

144811.2.1

From: "Debbie Payton" <debbie.payton@noaa.gov>
 To: chris.barker@noaa.gov, bill.lehr@noaa.gov
 Cc: glen.watabayashi@noaa.gov, debbie.payton@noaa.gov
 Re:
 Date: Sun, 25 Apr 2010 06:43:29 PM
 Subject: Re: Leak rate guestimate
 Attachments:

Two feet is the reported diameter in the release video didn't.

----- Original Message -----

From: Chris Barker
 To: Bill.Lehr@noaa.gov
 Cc: Glen (Bushy) Watabayashi ; Debbie Payton ; Debra Simecek-Beatty
 Sent: Sun Apr 25 17:56:07 2010
 Subject: Re: Leak rate guestimate

Bill.Lehr@noaa.gov wrote:
 > I don't think it is quite that bad Chris. First, I think that the 20
 > in pipe actually has a pipe in a pipe, so the effective diameter
 > through the hole is smaller and the 0.6 standard adjustment factor may
 > be too big. Plus, there is a lot of gas mixed in. I think the BP
 > estimate of 6,000 bbl/day may be reasonable, if slightly low.

Bushy mostly did this, but we went off the description of a "2 foot
 hole" -- I don't know how you get a 2 foot hole in a 20" pipe, but there
 you go.

If we make it half the size, the that's 1/4 the area, and our vertical
 scale (which we used for velocity) is 1/2 different, so 1/8 the volume rate:

48,000 / 8 = 6,000 bbls a day

and I didn't even plan that!

-Chris

> ----- Original Message -----

> From: Chris Barker
 > Date: Sunday, April 25, 2010 1:20 pm
 > Subject: Re: Leak rate guestimate
 > To: "Glen (Bushy) Watabayashi"
 > Cc: Debbie Payton , Debra Simecek-Beatty , Bill Lehr

>> Glen (Bushy) Watabayashi wrote:
 >>> OK I looked at the video clip with Chris.
 >>>> We figure that it's coming out of the 2 foot diameter hole at about
 >> 1

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 > To: "Glen (Bushy) Watabayashi"
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 >> 1

foot * 1 foot * 1 ft/sec =

has a discharge unit. It

but I have tested NUCOS

>>> foot per second so...
 >>>> pi * r * r * 1 ft per second = 3.14 * 1 foot * 1 foot * 1 ft/sec =
 >>> 3.14
 >>>> cubic feet / sec
 >>> ...
 >>> = 64,426 bbls per day
 >>>> NUCOS (my Unit converter for Oil Spills) has a discharge unit. It
 >>> gives me:
 >>>> 3.14 ft^3/s = 48,320 bbls/day
 >>>> I haven't checked each step of your math, but I have tested NUCOS
 >>>> pretty
 >>>> completely.
 >>>> -CHB
 >>>>