From: Wendy Wiltse
To: Charles D Hunt
Subject: Re: Fw: Lahaina -- (hot potato)
Date: 07/28/2008 01:43 PM

Wow! Good work, Chip. I look forward to hearing the whole story! Did you find wastewater at both Lahaina and Kihei?

Wendy

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▼ Charles D Hunt <cdhunt@usgs.gov>

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07/25/2008 10:13 PM

To Wendy Wiltse/R9/USEPA/US@EPA
cc watson.okubo@doh.hawaii.gov, Stephen S Anthony <santhony@usgs.gov>, Gordon W Tribble <gtribble@usgs.gov>
Subject Re: Fw: Lahaina -- (hot potato)

Hi, Wendy, yes very soon - perhaps as early as second week of August. Here are developments and constraints:

1. Briefed Watson informally in June when we had instrument-trolling and fabric-brighteners results mapped up. Successful in finding localized seeps and springs as fresh as 30-50% freshwater (in marine water-column samples, a couple with inverted funnel right over bubbling seep and up into bottle). And succesful with hi brighteners readings at those seeps.

2. Have received all chemistry data except 15N in water and algal tissue. This includes nutrients, pharmaceuticals, waste-indicator compounds (personal-care products).

3. Definite wastewater signature at several samples, in the form of hi N & P, hi brighteners, and detectable carbamazepine, sulfamethoxazole, caffeine, benadryl, 2 musk fragrances, and a couple fire retardants. And these are in marine water-column samples, albeit some right over prominent seeps.

4. **In summary, succesful wastewater detection in nearshore**

waters, which I've conveyed to Watson and within our field team. However, please keep confidential to the broader community until we've validated results and peer-reviewed an official briefing presentation for DOH, EPA, and stakeholders. I can arrange the web / phone hookup again for benefit of EPA San Fran.

I'm just finishing 1st of 2 field weeks at Enchanted Lakes w/ Dave Penn for his TMDL / watershed sanitary survey, so I'm fully booked week of July 28. After that I can work up a briefing, and hopefully 15N results will be in by then.

Chip Hunt --USGS-- 808-587-2414 cdhunt@usgs.gov

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07/25/2008 04:37 PM

To cdhunt@usgs.gov

cc watson.okubo@doh.hawaii.gov

Subject Fw: Lahaina -- (hot potato)

Hi Chip: When do you think you will be able to discuss results from your wading surveys on Maui? I am hearing rumors about your findings and would prefer to get the story from you!

Wendy

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----- Forwarded by Wendy Wiltse/R9/USEPA/US on 07/25/2008 07:33 PM -----

Charles D Hunt <cdhunt@usgs.gov>

05/01/2008 03:11 PM

To Wendy Wiltse/R9/USEPA/US@EPA

cc Stephen S Anthony <santhony@usgs.gov>

Subject Re: Lahaina -- (hot potato)

Yes, we're headed into the field next week May 5 for instrumental wading surveys, 2 days each at both Lahaina and Kihei.

And yes, I'll check with Steve Anthony on how much of the immediate results we're able to share the following week **(Steve, see red in Wendy's email below)**, though they'll assuredly be stamped "Provisional - Subject to Revision, and Not to Be Released or Redistributed", with final peer-reviewed results being in the written report we're scheduled to be drafting into FY09. Most of what we'll be collecting will be instrumental meter readings and, as such, will be raw data that are not likely to change much in final form.

Steve? Would you want to weigh in? I don't want to over-promise, I think delivery is tractable technically, but possibly not policy-wise (if we'd need at least one level of peer review before releasing provisional data; though even there, we could convene a brown-bag seminar Mon May 12 for peer review).

We'll be measuring:

1. Wading transects, w/ Hydrolab multiparameter sonde recording every 30 sec for:
   Temperature - degrees C
   Salinity - ppt
   Specific Conductance - uS/cm
   pH
   Turbidity - NTU
   Barometric Pressure - mm Hg
   Dissolved Oxygen - mg/L
   Dissolved Oxygen Saturation - percent
   Chlorophyll a - ug/L (uncalibrated, used only for relative magnitude)
   Chlorophyll a - volts (raw sensor reading, also used only for relative magnitude)
   Latitude/Longitude - from GPS

2. Point water-column grab samples for:
   Optical brightener fluorescence - meter reading (uncalibrated, used only for relative magnitude)
   Latitude/Longitude - from GPS

3. Point samples of benthic algae (Ulva mainly, but possibly also Hypnea)
   Alge sample, send to labs for 15N in tissue and possibly N concentration as well
   Latitude/Longitude - from GPS
   Temperature, salinity - from small salinity meter

Items 1 and 2 we'll be trying to process into ArcMap day by day (so we can see what we've got), or May 12-13 if we can't quite accomplish that, although we've just test-run the file-editing process and are feeling confident.

Uncalibrated parameters (Chlorophyll and Brighteners) will be measured with meters

kept at factory-calibrated settings because it's difficult and/or costly to come up with prepared standards or field data to establish a calibration curve.

Item 3 requires sample prep and lab analysis lead time so results not for a month or months. Megan Dailer will be collecting and prepping the samples and will give me sample splits of ground powder to send to USGS Isotope Lab for 15N. Megan and her group will probably also run 15N and N concentration at UH labs.

Later surveys will collect pore-water samples (and possibly some water -column samples) and send off for lab analysis nutrients and 15N, and we'll measure items 1 and 2 on those as well. Again, lab results likely to take a month or months.

With all that said, Wendy, I think we may have a bit of apprehension that provisional data would be used so soon to factor into management and permitting decisions. What answers might you expect in our data that would influence your permitting discussions ? (answers you don't already know, that is). What questions are you posing to yourself mentally? Does effluent flow to the ocean? Can we detect it? -- would those be enough to shift your permitting decisions? We're not regulators or resource managers here at USGS, but I'm just trying to anticipate how the data may be used since we're being asked for it quite early.

Ans: yes and maybe. Answer 2 should firm up with the surveys.

Thanks,

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Wiltse.Wendy@epamail.epa.gov

05/01/2008 11:03 AM

To cdhunt@usgs.gov
cc
Subject Lahaina

Hi Chip:

EPA is meeting with DOH the week of May12 to discuss reissuance of the Lahaina WWTP underground injection permit. Are you still planning field work for next week and **might we have a preview of your findings right away???** I'd hope we could discuss your findings in our meetings with DOH.

Wendy

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