

ANEXOS

Puntos extraídos del HYPACK para la exportación al civil 3d.

Puntos batimetría 2013

ABCISA	ORDENADA	ELEVACIÓN
7609867,825	319148,073	1877,635
7609868,187	319148,264	1877,535
7609868,558	319148,454	1877,635
7609868,954	319148,631	1877,735
7609869,384	319148,803	1877,635
7609869,844	319148,979	1877,635
7609870,309	319149,144	1877,635
7609870,756	319149,294	1877,735
7609871,187	319149,430	1877,535
7609871,604	319149,557	1877,555
7609872,012	319149,679	1877,525
7609872,419	319149,802	1877,525
7609872,827	319149,928	1877,535
7609873,272	319150,033	1877,515
7609873,764	319150,121	1877,525
7609874,229	319150,141	1877,495
7609874,785	319150,164	1877,535
7609875,356	319150,182	1877,535
7609875,989	319150,209	1877,525
7609876,672	319150,287	1877,495
7609877,364	319150,417	1877,495
7609878,052	319150,582	1877,545
7609878,717	319150,773	1877,525
7609879,385	319151,075	1877,525
7609880,105	319151,377	1877,485
7609880,843	319151,851	1877,405
7609881,552	319152,306	1877,465
7609882,250	319152,747	1877,445
7609882,953	319153,147	1877,405
7609883,721	319153,635	1877,395
7609884,614	319154,207	1877,425
7609885,528	319154,824	1877,455
7609885,508	319156,501	1877,465
7609882,216	319160,404	1877,465
7609877,670	319164,816	1877,505
7609873,506	319167,904	1877,495
7609868,695	319169,254	1877,565
7609863,829	319169,729	1877,555
7609858,829	319169,222	1877,535
7609853,768	319168,140	1877,705

ABCISA	ORDENADA	ELEVACIÓN
7609848,665	319166,532	1877,825
7609843,527	319164,743	1878,075
7609838,457	319163,131	1878,485
7609833,432	319161,619	1878,485
7609828,502	319160,222	1878,485
7609825,551	319158,662	1878,485
7609824,846	319156,065	1878,485
7609825,418	319152,581	1878,485
7609826,747	319148,417	1878,485
7609828,404	319144,293	1878,485
7609830,396	319140,164	1878,485
7609832,635	319135,946	1878,485
7609835,240	319132,049	1878,485
7609838,299	319128,392	1878,485
7609841,877	319124,851	1877,885
7609845,979	319121,593	1878,235
7609850,412	319118,124	1877,985
7609854,738	319114,405	1877,845
7609859,176	319110,402	1877,785
7609863,716	319106,121	1877,745
7609868,393	319101,459	1877,715
7609872,734	319096,652	1877,545
7609876,847	319091,822	1877,465
7609879,441	319088,616	1877,375
7609882,525	319088,175	1877,045
7609885,496	319088,268	1876,765
7609889,139	319090,093	1876,785
7609891,331	319091,044	1876,995
7609891,395	319093,238	1876,805
7609890,113	319096,083	1876,835
7609886,954	319099,158	1877,195
7609882,629	319102,212	1877,365
7609877,833	319105,169	1877,515
7609872,532	319107,124	1877,595
7609866,815	319108,489	1877,715
7609860,841	319109,603	1877,765
7609854,756	319110,831	1877,855
7609850,155	319113,333	1877,975
7609849,010	319117,051	1878,005
7609850,350	319120,378	1877,935
7609853,395	319124,876	1877,805
7609858,906	319127,311	1877,675
7609864,698	319126,858	1877,625
7609870,155	319125,167	1877,565
7609875,350	319123,113	1877,555
7609880,546	319120,747	1877,445

ABCISA	ORDENADA	ELEVACIÓN
7609886,119	319118,329	1877,325
7609891,819	319115,641	1877,225
7609897,460	319112,729	1876,885
7609902,541	319109,974	1876,785
7609906,563	319108,342	1876,905
7609910,402	319108,934	1877,275
7609913,914	319111,320	1877,355
7609917,145	319114,023	1877,385
7609918,300	319117,403	1877,165
7609917,014	319121,720	1876,815
7609914,039	319126,317	1876,715
7609909,973	319129,979	1877,025
7609904,923	319133,040	1877,075
7609899,529	319135,956	1877,195
7609894,115	319138,905	1877,315
7609888,823	319141,706	1877,415
7609883,137	319144,276	1877,505
7609877,525	319147,014	1877,535
7609871,755	319149,605	1877,535
7609865,944	319152,202	1877,555
7609860,094	319154,692	1877,625
7609854,191	319157,006	1877,645
7609848,253	319159,269	1877,925
7609842,427	319161,667	1878,235
7609839,328	319165,253	1878,485
7609838,454	319169,881	1878,485
7609840,038	319174,061	1878,485
7609844,149	319177,351	1877,765
7609850,264	319178,471	1877,645
7609856,642	319177,897	1877,565
7609863,315	319175,890	1877,585
7609869,633	319173,139	1877,495
7609875,393	319170,234	1877,465
7609880,864	319167,313	1877,445
7609886,325	319164,515	1877,435
7609891,855	319161,657	1877,365
7609897,862	319158,658	1877,255
7609903,733	319155,554	1877,115
7609909,236	319152,600	1877,035
7609914,694	319150,000	1876,945
7609919,927	319147,505	1876,895
7609925,261	319144,938	1876,675
7609930,768	319142,192	1876,695
7609935,740	319139,654	1876,875
7609940,038	319137,576	1876,935
7609942,077	319137,518	1877,065

ABCISA	ORDENADA	ELEVACIÓN
7609945,007	319140,240	1877,085
7609948,912	319144,564	1876,975
7609950,216	319146,608	1877,015
7609948,938	319150,009	1876,775
7609945,946	319154,690	1876,725
7609941,212	319160,164	1876,675
7609934,990	319164,874	1876,835
7609927,745	319168,852	1876,945
7609920,960	319172,383	1877,025
7609914,658	319175,445	1877,145
7609908,324	319178,060	1877,265
7609901,763	319180,364	1877,345
7609895,014	319182,661	1877,375
7609888,677	319184,884	1877,485
7609882,156	319187,169	1877,485
7609874,909	319189,802	1877,535
7609867,484	319192,817	1877,575
7609860,624	319195,566	1877,595
7609853,924	319198,253	1877,665
7609847,076	319201,017	1876,895
7609839,836	319203,920	1877,505
7609832,641	319206,848	1877,605
7609825,853	319209,629	1877,715
7609819,454	319212,284	1877,825
7609813,584	319214,663	1877,885
7609807,971	319216,680	1877,965
7609803,353	319219,175	1877,985
7609802,235	319222,875	1877,975
7609803,597	319227,983	1878,045
7609809,440	319232,331	1877,995
7609817,615	319233,556	1877,865
7609826,037	319233,268	1877,735
7609833,814	319231,982	1877,675
7609840,749	319230,262	1877,555
7609847,414	319228,325	1877,475
7609853,886	319226,010	1877,325
7609860,661	319223,114	1877,235
7609868,011	319219,545	1876,975
7609875,896	319215,312	1877,185
7609883,105	319211,436	1877,315
7609889,758	319207,907	1877,365
7609896,430	319204,308	1877,335
7609903,501	319200,019	1877,255
7609910,143	319195,372	1877,125
7609916,568	319191,081	1877,055
7609923,628	319186,222	1876,955

ABCISA	ORDENADA	ELEVACIÓN
7609930,789	319181,348	1876,915
7609937,743	319176,489	1876,815
7609944,515	319172,202	1876,755
7609950,874	319168,337	1876,635
7609956,702	319164,731	1876,705
7609962,396	319161,481	1876,755
7609967,464	319159,976	1876,925
7609972,890	319160,461	1877,015
7609978,308	319161,068	1877,065
7609983,484	319162,151	1877,005
7609987,919	319164,402	1876,975
7609989,954	319167,060	1876,945
7609989,546	319172,012	1876,785
7609985,038	319176,645	1876,755
7609977,790	319180,107	1876,735
7609970,340	319183,191	1876,725
7609962,955	319186,071	1876,855
7609955,117	319189,468	1876,945
7609946,910	319193,324	1876,955
7609938,864	319197,010	1876,955
7609930,957	319200,548	1876,945
7609923,035	319203,949	1876,995
7609914,881	319207,141	1877,075
7609906,839	319210,009	1877,215
7609899,288	319212,485	1877,285
7609891,673	319215,070	1877,235
7609883,887	319217,756	1877,095
7609876,542	319220,067	1877,045
7609869,472	319222,193	1877,105
7609861,743	319224,503	1877,255
7609854,049	319226,714	1877,475
7609846,936	319228,822	1877,535
7609840,114	319231,010	1877,645
7609833,016	319233,535	1877,695
7609825,729	319236,402	1877,785
7609818,347	319239,585	1877,855
7609811,073	319242,856	1877,955
7609803,880	319246,455	1877,425
7609799,888	319252,346	1877,755
7609801,968	319256,197	1877,665
7609809,422	319257,314	1877,305
7609818,972	319256,325	1877,505
7609828,681	319254,183	1877,535
7609838,109	319250,901	1877,625
7609847,884	319248,131	1877,605
7609858,088	319246,085	1877,435

ABCISA	ORDENADA	ELEVACIÓN
7609868,444	319244,315	1877,345
7609878,950	319242,642	1877,225
7609889,321	319240,732	1877,075
7609899,507	319238,533	1877,125
7609909,650	319235,626	1877,085
7609919,692	319231,752	1877,085
7609929,554	319227,009	1877,095
7609939,129	319221,585	1877,035
7609949,322	319216,680	1877,035
7609959,830	319212,099	1877,045
7609970,397	319207,937	1877,015
7609981,138	319204,767	1876,815
7609992,175	319202,772	1876,745
7610003,224	319201,235	1876,745
7610013,951	319199,829	1876,755
7610024,525	319198,674	1876,715
7610033,321	319198,071	1876,585
7610039,323	319199,351	1876,495
7610045,580	319202,772	1876,495
7610051,812	319206,544	1876,795
7610057,893	319209,656	1877,075
7610063,117	319214,022	1877,295
7610067,979	319219,167	1877,025
7610069,540	319224,130	1876,495
7610065,962	319229,561	1876,725
7610058,774	319234,080	1876,775
7610050,053	319236,968	1877,025
7610040,846	319239,353	1877,045
7610031,984	319241,933	1877,095
7610023,277	319243,755	1877,175
7610014,249	319245,614	1877,145
7610005,126	319247,831	1877,185
7609996,680	319249,814	1877,205
7609989,013	319251,884	1877,235
7609982,336	319254,193	1877,245
7609976,262	319256,764	1877,195
7609969,404	319258,767	1877,185
7609960,759	319260,325	1877,205
7609951,709	319262,028	1877,225
7609942,843	319264,094	1877,205
7609933,857	319265,131	1877,185
7609924,668	319265,510	1877,175
7609915,397	319265,520	1877,155
7609906,199	319265,520	1877,115
7609896,854	319265,605	1877,145
7609887,339	319265,616	1877,125

ABCISA	ORDENADA	ELEVACIÓN
7609877,744	319265,608	1877,255
7609868,243	319265,677	1877,385
7609858,921	319265,781	1876,965
7609849,684	319266,145	1877,105
7609841,039	319266,772	1876,945
7609832,761	319267,816	1877,115
7609823,923	319269,661	1877,565
7609814,666	319271,706	1877,795
7609805,404	319273,727	1877,885
7609798,942	319277,520	1878,495
7609799,850	319282,377	1878,495
7609805,227	319284,004	1878,495
7609812,828	319284,184	1878,495
7609821,406	319281,971	1877,935
7609831,089	319280,405	1877,835
7609841,331	319279,101	1877,635
7609851,994	319278,626	1877,555
7609862,863	319278,406	1877,215
7609873,852	319278,046	1877,005
7609884,830	319277,250	1877,065
7609895,829	319276,176	1877,255
7609906,832	319274,857	1877,145
7609917,908	319273,278	1877,215
7609928,794	319271,386	1877,255
7609939,268	319269,548	1877,235
7609949,620	319268,738	1877,245
7609960,029	319268,772	1877,225
7609970,566	319269,259	1877,235
7609981,104	319269,767	1877,235
7609991,605	319269,867	1877,255
7610002,187	319269,623	1877,225
7610012,819	319268,826	1877,215
7610023,400	319267,377	1877,205
7610033,728	319265,347	1877,135
7610043,675	319263,919	1877,105
7610053,207	319262,273	1877,105
7610062,518	319260,366	1877,035
7610071,915	319257,996	1876,985
7610081,559	319255,562	1876,315
7610091,317	319253,406	1876,205
7610101,195	319251,341	1876,015
7610110,771	319249,066	1877,285
7610120,084	319247,680	1877,835
7610129,259	319246,788	1877,685
7610138,371	319245,663	1878,495
7610146,809	319243,989	1878,495

ABCISA	ORDENADA	ELEVACIÓN
7610155,016	319242,090	1878,495
7610163,102	319240,141	1878,495
7610171,292	319239,730	1878,495
7610179,501	319238,345	1878,495
7610187,170	319237,947	1878,495
7610194,109	319241,167	1878,495
7610199,736	319246,931	1878,495
7610203,686	319254,445	1878,235
7610207,928	319262,711	1878,235
7610208,263	319271,216	1877,935
7610204,584	319279,320	1877,835
7610198,515	319285,938	1877,835
7610189,973	319289,507	1877,695
7610179,886	319291,206	1876,765
7610169,098	319292,397	1875,725
7610158,502	319293,550	1875,795
7610147,890	319294,567	1875,955
7610137,314	319295,725	1876,125
7610126,730	319297,002	1876,085
7610116,218	319298,168	1876,405
7610106,122	319298,066	1876,095
7610096,267	319297,355	1876,335
7610086,386	319296,973	1876,935
7610076,554	319297,133	1876,955
7610066,720	319297,651	1877,025
7610056,969	319298,490	1877,065
7610047,197	319298,947	1877,135
7610037,454	319299,411	1877,195
7610028,354	319299,995	1877,215
7610020,224	319300,368	1877,255
7610012,045	319300,558	1877,235
7610003,217	319300,313	1877,215
7609993,999	319298,906	1877,215
7609984,710	319297,242	1877,215
7609975,501	319295,702	1877,225
7609966,250	319294,642	1877,235
7609956,882	319294,311	1877,235
7609947,332	319294,618	1877,225
7609937,759	319295,651	1876,765
7609928,082	319297,283	1876,615
7609918,223	319298,575	1876,595
7609908,254	319299,119	1876,615
7609898,345	319299,296	1876,695
7609888,334	319299,153	1876,645
7609878,321	319299,033	1876,705
7609868,176	319299,123	1877,285

ABCISA	ORDENADA	ELEVACIÓN
7609857,887	319299,421	1877,745
7609847,893	319300,116	1877,945
7609838,134	319301,021	1878,495
7609829,919	319304,413	1877,335
7609826,241	319311,401	1876,925
7609825,579	319320,283	1876,335
7609827,650	319329,118	1876,235
7609834,258	319333,600	1876,065
7609843,414	319337,842	1875,965
7609853,764	319340,980	1875,935
7609864,854	319343,489	1875,935
7609876,313	319345,204	1875,905
7609887,991	319346,518	1875,885
7609899,838	319347,395	1875,855
7609911,734	319347,651	1875,605
7609923,563	319346,036	1874,875
7609934,906	319342,584	1875,255
7609946,449	319339,534	1875,185
7609958,128	319337,357	1875,825
7609970,002	319336,335	1876,635
7609981,914	319336,331	1876,785
7609993,830	319337,267	1876,595
7610005,753	319338,822	1876,445
7610017,769	319340,373	1876,395
7610029,906	319341,159	1876,305
7610041,989	319341,061	1876,525
7610053,969	319340,669	1876,465
7610066,010	319340,522	1876,385
7610078,132	319340,491	1876,295
7610090,242	319340,621	1876,215
7610102,402	319340,995	1876,055
7610114,604	319341,543	1875,995
7610126,877	319342,118	1875,915
7610139,219	319342,113	1875,875
7610151,307	319340,953	1875,805
7610163,456	319339,668	1875,705
7610175,655	319338,302	1875,665
7610187,899	319336,889	1875,355
7610200,207	319335,564	1875,635
7610212,479	319334,307	1875,675
7610224,415	319333,113	1875,755
7610235,914	319332,152	1876,385
7610246,834	319331,758	1877,075
7610257,331	319331,802	1877,225
7610267,705	319332,020	1877,335
7610278,056	319332,416	1877,365

ABCISA	ORDENADA	ELEVACIÓN
7610288,372	319332,957	1877,345
7610299,109	319333,323	1877,305
7610310,044	319333,261	1877,285
7610321,015	319332,646	1877,305
7610332,060	319331,952	1877,315
7610343,235	319331,467	1877,335
7610353,738	319331,153	1877,365
7610363,169	319331,098	1877,445
7610372,188	319330,427	1877,575
7610380,140	319329,343	1877,685
7610387,325	319328,592	1877,895
7610391,789	319328,619	1878,055
7610395,215	319332,108	1878,015
7610399,347	319339,341	1878,495
7610402,043	319347,691	1878,495
7610402,229	319353,091	1877,095
7610400,370	319355,848	1877,695
7610395,697	319358,273	1877,565
7610388,798	319359,398	1877,475
7610380,320	319360,313	1877,375
7610370,777	319360,382	1877,245
7610360,396	319359,999	1877,195
7610349,652	319359,272	1877,255
7610338,788	319359,406	1877,215
7610327,711	319359,381	1877,235
7610316,592	319359,083	1877,245
7610305,623	319359,148	1877,255
7610294,815	319359,986	1877,285
7610283,879	319361,284	1877,275
7610272,916	319362,939	1877,085
7610261,979	319363,684	1876,145
7610250,867	319362,837	1875,435
7610239,421	319361,417	1875,515
7610227,999	319361,362	1875,405
7610216,567	319362,288	1875,375
7610205,312	319363,694	1875,685
7610193,980	319364,763	1875,765
7610182,845	319365,369	1875,745
7610171,427	319364,311	1875,805
7610159,926	319363,043	1875,855
7610148,540	319361,582	1875,925
7610137,223	319359,898	1875,945
7610125,781	319358,368	1875,995
7610114,204	319358,668	1876,045
7610102,763	319360,302	1876,105
7610091,657	319362,002	1876,125

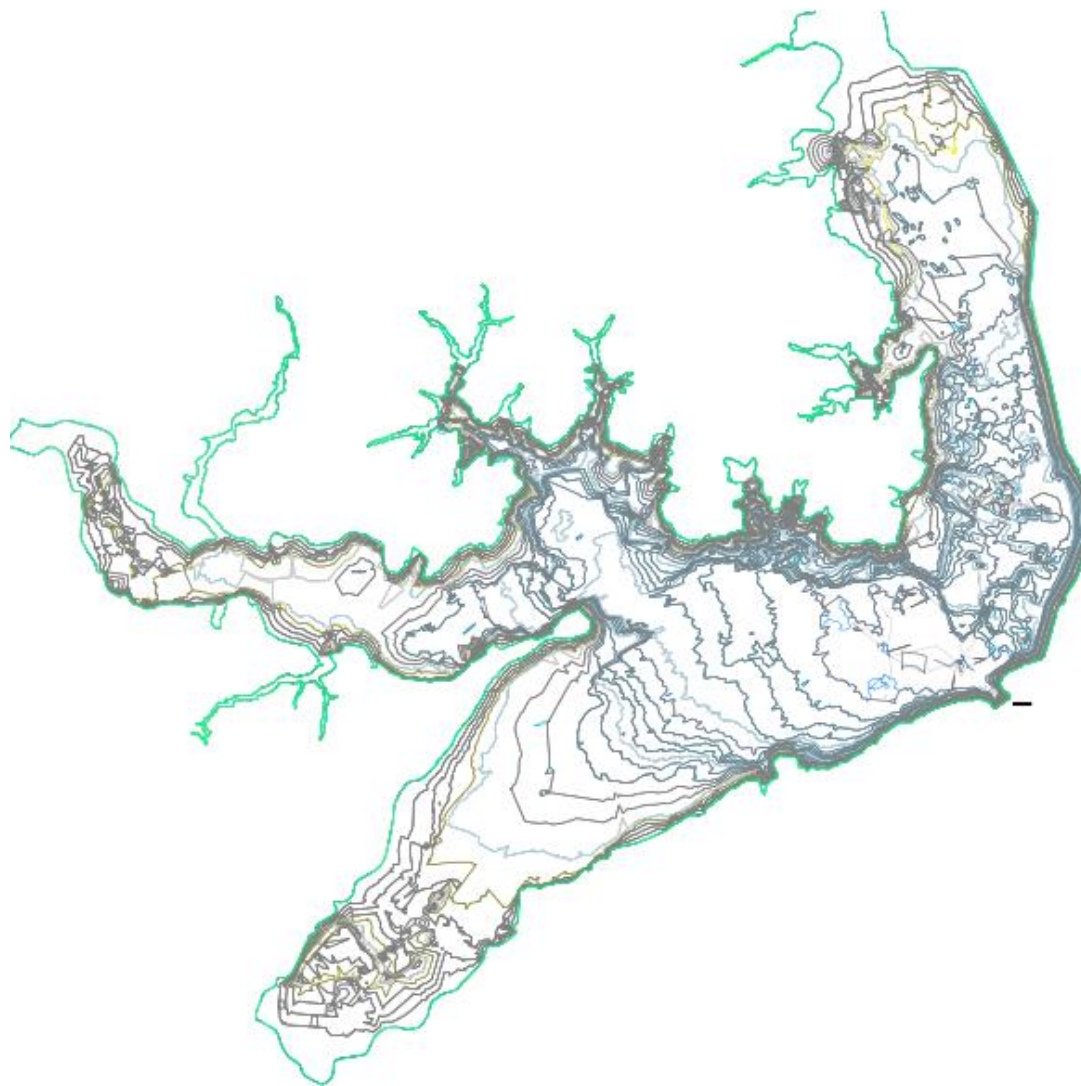
ABCISA	ORDENADA	ELEVACIÓN
7610080,268	319362,100	1876,155
7610068,872	319360,837	1876,105
7610057,435	319358,856	1876,015
7610046,039	319356,554	1876,095
7610034,609	319354,103	1876,155
7610023,141	319352,683	1876,205
7610011,922	319352,047	1876,215
7610000,786	319351,833	1876,195
7609989,466	319352,123	1874,485
7609977,944	319352,915	1874,465
7609966,461	319354,777	1873,595
7609955,637	319358,433	1874,695
7609945,155	319362,507	1875,885
7609934,536	319365,532	1876,315
7609923,676	319367,581	1876,485
7609912,745	319368,877	1876,355
7609901,561	319369,195	1876,445
7609890,235	319368,402	1876,775
7609879,046	319366,541	1876,745
7609867,687	319365,515	1877,155
7609856,276	319365,253	1877,475
7609844,895	319365,621	1877,635
7609833,630	319366,651	1877,675
7609822,503	319368,377	1877,855
7609812,198	319369,117	1878,085
7609803,095	319369,299	1878,005
7609796,843	319374,194	1878,035
7609794,302	319383,526	1878,045
7609796,136	319393,223	1878,045
7609804,354	319399,064	1878,025
7609814,461	319401,928	1877,935
7609825,263	319404,713	1877,705
7609836,780	319407,542	1877,685
7609848,636	319410,336	1877,385
7609860,750	319412,542	1877,235
7609873,013	319412,735	1877,085
7609885,120	319411,871	1876,895
7609897,441	319411,465	1876,925
7609909,855	319411,550	1876,915
7609922,281	319411,993	1876,875
7609934,784	319412,957	1876,845
7609947,252	319414,131	1876,305
7609959,892	319415,293	1876,135
7609972,549	319415,726	1876,055
7609985,050	319414,630	1874,995
7609997,586	319413,472	1876,535

ABCISA	ORDENADA	ELEVACIÓN
7610010,195	319413,182	1876,495
7610022,842	319413,786	1876,425
7610035,518	319414,830	1876,255
7610048,167	319415,663	1876,025
7610060,910	319415,509	1876,035
7610073,566	319414,282	1875,905
7610086,107	319412,194	1876,035
7610098,535	319409,988	1875,965
7610111,078	319408,404	1875,965
7610123,744	319407,581	1875,845
7610136,433	319407,830	1875,715
7610149,134	319408,811	1875,545
7610161,882	319410,574	1875,465
7610174,723	319412,378	1875,415
7610187,572	319413,425	1875,425
7610200,428	319413,481	1875,495
7610213,267	319412,988	1875,495
7610226,182	319412,619	1875,465
7610239,040	319412,292	1875,485
7610251,859	319411,614	1875,465
7610264,653	319410,720	1875,085
7610277,327	319409,451	1876,095
7610289,892	319407,947	1877,215
7610302,257	319406,576	1877,185
7610314,890	319406,423	1877,165
7610326,721	319406,506	1876,985
7610337,649	319406,997	1876,875
7610347,993	319407,651	1876,815
7610357,779	319408,016	1876,765
7610368,158	319408,647	1876,705
7610378,181	319408,897	1876,725
7610387,855	319409,069	1876,755
7610397,664	319408,896	1876,795
7610406,904	319408,570	1876,835
7610415,136	319408,287	1876,955
7610423,170	319408,054	1877,065
7610430,852	319407,763	1877,295
7610438,656	319407,509	1877,545
7610442,693	319408,899	1877,655
7610446,670	319412,946	1877,765
7610450,477	319419,411	1877,815
7610453,049	319427,177	1877,855

Fuente: Elaboración propia, en base a la información obtenida del informe del SNHN.

Por la complejidad de los puntos al ser alrededor de 14 mil puntos solo se añaden en esta tabla algunos puntos con el fin de presentar el formato exportado al CIVIL 3D.

Curvas de nivel obtenidas para la generación de la superficie en la batimetría 2016.



A diferencia de la batimetría 2013 en la 2016 se consiguió directamente la superficie generada por el SNHN.

Puntos extradidos del HYPACK para su exportación al CIVIL 3D, batimetría 2019.

Puntos batimetría 2019

ABCISA	ORDENADA	ELEVACIÓN
7611265,20	317453,68	1883,82
7611247,96	317448,31	1883,82
7611263,98	317458,53	1882,19
7611254,68	317438,87	1881,88
7611260,14	317439,64	1881,78
7611249,97	317441,82	1881,70
7611264,09	317442,78	1881,44
7611245,52	317452,74	1881,44
7611264,64	317448,09	1881,13
7611260,54	317478,69	1882,52
7611258,16	317474,09	1882,22
7611183,06	317483,37	1882,18
7611257,39	317466,43	1882,12
7611260,03	317462,00	1882,04
7611167,76	317483,01	1882,00
7611177,92	317482,45	1881,90
7611172,75	317482,62	1881,89
7611242,26	317458,89	1881,44
7611239,51	317464,87	1881,25
7611239,81	317469,90	1881,08
7611237,64	317474,78	1881,01
7611234,24	317479,69	1880,98
7611230,85	317483,45	1880,91
7611065,90	317483,14	1879,55
7611058,81	317481,94	1879,55
7611064,88	317499,79	1883,82
7611223,89	317486,66	1883,82
7611173,24	317489,02	1883,82
7611018,78	317504,62	1883,68
7611214,39	317484,57	1882,79
7611209,37	317484,62	1882,73
7611257,82	317495,53	1882,55
7611261,21	317486,14	1882,54
7611257,98	317502,75	1882,54

ABCISA	ORDENADA	ELEVACIÓN
7611204,50	317486,35	1882,45
7611187,73	317485,34	1882,45
7611135,38	317503,44	1882,44
7611141,50	317502,12	1882,41
7611154,68	317492,98	1882,39
7611149,79	317499,33	1882,32
7611193,91	317487,31	1882,32
7611056,58	317506,16	1882,18
7611198,94	317488,33	1882,16
7611158,58	317488,40	1882,15
7611165,23	317494,25	1882,13
7611160,11	317494,46	1882,11
7611168,09	317489,97	1882,05
7611102,39	317485,22	1882,05
7611113,92	317493,22	1882,03
7611163,09	317485,96	1882,00
7611059,79	317501,45	1881,98
7611130,31	317504,12	1881,96
7611117,71	317498,07	1881,94
7611106,79	317488,08	1881,80
7611120,51	317502,62	1881,55
7611125,30	317504,15	1881,42
7611097,24	317484,49	1881,34
7611092,29	317485,90	1881,13
7611087,51	317487,39	1880,61
7611070,31	317499,42	1880,10
7611075,55	317499,21	1879,99
7611093,52	317501,61	1879,97
7611081,08	317497,57	1879,96
7611087,73	317498,29	1879,95
7611091,61	317506,34	1879,94
7611082,33	317487,56	1879,89
7611077,58	317485,71	1879,70
7611071,05	317484,07	1879,61
7611036,75	317494,12	1879,21
7611054,17	317483,97	1879,16
7611041,49	317491,87	1878,96
7611046,19	317489,73	1878,75
7611032,70	317497,12	1878,66

ABCISA	ORDENADA	ELEVACIÓN
7611028,19	317501,57	1878,47
7611044,94	317531,31	1883,82
7611014,78	317514,83	1883,82
7611007,07	317526,90	1883,68
7611249,06	317526,77	1882,66
7611257,95	317511,35	1882,59
7611254,12	317516,42	1882,56
7611254,63	317521,43	1882,52
7611051,91	317508,82	1882,27
7611245,06	317530,06	1882,19
7611046,32	317515,57	1882,15
7611043,15	317522,91	1881,99
7611031,91	317527,65	1881,51
7611007,10	317521,79	1881,45
7611015,13	317509,50	1881,27
7611030,05	317522,55	1881,24
7610998,98	317530,31	1881,01
7611033,80	317533,28	1880,98
7611010,35	317517,99	1880,92
7611089,17	317514,02	1880,83
7611028,39	317517,79	1880,16
7611104,86	317524,92	1880,15
7611100,53	317521,02	1880,12
7611093,92	317515,90	1880,11
7611109,06	317527,76	1880,04
7611116,64	317531,48	1879,99
7611026,70	317512,84	1879,00
7611019,55	317511,96	1878,36
7611137,37	317552,04	1883,82
7610980,12	317537,59	1883,82
7610973,26	317543,01	1883,68
7611244,41	317535,78	1882,38
7611251,60	317548,57	1882,36
7611248,84	317543,32	1882,25
7611250,51	317554,17	1882,23
7611039,37	317552,76	1882,19
7611046,90	317550,84	1882,11
7611043,65	317539,87	1882,07
7611048,42	317555,62	1882,05

ABCISA	ORDENADA	ELEVACIÓN
7611044,61	317546,04	1882,05
7611246,55	317558,56	1882,04
7611037,68	317547,08	1881,99
7611036,32	317542,21	1881,86
7610960,99	317554,92	1881,84
7610967,58	317544,66	1881,80
7610949,37	317557,85	1881,75
7610958,69	317548,65	1881,63
7610964,61	317549,75	1881,62
7610955,97	317553,89	1881,57
7610990,42	317534,13	1881,42
7610985,03	317538,85	1881,33
7610997,26	317535,04	1881,14
7611141,97	317557,48	1880,54
7611124,49	317537,57	1879,88
7611130,55	317544,61	1879,87
7611134,46	317547,88	1879,85
7610875,46	317574,71	1883,82
7610893,79	317572,18	1883,82
7610911,54	317572,68	1883,82
7611237,45	317574,56	1883,82
7611216,79	317578,49	1883,82
7610888,18	317574,58	1883,82
7611239,57	317567,25	1883,82
7611043,71	317566,05	1882,35
7611056,57	317569,88	1882,27
7611041,39	317559,03	1882,22
7611086,67	317581,54	1882,22
7611063,53	317580,04	1882,20
7611051,95	317567,29	1882,18
7611048,49	317560,64	1882,17
7611076,52	317579,99	1882,17
7610905,73	317572,03	1882,17
7611081,86	317579,20	1882,14
7611233,97	317579,45	1882,14
7611055,03	317575,70	1882,10
7611071,59	317577,94	1882,09
7611223,42	317583,39	1882,08
7611047,68	317575,65	1882,07

ABCISA	ORDENADA	ELEVACIÓN
7611045,74	317570,98	1882,05
7611057,01	317582,34	1881,95
7611241,19	317561,62	1881,93
7611228,99	317581,62	1881,91
7610880,81	317574,71	1881,73
7610937,42	317565,64	1881,65
7610927,39	317570,55	1881,63
7610933,36	317568,62	1881,59
7610964,22	317559,33	1881,53
7610965,91	317564,71	1881,47
7610944,28	317560,85	1881,47
7610953,45	317578,53	1881,45
7610962,38	317573,57	1881,45
7610971,09	317574,13	1881,44
7610957,74	317575,86	1881,43
7610968,60	317569,54	1881,41
7610946,79	317582,88	1881,41
7610974,25	317568,94	1881,39
7610900,56	317571,59	1881,33
7610922,20	317570,72	1881,26
7610973,41	317578,69	1881,21
7610916,39	317571,32	1881,14
7610979,66	317567,14	1881,11
7610778,06	317564,64	1880,92
7610783,37	317564,88	1880,86
7610984,52	317565,58	1880,84
7610869,57	317574,51	1880,84
7610789,16	317564,20	1880,75
7610795,77	317568,86	1880,66
7610803,66	317579,99	1880,65
7610799,25	317573,97	1880,64
7610725,42	317577,10	1880,58
7611149,69	317561,90	1880,58
7610718,28	317582,27	1880,56
7610736,63	317568,78	1880,42
7610741,55	317567,30	1880,31
7611154,63	317562,73	1880,28
7610750,83	317567,41	1880,24
7610729,16	317573,77	1880,23

ABCISA	ORDENADA	ELEVACIÓN
7610759,86	317565,85	1880,15
7610773,59	317561,50	1880,03
7610767,88	317559,32	1879,87
7611190,10	317582,40	1879,83
7610762,27	317561,20	1879,76
7610997,61	317560,55	1879,73
7610992,34	317563,02	1879,69
7611159,55	317561,70	1879,34
7611169,53	317565,70	1879,13
7611185,47	317580,33	1878,91
7611180,95	317576,29	1878,73
7611164,58	317561,37	1878,71
7611175,08	317568,91	1878,62
7611082,27	317603,55	1883,82
7610712,71	317592,52	1883,68
7611050,05	317583,75	1883,68
7611095,21	317602,59	1882,37
7611096,95	317589,76	1882,17
7611091,04	317584,29	1882,12
7611059,69	317587,69	1882,07
7611098,63	317594,74	1882,01
7611079,50	317608,36	1881,96
7611088,90	317604,37	1881,93
7611068,44	317607,45	1881,88
7611069,79	317600,39	1881,88
7611054,29	317601,43	1881,87
7611072,77	317604,75	1881,87
7611207,75	317586,98	1881,87
7611051,34	317591,14	1881,86
7611064,53	317595,10	1881,85
7611063,75	317604,15	1881,84
7611059,41	317601,65	1881,80
7611052,49	317596,11	1881,79
7611212,01	317584,32	1881,77
7610941,75	317584,38	1881,35
7610913,18	317595,69	1881,34
7610936,76	317586,10	1881,30
7610931,93	317588,08	1881,27
7610927,31	317590,03	1881,25

ABCISA	ORDENADA	ELEVACIÓN
7610908,80	317598,17	1881,22
7610917,86	317593,75	1881,21
7610904,05	317600,86	1881,20
7610899,00	317602,76	1881,15
7610888,86	317606,50	1881,11
7610893,53	317604,54	1881,11
7610922,75	317592,28	1881,06
7611202,73	317587,09	1881,03
7610974,94	317584,42	1880,93
7610859,45	317599,55	1880,91
7610864,18	317607,45	1880,91
7610855,09	317593,96	1880,83
7610809,50	317584,58	1880,81
7610850,64	317590,47	1880,80
7610842,25	317585,81	1880,75
7610837,21	317586,05	1880,61
7610713,63	317587,54	1880,60
7610815,97	317587,10	1880,58
7610822,27	317588,20	1880,55
7610832,28	317587,02	1880,49
7610976,97	317589,09	1880,30
7610716,47	317595,93	1880,14
7610715,25	317600,90	1880,01
7610980,16	317593,78	1880,00
7611197,78	317585,45	1879,96
7610710,57	317607,83	1879,92
7610983,08	317598,06	1879,84
7610986,32	317602,89	1879,53
7610997,85	317626,30	1883,82
7610992,48	317628,72	1883,82
7610990,96	317610,62	1883,68
7610994,42	317622,62	1883,68
7611073,29	317611,02	1883,68
7611001,81	317623,12	1882,45
7611020,19	317620,28	1882,30
7611013,89	317620,56	1882,11
7610986,19	317627,18	1882,04
7611009,07	317622,11	1882,02
7611025,49	317620,55	1881,98

ABCISA	ORDENADA	ELEVACIÓN
7611034,32	317619,74	1881,94
7611040,75	317615,17	1881,93
7611064,74	317611,89	1881,85
7611059,68	317612,48	1881,82
7611053,95	317612,92	1881,80
7611046,38	317614,36	1881,78
7610995,13	317617,62	1881,76
7610981,02	317627,33	1881,65
7610885,51	317625,92	1881,18
7610881,31	317623,02	1881,13
7610872,41	317614,32	1881,12
7610976,17	317628,68	1881,08
7610876,58	317618,49	1881,07
7610879,44	317611,38	1881,07
7610884,42	317608,83	1881,05
7610866,78	317616,74	1880,99
7610889,50	317630,30	1880,97
7610861,76	317618,00	1880,97
7610867,89	317611,04	1880,93
7610855,31	317620,59	1880,92
7610849,52	317622,59	1880,90
7610840,55	317625,64	1880,87
7610835,71	317628,30	1880,83
7610831,13	317631,43	1880,82
7610722,45	317631,82	1880,42
7610707,41	317612,67	1880,35
7610715,51	317627,57	1880,28
7610706,57	317617,72	1880,14
7610711,55	317623,87	1879,77
7610967,79	317631,46	1879,63
7610964,04	317627,70	1878,65
7610959,08	317628,99	1878,04
7610953,98	317629,18	1878,01
7610949,51	317631,98	1877,95
7610941,98	317642,95	1883,82
7610963,20	317633,79	1883,82
7610938,21	317648,56	1883,68
7610940,54	317653,48	1882,26
7610947,23	317656,20	1882,25

ABCISA	ORDENADA	ELEVACIÓN
7610942,41	317658,32	1882,20
7610957,93	317635,11	1881,77
7610948,72	317638,13	1881,45
7610817,25	317653,29	1880,83
7610823,86	317641,70	1880,79
7610826,44	317635,38	1880,79
7610820,73	317646,87	1880,78
7610892,01	317634,69	1880,77
7610727,00	317634,13	1880,62
7610814,66	317657,67	1880,60
7610759,30	317655,77	1880,60
7610745,02	317647,39	1880,60
7610740,02	317644,65	1880,55
7610754,66	317652,80	1880,54
7610750,35	317650,16	1880,53
7610731,09	317637,39	1880,26
7610735,90	317641,72	1880,15
7610911,01	317656,11	1880,09
7610894,34	317639,15	1880,07
7610897,35	317643,19	1879,65
7610901,22	317646,60	1879,44
7610905,33	317649,69	1879,27
7610942,19	317637,68	1878,02
7610955,65	317682,18	1883,68
7610950,34	317661,33	1882,29
7610958,22	317677,65	1882,23
7610947,83	317666,16	1882,14
7610953,02	317667,30	1882,14
7610955,72	317671,71	1882,11
7610922,13	317667,48	1882,09
7610952,67	317677,01	1882,07
7610917,94	317663,37	1882,05
7610925,19	317671,93	1882,03
7610927,47	317676,68	1881,99
7610929,73	317681,62	1881,93
7610914,38	317659,82	1881,66
7610765,96	317660,89	1880,71
7610769,75	317664,29	1880,38
7610673,99	317676,58	1879,89

ABCISA	ORDENADA	ELEVACIÓN
7610811,54	317661,89	1879,82
7610790,76	317676,66	1879,57
7610808,51	317666,40	1879,57
7610774,58	317667,69	1879,54
7610779,69	317670,30	1879,50
7610799,33	317683,57	1879,45
7610784,56	317672,93	1879,44
7610794,66	317679,82	1879,44
7610806,21	317671,11	1879,43
7610803,73	317678,24	1879,37
7610672,49	317681,63	1878,79
7610972,26	317692,01	1883,82
7610944,33	317692,64	1883,68
7610829,61	317701,56	1883,68
7610963,18	317683,90	1882,29
7610970,55	317703,02	1882,22
7610959,51	317691,16	1882,18
7610970,88	317686,97	1882,18
7610952,70	317700,48	1882,10
7610971,25	317697,91	1882,05
7610959,42	317699,66	1882,03
7610933,48	317686,81	1881,93
7610948,22	317696,19	1881,89
7610940,46	317689,25	1881,89
7610835,20	317705,95	1881,79
7610824,57	317698,53	1881,49
7610819,60	317695,56	1881,43
7610815,24	317692,37	1881,34
7610810,04	317688,91	1881,28
7610791,29	317703,38	1881,15
7610794,58	317698,49	1881,09
7610787,60	317708,21	1881,08
7610797,39	317693,77	1880,91
7610805,17	317686,59	1880,67
7610799,59	317689,07	1880,63
7610668,94	317685,45	1878,46
7610667,07	317690,16	1878,35
7610659,39	317707,27	1878,17
7610663,89	317695,64	1878,14

ABCISA	ORDENADA	ELEVACIÓN
7610661,00	317700,01	1878,10
7610844,91	317716,75	1883,68
7610854,68	317727,55	1883,68
7610858,57	317732,02	1883,68
7610964,77	317712,02	1882,23
7610969,42	317709,77	1882,13
7610957,47	317712,73	1882,03
7610954,02	317721,73	1882,00
7610954,33	317716,73	1881,91
7610952,02	317726,90	1881,90
7610948,28	317730,72	1881,82
7610849,44	317721,07	1881,80
7610943,10	317732,46	1881,68
7610840,21	317710,93	1881,61
7610781,68	317716,25	1881,00

Fuente: Elaboración propia, en base a la información obtenida HYPACK del levantamiento realizado por el CIAGUA.

Al igual que en la batimetría 2013 por la complejidad de los datos al ser alrededor de 20 mil puntos solo se añaden los primeros puntos.

Valores obtenidos del CIVIL 3D para la generación de las curvas características.

Para la generación de las curvas características de las batimetrías se obtuvieron las siguientes tablas del CIVIL 3D:

Valores obtenidos para las curvas características, batimetría 2013

Número	Elevación Mínima (msnm)	Elevación Máxima (msnm)	Área (m ²)	Volumen parcial (m ³)
1	1856	1857	6,42	0
2	1857	1858	47,34	86,08
3	1858	1859	64,1	103,47
4	1859	1860	84,25	109,555
5	1860	1861	113,68	129,81
6	1861	1862	149,67	257,1

7	1862	1863	185,31	6079,57
8	1863	1864	833,76	149951,73
9	1864	1865	115281,42	259034,17
10	1865	1866	257907,52	213770,295
11	1866	1867	196835,09	198013,86
12	1867	1868	217832,38	239737,815
13	1868	1869	227704,5	247163,555
14	1869	1870	250713,43	181577,595
15	1870	1871	194515,53	155194,235
16	1871	1872	140784,64	157774,215
17	1872	1873	159960,56	155085,96
18	1873	1874	162892,03	167210,9
19	1874	1875	180006,36	255913,28
20	1875	1876	299323,38	393985,645
21	1876	1877	480362,64	484232,03
22	1877	1878	404109,34	486096,335
23	1878	1879	302057,83	432160,825
24	1879	1880	454229,55	394028,89
25	1880	1881	395510,93	359336,535
26	1881	1882	363031,32	559799,01
27	1882	1883	350799,4	1148572,04
	1883	1884	739798,28	

Fuente: Elaboración propia, obtenido de CIVIL 3D.

Valores obtenidos para las curvas características, batimetría 2016

Número	Elevación Mínima (msnm)	Elevación Máxima (msnm)	Área (m ²)	Volumen parcial (m ³)
1	1856	1857	35,23	0
2	1857	1858	82,62	86,08
3	1858	1859	60,88	103,47
4	1859	1860	78,01	109,555
5	1860	1861	104,3	129,81
6	1861	1862	103,23	257,1
7	1862	1863	157,18	6079,57
8	1863	1864	589,02	149951,73
9	1864	1865	3279,11	259034,17
10	1865	1866	361936,98	213770,295

11	1866	1867	172536,61	198013,86
12	1867	1868	188359,81	239737,815
13	1868	1869	273244,28	247163,555
14	1869	1870	304.575,59	181577,595
15	1870	1871	181260,67	155194,235
16	1871	1872	145507,62	157774,215
17	1872	1873	153412,84	155085,96
18	1873	1874	144313,8	167210,9
19	1874	1875	176192,35	255913,28
20	1875	1876	254139,8	393985,645
21	1876	1877	265488,68	484232,03
22	1877	1878	384593,12	486096,335
23	1878	1879	566387,85	432160,825
24	1879	1880	475854,1	394028,89
25	1880	1881	419263,5	359336,535
26	1881	1882	363924,99	559799,01
27	1882	1883	342714,99	1148572,04
	1883	1884	746316,55	

Fuente: Elaboración propia, obtenido de CIVIL 3D.

Valores obtenidos para las curvas características, batimetría 2019

Número	Elevación Mínima (msnm)	Elevación Máxima (msnm)	Área (m ²)	Volumen parcial (m ³)
1	1858	1859	72,49	0
2	1859	1860	99,67	86,08
3	1860	1861	107,27	103,47
4	1861	1862	111,84	109,555
5	1862	1863	147,78	129,81
6	1863	1864	366,42	257,1
7	1864	1865	11792,72	6079,57
8	1865	1866	288110,74	149951,73
9	1866	1867	229957,6	259034,17
10	1867	1868	197582,99	213770,295
11	1868	1869	198444,73	198013,86
12	1869	1870	281030,9	239737,815
13	1870	1871	213296,21	247163,555
14	1871	1872	149858,98	181577,595

15	1872	1873	160529,49	155194,235
16	1873	1874	155018,94	157774,215
17	1874	1875	155152,98	155085,96
18	1875	1876	179268,82	167210,9
19	1876	1877	332557,74	255913,28
20	1877	1878	455413,55	393985,645
21	1878	1879	513050,51	484232,03
22	1879	1880	459142,16	486096,335
23	1880	1881	405179,49	432160,825
24	1881	1882	382878,29	394028,89
25	1882	1883	335794,78	359336,535
26	1883	1884	783803,24	559799,01
27	1884	1885	1513340,83	1148572,04

Fuente: Elaboración propia, obtenido de CIVIL 3D.