



UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL OCEAN SERVICE
Silver Spring, Maryland 20910

TIDE NOTE FOR HYDROGRAPHIC SURVEY

DATE: December 22, 1999

HYDROGRAPHIC BRANCH: Pacific
HYDROGRAPHIC PROJECT: OPR-P342-RA-99
HYDROGRAPHIC SHEET: H-10910

LOCALITY: 6 NM Northwest of Cape Kasilof, AK

TIME PERIOD: July 22 - August 20, 1999

TIDE STATION USED: 945-5711 Cape Kasilof, AK
Lat. 60° 20.2'N Lon. 151° 22.8'W
PLANE OF REFERENCE (MEAN LOWER LOW WATER): 0.000 meters
HEIGHT OF HIGH WATER ABOVE PLANE OF REFERENCE: 5.850 meters

REMARKS: RECOMMENDED ZONING

Use zone(s) identified as: CK394, CK395, CK399, CK400, CK401, CK407, CK408, CK409, CK434, CK435, CK441, CK442, CK443, CK467, CK468, CK469, CK470, CK477, CK480, CK481, CK482, CK483, CK493 & CK494.

Refer to attachments for zoning information.

Note 1: Provided time series data are tabulated in metric units (Meters), relative to MLLW and on Greenwich Mean Time.

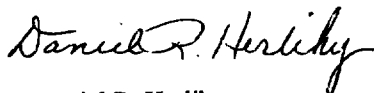
Note 2: Nikiski, AK served as datum control for subordinate tide stations and for tidal zoning in this hydrographic survey. Accepted datums for this station have been updated recently and have changed significantly from previous values.

The current National Tidal Datum Epoch (NTDE) used to compute tidal datums at tide stations is the 1960-78 NTDE. Traditionally, NTDEs have been adjusted when significant changes in mean sea level (MSL) trends were found through analyses amongst the National Water Level Observation Network (NWLON) stations. Epochs are updated to ensure that tidal datums are the most accurate and practical for navigation, surveying and engineering applications and reflect the existing local sea level conditions. For instance, analyses of sea level trends show that a new NTDE is necessary and efforts are underway to update the



This is advance information subject to office review. Questions concerning this letter should be directed to the Chief, Pacific Hydrographic Branch, (206) 526-6835. Refer to survey project OPR-P342-RA-99 and Danger to Navigation message RA-13-99. More information on current RAINIER survey projects may be obtained by e-mail; contact the Field Operations Officer at FOO.RAINIER@NOAA.GOV.

Sincerely,



Daniel R. Herlihy
Commander, NOAA
Commanding Officer

Attachment

cc: NIMA
PMC
N/CS261
N/CS34

**ADVANCE
INFORMATION**

1960-78 NTDE to a more recent 19-year time period. However, analyses also show that there are several geographic areas whose sea level trends are strongly anomalous from the average trends found across the NWLON and thus, must be treated differently. One of these areas is in Cook Inlet, Alaska. Nikiski has shown a significant relative sea level change due to continued vertical land movement after the 1964 earthquake. NOS has adopted a procedure for computing accepted tidal datums for this anomalous region by using an MSL value calculated from the last several years of data rather than the 19-year NTDE. The accepted range of tide is still based on the 19-year NTDE and, when applied to the updated MSL, will result in updated values for Mean High Water (MHW) and Mean Lower Low Water (MLLW) derived through standard datum calculation procedures. For Nikiski, the MSL value was computed from the period of 1994-1998. This resulted in a lowering of the MLLW datums relative to land by approximately 1.0 ft at Nikiski compared to the previous MLLW elevations used in surveys prior to January 1, 1998. Subordinate tide stations in the area used for hydrographic surveys and controlled by Nikiski will be affected similarly. Accepted datums have been computed and may be accessed on the Internet through the URL specification <http://www.co-ops.nos.noaa.gov>.

For -----
CHIEF, REQUIREMENTS AND DEVELOPMENT DIVISION

Final tide zone node point locations for OPR-P342-RA-99,
Sheet H-10910.

Format: Longitude in decimal degrees (negative value denotes
Longitude West),
Latitude in decimal degrees
Tide Station (in recommended order of use)
Average Time Correction (in minutes)
Range Correction

	Tide Station Order	AVG Time Correction	Range Correction
Zone CK394			
-151.641618 60.323932	945-5711	-12	0.96
-151.714292 60.336038			
-151.721656 60.289472			
-151.641663 60.278677			
-151.641618 60.323932			
Zone CK395			
-151.541398 60.307198	945-5711	-12	0.97
-151.641618 60.323932			
-151.641663 60.278677			
-151.530774 60.263658			
-151.541398 60.307198			
Zone CK399			
-151.550301 60.347025	945-5711	-6	0.98
-151.548639 60.336652			
-151.541398 60.307198			
-151.427199 60.288135			
-151.435607 60.29553			
-151.45777 60.327774			
-151.50207 60.336721			
-151.550301 60.347025			
Zone CK400			
-151.641609 60.366506	945-5711	-6	0.97
-151.641618 60.323932			
-151.541398 60.307198			
-151.548639 60.336652			
-151.550301 60.347025			
-151.641609 60.366506			

Zone CK401

-151.707366 60.379871	945-5711	-6	0.96
-151.714292 60.336038			
-151.641618 60.323932			
-151.641609 60.366506			
-151.696917 60.378305			
-151.707366 60.379871			

Zone CK407

-151.477091 60.362959	945-5711	0	0.98
-151.555767 60.381014			
-151.550301 60.347025			
-151.50207 60.336721			
-151.45777 60.327774			
-151.470767 60.346613			
-151.477091 60.362959			

Zone CK408

-151.555767 60.381014	945-5711	0	0.97
-151.641619 60.400682			
-151.641609 60.366506			
-151.550301 60.347025			
-151.555767 60.381014			

Zone CK409

-151.641619 60.400682	945-5711	0	0.96
-151.666938 60.406492			
-151.702162 60.412453			
-151.707366 60.379871			
-151.696917 60.378305			
-151.641609 60.366506			
-151.641619 60.400682			

Zone CK434

-151.641602 60.430226	945-5711	+6	0.97
-151.641619 60.400682			
-151.555767 60.381014			
-151.560906 60.412675			
-151.641602 60.430226			

Zone CK435

-151.560906 60.412675	945-5711	+6	0.98
-151.555767 60.381014			
-151.477091 60.362959			
-151.490399 60.397313			

-151.560906 60.412675

Zone CK441

-151.505164 60.435269	945-5711	+12	0.99
-151.490399 60.397313			
-151.435989 60.385467			
-151.454069 60.425425			
-151.505164 60.435269			

Zone CK442

-151.566483 60.447104	945-5711	+12	0.98
-151.560906 60.412675			
-151.490399 60.397313			
-151.505164 60.435269			
-151.566483 60.447104			

Zone CK443

-151.640529 60.459629	945-5711	+12	0.97
-151.64159 60.442491			
-151.641602 60.430226			
-151.560906 60.412675			
-151.566483 60.447104			
-151.621011 60.457617			
-151.640529 60.459629			

Zone CK467

-151.57191 60.489758	945-5711	+18	0.97
-151.582998 60.491646			
-151.638228 60.496612			
-151.640529 60.459629			
-151.621011 60.457617			
-151.566483 60.447104			
-151.57191 60.489758			

Zone CK468

-151.518004 60.480578	945-5711	+18	0.98
-151.57191 60.489758			
-151.566483 60.447104			
-151.505164 60.435269			
-151.50899 60.445118			
-151.518004 60.480578			

Zone CK469

-151.470383 60.472463	945-5711	+18	0.99
-151.518004 60.480578			

-151.50899 60.445118
-151.505164 60.435269
-151.454069 60.425425
-151.463551 60.446334
-151.470383 60.472463

Zone CK470

-151.422019 60.463609	945-5711	+12	1.00
-151.470383 60.472463			
-151.463551 60.446334			
-151.454069 60.425425			
-151.402166 60.415401			
-151.417034 60.446334			
-151.422019 60.463609			

Zone CK477

-151.473666 60.485057	945-5711	+18	1.00
-151.470383 60.472463			
-151.422019 60.463609			
-151.427569 60.482781			
-151.458649 60.484239			
-151.473666 60.485057			

Zone CK480

-151.43872 60.5213	945-5711	+24	1.02
-151.427569 60.482781			
-151.379602 60.48054			
-151.388575 60.51889			
-151.43872 60.5213			

Zone CK481

-151.483539 60.522936	945-5711	+24	1.00
-151.473987 60.484973			
-151.458649 60.484239			
-151.427569 60.482781			
-151.43872 60.5213			
-151.470667 60.522857			
-151.483539 60.522936			

Zone CK482

-151.52885 60.523183	945-5711	+24	0.99
-151.518004 60.480578			
-151.470383 60.472463			
-151.473666 60.485057			
-151.483539 60.522936			

-151.52885 60.523183

Zone CK483

-151.576222 60.523452	945-5711	+24	0.98
-151.57191 60.489758			
-151.518004 60.480578			
-151.52885 60.523183			
-151.576222 60.523452			

Zone CK493

-151.538535 60.561199	945-5711	+24	0.99
-151.52885 60.523183			
-151.483539 60.522936			
-151.493121 60.559471			
-151.538535 60.561199			

Zone CK494

-151.493121 60.559471	945-5711	+24	1.00
-151.483539 60.522936			
-151.470667 60.522857			
-151.43872 60.5213			
-151.449293 60.557775			
-151.493121 60.559471			