Descriptive Report
Dated: 6th December, 2002

2002 FIELD and FINAL TIDE NOTE

Hydrographic Sheet: H11100
Sheet B
Approaches to Icy Bay
Gulf of Alaska

NOAA Contract No: 50-DGNC-8-90028

The NOS Yakutat, AK tide station (945-3220) served as control for the subordinate station on this project. Datum determinations were made for the tertiary subordinate station, Moraine Bay (945-3443). The NTDE 1960-78 was utilized.

<table>
<thead>
<tr>
<th>Location and Time Meridian</th>
<th>Lat (NAD 83)</th>
<th>Long (NAD 83)</th>
<th>Time Meridian</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moraine Bay</td>
<td>59° 55' 42&quot;</td>
<td>141° 21' 44&quot;</td>
<td>0° (UTC)</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Time Period and Datum Reference</th>
<th>Name</th>
<th>Established</th>
<th>Removed</th>
<th>MLLW</th>
<th>MHW</th>
<th>units</th>
</tr>
</thead>
<tbody>
<tr>
<td>Moraine Bay</td>
<td>5/20/2002</td>
<td>7/15/2002</td>
<td>0.009</td>
<td>2.715</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Tide observer: LCMF, Inc.
139 E. 51st Avenue
Anchorage, AK 99503
(907) 273-1825

Gauges: Two Design Analysis H350/355 bubbler systems and one H350XL/355 bubbler system.

Installation: Each gauge was secured inside a waterproof Pelican case, and fastened vertically inside of an Weatherport Tent.

Refer to the tide station package for additional site specific details of installation.

Tide staff: No tide staff was installed. Levelling was performed from a tidal benchmark to the water surface. The water height was read using a metric rod with a stilting well attached to remove interference from waves.

Benchmarks: The following benchmarks were installed at this site:

The following NOS benchmarks were recovered at this site:
Moraine Bay: 3443 A 1979, 3443 C 1979, Camp RM 1 1976 (stem)

The following non-NOS benchmarks were recovered at this site:
Moraine Bay: BLM#1 and BLM#2

Levels: Benchmarks were leveled at the installation and removal of the tidal station. The benchmarks and station datums were connected through frequent measurements to the water. The level runs were closed within NOS tolerance. Existing NOS benchmarks were not stable compared to the previous levels run in 1979. The new benchmark 3443 F 2002 was designated the new primary bench mark.

Final Tidal Zoning: Tidal zones CA1 and CA2 were utilized to correct tide data for this survey sheet.

Reduction of Hydrographic data: Thales Geosolutions, Pacific (the prime contractor) was provided with preliminary data developed by LCMF during June 2002 based upon a short series simultaneous comparison between Yakutat and the subordinate station. Six minute tide data reduced to MLLW and smoothed with a 5th order 5 hour polynomial curve fit was provided to Thales throughout the field season. In July 2002, LCMF finalized datums and forwarded all data necessary to reduce hydrographic soundings to the prime contractor.
2002 FIELD and FINAL TIDE NOTE

Hydrographic Sheet: H11100
Sheet B Inset
Approaches to Icy Bay
Gulf of Alaska

NOAA Contract No.: 50-DGNC-8-00028

The NOS Yakutat, AK tide station (945-3220) served as control for the subordinate station on this project. Datum determinations were made for the tertiary subordinate station: Moraine Bay (945-3443). The NTDE 1960-78 was utilized.

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Tide observer: LCMF, Inc.
130 E. 51st Avenue
Anchorage, AK 99503
(907) 273-1625

Gauges
Two Design Analysis H350/355 bubbler systems and one H350 XL/355 bubbler system.

Installation
Each gauge was secured inside a waterproof Pelican case, and fastened vertically inside of a Weatherport Tent.
Refer to the tide station package for additional site specific details of installation.

Tide staff
No tide staff was installed. Leveling was performed from a tidal benchmark to the water surface. The water height was read using a metric rod with a stilling well attached to remove interference from waves.

Benchmarks
The following benchmarks were installed at this site:

The following NOS benchmarks were recovered at this site:
Moraine Bay: 3443 A 1979, 3443 C 1979, Camp RM 1 1976 (stem)

The following non-NOS benchmarks were recovered at this site:
Moraine Bay: BLM#1 and BLM#2

Levels
Benchmarks were leveled at the installation and removal of the tidal station. The benchmarks and station datums were connected through frequent measurements to the water. The level runs closed within NOS tolerance. Existing NOS benchmarks were not stable compared to the previous levels run in 1979. The new bench mark 3443 F 2002 was designated the new primary bench mark.

Final Tidal Zoning
Tidal zone CA1 was utilized to correct tide data for this survey sheet.

Reduction of Hydrographic data
Thales Geosolutions, Pacific (the prime contractor) was provided with preliminary datums developed by LCMF during June 2002 based upon a short series simultaneous comparison between Yakutat and the subordinate station. Six minute tide data reduced to MLLW and smoothed with a 5th order 5 hour polynomial curve fit was provided to Thales throughout the field season. In July 2002, LCMF finalized datums and forwarded all data necessary to reduce hydrographic soundings to the prime contractor.