

Supplementary data***A. Characteristic Metrics of the Mississippi River and Channel Belt***

The map with the late Holocene Stage 1 channel belt (CB) of the Mississippi River (Saucier, 1994) was georeferenced and the approximate CB centerline (axis) digitized in Google Earth. CB widths were measured perpendicular to the CB axis. We used a channel width of 1200-1400 m, representative of the normal flow reach (Hamar and Clifford, 2006). Channel-bed gradient, which parallels water-surface gradient in the normal flow reach, was measured from published data (Fisk, 1944; Wright and Parker, 2005). The measured gradient (Fig. DR1) of 8×10^{-5} was corrected to 6×10^{-5} to account for the 230 km shortening of the river channel between 1932 and 1942 (Winkley, 1997; Harmar and Clifford, 2006), when 14 sinuous bends were cut off.

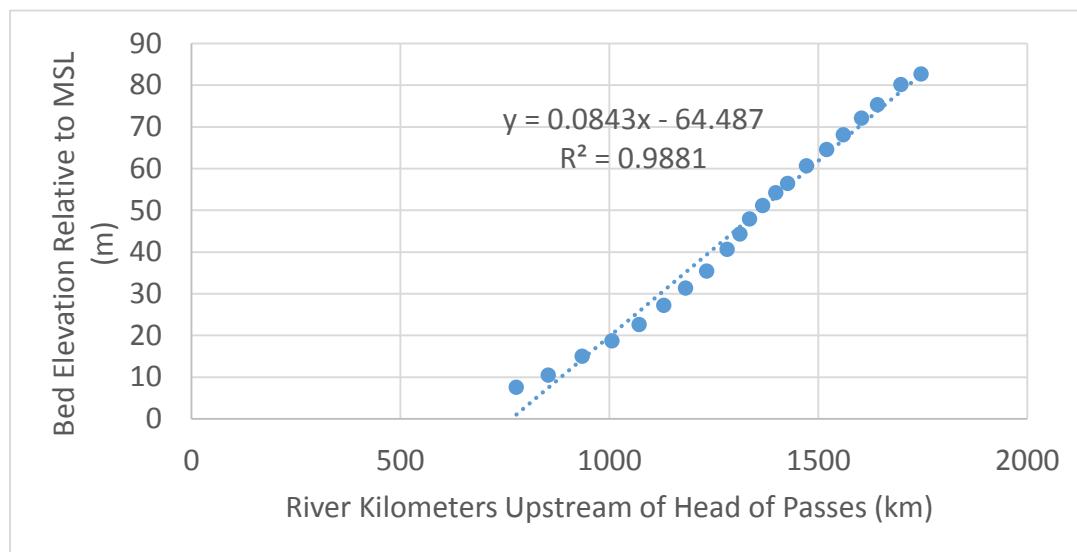


Figure DR1: Channel-bed elevation of the Lower Mississippi River within the normal flow reach based on data from Fisk (1944) and Wright and Parker (2005).

A total of 1596 borehole logs, originally compiled by technical reports associated with the Lower Mississippi Valley Mapping Program, were used to measure the thickness of CB deposits.

Instituted by the US Army Corps of Engineers (USACE), this database comprises geomorphic maps and borehole logs that cover the Mississippi Delta and the Lower Mississippi Valley up to Cairo, Illinois. We used technical reports that cover the St. Francis Basin (Saucier, 1964, USACE Technical Report 3-659), the Western Lowlands (Smith & Saucier, 1971, USACE Technical Report S-71-5), the Yazoo Basin (Kolb et al., 1968, USACE Technical Report 3-480; Krinitzsky et al., 1958, USACE Technical Report 3-480), the Boeuf-Tensas Basin (Saucier, 1967, USACE Technical Report 3-757), the Lower Mississippi Valley between Artonish and Donaldsonville (Saucier, 1969, USACE Technical Report S-69-4) and the Mississippi Delta Plain (May et al., 1984, USACE Technical Report GL-84-15-1; Dunbar et al., 1994, USACE Technical Report GL-84-15-2; Dunbar, et al., 1995, USACE Technical Report GL-84-15-3), all of which include boreholes within the Stage 1 CB. Borehole logs in the technical reports were compiled from a range of sources, including the energy industry, the Department of Transportation, as well as the USACE. Data are presented chiefly in the form of maps and cross-sections, and are available at <http://lmvmapping.erdc.usace.army.mil/>.

We used a data-base of 1350 cores from 109 cross-sections throughout the Mississippi CB to measure channel belt thickness. From this data-base, 359 boreholes encountered mud-dominated residual-channel fills (oxbow lakes); 747 encountered bank-attached bars; 244 encountered swale deposits (between point bar ridges). We used 192 measurements of oxbow lake thickness, obtained after filtering out excessively small values (<15m) associated with boreholes that penetrated the margins of channels. These 191 measurements includes boreholes that did not penetrate the base of the deposit as well as those that did. This allowed us to avoid a bias of the measurements towards smaller values. These thickness measurements were used as proxies for flow depth and to estimate CB thickness (Figs. DR2, 3) upstream of CBK 300. In the absence of oxbow lake deposits downstream of CBK 300, we estimated CB thickness between CBK 0 and

225 using measurements from 39 boreholes that encountered bank-attached bar deposits encased
in deltaic sediments. These 39 boreholes do not include those that encountered bar deposits that
were unusually thin (<20m) and associated with the margins of these deposits, and do include
boreholes that did not penetrate the base of the deposit. A quality check of our measurements
against the interpreted USACE cross-sections suggest that the range represented by the 50th to
75th percentiles of measurements within a 100 km window effectively represents channel belt
thickness at these locations. In the normal flow reach, a flow depth of 18-24 m was measured.

With these values for channel depth and water-surface gradient, the backwater length scale is
estimated to be 281, 328, and 375 km (Table 1). The intermediate and high estimates of
backwater length are in best agreement with the region in which the water-surface gradient
flattens out and where a divergence occurs at low flow between the modern water surface and
channel bed elevation profiles, between RK 300 and 400 (Nittrouer et al., 2012).

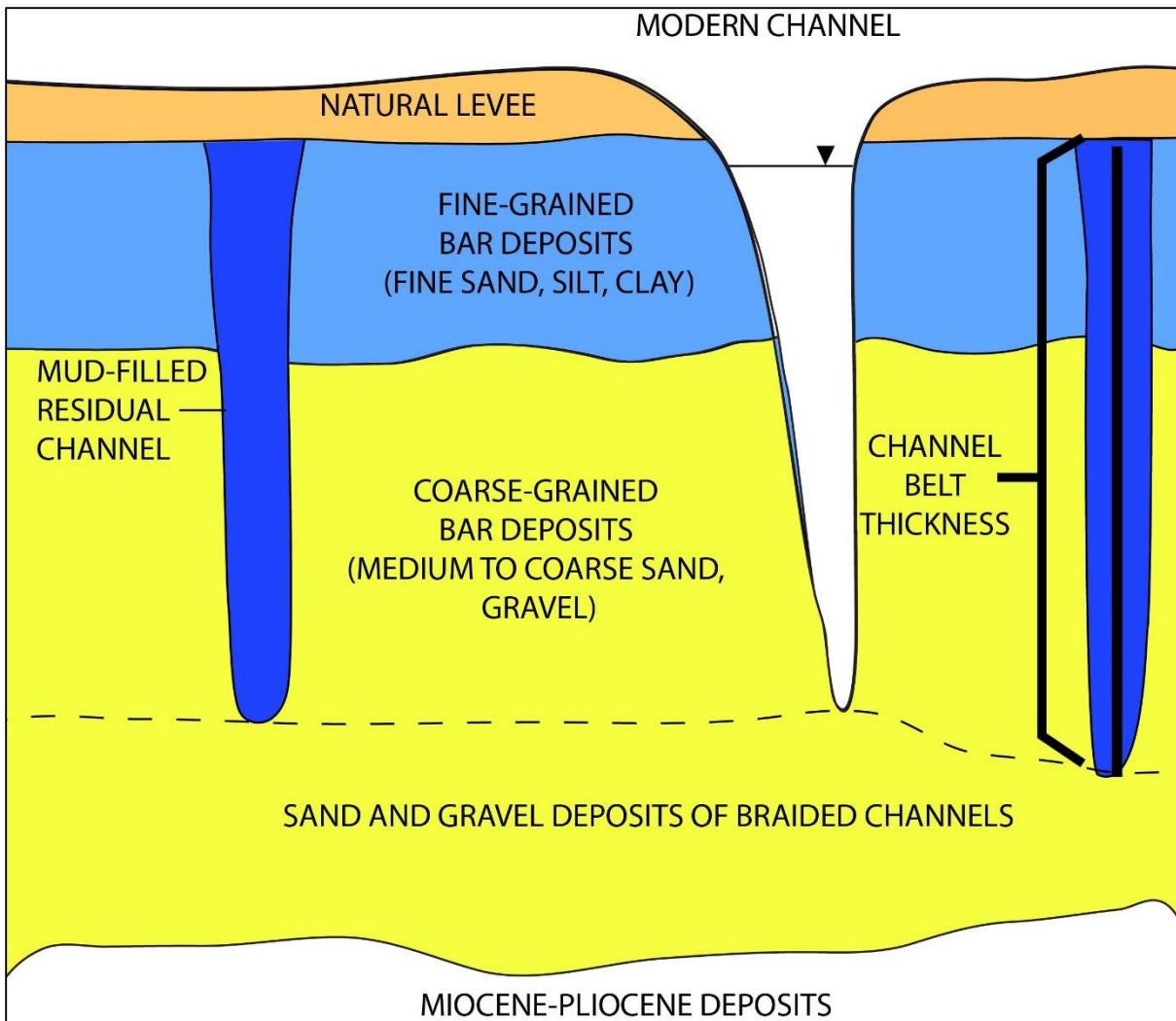


Figure DR2: Illustration of the methodology for CB thickness measurement from a schematic cross-section. Note that the similar composition of the lower portion of the bar deposits and the underlying Pleistocene deposits upstream of CBK 300 precludes the use of bar thickness as a proxy for channel depth. Instead, we use mud-filled residual channels as the most reliable proxies for channel depth and CB thickness.

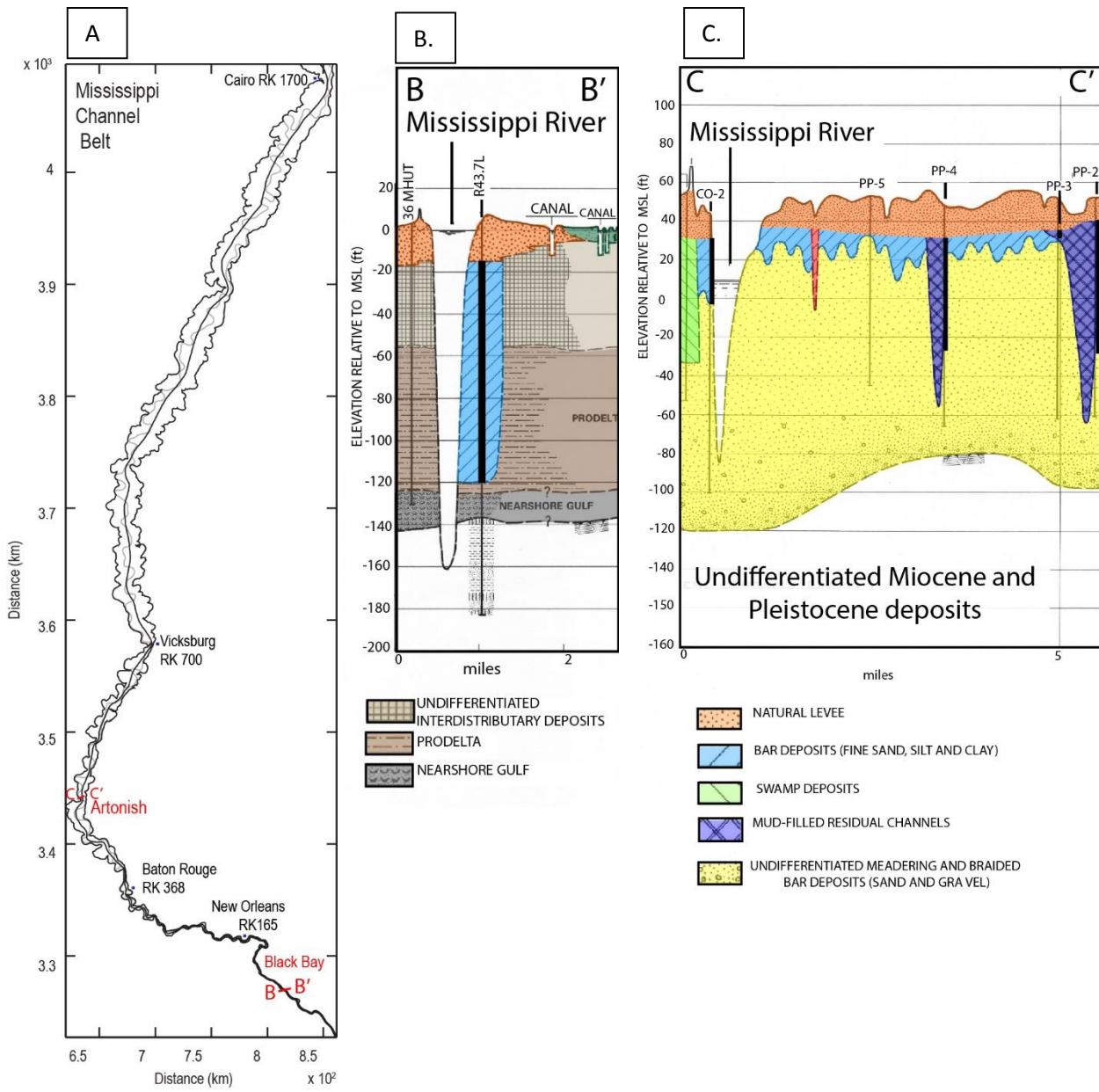


Figure DR3. A. Map with the location of cross sections B-B' and C-C' shown in red. B. The CB thickness measurements are approximated by the thickness of bank-attached bar deposits shown by the thick black lines in this modified USACE cross-section at Black Bay, Louisiana. Downstream of CBK 300, bank-attached bars are encased in deltaic deposits and can be used as a proxy for flow depth. C. The difference in thickness of the heterolithic bar deposits and mud-rich residual channel deposits is shown in the cross-section at Artonish, Louisiana (upstream of CBK 300). Note that a large fraction of the thickness of bars constructed by the migrating channel at Artonish is contributed by sand similar to the underlying braided-stream deposits, while the cross-section at Black Bay

C. The difference in thickness of the heterolithic bar deposits and mud-rich residual channel deposits is shown in the cross-section at Artonish, Louisiana (upstream of CBK 300). Note that a large fraction of the thickness of bars constructed by the migrating channel at Artonish is contributed by sand similar to the underlying braided-stream deposits, while the cross-section at Black Bay

displays thick heterolithic bank-attached bar deposits directly associated with the channel depth.

B. Characteristic Metrics of the Rhine Channels and Channel Belts

CB thickness measurements from cores (Gouw and Berendsen, 2007) were used to estimate normal flow depth for the Rhine channels. Gouw and Berendsen (2007) estimated the mean CB thickness for the Holocene channels in the Rhine-Meuse Delta at 6.7 m (range: 3.6 to 10.5 m). We use low, intermediate, and high estimates of flow depth of 6, 8, and 10 m, respectively. These values are comparable to channel depths (7-10 m) from historic maps (Frings et al., 2009).

Channel gradients (S_C) were estimated from CB gradients (S_{CB}) reconstructed by Gouw and Berendsen (2007), where the data points represent the highest elevation of bar sand in 0.5-km-long sections of the CB plotted against distance along the CB axis. Overestimation of S_C is expected from such measurements, as they neglect the effect of sinuosity. Berendsen (1982) reports channel sinuosities of 1.5-2 for Rhine channels unaffected by human engineering and a water-surface gradient of about 1.1×10^{-4} within the normal flow reach (Lobith to Lexkesveer) from a historic map of the Nederrijn-Lek created in 1888 A.D. We invert the time-averaged record of S_C from S_{CB} using a range of sinuosities. Most of the elevation data for the Linge are within the backwater zone or very close to the backwater transition. Including measurements from the backwater zone can change S_{CB} significantly. We therefore limited ourselves to measurements from above the backwater zone for the Waal and Nederrijn (Fig. DR4A & B). The values used were those located more than one channel depth above mean sea level (MSL), taken as 6 m for the Nederrijn and 8 m for the Waal. The S_{CB} values obtained from the slope of the linear regressions in Fig. DR4 are 2×10^{-4} for the Nederrijn and 1.6×10^{-4} for the Waal.

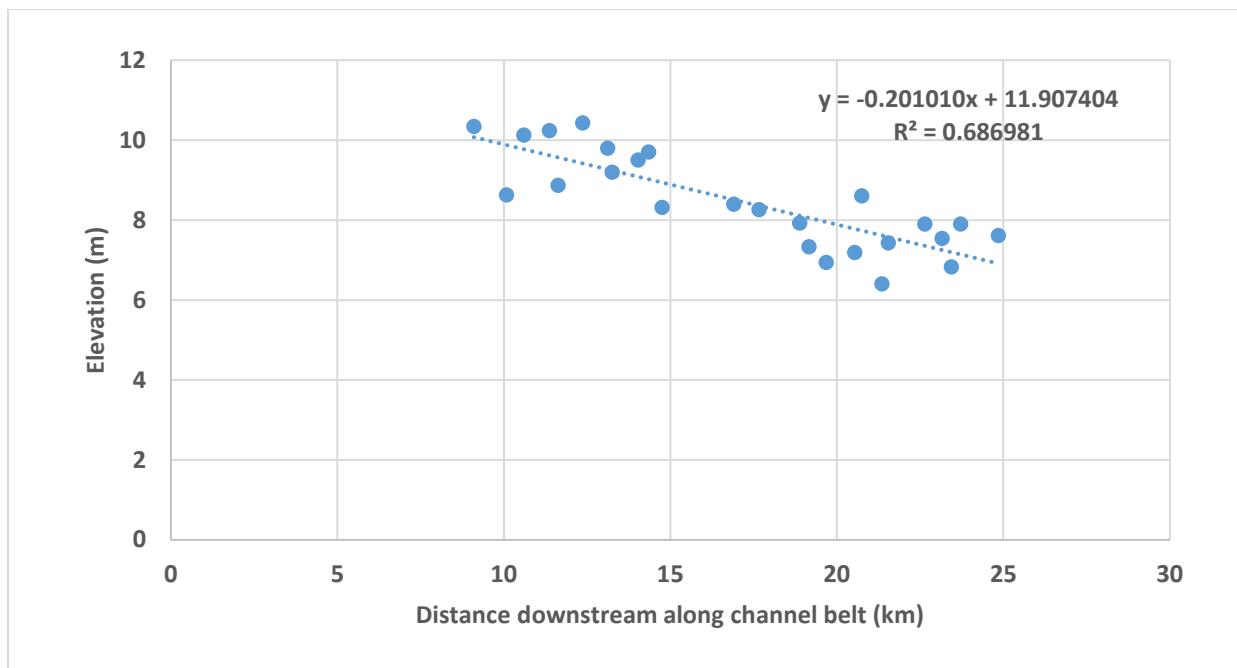


Figure DR4A: CB gradient of the Nederrijn above the backwater zone, based on data from Gouw & Berendsen (2007). Only data points greater than one channel depth (6 m) above MSL were used.

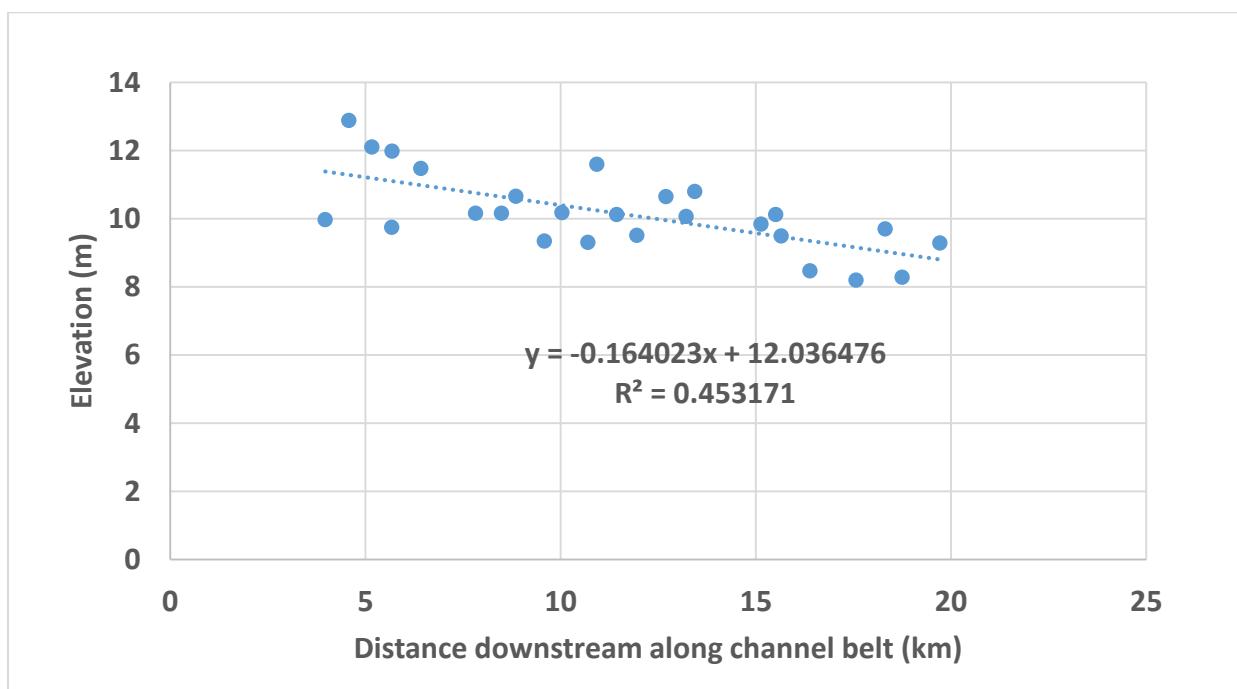


Figure DR4B: CB gradient of the Waal above the backwater zone, based on data from Gouw & Berendsen (2007). Only data points greater than one channel depth (8 m) above MSL were used.

The S_{CB} values were used to estimate S_C , by accounting for channel sinuosity (Ω):

$$S_C = S_{CB}/\Omega$$

In the normal flow reach, S_C and the water-surface gradient S_{WS} are taken as approximately equal; hence

$$S_{WS} = S_{CB}/\Omega$$

The backwater length scale (L_b) is estimated by

$$L_b = H/S_{WS}$$

where H is the mean normal flow depth and S_{WS} is the water-surface gradient within the normal flow reach.

For channel sinuosities of 1.5-2 the resultant channel gradient S_C ranges from 1×10^{-4} to 1.3×10^{-4} for the Nederrijn, which agrees well with the value of 1.1×10^{-4} from Berendsen (1982) for the normal-flow reach. Using an intermediate water-surface gradient of 1.1×10^{-4} results in backwater length estimates of 54, 71, and 89 km for flow depths of 6, 8, and 10 m respectively.

Reconstructed Holocene groundwater gradients (Fig. DR5; Cohen, 2005) show a break in slope landward of the shoreline, at ~40 km at 8 ka and ~45 km at 5 ka. Reconstructed gradients for deposits younger than 5 ka are less constrained by data, but should be landward of 50-60 km along the CB axis once sea-level rise and a channel sinuosity of 1.1-1.3 (measured in Google

Earth) is accounted for. The ratio of CB width to channel width within the backwater zone approaches 1, and the CB axis closely follows the low sinuosity channel in these zones. Since the groundwater surface is likely closely related to paleo-gradients, these data can be used to place a downstream limit on the backwater zone. Berendsen (1982) showed a marked reduction of the modern water-surface gradient for the Nederrijn-Lek 70-90 km landward of the shoreline. Our intermediate and higher estimates of backwater length are in best agreement with these datasets. The Linge had similar dimensions to the Nederrijn-Lek and we therefore assume a similar backwater length.

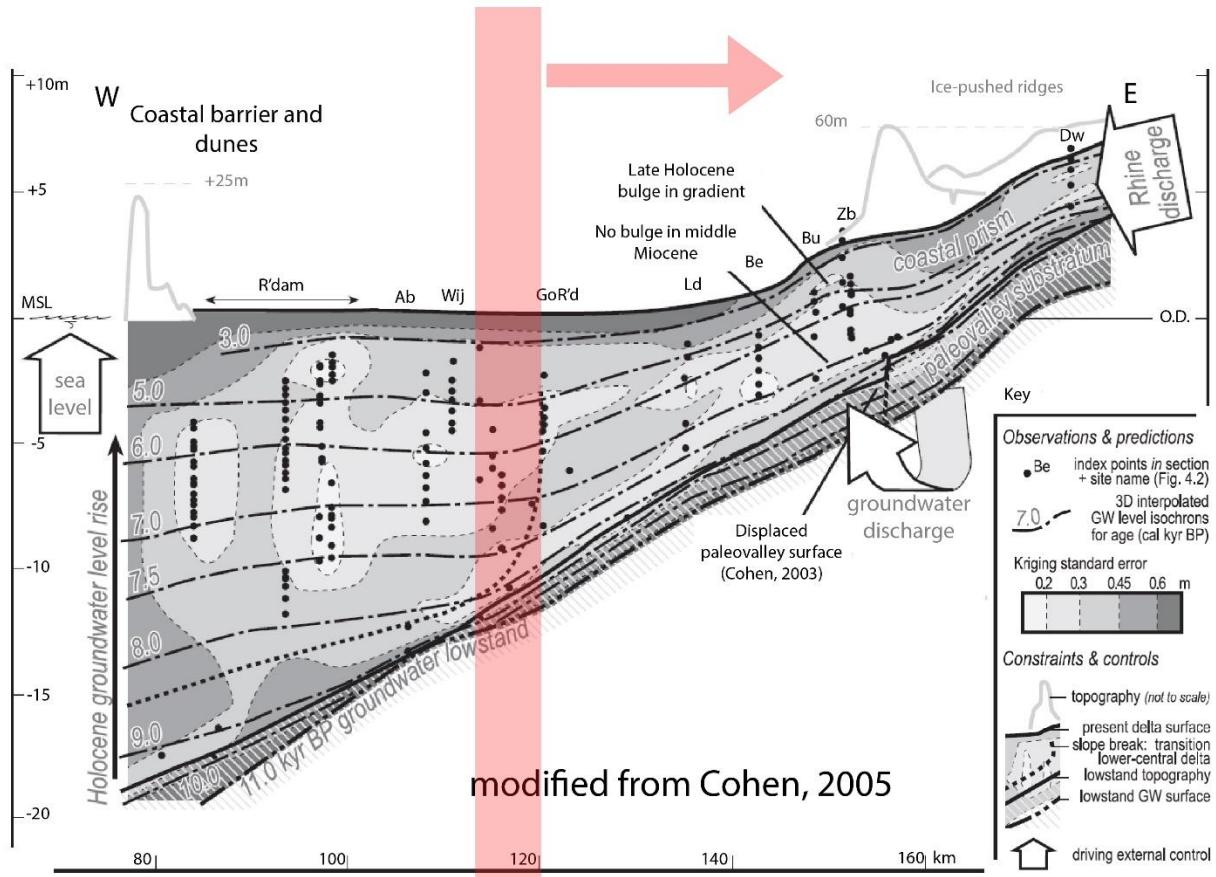


Figure DR5: Reconstructed groundwater gradients (representative from flood plain gradients, modified from Cohen (2005). The red band highlights the zone where a change in

gradient occurs at 8-5 ka. The backwater transition should be landward of this location in younger deposits.

Using the same sinuosity range of 1.5-2, we estimate S_C of the Waal to be 8.2×10^{-5} to 1.1×10^{-4} . We apply the same approach that was used for the Nederrijn-Lek to the Waal and use an intermediate slope of 9.4×10^{-5} . This yields backwater length estimates of 64, 85, and 106 km for normal flow depths of 6, 8, and 10 m.

Berendsen (1982) reports channel widths of 300-350 m for the Waal from historic maps created in 1888 A.D. Gouw and Berendsen (2007) report channel widths ranging from 260 to 490 m from the normal flow reach of the Waal, where 333, 440, and 476 m represent the 25th, 50th, and 75th percentiles, respectively. These data were acquired from historical topographic maps from between 1839 and 1859 A.D., before groynes were used to hold the channels in place. We use low and high values of 300 and 350 m for the Waal respectively. Berendsen (1982) reports channel widths of 200-300 m for the Nederrijn-Lek, whereas Gouw and Berendsen (2007) report widths of 126-310 m with 196, 233, and 269 m representing the 25th, 50th, and 75th percentiles, respectively. We use 200 and 250 m as low and high values, respectively, for the Nederrijn-Lek. We apply similar dimensions to the Linge.

CB widths for the Nederrijn-Lek, Waal, and Linge were digitized from data compiled by Gouw and Berendsen (2007). The reference map published by Gouw and Berendsen (2007) showed the location of the measurements. This map was used to measure the distance to the shoreline for each of the CBs in Google Earth (Fig. DR6).

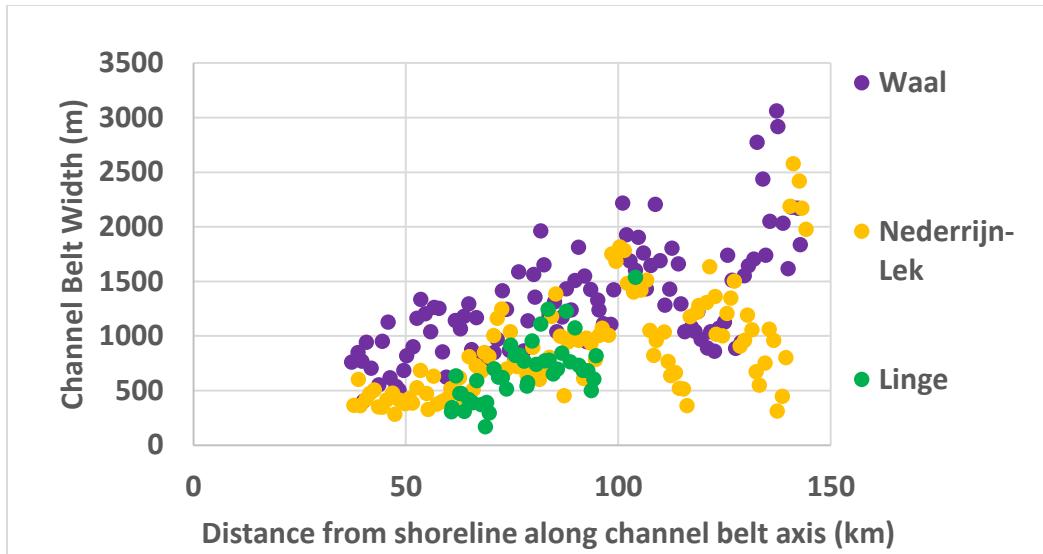
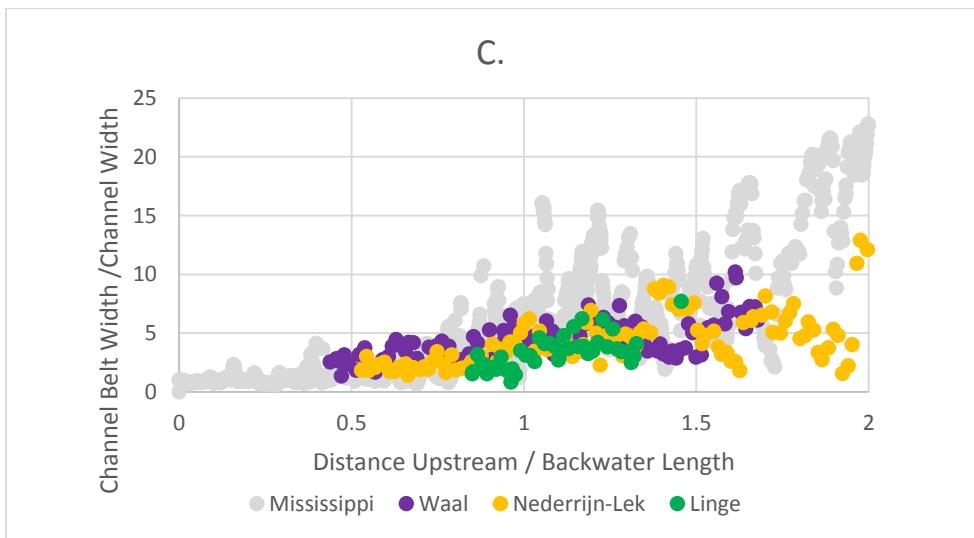
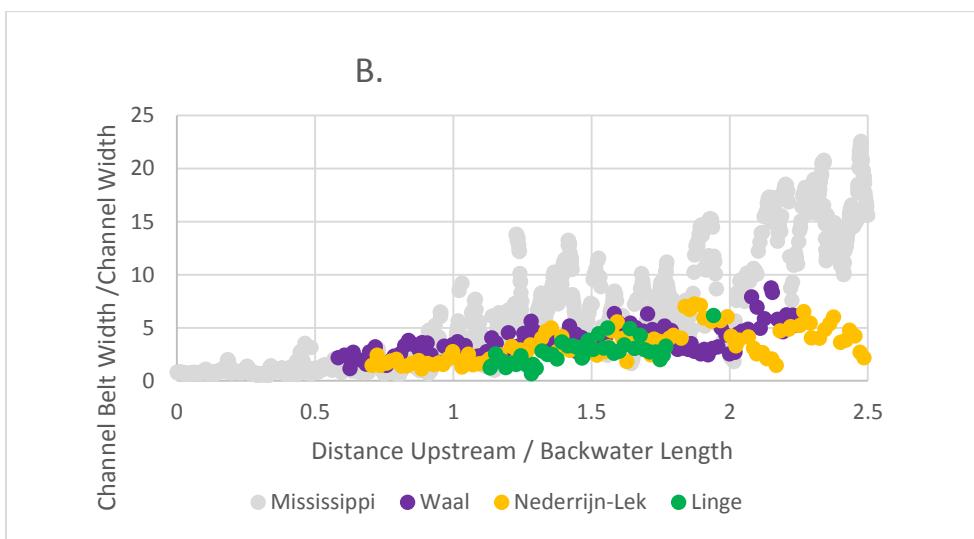
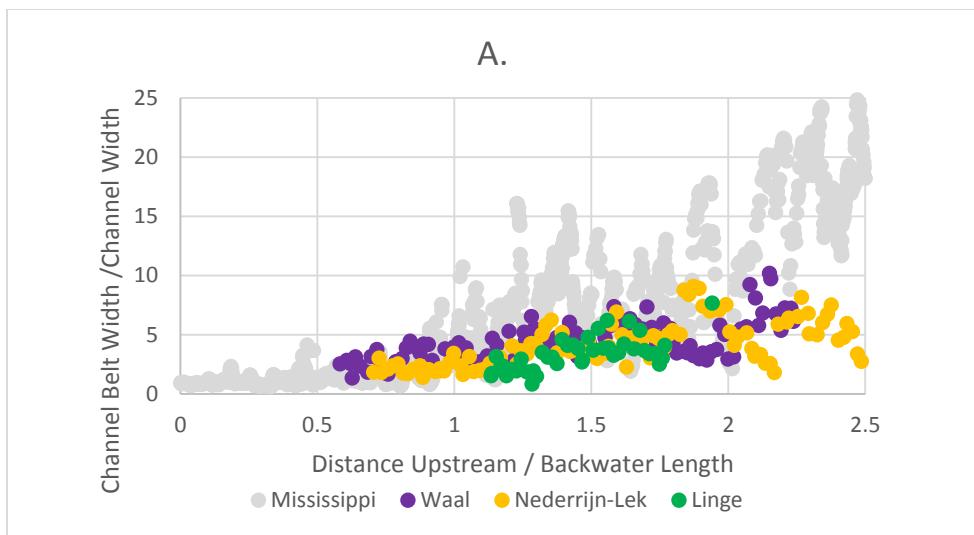


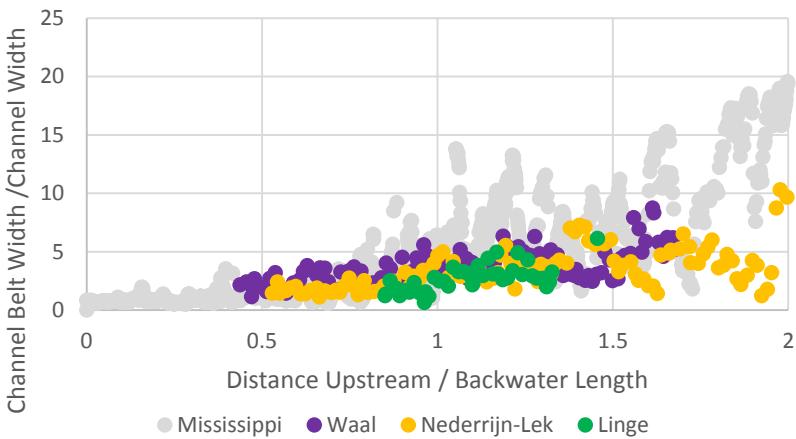
Figure DR6: Rhine channel-belt widths plotted against distance from the shoreline (data digitized from Gouw and Berendsen (2007).

C. Scaling Relationships

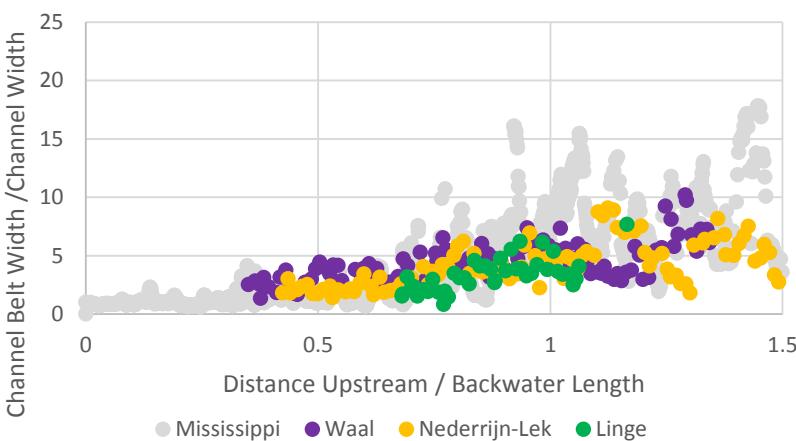
By non-dimensionalizing distance upstream along the CB by the estimated backwater length and the CB width by the average channel width in the normal flow reach, we can compare the downstream trends in CB widths of the Mississippi and Rhine. The backwater lengths used include high, intermediate, and low estimates. Having refined our water-surface gradient estimates for the Rhine in the previous section, we use only the intermediate gradient value for the backwater length estimate. We note that the data collapse appears to be best when scaled by intermediate or high values of backwater length, but not when smaller estimates of backwater length are used (Fig. DR7).



D.



E.



F.

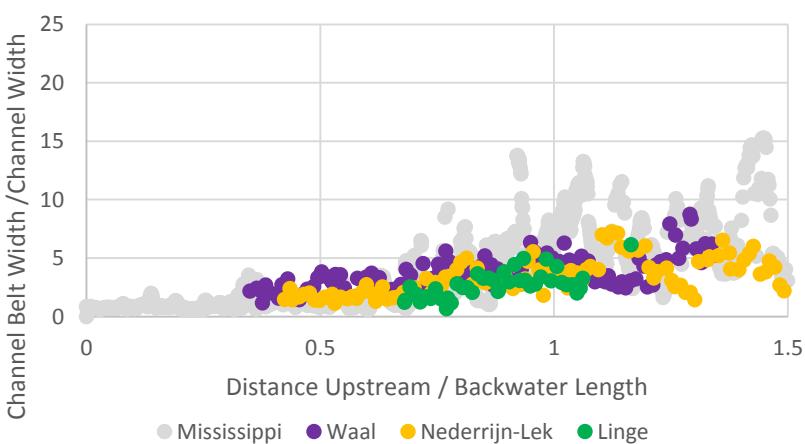


Figure DR7: Scaling of the Mississippi and Rhine CBs. In these plots, distance upstream and CB widths are non-dimensionalized by (A) the minimum estimated backwater length and minimum estimated normal flow channel width; (B) the minimum estimated backwater length and maximum estimated normal flow channel width; (C) the intermediate estimated backwater length and minimum estimated normal flow channel width; (D) the intermediate estimated backwater length and maximum estimated normal flow channel width; (E) the maximum estimated backwater length and minimum estimated normal flow channel width; and (F) the maximum estimated backwater length and maximum estimated normal flow channel width.

D. Channel-Belt Ages

Periods of activity for the Rhine CBs within the backwater zone range between 1600 and 2000 years, whereas the Mississippi CB within the backwater zone has been active for 1400 years (Table DR1). Relative sea level (RSL) at the onset of activity for these systems was 1.2 and <1.5 m below present MSL for the Rhine and Mississippi systems, respectively. Periods of activity for the Mississippi, Nederrijn, and Waal above the backwater zone are 3000, 2700, and 2300 years, respectively, but it should be noted that these values are less well constrained.

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TABLE DR1. CHANNEL BELT WIDTHS

Distance Upstream from HOP along channel belt axis (km)	Channel Belt Width (km)
1150.9226	24.676662
1150.4213	24.475525
1149.9617	24.29983
1149.3455	24.127534
1148.7237	22.561841
1148.1815	22.351312
1147.799	21.114156
1147.3064	18.091077
1146.7728	18.101002
1146.4311	18.067444
1145.9758	17.418729
1145.4286	16.681539
1144.9539	15.457605
1144.5261	14.762575
1144.0728	12.585364
1143.6182	12.369754
1143.0909	12.369754
1142.6333	12.302234
1142.266	12.729975
1141.7418	12.922694
1141.3184	13.29329
1140.6167	13.605372
1140.0973	13.569314
1139.6661	13.691934
1139.1677	13.54626
1138.6736	12.772668
1138.0772	11.087832
1137.6606	10.016823
1137.2294	12.568386
1136.6672	14.116039
1136.1051	10.294198
1135.5555	13.143845
1134.8704	13.052515
1134.325	7.9870102
1133.5042	7.549414
1132.7544	7.0797491
1132.1371	19.177118
1131.319	16.775396
1130.7692	19.372275
1130.0871	21.148265
1129.2004	21.009344

1128.5825	21.037391
1128.0366	20.685164
1127.2829	20.559655
1126.4523	20.481307
1125.7008	20.04751
1125.003	19.966611
1124.4442	22.783607
1123.8207	23.803337
1123.069	23.581295
1122.1807	22.837079
1121.5352	22.455376
1120.7438	22.405354
1119.8793	22.881284
1119.267	23.398871
1118.4904	24.018612
1117.9153	24.848073
1117.2688	25.07079
1116.8218	25.185802
1116.3154	25.404847
1115.6297	25.788071
1115.0769	26.312482
1114.277	26.845056
1113.7842	27.228453
1113.3218	27.414444
1112.7047	27.654481
1112.1984	27.609929
1111.6669	27.590998
1111.267	27.78018
1110.8289	27.688947
1110.3358	27.615082
1109.8083	27.355955
1109.3097	27.104853
1108.6257	26.909469
1107.8654	26.780089
1107.2581	25.365209
1106.5746	25.430517
1105.8628	26.068034
1105.12	26.646738
1104.5374	27.007085
1103.9758	26.667976
1103.4831	22.855882
1102.9493	24.204488
1102.231	22.636858
1101.4437	22.419933
1100.5689	21.778295
1099.8473	21.490603
1099.0112	20.892275

1097.9441	20.274306
1097.2179	19.301015
1096.3953	26.012287
1095.6166	25.876694
1094.6011	25.900895
1093.7676	25.450999
1092.6588	28.258103
1091.892	28.563219
1091.0297	28.396381
1090.3378	27.505065
1089.2456	26.648698
1088.2779	25.851476
1087.5244	25.016025
1086.7086	24.508817
1086.0299	25.162667
1085.5945	26.226392
1085.0006	26.902266
1084.3071	27.325221
1083.7993	27.564599
1083.2331	27.66701
1082.7147	27.721292
1082.0014	28.719925
1081.5426	29.431205
1080.9315	31.386055
1080.4006	31.757701
1079.9216	31.943746
1079.3235	31.621366
1078.9035	31.317683
1078.4237	31.235606
1077.9712	30.649869
1077.482	30.774729
1077.0777	31.095493
1076.5286	24.360509
1076.0175	24.017555
1075.5655	23.455006
1075.1615	22.669689
1074.6982	21.914429
1074.0367	21.642168
1073.3348	21.418903
1072.751	21.213644
1072.0761	20.713181
1071.436	20.794579
1070.9469	21.00468
1070.455	21.207118
1069.9524	20.998567
1069.5031	20.939625
1069.0538	20.838724

1068.2438	20.63906
1067.7946	20.308165
1067.3455	19.92142
1066.8963	19.687984
1066.5361	19.385971
1066.1618	19.429536
1065.7976	19.431028
1065.4114	19.579767
1064.9624	19.588482
1064.5329	23.030813
1064.1011	22.682503
1063.7072	22.439922
1063.2756	22.575644
1062.7677	22.54162
1062.3844	22.375453
1061.7797	22.008563
1061.0898	21.535074
1060.5628	21.219194
1060.0038	20.753564
1059.4957	24.877736
1058.9476	24.901293
1058.5885	25.060074
1057.9081	25.099408
1057.4466	24.926101
1056.8142	24.637656
1056.2138	24.268648
1055.5954	17.961444
1054.8951	17.826481
1054.3717	17.720326
1053.8116	16.832521
1053.3103	16.846654
1052.7677	17.013703
1052.2858	17.310752
1051.7965	17.459935
1051.2781	17.391929
1050.6062	17.371091
1050.1583	17.107514
1049.6192	17.205273
1049.0652	18.066183
1048.5707	19.259421
1048.0299	19.805285
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137.44105	1.2617103
137.33087	1.2369991
137.22891	1.2082236
137.1104	1.1448339
136.95032	1.0725491
136.73633	1.063745
136.63266	1.0221036
136.50299	4.4170127
136.3451	0.95948925
136.18954	0.94141572
136.00625	0.9346616
135.85069	0.94410717
135.66933	0.96153632
135.48788	0.99168959
135.38106	1.0111207
135.22256	1.0187443
135.09361	1.0831088
134.96414	1.2079507
134.80868	1.2207356
134.64517	1.2919833

134.46247	1.4192585
133.91697	1.6231354
132.73684	1.7232523
131.96139	1.6916419
130.83309	1.8342976
130.51005	1.9023706
130.14252	4.961908
129.88556	2.0261578
128.36582	2.6162529
128.09493	2.528112
127.85463	2.494432
127.60923	2.5149658
127.41689	2.4824443
127.16343	2.6624768
126.91352	3.065696
126.57102	2.8771926
126.20407	2.8392773
126.1044	3.8318382
125.81967	3.9197188
125.47512	3.7505496
124.88119	1.0412042
124.59869	1.0494153
124.27237	1.0534038
123.84807	1.4293537
123.63619	1.5453094
123.38693	1.7912909
123.15204	2.0690879
122.94672	2.384515
122.67997	2.4775695
122.42578	2.5636692
122.17966	2.6316812
121.90483	2.6081169
121.56949	2.5315462
121.31643	2.3319698
121.04213	2.1348197
120.71768	1.9341202
120.3833	1.8167698
120.15042	1.6806451
119.86132	1.5614171
119.64178	1.4584154
119.40626	1.3427462
119.19169	1.1856647
119.00717	1.0716864
118.83018	0.87155632
118.35569	0.85625748
118.0785	0.94830988
117.86248	1.0299604

117.55876	1.0863473
117.28374	1.1037242
116.97438	1.1630373
116.68704	1.1797507
116.37977	1.5573961
116.09441	1.5190527
115.90467	1.4995313
115.62078	1.50002
115.43216	1.8043235
114.94267	1.7356308
114.67682	1.3881268
114.46315	1.3557966
114.27618	1.3854884
114.05163	1.3188865
113.78862	1.2949252
113.60319	1.2558389
113.35156	1.2688029
113.18139	0.96938047
112.92119	0.98362507
112.6715	0.98650153
112.46295	0.99875434
112.29475	1.0112428
112.07543	1.0226384
111.90803	1.0439099
111.65167	1.0550664
111.4709	1.0878534
111.20039	1.1055211
110.89442	1.1053326
110.60513	1.0901168
110.30126	1.0671307
110.0343	0.97584557
109.71445	0.95528496
109.34016	1.0743762
108.96764	1.1981422
108.68303	1.2589313
108.37118	1.3791116
108.17679	1.4347042
107.86694	1.4907884
107.63744	1.5572538
107.44577	1.6273159
107.21349	1.6293921
106.98195	1.6624141
106.88681	1.6652063
106.7755	1.6590647
106.64964	1.640417
106.57151	1.6440623
106.49857	1.6495058

106.38187	1.6057997
106.28107	1.5521359
106.19503	1.5390434
106.05056	1.4992623
105.90354	1.4950913
105.75936	1.4086808
105.61629	1.4113584
105.52122	1.4179924
105.40154	1.3939148
105.24786	1.4359427
105.13373	1.4008921
104.97228	1.4254609
104.77884	1.4314967
104.65178	1.3823318
104.47517	1.2650778
104.25246	1.2679775
104.07634	1.3386976
103.909	1.2935193
103.69866	1.2355064
103.44394	1.2373982
103.20947	1.2263054
102.89086	1.2142065
102.6755	1.3206485
102.39715	1.2677366
102.12101	1.3515725
101.85295	1.3287221
101.55775	1.3101486
101.28454	1.3001321
101.02342	1.3785705
100.74495	1.3873415
100.5216	1.3587473
100.28821	1.344957
100.04937	1.3908498
99.824783	1.445442
99.601827	1.403956
99.367858	1.3786708
99.187228	1.3558464
99.020059	1.373084
98.8142	1.3639549
98.660445	1.3310226
98.509494	1.3158116
98.368329	1.2514253
98.208487	1.2375829
98.059393	1.218084
97.880777	1.1638928
97.702997	1.1071175
97.491446	1.2474951

97.232741	1.4158013
97.015665	1.6377176
96.799266	1.7424218
96.613827	1.7611645
96.347834	1.8136079
96.10708	1.8804218
95.84535	1.9180819
95.605668	1.9440956
95.403886	1.9336389
95.22137	1.9060203
95.053706	1.8939826
94.871118	1.8017223
94.665677	1.6578984
94.477233	1.4942219
94.247371	1.3557426
93.940863	1.1821487
93.693571	0.9075023
93.397424	0.78791183
93.194162	0.77726089
92.961339	0.78585291
92.806832	0.78523424
92.586755	0.77978664
92.307913	0.74160235
92.038156	0.74040645
91.782571	0.77829177
91.493527	0.84291407
91.249627	0.93469226
91.021047	0.98963625
90.788245	1.0199604
90.575253	1.0563667
90.366966	1.0382387
90.169847	1.0361126
90.001658	1.0262322
89.968108	0.97570342
89.807365	0.97556557
89.639252	0.95749117
89.471798	0.9494693
89.272224	0.93261669
89.088082	0.96040542
88.884552	0.94231858
88.457222	0.97231077
88.251468	0.94536833
88.031755	0.921528
87.813196	0.89671936
87.650184	0.86593275
87.43976	0.857595
87.230168	0.84992872

87.033787	0.83464327
86.838093	0.8128145
86.543903	0.82866838
86.134118	0.89928832
85.74645	0.8455719
85.348019	0.86267883
85.022179	0.89537259
84.556818	0.90547218
84.128709	0.93388664
83.947665	0.88733648
83.801988	0.90776554
83.656334	0.91190017
83.538792	0.90293518
83.407448	0.89796272
83.250537	0.89047488
83.105461	0.8852915
82.946572	0.87347664
82.815733	0.82131986
82.657072	0.79680789
82.495857	0.79943012
82.351586	0.78800279
82.17699	0.78005267
82.019005	0.78638742
81.854804	0.80032157
81.704189	0.77928866
81.540675	0.78024615
81.408271	0.78377278
81.222499	0.85401387
80.94507	0.86464415
80.527806	0.86981053
80.20446	0.94064876
79.853185	0.99501376
79.435764	1.0157496
79.090869	1.0389954
78.756544	1.0036103
78.463875	1.0729238
78.302373	1.0406846
78.027311	1.0045419
77.581017	0.98247805
77.062547	0.9634865
76.745531	0.8794266
76.350465	0.85307754
75.986616	0.88867857
75.481759	0.93469043
75.130366	1.0692292
74.728889	1.132787
74.380231	1.2833807

74.006896	1.3709957
73.635149	1.4740526
73.264938	1.5629957
72.958024	1.6344834
72.665195	1.6922292
72.387771	1.7140074
72.092678	1.7594125
71.703225	1.9116672
71.28843	1.9065007
70.975436	1.7621155
70.54705	1.5830534
70.15629	1.3171485
69.894967	1.1858565
69.414361	1.1655491
68.850671	1.2041862
68.244698	1.3635908
67.70055	1.4184729
67.17266	1.2545162
66.755594	1.147837
66.340247	1.0793861
65.997081	1.101446
65.564501	1.0831564
65.066675	1.1446021
64.610986	1.1294499
64.163301	1.1427705
63.618315	1.18749
62.973663	1.2223561
62.35255	1.1213249
61.846055	1.0696831
61.403551	1.134861
61.045784	1.1921824
60.597292	1.2203506
60.382189	1.2599302
60.183032	1.2077765
59.920537	1.2528228
59.606175	1.2286949
59.383573	1.2114601
59.008429	1.1826611
58.712953	1.1571772
58.416025	1.1603265
58.199717	1.1834455
58.008837	1.202146
57.78094	1.1914851
57.568182	1.2046884
57.321519	1.2177326
57.102886	1.2643045
56.792142	1.2352379

56.4472	1.1846826
56.234632	1.082038
55.776649	1.026397
55.195274	1.1897384
54.526911	1.2806367
54.04843	1.4818687
53.694432	1.7304018
53.332258	1.949711
52.912115	2.1545593
52.488535	2.5537311
52.070553	2.7023896
51.693107	2.7886797
51.240192	2.5960753
50.812469	2.2596681
50.427936	1.8343115
49.882405	1.5750142
49.412797	1.2644079
48.828018	1.1857827
48.374348	1.2339473
47.833238	1.3310325
47.435866	1.3801608
46.968019	1.4848504
46.349293	1.4876351
45.955217	1.4984957
45.372277	1.4771591
44.892367	1.4601054
44.347976	1.348957
43.869961	1.3181389
43.255185	1.3586342
42.874817	1.3388752
42.482145	1.3219423
42.121513	1.2729466
41.787696	1.2097859
41.244616	1.2069242
40.795792	1.1654137
40.156653	0.98495946
39.383601	0.97590382
38.718723	0.94736926
38.294206	1.0248148
37.906523	1.0554428
37.3585	1.1069316
36.923388	1.1356882
36.40701	1.1691972
35.906937	1.1861231
35.541464	1.1974346
35.215817	1.2043476
34.745151	1.1716812

34.400482	1.0989829
34.156972	1.0366512
33.92161	1.0308582
33.723193	0.96851522
33.355121	0.99497506
32.970574	0.92015225
32.43904	0.91827398
31.97441	0.96824516
31.349738	1.0630943
30.899932	1.1948341
30.394733	1.2773835
29.920221	1.338416
29.686233	1.5010217
29.256238	1.5392707
28.851379	1.4814885
28.418709	1.3637404
28.006044	1.3409356
27.518318	1.2391452
27.104488	1.1544201
26.574486	1.1312694
26.111504	1.1240479
25.67718	1.0696017
25.282412	1.0821763
24.93728	1.0590437
24.568731	1.0589043
24.096772	1.0661295
23.912596	1.0726602
23.571769	1.088119
23.233751	1.0972906
22.942019	1.0713703
22.587446	1.0317437
22.355245	1.0746507
22.014751	1.0135813
21.763081	1.0244576
21.507769	1.0159526
21.104356	0.98798949
20.754154	1.017158
20.485196	1.0048641
20.25807	0.99800561
19.904867	1.0235799
19.602357	1.0461496
19.367916	1.0102744
19.126203	1.0225099
18.932939	1.0601414
18.640137	1.0802182
18.438351	1.0237037
18.284193	1.0336957

18.083194	1.0419393
17.835151	1.0554303
17.56178	1.0345446
17.368304	1.1058873
17.216167	1.0717691
16.863809	1.0611493
16.526795	1.0560867
16.11071	1.1124881
15.772166	1.0583794
15.38199	1.0805275
14.937164	1.0739599
14.535702	1.0732525
14.137377	1.0502928
13.79522	1.0098215
13.468754	0.99845779
13.058618	0.97652202
12.562504	0.96031865
11.963627	0.95642606
11.387968	0.90299907
10.749096	0.84346234
9.8415446	0.8686878
8.9653858	0.99972116
8.016064	1.0112139
7.1189304	1.0311854
6.2845538	1.0653611
5.524057	1.0474458
4.677805	1.0962305
3.6734927	1.1931226
2.8588731	1.1299409
2.0956523	1.0728622
1.5625274	1.0686431
1.1944471	1.043212
0.69061944	1.0855349
0.29080263	1.1477301
0	1.2164209

TABLE DR2. BOREHOLE DATA

Longitude	Latitude	Channel Belt Thickness (m)	Channel Belt Kilometer (km)	Facies
29.3478	-89.5077	32.35262745	36407.0097	Bank-attached Bar
29.35166	-89.5152	21.19654902	37358.50033	Bank-attached Bar
29.35705	-89.5252	22.4980915	38294.20612	Bank-attached Bar
29.35827	-89.5296	22.4980915	38718.72314	Bank-attached Bar
29.35939	-89.5331	23.24183007	39383.60081	Bank-attached Bar
29.40841	-89.61	31.79482353	48374.34839	Bank-attached Bar
29.42455	-89.6102	38.67440523	49882.405	Bank-attached Bar
29.42907	-89.6091	29.00580392	50427.93621	Bank-attached Bar
29.43211	-89.6076	41.09155556	50812.46856	Bank-attached Bar
29.45277	-89.6223	32.91043137	53332.25846	Bank-attached Bar
29.52975	-89.7269	30.09207273	67172.65985	Bank-attached Bar
29.53061	-89.7308	32.08712727	67700.5497	Bank-attached Bar
29.53327	-89.737	33.25090909	68244.69817	Bank-attached Bar
29.53762	-89.7454	27.76450909	69414.36052	Bank-attached Bar
29.56327	-89.7885	25.71277192	74380.23109	Bank-attached Bar
29.58343	-89.8223	33.18904524	78463.87481	Bank-attached Bar
29.58792	-89.8298	36.38941745	79090.8689	Bank-attached Bar
29.59813	-89.8466	27.38096232	81408.27129	Bank-attached Bar
29.6004	-89.8539	29.39601149	82176.99027	Bank-attached Bar
29.62253	-89.9141	20.15972225	88457.22151	Bank-attached Bar
29.65727	-89.9618	32.95198063	94665.67714	Bank-attached Bar
29.6641	-89.9625	34.37436828	95221.36984	Bank-attached Bar
29.67221	-89.9634	31.52959297	96107.08007	Bank-attached Bar
29.67638	-89.9672	26.31417158	96799.26628	Bank-attached Bar
29.67891	-89.9668	21.33581479	97015.66539	Bank-attached Bar
29.70961	-89.9882	27.49949462	101023.4211	Bank-attached Bar
29.72278	-89.9943	27.26243001	102675.4997	Bank-attached Bar
29.72442	-89.9955	26.31417158	102890.8609	Bank-attached Bar
29.74738	-90.0084	24.80107048	105521.2223	Bank-attached Bar
29.91749	-89.9286	27.42267546	133592.1317	Bank-attached Bar
29.91336	-90.0987	23.68791104	153759.2523	Bank-attached Bar
29.94342	-90.3741	32.95077686	184690.4614	Bank-attached Bar
29.94516	-90.373	33.06845821	184690.4614	Bank-attached Bar
29.94635	-90.3723	32.95077686	184690.4614	Bank-attached Bar
29.94826	-90.3716	31.65628206	184690.4614	Bank-attached Bar
29.9491	-90.3712	25.88989611	184690.4614	Bank-attached Bar
30.05632	-90.4915	28.02650155	204713.3874	Bank-attached Bar
30.05605	-90.5012	25.30878019	205576.1036	Bank-attached Bar
30.04541	-90.5819	36.04332791	213841.8312	Bank-attached Bar
30.57994	-91.325	20.69269348	335603.3099	Oxbow Lake Deposit
30.58437	-91.3218	29.88944614	336418.6275	Oxbow Lake Deposit
30.59563	-91.3229	25.061151	337087.0491	Oxbow Lake Deposit
30.64662	-91.3039	15.18151606	340880.5893	Oxbow Lake Deposit
30.64855	-91.3083	16.05737276	340880.5893	Oxbow Lake Deposit
30.62947	-91.3627	15.63447952	342721.1495	Oxbow Lake Deposit
30.62754	-91.3611	26.4406639	342721.1495	Oxbow Lake Deposit

30.657	-91.3348	31.38486494	343549.9984 Oxbow Lake Deposit
30.68198	-91.3962	21.60446517	348136.1574 Oxbow Lake Deposit
30.68842	-91.405	25.98374865	349271.6024 Oxbow Lake Deposit
30.91727	-91.6487	18.83934771	389632.6626 Oxbow Lake Deposit
31.01265	-91.727	24.93023855	398067.1753 Oxbow Lake Deposit
31.06375	-91.6335	32.06664438	404387.5787 Oxbow Lake Deposit
31.06392	-91.6365	35.21280571	404387.5787 Oxbow Lake Deposit
31.0643	-91.6174	27.29622395	405480.9481 Oxbow Lake Deposit
31.15187	-91.601	15.20567742	417292.5437 Oxbow Lake Deposit
31.17691	-91.5882	22.27808552	419770.3833 Oxbow Lake Deposit
31.6966	-91.4091	16.4861495	481080.1782 Oxbow Lake Deposit
31.69937	-91.4093	22.09483954	481080.1782 Oxbow Lake Deposit
31.70236	-91.41	22.43476015	481080.1782 Oxbow Lake Deposit
31.70519	-91.4105	21.58495863	482175.6425 Oxbow Lake Deposit
31.70796	-91.4108	18.35571285	482175.6425 Oxbow Lake Deposit
31.71065	-91.41	24.4742838	482175.6425 Oxbow Lake Deposit
31.81953	-91.3656	19.94844355	494710.1294 Oxbow Lake Deposit
31.82119	-91.3645	24.98397299	494710.1294 Oxbow Lake Deposit
31.82297	-91.3631	19.75476934	495615.1064 Oxbow Lake Deposit
31.90801	-91.1936	18.70819623	512501.3515 Oxbow Lake Deposit
31.98431	-91.1737	19.90233641	520008.1543 Oxbow Lake Deposit
31.98305	-91.1756	22.09159342	520008.1543 Oxbow Lake Deposit
31.98614	-91.1727	17.91210277	520008.1543 Oxbow Lake Deposit
31.9877	-91.1716	18.70819623	520008.1543 Oxbow Lake Deposit
32.00788	-91.0685	26.91825208	526242.4565 Oxbow Lake Deposit
32.03576	-91.0635	18.80826588	530228.7386 Oxbow Lake Deposit
32.03689	-91.063	15.87486661	530228.7386 Oxbow Lake Deposit
32.03811	-91.0627	29.16143976	530228.7386 Oxbow Lake Deposit
32.11825	-91.0268	25.5378289	541894.3259 Oxbow Lake Deposit
32.18636	-91.0039	21.39655935	548867.2549 Oxbow Lake Deposit
32.42795	-90.9179	23.45967797	577593.9011 Oxbow Lake Deposit
32.54669	-90.974	15.28756115	591776.1998 Oxbow Lake Deposit
32.55025	-90.9704	15.55113979	591776.1998 Oxbow Lake Deposit
32.54474	-90.9775	16.47366504	591776.1998 Oxbow Lake Deposit
32.54213	-90.986	18.8458728	591776.1998 Oxbow Lake Deposit
32.54186	-90.9827	20.42734464	591776.1998 Oxbow Lake Deposit
32.5536	-90.968	17.00082232	593349.8062 Oxbow Lake Deposit
32.56077	-90.964	16.73724368	593349.8062 Oxbow Lake Deposit
32.55733	-90.9658	17.39619028	593349.8062 Oxbow Lake Deposit
32.56415	-90.9629	16.60545436	594680.3497 Oxbow Lake Deposit
32.5724	-90.9657	17.26440096	596011.9532 Oxbow Lake Deposit
32.57669	-90.9659	19.24124076	596011.9532 Oxbow Lake Deposit
32.57932	-90.9678	22.00881649	596011.9532 Oxbow Lake Deposit
32.58195	-90.97	23.32670969	596011.9532 Oxbow Lake Deposit
32.58627	-90.9762	20.69092328	596011.9532 Oxbow Lake Deposit
32.58437	-90.9729	22.27239513	596011.9532 Oxbow Lake Deposit
32.58919	-90.9795	21.61344853	597399.2425 Oxbow Lake Deposit

32.59208	-90.9825	22.27239513	597399.2425 Oxbow Lake Deposit
32.59425	-90.986	24.90818153	598701.4157 Oxbow Lake Deposit
32.61676	-90.9708	18.31871552	600840.8551 Oxbow Lake Deposit
32.62157	-90.9681	23.32670969	600840.8551 Oxbow Lake Deposit
32.64762	-90.9639	18.1869262	603527.9055 Oxbow Lake Deposit
32.64069	-90.9678	25.56712814	603527.9055 Oxbow Lake Deposit
32.64392	-90.9652	29.52080774	603527.9055 Oxbow Lake Deposit
32.6579	-90.958	23.45849901	604507.4615 Oxbow Lake Deposit
32.66529	-90.9578	16.21008639	605716.263 Oxbow Lake Deposit
32.66801	-90.9567	22.53597377	605716.263 Oxbow Lake Deposit
32.6706	-90.9564	30.04796502	605716.263 Oxbow Lake Deposit
32.676	-90.9589	20.55913396	606519.751 Oxbow Lake Deposit
32.6783	-90.961	22.79955241	606519.751 Oxbow Lake Deposit
32.68222	-90.9644	21.34986989	607336.9072 Oxbow Lake Deposit
32.68067	-90.9626	29.38901842	607336.9072 Oxbow Lake Deposit
32.73653	-91.1547	22.78414448	618184.9094 Oxbow Lake Deposit
32.83128	-91.093	20.92139761	628624.6866 Oxbow Lake Deposit
33.02028	-91.1964	20.19495385	648705.9325 Oxbow Lake Deposit
33.04352	-91.0055	21.25784615	651303.0864 Oxbow Lake Deposit
33.07914	-91.1735	29.72821448	656387.6963 Oxbow Lake Deposit
33.07691	-91.1726	33.47897051	656387.6963 Oxbow Lake Deposit
33.08167	-91.1747	25.56070777	656387.6963 Oxbow Lake Deposit
33.08381	-91.1747	22.3656193	656387.6963 Oxbow Lake Deposit
33.12749	-91.042	15.86769499	661294.9088 Oxbow Lake Deposit
33.1356	-91.0307	18.1897967	661294.9088 Oxbow Lake Deposit
33.22488	-91.0051	23.79956573	668779.681 Oxbow Lake Deposit
33.30081	-91.0835	21.45318842	679943.0799 Oxbow Lake Deposit
33.4845	-91.0436	18.89258745	704045.8473 Oxbow Lake Deposit
33.49445	-91.0724	16.48076777	704412.1611 Oxbow Lake Deposit
33.55365	-91.0484	17.66161379	710612.268 Oxbow Lake Deposit
33.72358	-91.153	16.11973235	728962.5707 Oxbow Lake Deposit
33.72622	-91.1524	16.46639326	728962.5707 Oxbow Lake Deposit
33.7292	-91.1521	15.59974098	729437.25 Oxbow Lake Deposit
33.80142	-91.0111	15.47532316	741008.952 Oxbow Lake Deposit
33.80302	-91.0099	19.66655651	742349.9668 Oxbow Lake Deposit
33.80413	-91.0088	15.79772572	742349.9668 Oxbow Lake Deposit
33.83108	-91.0205	16.60373214	744324.3404 Oxbow Lake Deposit
33.82945	-91.0187	20.47256293	744324.3404 Oxbow Lake Deposit
33.83448	-91.0257	16.76493342	744324.3404 Oxbow Lake Deposit
33.83996	-91.0314	25.14740013	744855.4792 Oxbow Lake Deposit
33.8383	-91.0294	25.4698027	744855.4792 Oxbow Lake Deposit
33.84243	-91.0316	25.4698027	744855.4792 Oxbow Lake Deposit
33.8569	-91.0309	18.21574497	747115.576 Oxbow Lake Deposit
33.87037	-91.0334	16.76493342	747979.6226 Oxbow Lake Deposit
33.87293	-91.0339	16.76493342	747979.6226 Oxbow Lake Deposit
33.87575	-91.0342	18.21574497	748473.4466 Oxbow Lake Deposit
33.87845	-91.0349	15.79772572	748473.4466 Oxbow Lake Deposit

33.88095	-91.0358	22.89058217	749040.3203 Oxbow Lake Deposit
33.88381	-91.0365	25.4698027	749040.3203 Oxbow Lake Deposit
33.88601	-91.0369	21.27856934	749388.1125 Oxbow Lake Deposit
33.88913	-91.0317	24.18019243	749792.0043 Oxbow Lake Deposit
33.88759	-91.0342	25.4698027	749792.0043 Oxbow Lake Deposit
33.89078	-91.0292	16.44253085	750311.6997 Oxbow Lake Deposit
33.90191	-91.0156	20.31136164	751884.6169 Oxbow Lake Deposit
33.91873	-91.0036	18.8605501	754076.7286 Oxbow Lake Deposit
33.92097	-91.0023	16.12012829	754475.0179 Oxbow Lake Deposit
33.92568	-90.9994	26.11460783	755034.624 Oxbow Lake Deposit
33.97408	-90.9523	18.7416667	761914.8047 Oxbow Lake Deposit
34.01673	-90.9967	18.85375644	763618.7195 Oxbow Lake Deposit
34.02075	-90.9884	15.39537508	764081.1218 Oxbow Lake Deposit
34.01999	-90.9907	17.84971024	764081.1218 Oxbow Lake Deposit
33.9762	-90.9063	16.39696335	764394.1905 Oxbow Lake Deposit
33.96943	-90.8964	16.62396425	764394.1905 Oxbow Lake Deposit
33.98215	-90.9054	20.81219469	764944.155 Oxbow Lake Deposit
34.00398	-90.9428	27.40249941	765351.3309 Oxbow Lake Deposit
34.00618	-90.9409	15.18692738	765351.3309 Oxbow Lake Deposit
34.02786	-90.9645	17.73814955	765979.7111 Oxbow Lake Deposit
33.97355	-90.8127	18.08529349	768907.6545 Oxbow Lake Deposit
33.97627	-90.8079	15.35334278	769472.5808 Oxbow Lake Deposit
33.97398	-90.7926	15.56511303	769472.5808 Oxbow Lake Deposit
34.03222	-90.7896	24.76647296	774066.3757 Oxbow Lake Deposit
34.05708	-90.8624	19.47888512	774066.3757 Oxbow Lake Deposit
34.05939	-90.8629	19.03868433	774066.3757 Oxbow Lake Deposit
34.06686	-90.8672	18.04823254	774739.6963 Oxbow Lake Deposit
34.07865	-90.8637	19.36883492	776402.9887 Oxbow Lake Deposit
34.12024	-90.878	17.08493717	779149.2279 Oxbow Lake Deposit
34.08868	-90.7674	25.4555727	781366.2299 Oxbow Lake Deposit
34.1705	-90.9109	25.4555727	782605.1803 Oxbow Lake Deposit
34.34446	-90.7746	16.54542672	805063.0543 Oxbow Lake Deposit
34.34824	-90.7756	21.84368134	805063.0543 Oxbow Lake Deposit
34.37142	-90.7763	28.72211717	806897.5166 Oxbow Lake Deposit
34.37428	-90.7762	16.63837855	806897.5166 Oxbow Lake Deposit
34.44202	-90.4796	17.54662899	829708.5977 Oxbow Lake Deposit
34.48784	-90.439	28.81153538	833650.3342 Oxbow Lake Deposit
34.59147	-90.5784	17.42155871	841788.2013 Oxbow Lake Deposit
34.59454	-90.5801	21.96097893	841788.2013 Oxbow Lake Deposit
34.5961	-90.5816	22.81978817	841788.2013 Oxbow Lake Deposit
34.59868	-90.584	18.15768091	841788.2013 Oxbow Lake Deposit
34.59752	-90.583	22.9424752	841788.2013 Oxbow Lake Deposit
34.59972	-90.5846	18.40305497	841788.2013 Oxbow Lake Deposit
34.60389	-90.5869	18.52574201	841788.2013 Oxbow Lake Deposit
34.63626	-90.5904	17.05349761	846002.4574 Oxbow Lake Deposit
34.64826	-90.5886	18.40305497	847543.9119 Oxbow Lake Deposit
34.65247	-90.5907	23.55591036	847543.9119 Oxbow Lake Deposit

34.66555	-90.6288	16.2736771	848495.8748 Oxbow Lake Deposit
34.68323	-90.5857	18.96354109	851603.5079 Oxbow Lake Deposit
34.71324	-90.6087	21.34754377	853507.0868 Oxbow Lake Deposit
34.71465	-90.6116	22.206353	853507.0868 Oxbow Lake Deposit
34.72372	-90.5702	24.88124185	854392.6843 Oxbow Lake Deposit
34.7264	-90.5703	23.67080306	855278.201 Oxbow Lake Deposit
34.72998	-90.5701	17.2151295	856342.3322 Oxbow Lake Deposit
34.95387	-90.2303	20.95922798	891307.1358 Oxbow Lake Deposit
35.04763	-90.2263	17.14224921	900501.2103 Oxbow Lake Deposit
35.10326	-90.1831	16.28513675	907270.5299 Oxbow Lake Deposit
35.20719	-90.1117	15.55046893	923657.4047 Oxbow Lake Deposit
35.34508	-90.1422	17.68584724	939586.1687 Oxbow Lake Deposit
35.37829	-90.1379	29.64980273	943050.1752 Oxbow Lake Deposit
35.40492	-90.2202	15.48454659	944899.7745 Oxbow Lake Deposit
35.42697	-90.1313	19.76653515	948864.4992 Oxbow Lake Deposit
35.4301	-90.1309	24.79486427	949121.0259 Oxbow Lake Deposit
35.3923	-90.0406	16.37446306	949782.9376 Oxbow Lake Deposit
35.39173	-90.042	17.08639624	949782.9376 Oxbow Lake Deposit
35.54269	-89.9137	16.58350069	971841.8225 Oxbow Lake Deposit
35.54551	-89.9138	21.68611629	971841.8225 Oxbow Lake Deposit
35.60955	-89.9339	17.20937698	976126.5479 Oxbow Lake Deposit
35.64147	-89.9284	26.24202307	979580.3575 Oxbow Lake Deposit
35.70759	-89.9614	20.22822612	983531.8475 Oxbow Lake Deposit
35.7373	-89.9573	20.41046239	986550.4919 Oxbow Lake Deposit
35.7995	-89.728	19.55642289	1004384.922 Oxbow Lake Deposit
35.87611	-89.6563	17.1568618	1011188.67 Oxbow Lake Deposit
35.87763	-89.6531	15.59714709	1011188.67 Oxbow Lake Deposit
35.87989	-89.6497	20.39626927	1012702.811 Oxbow Lake Deposit
36.05153	-89.6406	18.82164641	1031828.473 Oxbow Lake Deposit
36.11834	-89.5705	18.03082093	1043513.806 Oxbow Lake Deposit
36.11976	-89.5699	19.2961417	1043513.806 Oxbow Lake Deposit
36.13331	-89.5637	15.65834449	1044079.542 Oxbow Lake Deposit
36.13593	-89.5628	16.76550016	1044079.542 Oxbow Lake Deposit
36.27487	-89.5259	15.76226967	1060804.186 Oxbow Lake Deposit
36.27586	-89.5259	22.45272946	1060804.186 Oxbow Lake Deposit
36.27735	-89.5258	22.33933184	1060804.186 Oxbow Lake Deposit
36.52915	-89.2533	18.91043541	1099252.574 Oxbow Lake Deposit
36.57241	-89.2758	22.98915678	1100810.317 Oxbow Lake Deposit
36.60853	-89.3203	17.98345329	1101685.043 Oxbow Lake Deposit
36.61033	-89.2079	18.45886326	1108106.741 Oxbow Lake Deposit
36.86754	-89.1518	18.64492124	1135796.89 Oxbow Lake Deposit
36.95946	-89.125	18.42003106	1144767.478 Oxbow Lake Deposit
36.95208	-89.1723	18.58748589	1145669.988 Oxbow Lake Deposit
34.06442	-90.8658	11.00501984	774739.6963 Oxbow Lake Deposit
34.06917	-90.8696	14.63667639	774739.6963 Oxbow Lake Deposit
34.06686	-90.8672	18.04823254	774739.6963 Oxbow Lake Deposit
34.10115	-90.9376	13.81869918	775718.1415 Oxbow Lake Deposit

34.07865	-90.8637	19.36883492	776402.9887 Oxbow Lake Deposit
34.10372	-90.8818	12.21557203	777751.324 Oxbow Lake Deposit
34.10709	-90.8819	11.66532103	778314.815 Oxbow Lake Deposit
34.11003	-90.8818	5.502509921	778765.1546 Oxbow Lake Deposit
34.11276	-90.8814	10.12461826	778765.1546 Oxbow Lake Deposit
34.1178	-90.8796	7.923614287	779149.2279 Oxbow Lake Deposit
34.12019	-90.8783	10.89496964	779149.2279 Oxbow Lake Deposit
34.12024	-90.878	17.08493717	779149.2279 Oxbow Lake Deposit
34.11533	-90.881	7.813564088	779149.2279 Oxbow Lake Deposit
34.14829	-90.8142	13.94432372	784648.9278 Oxbow Lake Deposit
34.14565	-90.8188	14.44682187	784648.9278 Oxbow Lake Deposit
34.34116	-90.7732	13.01325697	804410.2589 Oxbow Lake Deposit
34.34824	-90.7756	21.84368134	805063.0543 Oxbow Lake Deposit
34.37142	-90.7763	28.72211717	806897.5166 Oxbow Lake Deposit
34.37632	-90.7762	13.94277532	806897.5166 Oxbow Lake Deposit
34.37428	-90.7762	16.63837855	806897.5166 Oxbow Lake Deposit
34.44202	-90.4796	17.54662899	829708.5977 Oxbow Lake Deposit
34.48784	-90.439	28.81153538	833650.3342 Oxbow Lake Deposit
34.58892	-90.577	11.65526815	841788.2013 Oxbow Lake Deposit
34.59147	-90.5784	17.42155871	841788.2013 Oxbow Lake Deposit
34.59454	-90.5801	21.96097893	841788.2013 Oxbow Lake Deposit
34.5961	-90.5816	22.81978817	841788.2013 Oxbow Lake Deposit
34.59868	-90.584	18.15768091	841788.2013 Oxbow Lake Deposit
34.59752	-90.583	22.9424752	841788.2013 Oxbow Lake Deposit
34.59972	-90.5846	18.40305497	841788.2013 Oxbow Lake Deposit
34.60163	-90.5859	12.63676441	841788.2013 Oxbow Lake Deposit
34.60389	-90.5869	18.52574201	841788.2013 Oxbow Lake Deposit
34.63365	-90.5909	13.00482551	846002.4574 Oxbow Lake Deposit
34.63626	-90.5904	17.05349761	846002.4574 Oxbow Lake Deposit
34.63939	-90.5899	14.96781804	846002.4574 Oxbow Lake Deposit
34.64826	-90.5886	18.40305497	847543.9119 Oxbow Lake Deposit
34.6504	-90.5892	13.86363475	847543.9119 Oxbow Lake Deposit
34.65247	-90.5907	23.55591036	847543.9119 Oxbow Lake Deposit
34.66555	-90.6288	16.2736771	848495.8748 Oxbow Lake Deposit
34.68181	-90.5865	11.02844234	849677.0178 Oxbow Lake Deposit
34.68323	-90.5857	18.96354109	851603.5079 Oxbow Lake Deposit
34.64514	-90.357	13.13002197	852555.2625 Oxbow Lake Deposit
34.7114	-90.6065	9.814962652	853507.0868 Oxbow Lake Deposit
34.71324	-90.6087	21.34754377	853507.0868 Oxbow Lake Deposit
34.71465	-90.6116	22.206353	853507.0868 Oxbow Lake Deposit
34.72096	-90.5713	13.04584032	854392.6843 Oxbow Lake Deposit
34.72372	-90.5702	24.88124185	854392.6843 Oxbow Lake Deposit
34.7264	-90.5703	23.67080306	855278.201 Oxbow Lake Deposit
34.72998	-90.5701	17.2151295	856342.3322 Oxbow Lake Deposit
34.82352	-90.3589	10.27004177	871854.0662 Oxbow Lake Deposit
34.83072	-90.3628	5.231908071	873107.6836 Oxbow Lake Deposit
34.90065	-90.4437	9.505216591	876318.5647 Oxbow Lake Deposit

34.97697	-90.3	4.844359325	890107.0838 Oxbow Lake Deposit
34.97572	-90.2984	9.688718651	890107.0838 Oxbow Lake Deposit
34.95387	-90.2303	20.95922798	891307.1358 Oxbow Lake Deposit
35.04279	-90.2392	4.530451578	899056.8683 Oxbow Lake Deposit
35.04393	-90.236	7.958901421	899884.4747 Oxbow Lake Deposit
35.04563	-90.2295	7.224233598	899884.4747 Oxbow Lake Deposit
35.04763	-90.2263	17.14224921	900501.2103 Oxbow Lake Deposit
35.10326	-90.1831	16.28513675	907270.5299 Oxbow Lake Deposit
35.14812	-90.1783	3.731543018	910363.9787 Oxbow Lake Deposit
35.19243	-90.1225	9.79557098	922015.563 Oxbow Lake Deposit
35.31267	-90.1515	5.895282414	936188.7596 Oxbow Lake Deposit
35.33776	-90.1414	8.322751643	938915.8036 Oxbow Lake Deposit
35.37829	-90.1379	29.64980273	943050.1752 Oxbow Lake Deposit
35.40492	-90.2202	15.48454659	944899.7745 Oxbow Lake Deposit
35.42697	-90.1313	19.76653515	948864.4992 Oxbow Lake Deposit
35.4301	-90.1309	24.79486427	949121.0259 Oxbow Lake Deposit
35.43291	-90.1304	6.068673073	949436.6896 Oxbow Lake Deposit
35.3923	-90.0406	16.37446306	949782.9376 Oxbow Lake Deposit
35.39173	-90.042	17.08639624	949782.9376 Oxbow Lake Deposit
35.39854	-90.0212	13.52673036	950740.9353 Oxbow Lake Deposit
35.45431	-90.1259	9.709876917	951575.5149 Oxbow Lake Deposit
35.45794	-90.1249	10.40343955	951976.4434 Oxbow Lake Deposit
35.46532	-90.122	7.802579666	952549.9794 Oxbow Lake Deposit
35.40437	-90.0153	1.957816236	952792.8247 Oxbow Lake Deposit
35.4697	-90.1187	8.496142303	953235.433 Oxbow Lake Deposit
35.54269	-89.9137	16.58350069	971841.8225 Oxbow Lake Deposit
35.54738	-89.916	11.84535764	971841.8225 Oxbow Lake Deposit
35.54551	-89.9138	21.68611629	971841.8225 Oxbow Lake Deposit
35.61107	-89.9318	8.943455754	976126.5479 Oxbow Lake Deposit
35.60955	-89.9339	17.20937698	976126.5479 Oxbow Lake Deposit
35.64147	-89.9284	26.24202307	979580.3575 Oxbow Lake Deposit
35.64401	-89.9259	4.191434241	979884.7872 Oxbow Lake Deposit
35.65803	-89.9394	6.924978311	980294.7206 Oxbow Lake Deposit
35.66288	-89.943	9.47628611	980702.3153 Oxbow Lake Deposit
35.69596	-89.9613	12.75653899	982689.9286 Oxbow Lake Deposit
35.69908	-89.9603	10.2052312	982689.9286 Oxbow Lake Deposit
35.70368	-89.9611	11.48088509	983531.8475 Oxbow Lake Deposit
35.70759	-89.9614	20.22822612	983531.8475 Oxbow Lake Deposit
35.7373	-89.9573	20.41046239	986550.4919 Oxbow Lake Deposit
35.74497	-89.9431	12.39206645	988029.5433 Oxbow Lake Deposit
35.78241	-89.7305	5.039078291	1003252.419 Oxbow Lake Deposit
35.78636	-89.7311	6.718771055	1003252.419 Oxbow Lake Deposit
35.78835	-89.7297	8.638419928	1003252.419 Oxbow Lake Deposit
35.84899	-89.8237	4.952442143	1003602.203 Oxbow Lake Deposit
35.7995	-89.728	19.55642289	1004384.922 Oxbow Lake Deposit
35.80208	-89.7226	11.99780546	1005534.419 Oxbow Lake Deposit
35.80327	-89.7203	5.998902728	1005534.419 Oxbow Lake Deposit

35.80509	-89.7172	4.319209964	1005534.419 Oxbow Lake Deposit
35.86303	-89.8101	4.80678208	1005884.647 Oxbow Lake Deposit
35.87611	-89.6563	17.1568618	1011188.67 Oxbow Lake Deposit
35.87763	-89.6531	15.59714709	1011188.67 Oxbow Lake Deposit
35.87989	-89.6497	20.39626927	1012702.811 Oxbow Lake Deposit
35.8935	-89.6409	12.47771767	1013228.987 Oxbow Lake Deposit
35.8961	-89.6396	9.358288255	1014640.179 Oxbow Lake Deposit
35.89918	-89.6399	14.27738849	1014640.179 Oxbow Lake Deposit
36.01803	-89.7355	8.960082521	1025659.021 Oxbow Lake Deposit
36.05198	-89.7133	8.42247757	1029929.93 Oxbow Lake Deposit
36.06885	-89.6859	2.508823106	1032323.724 Oxbow Lake Deposit
36.07314	-89.6853	9.139284172	1032872.411 Oxbow Lake Deposit
36.07121	-89.6854	10.03529242	1032872.411 Oxbow Lake Deposit
36.07636	-89.6843	13.79852708	1033468.872 Oxbow Lake Deposit
36.08391	-89.6828	13.97772873	1034386.506 Oxbow Lake Deposit
36.08677	-89.6824	10.39369572	1034867.863 Oxbow Lake Deposit
36.08849	-89.6814	9.676889123	1034867.863 Oxbow Lake Deposit
36.07006	-89.627	7.27559441	1034867.863 Oxbow Lake Deposit
36.07202	-89.6249	12.33687748	1035214.4 Oxbow Lake Deposit
36.07406	-89.6232	13.60219825	1035214.4 Oxbow Lake Deposit
36.10114	-89.5798	6.326603835	1040062.937 Oxbow Lake Deposit
36.09971	-89.5806	8.06641989	1040062.937 Oxbow Lake Deposit
36.09748	-89.582	11.3878869	1040062.937 Oxbow Lake Deposit
36.10314	-89.5785	10.12256614	1040062.937 Oxbow Lake Deposit
36.10814	-89.5761	5.061283068	1040062.937 Oxbow Lake Deposit
36.1069	-89.5767	7.27559441	1040062.937 Oxbow Lake Deposit
36.10929	-89.5754	7.908254794	1040062.937 Oxbow Lake Deposit
36.10524	-89.5775	9.331740657	1040062.937 Oxbow Lake Deposit
36.1107	-89.5746	9.173575561	1040062.937 Oxbow Lake Deposit
36.11185	-89.5741	9.173575561	1040530.52 Oxbow Lake Deposit
36.11304	-89.5735	10.12256614	1041718.391 Oxbow Lake Deposit
36.11448	-89.5726	10.28073123	1041718.391 Oxbow Lake Deposit
36.11976	-89.5699	19.2961417	1043513.806 Oxbow Lake Deposit
36.12811	-89.5658	6.010273643	1043513.806 Oxbow Lake Deposit
36.13056	-89.5649	9.806235945	1044079.542 Oxbow Lake Deposit
36.13833	-89.562	11.22972181	1044079.542 Oxbow Lake Deposit
36.17052	-89.5511	7.433759506	1047782.787 Oxbow Lake Deposit
36.17808	-89.5474	5.219448164	1047782.787 Oxbow Lake Deposit
36.30303	-89.6881	10.97985341	1054052.998 Oxbow Lake Deposit
36.30734	-89.6838	6.052996108	1054052.998 Oxbow Lake Deposit
36.30513	-89.686	8.30527373	1054052.998 Oxbow Lake Deposit
36.30984	-89.6822	5.349159351	1055136.425 Oxbow Lake Deposit
36.32578	-89.6412	8.586808432	1059188.986 Oxbow Lake Deposit
36.32368	-89.6438	14.35826984	1059188.986 Oxbow Lake Deposit
36.27487	-89.5259	15.76226967	1060804.186 Oxbow Lake Deposit
36.27586	-89.5259	22.45272946	1060804.186 Oxbow Lake Deposit
36.28305	-89.5256	6.69045979	1060804.186 Oxbow Lake Deposit

36.34094	-89.6187	13.09136368	1062625.813 Oxbow Lake Deposit
36.32961	-89.5301	4.876097813	1065203.809 Oxbow Lake Deposit
36.335	-89.5219	3.968916825	1066038.946 Oxbow Lake Deposit
36.53617	-89.2592	1.297774979	1099252.574 Oxbow Lake Deposit
36.52915	-89.2533	18.91043541	1099252.574 Oxbow Lake Deposit
36.57241	-89.2758	22.98915678	1100810.317 Oxbow Lake Deposit
36.57116	-89.2743	12.23616409	1100810.317 Oxbow Lake Deposit
36.56803	-89.2719	8.528235579	1100810.317 Oxbow Lake Deposit
36.60853	-89.3203	17.98345329	1101685.043 Oxbow Lake Deposit
36.60784	-89.2087	11.97862403	1108106.741 Oxbow Lake Deposit
36.61033	-89.2079	18.45886326	1108106.741 Oxbow Lake Deposit
36.64926	-89.2074	9.425802518	1111508.4 Oxbow Lake Deposit
36.65074	-89.2054	5.891126574	1111908.276 Oxbow Lake Deposit
36.71873	-89.1629	14.13870378	1119508.41 Oxbow Lake Deposit
36.72156	-89.1629	10.40765695	1120120.65 Oxbow Lake Deposit
36.81221	-89.1827	5.925905199	1129441.786 Oxbow Lake Deposit
36.81993	-89.1791	9.394727755	1130328.509 Oxbow Lake Deposit
36.85742	-89.1594	9.394727755	1134566.379 Oxbow Lake Deposit
36.85829	-89.1587	13.87529022	1134566.379 Oxbow Lake Deposit
36.86118	-89.1566	4.769631014	1135111.767 Oxbow Lake Deposit
36.86754	-89.1518	18.64492124	1135796.89 Oxbow Lake Deposit
36.95946	-89.125	18.42003106	1144767.478 Oxbow Lake Deposit
36.95703	-89.1404	3.684006213	1145195.32 Oxbow Lake Deposit
36.95208	-89.1723	18.58748589	1145669.988 Oxbow Lake Deposit
36.93849	-89.2473	5.860918975	1148965.1 Oxbow Lake Deposit