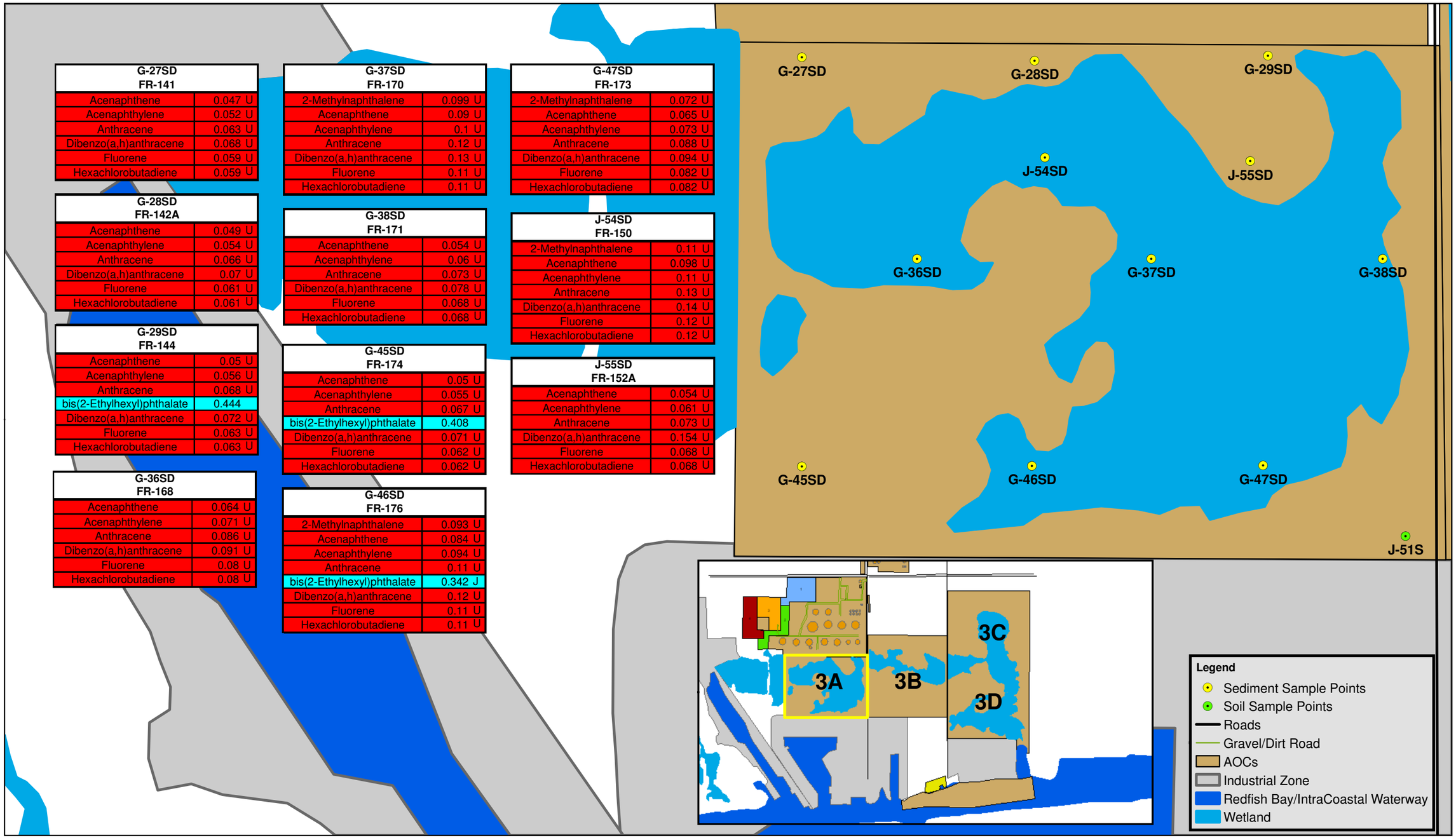
AOC-3D
Ecological
VOC Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29H



G-27SD FR-141	
Acenaphthene	0.047 U
Acenaphthylene	0.052 U
Anthracene	0.063 U
Dibenzo(a,h)anthracene	0.068 U
Fluorene	0.059 U
Hexachlorobutadiene	0.059 U

G-28SD FR-142A	
Acenaphthene	0.049 U
Acenaphthylene	0.054 U
Anthracene	0.066 U
Dibenzo(a,h)anthracene	0.07 U
Fluorene	0.061 U
Hexachlorobutadiene	0.061 U

G-29SD FR-144	
Acenaphthene	0.05 U
Acenaphthylene	0.056 U
Anthracene	0.068 U
bis(2-Ethylhexyl)phthalate	0.444
Dibenzo(a,h)anthracene	0.072 U
Fluorene	0.063 U
Hexachlorobutadiene	0.063 U

G-36SD FR-168	
Acenaphthene	0.064 U
Acenaphthylene	0.071 U
Anthracene	0.086 U
Dibenzo(a,h)anthracene	0.091 U
Fluorene	0.08 U
Hexachlorobutadiene	0.08 U

G-37SD FR-170	
2-Methylnaphthalene	0.099 U
Acenaphthene	0.09 U
Acenaphthylene	0.1 U
Anthracene	0.12 U
Dibenzo(a,h)anthracene	0.13 U
Fluorene	0.11 U
Hexachlorobutadiene	0.11 U

G-38SD FR-171	
Acenaphthene	0.054 U
Acenaphthylene	0.06 U
Anthracene	0.073 U
Dibenzo(a,h)anthracene	0.078 U
Fluorene	0.068 U
Hexachlorobutadiene	0.068 U

G-45SD FR-174	
Acenaphthene	0.05 U
Acenaphthylene	0.055 U
Anthracene	0.067 U
bis(2-Ethylhexyl)phthalate	0.408
Dibenzo(a,h)anthracene	0.071 U
Fluorene	0.062 U
Hexachlorobutadiene	0.062 U

G-46SD FR-176	
2-Methylnaphthalene	0.093 U
Acenaphthene	0.084 U
Acenaphthylene	0.094 U
Anthracene	0.11 U
bis(2-Ethylhexyl)phthalate	0.342 J
Dibenzo(a,h)anthracene	0.12 U
Fluorene	0.11 U
Hexachlorobutadiene	0.11 U

G-47SD FR-173	
2-Methylnaphthalene	0.072 U
Acenaphthene	0.065 U
Acenaphthylene	0.073 U
Anthracene	0.088 U
Dibenzo(a,h)anthracene	0.094 U
Fluorene	0.082 U
Hexachlorobutadiene	0.082 U

J-54SD FR-150	
2-Methylnaphthalene	0.11 U
Acenaphthene	0.098 U
Acenaphthylene	0.11 U
Anthracene	0.13 U
Dibenzo(a,h)anthracene	0.14 U
Fluorene	0.12 U
Hexachlorobutadiene	0.12 U

J-55SD FR-152A	
Acenaphthene	0.054 U
Acenaphthylene	0.061 U
Anthracene	0.073 U
Dibenzo(a,h)anthracene	0.154 U
Fluorene	0.068 U
Hexachlorobutadiene	0.068 U

Notes:

1. Results are posted in mg/kg
2. Qualifiers:
   - U = Undetected at the sample detection limit (SDL)
   - J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

Above Sediment Marine Limit

Exceeds Sediment Marine Screening Level

0 110 220

Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-3A
Ecological
SVOC Sediment Distribution Map

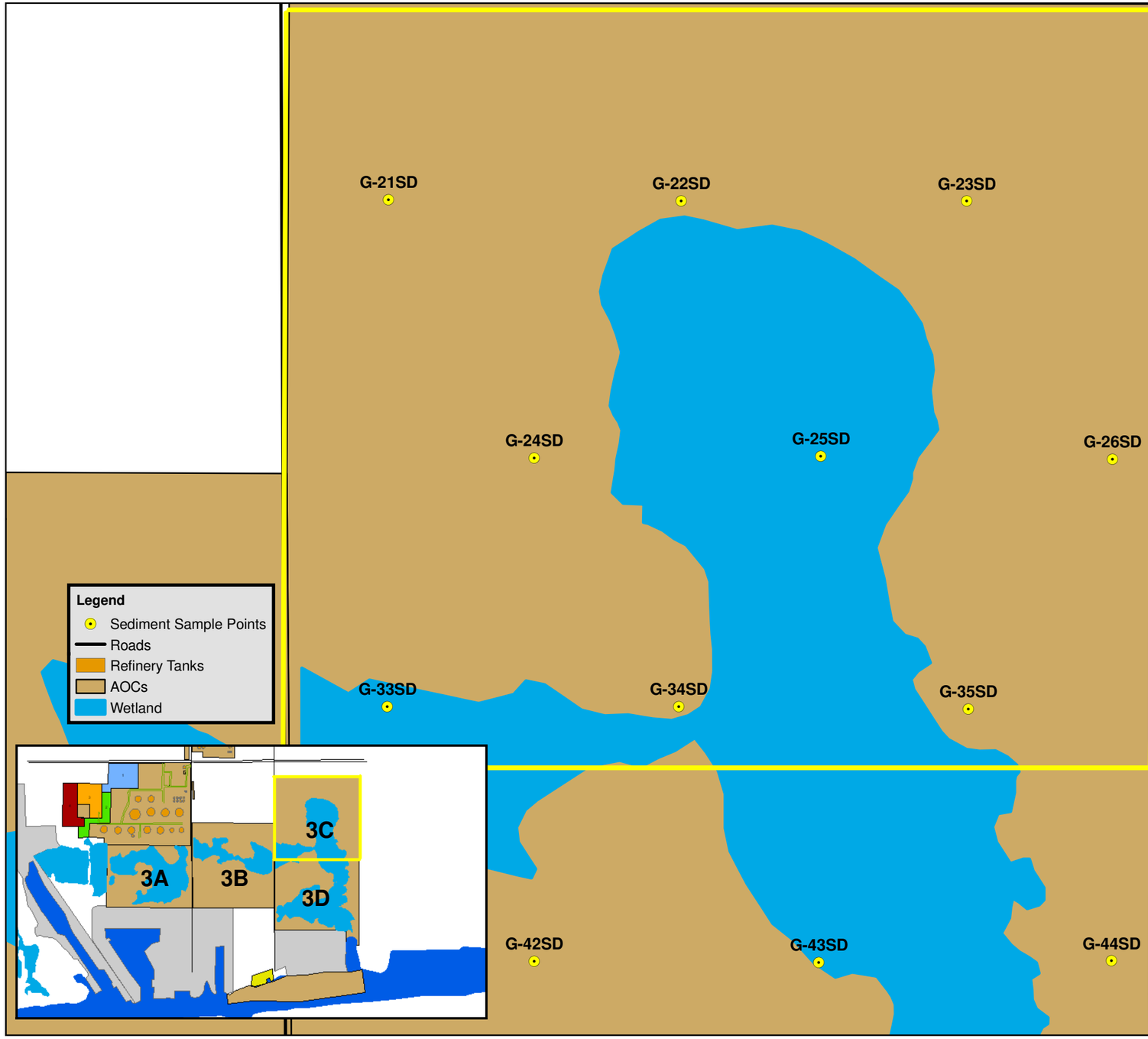
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

29I



G-21SD FR-210	
Acenaphthene	0.045 U
Acenaphthylene	0.05 U
Anthracene	0.061 U
bis(2-Ethylhexyl)phthalate	0.153 J
Dibenzo(a,h)anthracene	0.065 U
Fluorene	0.056 U
Hexachlorobutadiene	0.056 U

G-22SD FR-209	
2-Methylnaphthalene	0.23 U
Acenaphthene	0.21 U
Acenaphthylene	0.23 U
Anthracene	0.28 U
Benzo(a)anthracene	0.32 U
bis(2-Ethylhexyl)phthalate	0.43 U
Dibenzo(a,h)anthracene	0.3 U
Fluorene	0.26 U
Hexachlorobutadiene	0.26 U
Hexachloroethane	0.26 U

G-23SD FR-208	
2-Methylnaphthalene	0.082 U
Acenaphthene	0.074 U
Acenaphthylene	0.083 U
Anthracene	0.1 U
Dibenzo(a,h)anthracene	0.11 U
Fluorene	0.093 U
Hexachlorobutadiene	0.093 U

G-24SD FR-204	
Acenaphthene	0.05 U
Acenaphthylene	0.056 U
Anthracene	0.067 U
Dibenzo(a,h)anthracene	0.072 U
Fluorene	0.063 U
Hexachlorobutadiene	0.063 U

G-25SD FR-205	
Acenaphthene	0.058 U
Acenaphthylene	0.065 U
Anthracene	0.079 U
Dibenzo(a,h)anthracene	0.084 U
Fluorene	0.073 U
Hexachlorobutadiene	0.073 U

G-26SD FR-206A	
Acenaphthene	0.052 U
Acenaphthylene	0.058 U
Anthracene	0.07 U
Dibenzo(a,h)anthracene	0.075 U
Fluorene	0.065 U
Hexachlorobutadiene	0.065 U

G-33SD FR-190	
Acenaphthene	0.054 U
Acenaphthylene	0.06 U
Anthracene	0.072 U
Dibenzo(a,h)anthracene	0.077 U
Fluorene	0.067 U
Hexachlorobutadiene	0.067 U

G-34SD FR-191	
Acenaphthene	0.048 U
Acenaphthylene	0.054 U
Anthracene	0.065 U
Dibenzo(a,h)anthracene	0.07 U
Fluorene	0.061 U
Hexachlorobutadiene	0.061 U

G-35SD FR-192	
Acenaphthene	0.048 U
Acenaphthylene	0.054 U
Anthracene	0.065 U
Dibenzo(a,h)anthracene	0.07 U
Fluorene	0.061 U
Hexachlorobutadiene	0.061 U

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   U = Undetected at the sample detection limit (SDL)

Exceeds Sediment Marine Screening Level

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

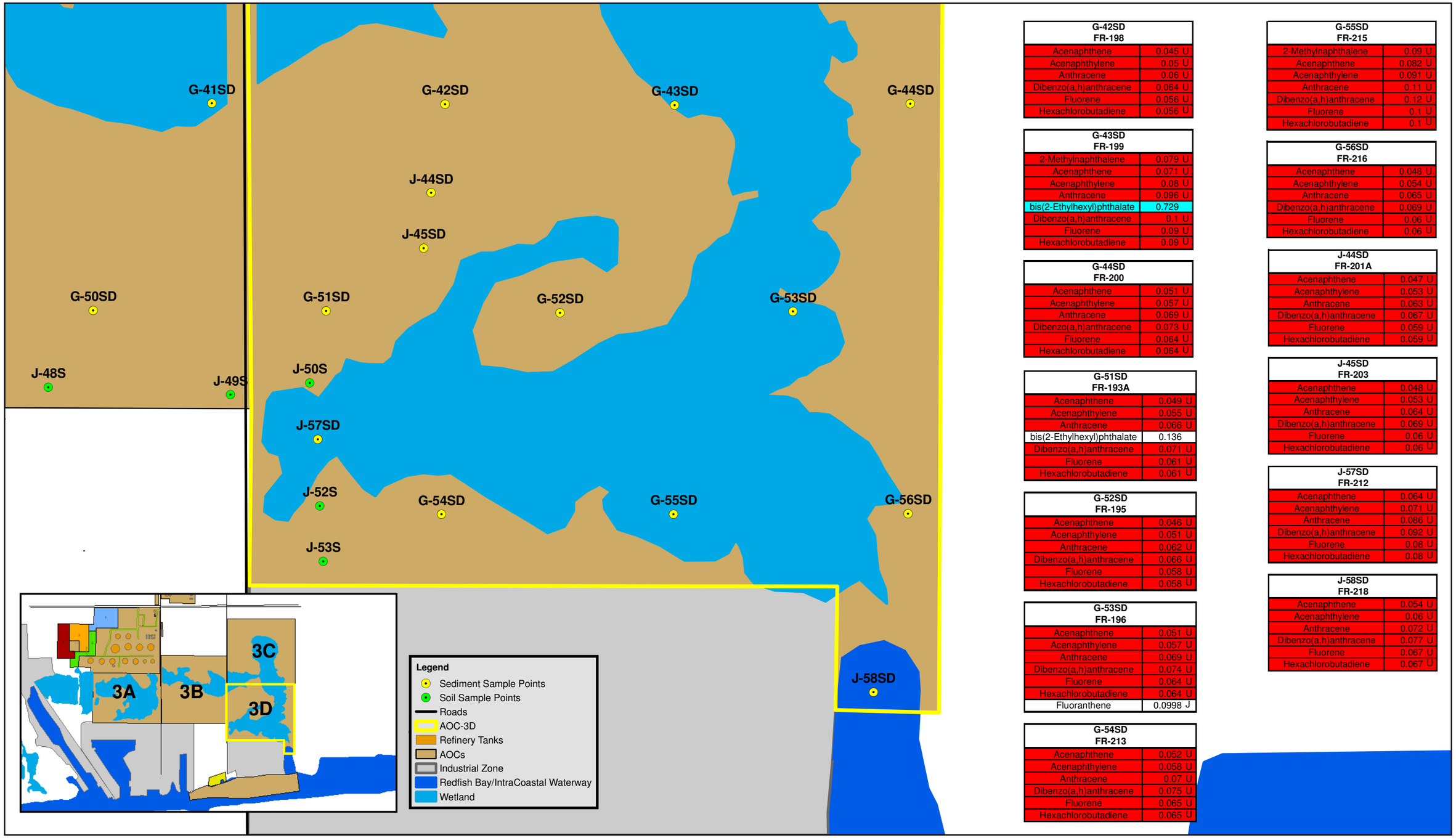
AOC-3C
Ecological
SVOC Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29K



G-42SD FR-198	
Acenaphthene	0.045 U
Acenaphthylene	0.05 U
Anthracene	0.06 U
Dibenzo(a,h)anthracene	0.064 U
Fluorene	0.056 U
Hexachlorobutadiene	0.056 U

G-43SD FR-199	
2-Methylnaphthalene	0.079 U
Acenaphthene	0.071 U
Acenaphthylene	0.08 U
Anthracene	0.096 U
bis(2-Ethylhexyl)phthalate	0.729
Dibenzo(a,h)anthracene	0.1 U
Fluorene	0.09 U
Hexachlorobutadiene	0.09 U

G-44SD FR-200	
Acenaphthene	0.051 U
Acenaphthylene	0.057 U
Anthracene	0.069 U
Dibenzo(a,h)anthracene	0.073 U
Fluorene	0.064 U
Hexachlorobutadiene	0.064 U

G-51SD FR-193A	
Acenaphthene	0.049 U
Acenaphthylene	0.055 U
Anthracene	0.066 U
bis(2-Ethylhexyl)phthalate	0.136
Dibenzo(a,h)anthracene	0.071 U
Fluorene	0.061 U
Hexachlorobutadiene	0.061 U

G-52SD FR-195	
Acenaphthene	0.046 U
Acenaphthylene	0.051 U
Anthracene	0.062 U
Dibenzo(a,h)anthracene	0.066 U
Fluorene	0.058 U
Hexachlorobutadiene	0.058 U

G-53SD FR-196	
Acenaphthene	0.051 U
Acenaphthylene	0.057 U
Anthracene	0.069 U
Dibenzo(a,h)anthracene	0.074 U
Fluorene	0.064 U
Hexachlorobutadiene	0.064 U
Fluoranthene	0.0998 J

G-54SD FR-213	
Acenaphthene	0.052 U
Acenaphthylene	0.058 U
Anthracene	0.07 U
Dibenzo(a,h)anthracene	0.075 U
Fluorene	0.065 U
Hexachlorobutadiene	0.065 U

G-55SD FR-215	
2-Methylnaphthalene	0.09 U
Acenaphthene	0.082 U
Acenaphthylene	0.091 U
Anthracene	0.11 U
Dibenzo(a,h)anthracene	0.12 U
Fluorene	0.1 U
Hexachlorobutadiene	0.1 U

G-56SD FR-216	
Acenaphthene	0.048 U
Acenaphthylene	0.054 U
Anthracene	0.065 U
Dibenzo(a,h)anthracene	0.069 U
Fluorene	0.06 U
Hexachlorobutadiene	0.06 U

J-44SD FR-201A	
Acenaphthene	0.047 U
Acenaphthylene	0.053 U
Anthracene	0.063 U
Dibenzo(a,h)anthracene	0.067 U
Fluorene	0.059 U
Hexachlorobutadiene	0.059 U

J-45SD FR-203	
Acenaphthene	0.048 U
Acenaphthylene	0.053 U
Anthracene	0.064 U
Dibenzo(a,h)anthracene	0.069 U
Fluorene	0.06 U
Hexachlorobutadiene	0.06 U

J-57SD FR-212	
Acenaphthene	0.064 U
Acenaphthylene	0.071 U
Anthracene	0.086 U
Dibenzo(a,h)anthracene	0.092 U
Fluorene	0.08 U
Hexachlorobutadiene	0.08 U

J-58SD FR-218	
Acenaphthene	0.054 U
Acenaphthylene	0.06 U
Anthracene	0.072 U
Dibenzo(a,h)anthracene	0.077 U
Fluorene	0.067 U
Hexachlorobutadiene	0.067 U

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   U = Undetected at the sample detection limit (SDL)

Above Sediment Marine Limit

Exceeds Sediment Marine Screening Level

0 90 180

Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-3D
Ecological
SVOC Sediment Distribution Map

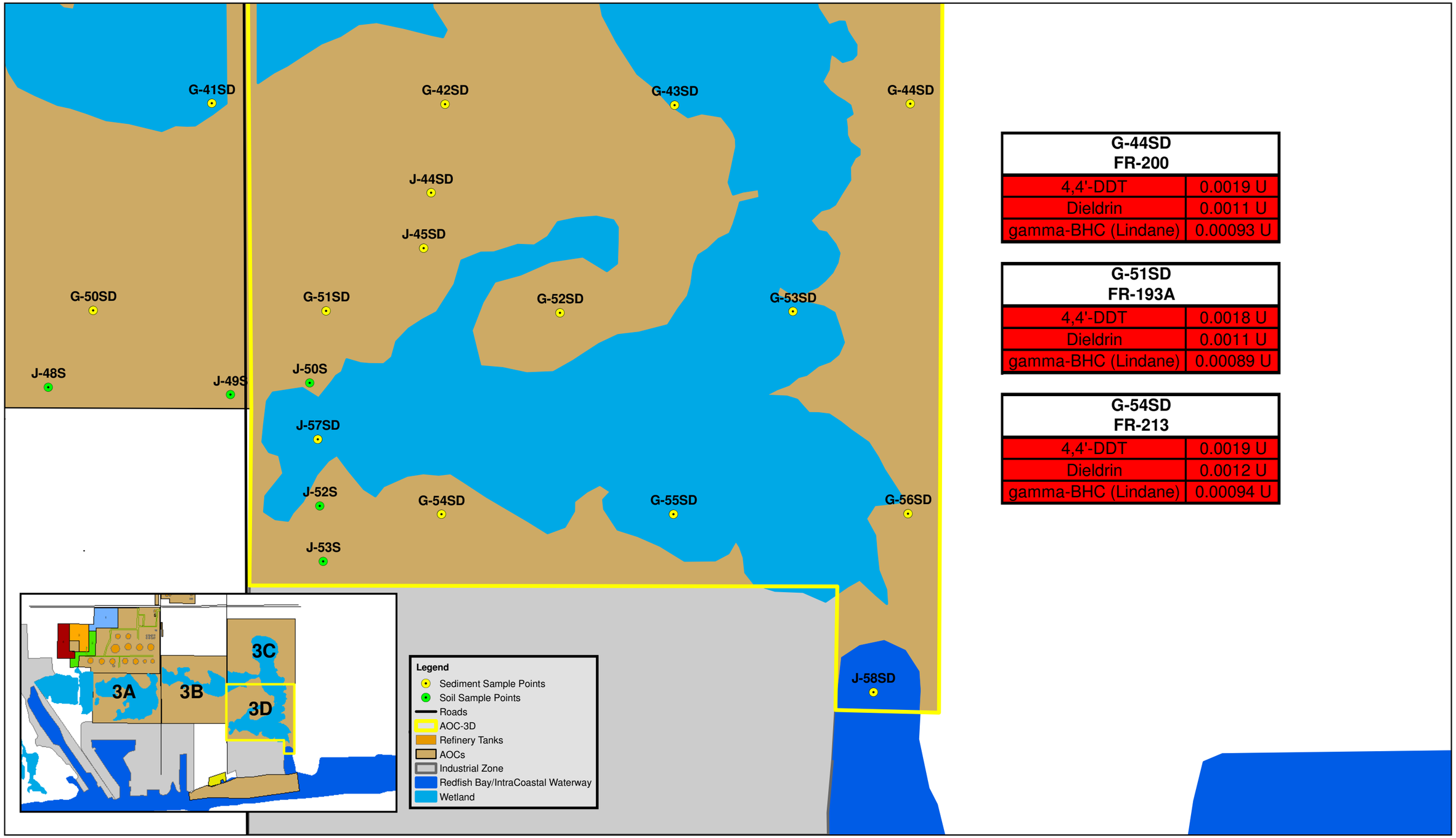
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

29L



G-44SD FR-200	
4,4'-DDT	0.0019 U
Dieldrin	0.0011 U
gamma-BHC (Lindane)	0.00093 U

G-51SD FR-193A	
4,4'-DDT	0.0018 U
Dieldrin	0.0011 U
gamma-BHC (Lindane)	0.00089 U

G-54SD FR-213	
4,4'-DDT	0.0019 U
Dieldrin	0.0012 U
gamma-BHC (Lindane)	0.00094 U

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   U = Undetected at the sample detection limit (SDL)

Exceeds Sediment Marine Screening Level

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

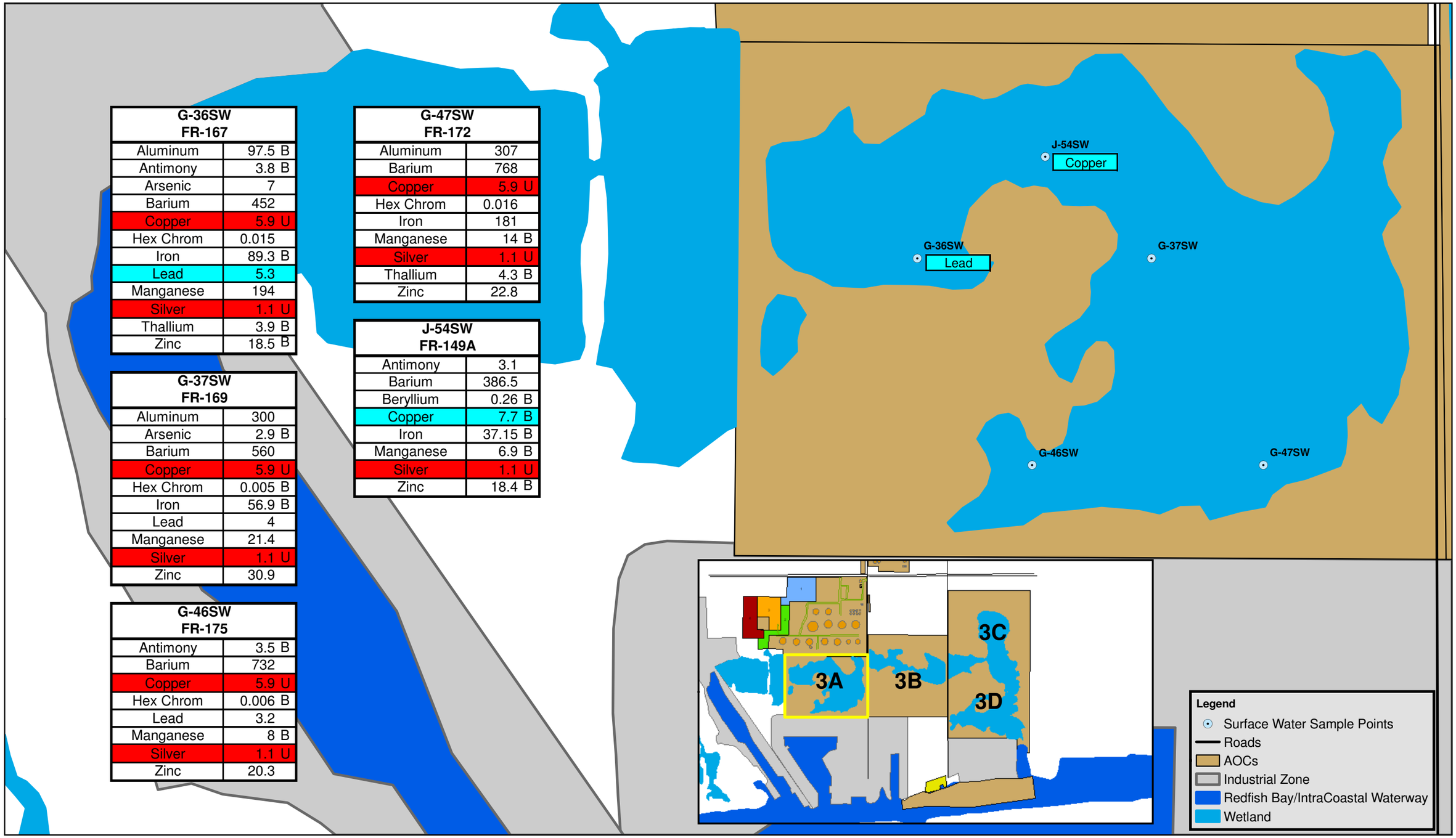
AOC-3D
Ecological
Pesticide Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
29M



G-36SW FR-167	
Aluminum	97.5 B
Antimony	3.8 B
Arsenic	7
Barium	452
Copper	5.9 U
Hex Chrom	0.015
Iron	89.3 B
Lead	5.3
Manganese	194
Silver	1.1 U
Thallium	3.9 B
Zinc	18.5 B

G-37SW FR-169	
Aluminum	300
Arsenic	2.9 B
Barium	560
Copper	5.9 U
Hex Chrom	0.005 B
Iron	56.9 B
Lead	4
Manganese	21.4
Silver	1.1 U
Zinc	30.9

G-46SW FR-175	
Antimony	3.5 B
Barium	732
Copper	5.9 U
Hex Chrom	0.006 B
Lead	3.2
Manganese	8 B
Silver	1.1 U
Zinc	20.3

G-47SW FR-172	
Aluminum	307
Barium	768
Copper	5.9 U
Hex Chrom	0.016
Iron	181
Manganese	14 B
Silver	1.1 U
Thallium	4.3 B
Zinc	22.8

J-54SW FR-149A	
Antimony	3.1
Barium	386.5
Beryllium	0.26 B
Copper	7.7 B
Iron	37.15 B
Manganese	6.9 B
Silver	1.1 U
Zinc	18.4 B

Notes:

1. Results are posted in µg/l
2. Qualifiers:

   U = Undetected at the sample detection limit (SDL)

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Marine Limit

Exceeds Marine Screening Level

0 100 200

Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-3A
Ecological
Metal Surface Water Distribution Map

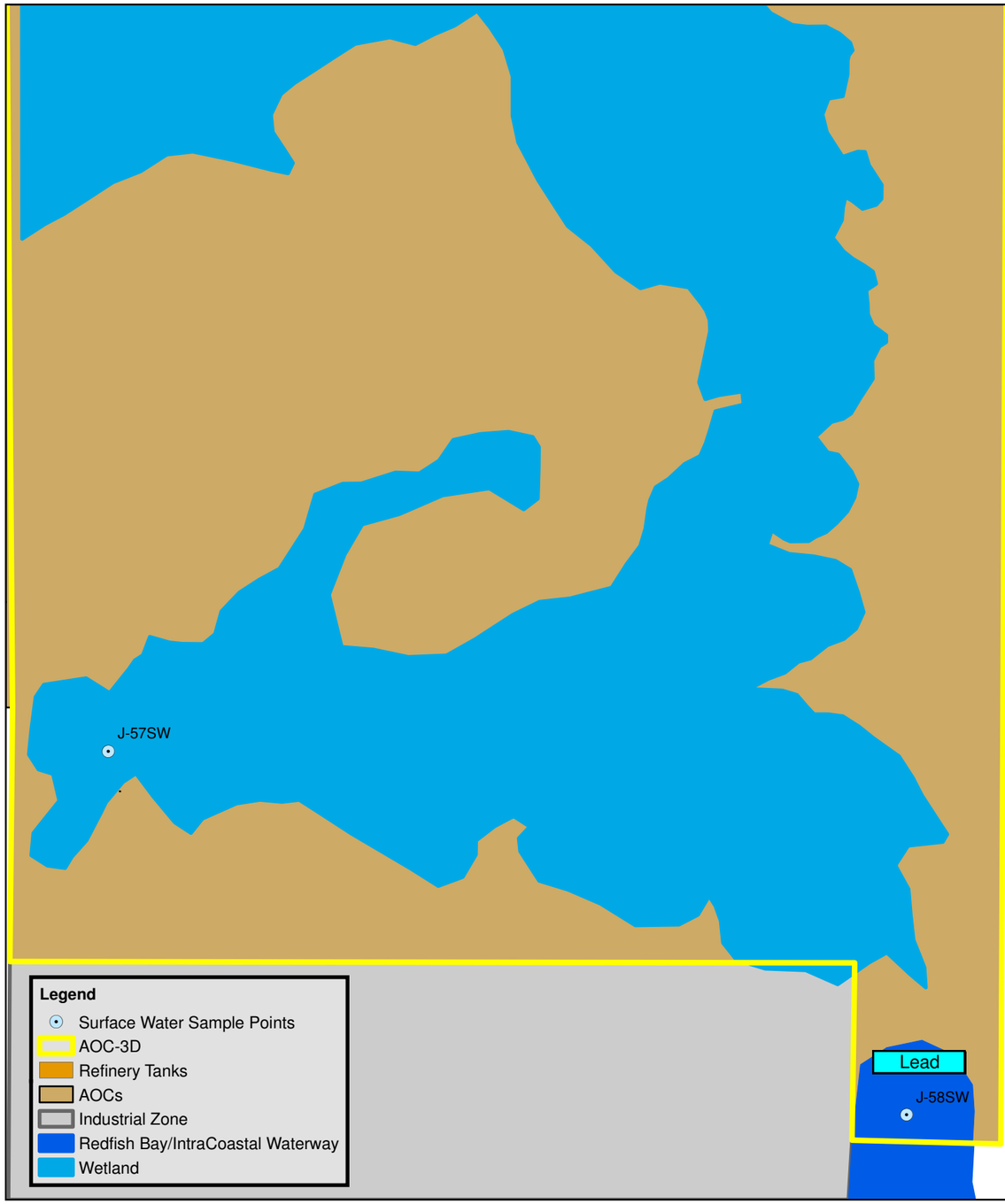
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

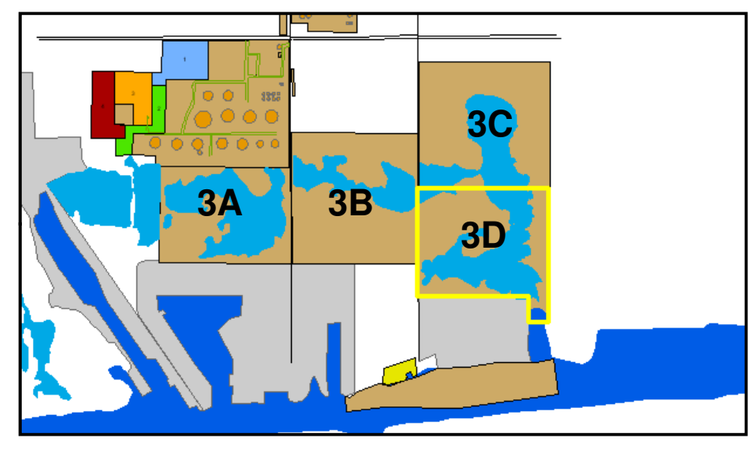
FIGURE

30A



J-57SW FR-211	
Aluminum	699
Antimony	4.1 B
Arsenic	10.6
Barium	393
Copper	5.9 U
Iron	576
Lead	4.8
Manganese	151
Nickel	3.7 B
Silver	1.1 U
Vanadium	5.1 B
Zinc	75.8

J-58SW FR-217	
Aluminum	128 B
Antimony	4.2 B
Barium	49.1 B
Copper	5.9 U
Iron	104
Lead	10.2
Manganese	14.5 B
Silver	1.1 U
Thallium	9.2 B
Vanadium	1.6 B
Zinc	21.7



Notes:

1. Results are posted in µg/l
2. Qualifiers:
   - U = Undetected at the sample detection limit (SDL)
   - B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Marine Limit

Exceeds Marine Screening Level

N

0 110 220

Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

AOC-3D
Ecological
Metal Surface Water Soil Distribution Map

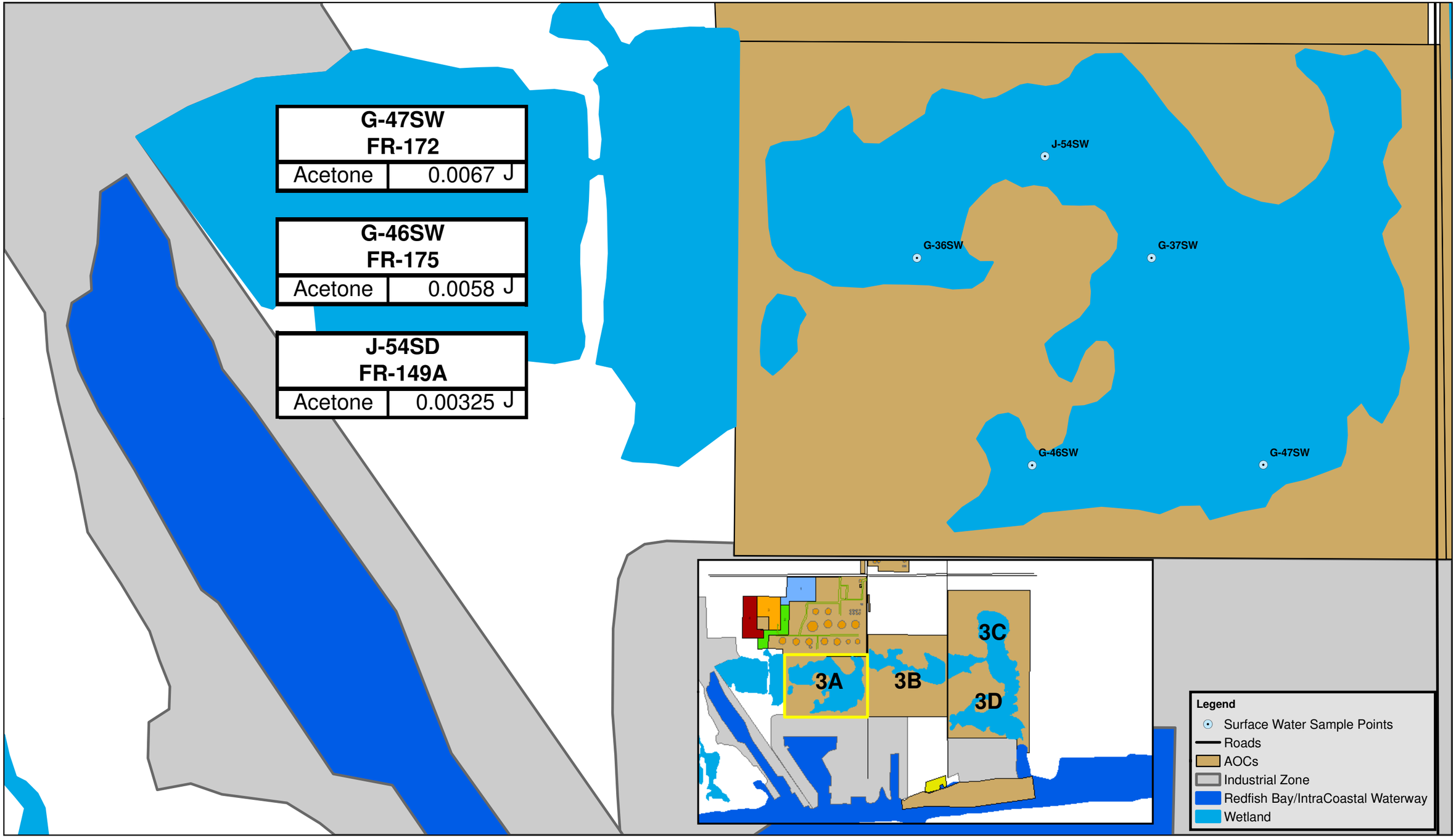
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

30B



Notes:

1. Results are posted in mg/l
2. Qualifiers:

   J = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

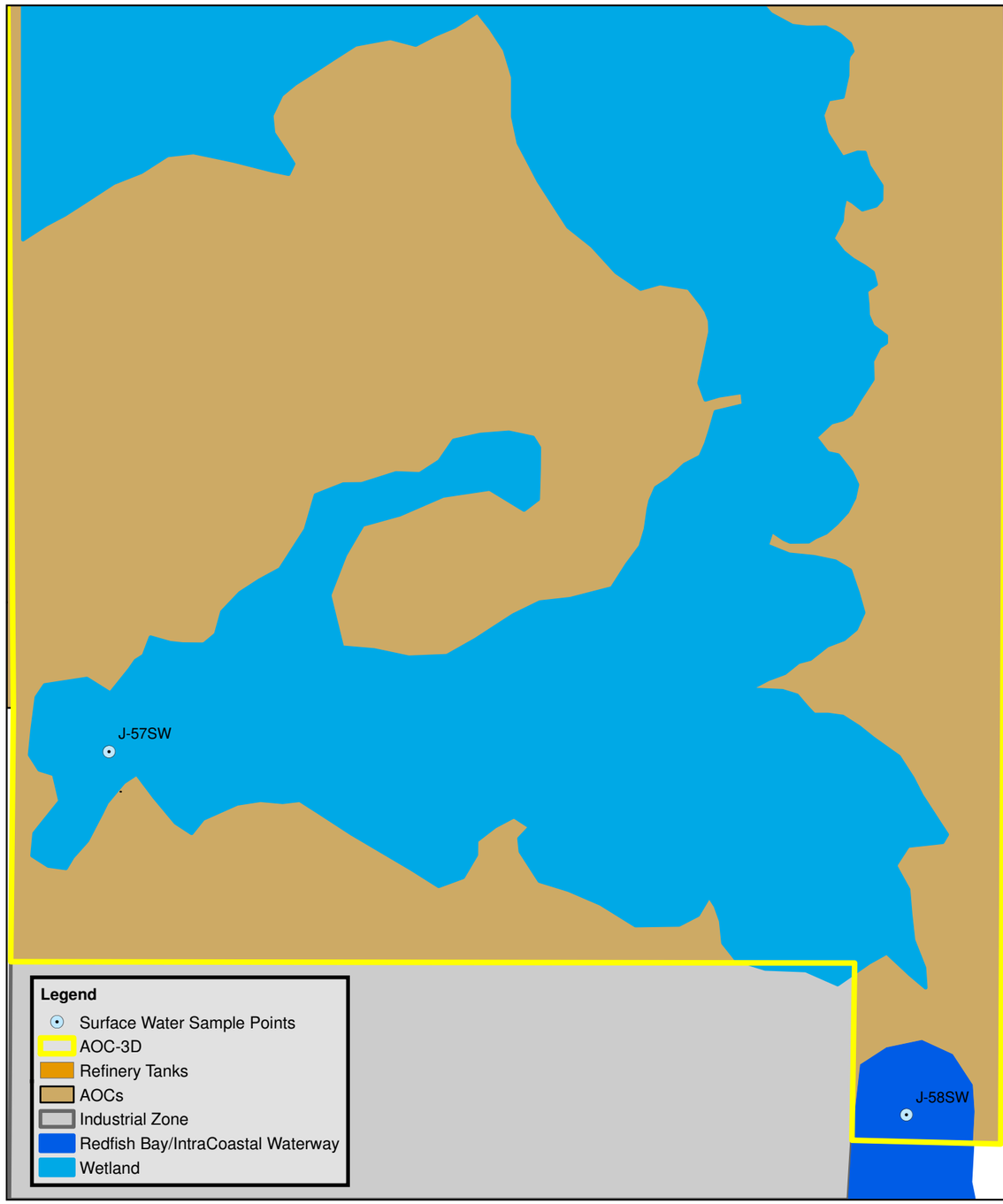
AOC-3A
Ecological
VOC Surface Water Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

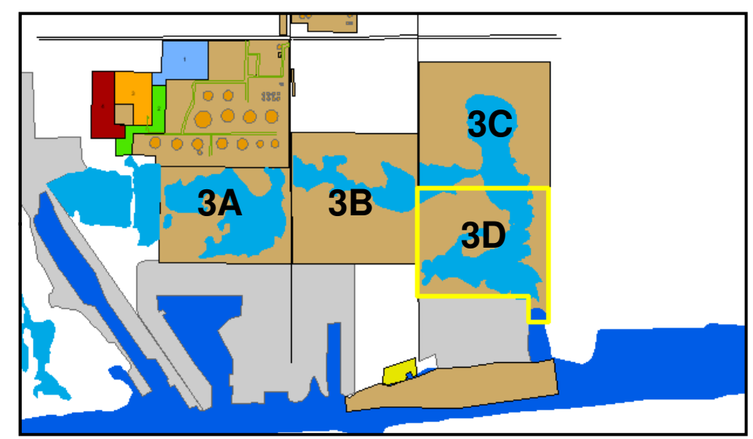
PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
30C



J-57SW FR-211	
Acetone	0.0056 J



Notes:

1. Results are posted in mg/l
2. Qualifiers:

J = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

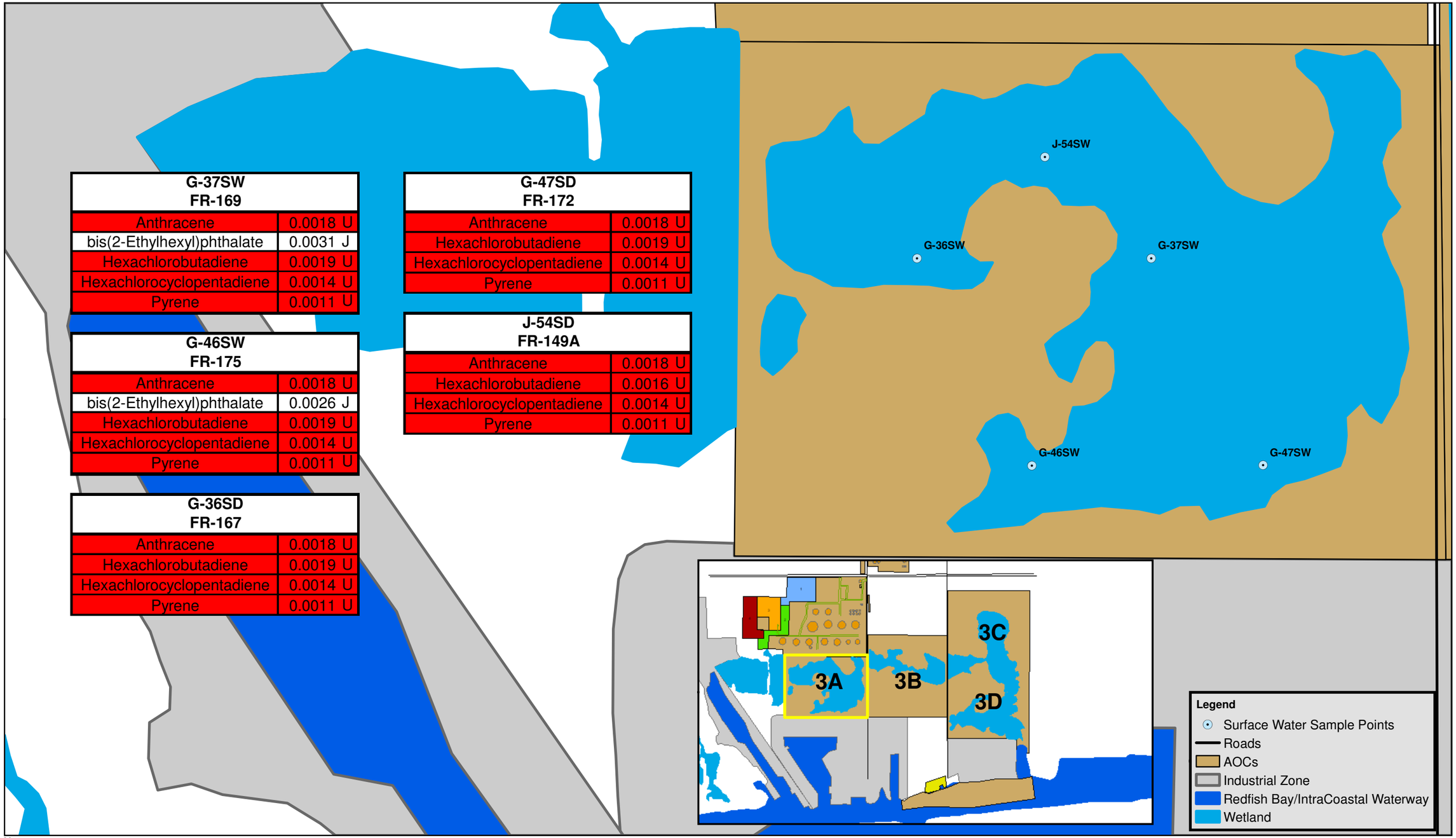
AOC-3D
Ecological
VOC Surface Water Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
30D



G-37SW FR-169	
Anthracene	0.0018 U
bis(2-Ethylhexyl)phthalate	0.0031 J
Hexachlorobutadiene	0.0019 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

G-46SW FR-175	
Anthracene	0.0018 U
bis(2-Ethylhexyl)phthalate	0.0026 J
Hexachlorobutadiene	0.0019 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

G-36SD FR-167	
Anthracene	0.0018 U
Hexachlorobutadiene	0.0019 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

G-47SD FR-172	
Anthracene	0.0018 U
Hexachlorobutadiene	0.0019 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

J-54SD FR-149A	
Anthracene	0.0018 U
Hexachlorobutadiene	0.0016 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

Notes:

1. Results are posted in mg/l
2. Qualifiers:
   - U = Undetected at the sample detection limit (SDL)
   - J = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Marine Screening Level

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

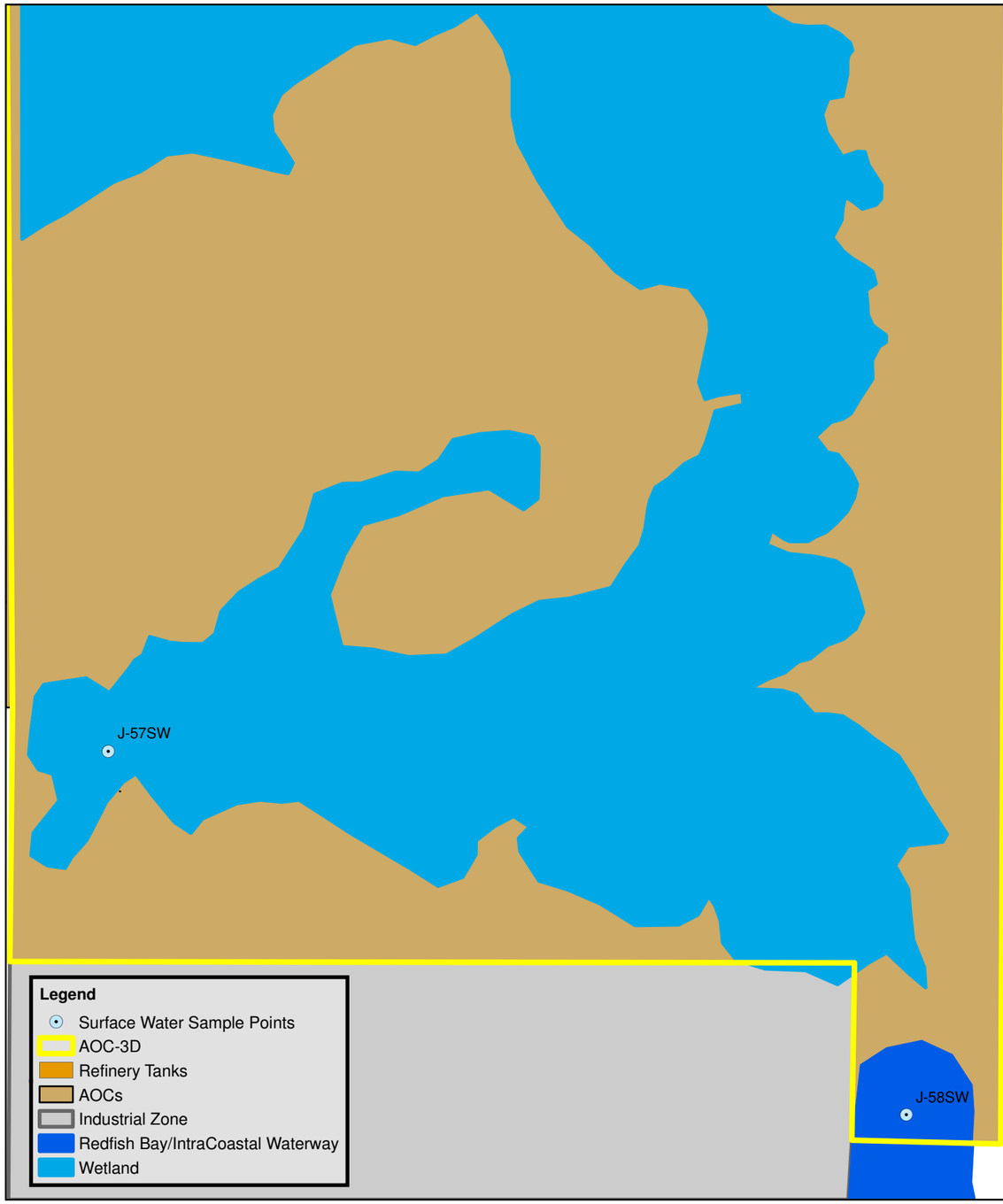
AOC-3A
Ecological
SVOC Surface Water Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

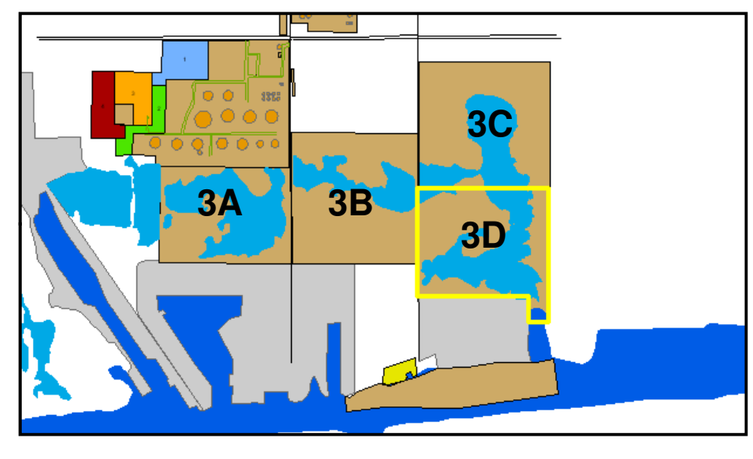
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
30E



J-57SW FR-211	
Anthracene	0.0018 U
bis(2-Ethylhexyl)phthalate	0.0026 J
Hexachlorobutadiene	0.0019 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

J-58SD FR-217	
Anthracene	0.0018 U
Hexachlorobutadiene	0.0019 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U



Notes:

1. Results are posted in mg/l
2. Qualifiers:
   - U = Undetected at the sample detection limit (SDL)
   - J = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Marine Screening Level

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

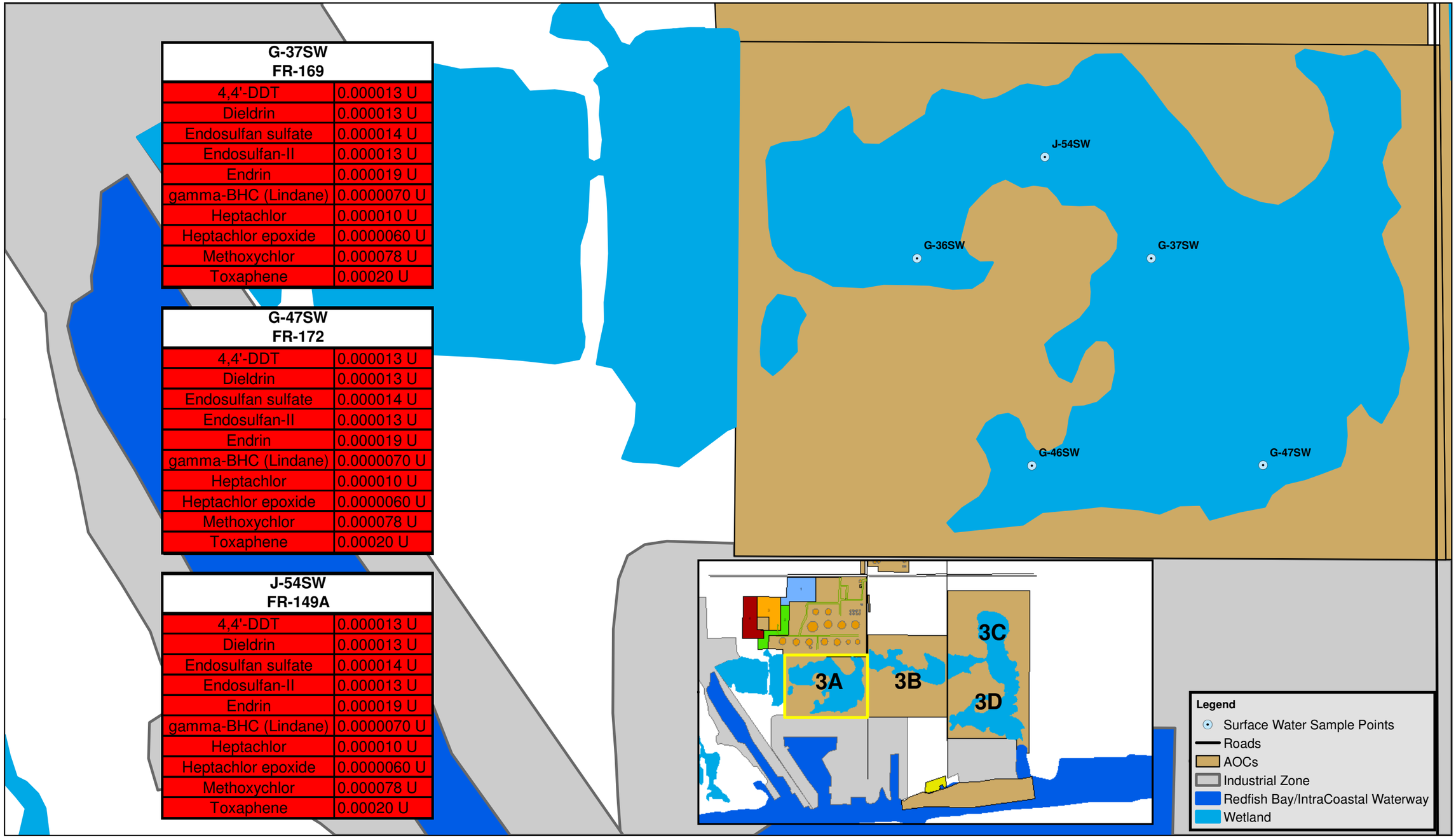
AOC-3D
Ecological
SVOC Surface Water Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
30F



G-37SW FR-169	
4,4'-DDT	0.000013 U
Dieldrin	0.000013 U
Endosulfan sulfate	0.000014 U
Endosulfan-II	0.000013 U
Endrin	0.000019 U
gamma-BHC (Lindane)	0.0000070 U
Heptachlor	0.000010 U
Heptachlor epoxide	0.0000060 U
Methoxychlor	0.000078 U
Toxaphene	0.00020 U

G-47SW FR-172	
4,4'-DDT	0.000013 U
Dieldrin	0.000013 U
Endosulfan sulfate	0.000014 U
Endosulfan-II	0.000013 U
Endrin	0.000019 U
gamma-BHC (Lindane)	0.0000070 U
Heptachlor	0.000010 U
Heptachlor epoxide	0.0000060 U
Methoxychlor	0.000078 U
Toxaphene	0.00020 U

J-54SW FR-149A	
4,4'-DDT	0.000013 U
Dieldrin	0.000013 U
Endosulfan sulfate	0.000014 U
Endosulfan-II	0.000013 U
Endrin	0.000019 U
gamma-BHC (Lindane)	0.0000070 U
Heptachlor	0.000010 U
Heptachlor epoxide	0.0000060 U
Methoxychlor	0.000078 U
Toxaphene	0.00020 U

Notes:

1. Results are posted in mg/l
2. Qualifiers:

   U = Undetected at the sample detection limit (SDL)

Exceeds Marine Screening Level

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

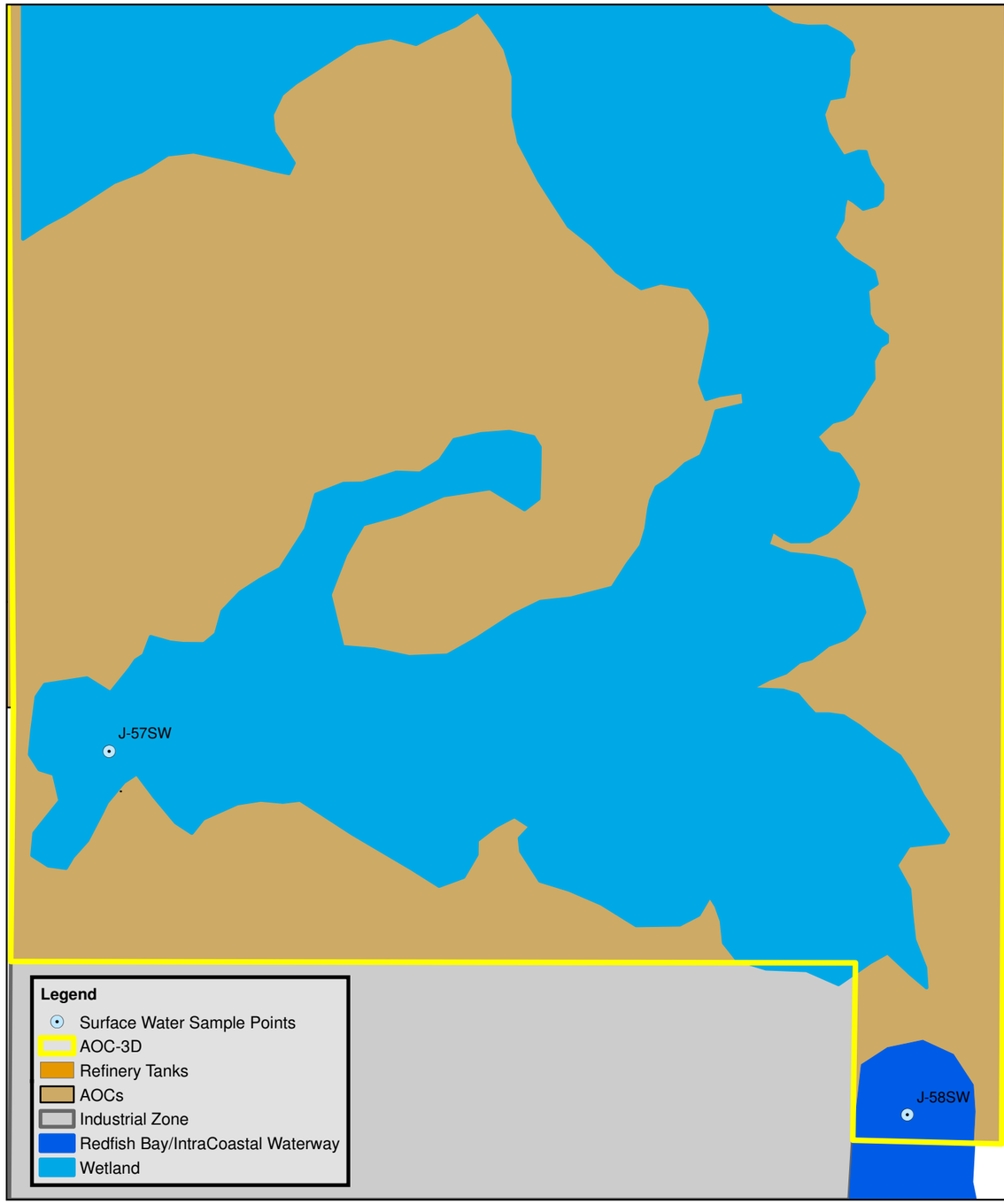
AOC-3A
Ecological
Pesticide Surface Water Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

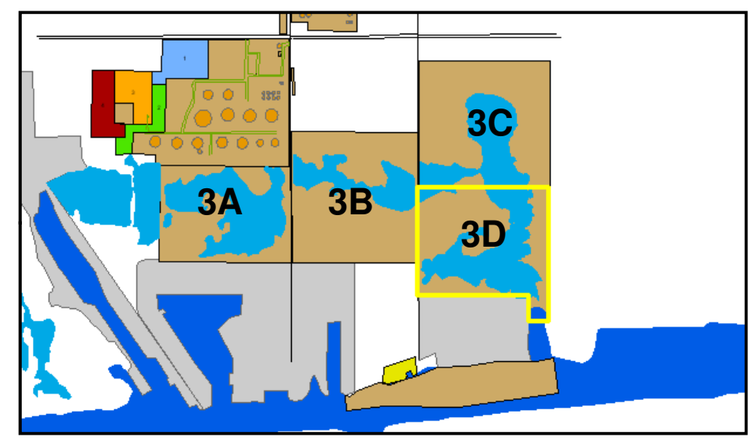
KLEINFELDER
Bright People. Right Solutions
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
30G



J-57SW FR-211	
4,4'-DDT	0.000013 U
Dieldrin	0.000013 U
Endosulfan sulfate	0.000014 U
Endosulfan-II	0.000013 U
Endrin	0.000019 U
gamma-BHC (Lindane)	0.0000070 U
Heptachlor	0.000010 U
Heptachlor epoxide	0.0000060 U
Methoxychlor	0.000078 U
Toxaphene	0.00020 U

J-58SW FR-217	
4,4'-DDT	0.000013 U
Dieldrin	0.000013 U
Endosulfan sulfate	0.000014 U
Endosulfan-II	0.000013 U
Endrin	0.000019 U
gamma-BHC (Lindane)	0.0000070 U
Heptachlor	0.000010 U
Heptachlor epoxide	0.0000060 U
Methoxychlor	0.000078 U
Toxaphene	0.00020 U



Notes:

1. Results are posted in mg/l
2. Qualifiers:

   U = Undetected at the sample detection limit (SDL)

Exceeds Marine Screening Level

N

0 100 200
Feet

DATE DRAWN: 7/8/08	DATE REVISED:
DRAFTED BY:	C. SEATON
CHECKED BY:	S. HALASZ
APPROVED BY:	

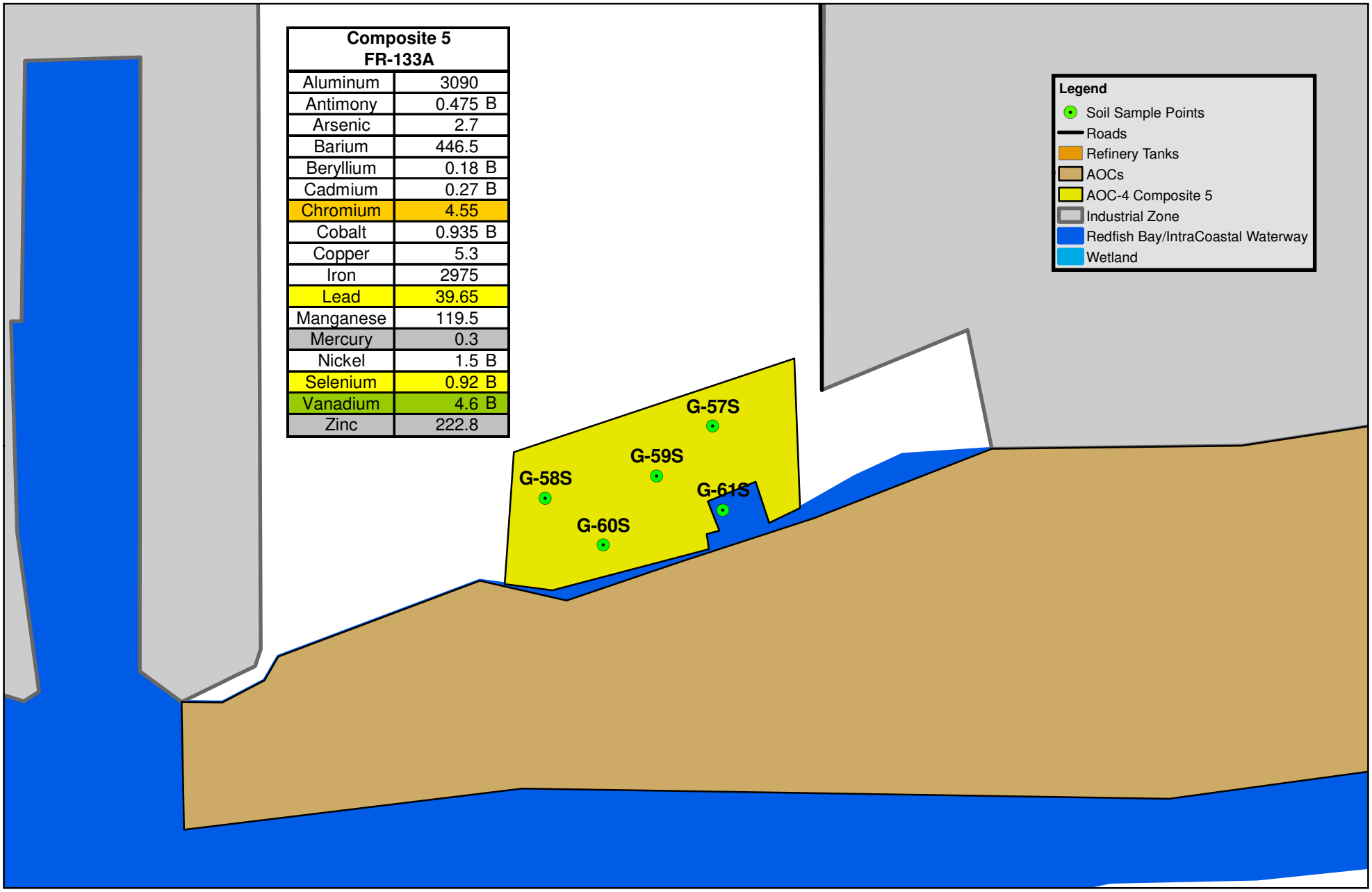
AOC-3D
Ecological
Pesticide Surface Water Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
30H



Composite 5 FR-133A	
Aluminum	3090
Antimony	0.475 B
Arsenic	2.7
Barium	446.5
Beryllium	0.18 B
Cadmium	0.27 B
Chromium	4.55
Cobalt	0.935 B
Copper	5.3
Iron	2975
Lead	39.65
Manganese	119.5
Mercury	0.3
Nickel	1.5 B
Selenium	0.92 B
Vanadium	4.6 B
Zinc	222.8

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- Exceeds Plant Limit
- Exceeds Median Background Limit
- Exceeds Earthworm and Plant Limits
- Exceeds Earthworm, Plant, and Median Background Limits

0 50 100
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

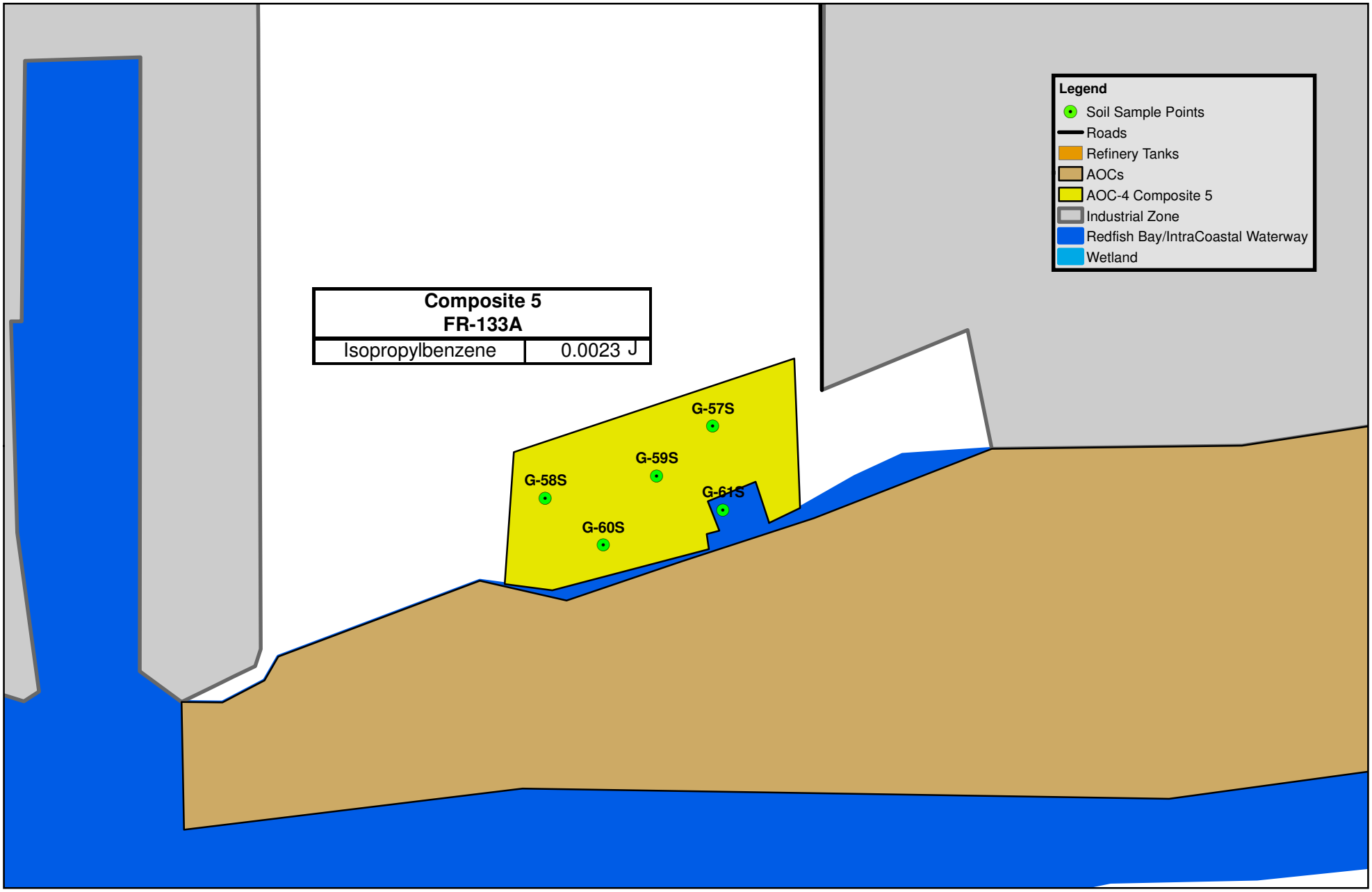
AOC-4
Ecological
Metal Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
31A



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 50 100
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

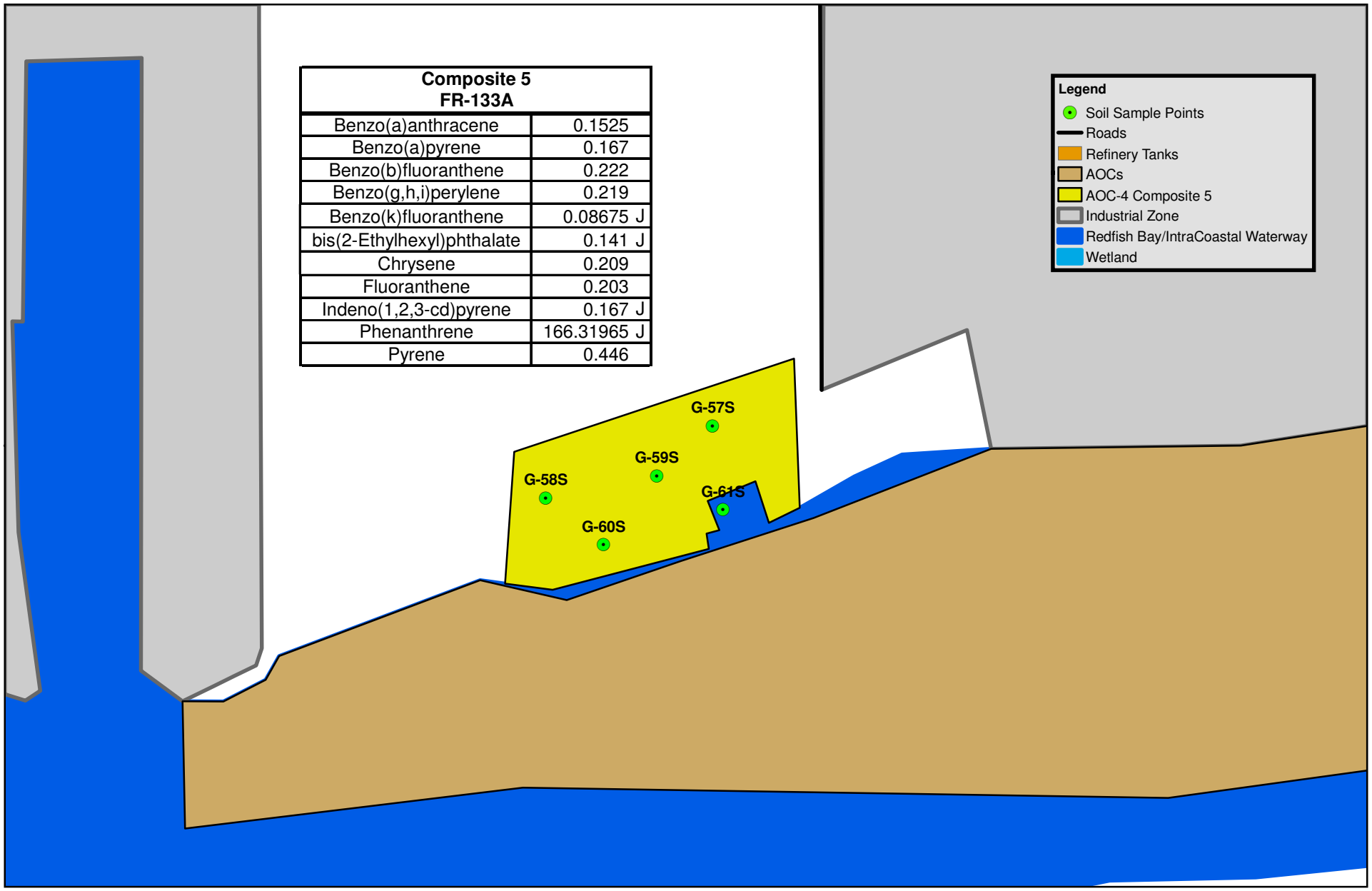
AOC-4
Ecological
VOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
31B



Composite 5 FR-133A	
Benzo(a)anthracene	0.1525
Benzo(a)pyrene	0.167
Benzo(b)fluoranthene	0.222
Benzo(g,h,i)perylene	0.219
Benzo(k)fluoranthene	0.08675 J
bis(2-Ethylhexyl)phthalate	0.141 J
Chrysene	0.209
Fluoranthene	0.203
Indeno(1,2,3-cd)pyrene	0.167 J
Phenanthrene	166.31965 J
Pyrene	0.446

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 50 100
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

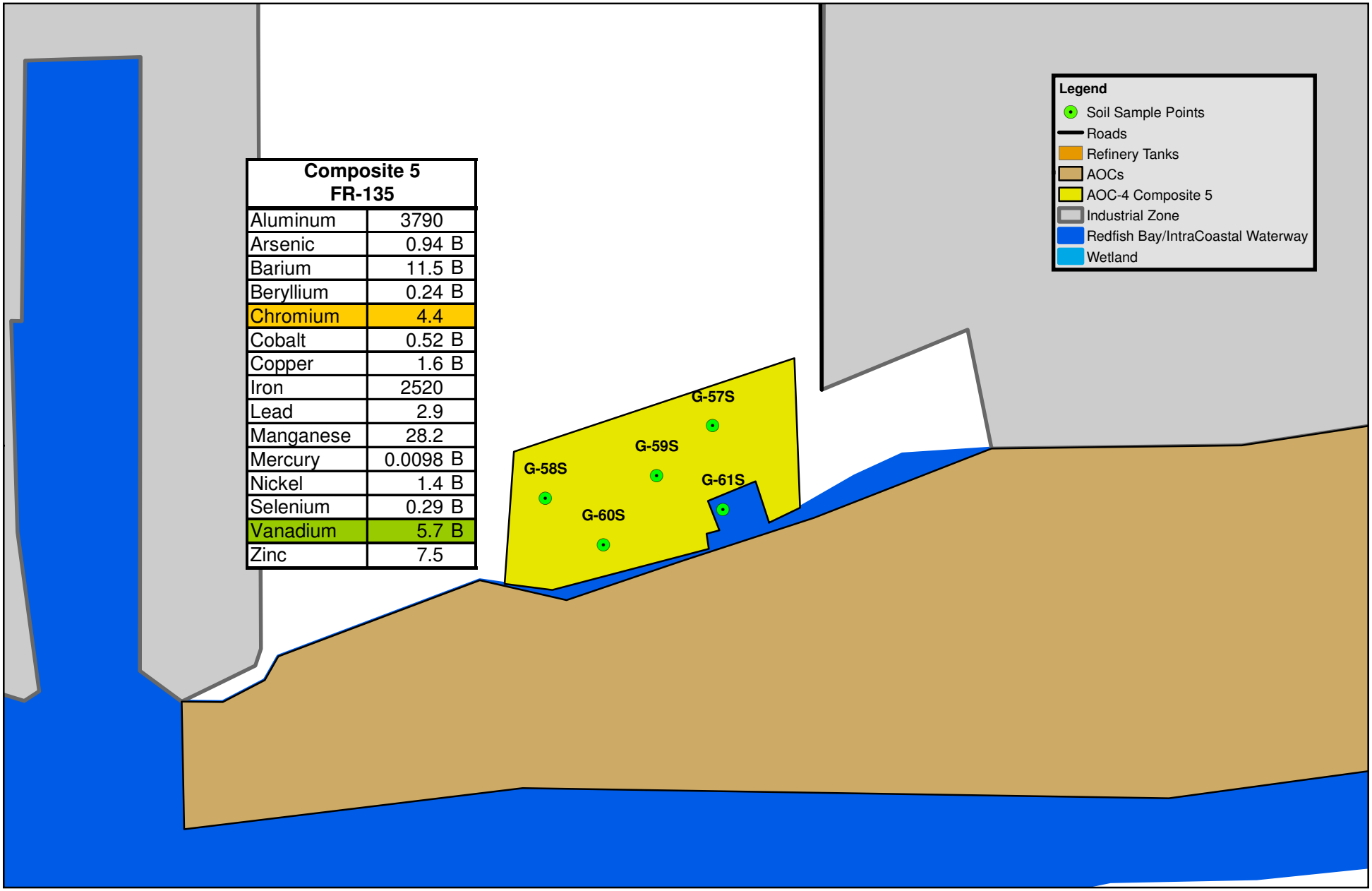
AOC-4
Ecological
SVOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
31C



Composite 5 FR-135	
Aluminum	3790
Arsenic	0.94 B
Barium	11.5 B
Beryllium	0.24 B
Chromium	4.4
Cobalt	0.52 B
Copper	1.6 B
Iron	2520
Lead	2.9
Manganese	28.2
Mercury	0.0098 B
Nickel	1.4 B
Selenium	0.29 B
Vanadium	5.7 B
Zinc	7.5

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit

Exceeds Earthworm and Plant Limits

0 50 100

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-4
Ecological
Metal Subsurface Soil Distribution Map

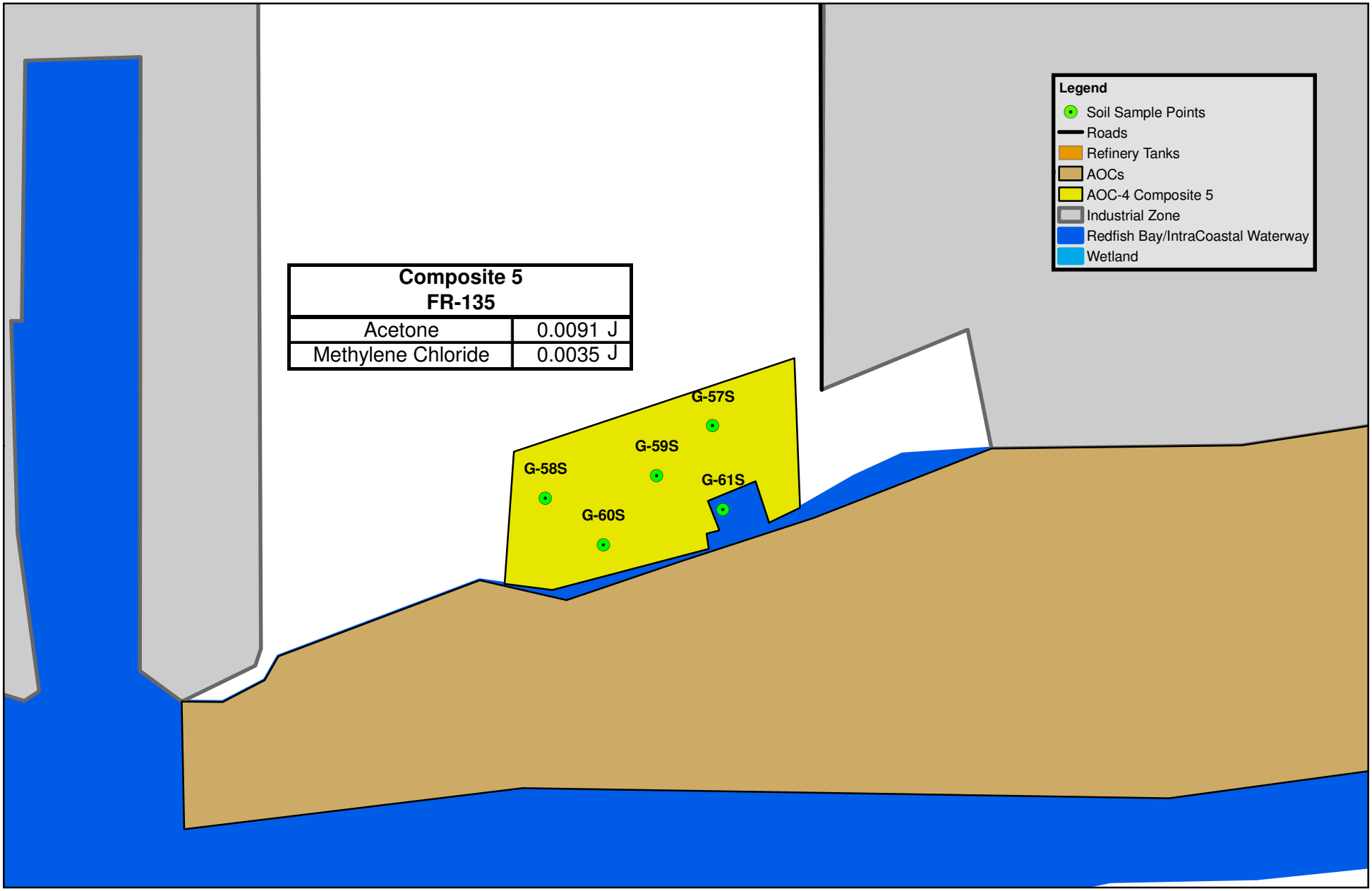
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

32A



Composite 5 FR-135	
Acetone	0.0091 J
Methylene Chloride	0.0035 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 50 100
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

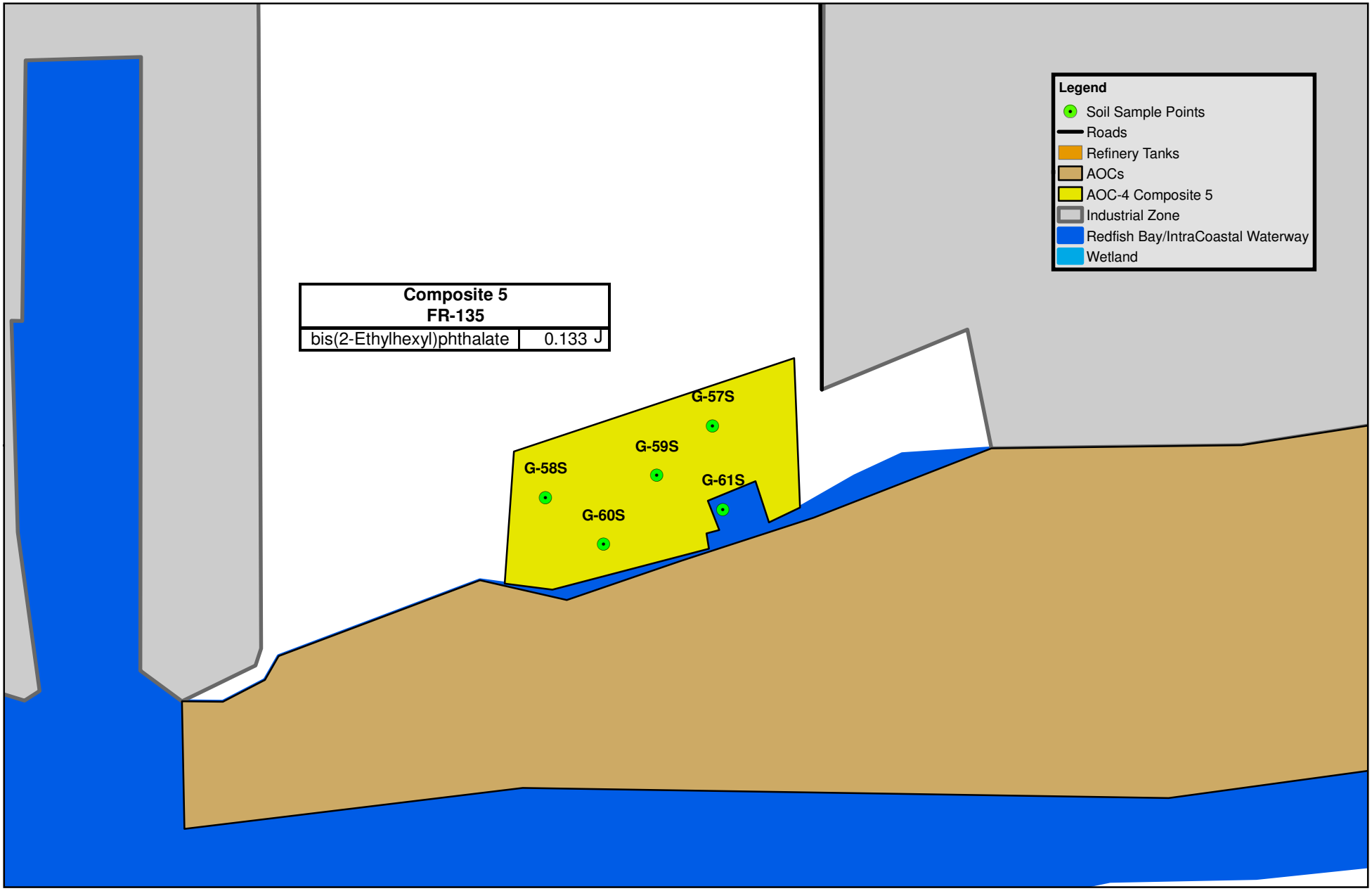
AOC-4
Ecological
VOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
32B



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 50 100
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

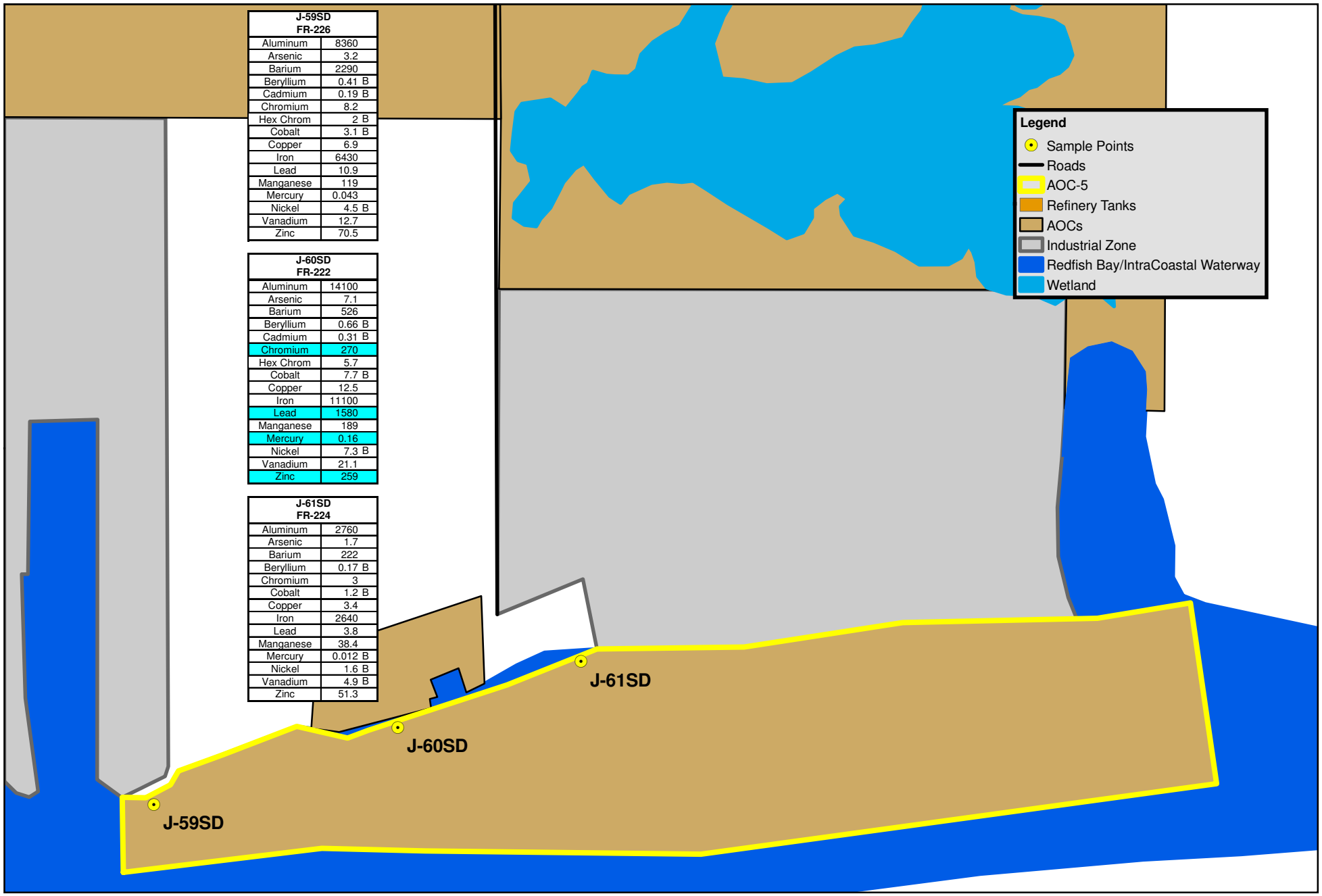
AOC-4
Ecological
SVOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
32C



J-59SD FR-226	
Aluminum	8360
Arsenic	3.2
Barium	2290
Beryllium	0.41 B
Cadmium	0.19 B
Chromium	8.2
Hex Chrom	2 B
Cobalt	3.1 B
Copper	6.9
Iron	6430
Lead	10.9
Manganese	119
Mercury	0.043
Nickel	4.5 B
Vanadium	12.7
Zinc	70.5

J-60SD FR-222	
Aluminum	14100
Arsenic	7.1
Barium	526
Beryllium	0.66 B
Cadmium	0.31 B
Chromium	270
Hex Chrom	5.7
Cobalt	7.7 B
Copper	12.5
Iron	11100
Lead	1580
Manganese	189
Mercury	0.16
Nickel	7.3 B
Vanadium	21.1
Zinc	259

J-61SD FR-224	
Aluminum	2760
Arsenic	1.7
Barium	222
Beryllium	0.17 B
Chromium	3
Cobalt	1.2 B
Copper	3.4
Iron	2640
Lead	3.8
Manganese	38.4
Mercury	0.012 B
Nickel	1.6 B
Vanadium	4.9 B
Zinc	51.3

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Sediment Marine Limit

N

0 100 200

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-5
Ecological
Metal Sediment Distribution Map

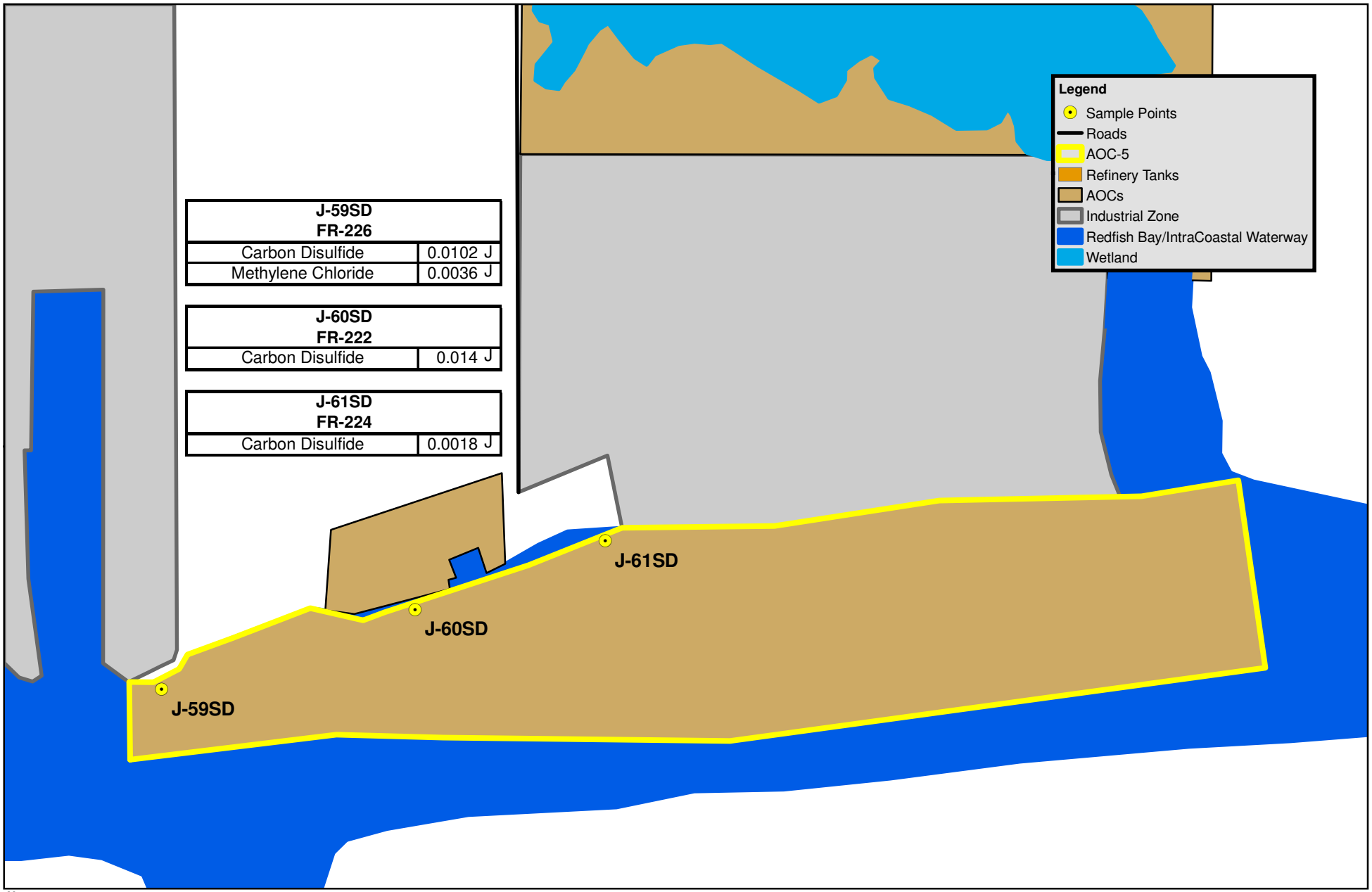
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

33A



J-59SD FR-226	
Carbon Disulfide	0.0102 J
Methylene Chloride	0.0036 J

J-60SD FR-222	
Carbon Disulfide	0.014 J

J-61SD FR-224	
Carbon Disulfide	0.0018 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 110 220
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

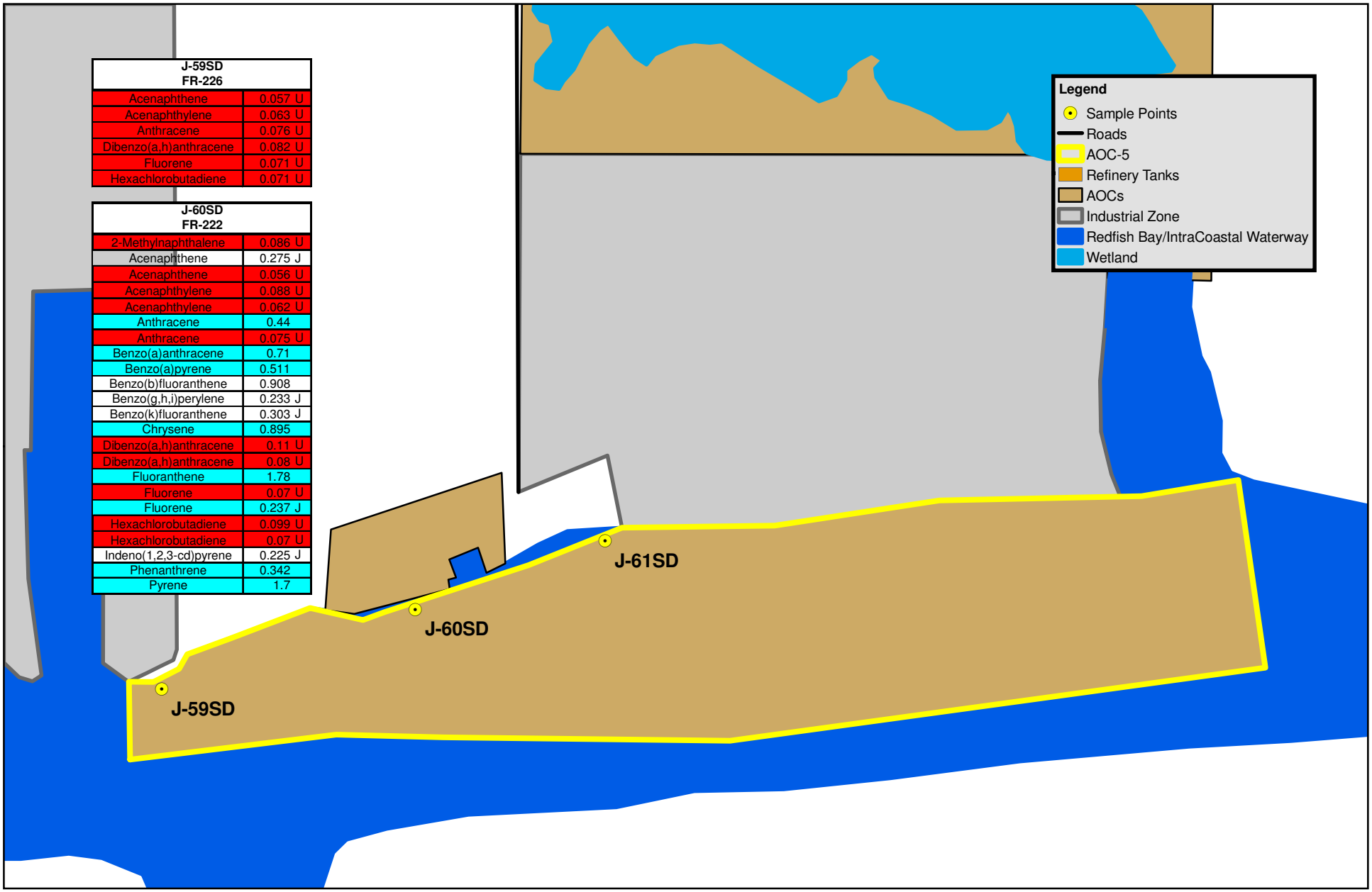
AOC-5
Ecological
VOC Sediment Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
33B



J-59SD FR-226	
Acenaphthene	0.057 U
Acenaphthylene	0.063 U
Anthracene	0.076 U
Dibenzo(a,h)anthracene	0.082 U
Fluorene	0.071 U
Hexachlorobutadiene	0.071 U

J-60SD FR-222	
2-Methylnaphthalene	0.086 U
Acenaphthene	0.275 J
Acenaphthene	0.056 U
Acenaphthylene	0.088 U
Acenaphthylene	0.062 U
Anthracene	0.44
Anthracene	0.075 U
Benzo(a)anthracene	0.71
Benzo(a)pyrene	0.511
Benzo(b)fluoranthene	0.908
Benzo(g,h,i)perylene	0.233 J
Benzo(k)fluoranthene	0.303 J
Chrysene	0.895
Dibenzo(a,h)anthracene	0.11 U
Dibenzo(a,h)anthracene	0.08 U
Fluoranthene	1.78
Fluorene	0.07 U
Fluorene	0.237 J
Hexachlorobutadiene	0.099 U
Hexachlorobutadiene	0.07 U
Indeno(1,2,3-cd)pyrene	0.225 J
Phenanthrene	0.342
Pyrene	1.7

Notes:

1. Results are posted in mg/kg
2. Qualifiers:
   - U = Undetected at the sample detection limit (SDL)
   - J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

Above Sediment Marine Limit

Exceeds Sediment Marine Screening Level

N

0 80 160

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-5
Ecological
SVOC Sediment Distribution Map

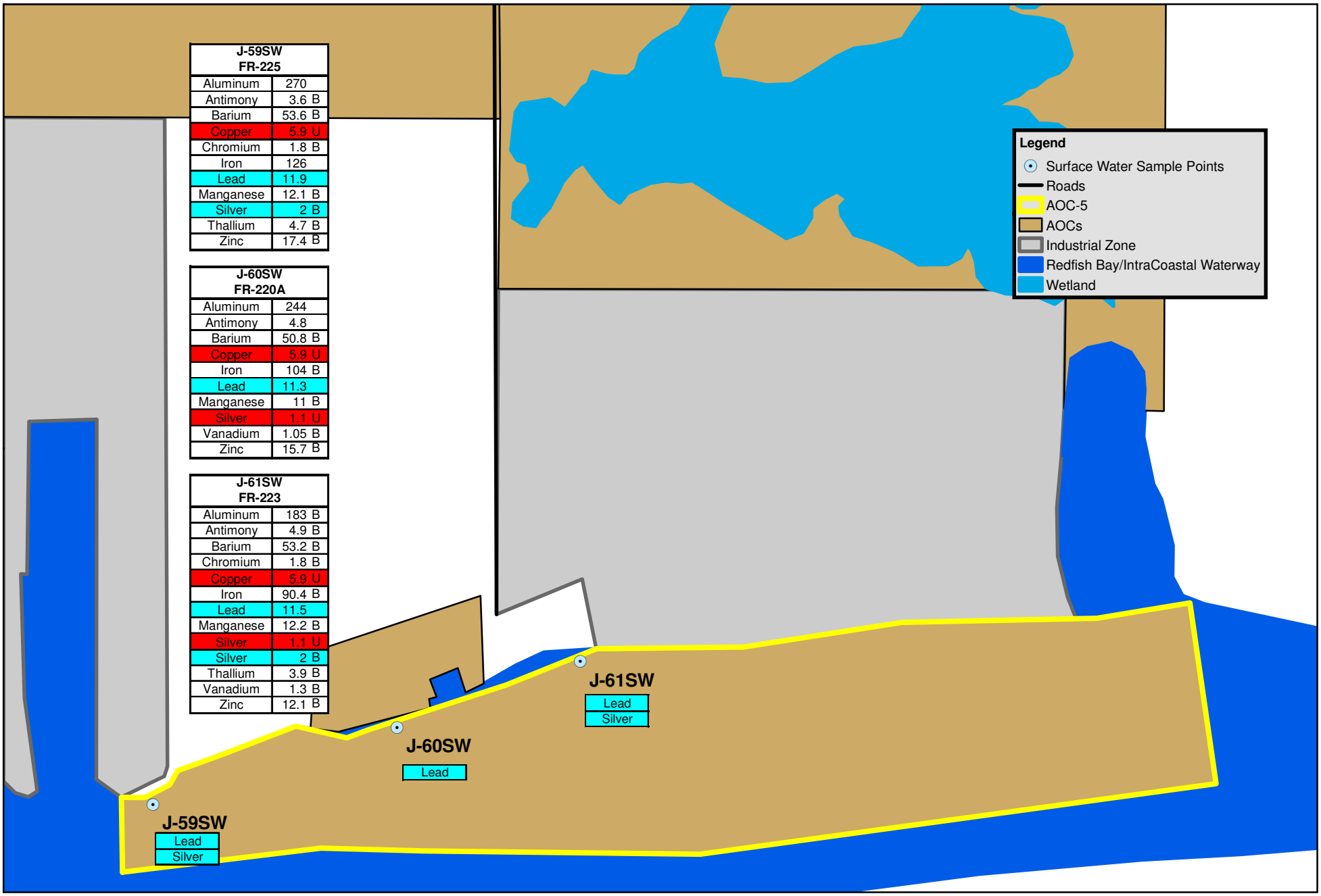
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

33C



J-59SW FR-225	
Aluminum	270
Antimony	3.6 B
Barium	53.6 B
Copper	5.9 U
Chromium	1.8 B
Iron	126
Lead	11.9
Manganese	12.1 B
Silver	2 B
Thallium	4.7 B
Zinc	17.4 B

J-60SW FR-220A	
Aluminum	244
Antimony	4.8
Barium	50.8 B
Copper	5.9 U
Iron	104 B
Lead	11.3
Manganese	11 B
Silver	1.1 U
Vanadium	1.05 B
Zinc	15.7 B

J-61SW FR-223	
Aluminum	183 B
Antimony	4.9 B
Barium	53.2 B
Chromium	1.8 B
Copper	5.9 U
Iron	90.4 B
Lead	11.5
Manganese	12.2 B
Silver	1.1 U
Silver	2 B
Thallium	3.9 B
Vanadium	1.3 B
Zinc	12.1 B

Notes:

1. Results are posted in µg/l
2. Qualifiers:

U = Undetected at the sample detection limit (SDL)

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Above Marine Limit

Exceeds Marine Screening Level

0 100 200

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-5
Ecological
Metal Surface Water Distribution Map

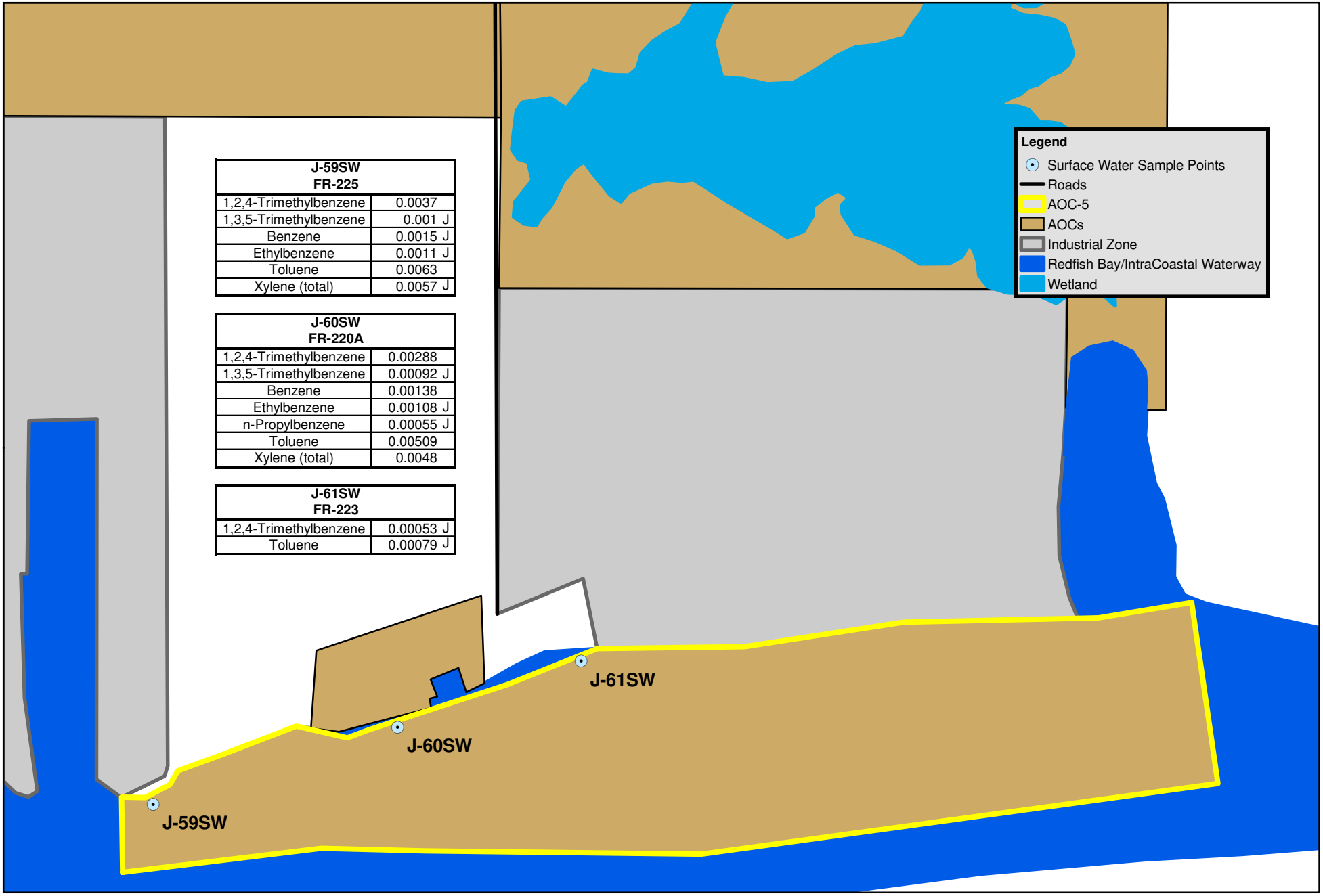
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

34A



J-59SW FR-225	
1,2,4-Trimethylbenzene	0.0037
1,3,5-Trimethylbenzene	0.001 J
Benzene	0.0015 J
Ethylbenzene	0.0011 J
Toluene	0.0063
Xylene (total)	0.0057 J

J-60SW FR-220A	
1,2,4-Trimethylbenzene	0.00288
1,3,5-Trimethylbenzene	0.00092 J
Benzene	0.00138
Ethylbenzene	0.00108 J
n-Propylbenzene	0.00055 J
Toluene	0.00509
Xylene (total)	0.0048

J-61SW FR-223	
1,2,4-Trimethylbenzene	0.00053 J
Toluene	0.00079 J

Notes:

1. Results are posted in mg/l
2. Qualifiers:

J = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

N

0 100 200
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

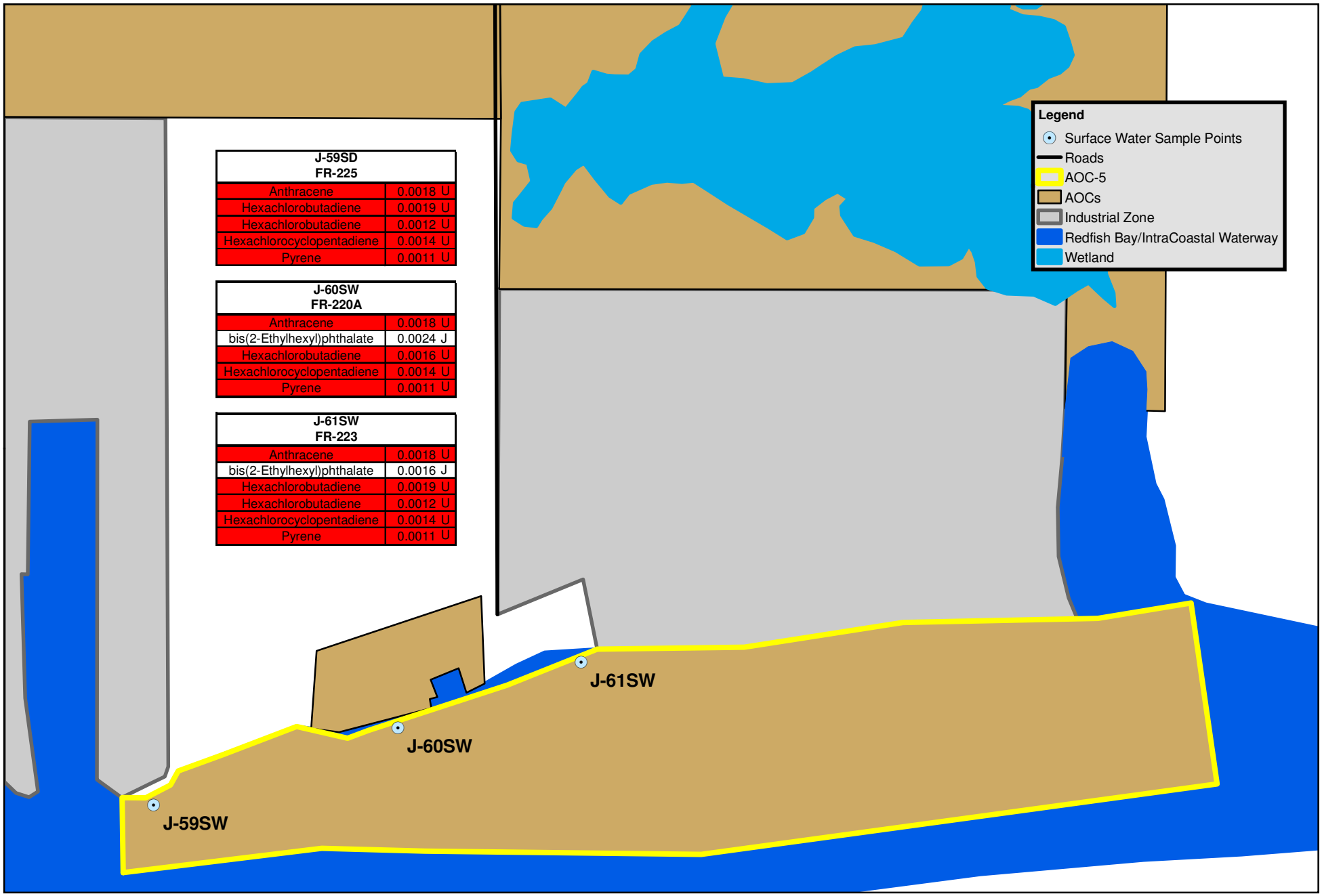
AOC-5
Ecological
VOC Surface Water Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
34B



J-59SD FR-225	
Anthracene	0.0018 U
Hexachlorobutadiene	0.0019 U
Hexachlorobutadiene	0.0012 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

J-60SW FR-220A	
Anthracene	0.0018 U
bis(2-Ethylhexyl)phthalate	0.0024 J
Hexachlorobutadiene	0.0016 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

J-61SW FR-223	
Anthracene	0.0018 U
bis(2-Ethylhexyl)phthalate	0.0016 J
Hexachlorobutadiene	0.0019 U
Hexachlorobutadiene	0.0012 U
Hexachlorocyclopentadiene	0.0014 U
Pyrene	0.0011 U

Notes:

1. Results are posted in mg/l
2. Qualifiers:

   U = Undetected at the sample detection limit (SDL)

   J = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Marine Screening Level

N

0 100 200

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-5
Ecological
SVOC Surface Water Distribution Map

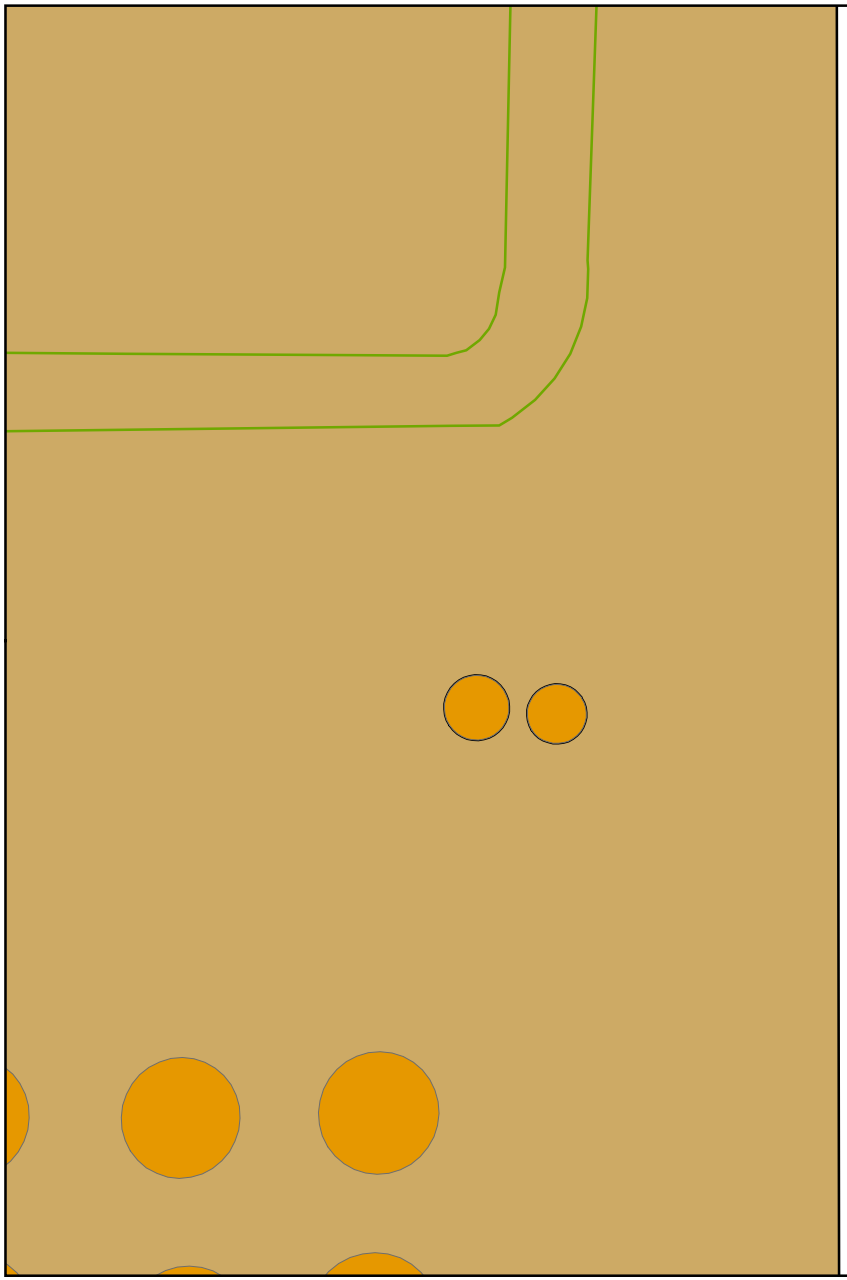
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

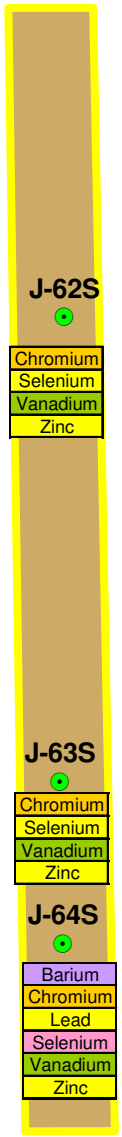
PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

34C





J-62S FR-234A	
Aluminum	11750
Arsenic	1.5
Barium	259
Beryllium	0.495
Cadmium	0.17 B
Chromium	12.25
Cobalt	2.75 B
Copper	8.45
Iron	7025
Lead	8.6
Manganese	180
Mercury	0.00405 B
Nickel	6
Selenium	0.795 B
Vanadium	19.45
Zinc	71.25

J-63S FR-231	
Aluminum	9190
Arsenic	2.4
Barium	280
Beryllium	0.43 B
Cadmium	0.13 B
Chromium	10.8
Cobalt	2.4 B
Copper	9.1
Iron	6580
Lead	7.1
Manganese	133
Mercury	0.0067 B
Nickel	7.5
Selenium	0.78 B
Vanadium	32.5
Zinc	69.3

J-64S FR-228	
Aluminum	10600
Arsenic	2.8
Barium	400
Beryllium	0.45 B
Cadmium	0.16 B
Chromium	15.3
Cobalt	2.7 B
Copper	14.6
Iron	7630
Lead	16.5
Manganese	157
Mercury	0.0094 B
Nickel	7.2
Selenium	1.2
Vanadium	20.6
Zinc	111

Legend

- Soil Sample Points
- Roads
- Gravel/Dirt Road
- AOC-6
- Refinery Tanks
- AOCs

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

- Exceeds Plant Limit
- Exceeds Median Background Limit
- Exceeds Earthworm and Plant Limits
- Exceeds Earthworm and Median Background Limits
- Exceeds Plant and Median Background Limits

N

0 25 50

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-6
Ecological
Metal Surface Soil Distribution Map

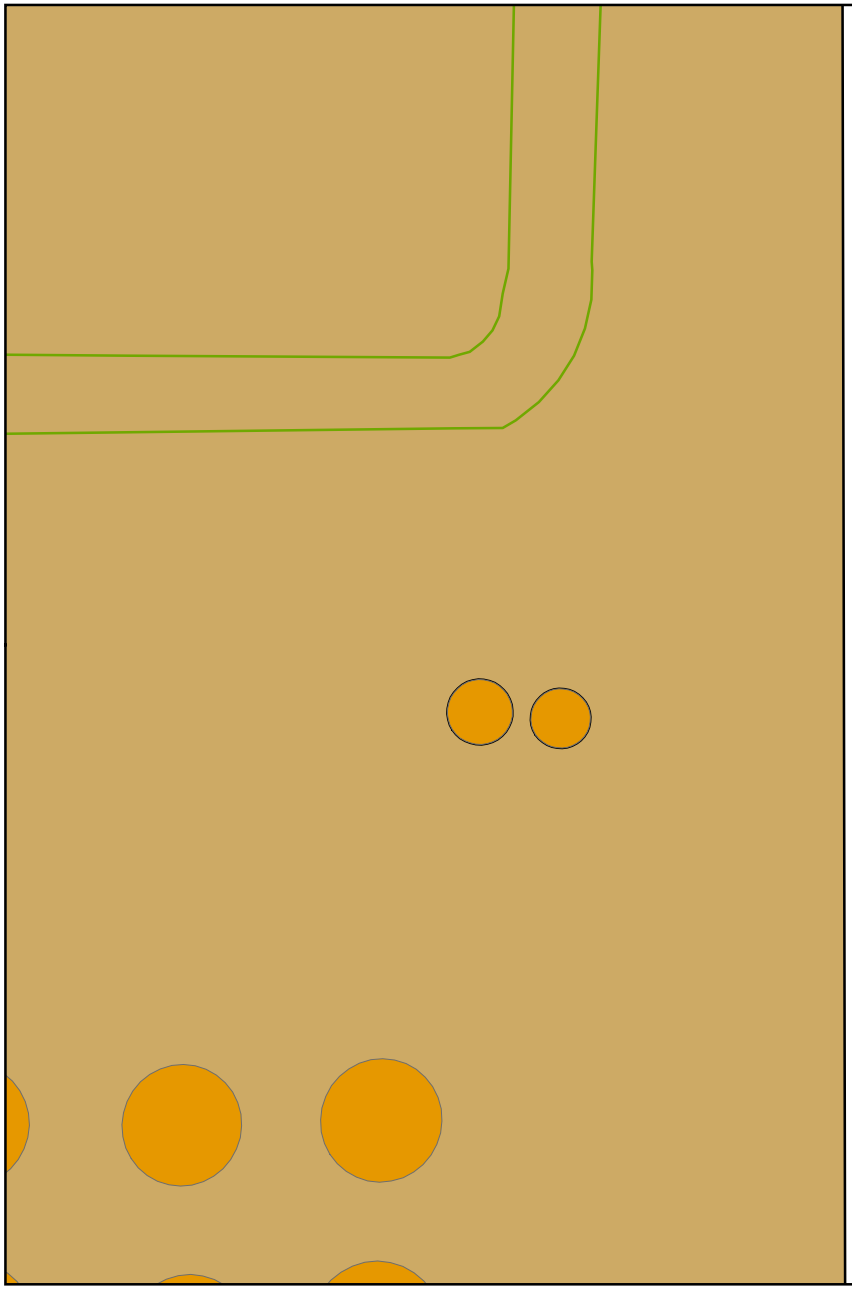
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

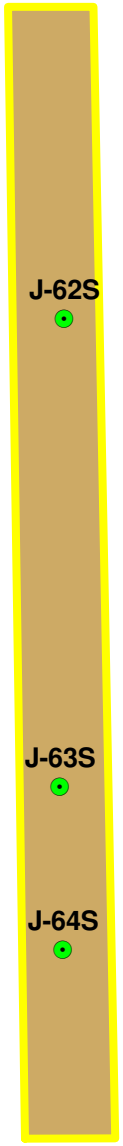
PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

35A





J-62S FR-234A	
Acetone	0.0094 J
Methylene Chloride	0.00295 J

J-63S FR-231	
Methylene Chloride	0.0028 J

J-64S FR-228	
Methylene Chloride	0.003 J

Legend

- Soil Sample Points
- Roads
- Gravel/Dirt Road
- AOC-6
- Refinery Tanks
- AOCs

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 25 50
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

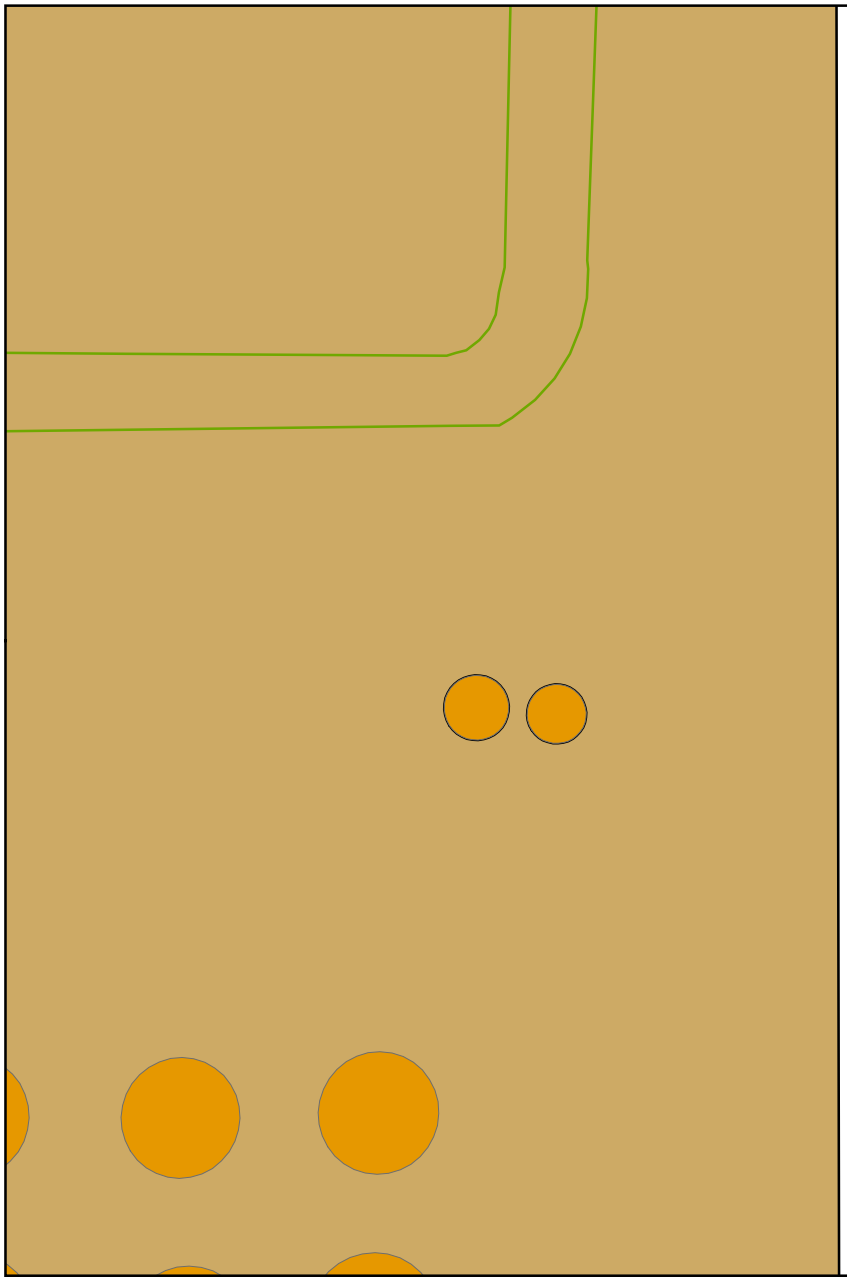
AOC-6
Ecological
VOC Surface Soil Distribution Map

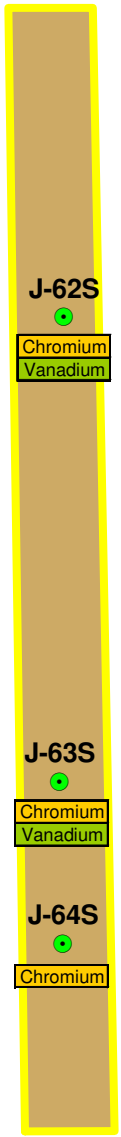
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
35B





J-62S FR-236	
Aluminum	2660
Barium	21.5 B
Beryllium	0.14 B
Chromium	2.1
Cobalt	0.2 B
Copper	1.2 B
Iron	956
Lead	2.6
Manganese	5.2
Mercury	0.025
Nickel	0.39 B
Vanadium	2.4 B
Zinc	3.7

J-63S FR-232	
Aluminum	4340
Arsenic	0.35 B
Barium	39.6
Beryllium	0.22 B
Chromium	4
Cobalt	0.3 B
Copper	1.9 B
Iron	1500
Lead	3.1
Manganese	7.5
Mercury	0.0064 B
Nickel	0.74 B
Vanadium	3.6 B
Zinc	5.8

J-64S FR-229	
Aluminum	1420
Barium	20.1 B
Beryllium	0.075 B
Chromium	2.3
Hex Chrom	1.5 B
Copper	1.5 B
Iron	737
Lead	2.1
Manganese	4.5
Mercury	0.0083 B
Nickel	0.25 B
Vanadium	1.6 B
Zinc	3

Legend

- Sample Points
- Roads
- Gravel/Dirt Road
- AOC-6
- Refinery Tanks
- AOCs

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Plant Limit

Exceeds Earthworm and Plant Limits

N

0 25 50

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-6
Ecological
Metal Subsurface Soil Distribution Map

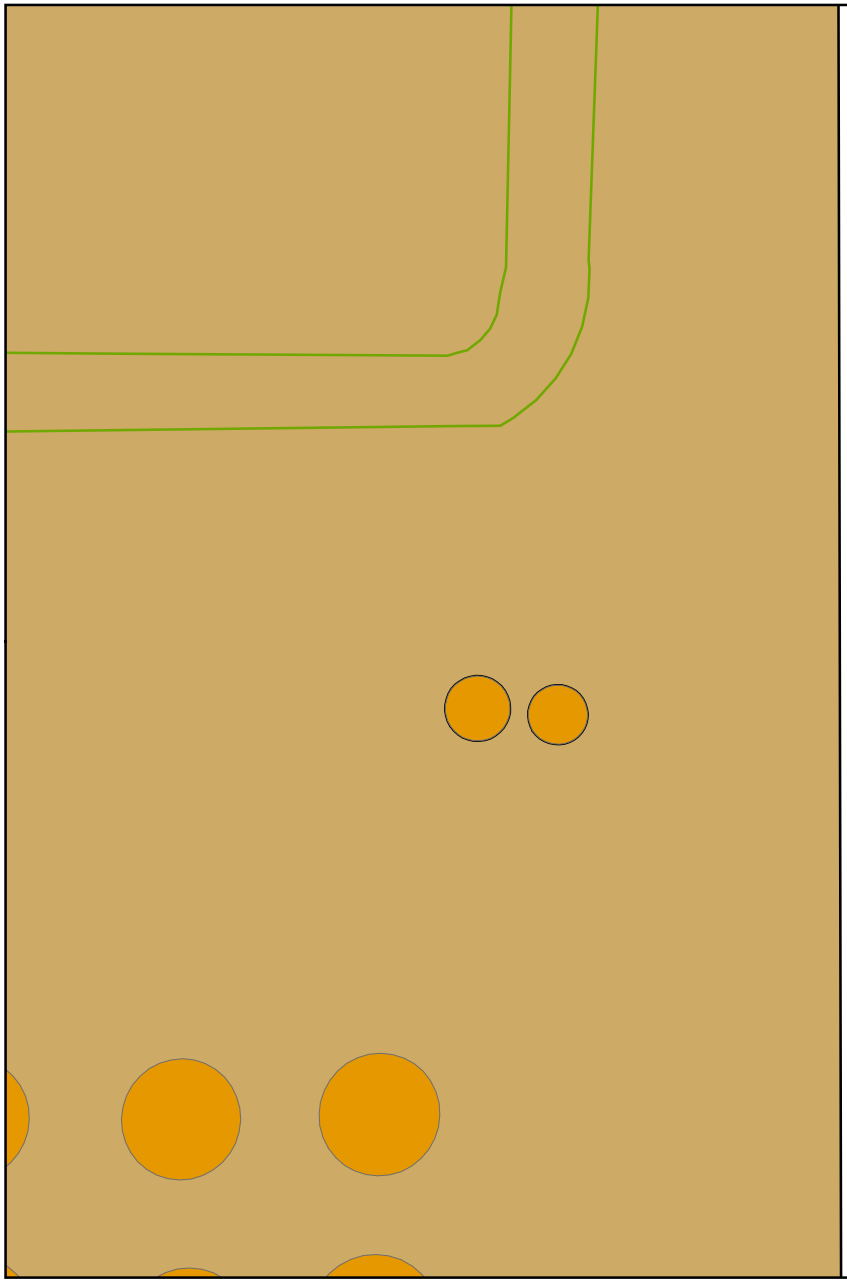
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

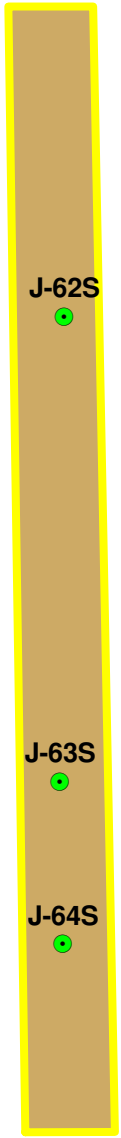
PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

36A





J-62S FR-236	
Acetone	0.0669
Methylene Chloride	0.0042 J

J-63S FR-232	
Acetone	0.0661
Methylene Chloride	0.004 J

J-64S FR-229	
Acetone	0.0183 J
Methylene Chloride	0.0033 J

Legend

- Soil Sample Points
- Roads
- Gravel/Dirt Road
- AOC-6
- Refinery Tanks
- AOCs

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 25 50

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-6
Ecological
VOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

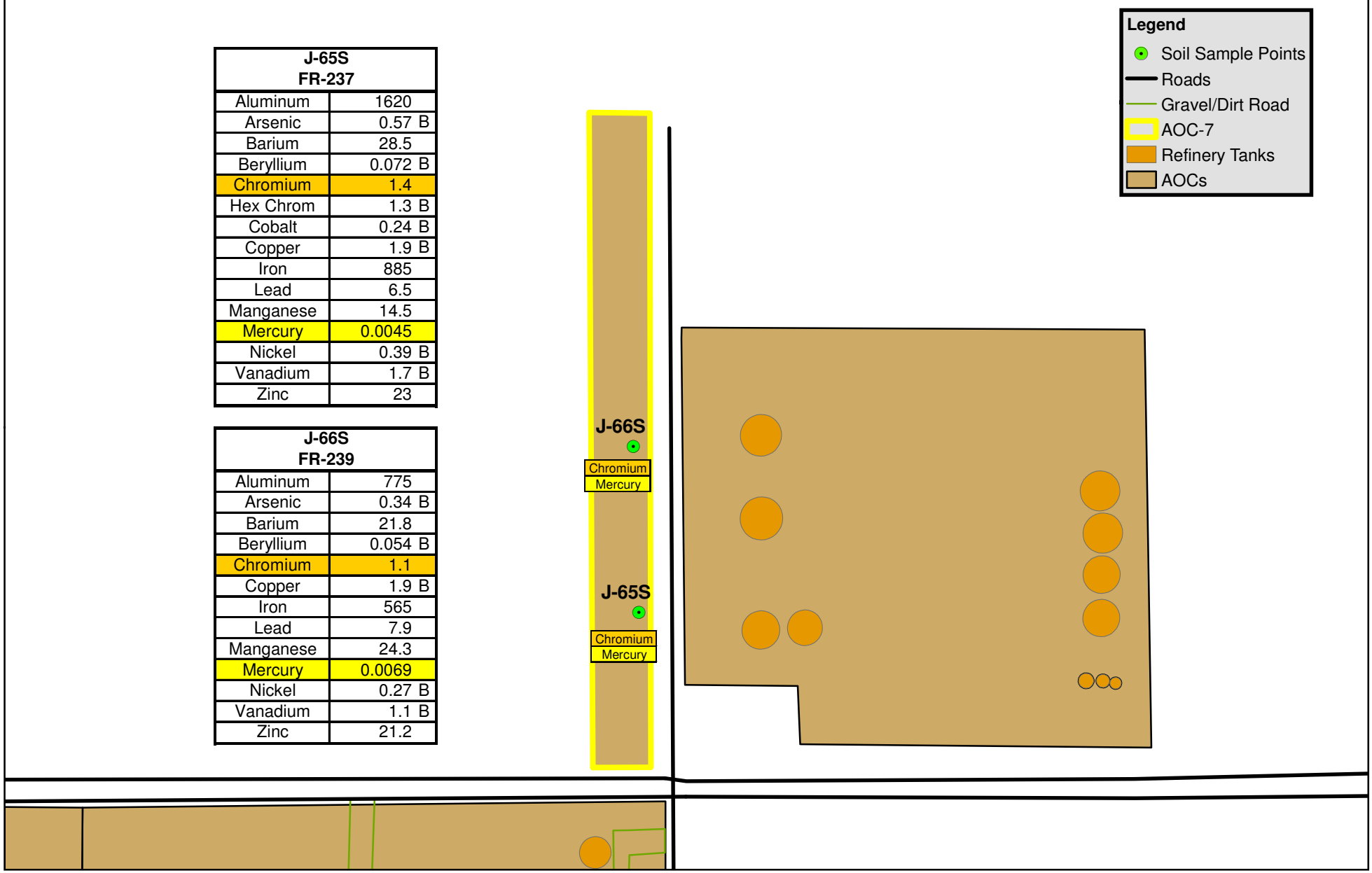
KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

36B

J-65S FR-237	
Aluminum	1620
Arsenic	0.57 B
Barium	28.5
Beryllium	0.072 B
Chromium	1.4
Hex Chrom	1.3 B
Cobalt	0.24 B
Copper	1.9 B
Iron	885
Lead	6.5
Manganese	14.5
Mercury	0.0045
Nickel	0.39 B
Vanadium	1.7 B
Zinc	23

J-66S FR-239	
Aluminum	775
Arsenic	0.34 B
Barium	21.8
Beryllium	0.054 B
Chromium	1.1
Copper	1.9 B
Iron	565
Lead	7.9
Manganese	24.3
Mercury	0.0069
Nickel	0.27 B
Vanadium	1.1 B
Zinc	21.2



Notes:

1. Results are posted in mg/kg
2. Qualifiers:

B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Median Background Limit

Exceeds Earthworm and Plant Limits

N

0 80 160

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-7
Ecological
Metal Surface Soil Distribution Map

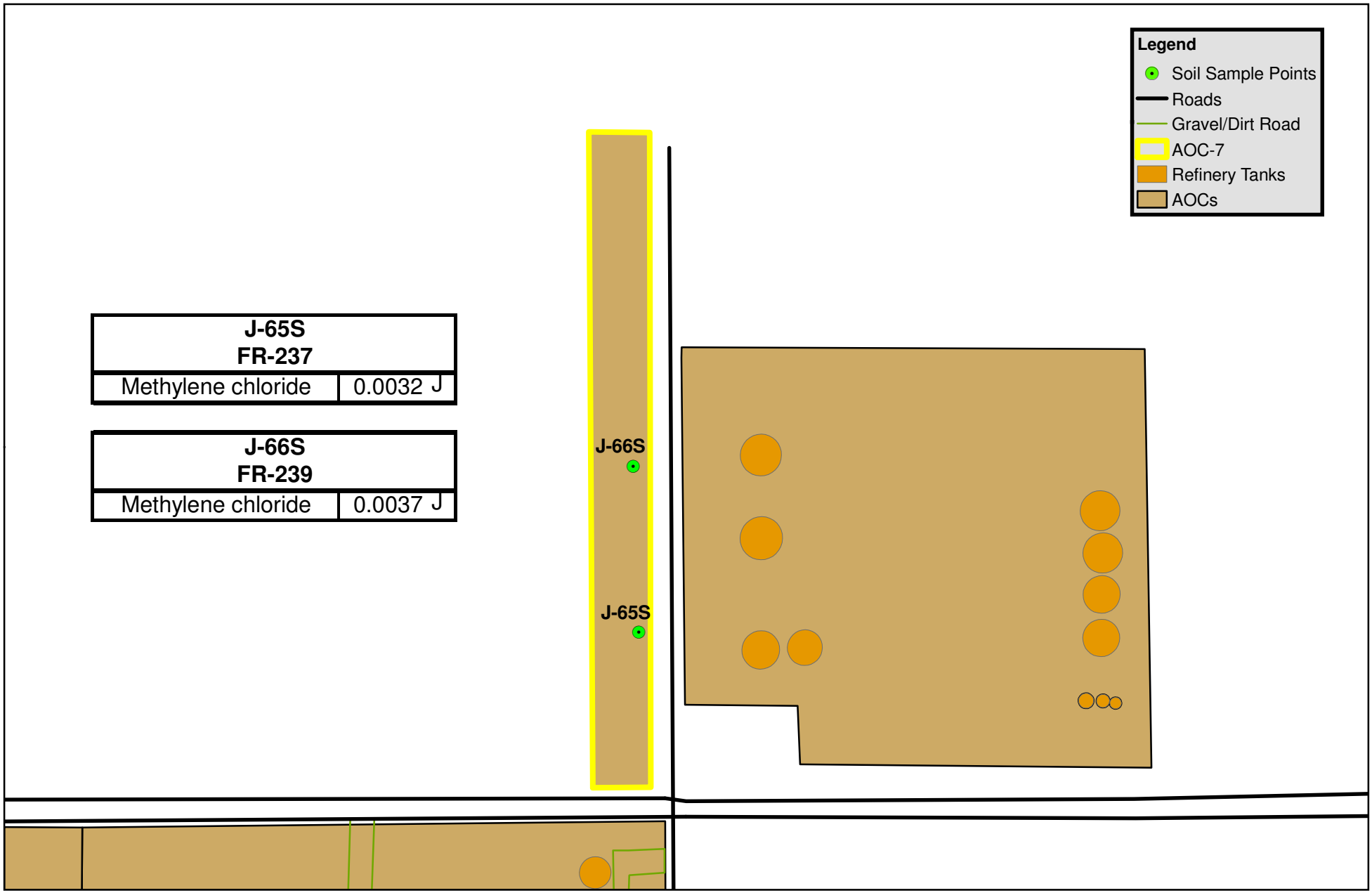
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

37A



J-65S FR-237	
Methylene chloride	0.0032 J

J-66S FR-239	
Methylene chloride	0.0037 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 80 160
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

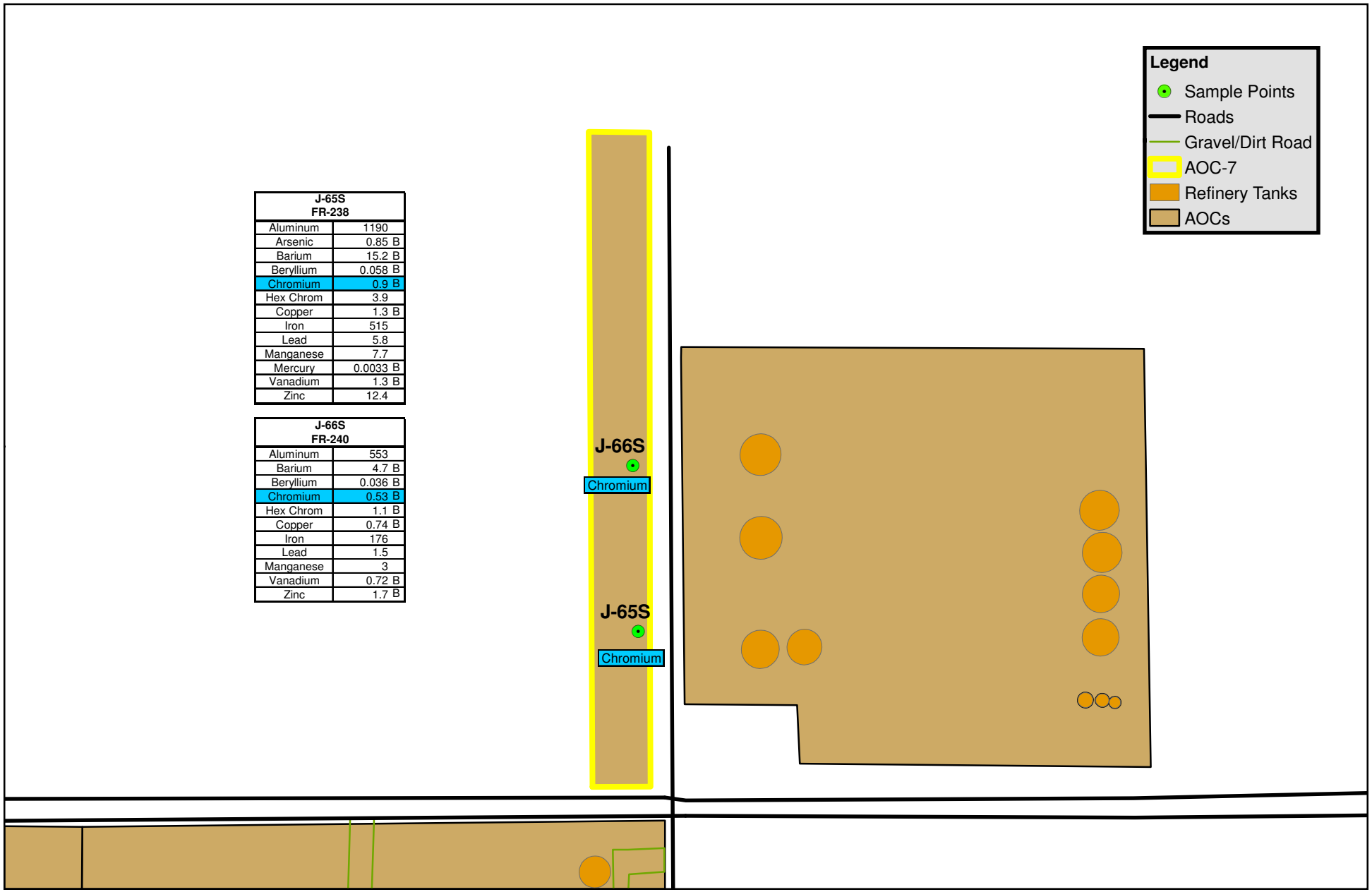
AOC-7
Ecological
VOC Surface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
37B



J-65S FR-238	
Aluminum	1190
Arsenic	0.85 B
Barium	15.2 B
Beryllium	0.058 B
Chromium	0.9 B
Hex Chrom	3.9
Copper	1.3 B
Iron	515
Lead	5.8
Manganese	7.7
Mercury	0.0033 B
Vanadium	1.3 B
Zinc	12.4

J-66S FR-240	
Aluminum	553
Barium	4.7 B
Beryllium	0.036 B
Chromium	0.53 B
Hex Chrom	1.1 B
Copper	0.74 B
Iron	176
Lead	1.5
Manganese	3
Vanadium	0.72 B
Zinc	1.7 B

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   B = Concentration greater than the sample detection limit (SDL) but less than the method quantitation limit (MQL)

Exceeds Earthworm Limit

N

0 90 180

Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-7
Ecological
Metal Subsurface Soil Distribution Map

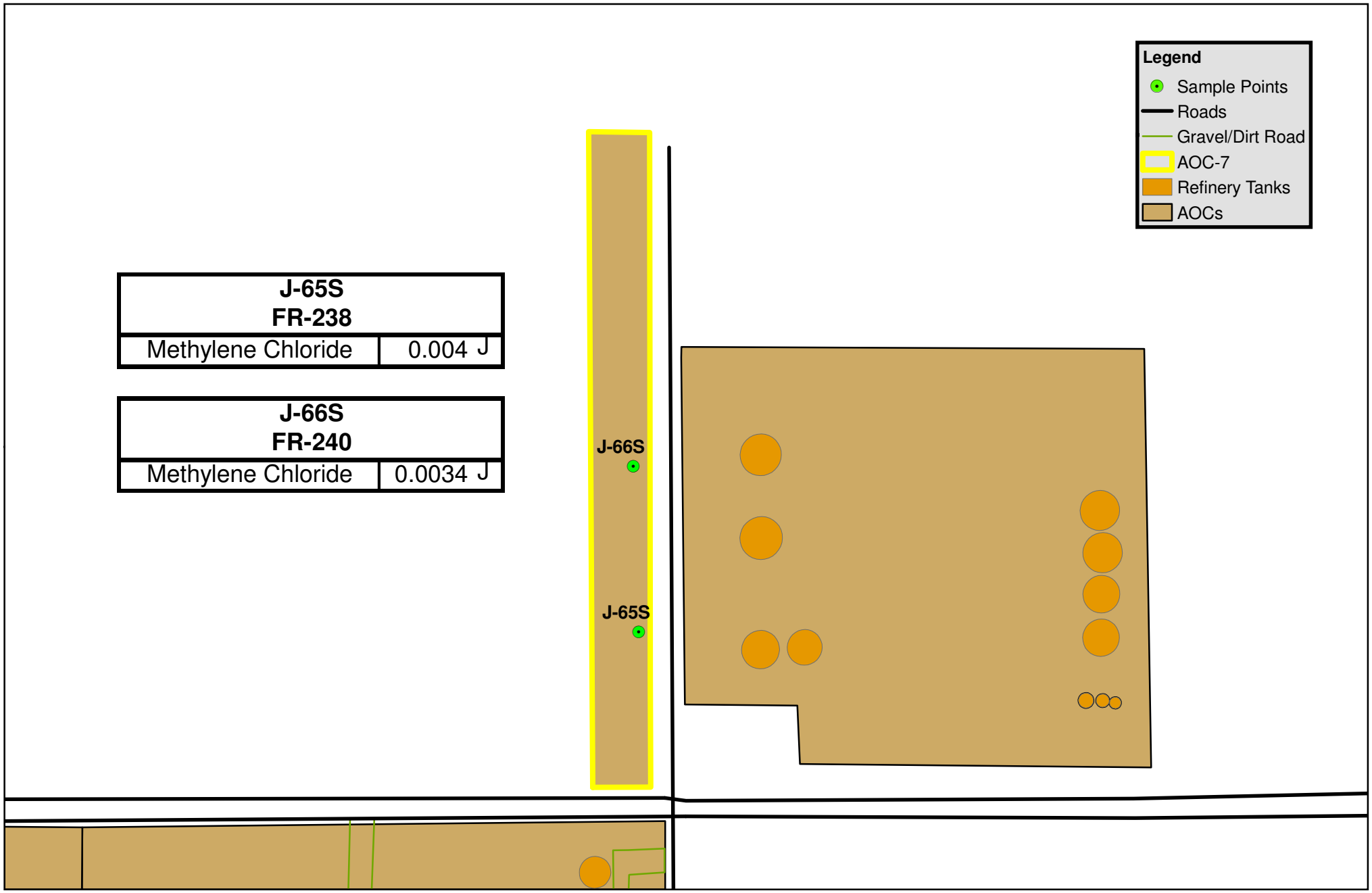
FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE

38A



J-65S FR-238	
Methylene Chloride	0.004 J

J-66S FR-240	
Methylene Chloride	0.0034 J

Notes:

1. Results are posted in mg/kg
2. Qualifiers:

   J = Concentration greater than the SDL but less than the method quantitation limit (MQL)

N

0 80 160
Feet

DATE DRAWN: 5/7/08	DATE REVISED:
DRAFTED BY: C. SEATON	
CHECKED BY: S. HALASZ	
APPROVED BY:	

AOC-7
Ecological
VOC Subsurface Soil Distribution Map

FALCON REFINERY
INGLESIDE, SAN PATRICIO COUNTY, TEXAS

PROJ NO. 59752 | FILE NAME: Falcon Refinery Base Map

KLEINFELDER
Bright People. Right Solutions.
3601 Manor Road, Austin, Texas 78723
Phone: 512-926-6650 Fax: 512-926-3312
www.kleinfelder.com

FIGURE
38B