JOA Surveys, LLC
SURVEYING GPS TIDES HYDROGRAPHY

2000 E. Dowling Road, Suite 10
Anchorage, AK 99507
[redacted]
www.joasurveys.com

TO: Bryce Gordon
Manager, Little St. James

FROM: Mike Zieserl
JOA Surveys
[redacted]
www.joasurveys.com

DATE: March 15, 2011

RE: NOAA tide gauge

The National Oceanic and Atmospheric Administration (NOAA) will be conducting a sea level and tide study this summer in the Virgin Islands and Puerto Rico. The data collected will be used to update nautical charts and tide predictions. With your permission, NOAA would like a temporary tide gauge installed on the Little St. James dock to support this project.

The tide gauge would operate from April until September 2011. JOA Surveys is a NOAA contractor, and we would install and remove the equipment. We would coordinate with you to make sure the equipment installation is acceptable and to minimize any intrusion.

I have included photos of a typical tide gauge installation. There is also a permission form at the end of this letter. Please feel free to contact me if you have any questions.

My co-worker Cody Mayfield will be visiting all of the locations where NOAA would like tide gauges installed later this week, in order to assess their feasibility. Could we arrange this visit with you?

Basically he would just like to see the dock, take some measurements and pictures, and talk to you about how we might install the equipment in an manner that would be acceptable to you. This visit wouldn't imply permission to install the tide gauge.

Sincerely,

Mike Zieserl

Tide Gauge Description

The tide gauge electronics would be inside of a weather proof enclosure mounted on the dock or land. The gauge would be powered by 12V battery and solar panel. Data would be transmitted hourly by a satellite radio and will be available on the internet.

The water level sensor would be inside of a PVC pipe attached to the side of the dock. It is an acoustic sensor that makes a faint clicking sound and measures the time for the acoustic wave to return after bouncing off the water surface.

The tide gauge sensor is in the 4" white PVC pipe that extends down to the water. The electronics are in the white enclosure on an aluminum stand. The aluminum pipe mast has a solar panel and a GOES satellite antenna. Tide data is transmitted every hour, and would be available on line at: http://www.tidesandcurrents.noaa.gov

The tide gauge electronics inside the enclosure include a data logger, satellite radio and battery.

Tidal Bench Mark disk.

We would set 5 tidal bench marks on land nearby in rock or concrete to serve as permanent markers for any future projects that required vertical heights above sea level. When the data collection period is complete we will remove everything except for the tidal bench marks.

Permission to Install Temporary Tide Gauge

Purpose: The installation of a temporary tide station at Lovango Cay in the US Virgin Islands. The tide station will support a NOAA project to study tides and sea level.

Company: Work will be performed by:

JOA Surveys, LLC (JOA)
2000 E Dowling Rd, #10
Anchorage, Alaska 99507
[redacted]
ATTN: Mike Zieserl ([redacted])

Dates: Installation is planned for April 2011 and removal of equipment is planned in September 2011.

Personnel: Mike Zieserl or Cody Mayfield from JOA will be in charge of the field work. A field crew of about 3 people will install and remove the equipment. Installation or removal would take about 3 days.

Installation: The NOAA tide gauge electronics will be housed in a clean weather proof enclosure. The sensor measures the sea level height by sending an acoustic wave down through a PVC pipe attached to the side of the dock to the water surface. The system is battery powered with solar panels for recharging. JOA will install 5 tidal bench marks disks in rock or concrete as permanent marks of the tidal elevation in this area. All other equipment will be removed at the end of the job.

By signing this document the property owner agrees to permit JOA Surveys to perform the above noted work.

JOA Surveys Signature	Date	Signature for the Owner	Date
	March 9, 2011		
Michael Zieserl			
JOA Surveys Printed Name		Printed Name	
Partner			
Title		Title	