

THE EXTRATROPICAL SURGE AND TIDE OPERATIONAL FORECAST SYSTEM FOR THE EASTERN NORTH PACIFIC OCEAN (ESTOFS-PACIFIC): DEVELOPMENT AND SKILL ASSESSMENT

Silver Spring, Maryland
February 2016



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THE EXTRATROPICAL SURGE AND TIDE OPERATIONAL FORECAST SYSTEM FOR THE EASTERN NORTH PACIFIC OCEAN (ESTOFS-PACIFIC): DEVELOPMENT AND SKILL ASSESSMENT

Jiangtao Xu

Center for Operational Oceanographic Products and Services
Silver Spring, Maryland

Jesse C. Feyen

Office of Coast Survey, Coast Survey Development Laboratory
Silver Spring, Maryland

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LIST OF ACRONYMS AND ABBREVIATIONS

ADCIRC	ADvanced CIRCulation model
CCS	Central Computing System
CO-OPS	Center for Operational Oceanographic Products and Services
CF	Central Frequency
CSDL	Coast Survey Development Laboratory
ETSS	Extratropical Storm Surge
ESTOFS	Extratropical Surge and Tide Operational Forecast System
GFS	Global Forecast System
EMC	Environmental Modeling Center
MN	Mean Range of Tide
MSL	Mean Sea Level
NCEP	National Centers for Environmental Prediction
NHC	National Hurricane Center
NCO	NCEP Central Operations
NOF	Negative Outlier Frequency
NOS	National Ocean Service
NOAA	National Oceanic and Atmospheric Administration
NWS	National Weather Service
NAVD 88	North American Vertical Datum of 1988
OCS	Office of Coast Survey
OPC	Ocean Prediction Center
POF	Positive Outlier Frequency
PRMSL	Pressure reduced to MSL [Pa]
RMSE	Root Mean Square Error
SLOSH	Sea Lake and Overland Surge from Hurricanes
TAFB	Tropical Analysis and Forecast Branch
UGRD	U-component of Wind [m/s]: 10 m above ground
USACE	United States Army Corps of Engineers
USGS	United States Geological Survey
UTC	Coordinated Universal Time
VGRD	V-component of wind [m/s]: 10 m above ground
WCOS	Weather and Climate Operational Supercomputing System
WW3	WAVEWATCH III [®]

EXECUTIVE SUMMARY

The Coast Survey Development Laboratory (CSDL) of the National Ocean Service (NOS) and the Environmental Modeling Center (EMC) of the National Centers for Environmental Prediction (NCEP) have collaborated to establish an Extratropical Surge and Tide Operational Forecast System (ESTOFS) for U.S. coastal waters. The ESTOFS-Atlantic that covers the U.S. East Coast and Gulf of Mexico has been in operation since 2012. This project is to develop a similar system for the eastern North Pacific Ocean that includes the U.S. West Coast, Gulf of Alaska, and the Hawaiian Islands.

The hydrodynamic model employed for ESTOFS is the ADvanced CIRCulation (ADCIRC) finite element model (Luettich et al. 1992; Luettich and Westerink 2004). The ADCIRC hydrodynamic model has been demonstrated to be effective at predicting tidal circulation and storm surge propagation in complex coastal systems.

For the development of ESTOFS-Pacific, we have built a new model grid that covers all the areas of interest. Three model run scenarios were tested: 1) astronomical tide, 2) model hindcast, and 3) semi-operational nowcast/forecast. The model results from each scenario were compared with observations using NOS' standard skill assessment software. The skill assessment demonstrated that ESTOFS-Pacific generally predicts the surge reasonably well considering the meteorological forcing. Only three stations had root mean square errors (RMSE) greater than 0.20 m in non-tidal water level. The model can also reproduce the tidal characteristics within the model domain. However, the model resolution is not sufficient to resolve all complex geometry in the shoreline and the model physics does not include all processes. Therefore, the model tends to have larger errors in tidal predictions in complicated inlets and estuarine systems with large tide range. There are 15 stations that had RMSE greater than 0.20 m for tidal prediction, with most of them in Puget Sound and southeastern Alaska.

The ESTOFS-Pacific was implemented operationally by NCEP Central Operations (NCO) on the Weather and Climate Operational Supercomputing System (WCOS) to provide 180-hr forecast guidance of surge combined with tides, astronomical tides, and sub-tidal water levels (the isolated surge) throughout the domain. The ESTOFS provides the National Weather Service (NWS) with a second extratropical surge system in addition to the Extratropical Storm Surge (ETSS) model that currently is based on the Sea Lake and Overland Surge from Hurricanes (SLOSH) model (Jelesnianski et al., 1992). ESTOFS-Pacific fills NWS gaps in operational storm surge and tide modeling coverage in Hawaii. This model serves the needs of local Weather Forecast Offices (WFOs) for coastal marine forecasts. Forecasters will benefit from the gridded astronomic tide predictions that are provided by ESTOFS-Pacific, which can be combined with any gridded surge prediction (generated from model guidance or forecaster). The ESTOFS is also designed to provide the surge with tides to WAVEWATCH III[®] (WW3) for coupling wave predictions to coastal water levels. ESTOFS uses the same Global Forecast System (GFS) forcing and has the same forecast cycle and length as WW3. Output from ESTOFS-Pacific is disseminated by NCEP's Ocean Prediction Center (OPC) and NWS' Office of Science and Technology/Meteorological Development Laboratory (OST/MDL).

1. INTRODUCTION

Impacts of extratropical storm surge can be far-reaching and catastrophic along the coast of United States. The National Weather Service (NWS) Extratropical Storm Surge (ETSS) system has been long used by Weather Forecast Offices (WFOs) for extratropical storm surge forecasts (<http://www.weather.gov/mdl/etsurge/>). However, the lack of astronomical tide can cause challenges in producing accurate water level forecasts during storms. Thus an enhanced model with tides would be valuable for local WFOs to more effectively prepare and respond to extratropical flooding. Additionally, a model that produces water level fields that includes surge and tides is needed to be coupled to coastal wave models and to provide boundary conditions to coastal hydrodynamic models.

The Office of Coast Survey/Coast Survey Development Laboratory (OCS/CSDL) of the National Ocean Service (NOS) and the Environmental Modeling Center (EMC) of the National Centers for Environmental Prediction (NCEP) have collaborated to establish an Extratropical Surge and Tide Operational Forecast System (ESTOFS). The ESTOFS-Atlantic that covers the East Coast and Gulf of Mexico have been developed and in operation at NCEP since 2012. This report describes the development of ESTOFS for the eastern North Pacific Ocean (ESTOFS-Pacific) including the West Coast, Gulf of Alaska, and the Hawaiian Islands.

The hydrodynamic model employed for the ESTOFS is the ADvanced CIRCulation (ADCIRC) finite element model (Luettich et al. 1992; Luettich and Westerink 2004). The ADCIRC hydrodynamic model has several beneficial features for this type of modeling system and has been demonstrated to be effective at predicting tidal circulation and storm surge propagation in complex coastal systems (Westerink et al. 2008, Funakoshi et al. 2014). Its unstructured grid methodology allows for good representation of the complex shorelines and bathymetry.

Three model scenarios (tide, hindcast, and semi-operational nowcast/forecast) were simulated to assess the performance of the model before its implementation into operation. The NOS standard skill assessment program (Zhang et al. 2006) and criteria (Hess et al. 2003) were used to assess the model skills in each scenario. Skill assessment score tables were compiled for each location where observations are available, and these tables were used to demonstrate that the model is suited for transition to an operational environment.

The real-time implementation of the ESTOFS-Pacific uses the same framework and pre- and post-processing scripts developed for the ESTOFS-Atlantic (Funakoshi et al. 2014). The ESTOFS-Pacific was implemented operationally by NCEP Central Operations (NCO) to provide forecasts of surge with tides, astronomical tides, and sub-tidal water levels (the isolated surge) throughout the domain. The ESTOFS provides NWS with a second extratropical surge system in addition to the ETSS that is based on the Sea Lake and Overland Surge from Hurricanes (SLOSH) model (Jelesnianski et al. 1992). The ESTOFS provides surge with tides and utilizes unstructured grids which can provide better resolution at the coast. This capability serves the needs of NCEP's Ocean Prediction Center (OPC) and the National Hurricane Center's Tropical Analysis and Forecast Branch (NHC/TAFB), who are responsible for coordinating marine forecasts. It also meets the needs of WFOs for issuing coastal inundation forecasts. The ESTOFS is also designed to provide surge with tides to the WAVEWATCH III[®] (WW3) wave model. To

accommodate coupling between the two systems, ESTOFS uses the same Global Forecast System (GFS) forcing and has the same forecast cycle and length.

2. MODEL SYSTEM OVERVIEW

2.1. ADCIRC Hydrodynamic Model

The ADCIRC model was developed to perform high resolution simulations of coastal hydrodynamics (Luettich et al. 1992; Luettich and Westerink 2004). This model is a system of computational algorithms that solve time-dependent, free surface circulation and transport problems in two and three dimensions. ESTOFS-Pacific uses the ADCIRC in its barotropic two-dimensional depth integrated (2DDI) mode. ADCIRC utilizes the finite element method in space, taking advantage of highly flexible, unstructured triangular grids. Numerous studies have shown this model to be accurate for computing the tides and surge in coastal waters (Luettich et al. 1994; Mukai et al. 2001; Spargo et al. 2004; Westerink et al. 2008).

ADCIRC solves the fully nonlinear governing shallow water equations through the use of the generalized wave continuity equation formulation (Kolar et al. 1992). ADCIRC uses a second order Galerkin finite element method to solve the governing equations to take advantage of the unstructured grid technique (Luettich et al. 1992; Luettich and Westerink 2004). While the semi-implicit time stepping scheme requires relatively small time steps that satisfy the Courant condition, extensive use of the model on multiple platforms has led to efficient coding and solution techniques. Furthermore, the model has been parallelized using the Message Passing Interface, demonstrating linear speed-up proportional to the number of processors.

2.2. Model Grid and Bathymetry

ESTOFS-Pacific is intended to provide operational surge and tide predictions for the U.S. West Coast, Gulf of Alaska, and the Hawaiian islands. To build the unstructured grid for ESTOFS-Pacific, we collected and examined the existing models in this area, which include the Eastern North Pacific Ocean (ENPAC) 2003 tidal database (Spargo et al., 2004), VDatum for the Pacific Northwest (Xu et al. 2010), an assimilating tidal model for the Northeast Pacific (Foreman et al., 2000), SWIMS Hawaii grids (Westerink, pers. comm.), and a Western Alaska tide model (USACE, pers. comm.). Careful considerations have been taken in choosing the open boundary locations to avoid the extensive amphidromic systems in the North Pacific. We initially developed two model grids to test the effect of boundary forcing on the tidal accuracies. One grid covers the West Coast and Gulf of Alaska with the outer boundary extending offshore to about the 400 m isobath; the other extends much further westward to include Hawaii as well. After calculating the two grids, a decision was made to proceed using the grid with the greater extent. A description of the comparisons is given in Appendix A. The results presented here are from the latter only. The ESTOFS-Pacific grid consists of 132,630 nodes (Figure 1). Coastal resolution generally averages about 1 to 2 km and the deep ocean offshore region has grid size about 50km (~0.5 degree).

Two open boundary nodestrings were created in the model grid: One along the open-ocean and the other for the Columbia River boundary. The tidal forcing along the open ocean was retrieved from the Oregon State University Global Inverse Tidal Model (TPXO8-Atlas); this includes the K_1 , O_1 , P_1 , Q_1 , M_2 , S_2 , N_2 , K_2 , M_f , and M_m constituents. The tidal constituents from the nearby Center for Operational Oceanographic Products and Services (CO-OPS) station at Skamokawa, Washington was applied along the Columbia River boundary.

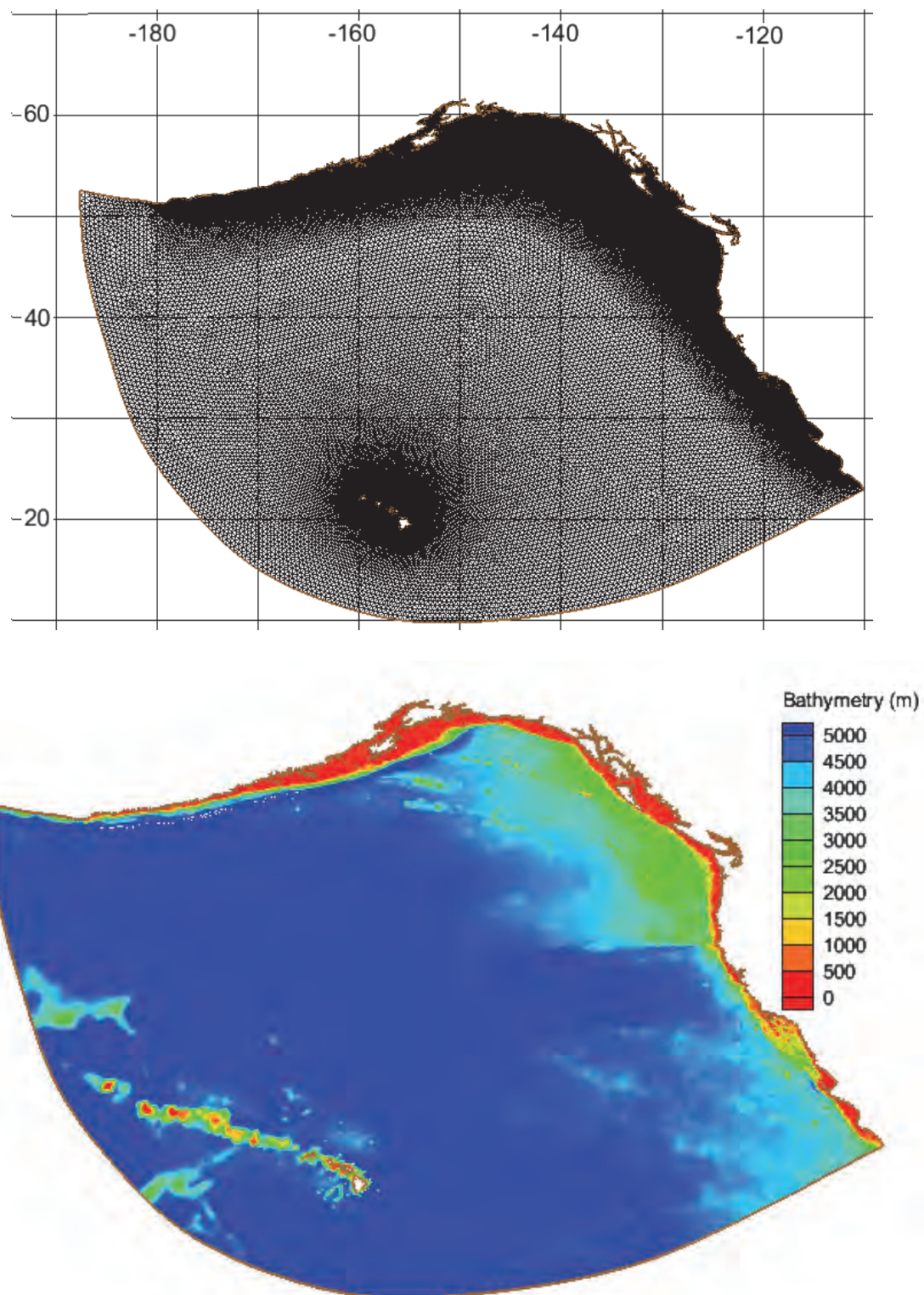


Figure 1. The ESTOFS-Pacific grid and bathymetry.

The model bathymetry is mainly derived from two sources. In the coastal areas, bathymetric data are from the NOS/OCS hydrographic database maintained at the National Geophysical Data Center (NGDC) and includes surveys conducted between 1851 and 2012. The VDatum software (Parker et al., 2002; Myers, 2005) was used to convert the survey data from various vertical reference datums to Mean Sea Level before they were interpolated onto the grid. Outside the survey areas, the University of California-San Diego/Scripps' global 1-minute bathy/topo dataset (Smith and Sandwell, 1997) (http://topex.ucsd.edu/WWW_html/mar_topo.html) was used in the model. The final model bathymetry is shown in Figure 1.

2.3. Model Input Files

ADCIRC is a FORTRAN-based program which requires at a minimum two input files, *fort.14* and *fort.15*, to run a simulation normally. *fort.14* is an ADCIRC grid and boundary information file which describes the structure of the unstructured grid (node locations, elevations, and element connectivity) and specifies the various boundary conditions (e.g. land, river, and ocean). *fort.15* is a model parameter and boundary condition file that contains the majority of the parameters (i.e. model runtime control parameters, output control, and external forcing functions) to configure and set up boundary forcing for ADCIRC.

In addition to these files, there are many optional files that may or may not be present depending upon which features the user wishes to incorporate into a model run. For example, *fort.22* is a surface forcing input file that provides meteorological forcing (wind velocity and atmospheric pressure). Another pairs used in the ESTOFS are *fort.67.nc* and *fort.68.nc* in order for ADCIRC to run consecutively via the hot start feature. Hot start information is written to *fort.67.nc* and *fort.68.nc* on an alternating basis so that in case of one file becomes corrupted, the other file can be used. These files are written out in NetCDF format.

During the model development and testing stage, we also used *fort.13*, which specifies nodal attributes of model parameters, to test the effect of varying bottom friction parameters within Juan de Fuca Strait and Puget Sound. Non-periodic flows at river boundaries for the Columbia and Sacramento Rivers were tested using *fort.21*. However, neither *fort.13* nor *fort.21* configurations are used in the final model set-up.

In summary, the following ADCIRC input files are used in the ESTOFS-Pacific.

1. *fort.14*: a grid and boundary information file.
2. *fort.15*: a model parameter and periodic boundary condition file. This file is reformatted every run cycle in order to update the run time parameters. This file contains the information for the tidal potential and open ocean boundary conditions.
3. *fort.22*: a surface forcing input file. Wind velocities and atmospheric pressure are converted to *fort.22* formatting for each run cycle.
4. *fort.67.nc* and *fort.68.nc*: NetCDF version of alternating hot start files.

2.4. System Interruption and Recovery Procedure

Hot start output is written to *fort.67.nc* and *fort.68.nc* on an alternating basis so that if the computer crashes in the processes of writing one of these files, the other will be unaffected and

can be used to restart the model. Normally, the most current (in time) of the *fort.67.nc* or *fort.68.nc* files is used to hot start the model. If there are no hot start files, a cold start could be used to restart the ESTOFS-Pacific.

The ESTOFS operates normally as an automated job on the NCEP WCOSS. Since the ESTOFS is designed to be coupled with WW3, it has same run cycle (4 times per day) and length (6-hr nowcast followed by 180-hr forecast). Hot start files are recorded every 6 hours during the run, and one is written on completion of the 6-hr nowcast that is used to initialize the next forecast cycle simulation. In this way the ADCIRC simulation runs continuously, since the hot start information from the conclusion of the nowcast is used to initialize the next nowcast/forecast cycle.

3. MODEL RUN SCENARIO DEFINITION

To evaluate the performance of the ESTOFS-Pacific, three model simulation scenarios were carried out. These include an astronomical tide simulation, a hindcast simulation, and a semi-operational nowcast/forecast simulation. Each is discussed in more detail below. The NOS skill assessment programs (Zhang et al. 2006) were applied to all three model simulation scenarios.

3.1. Astronomical Tide Simulation

Before carrying out the hindcast simulation, the model was run in an astronomical tide only scenario, where the model was forced with harmonically-predicted astronomical tides at the open boundary along with tidal potential forcing within the domain.

ESTOFS-Pacific uses the Oregon State University Global Inverse Tidal Model (TPXO8-Atlas) for the open-ocean boundary forcing (Egbert and Erofeeva 2002) while the tidal constituents from the nearby CO-OPS station Skamokawa, WA were applied at the Columbia River boundary. The Newtonian tidal potential and corrections are forced within the ESTOFS-Pacific domain (Reid 1990). There are no river discharge inflows and meteorological forcing. The harmonic tidal simulation was conducted for the same 15-month time period as the full hindcast from December 2004 to February 2006.

3.2. Model Hindcast Simulation

In the hindcast simulation, the open boundary forcing and Newtonian tidal potential and corrections were the same as in the tide simulation described above. No river flow is included in the ESTOFS-Pacific. Surface forcing consisting of wind velocities and atmospheric pressure is provided by the Global Forecast System (GFS) (<http://www.emc.ncep.noaa.gov/GFS/>). GFS output, at 0.5 degree resolution, of the east and north wind at 10 m above ground (UGRD and VGRD) and pressure reduced to MSL (PRMSL) are used as the surface forcing. The surface forcing was provided every 6 hours across the model grid in the hindcast simulation; the model linearly interpolated the wind forcing between these records. The simulation was run for 15 months (12/2004-02/2006) to include two winter seasons, which generally have stronger winds along the west coast of US.

The hindcast period was carefully chosen to test the model for historical extreme water level events. CO-OPS analyzed extreme water levels at stations with at least 30 years of data (Zervas, 2013). During the period of January 7-11, 2005, nine stations in California experienced extreme high waters which exceeded the 10% annual exceedance probability level: San Diego, La Jolla, Los Angeles, Santa Monica, Port San Luis, Monterey, San Francisco, Alameda, and Point Reyes. During the period of December 30, 2005 – January 1, 2006, 3 stations in California (San Francisco, Alameda, and Crescent City), 3 stations in Oregon (Astoria, South Beach, and Charleston), and 2 stations in Washington (Neah Bay and Port Angeles) experienced extreme high waters which exceeded the 10% annual exceedance probability level. In addition, on February 4, 2006, 4 stations in Washington (Cherry Point, Friday Harbor, Port Angeles, and Toke Point) and 1 station in Oregon (Astoria) also had high waters levels which exceeded the 10% annual exceedance probability level.

3.3. Semi-Operational Nowcast/Forecast Simulation

In this simulation, the model forcing was based on real-time operational forecast guidance from the GFS models. Initial conditions were generated from tidal spin-up and the nowcast. This run tests the ability of the model in an operational environment by using the operational forcing.

Forcing for the nowcast/forecast simulation was applied in the same way as for the hindcast simulation, except for the surface forcing interval. The real-time GFS operational output is available every 3 hours. We hence apply the surface forcing at 3-hr interval.

The ESTOFS ran 4 times per day. For each cycle, a 6-hr nowcast was made and followed by a 180 hr forecast.

4. SKILL ASSESSMENT STATISTICS AND DATA

4.1. Skill Assessment Statistics

Skill assessment is an objective measurement of the performance of a model when systematically compared with observations. NOS skill assessment criteria were created for evaluating the performance of operational forecast systems (Hess et al. 2003), and a software package was subsequently developed to compute these criteria using standard file formats output from the models (Zhang et al. 2006). The software can compute the skill assessment automatically using files containing observations, predictions, and model results. The standard suite of skill assessment statistics is defined in Table 1. Most of the skill assessment statistics have criteria for the acceptance of a modeling system into NOS operational use for operational forecast systems (OFSs) within embayments and estuaries. These criteria are also reported in Table 1. However, in order to provide much broader coverage than a single estuary, ESTOFS has much coarser resolution than traditional NOS operational forecast systems (on the order of 1 to 2 km versus hundreds of meters), and foregoes prediction of temperature and salinity. Therefore, the skill assessment criteria is only applied for prediction of water levels. The ESTOFS developers, as a result of feedback from operational forecasters, set a goal error criterion of 0.20 m for mean water levels. However, in regions with a large mean tide range (MN; that is, difference in height between Mean High and Mean Low Water), model skill is dominated by its simulation of tidal dynamics instead of storm surges. Therefore, where MN exceeds 2.0 m, an error criterion of 20% of the MN is used.

The skill assessment software deals with three types of data sets (as shown in Table 2): Group 1, a time series of values at uniform time intervals (such as water level observations); Group 2, a set of values representing the consecutive occurrences of an event (such as time of high water); and Group 3, a set of values representing a forecast valid at a given projection time.

4.2. Data

In this report, skill assessment scores were computed for water levels at 66 NOAA tide stations along the US West Coast, the Gulf of Alaska coast, and Hawaiian coasts. Figure 2 highlights the observation locations used by ETSS for output dissemination in the US West Coast and Gulf of Alaska (<http://www.nws.noaa.gov/mdl/etsurge/index.php?page=map®ion=wc&datum=msl&list=&map=0-48&type=&stn=>); ESTOFS Pacific also provides output at these locations, which are used in the skill assessment. However, 3 stations along the Aleutian Islands listed under Gulf of Alaska on the ETSS site were excluded (marked by red circles in Figure 2b) because they lie on the Bering Sea side of the islands which has very different tide and surge conditions. For skill assessment of this model, we also included 1 additional station in Southeast Alaska and 24 additional stations along the West Coast where observations are available. In addition, 6 NOAA tide stations in Hawaii are included (Figure 3) in the skill assessment. Appendix B provides a list of the stations.

Water level data for the skill assessment were collected from CO-OPS' website. For the astronomical tide simulation skill assessment, harmonic constants and harmonic tidal predictions were obtained. For the hindcast simulation skill assessment, the verified water level observations

Table 1. Skill assessment statistics and operational acceptance criteria (Hess et al. 2003).

Variable	Explanation
Error	The error is defined as the predicted value, p, minus the reference (observed or astronomical tide value, r : $e_i = p_i - r_i$.
SM	Series Mean. The mean value of a series y. Calculated as $\bar{y} = \frac{1}{N} \sum_{i=1}^N y_i.$
RMSE	Root Mean Square Error. Calculated as $RMSE = \sqrt{\frac{1}{N} \sum_{i=1}^N e_i^2}.$
SD	Standard Deviation. Calculated as $SD = \sqrt{\frac{1}{N-1} \sum_{i=1}^N (e_i - \bar{e})^2}$
CF(X)	Central Frequency. Fraction (percentage) of errors that lie within the limits $\pm X$.
POF(X)	Positive Outlier Frequency. Fraction (percentage) of errors that are greater than X.
NOF(X)	Negative Outlier Frequency. Fraction (percentage) of errors that are less than -X.
MDPO(X)	Maximum Duration of Positive Outliers. A positive outlier event is two or more consecutive occurrences of an error greater than X. MDPO is the length of time (based on the number of consecutive occurrences) of the longest event.
MDNO(X)	Maximum Duration of Negative Outliers. A negative outlier event is two or more consecutive occurrences of an error less than -X. MDNO is the length of time (based on the number of consecutive occurrences) of the longest event.
WOF(X)	Worst Case Outlier Frequency. Fraction (percentage) of errors that, given an error of magnitude exceeding X, either (1) the simulated value of water level is greater than the astronomical tide and the observed value is less than the astronomical tide, or (2) the simulated value of water level is less than the astronomical tide and the observed value is greater than the astronomical tide.
SKILL	Skill score. Calculated as $1 - \frac{\sum_{i=1}^N (M_i - O_i)^2}{\sum_{i=1}^N (M_i - \bar{M} + O_i - \bar{O})^2}$

Variable	SM	RMSE	SD	NOF(2x)	CF(X)	POF(2X)	MDPO(2X)	MDNO(2X)	WOF(2X)
Criterion	none	none	none	≤1%	≥90%	≤1%	≤ L	≤ L	≤ 0.5%

from December 2004 to February 2006 were obtained. For the skill assessment for semi-operational forecast simulations, the preliminary water level observations during May 2014 were obtained. The vertical reference datum of all observations was Mean Sea Level.

Table 2. Skill assessment data series groups and the variables in each. Note that upper case letters indicate a prediction series (e.g. H), and lower case letters (e.g. h) indicate a reference series (observation or astronomic tidal prediction) (Hess et al. 2003).

Group	Variable	Symbol
Group 1 (Time Series)	Water level	H, h
Group 2 (Values at a Tidal Stage)	Amplitude of high water	AHW,ahw
	Amplitude of low water	ALW,ahw
	Time of high water	THW,thw
	Time of low water	TLW,tlw
Group 3 (Values from a Forecast)	Water level at forecast projection time of nn hrs	Hnn, hnn

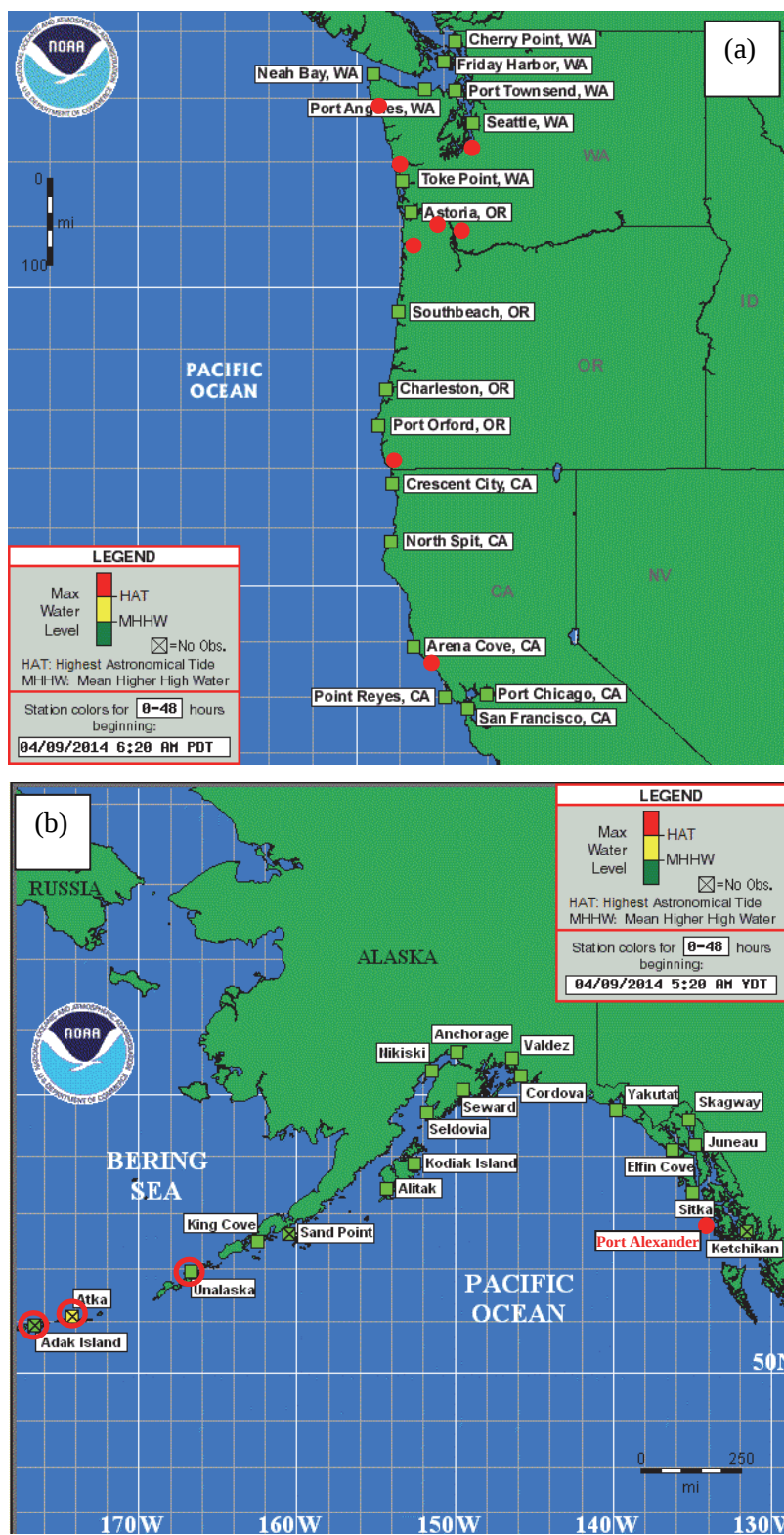


Figure 2. ETSS output station locations in (a) Pacific Northwest and (b) Gulf of Alaska. Additional NOAA stations used for the ESTOFS-Pacific skill assessment are marked by red dots. The 3 stations with red circles are excluded in the skill assessment.

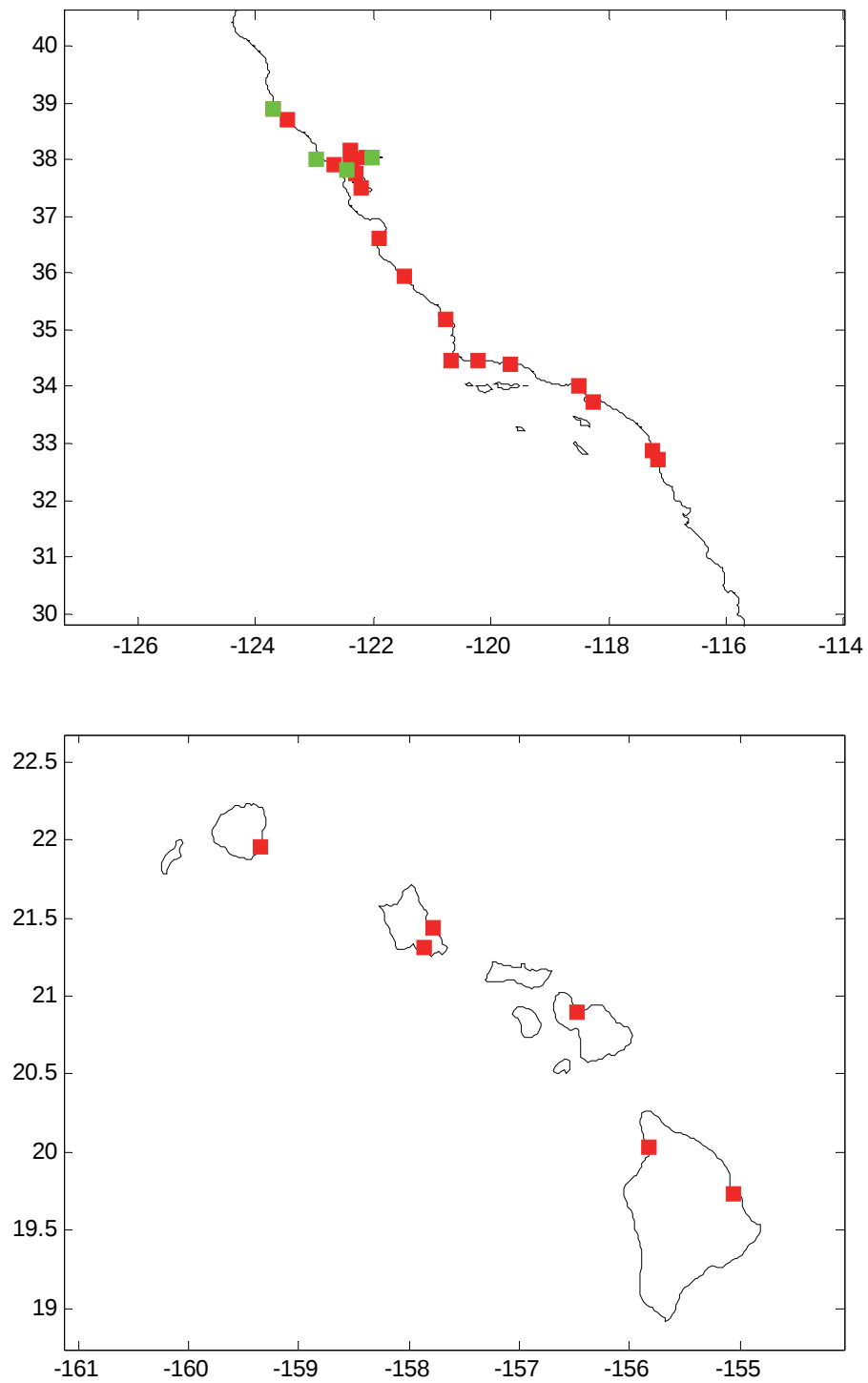


Figure 3. Tide station locations which are used for the ESTOFS-Pacific skill assessment in (a) Southern California and (b) Hawaii. Green symbols are stations also used by ETSS. Red symbols are the additional stations used for the ESTOFS-Pacific skill assessment.

5. WATER LEVEL SKILL ASSESSMENT

Skill assessment statistics were calculated for three model scenarios: astronomical tide simulation, hindcast, and semi-operational forecast, as described in Section 3. The NOS skill assessment software was used to automatically generate skill assessment tables for each of the stations mentioned in Section 4.2.

The goal for the ESTOFS water level skill assessment is to achieve better than or equal to 0.20 m in Root Mean Squared Errors (RMSE) (Funakoshi et al. 2014). This is a slightly larger error criterion than NOS standards set for other OFSs which have three dimensional physics, higher resolution, and are focused at a local scale. Although ESTOFS' unstructured grid has its highest resolution along the coast line, more resolution would be needed to resolve the complex shoreline and incorporate sufficient reaches of rivers, small tributaries, and tidal inlets to achieve the accuracy of traditional OFSs. These grid limitations pose challenges for ESTOFS at stations located inside small local inlets and waterways.

5.1. Astronomical Tide Simulation

For the astronomical tide simulation, 37 harmonic constants derived from 15-month water level time series were compared with the 37 CO-OPS accepted harmonic constants, as shown in Appendix C. Harmonic constants for two semidiurnal (M_2 and S_2) and two diurnal (K_1 and O_1) tidal constituents derived from modeled tidal water level were compared against observed harmonic constants in Figure 4. M_2 tide dominates at most stations and reaches over 3 m in amplitude in Cook Inlet, AK. In the Strait of Juan de Fuca and Puget Sound, the magnitude of diurnal tide K_1 becomes comparable to M_2 . The M_2 amplitude error ranges from -0.35 m (Ketchikan, AK) to 0.33 m (Port Chicago, CA) and M_2 phase error ranges from -27.8 degrees (Bolinis Lagoon, CA) to 27.9 degrees (Toke Point, WA). Most of the stations with largest errors are located within estuaries, rivers or small tidal inlets that weren't sufficiently by the model.

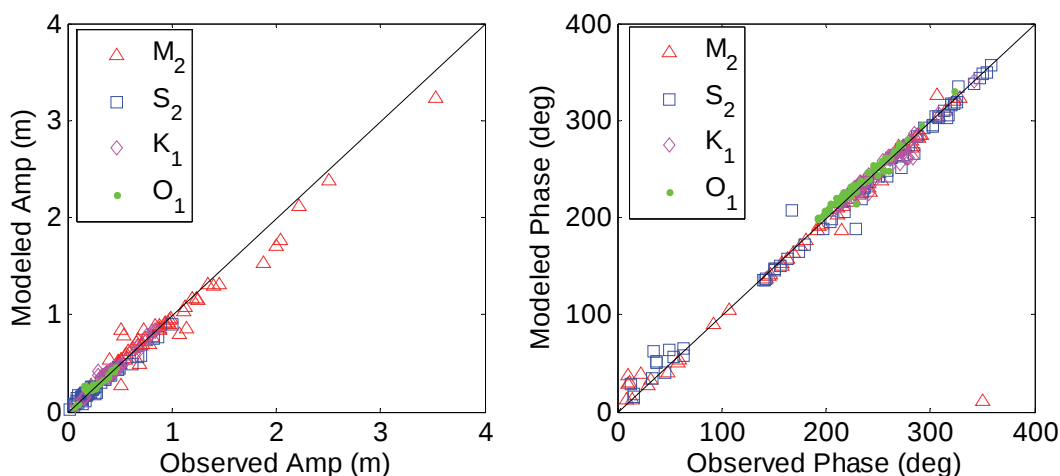


Figure 4. Model and observation derived amplitude and phase comparison of four selected tidal constituents (M_2 , S_2 , K_1 , and O_1).

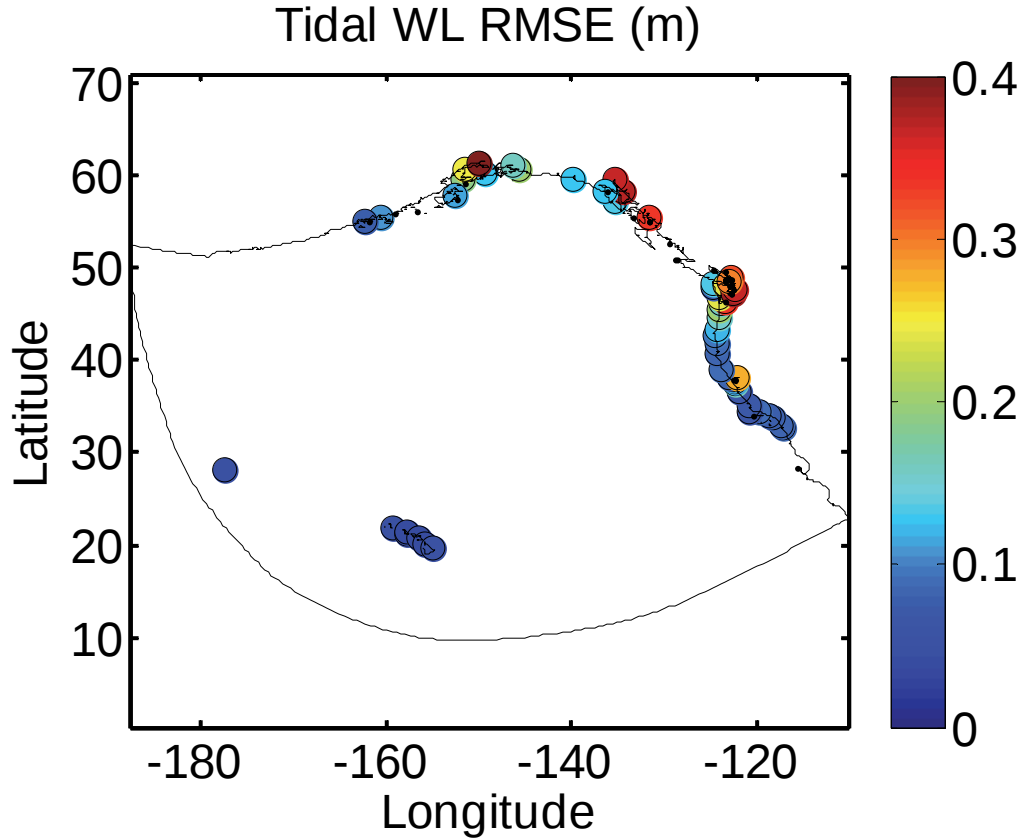


Figure 5. Root Mean Squared Error (RMSE) in tidal water level for the 15-month hindcast period (12/2004-2/2006) at all stations with observations.

The NOS standard suite of statistics was computed by comparing tidal water levels from the tidal simulation with CO-OPS tidal predictions and are presented in Appendix D (Scenario: Tidal Simulation). There are no tables at some stations because observations were not available during the simulation period (see Appendix B). The Root Mean Square Error (RMSE) at each station is depicted in Figure 5. Stations along the open coast generally have smaller error while the stations located within estuaries, rivers, or small tidal inlets can have relatively large errors. The RMSE varies from a maximum of 0.50 m at Anchorage, Alaska, to a minimum of 0.04 m at Mokuoloe, Hawaii.

The same information is also plotted in Figure 6 in green marks for each station. The x-axis is labeled with the CO-OPS station ID numbers and aligned roughly counterclockwise from California to Oregon, Washington, Alaska, and Hawaii.

For this skill assessment, a total of 15 stations of the 66 total have RMSE exceeding the NOS criterion (0.2 m, blue line in Figure 6) for the tidal water level. These are also the same stations where the Positive Outlier Frequency (POF), and Negative Outlier Frequency (NOF) criteria for the entire time series exceed the NOS criteria of 1% and had a relatively low score in Central Frequency (CF) of less than 65% (Appendix D).

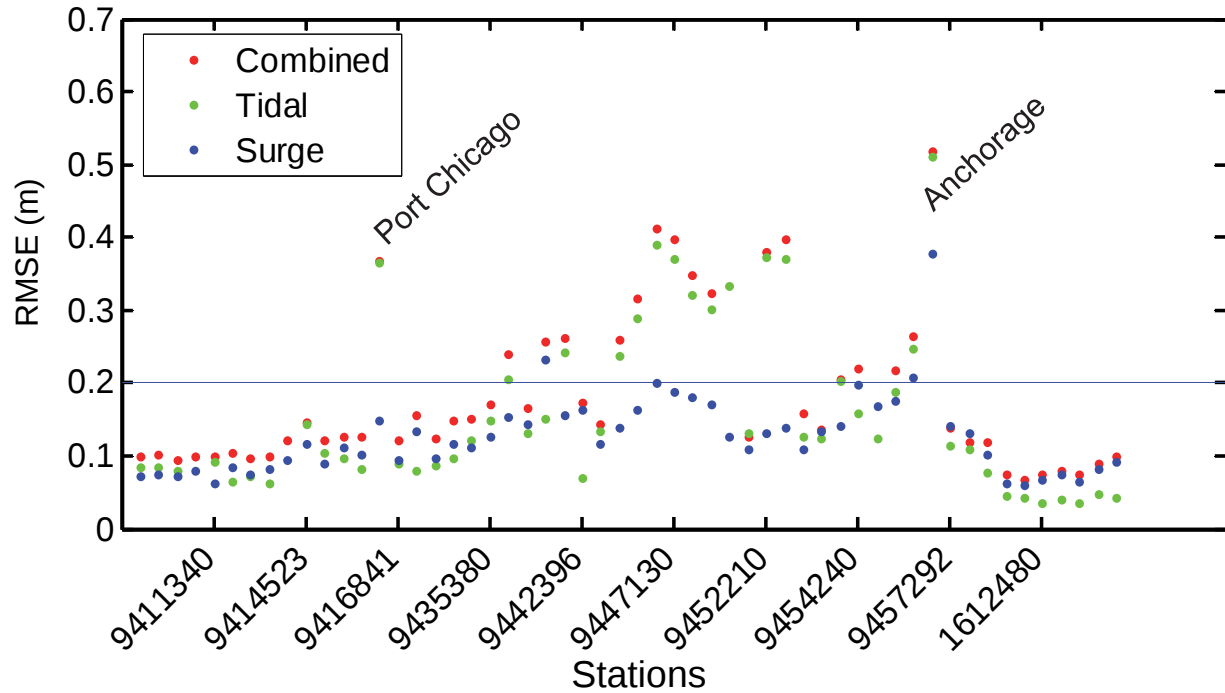


Figure 6. RMS errors (m) in the combined water level (red) as well as the tidal (green) and surge (blue) components at all available stations from the hindcast simulation. Stations roughly go counterclockwise from California to Oregon, Washington, Alaska and Hawaii.

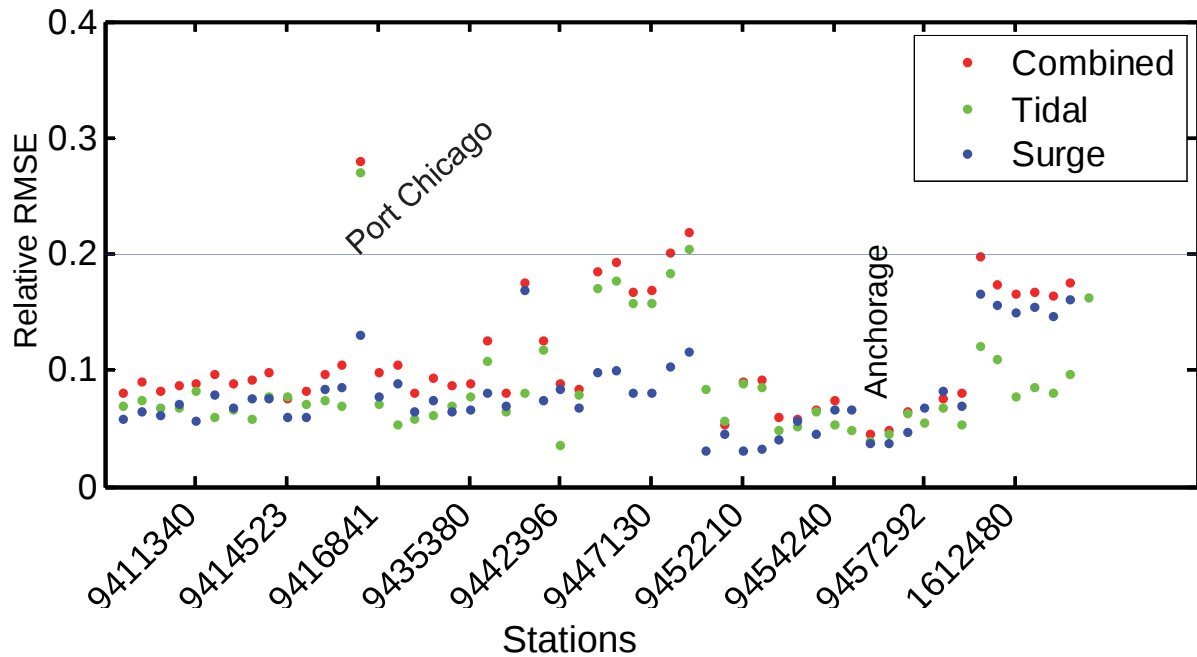


Figure 7. Relative RMS errors (m) scaled by tide range in the combined water level (red) as well as the tidal (green) and surge (blue) components at all available stations from the hindcast simulation. Stations roughly go counterclockwise from California to Oregon, Washington, Alaska and Hawaii.

As shown in Figure 5 and Figure 6, a relatively large error in the tidal water level prediction occurs mostly in Puget Sound and Alaska, where the shoreline and tidal dynamics are complex and tidal range is large. The RMSE of water level was compared against the mean tidal range at each station in order to determine the relative magnitude of water level uncertainty (Figure 7). With this measure, only a couple of stations have RMSE in tidal water level exceeding 20% of their corresponding MN tidal range: one is Port Chicago, CA which is located in the upper San Francisco Bay and close to the boundary where no river inflow is imposed; the other is at Friday Harbor, WA in Puget Sound. On the contrary, the largest RMSE of ~ 0.50 m at Anchorage is only about 6% of its tidal range of 7.98 m.

5.2. Hindcast Simulation

The hindcast simulation was a run for 15 months from December 2004 to February 2006. The ESTOFS water level time series were saved at hourly interval at locations where observations were available. The model used the same tidal forcing as done for the astronomical tide simulation. Wind velocities and atmospheric pressure obtained from the GFS were fed to the model every 6 hours (because the GFS analysis run output used for the hindcast simulation only has a 6-hr record, versus the 3-hr records produced during a forecast cycle).

The standard suite of statistics was computed to compare the simulated and observed water level time series and is presented in Appendix D [Scenario: Hindcast (combined water level)]. There are no tables at some stations because observations were not available during the hindcast period. Figure 8 shows the RMS errors in combined water level at each station, which has similar pattern and magnitude as the tidal water level shown in Figure 5. The absolute and relative RMSE to tidal range in combined water level at each station are also shown in Figures 6 and 7 in red. The RMSE varies from 0.52 m at Anchorage, Alaska, to 0.07 m at Honolulu, Hawaii.

In addition to the 15 stations whose RMSE in tidal water level exceeds the 0.2 m NOS criterion, three additional stations have RMSE in combined water level that exceeds the 0.2 m criterion: Skamokawa, WA near the boundary in Columbia River, and Valdez and Seldovia, AK in tidal inlets (Figures 6 and 8). Relative to the mean tidal range, the RMSE in combined water level at 3 stations exceeds 20% of its tidal range: Port Chicago, CA, Cherry Point, WA, Friday Harbor, WA and Midway Islands (Figure 7).

Even though the combined water level prediction is the final product that the general users will use, the surge component of the combined water level is of special interest to forecasters as they can evaluate and adjust it before super-imposing tidal information for the combined water level forecast. Therefore, additional code to deal with subtracting the tidal water level from the combined and perform skill assessment on the surge only water level was added into the NOS skill assessment package. The skill matrix for the surge water level time series is included in the skill tables [Appendix D (Scenario: Hindcast (surge only))]. For this non-tidal water level comparison, no skill assessment was done for the amplitude and timing of the high/low waters. Instead, the magnitude and timing of the peak high and low water marks from both model and observations are reported in the table. The RMSE of surge only water level at each station and its magnitude relative to tidal range are depicted in Figure 6 and 7 in blue dots. For the surge component of the water level, only 3 of the 66 stations exceeded the 0.2 m NOS criterion:

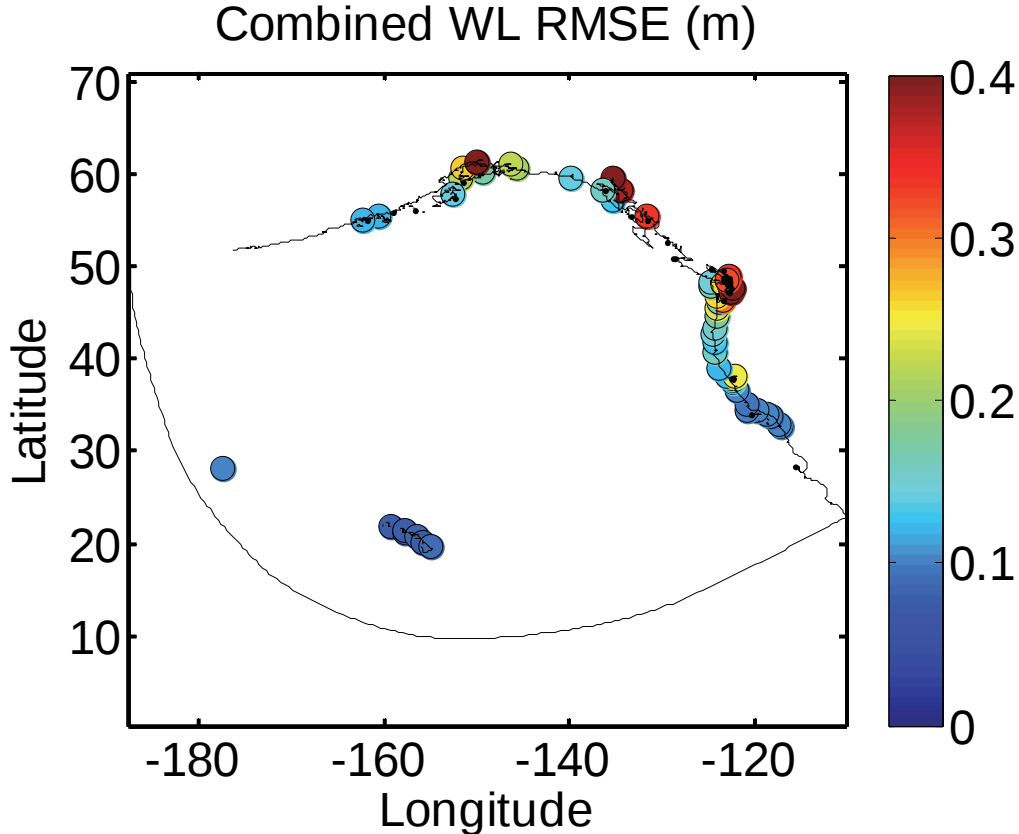


Figure 8. Root Mean Squared Error (RMSE) in combined water level for the 15-month hindcast period (12/2004-2/2006) at all stations with observations.

As described in Section 3.2, during the 15-month hindcast period, many stations experienced extreme water levels that exceed the 10% annual exceedance probability level. Figure 9 shows three examples of the high water extremes that occurred during the three storm periods (1/7-1/11, 2005, 12/30/2005 - 1/1/2006, and 2/4/2006). All extreme high water events occurred when significant storm surge coincided with the higher high tides. The surge component of the combined water level at San Francisco and Neah was about 30% of the mean tidal range or 20% of the greater diurnal range. While at Toke Point, which is located within Willapa Bay, the surge was about 60% of its mean tidal range.

5.3. Semi-Operational Nowcast/Forecast Simulation

The ESTOFS applies the same forcing for the forecast simulation as done for the hindcast simulation, except for the surface forcing interval. The GFS provides surface forcing every 3 hours in its forecast cycle. The ESTOFS ran 4 times per day to make 180-hr forecasts and recorded water levels at 6-min intervals at station locations. The 180-hr forecast simulations were concatenated into a continuous time series for skill assessment analysis. The ESTOFS forecasts are compared to CO-OPS preliminary real-time water level observations, which are not quality-controlled data. Due to the standards for NOS skill assessment, only the first 96 hours of the forecasts are used to compute skill assessment scores.

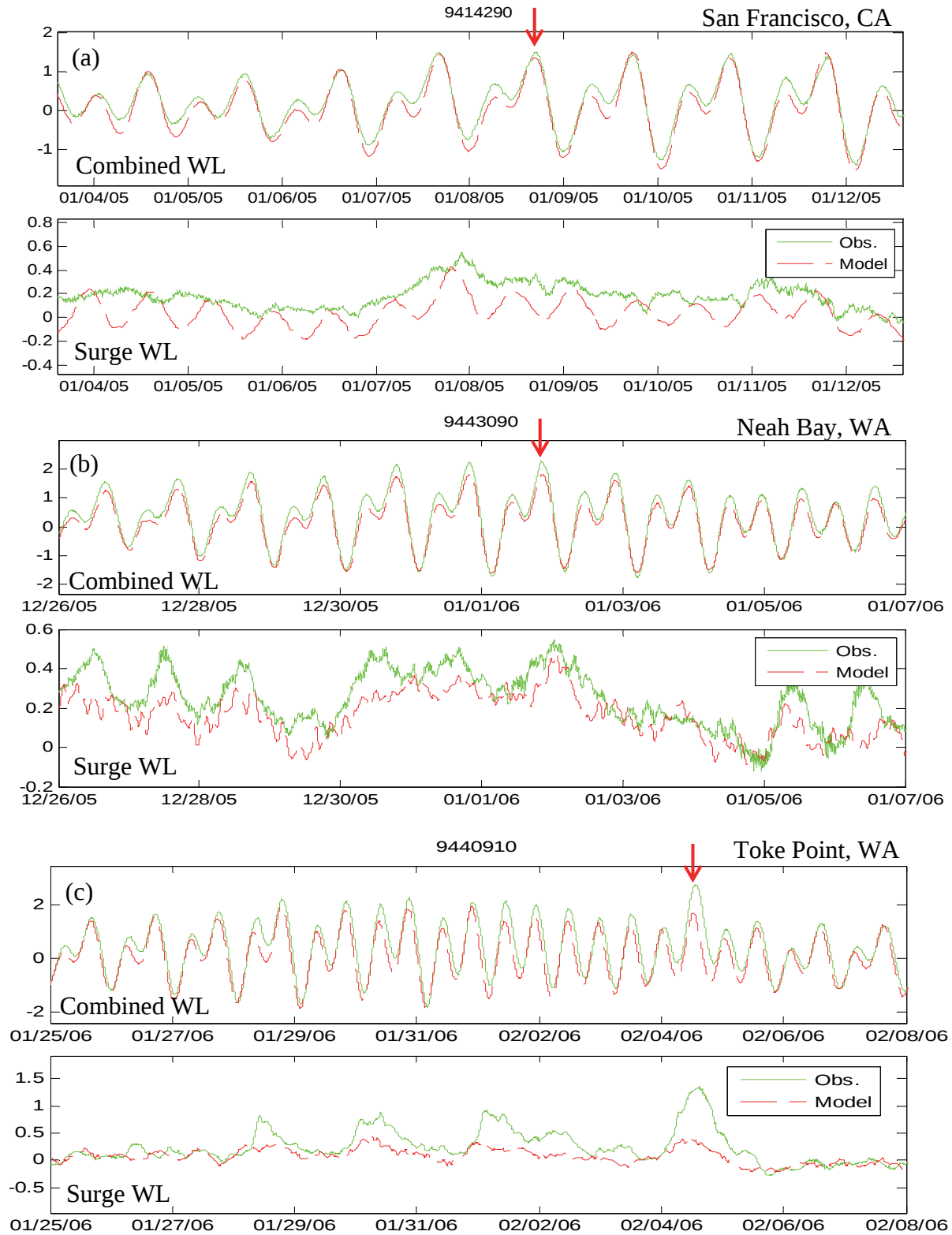


Figure 9. Observed and modeled water level time series at (a) San Francisco, CA, (b) Neah Bay, WA, and (c) Toke Point, WA. High water extremes that exceeded the 10% annual exceedance probability level are marked by red arrows.

Semi-operational nowcast/forecasts were made from February to April, 2014. However, due to the intermittent availability of the WCOSS computing resource preventing the generation of a continuous time series and a bug fix in early May in the wind interpolation program, we present the skill assessment results from the 1 month (May 6 – June 5, 2014) parallel testing runs.

The standard suite of NOS skill assessment statistics is presented in Appendix E (Scenario: Semi-Operational Forecast). Figure 10 shows the RMS error at each station at every sixth forecast hour from 0 to 96. The RMS errors in the combined water level at forecast hour 0 at each station are also plotted in Figure 11. The RMS errors in the nowcast/forecast simulation (Figures 10 and 11) show similar pattern and magnitude with that from the hindcast simulation (Figures 6 and 8). The relatively large RMS errors occur mostly in Puget Sound, Washington and southeast Alaska with the largest RMS error (0.525m) at Anchorage, AK at forecast hour 78. As shown in Figure 10, the RMS errors at forecast hour 96 (H96-h96) only differ slightly from the errors at forecast hour 0 (H00-h00), which demonstrates ESTOFS-Pacific’s forecast skill over time. The RMS errors slightly increase as the forecast progresses due to the increase in meteorological forecast uncertainty.

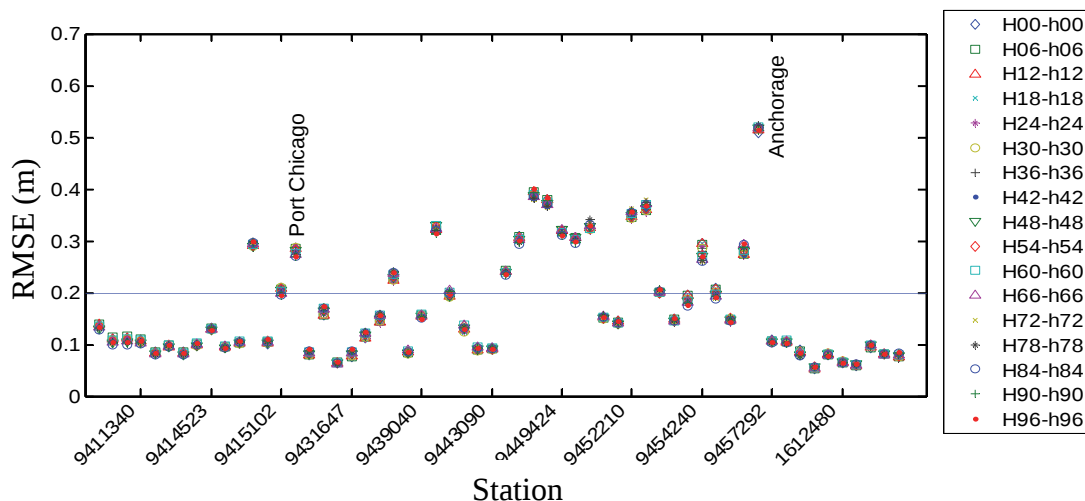


Figure 10. RMS errors (m) in the combined water level from the semi-operational forecast.

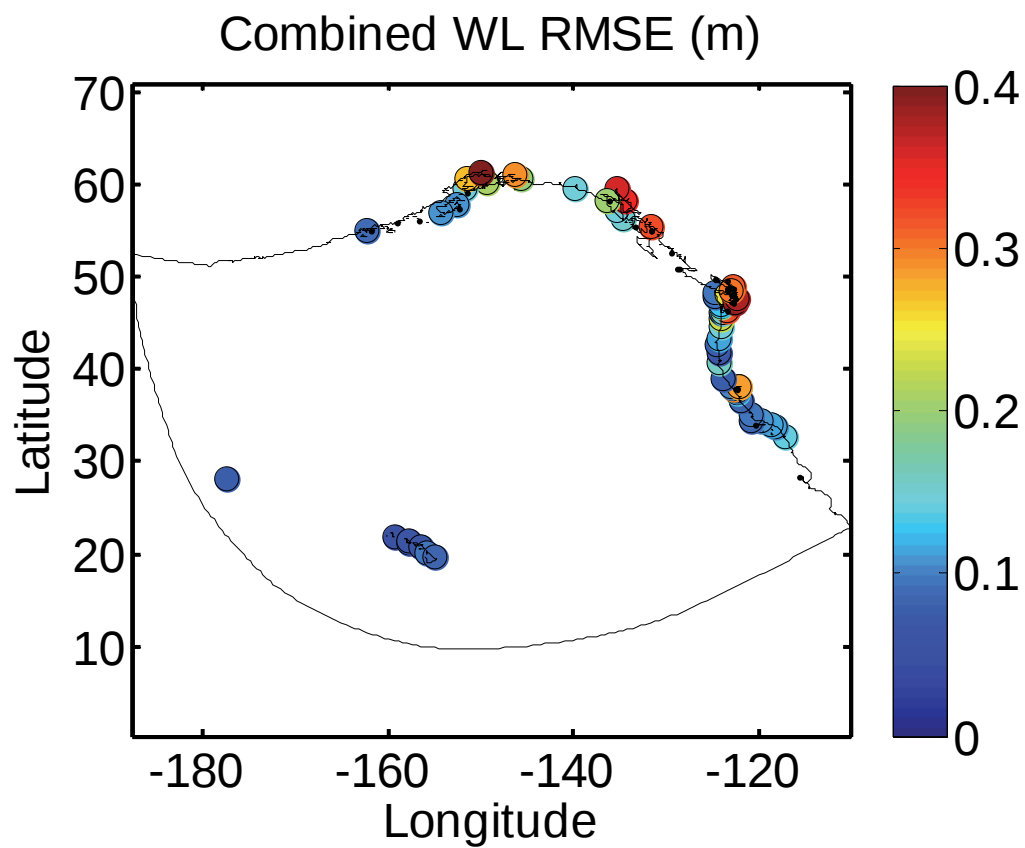


Figure 11. Root Mean Squared Error (m) in combined water level at forecast hour 0 for the 1-month nowcast/forecast period (5/6-6/5/2014) at all stations with observations.

6. SUMMARY AND CONCLUSIONS

A new unstructured grid for US West Coast, Gulf of Alaska and the Hawaiian Islands has been built. We applied the ADCIRC hydrodynamic model to this grid and evaluated the model performance in 3 model run scenarios: 1) astronomical tide, 2) hindcast simulation, and 3) semi-operational nowcast/forecast.

The model predicted tides well along the open coast. However, substantial discrepancies were observed in Puget Sound, Southeast Alaska, and in small tidal inlets and embayments as well as in upper reaches of rivers. Model resolution was unable to resolve how tidal waves interact with complex geometry of shorelines, bathymetry of sea floor, and freshwater inflow in these areas. Even though the unstructured model grid is designed to have higher resolution where needed, with the constraints of computational resources and data availability, the current model grid resolution and bathymetry accuracy are not sufficient to resolve all the tidal dynamics in these regions.

The results from the hindcast simulation and the semi-operational nowcast/forecast simulation showed similar model skill. Because the tidal variation dominates the combined water level variation along the West Coast and Gulf of Alaska coastline, the error trend in combined water level generally follows that of tidal water level. In contrast to the East and Gulf of Mexico coasts of the US, the magnitude of surge along the West coast is relatively small compared to the tidal range. The high water extremes here almost always occur when a moderate surge coincides with high tide.

ESTOFS-Pacific has been implemented into operations at NCEP since June 24, 2014. In operation, it runs 4 times a day to perform a 6-hr nowcast and a 180-hr forecast. Six-minute time series of tidal water level and combined water level are available at specified locations and domain-wide water levels are saved hourly.

ACKNOWLEDGMENTS

Cuong Hoang at CSDL provided the NOS bathymetric survey data. Edward Myers, Jindong Wang, and Lei Shi gave valuable input during the model development. Special thanks to Yuji Funakoshi who developed ESTOFS-Atlantic and helped to set up ESTOFS-Pacific real time simulation. We would also like to acknowledge Hendrik Tolman and Andre van der Westhuysen at NCEP/EMC for supporting ESTOFS-Pacific development, and Chris Magee, Kit Menlove, and Steven Earle at NCO for implementing ESTOFS-Pacific into operation.

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APPENDIX A. MODEL DOMAIN SELECTION

The northeastern Pacific poses special challenges in tidal simulations due to the existence of several clusters of amphidromes. The tidal charts of M_2 and K_1 in Figure A1 show examples of the semi-diurnal and diurnal tides in this region.

The goal of this project is to provide surge with tides for the US west coast, Gulf of Alaska, and Hawaii. For the ease of transition and maintenance, it is ideal if one model domain and grid can include all the interested areas. However, since the cluster of diurnal tidal amphidromes is close to the Hawaiian Islands and the cluster of semi-diurnal tidal amphidromes lies between the Hawaiian Islands and the west coast, we initially selected two different boundary locations (dash lines in Figure A1) and built two model grids (Figure A2). With the west coast domain, it would be necessary to build another model for the Hawaiian Islands separately.

The initial tidal simulations on the two model grids revealed that the diurnal tides results on both model grids are similar and compared well against harmonic constants from CO-OPS. However, the amplitudes of semi-diurnal tides on the extended domain were considerably underestimated.

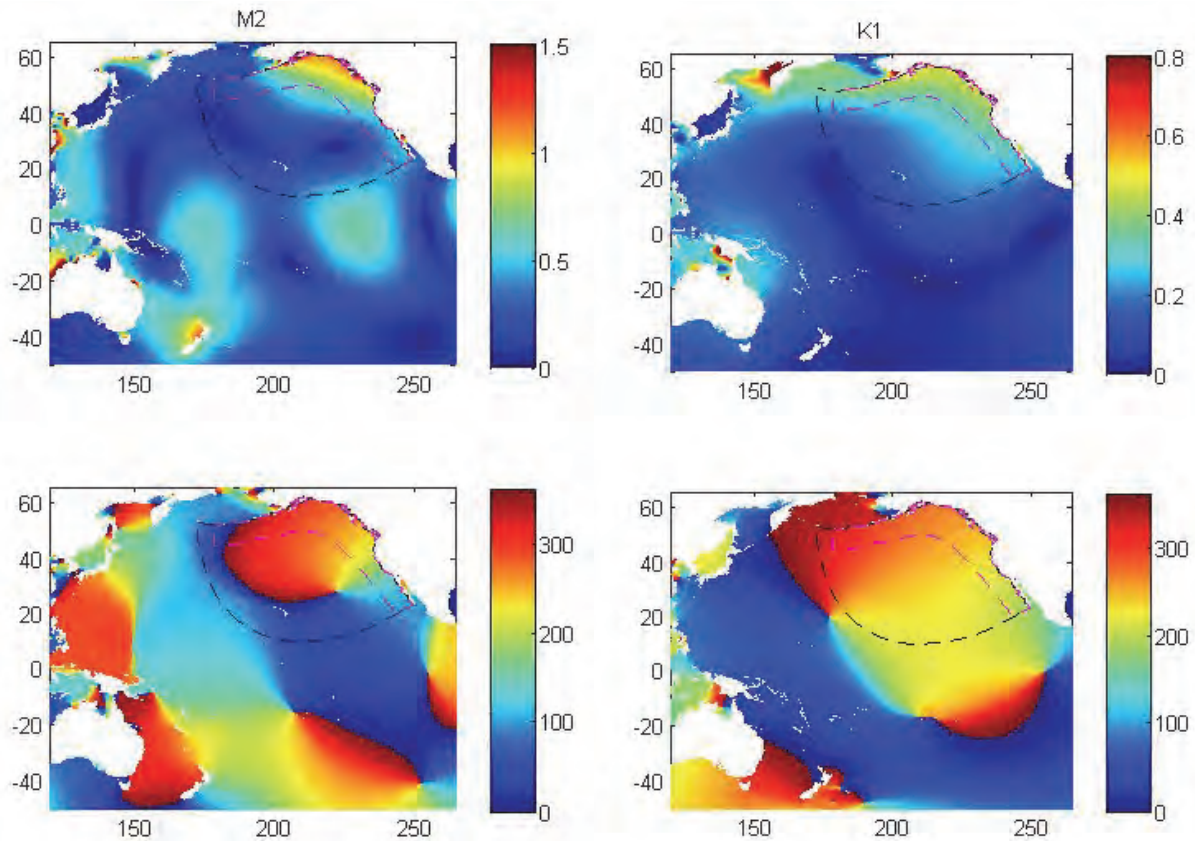


Figure A1. The two open boundary locations on the tidal charts in the Pacific from TPX08-atlas of M_2 and K_1 .

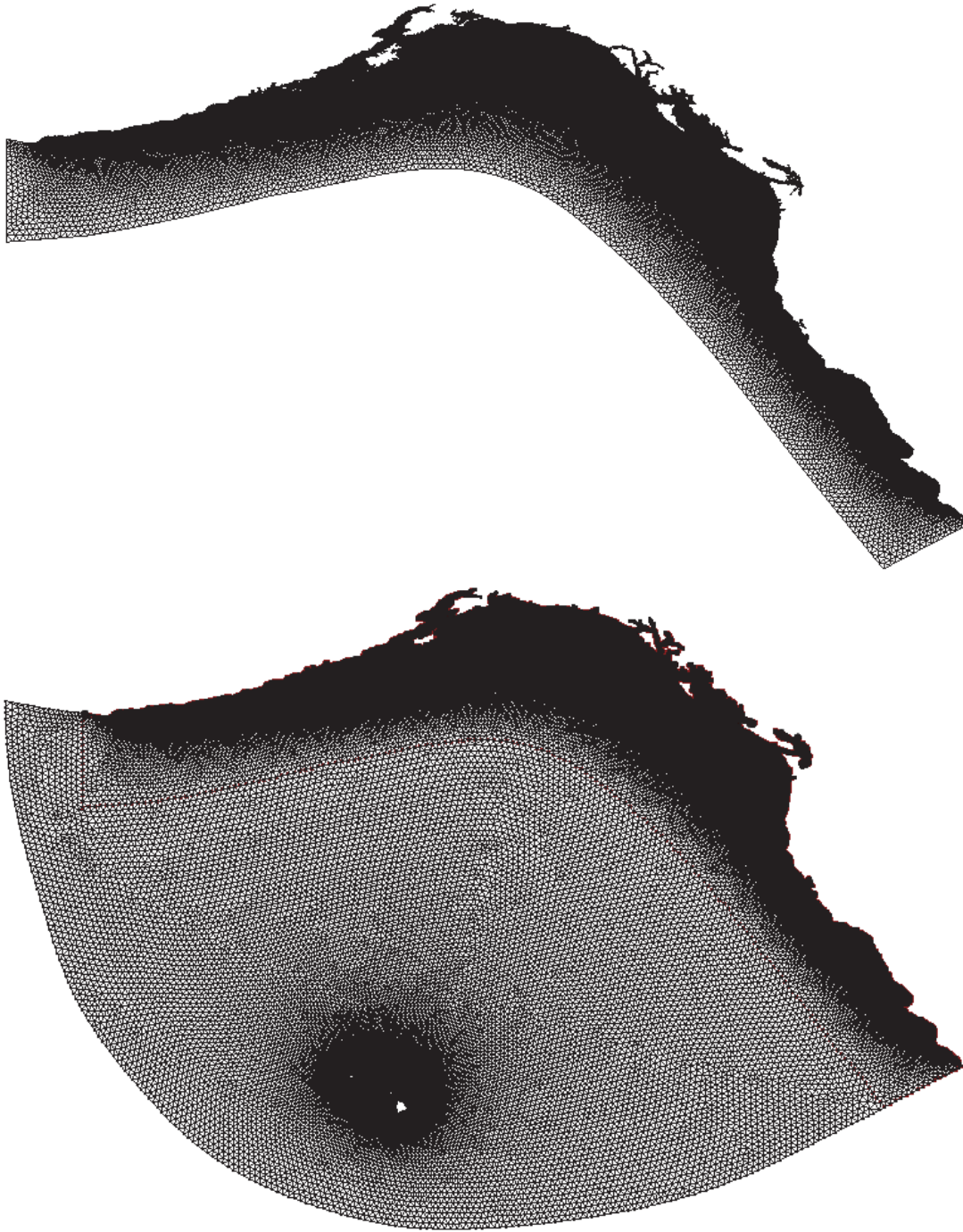


Figure A2. The model grids (a) for west coast and gulf of Alaska only, and (b) for the extended domain which also includes Hawaii.

Figure A3 shows the M_2 amplitude (top) and phase (bottom) results on the west coast domain (left), the extended domain (middle) and from TPXO8-Atlas (right) which provides boundary conditions to both models. M_2 on the west coast domain compared favorably with TPXO-Atlas

results while the amplitude of M_2 on the extended domain was underestimated considerably. Similar results were observed for other semi-diurnal tides S_2 , N_2 and K_2 .

Efforts made in order to improve the semi-diurnal tides on the extended domain included vary bottom friction, change TAU0 formulation and value, refine model grid, increase tidal potential, include advection and time derivative terms etc. All of these efforts did not improve the semi-diurnal tides significantly and resulted in more or less compromise in the diurnal tides results.

Because the underestimate of the semi-diurnal tidal amplitudes occurred fairly universally and even in the open ocean, we made an attempt to artificially increase the semi-diurnal tidal amplitudes along the open boundary by 20% based on the comparison results along the west coast and it greatly improved the semi-diurnal tides along the coast with little effect on the diurnal tides. Figure A4 shows the M_2 amplitude error from the west coast domain tidal simulation and from the extended domain tidal simulation with the 20% increase along the open boundary. With the modified open boundary conditions, results on the extended domain are similarly well as on the west coast domain. Therefore we made the decision to go with the extended domain and use only one domain and model to include all west coast, Gulf of Alaska and the Hawaiian Islands.

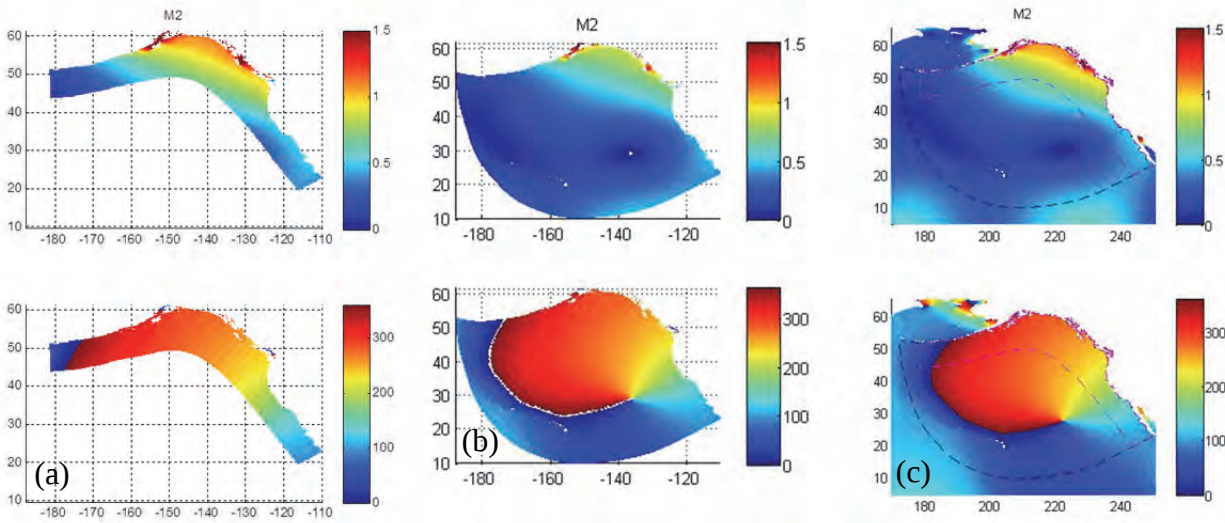


Figure A3. M_2 tidal charts from (a) west coast domain, (b) extended domain, and (c) TPXO8-Atlas.

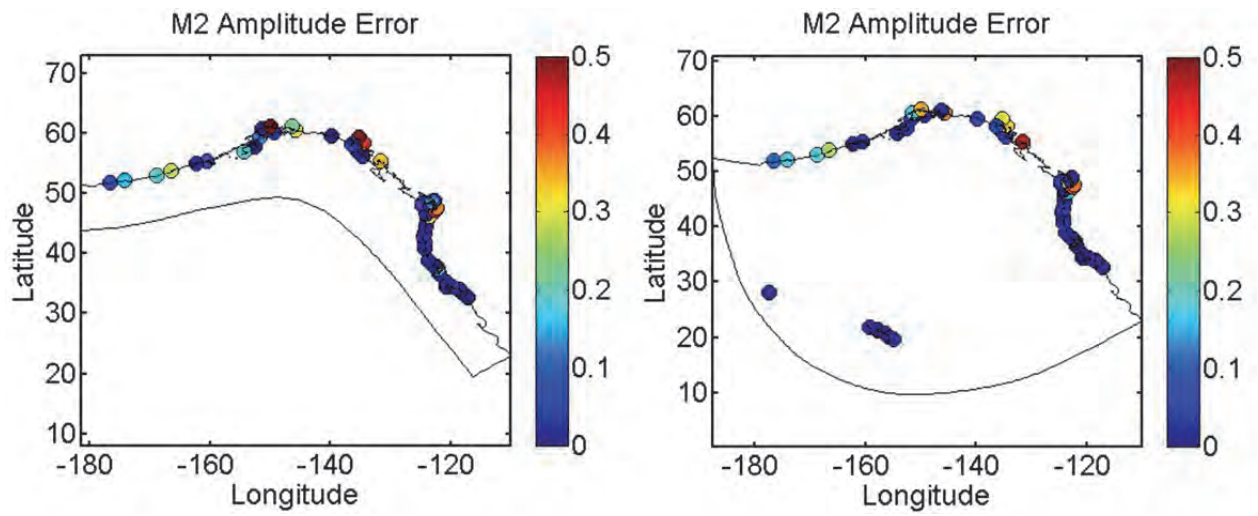


Figure A4. The M₂ amplitude error from the tidal simulation on (a) west coast domain and (b) the extended domain with 20% increase of semi-diurnal tides amplitude along the open boundary.

APPENDIX B. LIST OF STATIONS FOR SKILL ASSESSMENT

Lon	Lat	StaID	Name
-117.1736	32.7142	9410170	"San Diego, CA"
-117.2580	32.8667	9410230	"La Jolla, CA"
-118.2720	33.7200	9410660	"Los Angeles, CA"
-118.5000	34.0083	9410840	"Santa Monica, CA"
-119.6850	34.4083	9411340	"Santa Barbara, CA"
-120.2283	34.4694	9411399 ^{a,b}	"Gaviota State Park, Pacific Ocean, CA"
-120.6730	34.4683	9411406	"Oil Platform Harvest, CA"
-120.7600	35.1767	9412110	"Port San Luis, CA"
-121.4819	35.9495	9412802 ^{a,b}	"Mansfield Cone, CA"
-121.8880	36.6050	9413450	"Monterey, CA"
-122.4650	37.8067	9414290	"San Francisco, CA"
-122.2100	37.5067	9414523	"Redwood City, CA"
-122.2983	37.7717	9414750	"Alameda, CA"
-122.4000	37.9283	9414863	"Richmond, CA"
-122.6785	37.9080	9414958 ^a	"Bollinas, Bollinas Lagoon, CA"
-122.9767	37.9961	9415020	"Point Reyes, CA"
-122.3630	38.0150	9415056 ^{a,b}	"Point Pinole, CA"
-122.1250	38.0333	9415102 ^b	"Martinez-amorco Pier, CA"
-122.0395	38.0560	9415144	"Port Chicago, CA"
-122.4070	38.1567	9415338 ^{a,b}	"Sonoma Creek Entrance, CA"
-123.4494	38.7043	9416409 ^{a,b}	"Green Cove, Pacific Ocean, CA"
-123.7080	38.9133	9416841	"Arena Cove, CA"
-124.2170	40.7667	9418767	"North Spit, Humboldt Bay, CA"
-124.1830	41.7450	9419750	"Crescent City, CA"
-124.2009	41.9452	9419945 ^{a,b}	"Pyramid Point, Smith River, CA"
-124.4983	42.7390	9431647	"Port Orford, OR"
-124.3220	43.3450	9432780	"Charleston, OR"
-124.0430	44.6250	9435380	"South Beach, Yaquina River, OR"
-123.9189	45.5545	9437540	"Garibaldi, OR"
-123.9450	46.2017	9439011 ^a	"Hammond, OR"
-123.7683	46.2073	9439040	"Astoria, OR"
-123.4520	46.2667	9440569	"Skamokawa, WA"
-123.9669	46.7075	9440910	"Toke Point, WA"
-124.1051	46.9043	9441102	"Westport, WA"
-124.6370	47.9133	9442396	"La Push, WA"
-124.6117	48.3667	9443090	"Neah Bay, WA"
-123.4400	48.1250	9444090	"Port Angeles, WA"
-122.7580	48.1117	9444900	"Port Townsend, WA"
-122.4133	47.2667	9446484	"Tacoma, WA"
-122.3393	47.6026	9447130	"Seattle, Puget Sound, WA"
-122.7580	48.8633	9449424	"Cherry Point, WA"
-123.0100	48.5467	9449880	"Friday Harbor, WA"

-131.6262	55.3318	9450460	"Ketchikan, AK"
-134.6470	56.2467	9451054 ^a	"Port Alexander, AK"
-135.3420	57.0517	9451600	"Sitka, AK"
-134.4120	58.2983	9452210	"Juneau, AK"
-135.3270	59.4500	9452400	"Skagway, AK"
-136.3469	58.1947	9452634	"Elfin Cove, AK"
-139.7334	59.5485	9453220	"Yakutat, Yakutat Bay, AK"
-145.7530	60.5583	9454050	"Cordova, AK"
-146.3620	61.1250	9454240	"Valdez, AK"
-149.4267	60.1200	9455090	"Seward, AK"
-151.7199	59.4405	9455500	"Seldovia, AK"
-151.3980	60.6833	9455760	"Nikiski, AK"
-149.8900	61.2383	9455920	"Anchorage, AK"
-152.5120	57.7317	9457292	"Kodiak Island, AK"
-154.2470	56.8983	9457804 ^a	"Alitak, AK"
-160.5020	55.3367	9459450	"Sand Point, AK"
-162.3270	55.0617	9459881	"King Cove, AK"
-159.3561	21.9544	1611400	"Nawiliwili, HI"
-157.8670	21.3067	1612340	"Honolulu, HI"
-157.7900	21.4331	1612480	"Mokuoloe, HI"
-156.4767	20.8950	1615680	"Kahului, Kahului Harbor, HI"
-155.8294	20.0366	1617433	"Kawaihae, HI"
-155.0558	19.7303	1617760	"Hilo, Hilo Bay, Kuhio Bay, HI"
-177.3600	28.2117	1619910	"Sand Island, Midway Islands"

Notes: ^a indicates no observations available during hindcast period.

^b indicates no observations available during semi-operational simulation period.

APPENDIX C. SKILL ASSESSMENT OF HARMONIC CONSTANTS

Station: "San Diego, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.556	143.2	0.582	137.0	0.026	-6.2
2	S(2)	0.229	140.2	0.256	135.7	0.027	-4.5
3	N(2)	0.130	123.8	0.138	118.1	0.008	-5.7
4	K(1)	0.347	208.0	0.349	208.5	0.002	0.5
5	M(4)	0.000	0.0	0.004	159.6	0.000	0.0
6	O(1)	0.220	192.4	0.227	198.8	0.007	6.4
7	M(6)	0.004	61.4	0.024	30.7	0.020	-30.7
8	MK(3)	0.000	0.0	0.005	200.3	0.000	0.0
9	S(4)	0.000	0.0	0.002	157.2	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.025	128.8	0.000	0.0	-0.025	-128.8
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.016	93.0	0.000	0.0	-0.016	-93.0
14	2N(2)	0.016	97.5	0.001	243.2	-0.015	145.7
15	00(1)	0.011	241.1	0.000	0.0	-0.011	118.9
16	LAMBDA(2)	0.003	128.8	0.000	0.0	-0.003	-128.8
17	S(1)	0.004	338.8	0.000	0.0	-0.004	21.2
18	M(1)	0.013	220.4	0.001	308.4	-0.012	88.0
19	J(1)	0.020	220.6	0.001	315.6	-0.019	95.0
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.069	179.3	0.000	0.0	-0.069	-179.3
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.009	184.3	0.000	0.0	-0.009	175.7
26	Q(1)	0.041	184.7	0.040	191.7	-0.001	7.0
27	T(2)	0.014	127.3	0.000	0.0	-0.014	-127.3
28	R(2)	0.002	140.1	0.000	0.0	-0.002	-140.1
29	2Q(1)	0.004	182.1	0.000	0.0	-0.004	177.9
30	P(1)	0.109	205.5	0.108	208.6	-0.001	3.1
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.003	346.1	0.000	0.0	-0.003	13.9
33	L(2)	0.015	144.0	0.002	69.3	-0.013	-74.7
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.067	134.3	0.075	124.2	0.008	-10.1
36	M(8)	0.000	0.0	0.002	135.6	0.000	0.0
37	MS(4)	0.000	0.0	0.009	143.7	0.000	0.0

Station: "Los Angeles, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.515	145.5	0.541	139.5	0.026	-6.0
2	S(2)	0.203	141.1	0.227	136.2	0.024	-4.9
3	N(2)	0.121	123.7	0.129	119.3	0.008	-4.4
4	K(1)	0.343	207.7	0.353	209.3	0.010	1.6
5	M(4)	0.000	0.0	0.003	327.1	0.000	0.0
6	O(1)	0.218	192.3	0.230	199.8	0.012	7.5
7	M(6)	0.000	0.0	0.007	351.3	0.000	0.0
8	MK(3)	0.000	0.0	0.002	92.5	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.023	130.2	0.000	0.0	-0.023	-130.2
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.017	88.1	0.000	0.0	-0.017	-88.1
14	2N(2)	0.015	95.1	0.000	0.0	-0.015	-95.1
15	OO(1)	0.011	236.9	0.000	0.0	-0.011	123.1
16	LAMBDA(2)	0.003	166.4	0.000	0.0	-0.003	-166.4
17	S(1)	0.003	314.1	0.000	0.0	-0.003	45.9
18	M(1)	0.012	222.6	0.000	0.0	-0.012	137.4
19	J(1)	0.020	219.1	0.000	0.0	-0.020	140.9
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.066	184.4	0.000	0.0	-0.066	175.6
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.008	182.1	0.000	0.0	-0.008	177.9
26	Q(1)	0.039	185.0	0.040	192.1	0.001	7.1
27	T(2)	0.012	129.7	0.000	0.0	-0.012	-129.7
28	R(2)	0.003	167.5	0.000	0.0	-0.003	-167.5
29	2Q(1)	0.004	186.1	0.000	0.0	-0.004	173.9
30	P(1)	0.107	204.6	0.109	208.7	0.002	4.1
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.003	350.1	0.000	0.0	-0.003	9.9
33	L(2)	0.008	134.2	0.000	0.0	-0.008	-134.2
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.060	135.5	0.065	125.1	0.005	-10.4
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.002	93.7	0.000	0.0

Station: "Santa Monica, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.506	147.3	0.534	141.0	0.028	-6.3
2	S(2)	0.200	143.2	0.222	137.2	0.022	-6.0
3	N(2)	0.120	125.5	0.128	120.5	0.008	-5.0
4	K(1)	0.340	209.1	0.352	209.8	0.012	0.7
5	M(4)	0.000	0.0	0.003	328.8	0.000	0.0
6	O(1)	0.218	193.8	0.229	200.3	0.011	6.5
7	M(6)	0.000	0.0	0.007	351.9	0.000	0.0
8	MK(3)	0.000	0.0	0.002	93.2	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.023	131.3	0.000	0.0	-0.023	-131.3
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.016	88.7	0.000	0.0	-0.016	-88.7
14	2N(2)	0.015	97.9	0.000	0.0	-0.015	-97.9
15	OO(1)	0.010	236.8	0.000	0.0	-0.010	123.2
16	LAMBDA(2)	0.004	145.5	0.000	0.0	-0.004	-145.5
17	S(1)	0.004	291.6	0.000	0.0	-0.004	68.4
18	M(1)	0.011	216.7	0.000	0.0	-0.011	143.3
19	J(1)	0.020	222.3	0.000	0.0	-0.020	137.7
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.065	183.2	0.000	0.0	-0.065	176.8
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.007	188.4	0.000	0.0	-0.007	171.6
26	Q(1)	0.040	185.8	0.040	192.5	0.000	6.7
27	T(2)	0.013	128.0	0.000	0.0	-0.013	-128.0
28	R(2)	0.002	143.0	0.000	0.0	-0.002	-143.0
29	2Q(1)	0.005	187.1	0.000	0.0	-0.005	172.9
30	P(1)	0.107	205.1	0.109	209.3	0.002	4.2
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.003	345.4	0.000	0.0	-0.003	14.6
33	L(2)	0.005	162.9	0.000	0.0	-0.005	-162.9
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.058	136.6	0.064	126.0	0.006	-10.6
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.002	93.9	0.000	0.0

Station: "Santa Barbara, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.479	157.8	0.524	150.6	0.045	-7.2
2	S(2)	0.167	151.2	0.200	145.4	0.033	-5.8
3	N(2)	0.115	135.5	0.125	128.7	0.010	-6.8
4	K(1)	0.349	213.8	0.358	213.1	0.009	-0.7
5	M(4)	0.004	55.9	0.003	335.7	-0.001	80.2
6	O(1)	0.227	197.3	0.232	203.6	0.005	6.3
7	M(6)	0.001	329.4	0.005	358.1	0.004	28.7
8	MK(3)	0.005	130.3	0.002	97.1	-0.003	-33.2
9	S(4)	0.001	26.0	0.000	0.0	-0.001	-26.0
10	MN(4)	0.001	73.6	0.000	0.0	-0.001	-73.6
11	NU(2)	0.021	143.0	0.000	0.0	-0.021	-143.0
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.011	87.1	0.000	0.0	-0.011	-87.1
14	2N(2)	0.014	110.4	0.000	0.0	-0.014	-110.4
15	OO(1)	0.011	238.7	0.000	0.0	-0.011	121.3
16	LAMBDA(2)	0.006	172.1	0.000	0.0	-0.006	-172.1
17	S(1)	0.004	278.9	0.000	0.0	-0.004	81.1
18	M(1)	0.012	224.6	0.000	0.0	-0.012	135.4
19	J(1)	0.022	224.8	0.000	0.0	-0.022	135.2
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.079	156.8	0.000	0.0	-0.079	-156.8
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.008	192.4	0.000	0.0	-0.008	167.6
26	Q(1)	0.041	187.2	0.040	195.8	-0.001	8.6
27	T(2)	0.005	142.5	0.000	0.0	-0.005	-142.5
28	R(2)	0.000	0.0	0.000	0.0	0.000	0.0
29	2Q(1)	0.006	198.8	0.000	0.0	-0.006	161.2
30	P(1)	0.113	210.3	0.111	212.6	-0.002	2.3
31	2SM(2)	0.004	343.0	0.000	0.0	-0.004	17.0
32	M(3)	0.001	350.0	0.000	0.0	-0.001	10.0
33	L(2)	0.009	211.7	0.000	0.0	-0.009	148.3
34	2MK(3)	0.004	76.1	0.000	0.0	-0.004	-76.1
35	K(2)	0.046	145.7	0.057	133.7	0.011	-12.0
36	M(8)	0.001	45.4	0.000	0.0	-0.001	-45.4
37	MS(4)	0.004	75.3	0.002	104.6	-0.002	29.3

Station: "Gaviota State Park, Pacific Ocean, CA"
 Observation: CO-OPS Accepted Harmonic Constants
 Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
 amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.487	158.3	0.505	153.2	0.018	-5.1
2	S(2)	0.170	151.3	0.188	147.4	0.018	-3.9
3	N(2)	0.114	133.2	0.120	130.8	0.006	-2.4
4	K(1)	0.354	211.4	0.355	213.8	0.001	2.4
5	M(4)	0.003	275.6	0.002	338.1	-0.001	62.5
6	O(1)	0.219	198.4	0.230	204.3	0.011	5.9
7	M(6)	0.001	349.4	0.004	0.6	0.003	11.2
8	MK(3)	0.000	0.0	0.002	96.3	0.000	0.0
9	S(4)	0.002	311.1	0.000	0.0	-0.002	48.9
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.022	136.5	0.000	0.0	-0.022	-136.5
12	S(6)	0.001	99.8	0.000	0.0	-0.001	-99.8
13	MU(2)	0.012	165.3	0.000	0.0	-0.012	-165.3
14	2N(2)	0.015	108.1	0.000	0.0	-0.015	-108.1
15	OO(1)	0.009	224.5	0.000	0.0	-0.009	135.5
16	LAMBDA(2)	0.003	155.0	0.000	0.0	-0.003	-155.0
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.016	204.9	0.000	0.0	-0.016	155.1
19	J(1)	0.017	217.9	0.000	0.0	-0.017	142.1
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.079	156.8	0.000	0.0	-0.079	-156.8
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.008	192.8	0.000	0.0	-0.008	167.2
26	Q(1)	0.043	191.9	0.040	196.4	-0.003	4.5
27	T(2)	0.010	151.6	0.000	0.0	-0.010	-151.6
28	R(2)	0.001	151.0	0.000	0.0	-0.001	-151.0
29	2Q(1)	0.006	185.5	0.000	0.0	-0.006	174.5
30	P(1)	0.117	210.5	0.110	213.4	-0.007	2.9
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.014	183.4	0.000	0.0	-0.014	176.6
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.046	150.7	0.054	135.5	0.008	-15.2
36	M(8)	0.001	37.5	0.000	0.0	-0.001	-37.5
37	MS(4)	0.000	0.0	0.002	106.4	0.000	0.0

Station: "Oil Platform Harvest, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.491	162.6	0.485	157.0	-0.006	-5.6
2	S(2)	0.162	156.7	0.172	150.7	0.010	-6.0
3	N(2)	0.117	138.7	0.115	134.0	-0.002	-4.7
4	K(1)	0.362	214.8	0.353	215.0	-0.009	0.2
5	M(4)	0.005	305.8	0.002	341.8	-0.003	36.0
6	O(1)	0.229	200.2	0.228	205.3	-0.001	5.1
7	M(6)	0.000	0.0	0.002	5.5	0.000	0.0
8	MK(3)	0.006	29.2	0.002	97.0	-0.004	67.8
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.023	147.5	0.000	0.0	-0.023	-147.5
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.015	92.6	0.000	0.0	-0.015	-92.6
14	2N(2)	0.011	106.9	0.000	0.0	-0.011	-106.9
15	OO(1)	0.012	245.5	0.000	0.0	-0.012	114.5
16	LAMBDA(2)	0.005	186.5	0.000	0.0	-0.005	173.5
17	S(1)	0.014	323.6	0.000	0.0	-0.014	36.4
18	M(1)	0.014	223.4	0.000	0.0	-0.014	136.6
19	J(1)	0.021	224.8	0.000	0.0	-0.021	135.2
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.017	280.1	0.000	0.0	-0.017	79.9
22	SA	0.051	195.6	0.000	0.0	-0.051	164.4
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.007	168.5	0.000	0.0	-0.007	-168.5
26	Q(1)	0.040	192.2	0.039	197.4	-0.001	5.2
27	T(2)	0.008	153.6	0.000	0.0	-0.008	-153.6
28	R(2)	0.000	0.0	0.000	0.0	0.000	0.0
29	2Q(1)	0.006	170.5	0.000	0.0	-0.006	-170.5
30	P(1)	0.118	211.7	0.109	214.5	-0.009	2.8
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.012	199.4	0.000	0.0	-0.012	160.6
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.044	150.1	0.049	138.5	0.005	-11.6
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.002	110.0	0.000	0.0

Station: "Port San Luis, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.501	168.1	0.498	163.2	-0.003	-4.9
2	S(2)	0.150	163.7	0.165	157.6	0.015	-6.1
3	N(2)	0.117	144.0	0.117	139.5	0.000	-4.5
4	K(1)	0.362	214.7	0.360	216.6	-0.002	1.9
5	M(4)	0.000	0.0	0.002	349.4	0.000	0.0
6	O(1)	0.227	198.8	0.232	207.0	0.005	8.2
7	M(6)	0.000	0.0	0.002	17.0	0.000	0.0
8	MK(3)	0.000	0.0	0.002	100.4	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.022	150.2	0.000	0.0	-0.022	-150.2
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.015	103.1	0.000	0.0	-0.015	-103.1
14	2N(2)	0.014	114.6	0.000	0.0	-0.014	-114.6
15	OO(1)	0.012	242.2	0.000	0.0	-0.012	117.8
16	LAMBDA(2)	0.003	188.1	0.000	0.0	-0.003	171.9
17	S(1)	0.006	315.5	0.000	0.0	-0.006	44.5
18	M(1)	0.014	222.2	0.000	0.0	-0.014	137.8
19	J(1)	0.022	225.6	0.000	0.0	-0.022	134.4
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.032	279.1	0.000	0.0	-0.032	80.9
22	SA	0.056	191.9	0.000	0.0	-0.056	168.1
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.006	123.7	0.000	0.0	-0.006	-123.7
25	RHO(1)	0.009	194.8	0.000	0.0	-0.009	165.2
26	Q(1)	0.041	190.7	0.040	199.0	-0.001	8.3
27	T(2)	0.009	151.7	0.000	0.0	-0.009	-151.7
28	R(2)	0.001	163.6	0.000	0.0	-0.001	-163.6
29	2Q(1)	0.004	186.5	0.000	0.0	-0.004	173.5
30	P(1)	0.115	211.9	0.111	216.2	-0.004	4.3
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.012	187.2	0.000	0.0	-0.012	172.8
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.044	156.1	0.047	145.0	0.003	-11.1
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	120.5	0.000	0.0

Station: "Mansfield Cone, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.488	174.8	0.486	170.2	-0.002	-4.6
2	S(2)	0.136	173.7	0.148	164.9	0.012	-8.8
3	N(2)	0.106	147.9	0.113	145.5	0.007	-2.4
4	K(1)	0.349	218.7	0.358	218.7	0.009	0.0
5	M(4)	0.003	321.6	0.002	359.2	-0.001	37.6
6	O(1)	0.217	202.3	0.231	209.0	0.014	6.7
7	M(6)	0.002	262.3	0.001	36.7	-0.001	134.4
8	MK(3)	0.000	0.0	0.002	101.7	0.000	0.0
9	S(4)	0.002	256.4	0.000	0.0	-0.002	103.6
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.021	151.5	0.000	0.0	-0.021	-151.5
12	S(6)	0.002	167.8	0.000	0.0	-0.002	-167.8
13	MU(2)	0.012	175.8	0.000	0.0	-0.012	-175.8
14	2N(2)	0.014	121.1	0.000	0.0	-0.014	-121.1
15	OO(1)	0.009	235.1	0.000	0.0	-0.009	124.9
16	LAMBDA(2)	0.003	174.3	0.000	0.0	-0.003	-174.3
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.015	210.5	0.000	0.0	-0.015	149.5
19	J(1)	0.017	226.8	0.000	0.0	-0.017	133.2
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.032	279.1	0.000	0.0	-0.032	80.9
22	SA	0.056	191.9	0.000	0.0	-0.056	168.1
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.008	195.2	0.000	0.0	-0.008	164.8
26	Q(1)	0.042	194.1	0.040	200.9	-0.002	6.8
27	T(2)	0.008	173.8	0.000	0.0	-0.008	-173.8
28	R(2)	0.001	173.6	0.000	0.0	-0.001	-173.6
29	2Q(1)	0.006	186.0	0.000	0.0	-0.006	174.0
30	P(1)	0.116	217.5	0.110	218.3	-0.006	0.8
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.014	201.4	0.000	0.0	-0.014	158.6
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.037	173.6	0.042	151.9	0.005	-21.7
36	M(8)	0.001	118.4	0.000	0.0	-0.001	-118.4
37	MS(4)	0.000	0.0	0.001	131.2	0.000	0.0

Station: "Monterey, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.493	181.1	0.490	176.1	-0.003	-5.0
2	S(2)	0.130	180.2	0.140	172.1	0.010	-8.1
3	N(2)	0.112	154.6	0.113	150.7	0.001	-3.9
4	K(1)	0.365	219.8	0.359	220.2	-0.006	0.4
5	M(4)	0.000	0.0	0.002	9.6	0.000	0.0
6	O(1)	0.230	203.4	0.231	210.5	0.001	7.1
7	M(6)	0.000	0.0	0.000	0.0	0.000	0.0
8	MK(3)	0.000	0.0	0.002	104.1	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.022	161.1	0.000	0.0	-0.022	-161.1
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.012	114.6	0.000	0.0	-0.012	-114.6
14	2N(2)	0.013	123.9	0.000	0.0	-0.013	-123.9
15	00(1)	0.011	250.2	0.000	0.0	-0.011	109.8
16	LAMBDA(2)	0.003	180.7	0.000	0.0	-0.003	179.3
17	S(1)	0.010	319.1	0.000	0.0	-0.010	40.9
18	M(1)	0.012	225.9	0.000	0.0	-0.012	134.1
19	J(1)	0.022	233.4	0.000	0.0	-0.022	126.6
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.027	283.9	0.000	0.0	-0.027	76.1
22	SA	0.048	206.0	0.000	0.0	-0.048	154.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.008	196.6	0.000	0.0	-0.008	163.4
26	Q(1)	0.041	195.1	0.039	202.3	-0.002	7.2
27	T(2)	0.007	167.8	0.000	0.0	-0.007	-167.8
28	R(2)	0.001	180.2	0.000	0.0	-0.001	179.8
29	2Q(1)	0.005	199.4	0.000	0.0	-0.005	160.6
30	P(1)	0.114	215.6	0.111	219.8	-0.003	4.2
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.007	220.2	0.000	0.0	-0.007	139.8
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.037	172.0	0.039	158.8	0.002	-13.2
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	144.1	0.000	0.0

Station: "San Francisco, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.580	210.6	0.620	203.3	0.040	-7.3
2	S(2)	0.137	218.4	0.157	205.4	0.020	-13.0
3	N(2)	0.123	184.9	0.133	177.2	0.010	-7.7
4	K(1)	0.368	226.5	0.388	229.6	0.020	3.1
5	M(4)	0.023	142.0	0.005	131.2	-0.018	-10.8
6	O(1)	0.230	210.1	0.251	219.8	0.021	9.7
7	M(6)	0.000	0.0	0.005	73.6	0.000	0.0
8	MK(3)	0.019	129.0	0.011	116.6	-0.008	-12.4
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.009	119.3	0.000	0.0	-0.009	-119.3
11	NU(2)	0.026	188.3	0.000	0.0	-0.026	171.7
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.007	100.9	0.000	0.0	-0.007	-100.9
14	2N(2)	0.014	158.4	0.003	350.8	-0.011	167.6
15	OO(1)	0.011	261.1	0.000	0.0	-0.011	98.9
16	LAMBDA(2)	0.006	217.5	0.000	0.0	-0.006	142.5
17	S(1)	0.007	284.8	0.000	0.0	-0.007	75.2
18	M(1)	0.011	244.5	0.002	7.7	-0.009	123.2
19	J(1)	0.019	243.8	0.002	18.6	-0.017	134.8
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.039	286.9	0.000	0.0	-0.039	73.1
22	SA	0.038	221.4	0.000	0.0	-0.038	138.6
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.009	202.3	0.000	0.0	-0.009	157.7
26	Q(1)	0.040	203.2	0.043	213.3	0.003	10.1
27	T(2)	0.009	196.6	0.000	0.0	-0.009	163.4
28	R(2)	0.001	218.7	0.000	0.0	-0.001	141.3
29	2Q(1)	0.004	208.0	0.000	0.0	-0.004	152.0
30	P(1)	0.116	223.3	0.119	230.3	0.003	7.0
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.005	26.8	0.000	0.0	-0.005	-26.8
33	L(2)	0.016	225.8	0.007	231.0	-0.009	5.2
34	2MK(3)	0.014	96.7	0.000	0.0	-0.014	-96.7
35	K(2)	0.040	209.9	0.046	194.0	0.006	-15.9
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.010	154.3	0.003	171.9	-0.007	17.6

Station: "Redwood City, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.884	240.7	0.889	231.3	0.005	-9.4
2	S(2)	0.192	258.6	0.217	242.4	0.025	-16.2
3	N(2)	0.176	219.2	0.182	210.7	0.006	-8.5
4	K(1)	0.417	240.8	0.431	243.9	0.014	3.1
5	M(4)	0.011	335.9	0.034	33.8	0.023	57.9
6	O(1)	0.245	225.5	0.281	233.7	0.036	8.2
7	M(6)	0.012	43.1	0.013	3.0	0.001	-40.1
8	MK(3)	0.027	89.8	0.053	55.7	0.026	-34.1
9	S(4)	0.000	0.0	0.002	69.6	0.000	0.0
10	MN(4)	0.005	331.3	0.000	0.0	-0.005	28.7
11	NU(2)	0.040	221.3	0.000	0.0	-0.040	138.7
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.021	1.4	0.000	0.0	-0.021	-1.4
14	2N(2)	0.015	201.6	0.008	353.6	-0.007	152.0
15	OO(1)	0.014	289.4	0.000	0.0	-0.014	70.6
16	LAMBDA(2)	0.018	214.3	0.000	0.0	-0.018	145.7
17	S(1)	0.016	217.7	0.000	0.0	-0.016	142.3
18	M(1)	0.014	269.5	0.006	359.1	-0.008	89.6
19	J(1)	0.018	280.6	0.010	13.5	-0.008	92.9
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.039	286.9	0.000	0.0	-0.039	73.1
22	SA	0.038	221.4	0.000	0.0	-0.038	138.6
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.012	206.1	0.000	0.0	-0.012	153.9
26	Q(1)	0.044	224.6	0.049	230.9	0.005	6.3
27	T(2)	0.009	223.3	0.000	0.0	-0.009	136.7
28	R(2)	0.005	64.9	0.000	0.0	-0.005	-64.9
29	2Q(1)	0.006	230.4	0.003	274.2	-0.003	43.8
30	P(1)	0.130	237.9	0.134	247.7	0.004	9.8
31	2SM(2)	0.009	61.8	0.000	0.0	-0.009	-61.8
32	M(3)	0.006	1.6	0.000	0.0	-0.006	-1.6
33	L(2)	0.054	230.2	0.028	208.7	-0.026	-21.5
34	2MK(3)	0.039	71.7	0.000	0.0	-0.039	-71.7
35	K(2)	0.062	240.3	0.077	225.9	0.015	-14.4
36	M(8)	0.000	0.0	0.003	128.2	0.000	0.0
37	MS(4)	0.009	358.3	0.019	37.8	0.010	39.5

Station: "Alameda, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.678	224.0	0.741	219.7	0.063	-4.3
2	S(2)	0.154	235.0	0.182	225.8	0.028	-9.2
3	N(2)	0.139	199.3	0.154	195.7	0.015	-3.6
4	K(1)	0.377	232.7	0.405	237.1	0.028	4.4
5	M(4)	0.019	142.8	0.010	117.6	-0.009	-25.2
6	O(1)	0.230	216.5	0.261	227.1	0.031	10.6
7	M(6)	0.007	39.2	0.006	44.2	-0.001	5.0
8	MK(3)	0.021	114.0	0.021	94.7	0.000	-19.3
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.007	123.0	0.000	0.0	-0.007	-123.0
11	NU(2)	0.030	202.0	0.000	0.0	-0.030	158.0
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.007	37.4	0.000	0.0	-0.007	-37.4
14	2N(2)	0.014	172.9	0.005	342.0	-0.009	169.1
15	OO(1)	0.011	272.0	0.000	0.0	-0.011	88.0
16	LAMBDA(2)	0.011	213.5	0.000	0.0	-0.011	146.5
17	S(1)	0.008	247.6	0.000	0.0	-0.008	112.4
18	M(1)	0.012	257.4	0.004	4.3	-0.008	106.9
19	J(1)	0.019	256.5	0.005	17.7	-0.014	121.2
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.037	288.3	0.000	0.0	-0.037	71.7
22	SA	0.032	227.8	0.000	0.0	-0.032	132.2
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.013	147.5	0.000	0.0	-0.013	-147.5
25	RHO(1)	0.009	211.1	0.000	0.0	-0.009	148.9
26	Q(1)	0.040	210.9	0.045	222.3	0.005	11.4
27	T(2)	0.010	217.7	0.000	0.0	-0.010	142.3
28	R(2)	0.001	235.4	0.000	0.0	-0.001	124.6
29	2Q(1)	0.004	214.4	0.001	272.6	-0.003	58.2
30	P(1)	0.118	230.0	0.124	239.2	0.006	9.2
31	2SM(2)	0.004	48.5	0.000	0.0	-0.004	-48.5
32	M(3)	0.003	47.7	0.000	0.0	-0.003	-47.7
33	L(2)	0.025	234.1	0.015	218.2	-0.010	-15.9
34	2MK(3)	0.022	79.3	0.000	0.0	-0.022	-79.3
35	K(2)	0.047	224.8	0.057	213.3	0.010	-11.5
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.008	161.9	0.003	140.8	-0.005	-21.1

Station: "Richmond, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.616	223.1	0.656	216.1	0.040	-7.0
2	S(2)	0.143	233.6	0.160	219.2	0.017	-14.4
3	N(2)	0.130	197.1	0.137	190.2	0.007	-6.9
4	K(1)	0.374	233.1	0.393	235.3	0.019	2.2
5	M(4)	0.011	207.8	0.004	157.8	-0.007	-50.0
6	O(1)	0.228	216.9	0.253	225.5	0.025	8.6
7	M(6)	0.005	92.4	0.007	74.3	0.002	-18.1
8	MK(3)	0.012	149.2	0.014	121.9	0.002	-27.3
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.005	187.1	0.000	0.0	-0.005	172.9
11	NU(2)	0.027	200.6	0.000	0.0	-0.027	159.4
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.006	99.2	0.000	0.0	-0.006	-99.2
14	2N(2)	0.013	171.6	0.005	1.8	-0.008	-169.8
15	OO(1)	0.009	261.2	0.000	0.0	-0.009	98.8
16	LAMBDA(2)	0.009	225.1	0.000	0.0	-0.009	134.9
17	S(1)	0.010	250.7	0.000	0.0	-0.010	109.3
18	M(1)	0.008	249.8	0.003	10.9	-0.005	121.1
19	J(1)	0.019	254.9	0.005	24.9	-0.014	130.0
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.029	259.8	0.000	0.0	-0.029	100.2
22	SA	0.048	223.9	0.000	0.0	-0.048	136.1
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.009	220.5	0.000	0.0	-0.009	139.5
26	Q(1)	0.039	210.5	0.043	220.4	0.004	9.9
27	T(2)	0.011	200.2	0.000	0.0	-0.011	159.8
28	R(2)	0.001	234.0	0.000	0.0	-0.001	126.0
29	2Q(1)	0.003	216.3	0.001	277.3	-0.002	61.0
30	P(1)	0.119	229.8	0.120	237.1	0.001	7.3
31	2SM(2)	0.003	62.6	0.000	0.0	-0.003	-62.6
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.020	246.3	0.011	237.6	-0.009	-8.7
34	2MK(3)	0.012	96.1	0.000	0.0	-0.012	-96.1
35	K(2)	0.041	225.9	0.049	208.1	0.008	-17.8
36	M(8)	0.000	0.0	0.002	255.0	0.000	0.0
37	MS(4)	0.005	216.8	0.002	219.1	-0.003	2.3

Station: "Bollinas, Bollinas Lagoon, CA"

Observation:CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.402	215.2	0.534	187.4	0.132	-27.8
2	S(2)	0.087	228.4	0.142	188.3	0.055	-40.1
3	N(2)	0.076	190.6	0.121	161.3	0.045	-29.3
4	K(1)	0.288	240.4	0.369	224.7	0.081	-15.7
5	M(4)	0.022	355.4	0.002	69.2	-0.020	73.8
6	O(1)	0.158	228.6	0.240	215.3	0.082	-13.3
7	M(6)	0.007	30.2	0.002	100.2	-0.005	70.0
8	MK(3)	0.023	353.3	0.003	129.6	-0.020	136.3
9	S(4)	0.002	28.7	0.000	0.0	-0.002	-28.7
10	MN(4)	0.008	347.0	0.000	0.0	-0.008	13.0
11	NU(2)	0.019	183.2	0.000	0.0	-0.019	176.8
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.016	31.0	0.000	0.0	-0.016	-31.0
14	2N(2)	0.015	129.8	0.000	0.0	-0.015	-129.8
15	00(1)	0.009	288.3	0.000	0.0	-0.009	71.7
16	LAMBDA(2)	0.007	177.1	0.000	0.0	-0.007	-177.1
17	S(1)	0.004	30.6	0.000	0.0	-0.004	-30.6
18	M(1)	0.003	256.8	0.000	0.0	-0.003	103.2
19	J(1)	0.009	288.4	0.000	0.0	-0.009	71.6
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.031	285.3	0.000	0.0	-0.031	74.7
22	SA	0.061	217.7	0.000	0.0	-0.061	142.3
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.010	218.8	0.000	0.0	-0.010	141.2
26	Q(1)	0.027	241.5	0.041	207.2	0.014	-34.3
27	T(2)	0.008	234.4	0.000	0.0	-0.008	125.6
28	R(2)	0.005	262.0	0.000	0.0	-0.005	98.0
29	2Q(1)	0.008	251.7	0.000	0.0	-0.008	108.3
30	P(1)	0.080	239.9	0.114	224.2	0.034	-15.7
31	2SM(2)	0.003	31.9	0.000	0.0	-0.003	-31.9
32	M(3)	0.006	304.3	0.000	0.0	-0.006	55.7
33	L(2)	0.019	216.4	0.001	301.3	-0.018	84.9
34	2MK(3)	0.024	350.9	0.000	0.0	-0.024	9.1
35	K(2)	0.037	202.1	0.039	175.7	0.002	-26.4
36	M(8)	0.002	137.1	0.000	0.0	-0.002	-137.1
37	MS(4)	0.013	17.5	0.002	159.9	-0.011	142.4

Station: "Point Reyes, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.554	191.3	0.528	186.3	-0.026	-5.0
2	S(2)	0.137	196.8	0.139	188.0	0.002	-8.8
3	N(2)	0.124	164.6	0.119	160.3	-0.005	-4.3
4	K(1)	0.384	220.3	0.364	223.4	-0.020	3.1
5	M(4)	0.000	0.0	0.002	42.4	0.000	0.0
6	O(1)	0.236	204.5	0.235	214.6	-0.001	10.1
7	M(6)	0.000	0.0	0.001	124.7	0.000	0.0
8	MK(3)	0.000	0.0	0.002	119.2	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.024	171.5	0.000	0.0	-0.024	-171.5
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.014	125.3	0.000	0.0	-0.014	-125.3
14	2N(2)	0.014	136.2	0.000	0.0	-0.014	-136.2
15	OO(1)	0.013	252.2	0.000	0.0	-0.013	107.8
16	LAMBDA(2)	0.004	229.5	0.000	0.0	-0.004	130.5
17	S(1)	0.012	334.5	0.000	0.0	-0.012	25.5
18	M(1)	0.013	232.0	0.000	0.0	-0.013	128.0
19	J(1)	0.023	233.7	0.000	0.0	-0.023	126.3
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.031	285.3	0.000	0.0	-0.031	74.7
22	SA	0.061	217.7	0.000	0.0	-0.061	142.3
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.008	194.2	0.000	0.0	-0.008	165.8
26	Q(1)	0.043	196.9	0.040	206.7	-0.003	9.8
27	T(2)	0.007	189.4	0.000	0.0	-0.007	170.6
28	R(2)	0.001	196.9	0.000	0.0	-0.001	163.1
29	2Q(1)	0.005	202.2	0.000	0.0	-0.005	157.8
30	P(1)	0.120	217.2	0.112	223.1	-0.008	5.9
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.010	214.4	0.000	0.0	-0.010	145.6
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.039	187.3	0.038	174.8	-0.001	-12.5
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	168.5	0.000	0.0

Station: "Martinez-amorco Pier, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.533	270.2	0.784	272.7	0.251	2.5
2	S(2)	0.096	287.7	0.163	284.0	0.067	-3.7
3	N(2)	0.097	249.3	0.147	250.3	0.050	1.0
4	K(1)	0.296	261.7	0.411	263.5	0.115	1.8
5	M(4)	0.010	54.9	0.014	114.0	0.004	59.1
6	O(1)	0.163	245.7	0.264	253.9	0.101	8.2
7	M(6)	0.006	194.2	0.011	139.1	0.005	-55.1
8	MK(3)	0.000	0.0	0.051	150.3	0.000	0.0
9	S(4)	0.001	195.0	0.000	0.0	-0.001	165.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.019	252.2	0.000	0.0	-0.019	107.8
12	S(6)	0.000	266.2	0.000	0.0	0.000	0.0
13	MU(2)	0.013	252.8	0.000	0.0	-0.013	107.2
14	2N(2)	0.013	228.5	0.012	51.0	-0.001	-177.5
15	OO(1)	0.007	277.7	0.000	0.0	-0.007	82.3
16	LAMBDA(2)	0.004	278.4	0.000	0.0	-0.004	81.6
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.012	253.7	0.009	29.1	-0.003	135.4
19	J(1)	0.013	269.6	0.014	47.4	0.001	137.8
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.060	285.7	0.000	0.0	-0.060	74.3
22	SA	0.000	0.0	0.000	0.0	0.000	0.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.006	238.8	0.000	0.0	-0.006	121.2
26	Q(1)	0.031	237.7	0.045	254.1	0.014	16.4
27	T(2)	0.006	287.0	0.000	0.0	-0.006	73.0
28	R(2)	0.001	288.4	0.000	0.0	-0.001	71.6
29	2Q(1)	0.004	229.8	0.003	302.3	-0.001	72.5
30	P(1)	0.098	260.5	0.124	269.6	0.026	9.1
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.015	291.0	0.036	276.3	0.021	-14.7
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.026	289.1	0.066	270.1	0.040	-19.0
36	M(8)	0.001	284.4	0.002	285.9	0.001	1.5
37	MS(4)	0.000	0.0	0.007	113.1	0.000	0.0

Station: "Port Chicago, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.515	288.2	0.844	281.7	0.329	-6.5
2	S(2)	0.106	302.4	0.175	295.5	0.069	-6.9
3	N(2)	0.098	262.1	0.157	260.6	0.059	-1.5
4	K(1)	0.287	271.9	0.422	268.4	0.135	-3.5
5	M(4)	0.011	133.9	0.029	134.7	0.018	0.8
6	O(1)	0.164	256.4	0.272	258.4	0.108	2.0
7	M(6)	0.010	254.6	0.013	165.6	0.003	-89.0
8	MK(3)	0.028	138.4	0.068	153.6	0.040	15.2
9	S(4)	0.000	0.0	0.001	206.2	0.000	0.0
10	MN(4)	0.004	116.5	0.000	0.0	-0.004	-116.5
11	NU(2)	0.022	267.4	0.000	0.0	-0.022	92.6
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.017	99.0	0.000	0.0	-0.017	-99.0
14	2N(2)	0.008	241.2	0.013	57.8	0.005	176.6
15	OO(1)	0.008	328.5	0.000	0.0	-0.008	31.5
16	LAMBDA(2)	0.014	282.9	0.000	0.0	-0.014	77.1
17	S(1)	0.014	282.0	0.000	0.0	-0.014	78.0
18	M(1)	0.009	4.1	0.010	31.3	0.001	27.2
19	J(1)	0.005	329.0	0.015	49.9	0.010	80.9
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.060	285.7	0.000	0.0	-0.060	74.3
22	SA	0.000	0.0	0.000	0.0	0.000	0.0
23	MSF	0.033	18.1	0.000	0.0	-0.033	-18.1
24	MF	0.033	184.0	0.000	0.0	-0.033	176.0
25	RHO(1)	0.008	255.5	0.000	0.0	-0.008	104.5
26	Q(1)	0.025	262.8	0.047	259.0	0.022	-3.8
27	T(2)	0.006	253.6	0.000	0.0	-0.006	106.4
28	R(2)	0.004	205.5	0.000	0.0	-0.004	154.5
29	2Q(1)	0.004	241.0	0.004	305.2	0.000	64.2
30	P(1)	0.083	270.1	0.128	274.9	0.045	4.8
31	2SM(2)	0.006	131.8	0.000	0.0	-0.006	-131.8
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.027	301.2	0.042	280.6	0.015	-20.6
34	2MK(3)	0.036	124.2	0.000	0.0	-0.036	-124.2
35	K(2)	0.045	294.0	0.073	279.8	0.028	-14.2
36	M(8)	0.000	0.0	0.003	332.4	0.000	0.0
37	MS(4)	0.008	150.4	0.014	144.9	0.006	-5.5

Station: "GREEN COVE, PACIFIC OCEAN, CA"

Observation:CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.512	193.5	0.536	191.2	0.024	-2.3
2	S(2)	0.123	203.7	0.135	196.1	0.012	-7.6
3	N(2)	0.114	165.3	0.120	164.8	0.006	-0.5
4	K(1)	0.341	223.2	0.372	224.6	0.031	1.4
5	M(4)	0.009	28.7	0.002	44.1	-0.007	15.4
6	O(1)	0.212	212.6	0.239	214.8	0.027	2.2
7	M(6)	0.001	110.1	0.001	156.5	0.000	46.4
8	MK(3)	0.000	0.0	0.001	112.9	0.000	0.0
9	S(4)	0.002	41.4	0.000	0.0	-0.002	-41.4
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.022	169.1	0.000	0.0	-0.022	-169.1
12	S(6)	0.001	65.7	0.000	0.0	-0.001	-65.7
13	MU(2)	0.012	183.3	0.000	0.0	-0.012	176.7
14	2N(2)	0.015	136.9	0.000	0.0	-0.015	-136.9
15	OO(1)	0.009	233.7	0.000	0.0	-0.009	126.3
16	LAMBDA(2)	0.004	198.2	0.000	0.0	-0.004	161.8
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.015	217.9	0.000	0.0	-0.015	142.1
19	J(1)	0.017	228.4	0.000	0.0	-0.017	131.6
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.058	272.5	0.000	0.0	-0.058	87.5
22	SA	0.073	263.0	0.000	0.0	-0.073	97.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.008	208.1	0.000	0.0	-0.008	151.9
26	Q(1)	0.041	207.4	0.041	206.6	0.000	-0.8
27	T(2)	0.007	203.2	0.000	0.0	-0.007	156.8
28	R(2)	0.001	204.0	0.000	0.0	-0.001	156.0
29	2Q(1)	0.005	202.2	0.000	0.0	-0.005	157.8
30	P(1)	0.113	222.4	0.115	224.2	0.002	1.8
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.014	221.9	0.000	0.0	-0.014	138.1
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.034	204.5	0.036	182.9	0.002	-21.6
36	M(8)	0.001	141.8	0.000	0.0	-0.001	-141.8
37	MS(4)	0.000	0.0	0.001	185.2	0.000	0.0

Station: "Arena Cove, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.571	195.5	0.545	192.7	-0.026	-2.8
2	S(2)	0.138	205.7	0.136	199.0	-0.002	-6.7
3	N(2)	0.125	168.9	0.121	166.3	-0.004	-2.6
4	K(1)	0.369	223.5	0.373	224.7	0.004	1.2
5	M(4)	0.000	0.0	0.002	48.3	0.000	0.0
6	O(1)	0.233	207.9	0.239	214.9	0.006	7.0
7	M(6)	0.000	0.0	0.001	160.9	0.000	0.0
8	MK(3)	0.000	0.0	0.001	114.2	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.024	176.1	0.000	0.0	-0.024	-176.1
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.013	132.0	0.000	0.0	-0.013	-132.0
14	2N(2)	0.015	140.1	0.000	0.0	-0.015	-140.1
15	OO(1)	0.012	252.1	0.000	0.0	-0.012	107.9
16	LAMBDA(2)	0.004	209.5	0.000	0.0	-0.004	150.5
17	S(1)	0.015	325.8	0.000	0.0	-0.015	34.2
18	M(1)	0.012	231.2	0.000	0.0	-0.012	128.8
19	J(1)	0.022	236.9	0.000	0.0	-0.022	123.1
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.058	272.5	0.000	0.0	-0.058	87.5
22	SA	0.073	263.0	0.000	0.0	-0.073	97.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.008	198.8	0.000	0.0	-0.008	161.2
26	Q(1)	0.041	199.5	0.041	206.8	0.000	7.3
27	T(2)	0.007	199.8	0.000	0.0	-0.007	160.2
28	R(2)	0.001	206.1	0.000	0.0	-0.001	153.9
29	2Q(1)	0.004	212.0	0.000	0.0	-0.004	148.0
30	P(1)	0.117	220.2	0.115	224.3	-0.002	4.1
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.010	229.1	0.000	0.0	-0.010	130.9
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.037	195.4	0.036	186.0	-0.001	-9.4
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	189.3	0.000	0.0

Station: "North Spit, Humboldt Bay, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.700	215.1	0.675	214.0	-0.025	-1.1
2	S(2)	0.175	236.6	0.167	232.0	-0.008	-4.6
3	N(2)	0.148	190.5	0.143	188.5	-0.005	-2.0
4	K(1)	0.401	233.4	0.398	233.2	-0.003	-0.2
5	M(4)	0.012	200.6	0.008	70.6	-0.004	-130.0
6	O(1)	0.249	217.2	0.255	223.3	0.006	6.1
7	M(6)	0.006	284.7	0.003	330.5	-0.003	45.8
8	MK(3)	0.006	197.5	0.008	48.8	0.002	-148.7
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.005	177.4	0.000	0.0	-0.005	-177.4
11	NU(2)	0.029	194.5	0.000	0.0	-0.029	165.5
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.010	173.0	0.000	0.0	-0.010	-173.0
14	2N(2)	0.017	164.2	0.000	0.0	-0.017	-164.2
15	OO(1)	0.013	265.9	0.000	0.0	-0.013	94.1
16	LAMBDA(2)	0.006	215.8	0.000	0.0	-0.006	144.2
17	S(1)	0.012	35.0	0.000	0.0	-0.012	-35.0
18	M(1)	0.013	252.4	0.001	348.1	-0.012	95.7
19	J(1)	0.022	248.3	0.001	359.3	-0.021	111.0
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.038	264.1	0.000	0.0	-0.038	95.9
22	SA	0.065	255.0	0.000	0.0	-0.065	105.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.014	149.0	0.000	0.0	-0.014	-149.0
25	RHO(1)	0.008	210.3	0.000	0.0	-0.008	149.7
26	Q(1)	0.044	211.3	0.043	215.7	-0.001	4.4
27	T(2)	0.010	235.8	0.000	0.0	-0.010	124.2
28	R(2)	0.002	237.5	0.000	0.0	-0.002	122.5
29	2Q(1)	0.005	216.4	0.000	0.0	-0.005	143.6
30	P(1)	0.126	231.2	0.122	233.3	-0.004	2.1
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.016	225.2	0.002	193.5	-0.014	-31.7
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.047	228.3	0.046	220.0	-0.001	-8.3
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.006	239.1	0.002	144.1	-0.004	-95.0

Station: "Crescent City, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.716	211.0	0.690	210.3	-0.026	-0.7
2	S(2)	0.183	231.7	0.175	228.9	-0.008	-2.8
3	N(2)	0.152	185.2	0.147	184.3	-0.005	-0.9
4	K(1)	0.391	227.8	0.401	230.6	0.010	2.8
5	M(4)	0.000	0.0	0.003	84.7	0.000	0.0
6	O(1)	0.242	212.6	0.257	220.6	0.015	8.0
7	M(6)	0.000	0.0	0.001	213.7	0.000	0.0
8	MK(3)	0.000	0.0	0.001	134.8	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.030	191.2	0.000	0.0	-0.030	168.8
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.016	154.0	0.000	0.0	-0.016	-154.0
14	2N(2)	0.017	158.8	0.000	0.0	-0.017	-158.8
15	OO(1)	0.014	255.0	0.000	0.0	-0.014	105.0
16	LAMBDA(2)	0.005	230.9	0.000	0.0	-0.005	129.1
17	S(1)	0.008	4.3	0.000	0.0	-0.008	-4.3
18	M(1)	0.012	242.5	0.000	0.0	-0.012	117.5
19	J(1)	0.022	240.0	0.000	0.0	-0.022	120.0
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.041	262.1	0.000	0.0	-0.041	97.9
22	SA	0.071	261.4	0.000	0.0	-0.071	98.6
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.014	152.0	0.000	0.0	-0.014	-152.0
25	RHO(1)	0.009	206.7	0.000	0.0	-0.009	153.3
26	Q(1)	0.043	205.5	0.044	212.4	0.001	6.9
27	T(2)	0.010	225.8	0.000	0.0	-0.010	134.2
28	R(2)	0.002	232.4	0.000	0.0	-0.002	127.6
29	2Q(1)	0.005	204.9	0.000	0.0	-0.005	155.1
30	P(1)	0.123	225.2	0.124	230.2	0.001	5.0
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.013	235.6	0.000	0.0	-0.013	124.4
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.051	223.6	0.046	217.6	-0.005	-6.0
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.002	224.0	0.000	0.0

Station: "Pyramid Point, Smith River, CA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.667	216.2	0.704	211.5	0.037	-4.7
2	S(2)	0.169	236.9	0.179	230.9	0.010	-6.0
3	N(2)	0.142	190.6	0.150	185.6	0.008	-5.0
4	K(1)	0.370	228.7	0.405	231.2	0.035	2.5
5	M(4)	0.002	157.5	0.003	87.1	0.001	-70.4
6	O(1)	0.224	217.4	0.259	221.2	0.035	3.8
7	M(6)	0.002	164.1	0.001	220.0	-0.001	55.9
8	MK(3)	0.000	0.0	0.001	138.8	0.000	0.0
9	S(4)	0.003	86.3	0.000	0.0	-0.003	-86.3
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.028	194.1	0.000	0.0	-0.028	165.9
12	S(6)	0.001	106.7	0.000	0.0	-0.001	-106.7
13	MU(2)	0.016	195.6	0.000	0.0	-0.016	164.4
14	2N(2)	0.019	165.1	0.000	0.0	-0.019	-165.1
15	OO(1)	0.010	239.9	0.000	0.0	-0.010	120.1
16	LAMBDA(2)	0.005	225.8	0.000	0.0	-0.005	134.2
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.016	223.1	0.000	0.0	-0.016	136.9
19	J(1)	0.017	234.3	0.000	0.0	-0.017	125.7
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.041	262.1	0.000	0.0	-0.041	97.9
22	SA	0.071	261.4	0.000	0.0	-0.071	98.6
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.009	212.6	0.000	0.0	-0.009	147.4
26	Q(1)	0.043	211.8	0.044	213.0	0.001	1.2
27	T(2)	0.010	236.1	0.000	0.0	-0.010	123.9
28	R(2)	0.001	237.4	0.000	0.0	-0.001	122.6
29	2Q(1)	0.006	206.2	0.000	0.0	-0.006	153.8
30	P(1)	0.122	227.8	0.125	230.8	0.003	3.0
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.019	241.3	0.000	0.0	-0.019	118.7
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.046	238.7	0.048	219.8	0.002	-18.9
36	M(8)	0.002	165.8	0.000	0.0	-0.002	-165.8
37	MS(4)	0.000	0.0	0.002	226.5	0.000	0.0

Station: "Port Orford, OR"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.750	216.5	0.726	215.8	-0.024	-0.7
2	S(2)	0.196	239.2	0.187	237.2	-0.009	-2.0
3	N(2)	0.158	190.5	0.153	189.9	-0.005	-0.6
4	K(1)	0.428	231.2	0.402	233.4	-0.026	2.2
5	M(4)	0.000	0.0	0.003	92.0	0.000	0.0
6	O(1)	0.266	214.4	0.256	223.6	-0.010	9.2
7	M(6)	0.000	0.0	0.001	237.3	0.000	0.0
8	MK(3)	0.000	0.0	0.001	140.5	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.032	195.9	0.000	0.0	-0.032	164.1
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.016	162.3	0.000	0.0	-0.016	-162.3
14	2N(2)	0.019	165.4	0.000	0.0	-0.019	-165.4
15	OO(1)	0.015	253.4	0.000	0.0	-0.015	106.6
16	LAMBDA(2)	0.005	244.1	0.000	0.0	-0.005	115.9
17	S(1)	0.011	5.3	0.000	0.0	-0.011	-5.3
18	M(1)	0.015	234.5	0.000	0.0	-0.015	125.5
19	J(1)	0.027	245.7	0.000	0.0	-0.027	114.3
20	MM	0.017	165.6	0.000	0.0	-0.017	-165.6
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.093	268.0	0.000	0.0	-0.093	92.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.015	147.1	0.000	0.0	-0.015	-147.1
25	RHO(1)	0.010	205.2	0.000	0.0	-0.010	154.8
26	Q(1)	0.047	206.3	0.043	215.6	-0.004	9.3
27	T(2)	0.012	236.5	0.000	0.0	-0.012	123.5
28	R(2)	0.002	240.1	0.000	0.0	-0.002	119.9
29	2Q(1)	0.005	207.9	0.000	0.0	-0.005	152.1
30	P(1)	0.134	227.2	0.124	233.1	-0.010	5.9
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.016	247.4	0.000	0.0	-0.016	112.6
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.053	231.6	0.050	226.3	-0.003	-5.3
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.003	230.2	0.000	0.0

Station: "Charleston, OR"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.818	225.3	0.772	219.0	-0.046	-6.3
2	S(2)	0.215	251.1	0.203	241.9	-0.012	-9.2
3	N(2)	0.169	200.7	0.162	193.3	-0.007	-7.4
4	K(1)	0.401	235.2	0.411	234.8	0.010	-0.4
5	M(4)	0.008	200.7	0.003	97.2	-0.005	-103.5
6	O(1)	0.247	220.5	0.262	225.0	0.015	4.5
7	M(6)	0.004	331.1	0.001	257.3	-0.003	-73.8
8	MK(3)	0.005	191.9	0.001	150.8	-0.004	-41.1
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.003	183.9	0.000	0.0	-0.003	176.1
11	NU(2)	0.034	203.6	0.000	0.0	-0.034	156.4
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.013	182.1	0.000	0.0	-0.013	177.9
14	2N(2)	0.020	174.6	0.000	0.0	-0.020	-174.6
15	OO(1)	0.013	266.3	0.000	0.0	-0.013	93.7
16	LAMBDA(2)	0.005	224.0	0.000	0.0	-0.005	136.0
17	S(1)	0.004	46.7	0.000	0.0	-0.004	-46.7
18	M(1)	0.015	246.5	0.000	0.0	-0.015	113.5
19	J(1)	0.024	249.4	0.000	0.0	-0.024	110.6
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.103	283.3	0.000	0.0	-0.103	76.7
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.016	155.7	0.000	0.0	-0.016	-155.7
25	RHO(1)	0.009	213.3	0.000	0.0	-0.009	146.7
26	Q(1)	0.044	214.3	0.044	216.9	0.000	2.6
27	T(2)	0.012	244.4	0.000	0.0	-0.012	115.6
28	R(2)	0.002	252.1	0.000	0.0	-0.002	107.9
29	2Q(1)	0.004	213.3	0.000	0.0	-0.004	146.7
30	P(1)	0.126	233.3	0.127	234.5	0.001	1.2
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.022	241.4	0.000	0.0	-0.022	118.6
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.058	244.6	0.054	231.2	-0.004	-13.4
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.004	252.9	0.003	234.1	-0.001	-18.8

Station: "South Beach, Yaquina River, OR"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.887	231.2	0.840	223.8	-0.047	-7.4
2	S(2)	0.242	259.3	0.226	248.3	-0.016	-11.0
3	N(2)	0.184	207.5	0.176	198.4	-0.008	-9.1
4	K(1)	0.434	238.1	0.423	237.0	-0.011	-1.1
5	M(4)	0.012	198.8	0.004	104.1	-0.008	-94.7
6	O(1)	0.263	221.4	0.271	227.0	0.008	5.6
7	M(6)	0.008	298.3	0.002	282.4	-0.006	-15.9
8	MK(3)	0.003	196.9	0.000	0.0	-0.003	163.1
9	S(4)	0.001	349.7	0.000	0.0	-0.001	10.3
10	MN(4)	0.005	180.3	0.000	0.0	-0.005	179.7
11	NU(2)	0.037	210.4	0.000	0.0	-0.037	149.6
12	S(6)	0.001	123.6	0.000	0.0	-0.001	-123.6
13	MU(2)	0.015	203.9	0.000	0.0	-0.015	156.1
14	2N(2)	0.021	182.5	0.000	0.0	-0.021	177.5
15	OO(1)	0.014	274.4	0.000	0.0	-0.014	85.6
16	LAMBDA(2)	0.007	223.2	0.000	0.0	-0.007	136.8
17	S(1)	0.012	5.4	0.000	0.0	-0.012	-5.4
18	M(1)	0.015	257.9	0.000	0.0	-0.015	102.1
19	J(1)	0.024	256.0	0.000	0.0	-0.024	104.0
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.027	234.0	0.000	0.0	-0.027	126.0
22	SA	0.122	285.9	0.000	0.0	-0.122	74.1
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.025	183.0	0.000	0.0	-0.025	177.0
25	RHO(1)	0.009	211.9	0.000	0.0	-0.009	148.1
26	Q(1)	0.046	214.2	0.046	218.3	0.000	4.1
27	T(2)	0.015	251.7	0.000	0.0	-0.015	108.3
28	R(2)	0.002	213.6	0.000	0.0	-0.002	146.4
29	2Q(1)	0.005	214.4	0.000	0.0	-0.005	145.6
30	P(1)	0.134	233.9	0.130	236.7	-0.004	2.8
31	2SM(2)	0.002	54.2	0.000	0.0	-0.002	-54.2
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.022	235.9	0.000	0.0	-0.022	124.1
34	2MK(3)	0.002	349.0	0.000	0.0	-0.002	11.0
35	K(2)	0.064	250.6	0.060	237.8	-0.004	-12.8
36	M(8)	0.002	260.4	0.000	0.0	-0.002	99.6
37	MS(4)	0.007	239.9	0.004	241.8	-0.003	1.9

Station: "Garibaldi, OR"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.877	242.6	0.859	226.4	-0.018	-16.2
2	S(2)	0.235	273.0	0.233	251.7	-0.002	-21.3
3	N(2)	0.178	220.0	0.179	201.1	0.001	-18.9
4	K(1)	0.418	245.8	0.422	238.3	0.004	-7.5
5	M(4)	0.029	250.4	0.004	108.2	-0.025	-142.2
6	O(1)	0.253	229.1	0.265	227.7	0.012	-1.4
7	M(6)	0.016	358.5	0.002	294.4	-0.014	-64.1
8	MK(3)	0.012	247.6	0.000	0.0	-0.012	112.4
9	S(4)	0.002	354.4	0.000	0.0	-0.002	5.6
10	MN(4)	0.012	229.9	0.000	0.0	-0.012	130.1
11	NU(2)	0.037	221.8	0.000	0.0	-0.037	138.2
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.014	252.0	0.000	0.0	-0.014	108.0
14	2N(2)	0.019	195.3	0.000	0.0	-0.019	164.7
15	00(1)	0.013	285.0	0.000	0.0	-0.013	75.0
16	LAMBDA(2)	0.010	223.0	0.000	0.0	-0.010	137.0
17	S(1)	0.012	7.7	0.000	0.0	-0.012	-7.7
18	M(1)	0.014	272.7	0.000	0.0	-0.014	87.3
19	J(1)	0.021	266.3	0.000	0.0	-0.021	93.7
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.014	198.0	0.000	0.0	-0.014	162.0
22	SA	0.111	286.2	0.000	0.0	-0.111	73.8
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.026	183.4	0.000	0.0	-0.026	176.6
25	RHO(1)	0.009	217.1	0.000	0.0	-0.009	142.9
26	Q(1)	0.043	223.6	0.045	220.5	0.002	-3.1
27	T(2)	0.015	266.1	0.000	0.0	-0.015	93.9
28	R(2)	0.002	184.9	0.000	0.0	-0.002	175.1
29	2Q(1)	0.005	226.9	0.000	0.0	-0.005	133.1
30	P(1)	0.129	242.1	0.130	237.9	0.001	-4.2
31	2SM(2)	0.004	72.4	0.000	0.0	-0.004	-72.4
32	M(3)	0.002	227.9	0.000	0.0	-0.002	132.1
33	L(2)	0.026	241.4	0.000	0.0	-0.026	118.6
34	2MK(3)	0.004	308.6	0.000	0.0	-0.004	51.4
35	K(2)	0.060	265.5	0.062	241.3	0.002	-24.2
36	M(8)	0.002	15.9	0.000	0.0	-0.002	-15.9
37	MS(4)	0.018	286.6	0.004	244.9	-0.014	-41.7

Station: "Hammond, OR"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.929	250.6	0.913	245.9	-0.016	-4.7
2	S(2)	0.249	278.5	0.237	274.0	-0.012	-4.5
3	N(2)	0.188	226.8	0.180	222.0	-0.008	-4.8
4	K(1)	0.415	248.4	0.421	248.9	0.006	0.5
5	M(4)	0.015	245.9	0.011	86.0	-0.004	-159.9
6	O(1)	0.260	232.5	0.271	238.2	0.011	5.7
7	M(6)	0.005	39.2	0.014	109.5	0.009	70.3
8	MK(3)	0.005	169.7	0.012	45.3	0.007	-124.4
9	S(4)	0.002	18.3	0.000	0.0	-0.002	-18.3
10	MN(4)	0.004	225.5	0.000	0.0	-0.004	134.5
11	NU(2)	0.032	230.0	0.000	0.0	-0.032	130.0
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.005	233.3	0.000	0.0	-0.005	126.7
14	2N(2)	0.023	191.4	0.001	298.1	-0.022	106.7
15	OO(1)	0.012	287.1	0.000	0.0	-0.012	72.9
16	LAMBDA(2)	0.009	266.1	0.000	0.0	-0.009	93.9
17	S(1)	0.009	15.7	0.000	0.0	-0.009	-15.7
18	M(1)	0.013	289.0	0.002	23.5	-0.011	94.5
19	J(1)	0.022	268.0	0.004	31.7	-0.018	123.7
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.052	184.1	0.000	0.0	-0.052	175.9
22	SA	0.111	307.2	0.000	0.0	-0.111	52.8
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.008	239.8	0.000	0.0	-0.008	120.2
26	Q(1)	0.044	225.0	0.043	232.4	-0.001	7.4
27	T(2)	0.010	257.0	0.000	0.0	-0.010	103.0
28	R(2)	0.002	268.6	0.000	0.0	-0.002	91.4
29	2Q(1)	0.004	212.2	0.000	0.0	-0.004	147.8
30	P(1)	0.124	246.8	0.125	249.6	0.001	2.8
31	2SM(2)	0.006	106.8	0.000	0.0	-0.006	-106.8
32	M(3)	0.002	21.6	0.000	0.0	-0.002	-21.6
33	L(2)	0.027	267.5	0.008	227.4	-0.019	-40.1
34	2MK(3)	0.008	102.6	0.000	0.0	-0.008	-102.6
35	K(2)	0.070	271.2	0.067	263.2	-0.003	-8.0
36	M(8)	0.000	0.0	0.003	197.3	0.000	0.0
37	MS(4)	0.008	296.9	0.004	357.8	-0.004	60.9

Station: "Astoria, OR"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.965	261.6	0.919	261.4	-0.046	-0.2
2	S(2)	0.242	293.8	0.228	292.3	-0.014	-1.5
3	N(2)	0.184	239.5	0.174	239.5	-0.010	0.0
4	K(1)	0.403	254.5	0.404	257.9	0.001	3.4
5	M(4)	0.009	109.1	0.036	96.7	0.027	-12.4
6	O(1)	0.244	239.6	0.255	247.6	0.011	8.0
7	M(6)	0.012	124.1	0.030	121.1	0.018	-3.0
8	MK(3)	0.025	113.3	0.030	67.0	0.005	-46.3
9	S(4)	0.003	160.0	0.001	138.3	-0.002	-21.7
10	MN(4)	0.005	79.1	0.000	0.0	-0.005	-79.1
11	NU(2)	0.039	240.9	0.000	0.0	-0.039	119.1
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.019	356.5	0.000	0.0	-0.019	3.5
14	2N(2)	0.018	214.0	0.000	0.0	-0.018	146.0
15	OO(1)	0.012	294.3	0.000	0.0	-0.012	65.7
16	LAMBDA(2)	0.022	257.3	0.000	0.0	-0.022	102.7
17	S(1)	0.011	24.5	0.000	0.0	-0.011	-24.5
18	M(1)	0.014	302.6	0.004	26.0	-0.010	83.4
19	J(1)	0.015	282.8	0.006	38.8	-0.009	116.0
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.045	183.0	0.000	0.0	-0.045	177.0
22	SA	0.113	308.7	0.000	0.0	-0.113	51.3
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.026	187.9	0.000	0.0	-0.026	172.1
25	RHO(1)	0.007	239.9	0.000	0.0	-0.007	120.1
26	Q(1)	0.042	240.0	0.041	247.0	-0.001	7.0
27	T(2)	0.016	296.4	0.000	0.0	-0.016	63.6
28	R(2)	0.002	356.4	0.000	0.0	-0.002	3.6
29	2Q(1)	0.005	253.7	0.001	280.0	-0.004	26.3
30	P(1)	0.112	251.4	0.115	260.0	0.003	8.6
31	2SM(2)	0.010	121.5	0.000	0.0	-0.010	-121.5
32	M(3)	0.004	15.4	0.000	0.0	-0.004	-15.4
33	L(2)	0.046	267.4	0.015	234.4	-0.031	-33.0
34	2MK(3)	0.031	91.4	0.000	0.0	-0.031	-91.4
35	K(2)	0.075	283.4	0.072	280.0	-0.003	-3.4
36	M(8)	0.001	231.4	0.004	237.0	0.003	5.6
37	MS(4)	0.006	107.6	0.011	105.2	0.005	-2.4

Station: "Skamokawa, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.846	291.8	0.884	284.7	0.038	-7.1
2	S(2)	0.201	325.5	0.212	318.4	0.011	-7.1
3	N(2)	0.151	271.6	0.160	264.7	0.009	-6.9
4	K(1)	0.324	274.8	0.353	270.1	0.029	-4.7
5	M(4)	0.067	145.5	0.032	115.0	-0.035	-30.5
6	O(1)	0.189	261.5	0.213	261.5	0.024	0.0
7	M(6)	0.011	233.5	0.011	141.0	0.000	-92.5
8	MK(3)	0.060	133.5	0.021	97.4	-0.039	-36.1
9	S(4)	0.003	213.9	0.001	187.8	-0.002	-26.1
10	MN(4)	0.025	130.7	0.000	0.0	-0.025	-130.7
11	NU(2)	0.036	274.2	0.000	0.0	-0.036	85.8
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.030	50.5	0.000	0.0	-0.030	-50.5
14	2N(2)	0.021	229.2	0.002	195.1	-0.019	-34.1
15	00(1)	0.007	332.7	0.000	0.0	-0.007	27.3
16	LAMBDA(2)	0.023	279.0	0.000	0.0	-0.023	81.0
17	S(1)	0.004	128.4	0.000	0.0	-0.004	-128.4
18	M(1)	0.017	4.7	0.002	15.0	-0.015	10.3
19	J(1)	0.014	325.1	0.003	49.5	-0.011	84.4
20	MM	0.073	37.7	0.000	0.0	-0.073	-37.7
21	SSA	0.063	93.0	0.000	0.0	-0.063	-93.0
22	SA	0.040	72.2	0.000	0.0	-0.040	-72.2
23	MSF	0.089	38.4	0.000	0.0	-0.089	-38.4
24	MF	0.030	175.6	0.000	0.0	-0.030	-175.6
25	RHO(1)	0.006	301.2	0.000	0.0	-0.006	58.8
26	Q(1)	0.032	267.7	0.035	266.2	0.003	-1.5
27	T(2)	0.013	314.0	0.000	0.0	-0.013	46.0
28	R(2)	0.007	14.8	0.000	0.0	-0.007	-14.8
29	2Q(1)	0.005	227.2	0.000	0.0	-0.005	132.8
30	P(1)	0.088	275.3	0.097	273.0	0.009	-2.3
31	2SM(2)	0.011	148.7	0.000	0.0	-0.011	-148.7
32	M(3)	0.010	330.8	0.000	0.0	-0.010	29.2
33	L(2)	0.039	302.4	0.007	256.6	-0.032	-45.8
34	2MK(3)	0.063	121.6	0.000	0.0	-0.063	-121.6
35	K(2)	0.071	312.3	0.075	302.1	0.004	-10.2
36	M(8)	0.004	74.0	0.005	10.9	0.001	-63.1
37	MS(4)	0.034	171.9	0.014	144.0	-0.020	-27.9

Station: "Toke Point, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.981	253.7	0.951	237.6	-0.030	-16.1
2	S(2)	0.261	284.4	0.259	266.0	-0.002	-18.4
3	N(2)	0.198	229.7	0.196	213.7	-0.002	-16.0
4	K(1)	0.435	251.1	0.420	245.1	-0.015	-6.0
5	M(4)	0.014	352.6	0.019	82.8	0.005	90.2
6	O(1)	0.264	235.4	0.269	236.0	0.005	0.6
7	M(6)	0.009	45.3	0.010	6.0	0.001	-39.3
8	MK(3)	0.004	10.9	0.016	49.9	0.012	39.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.006	335.6	0.000	0.0	-0.006	24.4
11	NU(2)	0.044	228.6	0.000	0.0	-0.044	131.4
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.008	253.2	0.000	0.0	-0.008	106.8
14	2N(2)	0.022	204.6	0.000	0.0	-0.022	155.4
15	OO(1)	0.016	292.6	0.000	0.0	-0.016	67.4
16	LAMBDA(2)	0.009	269.3	0.000	0.0	-0.009	90.7
17	S(1)	0.006	40.7	0.000	0.0	-0.006	-40.7
18	M(1)	0.016	270.3	0.001	341.0	-0.015	70.7
19	J(1)	0.023	267.6	0.002	354.8	-0.021	87.2
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.158	289.8	0.000	0.0	-0.158	70.2
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.024	161.8	0.000	0.0	-0.024	-161.8
25	RHO(1)	0.011	208.7	0.000	0.0	-0.011	151.3
26	Q(1)	0.047	230.2	0.046	228.9	-0.001	-1.3
27	T(2)	0.017	270.5	0.000	0.0	-0.017	89.5
28	R(2)	0.002	285.6	0.000	0.0	-0.002	74.4
29	2Q(1)	0.006	221.0	0.000	0.0	-0.006	139.0
30	P(1)	0.136	249.2	0.129	245.8	-0.007	-3.4
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.033	266.3	0.005	193.6	-0.028	-72.7
34	2MK(3)	0.005	64.3	0.000	0.0	-0.005	-64.3
35	K(2)	0.071	279.6	0.072	253.6	0.001	-26.0
36	M(8)	0.000	0.0	0.003	28.2	0.000	0.0
37	MS(4)	0.009	30.5	0.002	122.4	-0.007	91.9

Station: "Westport, WA"

Observation:CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.990	240.7	0.957	235.8	-0.033	-4.9
2	S(2)	0.268	273.2	0.263	264.1	-0.005	-9.1
3	N(2)	0.199	217.7	0.197	211.8	-0.002	-5.9
4	K(1)	0.419	243.3	0.421	242.7	0.002	-0.6
5	M(4)	0.031	216.5	0.019	59.0	-0.012	-157.5
6	O(1)	0.259	227.4	0.267	233.6	0.008	6.2
7	M(6)	0.017	16.0	0.018	3.2	0.001	-12.8
8	MK(3)	0.011	194.4	0.012	32.4	0.001	-162.0
9	S(4)	0.003	342.9	0.000	0.0	-0.003	17.1
10	MN(4)	0.011	201.3	0.000	0.0	-0.011	158.7
11	NU(2)	0.044	217.1	0.000	0.0	-0.044	142.9
12	S(6)	0.001	145.2	0.000	0.0	-0.001	-145.2
13	MU(2)	0.014	255.2	0.000	0.0	-0.014	104.8
14	2N(2)	0.021	211.9	0.000	0.0	-0.021	148.1
15	OO(1)	0.016	281.6	0.000	0.0	-0.016	78.4
16	LAMBDA(2)	0.010	252.8	0.000	0.0	-0.010	107.2
17	S(1)	0.015	320.5	0.000	0.0	-0.015	39.5
18	M(1)	0.015	246.1	0.001	340.0	-0.014	93.9
19	J(1)	0.024	261.1	0.002	357.2	-0.022	96.1
20	MM	0.016	306.8	0.000	0.0	-0.016	53.2
21	SSA	0.016	203.9	0.000	0.0	-0.016	156.1
22	SA	0.087	277.8	0.000	0.0	-0.087	82.2
23	MSF	0.029	21.5	0.000	0.0	-0.029	-21.5
24	MF	0.025	164.6	0.000	0.0	-0.025	-164.6
25	RHO(1)	0.009	216.5	0.000	0.0	-0.009	143.5
26	Q(1)	0.046	221.3	0.045	226.9	-0.001	5.6
27	T(2)	0.017	290.4	0.000	0.0	-0.017	69.6
28	R(2)	0.010	226.6	0.000	0.0	-0.010	133.4
29	2Q(1)	0.005	267.6	0.000	0.0	-0.005	92.4
30	P(1)	0.116	238.2	0.129	243.5	0.013	5.3
31	2SM(2)	0.005	58.7	0.000	0.0	-0.005	-58.7
32	M(3)	0.004	300.1	0.000	0.0	-0.004	59.9
33	L(2)	0.038	254.5	0.005	188.4	-0.033	-66.1
34	2MK(3)	0.005	109.0	0.000	0.0	-0.005	-109.0
35	K(2)	0.074	262.9	0.072	251.8	-0.002	-11.1
36	M(8)	0.004	18.6	0.002	196.6	-0.002	178.0
37	MS(4)	0.013	258.9	0.005	65.5	-0.008	166.6

Station: "La Push, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.932	234.9	0.905	234.4	-0.027	-0.5
2	S(2)	0.262	262.5	0.252	261.1	-0.010	-1.4
3	N(2)	0.192	210.6	0.189	209.2	-0.003	-1.4
4	K(1)	0.432	239.2	0.416	241.5	-0.016	2.3
5	M(4)	0.003	114.0	0.005	116.4	0.002	2.4
6	O(1)	0.259	223.4	0.268	232.6	0.009	9.2
7	M(6)	0.001	77.5	0.002	316.1	0.001	121.4
8	MK(3)	0.003	80.5	0.000	0.0	-0.003	-80.5
9	S(4)	0.001	114.6	0.000	0.0	-0.001	-114.6
10	MN(4)	0.002	83.6	0.000	0.0	-0.002	-83.6
11	NU(2)	0.037	221.8	0.000	0.0	-0.037	138.2
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.022	177.9	0.000	0.0	-0.022	-177.9
14	2N(2)	0.027	180.0	0.000	0.0	-0.027	-180.0
15	OO(1)	0.013	257.2	0.000	0.0	-0.013	102.8
16	LAMBDA(2)	0.006	286.0	0.000	0.0	-0.006	74.0
17	S(1)	0.010	294.3	0.000	0.0	-0.010	65.7
18	M(1)	0.012	234.3	0.000	0.0	-0.012	125.7
19	J(1)	0.027	257.9	0.000	0.0	-0.027	102.1
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.000	0.0	0.000	0.0	0.000	0.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.010	230.7	0.000	0.0	-0.010	129.3
26	Q(1)	0.042	214.8	0.045	224.1	0.003	9.3
27	T(2)	0.014	263.7	0.000	0.0	-0.014	96.3
28	R(2)	0.002	207.0	0.000	0.0	-0.002	153.0
29	2Q(1)	0.005	187.4	0.000	0.0	-0.005	172.6
30	P(1)	0.133	236.7	0.128	241.4	-0.005	4.7
31	2SM(2)	0.004	19.1	0.000	0.0	-0.004	-19.1
32	M(3)	0.003	256.8	0.000	0.0	-0.003	103.2
33	L(2)	0.018	261.1	0.000	0.0	-0.018	98.9
34	2MK(3)	0.001	74.3	0.000	0.0	-0.001	-74.3
35	K(2)	0.075	252.7	0.067	251.1	-0.008	-1.6
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.002	65.1	0.004	251.1	0.002	174.0

Station: "Neah Bay, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.789	246.2	0.701	243.3	-0.088	-2.9
2	S(2)	0.231	272.5	0.202	269.7	-0.029	-2.8
3	N(2)	0.168	222.3	0.147	219.3	-0.021	-3.0
4	K(1)	0.496	248.5	0.480	245.5	-0.016	-3.0
5	M(4)	0.011	58.8	0.008	117.1	-0.003	58.3
6	O(1)	0.306	231.6	0.295	234.5	-0.011	2.9
7	M(6)	0.007	184.2	0.001	266.9	-0.006	82.7
8	MK(3)	0.016	325.3	0.002	19.7	-0.014	54.4
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.005	28.0	0.000	0.0	-0.005	-28.0
11	NU(2)	0.032	226.5	0.000	0.0	-0.032	133.5
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.023	202.5	0.000	0.0	-0.023	157.5
14	2N(2)	0.020	196.6	0.002	302.2	-0.018	105.6
15	00(1)	0.016	283.5	0.000	0.0	-0.016	76.5
16	LAMBDA(2)	0.003	270.0	0.000	0.0	-0.003	90.0
17	S(1)	0.013	29.3	0.000	0.0	-0.013	-29.3
18	M(1)	0.017	263.4	0.001	0.3	-0.016	96.9
19	J(1)	0.027	264.8	0.002	19.9	-0.025	115.1
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.126	289.9	0.000	0.0	-0.126	70.1
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.018	164.6	0.000	0.0	-0.018	-164.6
25	RHO(1)	0.010	219.6	0.000	0.0	-0.010	140.4
26	Q(1)	0.055	223.8	0.049	227.2	-0.006	3.4
27	T(2)	0.012	267.2	0.000	0.0	-0.012	92.8
28	R(2)	0.003	288.0	0.000	0.0	-0.003	72.0
29	2Q(1)	0.006	227.4	0.000	0.0	-0.006	132.6
30	P(1)	0.155	246.8	0.147	245.6	-0.008	-1.2
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.012	265.6	0.002	104.2	-0.010	-161.4
34	2MK(3)	0.010	321.6	0.000	0.0	-0.010	38.4
35	K(2)	0.059	266.9	0.052	258.6	-0.007	-8.3
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.007	68.6	0.004	243.1	-0.003	174.5

Station: "Port Angeles, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.514	307.1	0.272	325.3	-0.242	18.2
2	S(2)	0.146	326.4	0.076	335.2	-0.070	8.8
3	N(2)	0.116	280.1	0.069	300.3	-0.047	20.2
4	K(1)	0.667	261.8	0.665	252.4	-0.002	-9.4
5	M(4)	0.015	100.3	0.012	128.2	-0.003	27.9
6	O(1)	0.391	241.6	0.383	240.0	-0.008	-1.6
7	M(6)	0.015	196.2	0.003	138.7	-0.012	-57.5
8	MK(3)	0.020	22.4	0.007	30.4	-0.013	8.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.008	68.1	0.000	0.0	-0.008	-68.1
11	NU(2)	0.021	286.7	0.000	0.0	-0.021	73.3
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.027	234.0	0.000	0.0	-0.027	126.0
14	2N(2)	0.015	248.6	0.006	308.9	-0.009	60.3
15	00(1)	0.023	301.6	0.000	0.0	-0.023	58.4
16	LAMBDA(2)	0.006	51.8	0.000	0.0	-0.006	-51.8
17	S(1)	0.017	15.6	0.000	0.0	-0.017	-15.6
18	M(1)	0.021	273.8	0.006	10.5	-0.015	96.7
19	J(1)	0.039	286.0	0.009	30.5	-0.030	104.5
20	MM	0.023	187.7	0.000	0.0	-0.023	172.3
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.101	287.6	0.000	0.0	-0.101	72.4
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.014	146.8	0.000	0.0	-0.014	-146.8
25	RHO(1)	0.012	233.2	0.000	0.0	-0.012	126.8
26	Q(1)	0.066	232.8	0.062	234.3	-0.004	1.5
27	T(2)	0.008	335.5	0.000	0.0	-0.008	24.5
28	R(2)	0.001	327.2	0.000	0.0	-0.001	32.8
29	2Q(1)	0.007	221.8	0.001	238.9	-0.006	17.1
30	P(1)	0.207	259.4	0.200	253.6	-0.007	-5.8
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.003	142.1	0.000	0.0	-0.003	-142.1
33	L(2)	0.012	31.9	0.007	126.6	-0.005	94.7
34	2MK(3)	0.020	19.3	0.000	0.0	-0.020	-19.3
35	K(2)	0.027	332.7	0.015	338.3	-0.012	5.6
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.009	118.5	0.004	206.8	-0.005	88.3

Station: "Port Townsend, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.685	349.7	0.494	11.5	-0.191	21.8
2	S(2)	0.170	12.6	0.114	29.3	-0.056	16.7
3	N(2)	0.146	320.0	0.114	342.2	-0.032	22.2
4	K(1)	0.766	270.7	0.749	256.3	-0.017	-14.4
5	M(4)	0.039	60.5	0.011	175.6	-0.028	115.1
6	O(1)	0.447	249.8	0.423	243.4	-0.024	-6.4
7	M(6)	0.010	246.3	0.002	102.4	-0.008	-143.9
8	MK(3)	0.028	332.8	0.012	50.3	-0.016	77.5
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.015	29.7	0.000	0.0	-0.015	-29.7
11	NU(2)	0.028	331.5	0.000	0.0	-0.028	28.5
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.027	239.6	0.000	0.0	-0.027	120.4
14	2N(2)	0.018	286.8	0.006	291.4	-0.012	4.6
15	OO(1)	0.029	317.0	0.000	0.0	-0.029	43.0
16	LAMBDA(2)	0.011	44.3	0.000	0.0	-0.011	-44.3
17	S(1)	0.016	51.2	0.000	0.0	-0.016	-51.2
18	M(1)	0.025	303.2	0.009	12.8	-0.016	69.6
19	J(1)	0.039	302.4	0.015	32.1	-0.024	89.7
20	MM	0.022	184.6	0.000	0.0	-0.022	175.4
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.082	292.0	0.000	0.0	-0.082	68.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.020	144.3	0.000	0.0	-0.020	-144.3
25	RHO(1)	0.015	240.4	0.000	0.0	-0.015	119.6
26	Q(1)	0.076	242.3	0.068	239.2	-0.008	-3.1
27	T(2)	0.011	14.1	0.000	0.0	-0.011	-14.1
28	R(2)	0.001	13.6	0.000	0.0	-0.001	-13.6
29	2Q(1)	0.008	242.4	0.002	241.4	-0.006	-1.0
30	P(1)	0.241	269.5	0.224	258.2	-0.017	-11.3
31	2SM(2)	0.004	290.6	0.000	0.0	-0.004	69.4
32	M(3)	0.003	228.7	0.000	0.0	-0.003	131.3
33	L(2)	0.026	44.1	0.008	123.4	-0.018	79.3
34	2MK(3)	0.019	341.1	0.000	0.0	-0.019	18.9
35	K(2)	0.052	16.8	0.033	28.7	-0.019	11.9
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.021	83.5	0.004	218.1	-0.017	134.6

Station: "Tacoma, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.139	11.8	0.855	29.8	-0.284	18.0
2	S(2)	0.282	37.8	0.197	52.1	-0.085	14.3
3	N(2)	0.225	341.2	0.187	1.3	-0.038	20.1
4	K(1)	0.838	277.9	0.846	261.1	0.008	-16.8
5	M(4)	0.019	207.7	0.015	249.6	-0.004	41.9
6	O(1)	0.459	255.1	0.468	247.9	0.009	-7.2
7	M(6)	0.005	292.0	0.005	193.7	0.000	-98.3
8	MK(3)	0.036	74.9	0.024	70.0	-0.012	-4.9
9	S(4)	0.003	267.8	0.000	0.0	-0.003	92.2
10	MN(4)	0.008	184.1	0.000	0.0	-0.008	175.9
11	NU(2)	0.045	359.4	0.000	0.0	-0.045	0.6
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.036	232.6	0.000	0.0	-0.036	127.4
14	2N(2)	0.018	311.8	0.008	266.5	-0.010	-45.3
15	OO(1)	0.036	338.6	0.000	0.0	-0.036	21.4
16	LAMBDA(2)	0.020	48.8	0.000	0.0	-0.020	-48.8
17	S(1)	0.020	35.2	0.000	0.0	-0.020	-35.2
18	M(1)	0.033	294.1	0.013	17.3	-0.020	83.2
19	J(1)	0.044	319.0	0.020	36.5	-0.024	77.5
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.027	214.6	0.000	0.0	-0.027	145.4
22	SA	0.074	289.4	0.000	0.0	-0.074	70.6
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.016	222.9	0.000	0.0	-0.016	137.1
26	Q(1)	0.076	250.6	0.074	244.6	-0.002	-6.0
27	T(2)	0.019	39.8	0.000	0.0	-0.019	-39.8
28	R(2)	0.002	38.9	0.000	0.0	-0.002	-38.9
29	2Q(1)	0.007	255.1	0.003	242.9	-0.004	-12.2
30	P(1)	0.255	277.2	0.251	263.6	-0.004	-13.6
31	2SM(2)	0.007	293.0	0.000	0.0	-0.007	67.0
32	M(3)	0.008	152.4	0.000	0.0	-0.008	-152.4
33	L(2)	0.062	53.3	0.010	114.4	-0.052	61.1
34	2MK(3)	0.032	44.6	0.000	0.0	-0.032	-44.6
35	K(2)	0.082	39.6	0.062	42.7	-0.020	3.1
36	M(8)	0.000	0.0	0.002	236.9	0.000	0.0
37	MS(4)	0.011	243.1	0.005	267.6	-0.006	24.5

Station: "Seattle, Puget Sound, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.072	10.6	0.798	28.6	-0.274	18.0
2	S(2)	0.268	37.0	0.184	50.4	-0.084	13.4
3	N(2)	0.216	340.8	0.176	360.0	-0.040	19.2
4	K(1)	0.834	277.0	0.832	261.0	-0.002	-16.0
5	M(4)	0.021	200.2	0.017	240.7	-0.004	40.5
6	O(1)	0.461	254.6	0.461	247.8	0.000	-6.8
7	M(6)	0.009	313.6	0.000	0.0	-0.009	46.4
8	MK(3)	0.034	78.1	0.022	68.9	-0.012	-9.2
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.009	174.0	0.000	0.0	-0.009	-174.0
11	NU(2)	0.045	354.9	0.000	0.0	-0.045	5.1
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.034	236.6	0.000	0.0	-0.034	123.4
14	2N(2)	0.024	308.7	0.008	268.8	-0.016	-39.9
15	00(1)	0.032	328.9	0.000	0.0	-0.032	31.1
16	LAMBDA(2)	0.020	48.4	0.000	0.0	-0.020	-48.4
17	S(1)	0.016	44.2	0.000	0.0	-0.016	-44.2
18	M(1)	0.027	319.8	0.013	17.1	-0.014	57.3
19	J(1)	0.040	315.2	0.020	36.3	-0.020	81.1
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.033	231.1	0.000	0.0	-0.033	128.9
22	SA	0.077	292.9	0.000	0.0	-0.077	67.1
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.022	140.5	0.000	0.0	-0.022	-140.5
25	RHO(1)	0.015	246.6	0.000	0.0	-0.015	113.4
26	Q(1)	0.075	249.9	0.073	244.4	-0.002	-5.5
27	T(2)	0.016	37.1	0.000	0.0	-0.016	-37.1
28	R(2)	0.002	38.0	0.000	0.0	-0.002	-38.0
29	2Q(1)	0.008	251.5	0.003	242.8	-0.005	-8.7
30	P(1)	0.258	276.6	0.248	263.4	-0.010	-13.2
31	2SM(2)	0.008	282.6	0.000	0.0	-0.008	77.4
32	M(3)	0.005	342.4	0.000	0.0	-0.005	17.6
33	L(2)	0.045	56.1	0.010	117.5	-0.035	61.4
34	2MK(3)	0.034	46.7	0.000	0.0	-0.034	-46.7
35	K(2)	0.079	37.9	0.057	41.9	-0.022	4.0
36	M(8)	0.000	0.0	0.002	243.2	0.000	0.0
37	MS(4)	0.012	229.9	0.004	269.2	-0.008	39.3

Station: "Cherry Point, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.734	22.8	0.846	38.5	0.112	15.7
2	S(2)	0.179	50.3	0.205	64.4	0.026	14.1
3	N(2)	0.154	354.5	0.185	9.1	0.031	14.6
4	K(1)	0.817	282.8	0.827	262.2	0.010	-20.6
5	M(4)	0.006	153.6	0.005	114.5	-0.001	-39.1
6	O(1)	0.456	260.0	0.460	248.9	0.004	-11.1
7	M(6)	0.003	51.6	0.006	46.9	0.003	-4.7
8	MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.031	3.2	0.000	0.0	-0.031	-3.2
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.017	268.3	0.000	0.0	-0.017	91.7
14	2N(2)	0.017	323.7	0.010	329.6	-0.007	5.9
15	OO(1)	0.032	329.5	0.000	0.0	-0.032	30.5
16	LAMBDA(2)	0.010	52.7	0.000	0.0	-0.010	-52.7
17	S(1)	0.027	37.8	0.000	0.0	-0.027	-37.8
18	M(1)	0.027	310.9	0.012	13.9	-0.015	63.0
19	J(1)	0.045	316.1	0.018	34.0	-0.027	77.9
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.023	236.5	0.000	0.0	-0.023	123.5
22	SA	0.050	280.1	0.000	0.0	-0.050	79.9
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.024	132.4	0.000	0.0	-0.024	-132.4
25	RHO(1)	0.015	245.6	0.000	0.0	-0.015	114.4
26	Q(1)	0.076	253.2	0.074	245.1	-0.002	-8.1
27	T(2)	0.012	43.8	0.000	0.0	-0.012	-43.8
28	R(2)	0.002	51.4	0.000	0.0	-0.002	-51.4
29	2Q(1)	0.009	252.1	0.003	239.3	-0.006	-12.8
30	P(1)	0.256	281.4	0.247	264.5	-0.009	-16.9
31	2SM(2)	0.003	277.1	0.000	0.0	-0.003	82.9
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.025	58.6	0.008	134.9	-0.017	76.3
34	2MK(3)	0.005	338.2	0.000	0.0	-0.005	21.8
35	K(2)	0.050	50.5	0.057	64.1	0.007	13.6
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.003	164.5	0.002	144.9	-0.001	-19.6

Station: "Friday Harbor, WA"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.565	9.7	0.592	37.6	0.027	27.9
2	S(2)	0.133	34.9	0.138	62.3	0.005	27.4
3	N(2)	0.122	341.3	0.133	7.4	0.011	26.1
4	K(1)	0.758	278.8	0.778	262.0	0.020	-16.8
5	M(4)	0.018	114.6	0.008	119.2	-0.010	4.6
6	O(1)	0.423	256.4	0.437	248.6	0.014	-7.8
7	M(6)	0.000	0.0	0.005	42.2	0.000	0.0
8	MK(3)	0.012	25.2	0.002	14.9	-0.010	-10.3
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.025	352.3	0.000	0.0	-0.025	7.7
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.020	267.3	0.000	0.0	-0.020	92.7
14	2N(2)	0.016	341.5	0.008	330.4	-0.008	-11.1
15	OO(1)	0.028	312.6	0.000	0.0	-0.028	47.4
16	LAMBDA(2)	0.009	52.1	0.000	0.0	-0.009	-52.1
17	S(1)	0.030	56.8	0.000	0.0	-0.030	-56.8
18	M(1)	0.021	280.3	0.010	13.3	-0.011	93.0
19	J(1)	0.045	314.6	0.016	33.9	-0.029	79.3
20	MM	0.054	125.2	0.000	0.0	-0.054	-125.2
21	SSA	0.039	221.0	0.000	0.0	-0.039	139.0
22	SA	0.085	280.4	0.000	0.0	-0.085	79.6
23	MSF	0.028	110.3	0.000	0.0	-0.028	-110.3
24	MF	0.018	168.2	0.000	0.0	-0.018	-168.2
25	RHO(1)	0.019	263.0	0.000	0.0	-0.019	97.0
26	Q(1)	0.068	244.0	0.071	244.3	0.003	0.3
27	T(2)	0.008	34.8	0.000	0.0	-0.008	-34.8
28	R(2)	0.000	0.0	0.000	0.0	0.000	0.0
29	2Q(1)	0.018	224.5	0.002	236.8	-0.016	12.3
30	P(1)	0.236	274.9	0.233	264.0	-0.003	-10.9
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.023	77.2	0.007	140.4	-0.016	63.2
34	2MK(3)	0.010	17.4	0.000	0.0	-0.010	-17.4
35	K(2)	0.035	40.6	0.038	64.2	0.003	23.6
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.010	130.7	0.002	168.1	-0.008	37.4

Station: "Ketchikan, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.882	270.1	1.537	263.4	-0.345	-6.7
2	S(2)	0.624	301.8	0.494	294.4	-0.130	-7.4
3	N(2)	0.382	245.6	0.309	239.0	-0.073	-6.6
4	K(1)	0.513	261.1	0.479	259.9	-0.034	-1.2
5	M(4)	0.016	291.6	0.016	185.7	0.000	-105.9
6	O(1)	0.311	244.9	0.301	249.4	-0.010	4.5
7	M(6)	0.000	0.0	0.000	0.0	0.000	0.0
8	MK(3)	0.005	9.8	0.014	354.8	0.009	15.0
9	S(4)	0.003	16.3	0.002	217.0	-0.001	159.3
10	MN(4)	0.006	273.2	0.000	0.0	-0.006	86.8
11	NU(2)	0.073	250.0	0.000	0.0	-0.073	110.0
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.041	231.3	0.000	0.0	-0.041	128.7
14	2N(2)	0.045	219.6	0.000	0.0	-0.045	140.4
15	OO(1)	0.017	292.1	0.000	0.0	-0.017	67.9
16	LAMBDA(2)	0.012	277.9	0.000	0.0	-0.012	82.1
17	S(1)	0.015	45.0	0.000	0.0	-0.015	-45.0
18	M(1)	0.016	276.3	0.000	0.0	-0.016	83.7
19	J(1)	0.030	275.5	0.000	0.0	-0.030	84.5
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.031	161.1	0.000	0.0	-0.031	-161.1
22	SA	0.115	273.7	0.000	0.0	-0.115	86.3
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.027	173.0	0.000	0.0	-0.027	-173.0
25	RHO(1)	0.011	241.0	0.000	0.0	-0.011	119.0
26	Q(1)	0.054	237.4	0.050	241.3	-0.004	3.9
27	T(2)	0.035	296.9	0.000	0.0	-0.035	63.1
28	R(2)	0.008	340.5	0.000	0.0	-0.008	19.5
29	2Q(1)	0.007	236.6	0.000	0.0	-0.007	123.4
30	P(1)	0.162	258.5	0.148	259.7	-0.014	1.2
31	2SM(2)	0.004	98.5	0.000	0.0	-0.004	-98.5
32	M(3)	0.018	336.4	0.000	0.0	-0.018	23.6
33	L(2)	0.042	281.3	0.000	0.0	-0.042	78.7
34	2MK(3)	0.004	53.1	0.000	0.0	-0.004	-53.1
35	K(2)	0.172	295.2	0.134	284.0	-0.038	-11.2
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.013	332.5	0.017	166.7	0.004	-165.8

Station: "Port Alexander, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.242	275.7	1.164	271.5	-0.078	-4.2
2	S(2)	0.411	307.6	0.373	302.8	-0.038	-4.8
3	N(2)	0.257	251.3	0.236	247.0	-0.021	-4.3
4	K(1)	0.465	263.1	0.439	262.8	-0.026	-0.3
5	M(4)	0.004	281.4	0.004	222.9	0.000	-58.5
6	O(1)	0.286	248.0	0.280	253.1	-0.006	5.1
7	M(6)	0.002	138.0	0.002	105.1	0.000	-32.9
8	MK(3)	0.007	258.9	0.002	16.4	-0.005	117.5
9	S(4)	0.000	354.4	0.000	0.0	0.000	0.0
10	MN(4)	0.001	268.0	0.000	0.0	-0.001	92.0
11	NU(2)	0.050	255.7	0.000	0.0	-0.050	104.3
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.029	233.2	0.000	0.0	-0.029	126.8
14	2N(2)	0.030	226.1	0.000	0.0	-0.030	133.9
15	OO(1)	0.016	295.2	0.000	0.0	-0.016	64.8
16	LAMBDA(2)	0.007	292.1	0.000	0.0	-0.007	67.9
17	S(1)	0.009	43.1	0.000	0.0	-0.009	-43.1
18	M(1)	0.015	275.9	0.000	0.0	-0.015	84.1
19	J(1)	0.026	275.4	0.000	0.0	-0.026	84.6
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.107	271.1	0.000	0.0	-0.107	88.9
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.029	196.8	0.000	0.0	-0.029	163.2
25	RHO(1)	0.009	238.8	0.000	0.0	-0.009	121.2
26	Q(1)	0.051	240.5	0.047	244.8	-0.004	4.3
27	T(2)	0.022	298.0	0.000	0.0	-0.022	62.0
28	R(2)	0.001	266.6	0.000	0.0	-0.001	93.4
29	2Q(1)	0.005	238.0	0.000	0.0	-0.005	122.0
30	P(1)	0.146	260.0	0.136	262.6	-0.010	2.6
31	2SM(2)	0.002	91.7	0.000	0.0	-0.002	-91.7
32	M(3)	0.003	326.3	0.000	0.0	-0.003	33.7
33	L(2)	0.028	287.6	0.000	0.0	-0.028	72.4
34	2MK(3)	0.005	212.9	0.000	0.0	-0.005	147.1
35	K(2)	0.110	300.2	0.101	292.7	-0.009	-7.5
36	M(8)	0.000	295.0	0.000	0.0	0.000	0.0
37	MS(4)	0.003	340.5	0.002	271.7	-0.001	-68.8

Station: "Sitka, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.106	273.8	1.037	272.2	-0.069	-1.6
2	S(2)	0.355	304.9	0.330	303.3	-0.025	-1.6
3	N(2)	0.230	249.2	0.212	247.6	-0.018	-1.6
4	K(1)	0.462	259.9	0.458	263.4	-0.004	3.5
5	M(4)	0.000	0.0	0.002	263.0	0.000	0.0
6	O(1)	0.280	244.4	0.288	251.4	0.008	7.0
7	M(6)	0.000	0.0	0.003	132.4	0.000	0.0
8	MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.044	253.6	0.000	0.0	-0.044	106.4
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.026	228.7	0.000	0.0	-0.026	131.3
14	2N(2)	0.027	223.8	0.000	0.0	-0.027	136.2
15	OO(1)	0.016	289.1	0.000	0.0	-0.016	70.9
16	LAMBDA(2)	0.008	293.0	0.000	0.0	-0.008	67.0
17	S(1)	0.011	35.3	0.000	0.0	-0.011	-35.3
18	M(1)	0.016	273.4	0.000	0.0	-0.016	86.6
19	J(1)	0.027	272.9	0.000	0.0	-0.027	87.1
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.121	274.8	0.000	0.0	-0.121	85.2
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.027	176.8	0.000	0.0	-0.027	-176.8
25	RHO(1)	0.010	238.9	0.000	0.0	-0.010	121.1
26	Q(1)	0.049	237.2	0.048	243.1	-0.001	5.9
27	T(2)	0.021	296.6	0.000	0.0	-0.021	63.4
28	R(2)	0.003	306.0	0.000	0.0	-0.003	54.0
29	2Q(1)	0.005	240.5	0.000	0.0	-0.005	119.5
30	P(1)	0.145	257.6	0.141	263.0	-0.004	5.4
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.024	288.8	0.000	0.0	-0.024	71.2
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.098	298.4	0.089	293.3	-0.009	-5.1
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.002	13.1	0.000	0.0

Station: "Juneau, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.995	282.5	1.702	271.4	-0.293	-11.1
2	S(2)	0.680	315.5	0.564	303.1	-0.116	-12.4
3	N(2)	0.405	258.2	0.341	247.0	-0.064	-11.2
4	K(1)	0.520	265.0	0.486	263.1	-0.034	-1.9
5	M(4)	0.038	8.9	0.009	209.4	-0.029	159.5
6	O(1)	0.311	250.2	0.305	253.3	-0.006	3.1
7	M(6)	0.005	239.8	0.007	60.2	0.002	-179.6
8	MK(3)	0.027	255.2	0.014	18.6	-0.013	123.4
9	S(4)	0.005	55.6	0.000	0.0	-0.005	-55.6
10	MN(4)	0.015	335.8	0.000	0.0	-0.015	24.2
11	NU(2)	0.078	262.8	0.000	0.0	-0.078	97.2
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.045	251.7	0.000	0.0	-0.045	108.3
14	2N(2)	0.047	231.4	0.000	0.0	-0.047	128.6
15	OO(1)	0.018	294.0	0.000	0.0	-0.018	66.0
16	LAMBDA(2)	0.013	285.7	0.000	0.0	-0.013	74.3
17	S(1)	0.008	55.6	0.000	0.0	-0.008	-55.6
18	M(1)	0.017	281.0	0.000	0.0	-0.017	79.0
19	J(1)	0.031	277.7	0.000	0.0	-0.031	82.3
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.080	255.6	0.000	0.0	-0.080	104.4
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.025	176.1	0.000	0.0	-0.025	-176.1
25	RHO(1)	0.010	241.4	0.000	0.0	-0.010	118.6
26	Q(1)	0.055	243.7	0.051	245.2	-0.004	1.5
27	T(2)	0.036	309.6	0.000	0.0	-0.036	50.4
28	R(2)	0.004	9.6	0.000	0.0	-0.004	-9.6
29	2Q(1)	0.006	241.6	0.000	0.0	-0.006	118.4
30	P(1)	0.164	263.7	0.150	263.1	-0.014	-0.6
31	2SM(2)	0.005	96.6	0.000	0.0	-0.005	-96.6
32	M(3)	0.013	0.8	0.000	0.0	-0.013	-0.8
33	L(2)	0.045	289.2	0.000	0.0	-0.045	70.8
34	2MK(3)	0.020	197.3	0.000	0.0	-0.020	162.7
35	K(2)	0.190	309.0	0.153	292.8	-0.037	-16.2
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.022	47.7	0.009	236.0	-0.013	171.7

Station: "Skagway, AK"

Observation:CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	2.035	283.9	1.759	272.9	-0.276	-11.0
2	S(2)	0.698	317.4	0.585	304.9	-0.113	-12.5
3	N(2)	0.414	259.1	0.351	248.5	-0.063	-10.6
4	K(1)	0.527	265.4	0.496	264.0	-0.031	-1.4
5	M(4)	0.041	27.0	0.008	176.0	-0.033	149.0
6	O(1)	0.317	250.1	0.311	254.1	-0.006	4.0
7	M(6)	0.017	68.9	0.025	258.1	0.008	170.8
8	MK(3)	0.023	270.5	0.016	24.2	-0.007	113.7
9	S(4)	0.004	81.3	0.000	0.0	-0.004	-81.3
10	MN(4)	0.016	359.7	0.000	0.0	-0.016	0.3
11	NU(2)	0.080	261.9	0.000	0.0	-0.080	98.1
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.049	254.6	0.000	0.0	-0.049	105.4
14	2N(2)	0.048	234.2	0.000	0.0	-0.048	125.8
15	00(1)	0.019	296.3	0.000	0.0	-0.019	63.7
16	LAMBDA(2)	0.015	277.7	0.000	0.0	-0.015	82.3
17	S(1)	0.007	45.8	0.000	0.0	-0.007	-45.8
18	M(1)	0.017	281.1	0.000	0.0	-0.017	78.9
19	J(1)	0.031	278.8	0.000	0.0	-0.031	81.2
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.059	190.0	0.000	0.0	-0.059	170.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.029	167.6	0.000	0.0	-0.029	-167.6
25	RHO(1)	0.011	237.1	0.000	0.0	-0.011	122.9
26	Q(1)	0.056	243.8	0.052	245.9	-0.004	2.1
27	T(2)	0.036	316.3	0.000	0.0	-0.036	43.7
28	R(2)	0.007	90.8	0.000	0.0	-0.007	-90.8
29	2Q(1)	0.007	251.7	0.000	0.0	-0.007	108.3
30	P(1)	0.167	260.9	0.153	264.0	-0.014	3.1
31	2SM(2)	0.007	99.7	0.000	0.0	-0.007	-99.7
32	M(3)	0.012	358.2	0.000	0.0	-0.012	1.8
33	L(2)	0.048	283.2	0.002	198.7	-0.046	-84.5
34	2MK(3)	0.013	208.1	0.000	0.0	-0.013	151.9
35	K(2)	0.190	310.1	0.159	294.6	-0.031	-15.5
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.025	65.2	0.011	218.7	-0.014	153.5

Station: "Elfin Cove, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.249	276.1	1.143	272.1	-0.106	-4.0
2	S(2)	0.394	308.1	0.369	303.5	-0.025	-4.6
3	N(2)	0.251	252.7	0.232	247.6	-0.019	-5.1
4	K(1)	0.478	263.9	0.449	264.2	-0.029	0.3
5	M(4)	0.008	187.2	0.000	0.0	-0.008	172.8
6	O(1)	0.296	248.7	0.286	253.7	-0.010	5.0
7	M(6)	0.004	145.1	0.004	172.9	0.000	27.8
8	MK(3)	0.005	246.6	0.002	8.9	-0.003	122.3
9	S(4)	0.003	268.2	0.000	0.0	-0.003	91.8
10	MN(4)	0.004	173.4	0.000	0.0	-0.004	-173.4
11	NU(2)	0.049	254.1	0.000	0.0	-0.049	105.9
12	S(6)	0.001	182.1	0.000	0.0	-0.001	177.9
13	MU(2)	0.027	234.2	0.000	0.0	-0.027	125.8
14	2N(2)	0.033	227.1	0.000	0.0	-0.033	132.9
15	OO(1)	0.014	285.6	0.000	0.0	-0.014	74.4
16	LAMBDA(2)	0.008	266.6	0.000	0.0	-0.008	93.4
17	S(1)	0.008	120.9	0.000	0.0	-0.008	-120.9
18	M(1)	0.018	263.0	0.000	0.0	-0.018	97.0
19	J(1)	0.029	275.2	0.000	0.0	-0.029	84.8
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.000	0.0	0.000	0.0	0.000	0.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.012	238.4	0.000	0.0	-0.012	121.6
26	Q(1)	0.050	237.7	0.048	245.3	-0.002	7.6
27	T(2)	0.032	306.2	0.000	0.0	-0.032	53.8
28	R(2)	0.020	71.8	0.000	0.0	-0.020	-71.8
29	2Q(1)	0.007	263.9	0.000	0.0	-0.007	96.1
30	P(1)	0.159	257.2	0.138	264.0	-0.021	6.8
31	2SM(2)	0.002	171.5	0.000	0.0	-0.002	-171.5
32	M(3)	0.005	319.3	0.000	0.0	-0.005	40.7
33	L(2)	0.027	306.0	0.000	0.0	-0.027	54.0
34	2MK(3)	0.005	198.2	0.000	0.0	-0.005	161.8
35	K(2)	0.117	297.5	0.100	293.4	-0.017	-4.1
36	M(8)	0.001	63.3	0.000	0.0	-0.001	-63.3
37	MS(4)	0.006	227.3	0.000	0.0	-0.006	132.7

Station: "Yakutat, Yakutat Bay, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.126	281.5	1.074	278.8	-0.052	-2.7
2	S(2)	0.366	312.8	0.348	310.3	-0.018	-2.5
3	N(2)	0.231	257.3	0.219	254.1	-0.012	-3.2
4	K(1)	0.454	268.0	0.439	267.7	-0.015	-0.3
5	M(4)	0.000	0.0	0.004	303.8	0.000	0.0
6	O(1)	0.281	253.1	0.281	258.3	0.000	5.2
7	M(6)	0.000	0.0	0.007	153.8	0.000	0.0
8	MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.045	260.6	0.000	0.0	-0.045	99.4
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.026	234.5	0.000	0.0	-0.026	125.5
14	2N(2)	0.027	231.8	0.000	0.0	-0.027	128.2
15	OO(1)	0.017	293.6	0.000	0.0	-0.017	66.4
16	LAMBDA(2)	0.007	299.6	0.000	0.0	-0.007	60.4
17	S(1)	0.009	30.1	0.000	0.0	-0.009	-30.1
18	M(1)	0.016	273.0	0.000	0.0	-0.016	87.0
19	J(1)	0.028	279.5	0.000	0.0	-0.028	80.5
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.118	266.4	0.000	0.0	-0.118	93.6
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.023	164.9	0.000	0.0	-0.023	-164.9
25	RHO(1)	0.009	251.1	0.000	0.0	-0.009	108.9
26	Q(1)	0.050	246.0	0.048	250.0	-0.002	4.0
27	T(2)	0.023	303.7	0.000	0.0	-0.023	56.3
28	R(2)	0.003	313.9	0.000	0.0	-0.003	46.1
29	2Q(1)	0.005	249.8	0.000	0.0	-0.005	110.2
30	P(1)	0.142	265.2	0.135	267.5	-0.007	2.3
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.003	266.2	0.000	0.0	-0.003	93.8
33	L(2)	0.024	303.6	0.000	0.0	-0.024	56.4
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.100	306.6	0.094	300.2	-0.006	-6.4
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.005	39.9	0.000	0.0

Station: "Cordova, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.455	290.2	1.307	284.6	-0.148	-5.6
2	S(2)	0.496	322.2	0.441	317.1	-0.055	-5.1
3	N(2)	0.298	265.9	0.264	260.5	-0.034	-5.4
4	K(1)	0.501	273.7	0.469	272.1	-0.032	-1.6
5	M(4)	0.055	13.8	0.047	11.0	-0.008	-2.8
6	O(1)	0.306	256.8	0.299	261.4	-0.007	4.6
7	M(6)	0.011	115.4	0.007	294.7	-0.004	179.3
8	MK(3)	0.000	0.0	0.008	45.8	0.000	0.0
9	S(4)	0.016	5.3	0.011	141.9	-0.005	136.6
10	MN(4)	0.016	331.1	0.000	0.0	-0.016	28.9
11	NU(2)	0.057	269.5	0.000	0.0	-0.057	90.5
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.031	255.5	0.000	0.0	-0.031	104.5
14	2N(2)	0.035	239.0	0.000	0.0	-0.035	121.0
15	OO(1)	0.016	300.4	0.000	0.0	-0.016	59.6
16	LAMBDA(2)	0.010	297.4	0.000	0.0	-0.010	62.6
17	S(1)	0.020	61.7	0.000	0.0	-0.020	-61.7
18	M(1)	0.016	289.1	0.000	0.0	-0.016	70.9
19	J(1)	0.029	287.7	0.000	0.0	-0.029	72.3
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.131	254.2	0.000	0.0	-0.131	105.8
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.028	179.9	0.000	0.0	-0.028	-179.9
25	RHO(1)	0.010	249.4	0.000	0.0	-0.010	110.6
26	Q(1)	0.053	250.3	0.050	253.2	-0.003	2.9
27	T(2)	0.028	313.8	0.000	0.0	-0.028	46.2
28	R(2)	0.004	323.5	0.000	0.0	-0.004	36.5
29	2Q(1)	0.006	250.9	0.000	0.0	-0.006	109.1
30	P(1)	0.155	271.2	0.146	272.1	-0.009	0.9
31	2SM(2)	0.004	132.8	0.000	0.0	-0.004	-132.8
32	M(3)	0.007	277.8	0.000	0.0	-0.007	82.2
33	L(2)	0.034	299.4	0.003	191.2	-0.031	-108.2
34	2MK(3)	0.003	174.1	0.000	0.0	-0.003	-174.1
35	K(2)	0.138	316.2	0.120	306.4	-0.018	-9.8
36	M(8)	0.004	186.7	0.000	0.0	-0.004	173.3
37	MS(4)	0.033	97.1	0.066	78.7	0.033	-18.4

Station: "Valdez, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.394	287.7	1.302	283.7	-0.092	-4.0
2	S(2)	0.479	320.4	0.438	315.7	-0.041	-4.7
3	N(2)	0.287	263.1	0.262	259.2	-0.025	-3.9
4	K(1)	0.500	272.0	0.467	271.7	-0.033	-0.3
5	M(4)	0.047	19.4	0.039	353.6	-0.008	25.8
6	O(1)	0.303	256.0	0.297	261.2	-0.006	5.2
7	M(6)	0.003	197.6	0.006	319.7	0.003	122.1
8	MK(3)	0.000	0.0	0.002	26.0	0.000	0.0
9	S(4)	0.012	351.1	0.009	137.4	-0.003	146.3
10	MN(4)	0.012	338.4	0.000	0.0	-0.012	21.6
11	NU(2)	0.054	267.6	0.000	0.0	-0.054	92.4
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.033	244.4	0.000	0.0	-0.033	115.6
14	2N(2)	0.034	237.9	0.000	0.0	-0.034	122.1
15	OO(1)	0.016	298.1	0.000	0.0	-0.016	61.9
16	LAMBDA(2)	0.009	303.5	0.000	0.0	-0.009	56.5
17	S(1)	0.006	359.1	0.000	0.0	-0.006	0.9
18	M(1)	0.016	286.8	0.000	0.0	-0.016	73.2
19	J(1)	0.029	282.2	0.000	0.0	-0.029	77.8
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.112	243.1	0.000	0.0	-0.112	116.9
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.026	176.5	0.000	0.0	-0.026	-176.5
25	RHO(1)	0.009	251.8	0.000	0.0	-0.009	108.2
26	Q(1)	0.053	249.4	0.050	253.1	-0.003	3.7
27	T(2)	0.028	306.2	0.000	0.0	-0.028	53.8
28	R(2)	0.006	9.6	0.000	0.0	-0.006	-9.6
29	2Q(1)	0.007	249.6	0.000	0.0	-0.007	110.4
30	P(1)	0.162	269.7	0.144	271.6	-0.018	1.9
31	2SM(2)	0.003	136.1	0.000	0.0	-0.003	-136.1
32	M(3)	0.007	273.6	0.000	0.0	-0.007	86.4
33	L(2)	0.031	300.1	0.000	0.0	-0.031	59.9
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.131	313.8	0.119	305.4	-0.012	-8.4
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.035	103.4	0.057	73.6	0.022	-29.8

Station: "Seward, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.198	288.0	1.161	285.2	-0.037	-2.8
2	S(2)	0.408	319.9	0.389	317.2	-0.019	-2.7
3	N(2)	0.248	263.3	0.235	260.2	-0.013	-3.1
4	K(1)	0.462	273.2	0.435	271.9	-0.027	-1.3
5	M(4)	0.010	18.9	0.008	333.2	-0.002	45.7
6	O(1)	0.287	257.3	0.281	262.0	-0.006	4.7
7	M(6)	0.006	30.6	0.005	125.2	-0.001	94.6
8	MK(3)	0.000	0.0	0.002	152.5	0.000	0.0
9	S(4)	0.000	0.0	0.001	153.5	0.000	0.0
10	MN(4)	0.003	340.2	0.000	0.0	-0.003	19.8
11	NU(2)	0.045	267.7	0.000	0.0	-0.045	92.3
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.029	239.1	0.000	0.0	-0.029	120.9
14	2N(2)	0.030	236.8	0.000	0.0	-0.030	123.2
15	OO(1)	0.015	299.3	0.000	0.0	-0.015	60.7
16	LAMBDA(2)	0.005	285.3	0.000	0.0	-0.005	74.7
17	S(1)	0.012	28.4	0.000	0.0	-0.012	-28.4
18	M(1)	0.015	284.5	0.000	0.0	-0.015	75.5
19	J(1)	0.026	287.2	0.000	0.0	-0.026	72.8
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.118	253.3	0.000	0.0	-0.118	106.7
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.024	163.9	0.000	0.0	-0.024	-163.9
25	RHO(1)	0.009	251.0	0.000	0.0	-0.009	109.0
26	Q(1)	0.052	250.1	0.048	253.7	-0.004	3.6
27	T(2)	0.026	309.6	0.000	0.0	-0.026	50.4
28	R(2)	0.003	321.1	0.000	0.0	-0.003	38.9
29	2Q(1)	0.007	249.3	0.000	0.0	-0.007	110.7
30	P(1)	0.146	269.1	0.135	271.7	-0.011	2.6
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.004	280.4	0.000	0.0	-0.004	79.6
33	L(2)	0.025	298.7	0.000	0.0	-0.025	61.3
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.111	311.5	0.105	306.8	-0.006	-4.7
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.007	95.0	0.010	82.8	0.003	-12.2

Station: "Seldovia, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	2.221	324.0	2.123	323.0	-0.098	-1.0
2	S(2)	0.830	358.3	0.754	356.8	-0.076	-1.5
3	N(2)	0.456	298.4	0.433	296.6	-0.023	-1.8
4	K(1)	0.563	279.8	0.535	278.0	-0.028	-1.8
5	M(4)	0.031	71.2	0.020	263.5	-0.011	167.7
6	O(1)	0.344	263.6	0.334	267.9	-0.010	4.3
7	M(6)	0.016	194.7	0.008	285.0	-0.008	90.3
8	MK(3)	0.018	199.5	0.023	190.4	0.005	-9.1
9	S(4)	0.005	137.0	0.000	0.0	-0.005	-137.0
10	MN(4)	0.011	42.0	0.000	0.0	-0.011	-42.0
11	NU(2)	0.077	302.2	0.000	0.0	-0.077	57.8
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.090	275.8	0.000	0.0	-0.090	84.2
14	2N(2)	0.052	267.7	0.007	141.7	-0.045	-126.0
15	OO(1)	0.019	314.4	0.000	0.0	-0.019	45.6
16	LAMBDA(2)	0.009	304.2	0.000	0.0	-0.009	55.8
17	S(1)	0.014	52.5	0.000	0.0	-0.014	-52.5
18	M(1)	0.020	297.0	0.003	25.3	-0.017	88.3
19	J(1)	0.032	295.0	0.004	40.5	-0.028	105.5
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.126	250.2	0.000	0.0	-0.126	109.8
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.023	171.7	0.000	0.0	-0.023	-171.7
25	RHO(1)	0.012	250.4	0.000	0.0	-0.012	109.6
26	Q(1)	0.062	255.8	0.057	261.8	-0.005	6.0
27	T(2)	0.045	351.9	0.000	0.0	-0.045	8.1
28	R(2)	0.009	7.7	0.000	0.0	-0.009	-7.7
29	2Q(1)	0.007	248.3	0.000	0.0	-0.007	111.7
30	P(1)	0.179	277.9	0.163	279.6	-0.016	1.7
31	2SM(2)	0.008	92.5	0.000	0.0	-0.008	-92.5
32	M(3)	0.010	7.5	0.000	0.0	-0.010	-7.5
33	L(2)	0.034	332.4	0.009	165.3	-0.025	-167.1
34	2MK(3)	0.027	180.9	0.000	0.0	-0.027	179.1
35	K(2)	0.227	350.3	0.207	346.2	-0.020	-4.1
36	M(8)	0.004	350.2	0.000	0.0	-0.004	9.8
37	MS(4)	0.027	117.5	0.007	321.1	-0.020	156.4

Station: "Nikiski, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	2.501	32.3	2.379	32.9	-0.122	0.6
2	S(2)	0.861	63.1	0.766	65.9	-0.095	2.8
3	N(2)	0.495	1.6	0.454	2.4	-0.041	0.8
4	K(1)	0.644	307.9	0.605	306.7	-0.039	-1.2
5	M(4)	0.089	279.1	0.095	329.7	0.006	50.6
6	O(1)	0.383	291.1	0.362	295.1	-0.021	4.0
7	M(6)	0.071	141.2	0.070	150.0	-0.001	8.8
8	MK(3)	0.044	253.3	0.060	270.3	0.016	17.0
9	S(4)	0.009	17.8	0.012	46.3	0.003	28.5
10	MN(4)	0.035	259.9	0.000	0.0	-0.035	100.1
11	NU(2)	0.087	22.7	0.000	0.0	-0.087	-22.7
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.105	274.7	0.000	0.0	-0.105	85.3
14	2N(2)	0.056	332.3	0.027	155.9	-0.029	-176.4
15	OO(1)	0.017	11.9	0.000	0.0	-0.017	-11.9
16	LAMBDA(2)	0.031	60.1	0.000	0.0	-0.031	-60.1
17	S(1)	0.008	107.5	0.000	0.0	-0.008	-107.5
18	M(1)	0.024	353.1	0.013	76.0	-0.011	82.9
19	J(1)	0.024	342.3	0.019	95.4	-0.005	113.1
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.120	243.7	0.000	0.0	-0.120	116.3
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.028	163.0	0.000	0.0	-0.028	-163.0
25	RHO(1)	0.014	276.8	0.000	0.0	-0.014	83.2
26	Q(1)	0.064	290.2	0.060	295.4	-0.004	5.2
27	T(2)	0.049	59.5	0.000	0.0	-0.049	-59.5
28	R(2)	0.015	97.4	0.000	0.0	-0.015	-97.4
29	2Q(1)	0.007	288.4	0.004	311.0	-0.003	22.6
30	P(1)	0.185	308.2	0.169	311.3	-0.016	3.1
31	2SM(2)	0.015	282.7	0.000	0.0	-0.015	77.3
32	M(3)	0.010	103.9	0.000	0.0	-0.010	-103.9
33	L(2)	0.072	79.9	0.031	102.7	-0.041	22.8
34	2MK(3)	0.045	244.9	0.000	0.0	-0.045	115.1
35	K(2)	0.243	55.8	0.217	54.3	-0.026	-1.5
36	M(8)	0.010	14.0	0.009	77.0	-0.001	63.0
37	MS(4)	0.070	319.1	0.063	3.9	-0.007	44.8

Station: "Anchorage, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	3.531	107.8	3.234	104.2	-0.297	-3.6
2	S(2)	1.000	150.4	0.902	146.7	-0.098	-3.7
3	N(2)	0.604	82.0	0.533	76.9	-0.071	-5.1
4	K(1)	0.689	341.8	0.636	341.2	-0.053	-0.6
5	M(4)	0.289	84.9	0.298	107.1	0.009	22.2
6	O(1)	0.385	322.2	0.361	329.8	-0.024	7.6
7	M(6)	0.152	26.8	0.142	45.5	-0.010	18.7
8	MK(3)	0.079	10.9	0.124	21.9	0.045	11.0
9	S(4)	0.021	215.0	0.026	228.6	0.005	13.6
10	MN(4)	0.105	65.7	0.000	0.0	-0.105	-65.7
11	NU(2)	0.185	83.0	0.000	0.0	-0.185	-83.0
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.233	242.3	0.000	0.0	-0.233	117.7
14	2N(2)	0.144	40.7	0.059	168.7	-0.085	128.0
15	0O(1)	0.020	69.1	0.000	0.0	-0.020	-69.1
16	LAMBDA(2)	0.095	114.9	0.000	0.0	-0.095	-114.9
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.050	57.6	0.026	102.4	-0.024	44.8
19	J(1)	0.032	57.4	0.036	126.1	0.004	68.7
20	MM	0.062	39.7	0.000	0.0	-0.062	-39.7
21	SSA	0.072	45.6	0.000	0.0	-0.072	-45.6
22	SA	0.054	230.2	0.000	0.0	-0.054	129.8
23	MSF	0.143	50.4	0.000	0.0	-0.143	-50.4
24	MF	0.032	116.3	0.000	0.0	-0.032	-116.3
25	RHO(1)	0.015	313.8	0.000	0.0	-0.015	46.2
26	Q(1)	0.063	331.2	0.062	336.0	-0.001	4.8
27	T(2)	0.059	150.4	0.000	0.0	-0.059	-150.4
28	R(2)	0.008	150.3	0.000	0.0	-0.008	-150.3
29	2Q(1)	0.010	302.6	0.005	336.9	-0.005	34.3
30	P(1)	0.162	347.2	0.164	351.0	0.002	3.8
31	2SM(2)	0.064	350.3	0.000	0.0	-0.064	9.7
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.162	122.5	0.107	120.8	-0.055	-1.7
34	2MK(3)	0.118	22.4	0.000	0.0	-0.118	-22.4
35	K(2)	0.269	142.3	0.257	132.2	-0.012	-10.1
36	M(8)	0.043	358.2	0.025	34.4	-0.018	36.2
37	MS(4)	0.184	133.3	0.188	155.1	0.004	21.8

Station: "Kodiak Island, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.973	308.1	0.908	304.1	-0.065	-4.0
2	S(2)	0.325	341.4	0.300	337.8	-0.025	-3.6
3	N(2)	0.201	284.2	0.185	279.8	-0.016	-4.4
4	K(1)	0.398	288.6	0.370	284.6	-0.028	-4.0
5	M(4)	0.009	28.2	0.008	333.0	-0.001	55.2
6	O(1)	0.259	273.0	0.248	275.1	-0.011	2.1
7	M(6)	0.010	89.1	0.008	135.5	-0.002	46.4
8	MK(3)	0.005	264.6	0.003	214.9	-0.002	-49.7
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.003	349.0	0.000	0.0	-0.003	11.0
11	NU(2)	0.039	284.2	0.000	0.0	-0.039	75.8
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.022	277.1	0.000	0.0	-0.022	82.9
14	2N(2)	0.024	258.9	0.001	46.6	-0.023	147.7
15	OO(1)	0.012	313.1	0.000	0.0	-0.012	46.9
16	LAMBDA(2)	0.007	323.6	0.000	0.0	-0.007	36.4
17	S(1)	0.012	77.0	0.000	0.0	-0.012	-77.0
18	M(1)	0.014	293.2	0.002	248.9	-0.012	-44.3
19	J(1)	0.023	297.9	0.002	276.8	-0.021	-21.1
20	MM	0.019	191.7	0.000	0.0	-0.019	168.3
21	SSA	0.015	151.7	0.000	0.0	-0.015	-151.7
22	SA	0.078	262.1	0.000	0.0	-0.078	97.9
23	MSF	0.015	51.5	0.000	0.0	-0.015	-51.5
24	MF	0.020	165.2	0.000	0.0	-0.020	-165.2
25	RHO(1)	0.009	267.1	0.000	0.0	-0.009	92.9
26	Q(1)	0.047	264.8	0.043	265.7	-0.004	0.9
27	T(2)	0.019	329.5	0.000	0.0	-0.019	30.5
28	R(2)	0.002	341.4	0.000	0.0	-0.002	18.6
29	2Q(1)	0.007	257.4	0.000	0.0	-0.007	102.6
30	P(1)	0.126	284.4	0.117	283.7	-0.009	-0.7
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.024	321.0	0.003	238.2	-0.021	-82.8
34	2MK(3)	0.005	245.5	0.000	0.0	-0.005	114.5
35	K(2)	0.090	332.8	0.081	326.4	-0.009	-6.4
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.006	71.6	0.006	70.1	0.000	-1.5

Station: "Alitak, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	1.351	314.1	1.305	309.3	-0.046	-4.8
2	S(2)	0.487	347.7	0.457	343.2	-0.030	-4.5
3	N(2)	0.277	291.1	0.268	286.4	-0.009	-4.7
4	K(1)	0.495	280.4	0.469	279.0	-0.026	-1.4
5	M(4)	0.033	210.7	0.022	150.9	-0.011	-59.8
6	O(1)	0.310	265.5	0.301	268.6	-0.009	3.1
7	M(6)	0.013	85.1	0.010	133.7	-0.003	48.6
8	MK(3)	0.017	98.7	0.017	111.6	0.000	12.9
9	S(4)	0.005	303.4	0.002	288.8	-0.003	-14.6
10	MN(4)	0.012	171.0	0.000	0.0	-0.012	-171.0
11	NU(2)	0.055	292.7	0.000	0.0	-0.055	67.3
12	S(6)	0.001	94.4	0.000	0.0	-0.001	-94.4
13	MU(2)	0.049	296.6	0.000	0.0	-0.049	63.4
14	2N(2)	0.028	269.0	0.002	309.1	-0.026	40.1
15	OO(1)	0.018	320.0	0.000	0.0	-0.018	40.0
16	LAMBDA(2)	0.006	248.0	0.000	0.0	-0.006	112.0
17	S(1)	0.014	48.2	0.000	0.0	-0.014	-48.2
18	M(1)	0.020	291.5	0.002	4.5	-0.018	73.0
19	J(1)	0.031	296.1	0.003	16.9	-0.028	80.8
20	MM	0.028	259.0	0.000	0.0	-0.028	101.0
21	SSA	0.015	54.2	0.000	0.0	-0.015	-54.2
22	SA	0.055	267.8	0.000	0.0	-0.055	92.2
23	MSF	0.007	106.0	0.000	0.0	-0.007	-106.0
24	MF	0.031	144.3	0.000	0.0	-0.031	-144.3
25	RHO(1)	0.009	259.2	0.000	0.0	-0.009	100.8
26	Q(1)	0.058	258.4	0.052	261.3	-0.006	2.9
27	T(2)	0.028	336.5	0.000	0.0	-0.028	23.5
28	R(2)	0.001	322.5	0.000	0.0	-0.001	37.5
29	2Q(1)	0.006	252.1	0.000	0.0	-0.006	107.9
30	P(1)	0.155	279.1	0.146	280.4	-0.009	1.3
31	2SM(2)	0.008	99.5	0.000	0.0	-0.008	-99.5
32	M(3)	0.002	147.3	0.000	0.0	-0.002	-147.3
33	L(2)	0.027	314.9	0.010	226.5	-0.017	-88.4
34	2MK(3)	0.014	64.0	0.000	0.0	-0.014	-64.0
35	K(2)	0.131	338.6	0.123	331.0	-0.008	-7.6
36	M(8)	0.003	311.6	0.007	291.5	0.004	-20.1
37	MS(4)	0.020	257.7	0.018	241.6	-0.002	-16.1

Station: "Sand Point, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.738	322.2	0.761	319.8	0.023	-2.4
2	S(2)	0.245	349.8	0.250	348.7	0.005	-1.1
3	N(2)	0.162	298.5	0.160	295.3	-0.002	-3.2
4	K(1)	0.416	285.0	0.393	286.4	-0.023	1.4
5	M(4)	0.000	0.0	0.002	34.0	0.000	0.0
6	O(1)	0.268	270.1	0.262	276.2	-0.006	6.1
7	M(6)	0.009	24.3	0.014	93.6	0.005	69.3
8	MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.031	301.8	0.000	0.0	-0.031	58.2
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.018	276.4	0.000	0.0	-0.018	83.6
14	2N(2)	0.020	272.8	0.000	0.0	-0.020	87.2
15	OO(1)	0.012	312.1	0.000	0.0	-0.012	47.9
16	LAMBDA(2)	0.005	336.1	0.000	0.0	-0.005	23.9
17	S(1)	0.010	58.3	0.000	0.0	-0.010	-58.3
18	M(1)	0.014	290.8	0.000	0.0	-0.014	69.2
19	J(1)	0.023	299.1	0.000	0.0	-0.023	60.9
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.123	272.3	0.000	0.0	-0.123	87.7
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.009	270.3	0.000	0.0	-0.009	89.7
26	Q(1)	0.048	263.2	0.046	268.3	-0.002	5.1
27	T(2)	0.016	340.7	0.000	0.0	-0.016	19.3
28	R(2)	0.002	350.8	0.000	0.0	-0.002	9.2
29	2Q(1)	0.006	268.3	0.000	0.0	-0.006	91.7
30	P(1)	0.130	281.9	0.122	286.6	-0.008	4.7
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.014	332.9	0.001	290.5	-0.013	-42.4
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.066	342.8	0.068	337.5	0.002	-5.3
36	M(8)	0.000	0.0	0.002	291.6	0.000	0.0
37	MS(4)	0.000	0.0	0.002	147.5	0.000	0.0

Station: "King Cove, AK"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.674	328.3	0.680	323.0	0.006	-5.3
2	S(2)	0.220	354.1	0.223	349.7	0.003	-4.4
3	N(2)	0.150	306.4	0.147	298.5	-0.003	-7.9
4	K(1)	0.417	284.5	0.378	281.8	-0.039	-2.7
5	M(4)	0.002	63.2	0.005	38.1	0.003	-25.1
6	O(1)	0.263	270.2	0.247	273.3	-0.016	3.1
7	M(6)	0.014	139.6	0.025	152.4	0.011	12.8
8	MK(3)	0.002	53.2	0.001	327.2	-0.001	86.0
9	S(4)	0.001	197.1	0.000	0.0	-0.001	162.9
10	MN(4)	0.001	351.1	0.000	0.0	-0.001	8.9
11	NU(2)	0.029	310.6	0.000	0.0	-0.029	49.4
12	S(6)	0.003	193.5	0.000	0.0	-0.003	166.5
13	MU(2)	0.020	285.8	0.000	0.0	-0.020	74.2
14	2N(2)	0.018	277.7	0.000	0.0	-0.018	82.3
15	OO(1)	0.013	306.6	0.000	0.0	-0.013	53.4
16	LAMBDA(2)	0.005	327.6	0.000	0.0	-0.005	32.4
17	S(1)	0.005	129.2	0.000	0.0	-0.005	-129.2
18	M(1)	0.015	279.5	0.000	0.0	-0.015	80.5
19	J(1)	0.024	294.2	0.001	16.6	-0.023	82.4
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.000	0.0	0.000	0.0	0.000	0.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.014	251.1	0.000	0.0	-0.014	108.9
26	Q(1)	0.050	256.5	0.043	266.9	-0.007	10.4
27	T(2)	0.016	339.4	0.000	0.0	-0.016	20.6
28	R(2)	0.003	120.9	0.000	0.0	-0.003	-120.9
29	2Q(1)	0.006	263.0	0.000	0.0	-0.006	97.0
30	P(1)	0.135	278.1	0.117	282.0	-0.018	3.9
31	2SM(2)	0.002	217.8	0.000	0.0	-0.002	142.2
32	M(3)	0.001	176.2	0.000	0.0	-0.001	-176.2
33	L(2)	0.014	1.8	0.000	0.0	-0.014	-1.8
34	2MK(3)	0.002	350.2	0.000	0.0	-0.002	9.8
35	K(2)	0.062	345.6	0.060	338.4	-0.002	-7.2
36	M(8)	0.001	209.3	0.000	0.0	-0.001	150.7
37	MS(4)	0.001	213.8	0.004	141.4	0.003	-72.4

Station: "Nawiliwili, HI"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.149	48.3	0.183	40.2	0.034	-8.1
2	S(2)	0.055	45.8	0.070	41.0	0.015	-4.8
3	N(2)	0.028	38.8	0.034	29.8	0.006	-9.0
4	K(1)	0.147	229.9	0.134	228.1	-0.013	-1.8
5	M(4)	0.004	203.8	0.001	215.1	-0.003	11.3
6	O(1)	0.084	221.8	0.075	226.0	-0.009	4.2
7	M(6)	0.000	0.0	0.003	328.1	0.000	0.0
8	MK(3)	0.000	0.0	0.000	19.3	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.005	40.7	0.000	0.0	-0.005	-40.7
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.005	354.6	0.000	0.0	-0.005	5.4
14	2N(2)	0.003	39.7	0.000	0.0	-0.003	-39.7
15	OO(1)	0.007	258.5	0.000	0.0	-0.007	101.5
16	LAMBDA(2)	0.001	47.1	0.000	0.0	-0.001	-47.1
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.005	253.9	0.000	0.0	-0.005	106.1
19	J(1)	0.009	245.8	0.000	0.0	-0.009	114.2
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.042	193.1	0.000	0.0	-0.042	166.9
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.003	221.4	0.000	0.0	-0.003	138.6
26	Q(1)	0.013	213.8	0.011	218.3	-0.002	4.5
27	T(2)	0.003	45.8	0.000	0.0	-0.003	-45.8
28	R(2)	0.000	0.0	0.000	0.0	0.000	0.0
29	2Q(1)	0.002	213.8	0.000	0.0	-0.002	146.2
30	P(1)	0.045	227.1	0.041	228.8	-0.004	1.7
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.004	48.0	0.000	0.0	-0.004	-48.0
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.015	32.9	0.021	27.1	0.006	-5.8
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	355.0	0.000	0.0

Station: "Honolulu, HI"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.178	59.5	0.197	52.8	0.019	-6.7
2	S(2)	0.057	53.8	0.068	56.9	0.011	3.1
3	N(2)	0.034	49.5	0.036	41.6	0.002	-7.9
4	K(1)	0.158	227.0	0.137	224.3	-0.021	-2.7
5	M(4)	0.000	0.0	0.001	216.8	0.000	0.0
6	O(1)	0.087	215.7	0.076	221.2	-0.011	5.5
7	M(6)	0.000	0.0	0.003	329.2	0.000	0.0
8	MK(3)	0.000	0.0	0.000	20.4	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.006	60.8	0.000	0.0	-0.006	-60.8
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.005	8.8	0.000	0.0	-0.005	-8.8
14	2N(2)	0.004	37.6	0.000	0.0	-0.004	-37.6
15	OO(1)	0.006	252.8	0.000	0.0	-0.006	107.2
16	LAMBDA(2)	0.001	56.9	0.000	0.0	-0.001	-56.9
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.005	240.3	0.000	0.0	-0.005	119.7
19	J(1)	0.010	239.5	0.000	0.0	-0.010	120.5
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.040	191.5	0.000	0.0	-0.040	168.5
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.007	48.2	0.000	0.0	-0.007	-48.2
25	RHO(1)	0.003	211.0	0.000	0.0	-0.003	149.0
26	Q(1)	0.014	208.3	0.012	213.4	-0.002	5.1
27	T(2)	0.003	53.9	0.000	0.0	-0.003	-53.9
28	R(2)	0.000	53.6	0.000	0.0	0.000	0.0
29	2Q(1)	0.002	204.6	0.000	0.0	-0.002	155.4
30	P(1)	0.048	226.2	0.042	225.1	-0.006	-1.1
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.005	69.3	0.000	0.0	-0.005	-69.3
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.016	47.9	0.020	41.2	0.004	-6.7
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	356.0	0.000	0.0

Station: "Mokuoloe, HI"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.161	13.9	0.175	13.1	0.014	-0.8
2	S(2)	0.080	15.5	0.084	14.8	0.004	-0.7
3	N(2)	0.033	9.8	0.034	4.2	0.001	-5.6
4	K(1)	0.177	236.4	0.151	229.2	-0.026	-7.2
5	M(4)	0.000	0.0	0.002	216.1	0.000	0.0
6	O(1)	0.100	227.2	0.084	226.3	-0.016	-0.9
7	M(6)	0.000	0.0	0.003	331.9	0.000	0.0
8	MK(3)	0.000	0.0	0.001	26.6	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.006	24.5	0.000	0.0	-0.006	-24.5
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.007	339.7	0.000	0.0	-0.007	20.3
14	2N(2)	0.004	358.7	0.000	0.0	-0.004	1.3
15	OO(1)	0.007	266.6	0.000	0.0	-0.007	93.4
16	LAMBDA(2)	0.001	14.6	0.000	0.0	-0.001	-14.6
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.006	258.7	0.000	0.0	-0.006	101.3
19	J(1)	0.010	253.1	0.000	0.0	-0.010	106.9
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.000	0.0	0.000	0.0	0.000	0.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.003	231.8	0.000	0.0	-0.003	128.2
26	Q(1)	0.016	220.9	0.013	218.1	-0.003	-2.8
27	T(2)	0.006	36.3	0.000	0.0	-0.006	-36.3
28	R(2)	0.001	15.6	0.000	0.0	-0.001	-15.6
29	2Q(1)	0.003	218.1	0.000	0.0	-0.003	141.9
30	P(1)	0.054	232.8	0.046	229.7	-0.008	-3.1
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.005	8.0	0.000	0.0	-0.005	-8.0
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.023	6.0	0.025	4.3	0.002	-1.7
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	354.5	0.000	0.0

Station: "Kahului, Kahului Harbor, HI"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.187	8.6	0.205	13.0	0.018	4.4
2	S(2)	0.098	15.5	0.096	18.2	-0.002	2.7
3	N(2)	0.035	0.6	0.040	4.4	0.005	3.8
4	K(1)	0.173	233.4	0.154	229.0	-0.019	-4.4
5	M(4)	0.000	0.0	0.002	218.7	0.000	0.0
6	O(1)	0.098	220.1	0.085	225.3	-0.013	5.2
7	M(6)	0.000	0.0	0.003	333.4	0.000	0.0
8	MK(3)	0.000	0.0	0.001	33.0	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.006	4.3	0.000	0.0	-0.006	-4.3
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.008	342.4	0.000	0.0	-0.008	17.6
14	2N(2)	0.005	355.1	0.000	0.0	-0.005	4.9
15	OO(1)	0.007	251.8	0.000	0.0	-0.007	108.2
16	LAMBDA(2)	0.001	11.8	0.000	0.0	-0.001	-11.8
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.006	254.8	0.000	0.0	-0.006	105.2
19	J(1)	0.011	239.2	0.000	0.0	-0.011	120.8
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.038	199.5	0.000	0.0	-0.038	160.5
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.006	34.7	0.000	0.0	-0.006	-34.7
25	RHO(1)	0.004	221.0	0.000	0.0	-0.004	139.0
26	Q(1)	0.015	210.1	0.013	216.3	-0.002	6.2
27	T(2)	0.006	13.2	0.000	0.0	-0.006	-13.2
28	R(2)	0.001	15.8	0.000	0.0	-0.001	-15.8
29	2Q(1)	0.002	207.0	0.000	0.0	-0.002	153.0
30	P(1)	0.054	230.2	0.047	229.5	-0.007	-0.7
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.005	0.6	0.000	0.0	-0.005	-0.6
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.028	8.8	0.029	7.6	0.001	-1.2
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	357.8	0.000	0.0

Station: "Kawaihae, HI"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10
amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.200	58.2	0.222	50.8	0.022	-7.4
2	S(2)	0.065	64.1	0.078	57.2	0.013	-6.9
3	N(2)	0.036	49.6	0.041	39.3	0.005	-10.3
4	K(1)	0.158	226.3	0.142	222.2	-0.016	-4.1
5	M(4)	0.000	0.0	0.001	218.9	0.000	0.0
6	O(1)	0.089	214.0	0.079	217.8	-0.010	3.8
7	M(6)	0.000	0.0	0.003	330.1	0.000	0.0
8	MK(3)	0.000	0.0	0.000	29.0	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.006	57.4	0.000	0.0	-0.006	-57.4
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.005	23.0	0.000	0.0	-0.005	-23.0
14	2N(2)	0.005	48.8	0.000	0.0	-0.005	-48.8
15	OO(1)	0.006	259.3	0.000	0.0	-0.006	100.7
16	LAMBDA(2)	0.002	60.9	0.000	0.0	-0.002	-60.9
17	S(1)	0.004	217.1	0.000	0.0	-0.004	142.9
18	M(1)	0.005	250.3	0.000	0.0	-0.005	109.7
19	J(1)	0.009	240.9	0.000	0.0	-0.009	119.1
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.000	0.0	0.000	0.0	0.000	0.0
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.008	32.8	0.000	0.0	-0.008	-32.8
25	RHO(1)	0.003	208.7	0.000	0.0	-0.003	151.3
26	Q(1)	0.013	204.3	0.012	208.9	-0.001	4.6
27	T(2)	0.005	79.2	0.000	0.0	-0.005	-79.2
28	R(2)	0.001	64.4	0.000	0.0	-0.001	-64.4
29	2Q(1)	0.002	201.8	0.000	0.0	-0.002	158.2
30	P(1)	0.049	223.7	0.043	222.8	-0.006	-0.9
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.005	53.4	0.000	0.0	-0.005	-53.4
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.020	55.6	0.023	41.8	0.003	-13.8
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	359.0	0.000	0.0

Station: "Hilo, Hilo Bay, Kuhio Bay, HI"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.230	29.4	0.267	26.6	0.037	-2.8
2	S(2)	0.092	34.1	0.112	34.8	0.020	0.7
3	N(2)	0.044	21.4	0.052	16.8	0.008	-4.6
4	K(1)	0.167	233.4	0.153	227.5	-0.014	-5.9
5	M(4)	0.000	0.0	0.002	224.3	0.000	0.0
6	O(1)	0.092	223.2	0.084	222.2	-0.008	-1.0
7	M(6)	0.000	0.0	0.003	334.2	0.000	0.0
8	MK(3)	0.000	0.0	0.000	42.1	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.009	23.1	0.000	0.0	-0.009	-23.1
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.008	358.3	0.000	0.0	-0.008	1.7
14	2N(2)	0.006	13.6	0.000	0.0	-0.006	-13.6
15	OO(1)	0.007	263.0	0.000	0.0	-0.007	97.0
16	LAMBDA(2)	0.002	31.6	0.000	0.0	-0.002	-31.6
17	S(1)	0.003	222.9	0.000	0.0	-0.003	137.1
18	M(1)	0.005	252.0	0.000	0.0	-0.005	108.0
19	J(1)	0.011	245.3	0.000	0.0	-0.011	114.7
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.000	0.0	0.000	0.0	0.000	0.0
22	SA	0.043	208.2	0.000	0.0	-0.043	151.8
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.007	38.0	0.000	0.0	-0.007	-38.0
25	RHO(1)	0.003	218.8	0.000	0.0	-0.003	141.2
26	Q(1)	0.016	213.2	0.013	212.2	-0.003	-1.0
27	T(2)	0.006	33.0	0.000	0.0	-0.006	-33.0
28	R(2)	0.001	34.3	0.000	0.0	-0.001	-34.3
29	2Q(1)	0.002	213.1	0.000	0.0	-0.002	146.9
30	P(1)	0.051	231.8	0.047	228.0	-0.004	-3.8
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.000	0.0	0.000	0.0	0.000	0.0
33	L(2)	0.005	23.1	0.000	0.0	-0.005	-23.1
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.028	26.2	0.033	23.2	0.005	-3.0
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.001	2.8	0.000	0.0

Station: "Sand Island, Midway Islands"

Observation: CO-OPS Accepted Harmonic Constants

Model: Least Squares H.A. Beginning 12- 1-2004 at Hour 0.10

amplitudes are in meters, and Phase is in degrees (GMT)

N	Constituent	Observed		Modeled		Difference	
		Amplitude	Epoch	Amplitude	Epoch	Amplitude	Epoch
1	M(2)	0.123	92.5	0.103	90.6	-0.020	-1.9
2	S(2)	0.021	167.3	0.021	208.0	0.000	40.7
3	N(2)	0.024	57.1	0.023	45.6	-0.001	-11.5
4	K(1)	0.076	274.8	0.065	267.6	-0.011	-7.2
5	M(4)	0.000	0.0	0.000	0.0	0.000	0.0
6	O(1)	0.057	278.3	0.051	280.2	-0.006	1.9
7	M(6)	0.000	0.0	0.002	152.4	0.000	0.0
8	MK(3)	0.000	0.0	0.000	322.3	0.000	0.0
9	S(4)	0.000	0.0	0.000	0.0	0.000	0.0
10	MN(4)	0.000	0.0	0.000	0.0	0.000	0.0
11	NU(2)	0.005	66.1	0.000	0.0	-0.005	-66.1
12	S(6)	0.000	0.0	0.000	0.0	0.000	0.0
13	MU(2)	0.000	0.0	0.000	0.0	0.000	0.0
14	2N(2)	0.003	21.7	0.000	0.0	-0.003	-21.7
15	OO(1)	0.003	282.3	0.000	0.0	-0.003	77.7
16	LAMBDA(2)	0.001	127.2	0.000	0.0	-0.001	-127.2
17	S(1)	0.000	0.0	0.000	0.0	0.000	0.0
18	M(1)	0.004	299.9	0.000	0.0	-0.004	60.1
19	J(1)	0.004	273.7	0.000	0.0	-0.004	86.3
20	MM	0.000	0.0	0.000	0.0	0.000	0.0
21	SSA	0.035	287.8	0.000	0.0	-0.035	72.2
22	SA	0.039	232.5	0.000	0.0	-0.039	127.5
23	MSF	0.000	0.0	0.000	0.0	0.000	0.0
24	MF	0.000	0.0	0.000	0.0	0.000	0.0
25	RHO(1)	0.002	279.8	0.000	0.0	-0.002	80.2
26	Q(1)	0.011	283.4	0.008	278.6	-0.003	-4.8
27	T(2)	0.001	164.3	0.000	0.0	-0.001	-164.3
28	R(2)	0.000	170.3	0.000	0.0	0.000	0.0
29	2Q(1)	0.003	295.2	0.000	0.0	-0.003	64.8
30	P(1)	0.024	273.8	0.021	269.6	-0.003	-4.2
31	2SM(2)	0.000	0.0	0.000	0.0	0.000	0.0
32	M(3)	0.003	244.5	0.000	0.0	-0.003	115.5
33	L(2)	0.003	130.8	0.000	0.0	-0.003	-130.8
34	2MK(3)	0.000	0.0	0.000	0.0	0.000	0.0
35	K(2)	0.006	174.4	0.007	204.7	0.001	30.3
36	M(8)	0.000	0.0	0.000	0.0	0.000	0.0
37	MS(4)	0.000	0.0	0.000	0.0	0.000	0.0

APPENDIX D. SKILL ASSESSMENT SCORE TABLES OF TIDE AND HINDCAST SIMULATIONS

In the following tables, water level units are in meters, time is in hours referenced to UTC.

Station: San Diego, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: TIDAL SIMULATION ONLY													
H			109200	0.001									
h			109200	-0.005									
H-h	20 cm	24h	109200	0.006	0.086	0.086	0.0	98.4	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20 cm	24h	848	0.049	0.084	0.068	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20 cm	24h	848	-0.049	0.084	0.069	0.0	98.2	0.0	0.0	0.0		
THW-thw	0.50 h	25h	848	-0.249	0.389	0.298	1.4	82.7	0.1	0.0	0.0		
TLW-tlw	0.50 h	25h	848	-0.149	0.383	0.352	2.6	87.5	0.9	0.0	0.0		
SCENARIO: HINDCAST (COMBINED WL)													
H			109200	-0.023									
h			109200	0.004									
H-h	20 cm	24h	109200	-0.026	0.101	0.098	0.0	95.3	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20 cm	24h	840	0.014	0.090	0.089	0.0	97.7	0.0	0.0	0.0		
ALW-alw	20 cm	24h	841	-0.082	0.117	0.083	0.0	91.6	0.0	0.0	0.0		
THW-thw	0.50 h	25h	840	-0.198	0.492	0.451	3.3	71.5	0.4	26.1	0.0		
TLW-tlw	0.50 h	25h	841	-0.105	0.477	0.466	3.8	78.1	1.0	0.0	0.0		
SCENARIO: HINDCAST (SURGE ONLY)													
H			109200	-0.023									
h			109200	0.009									
H-h	20 cm	24h	109200	-0.032	0.072	0.065	0.0	98.8	0.0	0.0	0.0	0.00	0.58
VARIABLE		Obs		Model									
HWM	0.421	364.379		0.225	370.533								
LWM	-0.213	735.908		-0.182	352.733								

Station: La Jolla, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: TIDAL SIMULATION ONLY													
H			109200	0.000									
h			109200	-0.003									
H-h	20 cm	24h	109200	0.003	0.085	0.085	0.0	98.7	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20 cm	24h	844	0.045	0.086	0.074	0.0	99.2	0.0	0.0	0.0		
ALW-alw	20 cm	24h	844	-0.046	0.081	0.067	0.0	98.7	0.0	0.0	0.0		
THW-thw	0.50 h	25h	844	-0.221	0.322	0.235	0.7	88.4	0.0	0.0	0.0		
TLW-tlw	0.50 h	25h	844	-0.213	0.307	0.221	0.4	90.2	0.0	0.0	0.0		
SCENARIO: HINDCAST (COMBINED WL)													
H			109200	-0.023									
h			109200	0.008									
H-h	20 cm	24h	109200	-0.031	0.103	0.098	0.0	94.9	0.0	0.0	1.1	0.03	0.99
AHW-ahw	20 cm	24h	842	0.006	0.089	0.089	0.0	97.5	0.0	0.0	0.0		
ALW-alw	20 cm	24h	842	-0.079	0.115	0.083	0.0	91.7	0.0	0.0	0.0		
THW-thw	0.50 h	25h	842	-0.187	0.405	0.360	1.8	80.0	0.2	0.0	0.0		
TLW-tlw	0.50 h	25h	842	-0.202	0.409	0.356	1.8	79.9	0.4	14.1	0.0		
SCENARIO: HINDCAST (SURGE ONLY)													
H			109200	-0.023									
h			109200	0.011									
H-h	20 cm	24h	109200	-0.034	0.074	0.066	0.0	98.7	0.0	0.0	0.3	0.00	0.57
VARIABLE		Obs		Model									
HWM	0.266	364.467		0.191	370.517								
LWM	-0.519	735.138		-0.179	352.696								

Station: Los Angeles, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	-0.004									
H-h	20	cm	24h109200	0.004	0.080	0.080	0.0	99.5	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 844	0.034	0.083	0.076	0.0	99.9	0.0	0.0	0.0		
ALW-alw	20	cm	24h 844	-0.032	0.070	0.062	0.0	99.8	0.0	0.0	0.0		
THW-thw	0.50	h	25h 844	-0.199	0.286	0.205	0.6	91.6	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 844	-0.205	0.297	0.215	0.0	90.0	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.025									
h			109200	0.003									
H-h	20	cm	24h109200	-0.028	0.096	0.092	0.0	96.4	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 827	-0.009	0.091	0.091	0.0	97.5	0.0	0.0	0.0		
ALW-alw	20	cm	24h 827	-0.055	0.097	0.080	0.0	95.9	0.0	0.0	0.0		
THW-thw	0.50	h	25h 827	-0.154	0.405	0.375	1.5	78.6	0.1	0.0	0.0		
TLW-tlw	0.50	h	25h 827	-0.184	0.415	0.372	2.3	76.2	0.4	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.025									
h			109200	0.008									
H-h	20	cm	24h109200	-0.033	0.072	0.064	0.0	98.4	0.0	0.0	0.0	0.00	0.59
VARIABLE			Obs		Model								
HWM	0.375		363.650	0.201	369.933								
LWM	-0.214		705.608	-0.196	774.554								

Station: Santa Monica, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 17.74 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	-0.004									
H-h	20	cm	24h109200	0.004	0.079	0.079	0.0	99.6	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 845	0.036	0.081	0.072	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 845	-0.034	0.069	0.060	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 845	-0.213	0.288	0.194	0.4	92.3	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 845	-0.221	0.299	0.201	0.0	91.0	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			104944	-0.025									
h			104944	0.016									
H-h	20	cm	24h104944	-0.042	0.100	0.091	0.0	95.3	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 800	-0.024	0.090	0.087	0.0	97.5	0.0	0.0	0.0		
ALW-alw	20	cm	24h 801	-0.066	0.104	0.081	0.0	94.8	0.0	0.0	0.0		
THW-thw	0.50	h	25h 800	-0.154	0.412	0.383	1.9	78.2	0.0	10.6	0.0		
TLW-tlw	0.50	h	25h 801	-0.192	0.440	0.397	2.5	75.8	0.5	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			104944	-0.025									
h			104944	0.023									
H-h	20	cm	24h104944	-0.048	0.081	0.065	0.0	97.9	0.0	0.0	0.0	0.00	0.56
VARIABLE			Obs		Model								
HWM	0.392		364.496	0.196	369.937								
LWM	-0.256		722.029	-0.198	352.692								

Station: Santa Barbara, CA
 Observed data time period from: / 4/30/2005 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	-0.011									
H-h	20	cm	24h109200	0.011	0.092	0.092	0.0	97.7	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 843	0.060	0.099	0.079	0.0	98.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 843	-0.041	0.084	0.073	0.0	97.9	0.0	0.0	0.0		
THW-thw	0.50	h	25h 843	-0.304	0.364	0.200	0.2	82.0	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 843	-0.213	0.291	0.198	0.1	91.7	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			72961	-0.032									
h			72961	-0.028									
H-h	20	cm	24h 72961	-0.005	0.100	0.099	0.0	95.3	0.1	0.0	0.3	0.06	0.99
AHW-ahw	20	cm	24h 550	0.022	0.095	0.092	0.0	96.9	0.0	0.0	0.0		
ALW-alw	20	cm	24h 549	-0.024	0.089	0.085	0.0	97.6	0.0	0.0	0.0		
THW-thw	0.50	h	25h 550	-0.296	0.568	0.486	6.0	61.6	0.5	12.9	0.0		
TLW-tlw	0.50	h	25h 549	-0.214	0.523	0.477	4.6	67.0	1.1	13.2	24.2		

SCENARIO: HINDCAST (SURGE ONLY)

H			72961	-0.033									
h			72961	-0.041									
H-h	20	cm	24h 72961	0.008	0.063	0.063	0.0	99.5	0.0	0.0	0.0	0.00	0.48
VARIABLE			Obs		Model								
HWM	0.203		635.967	0.186	733.696								
LWM	-0.399		735.896	-0.226	774.575								

Station: Oil Platform Harvest, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.000									
H-h	20	cm	24h109200	0.000	0.065	0.065	0.0	100.0	0.0	0.0	0.0	0.00	1.00
AHW-ahw	20	cm	24h 845	-0.013	0.054	0.053	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 845	-0.001	0.057	0.057	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 845	-0.185	0.263	0.186	0.0	95.7	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 845	-0.218	0.290	0.190	0.1	91.7	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.033									
h			109200	0.022									
H-h	20	cm	24h109200	-0.055	0.104	0.089	0.0	94.9	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 842	-0.048	0.100	0.088	0.0	95.1	0.0	0.0	0.0		
ALW-alw	20	cm	24h 842	-0.067	0.109	0.086	0.0	93.9	0.0	0.0	0.0		
THW-thw	0.50	h	25h 842	-0.179	0.369	0.323	1.7	84.9	0.2	0.0	0.0		
TLW-tlw	0.50	h	25h 842	-0.184	0.371	0.322	1.3	83.1	0.1	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.033									
h			109200	0.022									
H-h	20	cm	24h109200	-0.055	0.085	0.064	0.0	98.6	0.0	0.0	0.0	0.00	0.61
VARIABLE			Obs		Model								
HWM	0.320		373.900	0.223	373.783								
LWM	-0.257		734.758	-0.194	747.767								

Station: Port San Luis, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.000									
H-h	20	cm	24h109200	0.000	0.072	0.072	0.0	99.8	0.0	0.0	0.0	0.00	1.00
AHW-ahw	20	cm	24h 849	-0.005	0.070	0.070	0.0	99.9	0.0	0.0	0.0		
ALW-alw	20	cm	24h 849	-0.002	0.065	0.065	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 849	-0.153	0.241	0.186	0.0	97.5	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 849	-0.197	0.287	0.209	0.2	91.8	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.040									
h			109200	0.002									
H-h	20	cm	24h109200	-0.041	0.097	0.088	0.0	96.0	0.0	0.1	0.0	0.00	0.99
AHW-ahw	20	cm	24h 825	-0.057	0.106	0.089	0.0	94.2	0.0	0.0	0.0		
ALW-alw	20	cm	24h 826	-0.029	0.087	0.082	0.0	97.9	0.0	0.0	0.0		
THW-thw	0.50	h	25h 825	-0.150	0.472	0.448	3.4	72.7	1.5	10.9	0.0		
TLW-tlw	0.50	h	25h 826	-0.169	0.463	0.431	2.5	74.0	0.1	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.040									
h			109200	0.001									
H-h	20	cm	24h109200	-0.041	0.075	0.063	0.0	98.7	0.0	0.0	0.0	0.00	0.69
VARIABLE			Obs		Model								
HWM	0.573		362.871	0.290	373.754								
LWM	-0.277		747.471	-0.227	747.754								

Station: Monterey, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.002									
H-h	20	cm	24h109200	-0.002	0.064	0.064	0.0	100.0	0.0	0.0	0.0	0.00	1.00
AHW-ahw	20	cm	24h 861	-0.009	0.061	0.061	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 861	-0.002	0.058	0.058	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 861	-0.153	0.228	0.169	0.0	98.3	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 861	-0.202	0.273	0.184	0.1	95.7	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.038									
h			109200	0.017									
H-h	20	cm	24h109200	-0.055	0.099	0.083	0.0	95.3	0.0	1.6	0.0	0.04	0.99
AHW-ahw	20	cm	24h 850	-0.075	0.111	0.082	0.1	92.6	0.0	0.0	0.0		
ALW-alw	20	cm	24h 850	-0.039	0.091	0.082	0.0	97.3	0.0	0.0	0.0		
THW-thw	0.50	h	25h 850	-0.137	0.386	0.361	1.2	80.1	0.2	0.0	0.0		
TLW-tlw	0.50	h	25h 850	-0.190	0.391	0.342	1.2	78.8	0.0	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.038									
h			109200	0.015									
H-h	20	cm	24h109200	-0.052	0.082	0.064	0.0	98.2	0.0	0.0	0.0	0.00	0.67
VARIABLE			Obs		Model								
HWM	0.465		373.800	0.330	373.771								
LWM	-0.261		735.775	-0.224	747.754								

Station: San Francisco, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.006									
h			109200	0.005									
H-h	20	cm	24h109200	0.001	0.097	0.097	0.0	96.4	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 879	0.022	0.113	0.111	0.0	93.9	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	-0.041	0.073	0.061	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.219	0.297	0.200	0.0	93.9	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.134	0.271	0.235	0.0	95.1	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.031									
h			109200	0.028									
H-h	20	cm	24h109200	-0.059	0.123	0.108	0.2	90.0	0.0	3.0	0.0	0.15	0.99
AHW-ahw	20	cm	24h 875	-0.040	0.123	0.116	0.1	90.3	0.0	0.0	0.0		
ALW-alw	20	cm	24h 875	-0.102	0.132	0.084	0.2	88.7	0.0	0.0	0.0		
THW-thw	0.50	h	25h 875	-0.189	0.408	0.361	1.1	76.2	0.2	0.0	0.0		
TLW-tlw	0.50	h	25h 875	-0.012	0.398	0.398	0.6	78.6	0.3	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.037									
h			109200	0.023									
H-h	20	cm	24h109200	-0.060	0.095	0.073	0.0	97.1	0.0	1.1	0.0	0.01	0.67
VARIABLE			Obs			Model							
HWM	0.546		373.908	0.424		373.800							
LWM	-0.296		703.971	-0.260		774.621							

Station: Redwood City, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.008									
h			109200	0.005									
H-h	20	cm	24h109200	0.003	0.151	0.151	0.3	80.4	0.2	2.3	2.5	0.00	0.99
AHW-ahw	20	cm	24h 879	0.054	0.132	0.121	0.0	86.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	-0.027	0.083	0.078	0.0	98.1	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.388	0.429	0.184	0.0	68.3	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.180	0.391	0.348	0.5	77.7	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.029									
h			109200	0.026									
H-h	20	cm	24h109200	-0.055	0.149	0.139	0.6	81.7	0.0	4.8	0.0	0.45	0.99
AHW-ahw	20	cm	24h 879	-0.008	0.127	0.127	0.2	88.4	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	-0.059	0.116	0.099	0.3	91.8	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.332	0.422	0.261	0.6	73.3	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.044	0.383	0.381	0.1	79.7	0.6	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.036									
h			109200	0.022									
H-h	20	cm	24h109200	-0.058	0.117	0.102	0.1	91.4	0.0	3.4	0.0	0.13	0.57
VARIABLE			Obs			Model							
HWM	0.619		373.971	0.350		373.854							
LWM	-0.325		786.954	-0.309		368.367							

Station: Alameda, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.010									
h			109200	0.005									
H-h	20	cm	24h109200	0.006	0.105	0.104	0.0	94.9	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 879	0.075	0.137	0.115	0.0	83.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	-0.067	0.094	0.066	0.0	99.3	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.014	0.178	0.177	0.0	99.5	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.042	0.280	0.277	0.0	94.1	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.026									
h			109200	0.017									
H-h	20	cm	24h109200	-0.043	0.123	0.115	0.2	89.9	0.0	3.1	0.0	0.15	0.99
AHW-ahw	20	cm	24h 879	0.012	0.118	0.117	0.1	90.2	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	-0.111	0.141	0.086	0.3	87.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.077	0.295	0.285	0.1	90.1	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.021	0.334	0.333	0.1	84.8	0.2	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.036									
h			109200	0.013									
H-h	20	cm	24h109200	-0.049	0.089	0.075	0.0	97.4	0.0	0.0	0.0	0.00	0.69
VARIABLE			Obs		Model								
HWM	0.565		373.933	0.418	373.821								
LWM	-0.305		704.987	-0.258	774.642								

Station: Richmond, CA
 Observed data time period from: /11/30/2004 to /10/12/2005 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.013									
h			109200	0.006									
H-h	20	cm	24h109200	0.007	0.099	0.098	0.0	96.0	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 879	0.046	0.115	0.106	0.0	92.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	-0.028	0.066	0.059	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.057	0.200	0.192	0.0	98.9	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.208	0.307	0.226	0.0	87.6	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			75840	-0.019									
h			75840	0.052									
H-h	20	cm	24h 75840	-0.071	0.129	0.108	0.2	88.3	0.0	3.1	0.0	0.21	0.99
AHW-ahw	20	cm	24h 608	-0.028	0.115	0.112	0.2	93.4	0.0	0.0	0.0		
ALW-alw	20	cm	24h 609	-0.109	0.134	0.078	0.2	88.5	0.0	0.0	0.0		
THW-thw	0.50	h	25h 608	-0.085	0.396	0.387	1.0	80.1	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 609	-0.181	0.403	0.361	1.1	78.0	0.2	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			75840	-0.031									
h			75840	0.056									
H-h	20	cm	24h 75840	-0.087	0.111	0.069	0.0	94.6	0.0	0.2	0.0	0.00	0.62
VARIABLE			Obs		Model								
HWM	0.586		373.925	0.436	373.808								
LWM	-0.216		336.025	-0.235	378.717								

Station: Point Reyes, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.005									
H-h	20	cm	24h109200	-0.004	0.083	0.083	0.0	99.2	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 870	-0.039	0.088	0.079	0.0	99.2	0.0	0.0	0.0		
ALW-alw	20	cm	24h 870	0.020	0.081	0.079	0.0	99.4	0.0	0.0	0.0		
THW-thw	0.50	h	25h 870	-0.143	0.224	0.172	0.0	98.6	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 870	-0.219	0.300	0.205	0.3	89.9	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.038									
h			109200	0.040									
H-h	20	cm	24h109200	-0.077	0.126	0.100	0.2	88.6	0.0	4.4	0.0	0.19	0.99
AHW-ahw	20	cm	24h 853	-0.123	0.159	0.101	0.4	78.7	0.0	0.0	0.0		
ALW-alw	20	cm	24h 853	-0.034	0.106	0.100	0.1	94.6	0.0	0.0	0.0		
THW-thw	0.50	h	25h 853	-0.084	0.416	0.408	0.6	76.4	0.7	0.0	0.0		
TLW-tlw	0.50	h	25h 853	-0.132	0.438	0.418	2.7	74.9	0.4	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.038									
h			109200	0.035									
H-h	20	cm	24h109200	-0.073	0.103	0.073	0.0	94.9	0.0	0.4	0.0	0.01	0.67
VARIABLE			Obs			Model							
HWM	0.665		373.758	0.401		373.775							
LWM	-0.274		697.871	-0.267		774.600							

Station: Port Chicago, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.046									
h			109200	0.004									
H-h	20	cm	24h109200	0.042	0.302	0.299	5.8	42.6	14.0	4.2	4.4	0.00	0.94
AHW-ahw	20	cm	24h 879	0.468	0.493	0.156	0.0	2.8	63.1	0.0	237.2		
ALW-alw	20	cm	24h 879	-0.323	0.352	0.141	31.1	17.0	0.0	36.4	0.0		
THW-thw	0.50	h	25h 879	-0.039	0.224	0.221	0.0	96.5	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.065	0.201	0.190	0.0	99.7	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	0.012									
h			109200	0.060									
H-h	20	cm	24h109200	-0.048	0.314	0.310	12.8	41.8	8.4	10.0	4.0	14.56	0.93
AHW-ahw	20	cm	24h 879	0.395	0.429	0.167	0.0	11.9	46.9	0.0	162.6		
ALW-alw	20	cm	24h 879	-0.414	0.448	0.171	50.5	9.2	0.0	459.3	0.0		
THW-thw	0.50	h	25h 879	0.056	0.266	0.260	0.0	93.6	0.2	0.0	0.0		
TLW-tlw	0.50	h	25h 879	0.027	0.330	0.329	0.0	89.1	0.5	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.034									
h			109200	0.056									
H-h	20	cm	24h109200	-0.089	0.147	0.117	1.6	84.9	0.0	21.8	0.0	1.01	0.55
VARIABLE			Obs			Model							
HWM	0.839		731.717	0.388		373.850							
LWM	-0.322		785.946	-0.283		378.821							

Station: Arena Cove, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.016									
H-h	20	cm	24h109200	-0.016	0.089	0.088	0.0	98.7	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 876	-0.044	0.099	0.089	0.0	97.3	0.0	0.0	0.0		
ALW-alw	20	cm	24h 876	0.009	0.080	0.080	0.0	99.8	0.0	0.0	0.0		
THW-thw	0.50	h	25h 876	-0.058	0.185	0.176	0.0	98.5	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 876	-0.133	0.229	0.186	0.0	96.1	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.040									
h			109200	0.032									
H-h	20	cm	24h109200	-0.073	0.122	0.098	0.2	90.3	0.0	3.3	0.0	0.21	0.99
AHW-ahw	20	cm	24h 870	-0.118	0.155	0.100	0.3	80.6	0.0	0.0	0.0		
ALW-alw	20	cm	24h 870	-0.028	0.095	0.091	0.0	96.7	0.0	0.0	0.0		
THW-thw	0.50	h	25h 870	-0.051	0.344	0.341	0.2	85.2	0.7	0.0	0.0		
TLW-tlw	0.50	h	25h 870	-0.090	0.350	0.339	0.8	84.6	0.2	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.040									
h			109200	0.016									
H-h	20	cm	24h109200	-0.056	0.096	0.078	0.0	96.5	0.0	0.2	0.0	0.01	0.71
VARIABLE			Obs		Model								
HWM	0.477		735.354	0.397	373.800								
LWM	-0.300		778.529	-0.270	466.087								

Station: North Spit, Humboldt Bay, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.001									
h			109200	0.013									
H-h	20	cm	24h109200	-0.011	0.081	0.080	0.0	99.5	0.0	0.0	0.0	0.00	1.00
AHW-ahw	20	cm	24h 879	-0.018	0.073	0.071	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	0.033	0.083	0.077	0.0	99.5	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	0.010	0.162	0.162	0.0	99.0	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	0.034	0.198	0.195	0.0	98.6	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.040									
h			109200	0.082									
H-h	20	cm	24h109200	-0.121	0.156	0.098	0.5	80.0	0.0	4.6	0.0	0.53	0.99
AHW-ahw	20	cm	24h 879	-0.135	0.164	0.094	0.7	76.7	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	-0.068	0.120	0.099	0.2	90.8	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.055	0.300	0.295	0.2	89.5	0.1	0.0	0.0		
TLW-tlw	0.50	h	25h 879	0.032	0.315	0.314	0.2	87.7	0.1	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.041									
h			109200	0.069									
H-h	20	cm	24h109200	-0.110	0.134	0.078	0.0	87.3	0.0	1.9	0.0	0.03	0.64
VARIABLE			Obs		Model								
HWM	0.610		730.987	0.389	373.837								
LWM	-0.262		776.392	-0.297	774.592								

Station: Crescent City, CA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.015									
H-h	20	cm	24h109200	-0.015	0.088	0.087	0.0	98.1	0.0	0.0	0.0	0.00	1.00
AHW-ahw	20	cm	24h 879	-0.042	0.097	0.088	0.0	96.4	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	0.014	0.079	0.077	0.0	99.7	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	0.010	0.160	0.160	0.0	99.1	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.048	0.170	0.164	0.0	98.2	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.041									
h			109200	0.015									
H-h	20	cm	24h109200	-0.055	0.124	0.111	0.4	89.5	0.0	3.9	0.0	0.29	0.99
AHW-ahw	20	cm	24h 874	-0.118	0.165	0.115	1.3	77.2	0.0	15.3	0.0		
ALW-alw	20	cm	24h 874	0.017	0.097	0.096	0.0	95.5	0.0	0.0	0.0		
THW-thw	0.50	h	25h 874	0.025	0.409	0.409	0.2	79.1	1.3	0.0	11.0		
TLW-tlw	0.50	h	25h 874	-0.010	0.399	0.399	1.0	79.3	0.6	0.0	11.6		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.041									
h			109200	0.000									
H-h	20	cm	24h109200	-0.041	0.098	0.090	0.0	94.9	0.0	0.1	0.0	0.00	0.78
VARIABLE			Obs		Model								
HWM	0.734		731.496	0.419	373.829								
LWM	-0.436		776.608	-0.325	774.571								

Station: Port Orford, OR
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.015									
H-h	20	cm	24h109200	-0.014	0.098	0.097	0.0	96.5	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 879	-0.050	0.100	0.087	0.0	95.8	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	0.017	0.099	0.097	0.0	96.5	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.001	0.150	0.150	0.0	99.7	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.036	0.153	0.148	0.0	99.1	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.041									
h			109200	0.042									
H-h	20	cm	24h109200	-0.082	0.149	0.124	1.7	83.6	0.0	13.0	0.0	1.21	0.99
AHW-ahw	20	cm	24h 877	-0.130	0.178	0.122	3.0	74.2	0.0	25.0	0.0		
ALW-alw	20	cm	24h 877	-0.041	0.130	0.124	1.4	87.6	0.0	0.0	0.0		
THW-thw	0.50	h	25h 877	0.025	0.319	0.318	0.5	87.6	0.2	0.0	0.0		
TLW-tlw	0.50	h	25h 877	0.012	0.314	0.314	0.2	89.1	0.3	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.041									
h			109200	0.027									
H-h	20	cm	24h109200	-0.068	0.118	0.097	0.2	91.3	0.0	2.4	0.0	0.05	0.76
VARIABLE			Obs		Model								
HWM	0.800		732.596	0.436	373.833								
LWM	-0.382		357.663	-0.328	774.558								

Station: Charleston, OR
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.018									
H-h	20	cm	24h109200	-0.018	0.121	0.120	0.0	89.5	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 879	-0.064	0.117	0.098	0.0	91.8	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	0.039	0.098	0.091	0.0	95.8	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.217	0.278	0.174	0.0	95.7	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.203	0.268	0.174	0.0	95.1	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.040									
h			109200	0.037									
H-h	20	cm	24h109200	-0.078	0.151	0.130	1.4	82.4	0.0	6.6	0.0	1.14	0.99
AHW-ahw	20	cm	24h 879	-0.135	0.179	0.118	2.3	71.8	0.0	25.7	0.0		
ALW-alw	20	cm	24h 879	-0.017	0.114	0.113	0.1	92.7	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.228	0.355	0.273	0.3	81.8	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.185	0.362	0.312	0.8	83.4	0.2	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.040									
h			109200	0.019									
H-h	20	cm	24h109200	-0.060	0.113	0.096	0.1	92.5	0.0	0.8	0.0	0.03	0.77
VARIABLE			Obs										
			Model										
HWM	0.715		733.079	0.443	373.833								
LWM	-0.386		784.671	-0.345	774.567								

Station: South Beach, Yaquina River, OR
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.001									
h			109200	0.023									
H-h	20	cm	24h109200	-0.023	0.150	0.148	0.1	80.2	0.1	1.6	2.8	0.00	0.99
AHW-ahw	20	cm	24h 879	-0.096	0.152	0.117	0.0	79.2	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	0.050	0.124	0.113	0.0	91.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.261	0.301	0.151	0.0	94.1	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.191	0.251	0.163	0.0	95.9	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.038									
h			109200	0.048									
H-h	20	cm	24h109200	-0.085	0.171	0.148	2.5	77.5	0.0	7.8	0.0	1.98	0.99
AHW-ahw	20	cm	24h 878	-0.158	0.203	0.127	4.8	65.4	0.0	48.4	0.0		
ALW-alw	20	cm	24h 878	-0.023	0.125	0.123	0.2	89.9	0.0	0.0	0.0		
THW-thw	0.50	h	25h 878	-0.210	0.367	0.301	0.6	81.7	0.1	0.0	0.0		
TLW-tlw	0.50	h	25h 878	-0.127	0.350	0.327	0.8	84.4	0.1	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.038									
h			109200	0.024									
H-h	20	cm	24h109200	-0.062	0.126	0.110	0.3	89.3	0.0	5.1	0.0	0.05	0.77
VARIABLE			Obs										
			Model										
HWM	0.841		733.054	0.464	373.875								
LWM	-0.415		357.775	-0.371	774.592								

Station: Garibaldi, OR
 Observed data time period from: / 7/29/2005 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.000									
H-h	20 cm	24h	109200	0.000	0.206	0.206	3.2	63.1	0.7	3.0	3.0	0.00	0.98
AHW-ahw	20 cm	24h	879	-0.016	0.068	0.066	0.0	99.5	0.0	0.0	0.0		
ALW-alw	20 cm	24h	879	0.062	0.086	0.059	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50 h	25h	879	-0.607	0.639	0.200	0.2	21.8	0.0	0.0	0.0		
TLW-tlw	0.50 h	25h	879	-0.489	0.519	0.175	0.1	46.9	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			51405	-0.037									
h			51405	0.023									
H-h	20 cm	24h	51405	-0.060	0.240	0.232	8.2	62.7	0.3	6.9	2.4	5.92	0.98
AHW-ahw	20 cm	24h	414	-0.100	0.175	0.143	4.6	77.5	0.0	13.4	0.0		
ALW-alw	20 cm	24h	413	0.008	0.151	0.151	2.2	84.5	0.0	24.2	0.0		
THW-thw	0.50 h	25h	414	-0.581	0.648	0.286	4.8	34.8	0.0	12.0	0.0		
TLW-tlw	0.50 h	25h	413	-0.400	0.505	0.309	3.4	63.9	0.0	13.7	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			51405	-0.038									
h			51405	0.022									
H-h	20 cm	24h	51405	-0.060	0.153	0.140	2.2	83.9	0.0	6.6	0.0	0.45	0.78
VARIABLE			Obs		Model								
HWM	0.988		733.088		0.416	732.975							
LWM	-0.359		776.525		-0.351	774.592							

Station: Astoria, OR
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.020									
h			109200	0.024									
H-h	20 cm	24h	109200	-0.004	0.133	0.133	0.0	86.1	0.0	1.0	0.7	0.00	0.99
AHW-ahw	20 cm	24h	879	-0.023	0.122	0.120	0.0	90.3	0.0	0.0	0.0		
ALW-alw	20 cm	24h	879	-0.021	0.122	0.120	0.0	90.1	0.0	0.0	0.0		
THW-thw	0.50 h	25h	879	0.016	0.187	0.187	0.0	98.0	0.0	0.0	0.0		
TLW-tlw	0.50 h	25h	879	0.053	0.308	0.304	0.0	89.2	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.005									
h			109200	0.013									
H-h	20 cm	24h	109200	-0.018	0.166	0.166	2.2	78.9	0.1	11.9	2.4	1.63	0.99
AHW-ahw	20 cm	24h	879	-0.068	0.155	0.140	2.6	83.6	0.0	49.3	0.0		
ALW-alw	20 cm	24h	879	0.002	0.173	0.173	3.5	79.7	0.0	49.7	0.0		
THW-thw	0.50 h	25h	879	0.006	0.262	0.262	0.3	92.7	0.0	0.0	0.0		
TLW-tlw	0.50 h	25h	879	0.159	0.330	0.289	0.0	86.0	0.1	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.025									
h			109200	-0.011									
H-h	20 cm	24h	109200	-0.014	0.144	0.143	0.7	84.4	0.1	11.9	2.6	0.08	0.67
VARIABLE			Obs		Model								
HWM	0.929		766.642		0.399	373.837							
LWM	-0.524		357.879		-0.326	774.662							

Station: Skamokawa, WA
 Observed data time period from: / 6/ 6/2005 to / 3/ 2/2006 with gaps of 16.71 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.017									
h			109200	-0.012									
H-h	20	cm	24h109200	0.029	0.151	0.148	0.6	81.9	0.3	3.2	2.9	0.00	0.99
AHW-ahw	20	cm	24h 879	0.040	0.103	0.095	0.0	94.5	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	-0.014	0.153	0.153	0.9	81.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.040	0.189	0.185	0.0	98.5	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.407	0.438	0.161	0.0	67.1	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			60092	0.004									
h			60092	0.030									
H-h	20	cm	24h 60092	-0.025	0.328	0.327	9.0	65.6	1.9	122.0	4.6	5.58	0.95
AHW-ahw	20	cm	24h 474	-0.010	0.197	0.197	6.5	80.0	0.0	187.1	0.0		
ALW-alw	20	cm	24h 470	-0.031	0.296	0.295	9.8	66.4	1.9	222.1	76.1		
THW-thw	0.50	h	25h 474	-0.106	0.399	0.385	1.3	92.4	0.0	49.6	0.0		
TLW-tlw	0.50	h	25h 470	-0.492	0.582	0.312	4.7	54.5	0.0	11.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			60092	-0.013									
h			60092	0.046									
H-h	20	cm	24h 60092	-0.059	0.315	0.309	10.1	77.1	0.5	181.3	3.7	2.31	0.24
VARIABLE			Obs		Model								
HWM	2.724		755.967	0.176	766.612								
LWM	-1.077		745.883	-0.191	779.833								

Station: Toke Point, WA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.001									
h			109200	0.028									
H-h	20	cm	24h109200	-0.027	0.244	0.242	7.0	55.7	3.5	4.2	5.1	0.00	0.98
AHW-ahw	20	cm	24h 879	-0.026	0.135	0.133	0.0	89.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	0.024	0.134	0.132	0.0	87.9	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	-0.516	0.537	0.147	0.0	42.1	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.540	0.568	0.177	0.8	39.8	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.031									
h			109200	0.046									
H-h	20	cm	24h109200	-0.077	0.262	0.250	10.3	54.8	0.7	11.8	4.0	8.03	0.97
AHW-ahw	20	cm	24h 879	-0.080	0.180	0.162	4.2	77.2	0.0	49.7	0.0		
ALW-alw	20	cm	24h 879	-0.031	0.174	0.172	2.8	78.5	0.0	25.1	0.0		
THW-thw	0.50	h	25h 879	-0.517	0.584	0.273	3.0	44.0	0.0	25.4	0.0		
TLW-tlw	0.50	h	25h 879	-0.486	0.562	0.282	3.5	50.5	0.0	25.4	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.031									
h			109200	0.018									
H-h	20	cm	24h109200	-0.049	0.156	0.148	1.5	82.5	0.1	18.7	1.1	0.39	0.76
VARIABLE			Obs		Model								
HWM	1.364		766.642	0.506	343.562								
LWM	-0.547		779.675	-0.383	779.796								

Station: La Push, WA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.000									
H-h	20	cm	24h109200	0.000	0.070	0.070	0.0	99.8	0.0	0.0	0.0	0.00	1.00
AHW-ahw	20	cm	24h 879	-0.036	0.075	0.066	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 879	0.030	0.068	0.061	0.0	99.4	0.0	0.0	0.0		
THW-thw	0.50	h	25h 879	0.002	0.139	0.139	0.0	99.9	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.028	0.144	0.142	0.0	99.7	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.023									
h			109200	0.003									
H-h	20	cm	24h109200	-0.026	0.175	0.173	3.0	80.8	0.0	27.1	1.2	0.89	0.99
AHW-ahw	20	cm	24h 879	-0.064	0.171	0.158	3.3	81.3	0.0	24.8	0.0		
ALW-alw	20	cm	24h 879	0.006	0.194	0.194	3.1	79.5	0.1	63.3	0.0		
THW-thw	0.50	h	25h 879	0.016	0.312	0.312	0.2	87.9	0.3	0.0	0.0		
TLW-tlw	0.50	h	25h 879	-0.016	0.306	0.306	0.1	87.7	0.0	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.023									
h			109200	0.003									
H-h	20	cm	24h109200	-0.026	0.163	0.161	2.5	85.0	0.0	27.3	0.0	0.41	0.78

VARIABLE		Obs	Model
HWM	1.898	346.058	0.511 732.979
LWM	-0.437	586.917	-0.361 774.550

Station: Neah Bay, WA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	-0.001									
h			109200	0.022									
H-h	20	cm	24h109200	-0.023	0.135	0.133	0.0	85.7	0.1	0.0	2.2	0.00	0.99
AHW-ahw	20	cm	24h 870	-0.100	0.147	0.108	0.0	81.1	0.0	0.0	0.0		
ALW-alw	20	cm	24h 870	0.072	0.140	0.121	0.0	85.3	0.6	0.0	0.0		
THW-thw	0.50	h	25h 870	0.036	0.244	0.241	0.0	94.4	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 870	-0.091	0.205	0.184	0.0	97.1	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.027									
h			109200	-0.001									
H-h	20	cm	24h109200	-0.026	0.143	0.141	0.5	84.2	0.2	5.1	3.0	0.59	0.99
AHW-ahw	20	cm	24h 865	-0.100	0.158	0.122	2.0	79.5	0.0	24.6	0.0		
ALW-alw	20	cm	24h 865	0.070	0.153	0.137	0.0	83.0	1.3	0.0	0.0		
THW-thw	0.50	h	25h 865	0.025	0.354	0.354	0.6	85.2	0.5	0.0	0.0		
TLW-tlw	0.50	h	25h 865	-0.064	0.376	0.371	1.2	82.1	0.8	13.8	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.026									
h			109200	-0.023									
H-h	20	cm	24h109200	-0.003	0.116	0.115	0.0	91.4	0.0	0.3	1.8	0.02	0.81

VARIABLE		Obs	Model
HWM	0.667	766.437	0.478 733.062
LWM	-0.486	779.604	-0.368 774.667

Station: Port Angeles, WA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	-0.005									
h			109200	0.018									
H-h	20	cm	24h109200	-0.023	0.239	0.238	4.9	54.4	3.6	4.5	4.5	0.00	0.97
AHW-ahw	20	cm	24h 460	-0.125	0.260	0.228	9.1	45.0	0.2	62.7	0.0		
ALW-alw	20	cm	24h 537	0.235	0.288	0.167	0.0	43.9	18.8	0.0149	2		
THW-thw	0.50	h	25h 460	0.443	1.159	1.072	6.7	30.4	30.4	48.8122	2		
TLW-tlw	0.50	h	25h 537	0.239	0.599	0.549	1.9	72.4	8.6	24.8	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.036									
h			109200	0.021									
H-h	20	cm	24h109200	-0.057	0.259	0.253	8.9	51.6	2.6	7.8	4.3	8.39	0.97
AHW-ahw	20	cm	24h 445	-0.182	0.305	0.246	19.6	39.6	0.0	160.8	0.0		
ALW-alw	20	cm	24h 534	0.222	0.288	0.184	0.0	42.3	15.5	0.0	98.8		
THW-thw	0.50	h	25h 445	0.300	1.205	1.168	11.0	29.2	29.4	24.6	95.9		
TLW-tlw	0.50	h	25h 534	0.384	0.757	0.652	1.9	55.4	14.4	0.0	24.1		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.030									
h			109200	0.004									
H-h	20	cm	24h109200	-0.034	0.139	0.135	0.4	86.1	0.3	5.5	5.3	0.51	0.74
VARIABLE			Obs		Model								
HWM	0.850		766.437		0.629	374.033							
LWM	-0.510		710.033		-0.569	774.742							

Station: Port Townsend, WA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	-0.010									
h			109200	0.014									
H-h	20	cm	24h109200	-0.024	0.290	0.289	12.7	50.9	6.4	5.8	4.8	0.00	0.97
AHW-ahw	20	cm	24h 629	-0.105	0.287	0.267	20.5	52.3	0.5	24.4	24.9		
ALW-alw	20	cm	24h 638	0.193	0.293	0.220	0.2	44.4	21.0	0.0124	4		
THW-thw	0.50	h	25h 629	0.538	0.797	0.589	1.1	43.7	18.3	0.0	49.6		
TLW-tlw	0.50	h	25h 638	0.743	0.959	0.606	0.2	34.8	26.0	0.0	24.8		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.042									
h			109200	0.041									
H-h	20	cm	24h109200	-0.083	0.316	0.305	16.9	48.6	4.1	7.5	4.9	13.29	0.97
AHW-ahw	20	cm	24h 617	-0.147	0.321	0.286	24.5	51.5	0.2	63.6	0.0		
ALW-alw	20	cm	24h 619	0.120	0.258	0.228	2.3	52.8	10.2	0.0	24.7		
THW-thw	0.50	h	25h 617	0.435	0.789	0.659	1.6	45.4	16.2	0.0	40.5		
TLW-tlw	0.50	h	25h 619	0.767	1.032	0.691	1.0	31.7	30.5	0.0	61.1		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.032									
h			109200	0.027									
H-h	20	cm	24h109200	-0.059	0.163	0.152	1.4	80.3	0.6	7.8	5.7	1.39	0.68
VARIABLE			Obs		Model								
HWM	0.854		763.354		0.714	374.046							
LWM	-0.494		779.642		-0.716	779.338							

Station: Tacoma, WA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	-0.013									
h			109200	0.016									
H-h	20	cm	24h109200	-0.030	0.390	0.389	19.0	36.4	14.7	6.2	5.4	0.00	0.97
AHW-ahw	20	cm	24h 803	-0.251	0.473	0.402	40.7	33.4	2.2	13.4	0.0		
ALW-alw	20	cm	24h 803	0.246	0.375	0.282	0.7	32.4	34.6	0.0	74.3		
THW-thw	0.50	h	25h 803	0.574	0.718	0.431	0.0	45.3	14.2	0.0	0.0		
TLW-tlw	0.50	h	25h 803	0.732	0.990	0.667	0.0	48.1	29.4	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.049									
h			109200	0.034									
H-h	20	cm	24h109200	-0.082	0.412	0.404	23.1	34.4	11.5	7.9	5.9	18.59	0.96
AHW-ahw	20	cm	24h 787	-0.278	0.484	0.397	41.2	35.3	0.6	63.1	0.0		
ALW-alw	20	cm	24h 791	0.183	0.359	0.309	4.4	36.8	24.7	0.0	49.4		
THW-thw	0.50	h	25h 787	0.614	0.797	0.509	0.4	39.8	17.0	0.0	24.8		
TLW-tlw	0.50	h	25h 791	0.753	1.021	0.690	0.3	39.4	30.2	0.0	14.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.035									
h			109200	0.017									
H-h	20	cm	24h109200	-0.052	0.200	0.193	2.8	71.1	1.9	6.5	6.1	3.64	0.59
VARIABLE			Obs		Model								
HWM	0.773		766.487	0.868	374.721								
LWM	-0.600		710.021	-0.933	369.887								

Station: Seattle, Puget Sound, WA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	-0.013									
h			109200	0.018									
H-h	20	cm	24h109200	-0.031	0.371	0.369	17.9	38.6	12.9	6.1	5.4	0.00	0.97
AHW-ahw	20	cm	24h 783	-0.230	0.441	0.376	37.4	37.4	1.3	13.3	0.0		
ALW-alw	20	cm	24h 784	0.244	0.373	0.282	0.5	35.6	32.7	0.0	99.1		
THW-thw	0.50	h	25h 783	0.525	0.684	0.438	0.0	53.6	11.6	0.0	0.0		
TLW-tlw	0.50	h	25h 784	0.692	0.953	0.655	0.0	51.3	27.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.048									
h			109200	0.036									
H-h	20	cm	24h109200	-0.084	0.397	0.388	22.2	36.5	10.0	7.9	5.8	17.78	0.96
AHW-ahw	20	cm	24h 775	-0.262	0.467	0.387	39.2	36.5	0.5	62.8	0.0		
ALW-alw	20	cm	24h 778	0.173	0.351	0.305	4.6	38.3	23.5	0.0	49.7		
THW-thw	0.50	h	25h 775	0.602	0.795	0.521	0.4	41.0	16.6	0.0	16.7		
TLW-tlw	0.50	h	25h 778	0.726	0.988	0.670	0.3	40.4	28.8	0.0	24.9		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.034									
h			109200	0.019									
H-h	20	cm	24h109200	-0.053	0.189	0.181	2.4	74.3	1.5	7.0	6.0	2.89	0.62
VARIABLE			Obs		Model								
HWM	0.813		766.496	0.837	374.721								
LWM	-0.529		779.683	-0.908	369.887								

Station: Cherry Point, WA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	-0.012									
h			109200	0.011									
H-h	20	cm	24h109200	-0.023	0.321	0.320	14.3	41.9	10.4	6.1	6.2	0.00	0.97
AHW-ahw	20	cm	24h 767	0.106	0.407	0.393	16.3	21.6	31.8	24.4	147.3		
ALW-alw	20	cm	24h 769	-0.124	0.302	0.276	19.2	49.8	2.3	0.0	0.0		
THW-thw	0.50	h	25h 767	0.400	0.665	0.531	0.0	63.9	14.9	0.0	0.0		
TLW-tlw	0.50	h	25h 769	0.479	0.750	0.578	0.0	60.2	19.8	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.042									
h			109200	0.028									
H-h	20	cm	24h109200	-0.071	0.350	0.343	18.4	40.6	8.6	10.5	6.2	16.33	0.97
AHW-ahw	20	cm	24h 761	0.058	0.407	0.403	18.0	24.6	23.8	24.3	147.3		
ALW-alw	20	cm	24h 762	-0.187	0.344	0.289	22.6	45.0	1.4	73.6	0.0		
THW-thw	0.50	h	25h 761	0.455	0.749	0.596	0.5	56.2	18.8	0.0	15.9		
TLW-tlw	0.50	h	25h 762	0.469	0.788	0.634	1.0	53.3	18.9	15.1	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.030									
h			109200	0.017									
H-h	20	cm	24h109200	-0.047	0.180	0.174	2.3	77.1	1.3	8.1	6.5	2.62	0.67
VARIABLE			Obs		Model								
HWM	0.963		766.588	0.797	374.071								
LWM	-0.524		779.746	-0.921	369.896								

Station: Friday Harbor, WA
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	-0.010									
h			109200	0.018									
H-h	20	cm	24h109200	-0.028	0.301	0.300	12.5	45.9	8.0	6.5	5.6	0.00	0.97
AHW-ahw	20	cm	24h 625	0.121	0.338	0.315	8.0	28.0	19.8	24.4	171.9		
ALW-alw	20	cm	24h 644	-0.005	0.239	0.239	6.1	57.3	2.8	0.0	24.9		
THW-thw	0.50	h	25h 625	0.620	0.836	0.562	0.0	54.1	19.4	0.0	0.0		
TLW-tlw	0.50	h	25h 644	0.703	0.943	0.628	0.0	46.9	26.9	0.0	11.9		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.040									
h			109200	0.037									
H-h	20	cm	24h109200	-0.077	0.323	0.314	17.2	44.1	5.3	8.5	5.5	14.46	0.96
AHW-ahw	20	cm	24h 629	0.064	0.345	0.339	14.8	29.1	14.1	24.8	122.7		
ALW-alw	20	cm	24h 640	-0.072	0.254	0.243	9.2	59.2	1.9	24.5	0.0		
THW-thw	0.50	h	25h 629	0.601	0.916	0.693	1.0	47.4	24.0	0.0	25.5		
TLW-tlw	0.50	h	25h 640	0.807	1.078	0.716	0.6	30.5	31.9	0.0	61.3		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.030									
h			109200	0.019									
H-h	20	cm	24h109200	-0.049	0.172	0.165	1.6	77.3	0.9	6.3	5.9	1.95	0.68
VARIABLE			Obs		Model								
HWM	0.771		766.583	0.736	374.075								
LWM	-0.469		779.658	-0.773	369.900								

Station: Ketchikan, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	0.001								
h				109200	0.021								
H-h	20	cm	24h	109200	-0.020	0.334	0.333	14.3	38.9	11.7	5.0	5.3	0.00 0.98
AHW-ahw	20	cm	24h	879	-0.365	0.395	0.151	39.9	15.2	0.0	247.0	0.0	
ALW-alw	20	cm	24h	879	0.366	0.406	0.178	0.0	20.9	43.7	0.0274	4.4	
THW-thw	0.50	h	25h	879	-0.235	0.278	0.150	0.0	97.8	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.206	0.260	0.159	0.0	95.1	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				109200	0.020								
h				109200	0.033								
H-h	20	cm	24h	109200	-0.013	0.335	0.334	13.5	39.2	11.8	5.6	5.5	15.30 0.98
AHW-ahw	20	cm	24h	879	-0.353	0.390	0.166	38.9	17.1	0.0	247.8	0.0	
ALW-alw	20	cm	24h	879	0.369	0.420	0.200	0.0	19.0	44.0	0.0184	9.9	
THW-thw	0.50	h	25h	879	-0.226	0.324	0.232	0.1	88.4	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.185	0.307	0.245	0.8	90.1	0.0	12.5	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H				109200	0.020								
h				109200	0.012								
H-h	20	cm	24h	109200	0.008	0.126	0.126	0.0	88.9	0.3	1.9	4.0	0.34 0.82
VARIABLE				Obs									
				Model									
HWM	0.625			727.604	0.573	721.179							
LWM	-0.478			786.713	-0.524	778.508							

Station: Sitka, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	0.000								
h				109200	0.020								
H-h	20	cm	24h	109200	-0.020	0.132	0.130	0.0	87.5	0.0	1.2	0.0	0.00 0.99
AHW-ahw	20	cm	24h	879	-0.097	0.153	0.118	0.0	81.2	0.0	0.0	0.0	
ALW-alw	20	cm	24h	879	0.054	0.123	0.111	0.0	90.0	0.0	0.0	0.0	
THW-thw	0.50	h	25h	879	-0.014	0.150	0.150	0.0	99.3	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.056	0.170	0.161	0.0	98.2	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				109200	0.041								
h				109200	0.029								
H-h	20	cm	24h	109200	0.013	0.128	0.128	0.2	88.3	0.0	5.1	1.1	0.15 1.00
AHW-ahw	20	cm	24h	879	-0.063	0.134	0.118	0.7	87.4	0.0	0.0	0.0	
ALW-alw	20	cm	24h	879	0.089	0.143	0.113	0.0	83.8	0.3	0.0	0.0	
THW-thw	0.50	h	25h	879	-0.003	0.247	0.247	0.1	94.0	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.034	0.258	0.256	0.1	93.4	0.1	0.0	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H				109200	0.041								
h				109200	0.008								
H-h	20	cm	24h	109200	0.033	0.109	0.104	0.0	93.4	0.0	0.0	0.0	0.00 0.86
VARIABLE				Obs									
				Model									
HWM	0.611			730.579	0.545	721.279							
LWM	-0.488			372.833	-0.430	372.921							

Station: Juneau, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	0.000								
h				109200	0.011								
H-h	20	cm	24h	109200	-0.011	0.374	0.373	16.9	36.0	15.3	4.7	5.2	0.00 0.98
AHW-ahw	20	cm	24h	879	-0.276	0.301	0.119	17.4	28.2	0.0	148.8	0.0	
ALW-alw	20	cm	24h	879	0.332	0.367	0.156	0.0	23.2	35.2	0.016	1.3	
THW-thw	0.50	h	25h	879	-0.415	0.442	0.154	0.0	68.5	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.395	0.438	0.188	0.2	67.7	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				109200	0.029								
h				109200	0.028								
H-h	20	cm	24h	109200	0.001	0.380	0.380	16.2	36.6	15.8	5.6	18.1	17.85 0.98
AHW-ahw	20	cm	24h	879	-0.250	0.298	0.163	17.3	36.6	0.1	198.4	0.0	
ALW-alw	20	cm	24h	879	0.329	0.382	0.194	0.0	23.0	32.9	0.016	0.8	
THW-thw	0.50	h	25h	879	-0.400	0.462	0.232	0.3	64.3	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.400	0.483	0.270	1.9	66.1	0.0	13.8	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H				109200	0.029								
h				109200	0.017								
H-h	20	cm	24h	109200	0.012	0.131	0.131	0.0	89.4	0.7	0.3	14.0	0.41 0.81
VARIABLE				Obs									
				Model									
HWM	0.667			730.471	0.579	763.804							
LWM	-3.800			535.154	-0.539	373.592							

Station: Skagway, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	0.000								
h				109200	-0.002								
H-h	20	cm	24h	109200	0.003	0.370	0.370	16.6	33.7	17.1	4.7	5.4	0.00 0.98
AHW-ahw	20	cm	24h	879	-0.281	0.307	0.126	18.5	27.2	0.0	148.6	0.0	
ALW-alw	20	cm	24h	879	0.377	0.416	0.176	0.0	17.3	45.3	0.019	7.3	
THW-thw	0.50	h	25h	879	-0.312	0.343	0.142	0.0	91.2	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.322	0.388	0.218	0.1	76.3	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				109200	0.030								
h				109200	0.010								
H-h	20	cm	24h	109200	0.020	0.399	0.399	16.9	32.9	19.3	5.6	6.4	22.39 0.98
AHW-ahw	20	cm	24h	879	-0.252	0.319	0.196	22.6	37.4	0.0	198.3	0.0	
ALW-alw	20	cm	24h	879	0.397	0.461	0.234	0.0	19.7	48.7	0.023	5.0	
THW-thw	0.50	h	25h	879	-0.286	0.383	0.255	0.5	80.5	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.297	0.435	0.318	1.9	71.6	0.0	0.0	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H				109200	0.030								
h				109200	0.012								
H-h	20	cm	24h	109200	0.018	0.140	0.139	0.1	85.2	0.6	1.5	4.8	0.51 0.81
VARIABLE				Obs									
				Model									
HWM	0.781			693.687	0.653	351.842							
LWM	-0.614			361.254	-0.582	373.587							

Station: Elfin Cove, AK
 Observed data time period from: / 8/15/2005 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	0.000								
h				109200	0.000								
H-h	20	cm	24h	109200	0.000	0.128	0.128	0.0	89.0	0.0	0.0	0.0	1.00
AHW-ahw	20	cm	24h	879	-0.128	0.147	0.073	0.0	82.4	0.0	0.0	0.0	
ALW-alw	20	cm	24h	879	0.107	0.135	0.083	0.0	87.1	0.0	0.0	0.0	
THW-thw	0.50	h	25h	879	-0.111	0.178	0.139	0.0	99.4	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.121	0.194	0.151	0.0	97.7	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				47296	0.077								
h				47296	0.124								
H-h	20	cm	24h	47296	-0.047	0.159	0.152	0.9	78.6	0.3	4.2	3.3	0.99
AHW-ahw	20	cm	24h	381	-0.177	0.211	0.114	3.4	55.4	0.0	49.6	0.0	
ALW-alw	20	cm	24h	381	0.060	0.150	0.138	0.0	84.0	1.0	0.0	0.0	
THW-thw	0.50	h	25h	381	-0.074	0.227	0.215	0.0	95.0	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	381	-0.075	0.227	0.214	0.0	95.3	0.0	0.0	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H				47296	0.075								
h				47296	0.123								
H-h	20	cm	24h	47296	-0.047	0.110	0.100	0.0	92.3	0.0	0.0	0.0	0.90
VARIABLE				Obs									
				Model									
HWM	0.709			730.612	0.541	680.258							
LWM	-0.442			778.583	-0.438	778.504							

Station: Yakutat, Yakutat Bay, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 28.22 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	0.000								
h				109200	0.019								
H-h	20	cm	24h	109200	-0.018	0.124	0.123	0.0	89.3	0.0	0.0	1.1	1.00
AHW-ahw	20	cm	24h	879	-0.080	0.133	0.106	0.0	85.8	0.0	0.0	0.0	
ALW-alw	20	cm	24h	879	0.036	0.113	0.107	0.0	92.8	0.0	0.0	0.0	
THW-thw	0.50	h	25h	879	-0.059	0.157	0.146	0.0	99.0	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.077	0.161	0.142	0.0	98.6	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				102430	0.058								
h				102430	0.022								
H-h	20	cm	24h	102430	0.036	0.139	0.134	0.1	85.7	0.4	2.0	4.2	0.99
AHW-ahw	20	cm	24h	822	-0.026	0.124	0.121	0.2	90.1	0.0	0.0	0.0	
ALW-alw	20	cm	24h	823	0.093	0.159	0.130	0.0	79.0	1.2	0.0	0.0	
THW-thw	0.50	h	25h	822	-0.028	0.324	0.323	0.5	87.3	0.2	0.0	0.0	
TLW-tlw	0.50	h	25h	823	-0.023	0.333	0.332	0.7	86.9	0.2	0.0	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H				102430	0.058								
h				102430	0.008								
H-h	20	cm	24h	102430	0.050	0.134	0.125	0.0	86.4	0.5	0.0	3.9	0.81
VARIABLE				Obs									
				Model									
HWM	0.669			730.717	0.614	351.925							
LWM	-0.589			620.775	-0.455	373.550							

Station: Cordova, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	-0.003								
h				109200	0.018								
H-h	20	cm	24h	109200	-0.021	0.203	0.202	2.4	64.9	1.6	3.2	4.2	0.00 0.99
AHW-ahw	20	cm	24h	879	-0.211	0.249	0.133	8.8	47.0	0.0	112.7	0.0	
ALW-alw	20	cm	24h	879	0.141	0.187	0.123	0.0	65.3	1.4	0.0	0.0	
THW-thw	0.50	h	25h	879	-0.151	0.243	0.190	0.0	97.5	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.138	0.279	0.242	0.5	92.4	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				109200	0.069								
h				109200	0.054								
H-h	20	cm	24h	109200	0.014	0.205	0.205	1.7	65.2	2.7	5.0	5.5	3.12 0.99
AHW-ahw	20	cm	24h	879	-0.163	0.218	0.145	4.3	58.0	0.0	74.2	0.0	
ALW-alw	20	cm	24h	879	0.174	0.238	0.162	0.1	55.5	7.4	0.0	24.7	
THW-thw	0.50	h	25h	879	-0.108	0.354	0.337	0.5	84.4	0.2	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.048	0.365	0.362	1.4	85.3	0.8	0.0	11.8	

SCENARIO: HINDCAST (SURGE ONLY)

H				109200	0.071								
h				109200	0.036								
H-h	20	cm	24h	109200	0.035	0.142	0.138	0.1	84.6	0.6	2.7	5.2	0.57 0.81
VARIABLE				Obs									
				Model									
HWM	0.760			768.633	0.691	763.763							
LWM	-0.555			372.937	-0.490	373.571							

Station: Valdez, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	0.000								
h				109200	0.013								
H-h	20	cm	24h	109200	-0.013	0.158	0.157	0.1	78.2	0.4	1.8	3.1	0.00 0.99
AHW-ahw	20	cm	24h	879	-0.132	0.175	0.115	0.3	70.8	0.0	24.8	0.0	
ALW-alw	20	cm	24h	879	0.093	0.148	0.115	0.0	82.1	0.1	0.0	0.0	
THW-thw	0.50	h	25h	879	-0.079	0.204	0.188	0.0	98.6	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.144	0.251	0.205	0.3	95.1	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				109200	0.067								
h				109200	-0.068								
H-h	20	cm	24h	109200	0.135	0.221	0.176	0.1	62.7	6.7	3.0	6.7	5.53 0.99
AHW-ahw	20	cm	24h	878	0.026	0.140	0.138	0.1	86.0	0.8	0.0	13.2	
ALW-alw	20	cm	24h	878	0.242	0.291	0.161	0.0	40.2	14.9	0.0	24.7	
THW-thw	0.50	h	25h	878	-0.090	0.323	0.311	0.1	87.6	0.1	0.0	0.0	
TLW-tlw	0.50	h	25h	878	-0.128	0.342	0.318	0.6	88.6	0.6	0.0	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H				109200	0.067								
h				109200	-0.080								
H-h	20	cm	24h	109200	0.147	0.198	0.132	0.0	65.9	3.4	0.1	7.8	2.47 0.70
VARIABLE				Obs									
				Model									
HWM	0.643			768.687	0.659	722.033							
LWM	-0.668			372.900	-0.515	373.562							

Station: Seward, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.016									
H-h	20	cm	24h109200	-0.016	0.124	0.123	0.0	89.2	0.0	0.0	1.5	0.00	1.00
AHW-ahw	20	cm	24h 879	-0.054	0.118	0.105	0.0	90.3	0.0	0.0	0.0	0.0	
ALW-alw	20	cm	24h 879	0.026	0.116	0.113	0.0	91.6	0.0	0.0	0.0	0.0	
THW-thw	0.50	h	25h 879	-0.104	0.197	0.167	0.0	97.8	0.0	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h 879	-0.112	0.190	0.153	0.0	98.3	0.0	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H			109200	0.082									
h			109200	-0.018									
H-h	20	cm	24h109200	0.100	0.169	0.137	0.0	76.0	1.7	1.8	6.0	1.34	0.99
AHW-ahw	20	cm	24h 879	0.056	0.131	0.119	0.0	86.8	0.1	0.0	0.0	0.0	
ALW-alw	20	cm	24h 879	0.148	0.202	0.137	0.0	64.4	3.3	0.0	12.6	0.0	
THW-thw	0.50	h	25h 879	-0.061	0.275	0.268	0.2	92.6	0.2	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h 879	-0.072	0.261	0.251	0.1	92.9	0.0	0.0	0.0	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	0.082									
h			109200	-0.034									
H-h	20	cm	24h109200	0.116	0.169	0.123	0.0	74.5	1.4	0.0	6.3	0.92	0.77
VARIABLE			Obs										
			Model										
HWM	0.672		768.654	0.626	768.763								
LWM	-0.685		372.887	-0.492	373.546								

Station: Seldovia, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.001									
h			109200	0.016									
H-h	20	cm	24h109200	-0.015	0.188	0.187	0.9	69.1	1.4	4.1	4.0	0.00	1.00
AHW-ahw	20	cm	24h 879	-0.077	0.167	0.148	0.7	75.8	0.0	49.6	0.0	0.0	
ALW-alw	20	cm	24h 879	0.136	0.224	0.178	0.0	62.7	7.4	0.0	12.5	0.0	
THW-thw	0.50	h	25h 879	-0.050	0.145	0.137	0.0	100.0	0.0	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h 879	0.052	0.158	0.149	0.0	98.2	0.0	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H			109200	0.082									
h			109200	0.016									
H-h	20	cm	24h109200	0.067	0.219	0.208	0.8	67.7	5.6	5.4	6.0	4.43	1.00
AHW-ahw	20	cm	24h 879	0.002	0.171	0.171	0.3	78.6	1.5	0.0	14.9	0.0	
ALW-alw	20	cm	24h 879	0.219	0.307	0.216	0.5	42.5	19.0	13.2	135.8	0.0	
THW-thw	0.50	h	25h 879	-0.035	0.198	0.195	0.1	98.2	0.6	0.0	25.1	0.0	
TLW-tlw	0.50	h	25h 879	0.089	0.211	0.191	0.0	96.5	0.2	0.0	0.0	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	0.082									
h			109200	0.000									
H-h	20	cm	24h109200	0.082	0.177	0.157	0.2	78.7	2.3	5.8	6.5	1.82	0.76
VARIABLE			Obs										
			Model										
HWM	1.603		526.325	0.804	435.842								
LWM	-1.470		526.604	-0.626	373.637								

Station: Nikiski, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.069									
h			109200	0.013									
H-h	20	cm	24h109200	0.056	0.248	0.242	1.2	62.4	7.7	3.7	5.1	0.00	1.00
AHW-ahw	20	cm	24h 879	0.013	0.148	0.148	0.6	83.0	0.1	0.0	0.0		
ALW-alw	20	cm	24h 879	0.222	0.320	0.231	0.0	45.3	22.4	0.0	0.0	11.1	1.1
THW-thw	0.50	h	25h 879	0.064	0.187	0.175	0.0	98.4	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	0.218	0.280	0.177	0.0	91.7	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	0.135									
h			109200	0.007									
H-h	20	cm	24h109200	0.128	0.266	0.233	0.6	59.1	12.3	4.8	11.6	7.66	1.00
AHW-ahw	20	cm	24h 879	0.086	0.192	0.172	0.0	72.4	4.8	0.0	24.8		
ALW-alw	20	cm	24h 879	0.318	0.420	0.275	0.6	29.1	37.2	0.0	0.0	17.2	6.6
THW-thw	0.50	h	25h 879	-0.039	0.193	0.189	0.0	96.8	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 879	0.112	0.207	0.174	0.0	97.3	0.0	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	0.066									
h			109200	-0.006									
H-h	20	cm	24h109200	0.072	0.208	0.195	0.5	67.8	5.2	3.1	9.0	4.44	0.69
VARIABLE			Obs										
			Model										
HWM	0.803		740.646	0.769	435.908								
LWM	-0.794		788.308	-0.711	373.725								

Station: Anchorage, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.253									
h			109200	-0.007									
H-h	20	cm	24h109200	0.261	0.503	0.430	4.5	34.5	34.7	4.6	7.7	0.00	0.99
AHW-ahw	20	cm	24h 879	0.039	0.208	0.205	1.8	64.7	3.3	74.4	0.0		
ALW-alw	20	cm	24h 878	0.550	0.630	0.307	0.0	13.8	68.0	0.0	29.5	9.9	
THW-thw	0.50	h	25h 879	0.098	0.248	0.227	0.0	95.2	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 878	0.317	0.414	0.266	0.0	72.2	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	0.310									
h			109200	-0.007									
H-h	20	cm	24h109200	0.317	0.517	0.408	1.6	37.6	37.1	5.8	22.8	22.96	0.99
AHW-ahw	20	cm	24h 879	0.018	0.209	0.208	0.7	69.3	4.9	0.0	37.2		
ALW-alw	20	cm	24h 878	0.918	0.973	0.323	0.0	2.3	94.3	0.0	0.0	7.3	
THW-thw	0.50	h	25h 879	0.063	0.184	0.173	0.0	98.3	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 878	0.169	0.239	0.169	0.0	96.1	0.0	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	0.057									
h			109200	0.000									
H-h	20	cm	24h109200	0.057	0.378	0.373	11.5	40.5	18.0	7.3	9.6	18.01	0.47
VARIABLE			Obs										
			Model										
HWM	1.810		753.704	0.968	436.021								
LWM	-1.365		788.412	-0.876	373.850								

Station: Kodiak Island, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	-0.001								
h				109200	0.012								
H-h	20	cm	24h	109200	-0.013	0.115	0.114	0.0	91.6	0.0	0.0	0.0	0.99
AHW-ahw	20	cm	24h	878	-0.080	0.119	0.088	0.0	90.7	0.0	0.0	0.0	
ALW-alw	20	cm	24h	879	0.061	0.105	0.085	0.0	94.3	0.0	0.0	0.0	
THW-thw	0.50	h	25h	878	-0.199	0.279	0.196	0.0	94.1	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	879	-0.181	0.257	0.182	0.2	96.6	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				109200	0.084								
h				109200	0.006								
H-h	20	cm	24h	109200	0.078	0.139	0.116	0.0	84.7	0.4	0.3	3.4	0.99
AHW-ahw	20	cm	24h	872	0.007	0.094	0.094	0.0	96.7	0.0	0.0	0.0	
ALW-alw	20	cm	24h	872	0.160	0.190	0.103	0.0	66.2	1.4	0.0	0.0	
THW-thw	0.50	h	25h	872	-0.166	0.386	0.348	1.0	79.6	0.1	0.0	0.0	
TLW-tlw	0.50	h	25h	872	-0.105	0.361	0.345	0.6	82.7	0.3	0.0	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H				109200	0.085								
h				109200	-0.006								
H-h	20	cm	24h	109200	0.091	0.142	0.109	0.0	82.2	0.3	0.0	3.0	0.80
VARIABLE				Obs									
HWM	0.806			435.492	0.666	435.800							
LWM	-0.599			372.887	-0.449	372.967							

Station: Sand Point, AK
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 96.48 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H				109200	0.001								
h				109200	0.020								
H-h	20	cm	24h	109200	-0.019	0.109	0.108	0.0	94.9	0.0	0.0	0.0	0.99
AHW-ahw	20	cm	24h	877	-0.007	0.106	0.106	0.0	96.7	0.0	0.0	0.0	
ALW-alw	20	cm	24h	878	-0.042	0.113	0.105	0.0	92.9	0.0	0.0	0.0	
THW-thw	0.50	h	25h	877	-0.090	0.209	0.188	0.0	96.7	0.0	0.0	0.0	
TLW-tlw	0.50	h	25h	878	-0.165	0.283	0.230	0.5	93.1	0.0	0.0	0.0	

SCENARIO: HINDCAST (COMBINED WL)

H				86048	0.078								
h				86048	0.030								
H-h	20	cm	24h	86048	0.048	0.120	0.109	0.1	90.7	0.1	3.8	1.2	0.99
AHW-ahw	20	cm	24h	688	0.051	0.115	0.103	0.0	91.4	0.0	0.0	0.0	
ALW-alw	20	cm	24h	687	0.031	0.118	0.114	0.0	91.4	0.3	0.0	0.0	
THW-thw	0.50	h	25h	688	-0.049	0.400	0.397	1.3	79.8	0.7	0.0	0.0	
TLW-tlw	0.50	h	25h	687	-0.134	0.428	0.407	2.2	77.4	0.9	0.0	0.0	

SCENARIO: HINDCAST (SURGE ONLY)

H				86048	0.076								
h				86048	0.025								
H-h	20	cm	24h	86048	0.052	0.132	0.122	0.1	87.0	0.2	5.6	1.8	0.87
VARIABLE				Obs									
HWM	0.736			433.471	0.797	433.237							
LWM	-0.636			372.379	-0.447	373.525							

Station: King Cove, AK
 Observed data time period from: / 8/26/2005 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.000									
H-h	20	cm	24h109200	-0.001	0.078	0.078	0.0	98.7	0.0	0.0	0.0	0.00	1.00
AHW-ahw	20	cm	24h 876	-0.007	0.044	0.044	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 877	-0.010	0.079	0.078	0.0	99.9	0.0	0.0	0.0		
THW-thw	0.50	h	25h 876	-0.237	0.344	0.249	0.8	86.1	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 877	-0.321	0.397	0.234	1.8	85.3	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			44701	0.098									
h			44701	0.090									
H-h	20	cm	24h 44701	0.008	0.119	0.119	0.3	90.9	0.2	6.2	2.5	0.29	0.99
AHW-ahw	20	cm	24h 356	-0.010	0.104	0.104	0.0	94.7	0.0	0.0	0.0		
ALW-alw	20	cm	24h 357	0.009	0.129	0.129	0.6	90.2	0.6	0.0	0.0		
THW-thw	0.50	h	25h 356	-0.129	0.493	0.477	3.9	75.6	1.1	10.1	16.9		
TLW-tlw	0.50	h	25h 357	-0.149	0.463	0.439	2.2	74.2	0.6	0.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			44701	0.098									
h			44701	0.090									
H-h	20	cm	24h 44701	0.009	0.103	0.102	0.2	94.3	0.0	4.9	0.0	0.16	0.95

VARIABLE Obs Model

HWM	0.847	766.596	0.774	766.475
LWM	-0.623	785.796	-0.463	785.696

Station: Nawiliwili, HI
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 26.89 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	-0.002									
H-h	20	cm	24h109200	0.001	0.045	0.045	0.0	100.0	0.0	0.0	0.0	0.00	0.98
AHW-ahw	20	cm	24h 819	0.034	0.053	0.041	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 819	-0.026	0.042	0.033	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 819	-0.307	0.400	0.257	0.4	79.9	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 819	-0.294	0.468	0.364	2.9	69.0	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			102748	-0.002									
h			102748	0.032									
H-h	20	cm	24h102748	-0.034	0.074	0.065	0.0	99.3	0.0	0.0	0.0	0.00	0.96
AHW-ahw	20	cm	24h 739	-0.013	0.065	0.063	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 739	-0.053	0.079	0.059	0.0	98.5	0.0	0.0	0.0		
THW-thw	0.50	h	25h 739	-0.230	0.590	0.543	6.0	61.3	2.8	25.5	11.5		
TLW-tlw	0.50	h	25h 739	-0.184	0.691	0.667	10.8	58.7	3.2	24.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			102748	-0.002									
h			102748	0.036									
H-h	20	cm	24h102748	-0.038	0.062	0.049	0.0	100.0	0.0	0.0	0.0	0.00	0.55

VARIABLE Obs Model

HWM	0.202	370.879	0.152	367.996
LWM	-0.159	561.287	-0.078	772.013

Station: Honolulu, HI
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	-0.002									
H-h	20	cm	24h109200	0.002	0.043	0.043	0.0	100.0	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 866	0.018	0.046	0.043	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 865	-0.009	0.035	0.034	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 866	-0.240	0.348	0.253	0.9	86.3	0.0	0.0	0.0		
TLW-tlw	0.50	h	25h 865	-0.263	0.401	0.303	1.6	79.4	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.003									
h			109200	0.033									
H-h	20	cm	24h109200	-0.036	0.068	0.058	0.0	99.5	0.0	0.0	0.0	0.00	0.97
AHW-ahw	20	cm	24h 845	-0.025	0.061	0.056	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 843	-0.046	0.070	0.053	0.0	98.9	0.0	0.0	0.0		
THW-thw	0.50	h	25h 845	-0.307	0.646	0.569	9.0	59.3	1.2	12.9	14.7		
TLW-tlw	0.50	h	25h 843	-0.276	0.653	0.592	10.2	59.8	1.2	48.0	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.002									
h			109200	0.035									
H-h	20	cm	24h109200	-0.037	0.061	0.049	0.0	100.0	0.0	0.0	0.0	0.00	0.55
VARIABLE			Obs		Model								
HWM	0.198		440.092	0.144	368.004								
LWM	-0.167		675.712	-0.078	636.312								

Station: Mokuoioe, HI
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.000									
H-h	20	cm	24h109200	0.000	0.035	0.035	0.0	100.0	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 763	0.003	0.027	0.027	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 760	-0.005	0.038	0.037	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 763	-0.006	0.421	0.422	0.9	76.0	0.9	0.0	0.0		
TLW-tlw	0.50	h	25h 760	-0.067	0.356	0.350	0.9	84.7	0.4	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.004									
h			109200	0.037									
H-h	20	cm	24h109200	-0.041	0.075	0.063	0.0	99.1	0.0	0.0	0.0	0.00	0.97
AHW-ahw	20	cm	24h 730	-0.047	0.075	0.059	0.0	99.2	0.0	0.0	0.0		
ALW-alw	20	cm	24h 725	-0.043	0.076	0.063	0.0	98.3	0.0	0.0	0.0		
THW-thw	0.50	h	25h 730	-0.144	0.720	0.706	8.9	54.4	5.2	38.2	17.6		
TLW-tlw	0.50	h	25h 725	-0.087	0.617	0.612	5.7	65.0	2.8	24.9	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.004									
h			109200	0.037									
H-h	20	cm	24h109200	-0.041	0.068	0.054	0.0	99.3	0.0	0.0	0.0	0.00	0.51
VARIABLE			Obs		Model								
HWM	0.259		523.763	0.147	367.987								
LWM	-0.138		524.342	-0.089	636.321								

Station: Kahului, Kahului Harbor, HI
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	-0.001									
H-h	20	cm	24h109200	0.001	0.041	0.041	0.0	100.0	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 800	0.010	0.038	0.037	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 798	-0.011	0.042	0.041	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 800	0.170	0.372	0.331	0.0	81.0	1.9	0.0	0.0		
TLW-tlw	0.50	h	25h 798	0.127	0.361	0.338	0.1	85.8	1.8	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.005									
h			109200	0.048									
H-h	20	cm	24h109200	-0.053	0.080	0.059	0.0	99.3	0.0	0.0	0.0	0.00	0.97
AHW-ahw	20	cm	24h 776	-0.069	0.087	0.052	0.0	99.2	0.0	0.0	0.0		
ALW-alw	20	cm	24h 776	-0.039	0.069	0.056	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 776	0.170	0.603	0.578	1.4	62.0	7.2	0.0	17.4		
TLW-tlw	0.50	h	25h 776	0.153	0.622	0.603	4.0	59.7	7.0	0.0	24.7		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.005									
h			109200	0.049									
H-h	20	cm	24h109200	-0.054	0.074	0.052	0.0	99.8	0.0	0.0	0.0	0.00	0.51
VARIABLE			Obs		Model								
HWM	0.298		441.362	0.154	368.012								
LWM	-0.164		363.096	-0.090	636.317								

Station: Kawaihae, HI
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.000									
H-h	20	cm	24h109200	0.000	0.036	0.036	0.0	100.0	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20	cm	24h 871	0.020	0.035	0.029	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20	cm	24h 871	-0.016	0.026	0.021	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50	h	25h 871	-0.268	0.360	0.241	0.3	83.6	0.1	0.0	0.0		
TLW-tlw	0.50	h	25h 871	-0.286	0.377	0.246	0.3	78.6	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.002									
h			109200	-0.029									
H-h	20	cm	24h109200	0.027	0.074	0.069	0.0	99.4	0.0	0.0	0.0	0.00	0.97
AHW-ahw	20	cm	24h 860	0.035	0.073	0.064	0.0	99.3	0.0	0.0	0.0		
ALW-alw	20	cm	24h 862	0.021	0.069	0.066	0.0	99.9	0.0	0.0	0.0		
THW-thw	0.50	h	25h 860	-0.268	0.560	0.492	5.9	64.8	1.2	14.2	10.6		
TLW-tlw	0.50	h	25h 862	-0.265	0.611	0.551	8.5	61.7	1.5	35.5	12.6		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.002									
h			109200	-0.029									
H-h	20	cm	24h109200	0.027	0.066	0.060	0.0	99.9	0.0	0.0	0.0	0.00	0.36
VARIABLE			Obs		Model								
HWM	0.134		523.433	0.119	368.008								
LWM	-0.225		767.704	-0.082	636.312								

Station: Hilo, Hilo Bay, Kuhio Bay, HI
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.000									
H-h	20 cm	24h	109200	0.000	0.049	0.049	0.0	100.0	0.0	0.0	0.0	0.00	0.99
AHW-ahw	20 cm	24h	851	0.035	0.053	0.039	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20 cm	24h	851	-0.037	0.055	0.041	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50 h	25h	851	-0.071	0.289	0.281	0.1	91.8	0.1	0.0	0.0		
TLW-tlw	0.50 h	25h	851	-0.157	0.310	0.267	0.7	87.5	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			109200	-0.003									
h			109200	0.052									
H-h	20 cm	24h	109200	-0.054	0.089	0.070	0.0	98.1	0.0	0.0	0.0	0.00	0.97
AHW-ahw	20 cm	24h	838	-0.023	0.066	0.061	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20 cm	24h	839	-0.085	0.105	0.061	0.0	97.1	0.0	0.0	0.0		
THW-thw	0.50 h	25h	838	-0.057	0.474	0.471	2.1	73.5	2.0	0.0	0.0		
TLW-tlw	0.50 h	25h	839	-0.133	0.474	0.456	3.8	72.8	0.1	13.5	0.0		

SCENARIO: HINDCAST (SURGE ONLY)

H			109200	-0.003									
h			109200	0.051									
H-h	20 cm	24h	109200	-0.054	0.082	0.062	0.0	99.8	0.0	0.0	0.0	0.00	0.46

VARIABLE Obs Model

HWM	0.278	440.825	0.130	368.025
LWM	-0.203	673.017	-0.081	636.308

Station: Sand Island, Midway Islands
 Observed data time period from: /11/30/2004 to / 3/ 2/2006 with gaps of 34.17 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: TIDAL SIMULATION ONLY

H			109200	0.000									
h			109200	0.006									
H-h	20 cm	24h	109200	-0.006	0.043	0.043	0.0	100.0	0.0	0.0	0.0	0.00	0.96
AHW-ahw	20 cm	24h	872	-0.027	0.048	0.039	0.0	100.0	0.0	0.0	0.0		
ALW-alw	20 cm	24h	873	0.016	0.043	0.039	0.0	100.0	0.0	0.0	0.0		
THW-thw	0.50 h	25h	872	-0.154	0.291	0.247	0.7	91.1	0.0	0.0	0.0		
TLW-tlw	0.50 h	25h	873	-0.065	0.321	0.315	0.0	84.4	0.0	0.0	0.0		

SCENARIO: HINDCAST (COMBINED WL)

H			101018	-0.004									
h			101018	0.011									
H-h	20 cm	24h	101018	-0.014	0.088	0.086	0.4	97.0	0.0	4.3	0.0	0.01	0.88
AHW-ahw	20 cm	24h	777	-0.046	0.093	0.081	0.1	95.2	0.0	0.0	0.0		
ALW-alw	20 cm	24h	779	0.026	0.076	0.072	0.0	99.4	0.0	0.0	0.0		
THW-thw	0.50 h	25h	777	-0.043	0.583	0.582	4.9	62.0	3.5	24.5	11.9		
TLW-tlw	0.50 h	25h	779	0.037	0.623	0.623	4.1	58.2	6.0	0.0	10.6		

SCENARIO: HINDCAST (SURGE ONLY)

H			101018	-0.003									
h			101018	0.002									
H-h	20 cm	24h	101018	-0.005	0.079	0.079	0.3	97.6	0.0	4.2	0.0	0.00	0.61

VARIABLE Obs Model

HWM	0.685	356.225	0.156	433.721
LWM	-0.198	408.337	-0.078	639.763

APPENDIX E. SKILL ASSESSMENT SCORE TABLES OF SEMI-OPERATIONAL NOWCAST/FORECAST SIMULATIONS

In the following tables, water level units are in meters, time is in hours referenced to UTC.

Station: San Diego, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: SEMI-OPERATIONAL FORECAST

H00-h00	20	cm	24h	112	-0.118	0.138	0.072	0.0	85.7	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.120	0.140	0.073	0.0	84.8	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.119	0.140	0.074	0.0	84.8	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.122	0.142	0.072	0.0	83.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.119	0.139	0.072	0.0	83.9	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.115	0.136	0.073	0.0	84.8	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.114	0.134	0.072	0.0	85.6	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.114	0.134	0.070	0.0	87.3	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.110	0.130	0.070	0.0	89.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.114	0.135	0.071	0.0	86.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.116	0.136	0.072	0.0	86.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.114	0.134	0.070	0.0	86.8	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.112	0.132	0.069	0.0	88.6	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.112	0.132	0.069	0.0	86.5	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.108	0.127	0.068	0.0	91.3	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.112	0.131	0.069	0.0	90.2	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.116	0.134	0.068	0.0	86.1	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	53	-0.062	0.095	0.072	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.175	0.189	0.073	0.0	53.7	0.0			
THW-thw	0.50	h	25h	53	-0.175	0.376	0.336	0.0	75.5	0.0			
TLW-tlw	0.50	h	25h	54	0.009	0.546	0.551	0.0	72.2	1.9			

Station: Los Angeles, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	

SCENARIO: SEMI-OPERATIONAL FORECAST

H00-h00	20	cm	24h	112	-0.091	0.111	0.063	0.0	94.6	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.093	0.114	0.065	0.0	93.8	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.090	0.111	0.064	0.0	94.6	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.093	0.113	0.064	0.0	94.6	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.090	0.110	0.063	0.0	95.5	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.087	0.109	0.065	0.0	94.6	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.085	0.106	0.063	0.0	94.6	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.088	0.107	0.062	0.0	94.5	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.083	0.103	0.062	0.0	94.5	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.087	0.107	0.063	0.0	92.6	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.089	0.109	0.062	0.0	95.3	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.087	0.105	0.060	0.0	95.3	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.085	0.103	0.059	0.0	96.2	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.087	0.104	0.058	0.0	96.2	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.082	0.099	0.057	0.0	96.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.084	0.102	0.058	0.0	96.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.088	0.105	0.058	0.0	96.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	52	-0.072	0.102	0.073	0.0	96.2	0.0			
ALW-alw	20	cm	24h	53	-0.115	0.127	0.053	0.0	98.1	0.0			
THW-thw	0.50	h	25h	52	-0.163	0.406	0.375	1.9	82.7	1.9			
TLW-tlw	0.50	h	25h	53	-0.153	0.500	0.481	0.0	77.4	1.9			

Station: Santa Monica, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.095	0.113	0.062	0.0	96.4	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.097	0.116	0.063	0.0	95.5	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.093	0.113	0.063	0.0	96.4	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.096	0.114	0.062	0.0	95.5	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.094	0.112	0.061	0.0	96.4	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.091	0.110	0.063	0.0	95.5	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.090	0.108	0.061	0.0	95.5	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.092	0.110	0.060	0.0	95.5	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.087	0.105	0.059	0.0	95.4	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.091	0.108	0.060	0.0	95.4	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.093	0.110	0.059	0.0	96.3	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.090	0.106	0.056	0.0	97.2	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.088	0.104	0.056	0.0	97.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.089	0.105	0.054	0.0	97.1	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.084	0.099	0.053	0.0	97.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.087	0.102	0.054	0.0	97.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.090	0.105	0.053	0.0	98.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.074	0.101	0.070	0.0	96.3	0.0			
ALW-alw	20	cm	24h	53	-0.117	0.129	0.054	0.0	94.3	0.0			
THW-thw	0.50	h	25h	54	-0.150	0.387	0.360	0.0	74.1	0.0			
TLW-tlw	0.50	h	25h	53	-0.111	0.356	0.342	0.0	86.8	3.8			

Station: Santa Barbara, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.090	0.108	0.061	0.0	98.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.091	0.110	0.062	0.0	97.3	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.088	0.107	0.061	0.0	98.2	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.091	0.109	0.059	0.0	98.2	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.090	0.107	0.059	0.0	98.2	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.088	0.107	0.061	0.0	97.3	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.089	0.105	0.057	0.0	97.3	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.091	0.108	0.058	0.0	97.3	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.086	0.103	0.057	0.0	98.2	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.089	0.106	0.058	0.0	96.3	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.091	0.108	0.057	0.0	96.3	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.087	0.103	0.055	0.0	97.2	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.087	0.103	0.056	0.0	97.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.089	0.105	0.056	0.0	96.2	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.084	0.101	0.056	0.0	98.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.086	0.103	0.056	0.0	96.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.091	0.106	0.056	0.0	97.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.080	0.102	0.063	0.0	98.1	0.0			
ALW-alw	20	cm	24h	54	-0.095	0.112	0.060	0.0	94.4	0.0			
THW-thw	0.50	h	25h	54	-0.133	0.453	0.437	1.9	70.4	1.9			
TLW-tlw	0.50	h	25h	54	-0.098	0.527	0.523	0.0	64.8	3.7			

Station: Oil Platform Harvest, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.058	0.085	0.062	0.0	100.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.059	0.086	0.063	0.0	100.0	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.056	0.084	0.063	0.0	100.0	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.059	0.085	0.061	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.057	0.083	0.061	0.0	100.0	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.055	0.083	0.063	0.0	100.0	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.056	0.081	0.059	0.0	100.0	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.059	0.083	0.059	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.056	0.081	0.058	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.060	0.083	0.058	0.0	100.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.061	0.084	0.057	0.0	100.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.059	0.082	0.057	0.0	100.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.059	0.082	0.057	0.0	100.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.059	0.082	0.057	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.055	0.079	0.056	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.057	0.081	0.058	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.061	0.084	0.058	0.0	100.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.047	0.080	0.065	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.068	0.093	0.064	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.154	0.411	0.384	0.0	85.2	1.9			
TLW-tlw	0.50	h	25h	54	-0.072	0.389	0.386	0.0	83.3	3.7			

Station: Port San Luis, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.079	0.098	0.058	0.0	98.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.081	0.100	0.059	0.0	98.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.077	0.096	0.058	0.0	99.1	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.081	0.098	0.056	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.079	0.097	0.056	0.0	100.0	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.078	0.096	0.057	0.0	99.1	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.079	0.096	0.054	0.0	98.2	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.082	0.098	0.053	0.0	98.2	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.079	0.096	0.054	0.0	98.2	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.083	0.099	0.053	0.0	98.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.085	0.100	0.053	0.0	98.1	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.083	0.098	0.051	0.0	99.1	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.084	0.098	0.052	0.0	97.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.085	0.099	0.051	0.0	99.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.082	0.095	0.050	0.0	99.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.083	0.098	0.052	0.0	99.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.085	0.100	0.052	0.0	98.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	55	-0.089	0.107	0.060	0.0	94.5	0.0			
ALW-alw	20	cm	24h	54	-0.073	0.095	0.061	0.0	98.1	0.0			
THW-thw	0.50	h	25h	55	-0.162	0.440	0.413	5.5	76.4	0.0			
TLW-tlw	0.50	h	25h	54	-0.096	0.438	0.432	0.0	79.6	1.9			

Station: Monterey, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.066	0.085	0.053	0.0	99.1	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.067	0.086	0.054	0.0	99.1	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.065	0.084	0.053	0.0	99.1	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.067	0.084	0.051	0.0	99.1	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.065	0.082	0.051	0.0	99.1	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.063	0.081	0.051	0.0	99.1	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.065	0.081	0.049	0.0	99.1	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.067	0.083	0.049	0.0	99.1	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.064	0.080	0.049	0.0	99.1	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.068	0.083	0.048	0.0	99.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.069	0.084	0.047	0.0	99.1	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.067	0.081	0.046	0.0	99.1	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.068	0.082	0.045	0.0	99.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.069	0.082	0.044	0.0	99.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.065	0.079	0.044	0.0	99.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.067	0.081	0.045	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.070	0.083	0.045	0.0	99.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	55	-0.081	0.094	0.048	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.053	0.075	0.053	0.0	100.0	0.0			
THW-thw	0.50	h	25h	55	-0.118	0.299	0.277	0.0	94.5	0.0			
TLW-tlw	0.50	h	25h	54	-0.093	0.314	0.303	0.0	87.0	1.9			

Station: San Francisco, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.056	0.100	0.083	0.0	96.4	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.057	0.101	0.083	0.0	96.4	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.056	0.099	0.082	0.0	97.3	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.059	0.099	0.081	0.0	97.3	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.058	0.098	0.080	0.0	98.2	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.057	0.098	0.080	0.0	97.3	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.061	0.100	0.079	0.0	96.4	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.062	0.099	0.078	0.0	96.4	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.060	0.098	0.078	0.0	96.3	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.064	0.100	0.078	0.0	96.3	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.064	0.102	0.080	0.0	96.3	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.061	0.101	0.081	0.0	96.2	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.064	0.103	0.081	0.0	96.2	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.062	0.101	0.080	0.0	96.2	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.062	0.100	0.079	0.0	96.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.063	0.101	0.080	0.0	97.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.063	0.102	0.080	0.0	96.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.053	0.100	0.086	0.0	96.3	0.0			
ALW-alw	20	cm	24h	54	-0.090	0.108	0.061	0.0	96.3	0.0			
THW-thw	0.50	h	25h	54	-0.187	0.376	0.329	0.0	79.6	0.0			
TLW-tlw	0.50	h	25h	54	-0.035	0.314	0.315	0.0	88.9	0.0			

Station: Redwood City, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.058	0.131	0.118	0.0	87.5	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.059	0.132	0.119	0.0	87.5	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.056	0.130	0.118	0.0	87.5	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.057	0.130	0.117	0.0	85.7	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.060	0.129	0.115	0.0	88.4	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.058	0.127	0.114	0.0	86.6	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.061	0.129	0.114	0.0	86.5	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.059	0.128	0.114	0.0	87.3	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.057	0.127	0.113	0.0	88.1	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.061	0.129	0.114	0.0	88.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.057	0.129	0.117	0.0	86.9	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.055	0.130	0.119	0.0	87.7	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.059	0.131	0.118	0.0	87.6	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.055	0.131	0.120	0.0	87.5	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.061	0.130	0.116	0.0	88.3	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.062	0.131	0.116	0.0	89.2	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.057	0.128	0.115	0.0	87.1	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.013	0.113	0.113	0.0	90.7	0.0			
ALW-alw	20	cm	24h	54	-0.024	0.076	0.073	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.204	0.298	0.220	0.0	94.4	0.0			
TLW-tlw	0.50	h	25h	54	0.015	0.248	0.250	0.0	92.6	0.0			

Station: Alameda, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.037	0.095	0.087	0.0	98.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.038	0.095	0.088	0.0	98.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.038	0.095	0.088	0.0	98.2	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.039	0.096	0.088	0.0	97.3	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.040	0.094	0.086	0.0	98.2	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.039	0.093	0.085	0.0	97.3	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.044	0.095	0.085	0.0	99.1	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.043	0.094	0.084	0.0	99.1	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.042	0.093	0.083	0.0	98.2	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.046	0.095	0.084	0.0	98.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.045	0.098	0.087	0.0	98.1	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.041	0.097	0.088	0.0	98.1	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.046	0.100	0.089	0.0	97.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.043	0.096	0.087	0.0	98.1	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.046	0.094	0.083	0.0	98.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.047	0.094	0.082	0.0	99.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.045	0.094	0.083	0.0	99.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	0.010	0.091	0.091	0.0	98.1	0.0			
ALW-alw	20	cm	24h	54	-0.079	0.102	0.064	0.0	98.1	0.0			
THW-thw	0.50	h	25h	54	-0.069	0.204	0.194	0.0	100.0	0.0			
TLW-tlw	0.50	h	25h	54	-0.063	0.235	0.228	0.0	98.1	0.0			

Station: Richmond, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.054	0.103	0.088	0.0	95.5	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.055	0.103	0.088	0.0	95.5	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.054	0.102	0.087	0.0	96.4	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.057	0.102	0.085	0.0	96.4	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.057	0.101	0.084	0.0	97.3	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.056	0.101	0.084	0.0	97.3	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.059	0.102	0.084	0.0	95.5	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.060	0.102	0.083	0.0	97.3	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.059	0.102	0.084	0.0	96.3	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.062	0.104	0.084	0.0	95.4	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.062	0.106	0.087	0.0	94.4	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.059	0.105	0.088	0.0	95.3	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.063	0.109	0.089	0.0	97.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.060	0.106	0.087	0.0	96.2	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.063	0.105	0.084	0.0	96.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.064	0.105	0.084	0.0	97.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.064	0.106	0.085	0.0	98.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.017	0.087	0.086	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.082	0.103	0.062	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.057	0.301	0.298	0.0	87.0	0.0			
TLW-tlw	0.50	h	25h	54	-0.250	0.393	0.306	0.0	77.8	0.0			

Station: Bolinas, Bolinas Lagoon, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.059	0.294	0.289	11.6	68.8	0.0	0.0	0.0	11.61
H06-h06	20	cm	24h	112	-0.062	0.293	0.288	11.6	69.6	0.0	0.0	0.0	11.61
H12-h12	20	cm	24h	112	-0.059	0.291	0.287	10.7	70.5	0.0	0.0	0.0	10.71
H18-h18	20	cm	24h	112	-0.064	0.290	0.284	10.7	71.4	0.0	0.0	0.0	10.71
H24-h24	20	cm	24h	112	-0.062	0.290	0.284	10.7	71.4	0.0	0.0	0.0	10.71
H30-h30	20	cm	24h	112	-0.061	0.289	0.284	10.7	71.4	0.0	0.0	0.0	10.71
H36-h36	20	cm	24h	111	-0.062	0.288	0.283	10.8	72.1	0.0	0.0	0.0	10.81
H42-h42	20	cm	24h	110	-0.066	0.290	0.283	10.9	70.0	0.0	0.0	0.0	10.91
H48-h48	20	cm	24h	109	-0.064	0.290	0.284	11.0	69.7	0.0	0.0	0.0	11.01
H54-h54	20	cm	24h	108	-0.070	0.292	0.285	11.1	70.4	0.0	0.0	0.0	11.11
H60-h60	20	cm	24h	107	-0.070	0.293	0.286	11.2	69.2	0.0	0.0	0.0	11.21
H66-h66	20	cm	24h	106	-0.067	0.295	0.288	11.3	68.9	0.0	0.0	0.0	11.32
H72-h72	20	cm	24h	105	-0.072	0.297	0.290	11.4	67.6	0.0	0.0	0.0	11.43
H78-h78	20	cm	24h	104	-0.073	0.299	0.291	11.5	67.3	0.0	0.0	0.0	11.54
H84-h84	20	cm	24h	103	-0.071	0.298	0.291	11.7	67.0	0.0	0.0	0.0	11.65
H90-h90	20	cm	24h	102	-0.069	0.297	0.291	10.8	63.7	0.0	0.0	0.0	10.78
H96-h96	20	cm	24h	101	-0.074	0.299	0.291	10.9	65.3	0.0	0.0	0.0	10.89
AHW-ahw	20	cm	24h	54	0.092	0.131	0.094	0.0	88.9	0.0			
ALW-alw	20	cm	24h	54	-0.160	0.231	0.169	16.7	70.4	0.0			
THW-thw	0.50	h	25h	54	-1.200	1.255	0.370	74.1	1.9	0.0			
TLW-tlw	0.50	h	25h	54	-1.330	1.448	0.577	59.3	0.0	0.0			

Station: Point Reyes, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.077	0.101	0.066	0.0	95.5	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.080	0.104	0.067	0.0	94.6	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.080	0.102	0.065	0.0	95.5	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.083	0.103	0.062	0.0	94.6	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.081	0.103	0.063	0.0	95.5	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.080	0.102	0.064	0.0	97.3	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.084	0.103	0.060	0.0	96.4	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.086	0.105	0.060	0.0	95.5	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.083	0.103	0.061	0.0	96.3	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.087	0.106	0.060	0.0	95.4	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.089	0.107	0.060	0.0	94.4	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.086	0.104	0.060	0.0	95.3	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.087	0.106	0.060	0.0	95.2	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.088	0.106	0.059	0.0	95.2	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.085	0.104	0.061	0.0	95.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.088	0.107	0.061	0.0	95.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.091	0.110	0.062	0.0	95.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	55	-0.121	0.137	0.064	0.0	83.6	0.0			
ALW-alw	20	cm	24h	54	-0.046	0.079	0.065	0.0	100.0	0.0			
THW-thw	0.50	h	25h	55	-0.085	0.357	0.350	0.0	83.6	0.0			
TLW-tlw	0.50	h	25h	54	-0.115	0.373	0.358	0.0	85.2	0.0			

Station: Martinez-amorco Pier, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.019	0.208	0.208	2.7	58.0	0.9	0.0	0.0	2.68
H06-h06	20	cm	24h	112	-0.017	0.207	0.207	2.7	58.9	0.9	0.0	0.0	2.68
H12-h12	20	cm	24h	112	-0.021	0.208	0.208	3.6	58.9	0.9	0.0	0.0	3.57
H18-h18	20	cm	24h	112	-0.016	0.212	0.212	3.6	58.9	0.9	0.0	0.0	3.57
H24-h24	20	cm	24h	112	-0.023	0.211	0.211	3.6	58.9	0.9	0.0	0.0	3.57
H30-h30	20	cm	24h	112	-0.020	0.210	0.210	3.6	58.0	0.9	0.0	0.0	3.57
H36-h36	20	cm	24h	111	-0.028	0.206	0.205	3.6	60.4	0.0	0.0	0.0	3.60
H42-h42	20	cm	24h	110	-0.021	0.206	0.205	3.6	60.0	0.0	0.0	0.0	3.64
H48-h48	20	cm	24h	109	-0.025	0.205	0.204	3.7	62.4	0.0	0.0	0.0	3.67
H54-h54	20	cm	24h	108	-0.023	0.206	0.205	3.7	60.2	0.0	0.0	0.0	3.70
H60-h60	20	cm	24h	107	-0.028	0.202	0.201	3.7	59.8	0.0	0.0	0.0	3.74
H66-h66	20	cm	24h	106	-0.024	0.199	0.198	3.8	62.3	0.0	0.0	0.0	3.77
H72-h72	20	cm	24h	105	-0.027	0.199	0.199	3.8	63.8	0.0	0.0	0.0	3.81
H78-h78	20	cm	24h	104	-0.024	0.199	0.198	3.8	62.5	0.0	0.0	0.0	3.85
H84-h84	20	cm	24h	103	-0.032	0.196	0.195	3.9	65.0	0.0	0.0	0.0	3.88
H90-h90	20	cm	24h	102	-0.028	0.195	0.194	3.9	63.7	0.0	0.0	0.0	3.92
H96-h96	20	cm	24h	101	-0.026	0.195	0.195	5.0	64.4	0.0	0.0	0.0	4.95
AHW-ahw	20	cm	24h	54	0.290	0.316	0.126	0.0	27.8	25.9			
ALW-alw	20	cm	24h	54	-0.256	0.276	0.105	14.8	40.7	0.0			
THW-thw	0.50	h	25h	54	0.180	0.317	0.264	0.0	90.7	0.0			
TLW-tlw	0.50	h	25h	54	0.061	0.262	0.257	0.0	96.3	0.0			

Station: Port Chicago, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.015	0.286	0.287	8.9	43.8	7.1	0.0	0.0	9.82
H06-h06	20	cm	24h	112	-0.012	0.286	0.287	8.9	44.6	7.1	0.0	0.0	9.82
H12-h12	20	cm	24h	112	-0.017	0.286	0.286	8.9	43.8	7.1	0.0	0.0	9.82
H18-h18	20	cm	24h	112	-0.011	0.289	0.291	8.0	43.8	8.0	0.0	0.0	8.93
H24-h24	20	cm	24h	112	-0.019	0.289	0.289	8.0	43.8	7.1	0.0	0.0	8.93
H30-h30	20	cm	24h	112	-0.015	0.287	0.288	8.0	42.0	7.1	0.0	0.0	8.93
H36-h36	20	cm	24h	111	-0.025	0.282	0.282	8.1	44.1	6.3	0.0	0.0	9.01
H42-h42	20	cm	24h	110	-0.016	0.281	0.282	7.3	42.7	6.4	0.0	0.0	8.18
H48-h48	20	cm	24h	109	-0.022	0.281	0.281	7.3	45.0	6.4	0.0	0.0	8.26
H54-h54	20	cm	24h	108	-0.018	0.282	0.283	7.4	45.4	6.5	0.0	0.0	8.33
H60-h60	20	cm	24h	107	-0.026	0.276	0.276	7.5	45.8	5.6	0.0	0.0	8.41
H66-h66	20	cm	24h	106	-0.020	0.274	0.274	7.5	48.1	5.7	0.0	0.0	8.49
H72-h72	20	cm	24h	105	-0.023	0.274	0.274	7.6	47.6	5.7	0.0	0.0	8.57
H78-h78	20	cm	24h	104	-0.021	0.274	0.275	7.7	48.1	5.8	0.0	0.0	8.65
H84-h84	20	cm	24h	103	-0.030	0.271	0.271	7.8	47.6	3.9	0.0	0.0	8.74
H90-h90	20	cm	24h	102	-0.025	0.270	0.270	7.8	49.0	3.9	0.0	0.0	8.82
H96-h96	20	cm	24h	101	-0.023	0.271	0.271	7.9	49.5	4.0	0.0	0.0	8.91
AHW-ahw	20	cm	24h	54	0.425	0.449	0.143	0.0	3.7	46.3			
ALW-alw	20	cm	24h	54	-0.364	0.391	0.144	33.3	5.6	0.0			
THW-thw	0.50	h	25h	54	-0.026	0.224	0.225	0.0	100.0	0.0			
TLW-tlw	0.50	h	25h	54	-0.013	0.284	0.286	0.0	94.4	0.0			

Station: Arena Cove, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.054	0.079	0.057	0.0	98.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.056	0.080	0.058	0.0	98.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.056	0.079	0.056	0.0	98.2	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.058	0.080	0.055	0.0	99.1	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.058	0.080	0.055	0.0	99.1	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.058	0.080	0.055	0.0	99.1	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.063	0.081	0.051	0.0	99.1	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.066	0.084	0.052	0.0	99.1	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.064	0.082	0.052	0.0	99.1	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.068	0.085	0.051	0.0	99.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.070	0.086	0.050	0.0	99.1	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.068	0.084	0.050	0.0	98.1	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.071	0.087	0.051	0.0	98.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.072	0.087	0.049	0.0	99.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.070	0.087	0.052	0.0	98.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.072	0.088	0.051	0.0	98.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.075	0.091	0.052	0.0	99.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	55	-0.098	0.111	0.053	0.0	96.4	0.0			
ALW-alw	20	cm	24h	54	-0.022	0.054	0.050	0.0	100.0	0.0			
THW-thw	0.50	h	25h	55	-0.011	0.243	0.245	0.0	96.4	0.0			
TLW-tlw	0.50	h	25h	54	-0.031	0.293	0.294	0.0	94.4	1.9			

Station: North Spit, Humboldt Bay, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.145	0.156	0.058	0.0	81.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.146	0.157	0.058	0.0	81.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.146	0.157	0.058	0.0	81.2	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.148	0.158	0.057	0.0	83.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.149	0.159	0.056	0.0	84.8	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.149	0.159	0.056	0.0	81.2	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.154	0.163	0.054	0.0	80.2	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.156	0.165	0.053	0.0	80.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.155	0.164	0.054	0.0	80.7	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.159	0.168	0.053	0.0	78.7	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.161	0.170	0.054	0.0	77.6	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.159	0.168	0.054	0.0	77.4	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.164	0.173	0.055	0.0	77.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.163	0.171	0.054	0.0	72.1	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.162	0.171	0.055	0.0	74.8	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.164	0.173	0.054	0.0	73.5	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.166	0.175	0.055	0.0	67.3	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.156	0.166	0.057	0.0	75.9	0.0			
ALW-alw	20	cm	24h	54	-0.095	0.106	0.048	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.009	0.255	0.257	0.0	96.3	0.0			
TLW-tlw	0.50	h	25h	54	0.117	0.262	0.237	0.0	92.6	0.0			

Station: Crescent City, CA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.004	0.065	0.066	0.0	99.1	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.005	0.066	0.066	0.0	99.1	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.006	0.065	0.065	0.0	99.1	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.008	0.065	0.065	0.0	99.1	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.009	0.065	0.065	0.0	99.1	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.010	0.065	0.064	0.0	99.1	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.017	0.063	0.061	0.0	100.0	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.018	0.063	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.017	0.064	0.062	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.022	0.064	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.024	0.065	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.022	0.063	0.059	0.0	100.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.029	0.066	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.029	0.062	0.056	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.029	0.064	0.058	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.032	0.064	0.056	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.034	0.067	0.059	0.0	100.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.066	0.095	0.068	0.0	98.1	0.0			
ALW-alw	20	cm	24h	54	0.047	0.070	0.053	0.0	98.1	0.0			
THW-thw	0.50	h	25h	54	-0.002	0.355	0.358	1.9	90.7	0.0			
TLW-tlw	0.50	h	25h	54	0.009	0.343	0.346	0.0	88.9	1.9			

Station: Port Orford, OR
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.00 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.046	0.076	0.061	0.0	99.1	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.046	0.076	0.061	0.0	99.1	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.046	0.077	0.062	0.0	99.1	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.047	0.077	0.061	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.048	0.078	0.061	0.0	99.1	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.049	0.078	0.061	0.0	99.1	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.056	0.080	0.058	0.0	99.1	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.058	0.081	0.056	0.0	99.1	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.057	0.081	0.058	0.0	99.1	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.060	0.083	0.057	0.0	99.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.062	0.085	0.058	0.0	98.1	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.061	0.083	0.057	0.0	99.1	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.066	0.089	0.060	0.0	98.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.065	0.087	0.057	0.0	99.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.064	0.087	0.060	0.0	99.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.065	0.088	0.059	0.0	99.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.066	0.091	0.063	0.0	99.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.087	0.104	0.057	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.017	0.065	0.064	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	0.020	0.250	0.251	0.0	94.4	0.0			
TLW-tlw	0.50	h	25h	54	0.044	0.280	0.279	0.0	92.6	0.0			

Station: Charleston, OR
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	111	-0.066	0.113	0.092	0.0	91.9	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	111	-0.067	0.114	0.093	0.0	91.0	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	111	-0.065	0.112	0.091	0.0	91.0	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	111	-0.067	0.111	0.089	0.0	90.1	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	111	-0.067	0.112	0.090	0.0	90.1	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	111	-0.069	0.114	0.090	0.0	90.1	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	110	-0.076	0.117	0.089	0.0	89.1	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	109	-0.079	0.118	0.088	0.0	89.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	108	-0.077	0.118	0.090	0.0	88.9	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	107	-0.082	0.120	0.089	0.0	88.8	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	106	-0.083	0.122	0.091	0.0	87.7	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	105	-0.082	0.122	0.091	0.0	88.6	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	104	-0.086	0.125	0.091	0.0	86.5	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	103	-0.086	0.124	0.091	0.0	86.4	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	102	-0.084	0.123	0.090	0.0	89.2	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	101	-0.084	0.125	0.092	0.0	87.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	100	-0.085	0.125	0.092	0.0	85.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.134	0.165	0.096	1.9	79.6	0.0			
ALW-alw	20	cm	24h	53	-0.015	0.066	0.065	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.226	0.365	0.290	0.0	85.2	1.9			
TLW-tlw	0.50	h	25h	53	-0.125	0.268	0.240	0.0	94.3	0.0			

Station: South Beach, Yaquina River, OR
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.089	0.145	0.115	0.0	80.4	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.091	0.146	0.115	0.0	79.5	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.088	0.144	0.115	0.0	79.5	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.088	0.142	0.111	0.0	83.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.088	0.142	0.113	0.0	81.2	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.090	0.145	0.113	0.0	80.4	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.097	0.149	0.113	0.0	79.3	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.100	0.150	0.112	0.0	80.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.097	0.150	0.115	0.0	79.8	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.102	0.153	0.115	0.0	79.6	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.103	0.156	0.117	0.0	76.6	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.104	0.156	0.117	0.0	77.4	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.107	0.159	0.118	0.0	77.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.105	0.158	0.118	0.0	76.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.103	0.156	0.118	0.0	77.7	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.103	0.158	0.120	0.0	77.5	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.103	0.157	0.119	0.0	79.2	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.169	0.183	0.072	0.0	63.0	0.0			
ALW-alw	20	cm	24h	54	-0.039	0.078	0.069	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.220	0.350	0.275	0.0	85.2	0.0			
TLW-tlw	0.50	h	25h	54	-0.052	0.305	0.303	0.0	85.2	0.0			

Station: Garibaldi, OR
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.081	0.227	0.213	6.2	60.7	0.0	0.0	0.0	5.36
H06-h06	20	cm	24h	112	-0.083	0.227	0.212	6.2	60.7	0.0	0.0	0.0	5.36
H12-h12	20	cm	24h	112	-0.080	0.225	0.212	6.2	60.7	0.0	0.0	0.0	5.36
H18-h18	20	cm	24h	112	-0.080	0.223	0.209	6.2	59.8	0.0	0.0	0.0	5.36
H24-h24	20	cm	24h	112	-0.078	0.223	0.210	6.2	60.7	0.0	0.0	0.0	5.36
H30-h30	20	cm	24h	112	-0.080	0.224	0.210	8.0	61.6	0.0	0.0	0.0	6.25
H36-h36	20	cm	24h	111	-0.086	0.227	0.211	7.2	62.2	0.0	0.0	0.0	5.41
H42-h42	20	cm	24h	110	-0.089	0.228	0.211	8.2	61.8	0.0	0.0	0.0	6.36
H48-h48	20	cm	24h	109	-0.086	0.229	0.213	8.3	61.5	0.0	0.0	0.0	6.42
H54-h54	20	cm	24h	108	-0.090	0.232	0.215	9.3	60.2	0.0	0.0	0.0	7.41
H60-h60	20	cm	24h	107	-0.092	0.236	0.219	9.3	58.9	0.0	0.0	0.0	7.48
H66-h66	20	cm	24h	106	-0.091	0.238	0.221	9.4	57.5	0.0	0.0	0.0	7.55
H72-h72	20	cm	24h	105	-0.097	0.240	0.220	10.5	59.0	0.0	0.0	0.0	8.57
H78-h78	20	cm	24h	104	-0.093	0.241	0.223	9.6	59.6	0.0	0.0	0.0	7.69
H84-h84	20	cm	24h	103	-0.093	0.240	0.222	9.7	57.3	0.0	0.0	0.0	7.77
H90-h90	20	cm	24h	102	-0.090	0.240	0.224	8.8	59.8	0.0	0.0	0.0	6.86
H96-h96	20	cm	24h	101	-0.093	0.239	0.221	9.9	60.4	0.0	0.0	0.0	7.92
AHW-ahw	20	cm	24h	54	-0.127	0.146	0.073	0.0	85.2	0.0			
ALW-alw	20	cm	24h	54	-0.028	0.074	0.069	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.615	0.663	0.250	3.7	31.5	0.0			
TLW-tlw	0.50	h	25h	54	-0.313	0.419	0.281	0.0	74.1	0.0			

Station: Hammond, OR
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.023	0.084	0.081	0.0	99.1	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.023	0.084	0.082	0.0	99.1	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.022	0.085	0.082	0.0	99.1	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.020	0.083	0.081	0.0	98.2	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.022	0.083	0.081	0.0	98.2	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.022	0.082	0.080	0.0	99.1	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.027	0.084	0.080	0.0	97.3	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.026	0.083	0.079	0.0	99.1	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.024	0.083	0.080	0.0	99.1	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.026	0.085	0.082	0.0	99.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.026	0.088	0.084	0.0	98.1	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.024	0.089	0.086	0.0	98.1	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.026	0.090	0.086	0.0	96.2	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.020	0.084	0.082	0.0	98.1	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.017	0.085	0.084	0.0	97.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.017	0.084	0.083	0.0	97.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.016	0.085	0.084	0.0	97.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.038	0.075	0.066	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.019	0.098	0.097	0.0	96.3	0.0			
THW-thw	0.50	h	25h	54	-0.085	0.268	0.257	0.0	96.3	0.0			
TLW-tlw	0.50	h	25h	54	0.298	0.391	0.256	0.0	81.5	1.9			

Station: Astoria, OR
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.119	0.155	0.101	0.0	81.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.118	0.156	0.102	0.0	81.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.115	0.154	0.103	0.0	81.2	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.114	0.153	0.103	0.0	83.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.116	0.155	0.103	0.0	81.2	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.115	0.154	0.102	0.0	80.4	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.118	0.157	0.104	0.0	79.3	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.116	0.155	0.104	0.0	80.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.114	0.154	0.103	0.0	78.9	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.116	0.156	0.105	0.0	76.9	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.117	0.158	0.107	0.0	77.6	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.114	0.157	0.108	0.0	77.4	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.114	0.157	0.108	0.0	77.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.108	0.152	0.107	0.0	78.8	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.107	0.151	0.108	0.0	81.6	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.107	0.152	0.108	0.0	81.4	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.104	0.150	0.109	0.0	82.2	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.145	0.158	0.063	0.0	79.6	0.0			
ALW-alw	20	cm	24h	54	-0.142	0.210	0.155	7.4	70.4	0.0			
THW-thw	0.50	h	25h	54	-0.037	0.229	0.228	0.0	92.6	0.0			
TLW-tlw	0.50	h	25h	54	0.256	0.342	0.230	0.0	85.2	0.0			

Station: Skamokawa, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.252	0.322	0.201	17.9	43.8	0.0	0.0	0.0	17.86
H06-h06	20	cm	24h	112	-0.249	0.321	0.204	17.9	43.8	0.0	0.0	0.0	17.86
H12-h12	20	cm	24h	112	-0.249	0.323	0.207	18.8	44.6	0.0	0.0	0.0	18.75
H18-h18	20	cm	24h	112	-0.246	0.322	0.208	18.8	43.8	0.0	0.0	0.0	18.75
H24-h24	20	cm	24h	112	-0.250	0.328	0.214	19.6	44.6	0.0	0.0	0.0	19.64
H30-h30	20	cm	24h	112	-0.247	0.327	0.215	18.8	45.5	0.0	0.0	0.0	18.75
H36-h36	20	cm	24h	111	-0.250	0.330	0.216	19.8	44.1	0.0	0.0	0.0	19.82
H42-h42	20	cm	24h	110	-0.247	0.326	0.214	18.2	45.5	0.0	0.0	0.0	18.18
H48-h48	20	cm	24h	109	-0.251	0.330	0.215	19.3	44.0	0.0	0.0	0.0	19.27
H54-h54	20	cm	24h	108	-0.248	0.328	0.215	18.5	43.5	0.0	0.0	0.0	18.52
H60-h60	20	cm	24h	107	-0.250	0.330	0.217	18.7	43.9	0.0	0.0	0.0	18.69
H66-h66	20	cm	24h	106	-0.246	0.325	0.214	17.9	43.4	0.0	0.0	0.0	17.92
H72-h72	20	cm	24h	105	-0.247	0.326	0.214	18.1	42.9	0.0	0.0	0.0	18.10
H78-h78	20	cm	24h	104	-0.240	0.320	0.213	17.3	45.2	0.0	0.0	0.0	17.31
H84-h84	20	cm	24h	103	-0.240	0.321	0.215	17.5	45.6	0.0	0.0	0.0	17.48
H90-h90	20	cm	24h	102	-0.233	0.314	0.211	16.7	48.0	0.0	0.0	0.0	16.67
H96-h96	20	cm	24h	101	-0.233	0.315	0.213	17.8	48.5	0.0	0.0	0.0	17.82
AHW-ahw	20	cm	24h	54	-0.182	0.200	0.083	0.0	55.6	0.0			
ALW-alw	20	cm	24h	54	-0.370	0.431	0.223	37.0	20.4	0.0			
THW-thw	0.50	h	25h	54	0.017	0.211	0.213	0.0	100.0	0.0			
TLW-tlw	0.50	h	25h	54	-0.635	0.699	0.294	13.0	29.6	0.0			

Station: Toke Point, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.027	0.195	0.194	2.7	59.8	0.0	0.0	0.0	2.68
H06-h06	20	cm	24h	112	-0.028	0.195	0.194	2.7	59.8	0.0	0.0	0.0	2.68
H12-h12	20	cm	24h	112	-0.023	0.193	0.193	3.6	59.8	0.0	0.0	0.0	2.68
H18-h18	20	cm	24h	112	-0.023	0.190	0.190	3.6	62.5	0.0	0.0	0.0	2.68
H24-h24	20	cm	24h	112	-0.022	0.191	0.190	2.7	60.7	0.0	0.0	0.0	2.68
H30-h30	20	cm	24h	112	-0.023	0.191	0.190	3.6	61.6	0.0	0.0	0.0	2.68
H36-h36	20	cm	24h	111	-0.027	0.193	0.192	3.6	64.9	0.0	0.0	0.0	2.70
H42-h42	20	cm	24h	110	-0.028	0.193	0.192	2.7	65.5	0.0	0.0	0.0	2.73
H48-h48	20	cm	24h	109	-0.025	0.194	0.193	2.8	65.1	0.0	0.0	0.0	2.75
H54-h54	20	cm	24h	108	-0.029	0.198	0.197	2.8	62.0	0.0	0.0	0.0	2.78
H60-h60	20	cm	24h	107	-0.029	0.201	0.200	3.7	59.8	0.0	0.0	0.0	2.80
H66-h66	20	cm	24h	106	-0.026	0.205	0.204	2.8	56.6	0.0	0.0	0.0	2.83
H72-h72	20	cm	24h	105	-0.031	0.203	0.201	4.8	58.1	0.0	0.0	0.0	2.86
H78-h78	20	cm	24h	104	-0.023	0.203	0.203	3.8	57.7	0.0	0.0	0.0	2.88
H84-h84	20	cm	24h	103	-0.023	0.200	0.199	2.9	59.2	0.0	0.0	0.0	2.91
H90-h90	20	cm	24h	102	-0.020	0.202	0.202	3.9	53.9	0.0	0.0	0.0	2.94
H96-h96	20	cm	24h	101	-0.020	0.198	0.198	4.0	59.4	0.0	0.0	0.0	2.97
AHW-ahw	20	cm	24h	54	-0.022	0.089	0.087	0.0	98.1	0.0			
ALW-alw	20	cm	24h	54	0.018	0.101	0.101	0.0	96.3	0.0			
THW-thw	0.50	h	25h	54	-0.424	0.476	0.217	0.0	53.7	0.0			
TLW-tlw	0.50	h	25h	54	-0.281	0.386	0.266	0.0	74.1	0.0			

Station: Westport, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.077	0.129	0.104	0.0	87.5	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.077	0.130	0.105	0.0	86.6	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.076	0.129	0.105	0.0	86.6	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.074	0.125	0.102	0.0	88.4	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.073	0.126	0.103	0.0	88.4	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.073	0.125	0.102	0.0	90.2	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.079	0.130	0.104	0.0	87.4	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.079	0.131	0.105	0.0	86.4	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.076	0.131	0.107	0.0	86.2	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.079	0.135	0.109	0.0	87.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.080	0.137	0.111	0.0	86.9	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.079	0.138	0.113	0.0	84.9	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.081	0.138	0.112	1.0	85.7	0.0	0.0	0.0	0.95
H78-h78	20	cm	24h	104	-0.075	0.134	0.111	0.0	85.6	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.072	0.131	0.110	0.0	87.4	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.071	0.131	0.111	0.0	85.3	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.071	0.129	0.109	0.0	87.1	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.114	0.144	0.088	0.0	83.3	0.0			
ALW-alw	20	cm	24h	54	-0.017	0.087	0.086	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.289	0.413	0.298	0.0	74.1	0.0			
TLW-tlw	0.50	h	25h	54	0.202	0.331	0.265	0.0	87.0	0.0			

Station: La Push, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.019	0.089	0.088	0.0	98.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.019	0.089	0.088	0.0	98.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.016	0.090	0.089	0.0	98.2	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.014	0.088	0.087	0.0	98.2	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.013	0.088	0.088	0.0	98.2	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.015	0.087	0.086	0.0	99.1	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.023	0.090	0.088	0.0	99.1	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.024	0.089	0.086	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.022	0.091	0.088	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.026	0.093	0.090	0.0	98.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.027	0.095	0.092	0.0	99.1	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.025	0.096	0.093	0.0	98.1	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.029	0.097	0.093	0.0	95.2	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.024	0.093	0.090	0.0	97.1	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.021	0.093	0.091	0.0	97.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.019	0.093	0.092	0.0	96.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.016	0.093	0.092	0.0	97.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.064	0.110	0.091	0.0	92.6	0.0			
ALW-alw	20	cm	24h	54	0.011	0.091	0.092	0.0	98.1	0.0			
THW-thw	0.50	h	25h	54	0.078	0.289	0.281	0.0	90.7	0.0			
TLW-tlw	0.50	h	25h	54	0.061	0.242	0.236	0.0	94.4	0.0			

Station: Neah Bay, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.004	0.093	0.093	0.0	98.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.003	0.092	0.093	0.0	98.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.001	0.092	0.092	0.0	97.3	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.001	0.087	0.087	0.0	99.1	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.004	0.090	0.091	0.0	97.3	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.002	0.090	0.090	0.0	97.3	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.005	0.093	0.093	0.0	97.3	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.009	0.091	0.091	0.0	98.2	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.006	0.092	0.092	0.0	98.2	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.010	0.091	0.091	0.0	98.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.011	0.093	0.093	0.0	98.1	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.011	0.093	0.093	0.0	97.2	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.014	0.093	0.093	0.0	98.1	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.011	0.094	0.093	0.0	97.1	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.008	0.091	0.092	0.0	98.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.008	0.093	0.093	0.0	98.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.006	0.092	0.092	0.0	97.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.090	0.147	0.118	1.9	96.3	0.0			
ALW-alw	20	cm	24h	54	0.072	0.111	0.086	0.0	94.4	0.0			
THW-thw	0.50	h	25h	54	0.015	0.399	0.402	1.9	87.0	1.9			
TLW-tlw	0.50	h	25h	54	0.006	0.387	0.390	0.0	87.0	5.6			

Station: Port Angeles, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.075	0.242	0.231	7.1	49.1	0.9	0.0	0.0	5.36
H06-h06	20	cm	24h	112	-0.077	0.244	0.232	7.1	48.2	0.9	0.0	0.0	5.36
H12-h12	20	cm	24h	112	-0.074	0.242	0.231	5.4	49.1	0.9	0.0	0.0	3.57
H18-h18	20	cm	24h	112	-0.073	0.239	0.229	6.2	50.0	0.9	0.0	0.0	3.57
H24-h24	20	cm	24h	112	-0.070	0.240	0.230	6.2	50.0	0.9	0.0	0.0	3.57
H30-h30	20	cm	24h	112	-0.071	0.241	0.231	7.1	49.1	0.0	0.0	0.0	4.46
H36-h36	20	cm	24h	111	-0.069	0.241	0.232	5.4	49.5	0.0	0.0	0.0	3.60
H42-h42	20	cm	24h	110	-0.079	0.244	0.232	8.2	50.9	0.0	0.0	0.0	5.45
H48-h48	20	cm	24h	109	-0.073	0.240	0.229	7.3	52.3	0.0	0.0	0.0	3.67
H54-h54	20	cm	24h	108	-0.075	0.239	0.228	6.5	51.9	0.0	0.0	0.0	3.70
H60-h60	20	cm	24h	107	-0.076	0.239	0.227	7.5	53.3	0.0	0.0	0.0	4.67
H66-h66	20	cm	24h	106	-0.077	0.241	0.229	8.5	53.8	0.0	0.0	0.0	5.66
H72-h72	20	cm	24h	105	-0.073	0.237	0.227	7.6	53.3	0.0	0.0	0.0	4.76
H78-h78	20	cm	24h	104	-0.076	0.240	0.228	9.6	51.9	0.0	0.0	0.0	5.77
H84-h84	20	cm	24h	103	-0.070	0.233	0.223	5.8	54.4	0.0	0.0	0.0	3.88
H90-h90	20	cm	24h	102	-0.071	0.236	0.226	6.9	53.9	0.0	0.0	0.0	3.92
H96-h96	20	cm	24h	101	-0.070	0.235	0.226	6.9	51.5	0.0	0.0	0.0	4.95
AHW-ahw	20	cm	24h	32	-0.164	0.257	0.202	12.5	53.1	0.0			
ALW-alw	20	cm	24h	35	0.183	0.234	0.148	0.0	48.6	2.9			
THW-thw	0.50	h	25h	32	0.644	1.400	1.264	6.2	18.8	43.8			
TLW-tlw	0.50	h	25h	35	0.500	0.823	0.664	0.0	65.7	20.0			

Station: Port Townsend, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.123	0.308	0.283	18.8	50.0	0.9	6.0	0.0	15.18
H06-h06	20	cm	24h	112	-0.123	0.308	0.284	18.8	50.0	0.9	6.0	0.0	15.18
H12-h12	20	cm	24h	112	-0.121	0.307	0.283	19.6	48.2	0.9	6.0	0.0	16.07
H18-h18	20	cm	24h	112	-0.121	0.306	0.283	18.8	47.3	0.9	0.0	0.0	15.18
H24-h24	20	cm	24h	112	-0.120	0.304	0.280	17.9	51.8	0.9	0.0	0.0	14.29
H30-h30	20	cm	24h	112	-0.120	0.303	0.279	18.8	50.9	0.9	0.0	0.0	15.18
H36-h36	20	cm	24h	111	-0.115	0.300	0.279	18.0	53.2	0.9	0.0	0.0	14.41
H42-h42	20	cm	24h	110	-0.126	0.305	0.279	18.2	51.8	0.9	0.0	0.0	14.55
H48-h48	20	cm	24h	109	-0.122	0.302	0.278	17.4	50.5	0.9	0.0	0.0	13.76
H54-h54	20	cm	24h	108	-0.121	0.302	0.278	17.6	50.0	0.9	0.0	0.0	13.89
H60-h60	20	cm	24h	107	-0.124	0.302	0.276	17.8	49.5	0.9	0.0	0.0	14.02
H66-h66	20	cm	24h	106	-0.122	0.302	0.278	17.9	50.0	0.9	0.0	0.0	14.15
H72-h72	20	cm	24h	105	-0.117	0.297	0.275	16.2	49.5	1.0	0.0	0.0	12.38
H78-h78	20	cm	24h	104	-0.121	0.298	0.274	16.3	50.0	1.0	0.0	0.0	12.50
H84-h84	20	cm	24h	103	-0.116	0.294	0.272	15.5	52.4	1.0	0.0	0.0	11.65
H90-h90	20	cm	24h	102	-0.114	0.298	0.277	16.7	53.9	1.0	0.0	0.0	12.75
H96-h96	20	cm	24h	101	-0.115	0.301	0.280	16.8	52.5	1.0	0.0	0.0	12.87
AHW-ahw	20	cm	24h	44	-0.242	0.367	0.280	31.8	50.0	0.0			
ALW-alw	20	cm	24h	45	0.068	0.209	0.200	2.2	60.0	4.4			
THW-thw	0.50	h	25h	44	0.377	0.689	0.583	2.3	59.1	11.4			
TLW-tlw	0.50	h	25h	45	0.873	1.188	0.815	0.0	26.7	40.0			

Station: Tacoma, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.27 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.118	0.394	0.378	21.4	33.9	8.0	0.0	0.0	14.29
H06-h06	20	cm	24h	112	-0.120	0.395	0.379	21.4	34.8	8.0	0.0	0.0	14.29
H12-h12	20	cm	24h	112	-0.116	0.395	0.379	20.5	35.7	8.0	0.0	0.0	13.39
H18-h18	20	cm	24h	112	-0.118	0.397	0.381	21.4	34.8	8.0	0.0	0.0	14.29
H24-h24	20	cm	24h	112	-0.120	0.393	0.376	22.3	33.9	7.1	0.0	0.0	15.18
H30-h30	20	cm	24h	112	-0.121	0.389	0.371	23.2	38.4	7.1	0.0	0.0	15.18
H36-h36	20	cm	24h	111	-0.110	0.384	0.370	21.6	38.7	6.3	0.0	0.0	14.41
H42-h42	20	cm	24h	110	-0.119	0.388	0.371	21.8	40.0	7.3	0.0	0.0	14.55
H48-h48	20	cm	24h	109	-0.114	0.388	0.373	21.1	38.5	6.4	0.0	0.0	13.76
H54-h54	20	cm	24h	108	-0.111	0.389	0.374	20.4	35.2	6.5	0.0	0.0	12.96
H60-h60	20	cm	24h	107	-0.116	0.389	0.373	21.5	35.5	6.5	0.0	0.0	14.02
H66-h66	20	cm	24h	106	-0.109	0.385	0.372	20.8	39.6	6.6	0.0	0.0	13.21
H72-h72	20	cm	24h	105	-0.104	0.380	0.367	20.0	37.1	7.6	0.0	0.0	12.38
H78-h78	20	cm	24h	104	-0.110	0.382	0.368	20.2	37.5	6.7	0.0	0.0	13.46
H84-h84	20	cm	24h	103	-0.109	0.386	0.372	20.4	37.9	7.8	0.0	0.0	13.59
H90-h90	20	cm	24h	102	-0.102	0.393	0.381	19.6	34.3	7.8	0.0	0.0	12.75
H96-h96	20	cm	24h	101	-0.105	0.401	0.388	23.8	32.7	7.9	0.0	0.0	14.85
AHW-ahw	20	cm	24h	52	-0.364	0.512	0.364	44.2	42.3	0.0			
ALW-alw	20	cm	24h	53	0.132	0.296	0.268	1.9	50.9	17.0			
THW-thw	0.50	h	25h	52	0.608	0.756	0.455	0.0	42.3	15.4			
TLW-tlw	0.50	h	25h	53	0.725	0.977	0.661	0.0	41.5	32.1			

Station: Seattle, Puget Sound, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.61 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	110	-0.112	0.379	0.364	20.0	33.6	8.2	0.0	0.0	11.82
H06-h06	20	cm	24h	110	-0.113	0.380	0.364	20.0	34.5	8.2	0.0	0.0	12.73
H12-h12	20	cm	24h	110	-0.109	0.379	0.365	20.0	34.5	8.2	0.0	0.0	12.73
H18-h18	20	cm	24h	110	-0.111	0.381	0.366	20.9	34.5	8.2	0.0	0.0	13.64
H24-h24	20	cm	24h	110	-0.112	0.377	0.362	20.0	35.5	7.3	0.0	0.0	12.73
H30-h30	20	cm	24h	110	-0.113	0.373	0.357	20.9	35.5	7.3	0.0	0.0	13.64
H36-h36	20	cm	24h	109	-0.102	0.368	0.355	20.2	36.7	7.3	0.0	0.0	12.84
H42-h42	20	cm	24h	108	-0.110	0.372	0.357	20.4	38.0	7.4	0.0	0.0	12.96
H48-h48	20	cm	24h	107	-0.105	0.373	0.359	19.6	35.5	7.5	0.0	0.0	12.15
H54-h54	20	cm	24h	106	-0.102	0.374	0.361	17.9	34.0	7.5	0.0	0.0	11.32
H60-h60	20	cm	24h	105	-0.106	0.374	0.360	21.0	35.2	7.6	0.0	0.0	12.38
H66-h66	20	cm	24h	104	-0.099	0.370	0.358	20.2	36.5	7.7	0.0	0.0	12.50
H72-h72	20	cm	24h	103	-0.094	0.365	0.355	20.4	37.9	5.8	0.0	0.0	11.65
H78-h78	20	cm	24h	102	-0.099	0.367	0.355	19.6	38.2	5.9	0.0	0.0	11.76
H84-h84	20	cm	24h	101	-0.098	0.370	0.359	20.8	33.7	5.9	0.0	0.0	12.87
H90-h90	20	cm	24h	100	-0.091	0.377	0.367	20.0	35.0	8.0	0.0	0.0	12.00
H96-h96	20	cm	24h	99	-0.094	0.384	0.374	21.2	32.3	8.1	0.0	0.0	13.13
AHW-ahw	20	cm	24h	51	-0.350	0.494	0.352	45.1	43.1	0.0			
ALW-alw	20	cm	24h	52	0.138	0.298	0.267	1.9	48.1	21.2			
THW-thw	0.50	h	25h	51	0.590	0.798	0.543	0.0	47.1	11.8			
TLW-tlw	0.50	h	25h	52	0.723	0.955	0.631	0.0	40.4	32.7			

Station: Cherry Point, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.61 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.065	0.320	0.314	15.2	47.3	6.2	0.0	0.0	9.82
H06-h06	20	cm	24h	112	-0.066	0.320	0.315	15.2	47.3	7.1	0.0	0.0	10.71
H12-h12	20	cm	24h	112	-0.063	0.320	0.315	16.1	46.4	7.1	0.0	0.0	11.61
H18-h18	20	cm	24h	112	-0.064	0.325	0.320	15.2	45.5	7.1	0.0	0.0	10.71
H24-h24	20	cm	24h	112	-0.063	0.323	0.318	15.2	46.4	6.2	0.0	0.0	10.71
H30-h30	20	cm	24h	112	-0.065	0.321	0.316	16.1	48.2	6.2	0.0	0.0	11.61
H36-h36	20	cm	24h	111	-0.057	0.321	0.317	15.3	48.6	5.4	0.0	0.0	9.91
H42-h42	20	cm	24h	110	-0.071	0.324	0.318	16.4	47.3	4.5	0.0	0.0	10.91
H48-h48	20	cm	24h	109	-0.064	0.322	0.317	15.6	47.7	4.6	0.0	0.0	11.01
H54-h54	20	cm	24h	108	-0.064	0.318	0.313	15.7	48.1	4.6	0.0	0.0	11.11
H60-h60	20	cm	24h	107	-0.067	0.316	0.311	16.8	48.6	5.6	0.0	0.0	12.15
H66-h66	20	cm	24h	106	-0.067	0.322	0.317	17.9	46.2	5.7	0.0	0.0	13.21
H72-h72	20	cm	24h	105	-0.057	0.317	0.313	16.2	48.6	4.8	0.0	0.0	10.48
H78-h78	20	cm	24h	104	-0.070	0.315	0.308	17.3	49.0	2.9	0.0	0.0	10.58
H84-h84	20	cm	24h	103	-0.061	0.310	0.305	16.5	51.5	2.9	0.0	0.0	9.71
H90-h90	20	cm	24h	102	-0.061	0.311	0.306	16.7	49.0	2.9	0.0	0.0	9.80
H96-h96	20	cm	24h	101	-0.060	0.310	0.306	16.8	51.5	2.0	0.0	0.0	8.91
AHW-ahw	20	cm	24h	53	0.007	0.383	0.387	20.8	24.5	24.5			
ALW-alw	20	cm	24h	54	-0.207	0.343	0.276	27.8	37.0	0.0			
THW-thw	0.50	h	25h	53	0.617	0.891	0.649	0.0	39.6	22.6			
TLW-tlw	0.50	h	25h	54	0.576	0.827	0.599	0.0	42.6	22.2			

Station: Friday Harbor, WA
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.61 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.097	0.307	0.293	18.8	49.1	1.8	6.0	0.0	15.18
H06-h06	20	cm	24h	112	-0.099	0.307	0.292	18.8	49.1	1.8	6.0	0.0	15.18
H12-h12	20	cm	24h	112	-0.097	0.306	0.292	18.8	50.0	1.8	6.0	0.0	15.18
H18-h18	20	cm	24h	112	-0.097	0.309	0.294	17.9	46.4	1.8	0.0	0.0	15.18
H24-h24	20	cm	24h	112	-0.096	0.307	0.293	17.9	49.1	1.8	0.0	0.0	15.18
H30-h30	20	cm	24h	112	-0.099	0.305	0.290	17.9	50.0	1.8	0.0	0.0	15.18
H36-h36	20	cm	24h	111	-0.093	0.304	0.291	17.1	50.5	1.8	0.0	0.0	14.41
H42-h42	20	cm	24h	110	-0.106	0.309	0.292	17.3	50.9	1.8	0.0	0.0	14.55
H48-h48	20	cm	24h	109	-0.101	0.306	0.290	16.5	51.4	1.8	0.0	0.0	13.76
H54-h54	20	cm	24h	108	-0.101	0.303	0.287	15.7	50.0	1.9	0.0	0.0	12.96
H60-h60	20	cm	24h	107	-0.104	0.303	0.286	15.9	50.5	0.9	0.0	0.0	13.08
H66-h66	20	cm	24h	106	-0.104	0.306	0.289	16.0	51.9	0.9	0.0	0.0	13.21
H72-h72	20	cm	24h	105	-0.096	0.300	0.286	16.2	52.4	1.0	0.0	0.0	13.33
H78-h78	20	cm	24h	104	-0.106	0.301	0.283	15.4	51.9	1.0	0.0	0.0	12.50
H84-h84	20	cm	24h	103	-0.099	0.296	0.280	14.6	54.4	1.0	0.0	0.0	11.65
H90-h90	20	cm	24h	102	-0.098	0.298	0.283	15.7	55.9	1.0	0.0	0.0	13.73
H96-h96	20	cm	24h	101	-0.098	0.299	0.284	14.9	56.4	1.0	0.0	0.0	12.87
AHW-ahw	20	cm	24h	45	-0.026	0.350	0.353	22.2	31.1	6.7			
ALW-alw	20	cm	24h	46	-0.101	0.250	0.232	15.2	54.3	0.0			
THW-thw	0.50	h	25h	45	0.691	0.949	0.658	0.0	37.8	26.7			
TLW-tlw	0.50	h	25h	46	0.941	1.218	0.782	2.2	21.7	43.5			

Station: Ketchikan, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.34 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.080	0.325	0.317	8.0	35.7	17.9	0.0	0.0	15.18
H06-h06	20	cm	24h	112	0.077	0.325	0.317	8.0	34.8	17.9	0.0	0.0	15.18
H12-h12	20	cm	24h	112	0.084	0.326	0.317	7.1	35.7	17.9	0.0	0.0	15.18
H18-h18	20	cm	24h	112	0.083	0.322	0.313	7.1	35.7	18.8	0.0	0.0	16.07
H24-h24	20	cm	24h	112	0.077	0.321	0.313	8.0	37.5	15.2	0.0	0.0	12.50
H30-h30	20	cm	24h	112	0.075	0.322	0.315	8.0	34.8	16.1	0.0	0.0	13.39
H36-h36	20	cm	24h	111	0.086	0.325	0.314	8.1	34.2	17.1	0.0	0.0	14.41
H42-h42	20	cm	24h	110	0.093	0.329	0.317	8.2	35.5	17.3	0.0	0.0	13.64
H48-h48	20	cm	24h	109	0.084	0.328	0.318	8.3	35.8	16.5	0.0	0.0	13.76
H54-h54	20	cm	24h	108	0.061	0.324	0.320	9.3	37.0	15.7	0.0	0.0	12.04
H60-h60	20	cm	24h	107	0.061	0.325	0.321	10.3	37.4	16.8	0.0	0.0	14.02
H66-h66	20	cm	24h	105	0.067	0.329	0.323	10.5	36.2	18.1	0.0	0.0	14.29
H72-h72	20	cm	24h	104	0.091	0.335	0.324	6.7	35.6	19.2	0.0	0.0	16.35
H78-h78	20	cm	24h	103	0.110	0.341	0.324	5.8	33.0	19.4	0.0	0.0	17.48
H84-h84	20	cm	24h	102	0.093	0.331	0.320	4.9	32.4	17.6	0.0	0.0	15.69
H90-h90	20	cm	24h	101	0.071	0.330	0.323	8.9	30.7	15.8	0.0	0.0	13.86
H96-h96	20	cm	24h	100	0.063	0.329	0.324	10.0	33.0	17.0	0.0	0.0	15.00
AHW-ahw	20	cm	24h	54	-0.224	0.250	0.112	5.6	35.2	0.0			
ALW-alw	20	cm	24h	54	0.442	0.457	0.115	0.0	1.9	66.7			
THW-thw	0.50	h	25h	54	-0.174	0.372	0.332	0.0	87.0	0.0			
TLW-tlw	0.50	h	25h	54	-0.185	0.321	0.265	1.9	88.9	0.0			

Station: Port Alexander, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 1.93 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	104	0.102	0.152	0.113	0.0	76.9	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	104	0.101	0.151	0.113	0.0	77.9	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	104	0.103	0.152	0.113	0.0	76.9	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	104	0.104	0.151	0.110	0.0	76.9	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	104	0.100	0.149	0.111	0.0	78.8	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	104	0.101	0.150	0.111	0.0	78.8	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	103	0.102	0.151	0.111	0.0	77.7	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	102	0.104	0.154	0.114	0.0	77.5	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	101	0.100	0.151	0.114	0.0	76.2	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	100	0.098	0.151	0.115	0.0	79.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	99	0.098	0.152	0.117	0.0	78.8	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	98	0.098	0.154	0.119	0.0	75.5	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	97	0.097	0.153	0.119	0.0	78.4	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	96	0.103	0.156	0.118	0.0	77.1	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	95	0.099	0.152	0.116	0.0	78.9	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	94	0.101	0.154	0.117	0.0	78.7	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	93	0.101	0.153	0.116	0.0	77.4	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	50	0.011	0.075	0.074	0.0	98.0	0.0			
ALW-alw	20	cm	24h	51	0.206	0.216	0.066	0.0	43.1	0.0			
THW-thw	0.50	h	25h	50	-0.040	0.182	0.180	0.0	100.0	0.0			
TLW-tlw	0.50	h	25h	51	-0.010	0.158	0.159	0.0	100.0	0.0			

Station: Sitka, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 1.93 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.114	0.145	0.091	0.0	83.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	0.113	0.144	0.091	0.0	83.9	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	0.114	0.145	0.090	0.0	83.9	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.115	0.145	0.088	0.0	84.8	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.110	0.141	0.088	0.0	85.7	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.109	0.139	0.087	0.0	84.8	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.108	0.139	0.087	0.0	85.6	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.109	0.141	0.090	0.0	84.5	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	0.108	0.140	0.089	0.0	85.3	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	0.108	0.141	0.090	0.0	87.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	0.107	0.141	0.092	0.0	85.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	0.106	0.142	0.094	0.0	84.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	0.105	0.141	0.094	0.0	83.8	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	0.109	0.144	0.094	0.0	83.7	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	0.108	0.142	0.092	0.0	82.5	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	0.111	0.145	0.093	0.0	80.4	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	0.114	0.145	0.091	0.0	82.2	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	0.046	0.085	0.072	0.0	98.1	0.0			
ALW-alw	20	cm	24h	54	0.186	0.199	0.073	0.0	63.0	0.0			
THW-thw	0.50	h	25h	54	-0.015	0.244	0.246	0.0	94.4	0.0			
TLW-tlw	0.50	h	25h	54	0.009	0.201	0.203	0.0	98.1	0.0			

Station: Juneau, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 1.93 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.069	0.348	0.342	9.8	35.7	19.6	0.0	0.0	13.39
H06-h06	20	cm	24h	112	0.066	0.346	0.341	9.8	36.6	18.8	0.0	0.0	13.39
H12-h12	20	cm	24h	112	0.071	0.347	0.341	9.8	35.7	18.8	0.0	0.0	13.39
H18-h18	20	cm	24h	112	0.072	0.344	0.337	8.9	34.8	17.0	0.0	0.0	12.50
H24-h24	20	cm	24h	112	0.064	0.342	0.338	8.9	34.8	17.9	0.0	0.0	13.39
H30-h30	20	cm	24h	112	0.066	0.344	0.339	9.8	35.7	17.9	0.0	0.0	13.39
H36-h36	20	cm	24h	111	0.076	0.346	0.339	9.0	35.1	18.0	0.0	0.0	13.51
H42-h42	20	cm	24h	110	0.078	0.347	0.340	8.2	36.4	20.0	0.0	0.0	15.45
H48-h48	20	cm	24h	109	0.062	0.349	0.345	11.0	37.6	18.3	0.0	0.0	14.68
H54-h54	20	cm	24h	108	0.051	0.347	0.345	11.1	36.1	18.5	0.0	0.0	14.81
H60-h60	20	cm	24h	107	0.054	0.353	0.350	12.1	33.6	17.8	0.0	0.0	13.08
H66-h66	20	cm	24h	106	0.054	0.356	0.353	13.2	34.0	18.9	0.0	0.0	14.15
H72-h72	20	cm	24h	105	0.060	0.363	0.359	14.3	34.3	20.0	0.0	0.0	15.24
H78-h78	20	cm	24h	104	0.073	0.359	0.353	10.6	34.6	20.2	0.0	0.0	15.38
H84-h84	20	cm	24h	103	0.057	0.354	0.351	14.6	34.0	18.4	0.0	0.0	15.53
H90-h90	20	cm	24h	102	0.054	0.356	0.354	14.7	34.3	18.6	0.0	0.0	14.71
H96-h96	20	cm	24h	101	0.046	0.356	0.355	14.9	35.6	19.8	0.0	0.0	15.84
AHW-ahw	20	cm	24h	54	-0.183	0.213	0.111	1.9	50.0	0.0			
ALW-alw	20	cm	24h	54	0.381	0.393	0.099	0.0	5.6	44.4			
THW-thw	0.50	h	25h	54	-0.206	0.275	0.184	0.0	96.3	0.0			
TLW-tlw	0.50	h	25h	54	-0.289	0.346	0.193	0.0	83.3	0.0			

Station: Skagway, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 1.93 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.088	0.361	0.352	9.8	33.9	25.0	0.0	0.0	24.11
H06-h06	20	cm	24h	112	0.085	0.359	0.351	9.8	34.8	24.1	0.0	0.0	24.11
H12-h12	20	cm	24h	112	0.090	0.361	0.352	8.9	33.9	25.0	0.0	0.0	24.11
H18-h18	20	cm	24h	112	0.090	0.357	0.347	8.9	33.9	25.0	0.0	0.0	24.11
H24-h24	20	cm	24h	112	0.081	0.355	0.347	8.9	33.0	23.2	0.0	0.0	23.21
H30-h30	20	cm	24h	112	0.085	0.358	0.350	9.8	32.1	23.2	0.0	0.0	23.21
H36-h36	20	cm	24h	111	0.097	0.361	0.349	9.0	32.4	26.1	0.0	0.0	26.13
H42-h42	20	cm	24h	110	0.101	0.362	0.350	9.1	32.7	26.4	0.0	0.0	25.45
H48-h48	20	cm	24h	109	0.082	0.363	0.356	10.1	31.2	23.9	0.0	0.0	23.85
H54-h54	20	cm	24h	108	0.072	0.363	0.357	11.1	31.5	24.1	0.0	0.0	23.15
H60-h60	20	cm	24h	107	0.074	0.370	0.364	11.2	29.0	23.4	0.0	0.0	22.43
H66-h66	20	cm	24h	106	0.075	0.373	0.367	15.1	30.2	24.5	0.0	0.0	23.58
H72-h72	20	cm	24h	105	0.080	0.380	0.373	15.2	29.5	26.7	0.0	0.0	25.71
H78-h78	20	cm	24h	104	0.093	0.375	0.365	12.5	29.8	27.9	0.0	0.0	26.92
H84-h84	20	cm	24h	103	0.072	0.370	0.364	12.6	30.1	25.2	0.0	0.0	24.27
H90-h90	20	cm	24h	102	0.069	0.371	0.367	12.7	32.4	28.4	0.0	0.0	26.47
H96-h96	20	cm	24h	101	0.059	0.368	0.365	14.9	32.7	25.7	0.0	0.0	23.76
AHW-ahw	20	cm	24h	54	-0.164	0.212	0.136	7.4	55.6	0.0			
ALW-alw	20	cm	24h	54	0.440	0.454	0.112	0.0	0.0	66.7			
THW-thw	0.50	h	25h	54	-0.215	0.326	0.248	0.0	90.7	0.0			
TLW-tlw	0.50	h	25h	54	-0.207	0.354	0.289	1.9	83.3	0.0			

Station: Elfin Cove, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 1.93 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.172	0.203	0.108	0.0	56.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	0.171	0.201	0.107	0.0	56.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	0.172	0.202	0.107	0.0	56.2	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.173	0.202	0.104	0.0	56.2	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.169	0.199	0.105	0.0	56.2	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.170	0.199	0.103	0.0	58.0	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.170	0.199	0.104	0.0	58.6	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.172	0.202	0.106	0.0	56.4	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	0.169	0.199	0.106	0.0	58.7	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	0.168	0.199	0.108	0.0	59.3	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	0.169	0.201	0.109	0.0	54.2	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	0.169	0.201	0.111	0.0	56.6	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	0.170	0.203	0.111	0.0	55.2	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	0.175	0.207	0.110	0.0	51.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	0.172	0.203	0.109	0.0	54.4	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	0.175	0.206	0.110	0.0	53.9	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	0.175	0.206	0.108	0.0	53.5	1.0	0.0	0.0	0.99
AHW-ahw	20	cm	24h	54	0.065	0.099	0.076	0.0	94.4	0.0			
ALW-alw	20	cm	24h	54	0.265	0.273	0.066	0.0	16.7	1.9			
THW-thw	0.50	h	25h	54	-0.048	0.172	0.167	0.0	98.1	0.0			
TLW-tlw	0.50	h	25h	54	-0.013	0.160	0.161	0.0	96.3	0.0			

Station: Yakutat, Yakutat Bay, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 1.49 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	107	0.118	0.149	0.090	0.0	79.4	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	108	0.119	0.150	0.090	0.0	78.7	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	109	0.118	0.149	0.091	0.0	78.9	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	110	0.121	0.151	0.090	0.0	78.2	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	111	0.117	0.147	0.089	0.0	79.3	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.116	0.146	0.088	0.0	79.5	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.114	0.144	0.089	0.0	81.1	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.116	0.147	0.091	0.0	79.1	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	0.114	0.145	0.089	0.0	81.7	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	0.114	0.145	0.090	0.0	82.4	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	0.113	0.146	0.092	0.0	81.3	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	0.112	0.145	0.093	0.0	82.1	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	0.110	0.144	0.092	0.0	82.9	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	0.114	0.147	0.092	0.0	80.8	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	0.113	0.145	0.092	0.0	78.6	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	0.119	0.150	0.092	0.0	80.4	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	0.120	0.151	0.092	0.0	79.2	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	51	0.056	0.095	0.077	0.0	98.0	0.0			
ALW-alw	20	cm	24h	52	0.184	0.201	0.082	0.0	59.6	1.9			
THW-thw	0.50	h	25h	51	-0.053	0.230	0.226	0.0	94.1	0.0			
TLW-tlw	0.50	h	25h	52	0.081	0.319	0.312	0.0	92.3	1.9			

Station: Cordova, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.095	0.196	0.172	0.0	63.4	0.9	0.0	0.0	0.89
H06-h06	20	cm	24h	112	0.094	0.195	0.172	0.0	63.4	0.9	0.0	0.0	0.89
H12-h12	20	cm	24h	112	0.096	0.196	0.171	0.0	63.4	1.8	0.0	0.0	1.79
H18-h18	20	cm	24h	112	0.099	0.194	0.168	0.0	64.3	1.8	0.0	0.0	1.79
H24-h24	20	cm	24h	112	0.093	0.191	0.168	0.0	64.3	0.9	0.0	0.0	0.89
H30-h30	20	cm	24h	111	0.089	0.188	0.166	0.0	64.9	0.9	0.0	0.0	0.90
H36-h36	20	cm	24h	110	0.084	0.187	0.168	0.0	63.6	0.9	0.0	0.0	0.91
H42-h42	20	cm	24h	109	0.079	0.186	0.170	0.0	64.2	0.9	0.0	0.0	0.92
H48-h48	20	cm	24h	108	0.072	0.183	0.169	0.0	65.7	0.9	0.0	0.0	0.93
H54-h54	20	cm	24h	107	0.072	0.185	0.171	0.0	67.3	0.9	0.0	0.0	0.93
H60-h60	20	cm	24h	106	0.069	0.183	0.170	0.0	67.9	0.9	0.0	0.0	0.94
H66-h66	20	cm	24h	105	0.060	0.181	0.171	0.0	65.7	1.0	0.0	0.0	0.95
H72-h72	20	cm	24h	104	0.056	0.180	0.172	0.0	62.5	1.0	0.0	0.0	0.96
H78-h78	20	cm	24h	103	0.059	0.179	0.170	0.0	66.0	1.0	0.0	0.0	0.97
H84-h84	20	cm	24h	102	0.057	0.175	0.167	0.0	64.7	1.0	0.0	0.0	0.98
H90-h90	20	cm	24h	101	0.067	0.179	0.166	0.0	68.3	1.0	0.0	0.0	0.99
H96-h96	20	cm	24h	100	0.066	0.176	0.164	0.0	68.0	1.0	0.0	0.0	1.00
AHW-ahw	20	cm	24h	54	-0.056	0.166	0.158	0.0	75.9	0.0			
ALW-alw	20	cm	24h	54	0.198	0.218	0.093	0.0	53.7	1.9			
THW-thw	0.50	h	25h	54	-0.126	0.528	0.518	7.4	66.7	1.9			
TLW-tlw	0.50	h	25h	54	0.031	0.601	0.606	3.7	77.8	5.6			

Station: Valdez, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.263	0.295	0.135	0.0	33.9	20.5	0.0	0.0	20.54
H06-h06	20	cm	24h	112	0.262	0.294	0.133	0.0	33.9	19.6	0.0	0.0	19.64
H12-h12	20	cm	24h	112	0.263	0.295	0.134	0.0	34.8	22.3	0.0	0.0	22.32
H18-h18	20	cm	24h	112	0.266	0.296	0.130	0.0	33.9	21.4	0.0	0.0	21.43
H24-h24	20	cm	24h	112	0.259	0.289	0.130	0.0	36.6	18.8	0.0	0.0	18.75
H30-h30	20	cm	24h	112	0.257	0.286	0.128	0.0	36.6	16.1	0.0	0.0	16.07
H36-h36	20	cm	24h	111	0.249	0.280	0.129	0.0	39.6	16.2	0.0	0.0	16.22
H42-h42	20	cm	24h	110	0.245	0.277	0.130	0.0	41.8	16.4	0.0	0.0	16.36
H48-h48	20	cm	24h	109	0.238	0.270	0.128	0.0	44.0	13.8	0.0	0.0	13.76
H54-h54	20	cm	24h	108	0.240	0.273	0.131	0.0	43.5	14.8	0.0	0.0	14.81
H60-h60	20	cm	24h	107	0.238	0.271	0.131	0.0	43.9	13.1	0.0	0.0	13.08
H66-h66	20	cm	24h	106	0.230	0.264	0.130	0.0	44.3	9.4	0.0	0.0	9.43
H72-h72	20	cm	24h	105	0.226	0.261	0.132	0.0	44.8	10.5	0.0	0.0	10.48
H78-h78	20	cm	24h	104	0.230	0.263	0.128	0.0	46.2	9.6	0.0	0.0	9.62
H84-h84	20	cm	24h	103	0.228	0.260	0.124	0.0	46.6	9.7	0.0	0.0	9.71
H90-h90	20	cm	24h	102	0.240	0.270	0.126	0.0	47.1	11.8	0.0	0.0	11.76
H96-h96	20	cm	24h	101	0.240	0.270	0.123	0.0	41.6	11.9	0.0	0.0	11.88
AHW-ahw	20	cm	24h	54	0.184	0.238	0.152	0.0	57.4	9.3			
ALW-alw	20	cm	24h	54	0.303	0.318	0.098	0.0	18.5	16.7			
THW-thw	0.50	h	25h	54	-0.102	0.520	0.515	5.6	70.4	3.7			
TLW-tlw	0.50	h	25h	54	-0.041	0.560	0.564	3.7	79.6	5.6			

Station: Seward, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.187	0.208	0.091	0.0	56.2	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	0.186	0.206	0.090	0.0	57.1	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	0.185	0.206	0.090	0.0	58.9	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.187	0.207	0.089	0.0	58.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.182	0.202	0.088	0.0	59.8	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.182	0.201	0.087	0.0	60.7	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.180	0.200	0.088	0.0	61.3	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.180	0.201	0.088	0.0	60.9	0.9	0.0	0.0	0.91
H48-h48	20	cm	24h	109	0.178	0.197	0.085	0.0	58.7	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	0.180	0.200	0.087	0.0	57.4	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	0.176	0.197	0.090	0.0	57.9	0.9	0.0	0.0	0.93
H66-h66	20	cm	24h	106	0.171	0.193	0.089	0.0	59.4	0.9	0.0	0.0	0.94
H72-h72	20	cm	24h	105	0.169	0.190	0.088	0.0	64.8	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	0.172	0.193	0.087	0.0	61.5	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	0.167	0.187	0.085	0.0	63.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	0.173	0.194	0.089	0.0	63.7	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	0.171	0.192	0.088	0.0	61.4	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	0.153	0.187	0.109	0.0	68.5	0.0			
ALW-alw	20	cm	24h	54	0.211	0.226	0.080	0.0	51.9	1.9			
THW-thw	0.50	h	25h	54	-0.004	0.283	0.285	0.0	92.6	0.0			
TLW-tlw	0.50	h	25h	54	-0.032	0.238	0.238	0.0	94.4	0.0			

Station: Seldovia, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.062	0.147	0.134	0.0	82.1	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	0.063	0.148	0.134	0.0	81.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	0.062	0.149	0.136	0.0	81.2	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.065	0.149	0.135	0.0	81.2	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.060	0.144	0.132	0.0	82.1	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.068	0.149	0.133	0.0	81.2	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.064	0.151	0.138	0.0	80.2	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.061	0.148	0.136	0.0	82.7	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	0.060	0.148	0.136	0.0	82.6	0.9	0.0	0.0	0.92
H54-h54	20	cm	24h	108	0.066	0.151	0.137	0.0	81.5	0.9	0.0	0.0	0.93
H60-h60	20	cm	24h	107	0.053	0.149	0.140	0.0	84.1	0.9	0.0	0.0	0.93
H66-h66	20	cm	24h	106	0.059	0.148	0.137	0.0	83.0	0.9	0.0	0.0	0.94
H72-h72	20	cm	24h	105	0.072	0.155	0.138	0.0	82.9	1.9	0.0	0.0	1.90
H78-h78	20	cm	24h	104	0.064	0.151	0.137	0.0	83.7	1.0	0.0	0.0	0.96
H84-h84	20	cm	24h	103	0.061	0.146	0.134	0.0	81.6	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	0.062	0.147	0.134	0.0	84.3	1.0	0.0	0.0	0.98
H96-h96	20	cm	24h	101	0.053	0.143	0.134	0.0	82.2	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	0.012	0.133	0.134	0.0	87.0	0.0			
ALW-alw	20	cm	24h	53	0.214	0.243	0.116	0.0	43.4	3.8			
THW-thw	0.50	h	25h	54	0.006	0.157	0.158	0.0	98.1	0.0			
TLW-tlw	0.50	h	25h	53	0.141	0.229	0.182	0.0	90.6	0.0			

Station: Nikiski, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.230	0.276	0.154	0.0	45.5	15.2	0.0	12.0	11.61
H06-h06	20	cm	24h	112	0.229	0.275	0.153	0.0	45.5	15.2	0.0	12.0	11.61
H12-h12	20	cm	24h	112	0.227	0.274	0.155	0.0	47.3	15.2	0.0	6.0	11.61
H18-h18	20	cm	24h	112	0.226	0.273	0.155	0.0	48.2	16.1	0.0	18.0	12.50
H24-h24	20	cm	24h	112	0.227	0.273	0.153	0.0	45.5	15.2	0.0	12.0	10.71
H30-h30	20	cm	24h	112	0.229	0.275	0.153	0.0	44.6	14.3	0.0	12.0	10.71
H36-h36	20	cm	24h	111	0.229	0.275	0.153	0.0	47.7	15.3	0.0	12.0	10.81
H42-h42	20	cm	24h	110	0.227	0.273	0.153	0.0	46.4	14.5	0.0	12.0	10.91
H48-h48	20	cm	24h	109	0.234	0.279	0.153	0.0	45.0	14.7	0.0	12.0	11.01
H54-h54	20	cm	24h	108	0.236	0.281	0.152	0.0	46.3	15.7	0.0	18.0	12.96
H60-h60	20	cm	24h	107	0.236	0.282	0.156	0.0	46.7	17.8	0.0	18.0	13.08
H66-h66	20	cm	24h	106	0.251	0.293	0.152	0.0	38.7	17.0	0.0	12.0	13.21
H72-h72	20	cm	24h	105	0.252	0.292	0.149	0.0	40.0	19.0	0.0	12.0	15.24
H78-h78	20	cm	24h	104	0.243	0.287	0.154	0.0	44.2	20.2	0.0	18.0	16.35
H84-h84	20	cm	24h	103	0.251	0.294	0.153	0.0	40.8	17.5	0.0	12.0	14.56
H90-h90	20	cm	24h	102	0.242	0.287	0.155	0.0	43.1	16.7	0.0	6.0	13.73
H96-h96	20	cm	24h	101	0.249	0.295	0.158	0.0	40.6	18.8	0.0	12.0	14.85
AHW-ahw	20	cm	24h	54	0.201	0.244	0.141	0.0	51.9	9.3			
ALW-alw	20	cm	24h	54	0.403	0.432	0.157	0.0	11.1	53.7			
THW-thw	0.50	h	25h	54	-0.009	0.134	0.135	0.0	100.0	0.0			
TLW-tlw	0.50	h	25h	54	0.139	0.200	0.145	0.0	98.1	0.0			

Station: Anchorage, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.345	0.508	0.375	0.0	47.3	36.6	0.0	12.0	21.43
H06-h06	20	cm	24h	112	0.350	0.516	0.381	0.0	48.2	37.5	0.0	12.0	21.43
H12-h12	20	cm	24h	112	0.349	0.514	0.380	0.0	48.2	37.5	0.0	12.0	21.43
H18-h18	20	cm	24h	112	0.355	0.519	0.380	0.0	48.2	37.5	0.0	6.0	21.43
H24-h24	20	cm	24h	112	0.358	0.519	0.378	0.0	48.2	39.3	0.0	12.0	22.32
H30-h30	20	cm	24h	112	0.354	0.519	0.382	0.0	49.1	37.5	0.0	6.0	20.54
H36-h36	20	cm	24h	111	0.358	0.520	0.379	0.0	47.7	36.9	0.0	6.0	20.72
H42-h42	20	cm	24h	110	0.355	0.522	0.384	0.0	48.2	37.3	0.0	6.0	21.82
H48-h48	20	cm	24h	109	0.351	0.518	0.383	0.0	46.8	37.6	0.0	6.0	22.94
H54-h54	20	cm	24h	108	0.350	0.518	0.384	0.0	46.3	37.0	0.0	6.0	23.15
H60-h60	20	cm	24h	107	0.351	0.520	0.386	0.0	46.7	38.3	0.0	12.0	24.30
H66-h66	20	cm	24h	106	0.342	0.518	0.391	0.0	45.3	36.8	0.0	6.0	23.58
H72-h72	20	cm	24h	105	0.337	0.519	0.397	0.0	48.6	36.2	0.0	12.0	22.86
H78-h78	20	cm	24h	104	0.345	0.525	0.397	0.0	45.2	37.5	0.0	12.0	23.08
H84-h84	20	cm	24h	103	0.335	0.518	0.398	0.0	47.6	35.0	0.0	6.0	22.33
H90-h90	20	cm	24h	102	0.328	0.515	0.398	0.0	50.0	34.3	0.0	6.0	21.57
H96-h96	20	cm	24h	101	0.333	0.514	0.394	0.0	46.5	35.6	0.0	12.0	21.78
AHW-ahw	20	cm	24h	54	0.015	0.169	0.170	1.9	74.1	0.0			
ALW-alw	20	cm	24h	54	0.995	1.019	0.222	0.0	0.0	100.0			
THW-thw	0.50	h	25h	54	0.022	0.153	0.153	0.0	98.1	0.0			
TLW-tlw	0.50	h	25h	54	0.169	0.217	0.138	0.0	98.1	0.0			

Station: Kodiak Island, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.067	0.108	0.086	0.0	92.9	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	0.066	0.107	0.085	0.0	93.8	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	0.066	0.107	0.085	0.0	93.8	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.067	0.108	0.085	0.0	93.8	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.063	0.104	0.084	0.0	95.5	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.064	0.104	0.082	0.0	96.4	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.063	0.105	0.084	0.0	93.7	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.065	0.104	0.082	0.0	95.5	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	0.064	0.105	0.083	0.0	94.5	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	0.065	0.105	0.083	0.0	95.4	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	0.062	0.106	0.086	0.0	94.4	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	0.061	0.106	0.087	0.0	94.3	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	0.061	0.105	0.086	0.0	94.3	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	0.061	0.105	0.085	0.0	95.2	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	0.059	0.103	0.085	0.0	94.2	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	0.063	0.105	0.084	0.0	94.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	0.062	0.105	0.085	0.0	95.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	0.005	0.089	0.090	0.0	96.3	0.0			
ALW-alw	20	cm	24h	54	0.141	0.154	0.061	0.0	79.6	0.0			
THW-thw	0.50	h	25h	54	-0.083	0.363	0.357	0.0	81.5	1.9			
TLW-tlw	0.50	h	25h	54	0.000	0.334	0.338	0.0	85.2	0.0			

Station: Alitak, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.029	0.105	0.102	0.0	92.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	0.028	0.104	0.101	0.0	92.9	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	0.028	0.105	0.102	0.0	92.9	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.030	0.105	0.101	0.0	92.9	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.024	0.104	0.101	0.0	93.8	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.026	0.104	0.101	0.0	94.6	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.022	0.105	0.103	0.0	92.8	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.020	0.102	0.101	0.0	93.6	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	0.012	0.104	0.104	0.0	96.3	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	0.014	0.105	0.104	0.0	94.4	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	0.003	0.108	0.109	0.0	96.3	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	0.001	0.107	0.107	0.0	95.3	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	0.005	0.104	0.104	0.0	95.2	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	0.006	0.103	0.103	0.0	95.2	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	0.001	0.102	0.103	0.0	95.1	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	0.008	0.103	0.103	0.0	95.1	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	0.001	0.103	0.104	0.0	96.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.021	0.088	0.087	0.0	98.1	0.0			
ALW-alw	20	cm	24h	54	0.029	0.087	0.083	0.0	96.3	0.0			
THW-thw	0.50	h	25h	54	-0.022	0.224	0.225	0.0	96.3	0.0			
TLW-tlw	0.50	h	25h	54	-0.117	0.215	0.182	0.0	98.1	0.0			

Station: King Cove, AK
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.055	0.089	0.070	0.0	97.3	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	0.054	0.087	0.068	0.0	98.2	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	0.050	0.086	0.070	0.0	98.2	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.050	0.086	0.070	0.0	97.3	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.049	0.082	0.067	0.0	99.1	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.052	0.086	0.069	0.0	99.1	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.052	0.086	0.069	0.0	99.1	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.049	0.083	0.068	0.0	99.1	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	0.044	0.080	0.067	0.0	99.1	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	0.050	0.083	0.066	0.0	98.1	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	0.048	0.083	0.069	0.0	98.1	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	0.049	0.083	0.068	0.0	98.1	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	0.051	0.082	0.065	0.0	99.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	0.045	0.078	0.063	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	0.040	0.077	0.067	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	0.044	0.079	0.066	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	0.043	0.083	0.071	0.0	99.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	53	0.041	0.072	0.060	0.0	98.1	0.0			
ALW-alw	20	cm	24h	53	0.043	0.072	0.059	0.0	100.0	0.0			
THW-thw	0.50	h	25h	53	-0.230	0.462	0.405	1.9	69.8	0.0			
TLW-tlw	0.50	h	25h	53	-0.126	0.395	0.378	3.8	83.0	0.0			

Station: Nawiliwili, HI
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.013	0.053	0.051	0.0	100.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.014	0.053	0.052	0.0	100.0	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.014	0.053	0.051	0.0	100.0	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.015	0.054	0.052	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.015	0.054	0.052	0.0	100.0	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.016	0.055	0.053	0.0	100.0	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.016	0.055	0.052	0.0	100.0	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.018	0.055	0.052	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.018	0.056	0.053	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.019	0.056	0.053	0.0	100.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.019	0.055	0.052	0.0	100.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.020	0.055	0.052	0.0	100.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.018	0.055	0.052	0.0	100.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.021	0.056	0.052	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.023	0.057	0.053	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.025	0.056	0.051	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.024	0.056	0.051	0.0	100.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	0.022	0.050	0.045	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.040	0.051	0.032	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.265	0.585	0.527	11.1	55.6	0.0			
TLW-tlw	0.50	h	25h	54	-0.039	0.500	0.503	3.7	75.9	1.9			

Station: Honolulu, HI
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.019	0.079	0.078	0.0	100.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	0.016	0.080	0.079	0.0	100.0	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	0.014	0.081	0.080	0.0	100.0	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.012	0.081	0.080	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.011	0.082	0.082	0.0	100.0	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.008	0.083	0.083	0.0	100.0	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.009	0.082	0.082	0.0	100.0	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.006	0.082	0.082	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	0.005	0.082	0.082	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	0.003	0.081	0.082	0.0	100.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	0.003	0.081	0.081	0.0	100.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	0.001	0.079	0.079	0.0	100.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	0.002	0.079	0.079	0.0	100.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.002	0.078	0.079	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.002	0.079	0.079	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.006	0.077	0.077	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.006	0.077	0.078	0.0	100.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	0.054	0.098	0.082	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.014	0.061	0.060	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.143	0.575	0.562	3.7	59.3	5.6			
TLW-tlw	0.50	h	25h	54	-0.011	0.503	0.508	3.7	68.5	0.0			

Station: Mokuoloe, HI
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	0.013	0.065	0.064	0.0	100.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	0.012	0.065	0.064	0.0	100.0	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	0.010	0.067	0.066	0.0	100.0	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	0.007	0.067	0.067	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	0.006	0.068	0.068	0.0	100.0	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	0.006	0.068	0.068	0.0	100.0	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	0.005	0.067	0.067	0.0	100.0	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	0.003	0.067	0.067	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	0.002	0.067	0.067	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	0.001	0.066	0.067	0.0	100.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	0.000	0.066	0.066	0.0	100.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.001	0.065	0.065	0.0	100.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	0.000	0.065	0.065	0.0	100.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.003	0.065	0.065	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.005	0.065	0.066	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.007	0.064	0.064	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.007	0.065	0.065	0.0	100.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	50	0.022	0.066	0.062	0.0	100.0	0.0			
ALW-alw	20	cm	24h	50	0.005	0.052	0.053	0.0	100.0	0.0			
THW-thw	0.50	h	25h	50	0.074	0.628	0.630	4.0	50.0	8.0			
TLW-tlw	0.50	h	25h	50	-0.050	0.521	0.524	6.0	78.0	2.0			

Station: Kahului, Kahului Harbor, HI
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.005	0.058	0.058	0.0	100.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.006	0.058	0.058	0.0	100.0	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.007	0.059	0.059	0.0	100.0	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.009	0.059	0.058	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.010	0.060	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.010	0.061	0.061	0.0	100.0	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.011	0.061	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.013	0.061	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.013	0.062	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.014	0.061	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.014	0.061	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.013	0.060	0.059	0.0	100.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.012	0.060	0.059	0.0	100.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.014	0.061	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.016	0.062	0.060	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.017	0.062	0.059	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.016	0.062	0.060	0.0	100.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	52	-0.004	0.057	0.058	0.0	100.0	0.0			
ALW-alw	20	cm	24h	52	0.010	0.047	0.046	0.0	100.0	0.0			
THW-thw	0.50	h	25h	52	0.175	0.545	0.521	3.8	67.3	7.7			
TLW-tlw	0.50	h	25h	52	0.165	0.551	0.531	0.0	59.6	7.7			

Station: Kawaihae, HI
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.031	0.093	0.089	0.0	100.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.033	0.094	0.088	0.0	100.0	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.035	0.095	0.089	0.0	100.0	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.037	0.096	0.089	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.039	0.097	0.090	0.0	100.0	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.040	0.098	0.090	0.0	100.0	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.040	0.098	0.089	0.0	100.0	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.043	0.099	0.090	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.043	0.099	0.090	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.044	0.100	0.090	0.0	100.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.044	0.099	0.090	0.0	100.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.045	0.099	0.089	0.0	100.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.043	0.099	0.089	0.0	100.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.046	0.100	0.089	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.048	0.100	0.088	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.050	0.100	0.087	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.050	0.100	0.087	0.0	100.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.014	0.096	0.096	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.043	0.088	0.077	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.213	0.549	0.510	3.7	66.7	1.9			
TLW-tlw	0.50	h	25h	54	-0.039	0.382	0.384	0.0	77.8	0.0			

Station: Hilo, Hilo Bay, Kuhio Bay, HI
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.006	0.081	0.081	0.0	100.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.007	0.081	0.081	0.0	100.0	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.010	0.082	0.082	0.0	100.0	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.012	0.082	0.082	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.013	0.082	0.082	0.0	100.0	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.015	0.082	0.081	0.0	100.0	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.015	0.082	0.080	0.0	100.0	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.018	0.082	0.081	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.018	0.082	0.081	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.020	0.082	0.079	0.0	100.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.020	0.081	0.079	0.0	100.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.021	0.080	0.078	0.0	100.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.020	0.080	0.078	0.0	100.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.023	0.081	0.078	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.024	0.081	0.078	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.026	0.082	0.077	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.026	0.082	0.078	0.0	100.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	0.027	0.083	0.079	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.031	0.071	0.064	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	-0.133	0.390	0.370	1.9	77.8	0.0			
TLW-tlw	0.50	h	25h	54	-0.041	0.508	0.512	3.7	68.5	1.9			

Station: Sand Island, Midway Islands
 Observed data time period from: / 5/ 6/2014 to / 6/ 8/2014 with gaps of 0.42 days
 Data gap is filled using SVD method
 Data are not filtered

VARIABLE	X	N	IMAX	SM	RMSE	SD	NOF	CF	POF	MDNO	MDPO	WOF	SKILL
CRITERION	-	-	-	-	-	-	<1%	>90%	<1%	<N	<N	<.5%	
SCENARIO: SEMI-OPERATIONAL FORECAST													
H00-h00	20	cm	24h	112	-0.062	0.076	0.044	0.0	100.0	0.0	0.0	0.0	0.00
H06-h06	20	cm	24h	112	-0.062	0.076	0.043	0.0	100.0	0.0	0.0	0.0	0.00
H12-h12	20	cm	24h	112	-0.063	0.076	0.043	0.0	100.0	0.0	0.0	0.0	0.00
H18-h18	20	cm	24h	112	-0.062	0.076	0.043	0.0	100.0	0.0	0.0	0.0	0.00
H24-h24	20	cm	24h	112	-0.062	0.076	0.043	0.0	100.0	0.0	0.0	0.0	0.00
H30-h30	20	cm	24h	112	-0.062	0.076	0.043	0.0	100.0	0.0	0.0	0.0	0.00
H36-h36	20	cm	24h	111	-0.063	0.075	0.042	0.0	100.0	0.0	0.0	0.0	0.00
H42-h42	20	cm	24h	110	-0.064	0.076	0.042	0.0	100.0	0.0	0.0	0.0	0.00
H48-h48	20	cm	24h	109	-0.065	0.077	0.041	0.0	100.0	0.0	0.0	0.0	0.00
H54-h54	20	cm	24h	108	-0.066	0.077	0.041	0.0	100.0	0.0	0.0	0.0	0.00
H60-h60	20	cm	24h	107	-0.068	0.079	0.041	0.0	100.0	0.0	0.0	0.0	0.00
H66-h66	20	cm	24h	106	-0.068	0.079	0.041	0.0	100.0	0.0	0.0	0.0	0.00
H72-h72	20	cm	24h	105	-0.069	0.080	0.040	0.0	100.0	0.0	0.0	0.0	0.00
H78-h78	20	cm	24h	104	-0.071	0.081	0.039	0.0	100.0	0.0	0.0	0.0	0.00
H84-h84	20	cm	24h	103	-0.074	0.083	0.038	0.0	100.0	0.0	0.0	0.0	0.00
H90-h90	20	cm	24h	102	-0.075	0.084	0.037	0.0	100.0	0.0	0.0	0.0	0.00
H96-h96	20	cm	24h	101	-0.077	0.085	0.036	0.0	100.0	0.0	0.0	0.0	0.00
AHW-ahw	20	cm	24h	54	-0.094	0.102	0.039	0.0	100.0	0.0			
ALW-alw	20	cm	24h	54	-0.028	0.051	0.043	0.0	100.0	0.0			
THW-thw	0.50	h	25h	54	0.026	0.470	0.474	0.0	72.2	1.9			
TLW-tlw	0.50	h	25h	54	0.087	0.536	0.533	1.9	66.7	3.7			