# South River Science Team Bimonthly Meeting Summary: August 10, 2004

# Agenda South River Science Team August 10, 2004

# DEQ Office Harrisonburg, VA

0.00			
9:00	Welcome, Introductions	Don Kain	
9:15	DuPont Stormwater Update	Mike Sherrier	
9:45	Final Summary of Va. Tech Fish Food Habits Study	Don Orth	
10:15	Break		
10:30	Update / Status on Clam Studies	Doug Graber-Neufeld	
10:45	Shake & Bake Update	Rob Mason (by phone)	
11:15	Floodplain results	Dick Jensen / Annette Guiseppi- Elie	
12:00	Lunch		
1:00	Communications / Newsletter / Mercury Brochure / Signs / Publications & presentations (SETAC)	Ralph / Don	
1:30	Other topics, updates, etc.	All	
2:00	Hypotheses / What we know and what we don't know	Ralph, Don, All	
2:30	Agenda / Details for November Expert Panel Meeting (Nov 9 & 10, 2004)	All	
	Adjourn		

#### Welcome and introductions. Don Kain

Attending via phone: Mike Jacobi, USEPA; Erin Mac, DuPont; Rob Mason, U. MD List of Attendees is listed below in Attachment 1, page 6.

#### Stormwater Sampling at DuPont. Ralph Stahl (for Mike Sherrier)

- Ralph gave a brief history, including data from DEQ and Ralph Turner's detection of Hg in 001 outfall at ~10-30 ng/L concentrations
- Discovery resulted in retest of stormwater on plant at lower detection limits, to determine overall contribution to South River during storm events
- Data collection not yet implemented for Phase II of the study, but close to starting; ISCO automatic samplers have been purchased, and are in the process of being installed.
- Hope to have some data by Expert Panel meeting in November 2004

#### Clam Update. Doug Graber Neufeld

- Already performed a lot of clam transplants; have used controls to check for differences in uptake resulting from caging- results indicate no effect on uptake from cages
- Growth measurements indicate that clams increase shell length mostly in late spring (important info. for considering "growth dilution" effects)
- Past observations suggests that many clams die off around July
- Will be collecting cages near DuPont. These were placed in May, and will be collected Aug. 28
- Another set of cages placed near Basic Park/Hopeman Pkwy in July; will be collected in Oct. These are also near the Waynesboro WWTP, some eroding river banks, and also near an ox-bow that has relatively high MeHg levels
- Final set deployed near Dooms in July, to be collected in Oct.
- Methyl merc. data collected to date indicates that clam Hg is about 40% MeHg
- Ralph Turner suspects that clans exposed during warmer weather may have greater MeHg accumulation (more methylation occurring during warm weather)
- Doug and Tom hope to run some MeHg analyses on clams in the Dooms cages
- Some help will be needed with Clam Shucking around Aug. 31 (DEQ staff to assist)
- Ralph Stahl inquired as to when a manuscript might be forthcoming; Doug's response was "fairly soon"
- During next year's DEQ 100 year plan fish monitoring, plan to simultaneously collect clams w/ fish, and also perform collections at some sites in spring, summer, and fall
- Doug suggested using Forestry Station, but may not be enough fish to sample (prefer to sample smallmouth bass)
- Ralph T. suggested using a needle biopsy method, but Don Orth observed that there's greater variability due to sex, than to seasonality; therefore, without sex data, seasonal

variation is obscured. Steve Reeser to investigate whether sex can be determined by examining tissue biopsies (chromosomes, genetic, etc.).

- DGIF formulating plans to do a biomass estimate for selected sites on South River; involves exhaustive sampling. If individuals are biopsied in spring and summer, and are marked with an identifying tag, and if there are good chances that many of these will be recaptured in a biomass survey in fall, then wouldn't be necessary to perform sex ID at biopsy; just determine after final biomass collection.
- Refer to Doug's presentation slides in the Presentations folder.

### Final Summary of Va. Tech Fish Food Habits Study. Don Orth (for Greg Murphy)

- Differences detected between rivers, sexes and seasons. These are expected to drive some of the planned sampling and analytical events described in the above section
- Terrestrial insects may provide transport of Hg from soil back to fish (June beetles in Basic park ~10 ppm Hg)
- Hg in gastropoda ~ 40% (similar to results in shucked *Corbicula*)
- BASS (Bioaccumulation and Aquatic System Simulation) model might be useful as a river management tool (used in this study). In this study, food and gill uptake were included in model.
- Of necessity, many assumptions were made to flesh out model
- In smallmouth, differences between sexes and seasons apparent. Difference due to sex greater than due to season; 10-20% higher in females, 14-21% higher in spring than in fall w/in sexes
- One caveat mentioned; study essentially performed during period of extreme drought
- Model suggests required sediment Hg reduction of 75% may lower Hg in small fish to below 1ppm (but not the 0.5 ppm level which triggers consumption advisory limiting consumption).
- Ralph Turner obs'd.; difficult to make predictions based on sediment concentrations on the basis of sediment heterogeneity and difficulty in standardizing sediment samples (don't usually get a good correlation between MeHg in sediment and MeHg in invertebrates).
- Refer to Presentations folder.

#### Shake and Bake. Rob Mason

- Rob wants to rerun, due to observation of reduction in amount of MeHg, w/ treatment which underwent greatest amount of stirring/suspension
- TSS values were higher for soil than for sediment
- Results of ambient river water from Harriston (~17 miles downstream of DuPont footbridge; sampled in Spring) was 0.74 ng/L Dissolved MeHg; 1.5 ng/L total MeHg at Harriston
- Will provide organic matter measurements for sediments and soils
- Doesn't appear to be a lot of Hg fluxing from soils and sediments under treatment
- Results of one sample upstream of DuPont showed high Hg. Dean Cocking suggested that if the sample was taken from an area w/ high deposition of leaves, that

the leaves might have been covered w/ Hg from atmospheric sources. Dick Jensen said those samples were in fact taken from leafy sediments; estimated 90% leaf litter

- Don K suggested that the area behind McGaheysville dam be sampled prior to it's removal; question was brought up as to what the effectiveness of remediation might be if mercury is removed from the river, but is either disturbed from deep sediment left unremediated, or if Hg washes in from floodplains
- Consensus was made that the McGaheysville dam should be sampled prior to demolition late this summer/early this fall
- Refer to Presentations folder.

# Floodplain Results. Dick Jensen and Annette Guiseppe-Elie

- Dick Jensen provided history of the sediment/soil study to date
- Annette plans to complete floodplain sampling at Hopeman and Alcoa later this summer/early fall, after overgrown poison ivy has dropped its leaves
- Port Republic soil Hg was about 10 ppm dry weight
- Haven't discovered any high [Hg] in river banks so far
- Dean mentioned that he'd observed high [Hg] upstream of the Genicom ditch during previous investigations
- This data should be useful to Jim Pizzuto for his hydrological study
- See Presentations folder.

# Communications. Ralph Stahl and Don Kain

- Question as to whom will replace John Rudd? Ralph Turner suggested someone associated w/ METALICUS, maybe w/a microbial background. Two suggestions were Cindy Gilmore, and Tamer Barkay (sp?).
- Tamer was previously w/ USEPA Gulf Breeze, currently at Rutgers; Erin M. will contact Tamer to discuss joining the SRST
- The possibility of producing a brochure of SRST activities was discussed
- Spanish advisory sign wording has been approved
- Decision made to only post signs on public land (unless private owners were to request them)
- John Schmerfeld asked if turtles were consumed from the river; snapping turtle tissue Hg would probably be high
- For presentation at SETAC, currently 5 abstracts prepared at this point
- Expert panel meeting to be at DEQ-VRO, Nov. 9 and 10
- If a brochure is produced, it may be useful for handing out at county fairs, etc.
- Point made that signs downstream of Front Royal not necessary, since fish consumption is already advised against, due to PCB contamination
- For the end of the first day of the expert panel meeting, Ralph Stahl suggested a press briefing, contacting many local papers, getting quotes from lots of the experts (would need to discuss w/ Bill Hayden to inquire further)
- Newsletter information moving along
- USGS working on TMDL, open invitation to SRST to get involved.

- Need to get TMDL comments in by next week (to Don)
- Ralph T. working on getting mass balance of Hg in vicinity of DuPont- try to do this by Oct., DEQ VRO might be able to help w/ ProbMon gear (flow meter), or could get USGS, DEQ surface water crew from Charlottesville

#### Working Hypotheses. Ralph Stahl

- Still deciding over whether to look at birds. May issue an RFP for bird study
- Dick and Ralph want to do a MeHg study at every river mile, looking in the oxbow near Allied Redi Mix in Waynesboro, similar to what ORNL did in 97-98.
- Dick suggested having Hydroqual work w/ SRST, as opposed to "taking the data and running with it;" this would reduce likely hood of duplicating past efforts
- May want to look more at Hg speciation in soils and sediment
- DGIF may be able to do some exhaustive sampling to determine fish biomass in some reaches (how much Hg is tied up in the fish?); could do as part of scheduled 2005 creel and angler survey, and part of the 2005 fish tissue Hg sampling
- bioavailability changes depending on sed. characteristics, but pore water MeHg should be 100% available

#### Next Meeting- Expert Panel: 9-10 November 2004 at VRO DEQ

- Expect to start at 0900, end by 1500 hrs Wednesday.
- Use Tuesday for updates; clam, soils, water column data, atmospheric work
- Ralph S. suggested starting w/ working hypotheses

# Attachment 1. List of Attendees

Don KAIN DEQ 540-574-7815 DEFAMILIZED, VIRGUNA, GON BRENDA GOGGIN DEQ 540-574-7835 Degraging DED Virguna gov Robert Great DEQ 540-574-7840 god loc virginia, gov Sold Schmeltello USW BOY/B93-6644 Virginia, gov Gary Flory DER 540-574-7840 god loc god of the Aussoph Gary Flory DER 540-574-7840 god loc god of the Aussoph Ralph Stahn Dulon 302 892 1369 making stability of usa dupont. com Ralph Stahn Dulon 302 892 1369 making stability of usa dupont. com Bary (Christmann Frisher, Store 25-5874 Michael and Alinkh. rult Brue Landeen Frisher, Store 25-5874 Michael and Alinkh. rult Brue Landeen Frisher, Store 25-5874 Michael and Alinkh. rult Brue Landeen Frisher, Store 25-5874 Michael and Ninkh. rult Brue Landeen Frisher, Store 25-5874 Michael and Ninkh. rult Brue Landeen Frisher, Store 25-5878 Drace Openeusder forum song Aller Gutschell VIII and Store 25-5878 Michael and Ninkh. rult Brue Landeen Frisher, Store 25-5878 Drace Openeusder forum song Aller Gutschell VIII and Store 25-5878 Drace Openeusder forum song Aller Gutschell VIII and Store 25-5888 Will som Jeden DUH Virgin and gov Mill Prubats Doll 540-248-4300 phulpan (Jagif State. We WS Store Reeser UDGIF 540-248-4300 phulpan (Jagif State. We WS Bill Dardam VDH Stor 547-2821 wirgins of Doll 540-000 Store to Doll for Jeden We WS Bill Van Ward DER 540-574-7861 wirgen Od Gif State. We WS Bill Van Ward DER 540-574-7861 wirgen Od Gif State. We WS Bill Van Ward DER 540-574-7861 wirgen of Delawake, NET Ralph Turner RTGe 644-815-8219 mingen of Delawake, NET Ralph Turner BIGe 540-582 rest 200 direct. Ca Tom Sienste Dela 540-564 State State Cockinwed Q jew, edu	Name	Organization	Phone No.	E-Mail Address
Brenna Gaggin DEQ 540-574-78-32 branden OPE Virginia gov Robert Great DEQ JOHN Schnedered USEN BIT (1893-66/12418) john sobmethild & Auss. john Gang Flong DEQ Sub-Stringered area in the sub-sport Gang Flong DEQ Analte Guiself-Elie De Rott Sob Strift 7840 garlio gride Guiself-Elie Dusa. dupat.com Raiph Stahn Dufont 302 892 1369 making stahling or adopt.com Raiph Stahn Dufont 302 892 1369 making stahling or adopt.com Marty (Christmassen Fr. Sher. Stor 332-786) neidelille and edu Marty (Christmassen Fr. Sher. Stor 232-786) neidelille and edu Brown Stor 322-786 bruce Cymeusater Forum song Aller Leid shert VIA de 322-7836 Million John Sce enth link rult Bruce Landeen Fr. Sher. Stor 232-7836 Million John Sce enth link rult Bruce Landeen Fr. Sher. Stor 232-7836 Million John Sce enth link rult Bruce Landeen Fr. Sher. Stor 232-7836 Million John Sce enth link rult Bruce Landeen Fr. Sher. Stor 232-7836 Million John Sce enth link rult Bruce Landeen Fr. Sher. Stor 242-7836 Million John Sce enth link rult Bruce Landeen Fr. Sher. Stor 242-7836 Million John Sce enth link rult Bruce Landeen Fr. Sher. Stor 242-7836 Million John Sce enth link rult Bruce Landeen Fr. Sher. Stor 242-7836 Million John Sce enth link rult Bruce Landeen Fr. Sher. Stor 242-7836 Million John Sce enth link rult Bruce Reser UDGIF Stor 248-4300 Million John Sce enth link rule us Bill Dadam VDH Stor 574-7851 Diver and All Galf State. Va. US Steve Reser UDGIF Stor 248-4308 Stor 576-800 Giff. State. Va. US Bill Van War of DER Stor 574-7851 Diver and All Reg. Virginia.gov Quist Stores District Stores Cosk State Store Code Store Store Store Store Stores Code Distributer of Store 578 Stores Cock Inwed C june. edu DEA Stores Distributer DER (Stor) Store 578 Cock Inwed C june. edu DEA Store Millione Stores Cock Inwed C june. edu DEA Store Stores Cock Inwed C june. edu	DON KAIN	DEQ	540-574-7815	DEKAINDDED, VIRGINIA, GON
Robert Orent DEQ 540-574-7840 reference of wighing gov John Schnellereto USFWJ 874/893-6694/2019 John Schmidhild & furs 300/ Garry Flow-7 DER 540-574-7840 garllow-92 deg. Unsinia.gov Audite Guiselli-Elie Dulad 80+383 4954 anote guisepp-elie Dusa. dupat.com Ralph Stahn Dulont 302 892 1369 rayling.stahlijr & usa. dupat.com Ralph Stahn Dulont 302 892 1369 rayling.stahlijr & usa.dupont.com Dam Guiber Method & an U 510-432-8401 nextfold Cenv.cdv Math (Christiansen Frisher, Ster 105-5877 775christe earthlink, null Brie Lundeen Frisher, Ster 105-5877 775christe earthlink, null Brie Lundeen Frisher, Ster 105-5877 775christe earthlink, null Brie Lundeen Frisher, Ster 100-322-7830 Millishelde llev UH, Vieginie, gov Math (Christiansen Frisher, Ster 100-325-7830 Millishelde llev UH, Vieginie, gov Millis Guidshell VAH 40-332-7830 Millishelde llev UH, Vieginie, gov Millis Guidshell VAH 40-332-7830 Millishelde llev UH, Vieginie, gov Millis Guidshell VAH 40-332-7830 Millishelde llev UH, Vieginie, gov Millis Parter Better UDGIF 540-248-9350 Millishelde llev UH, Vieginie, gov Multi Philders Dolff 540-248-9350 Sterte Bette ULIE. US Store Reeser UDGIF 540-248-9350 Sterte Bette ULIE. US Store Reeser UDGIF 540-248-9350 Sterte Bette ULIE. US Bill Van Wart DEA 570-344-400 Sterte Oliginia.gov Dick Stevistan Dolfer 540-248-9355 Frithurine Bettrie USA.butPont, Con Bill Van Wart DEA 570-574-7851 Internet Reg.virginia.gov Dick Stevistan Dolfer 540-248-9355 Frithurine Center Wale, NET Ralph Turner RTGe 644-835-8519 rithurine Center Virginia.gov Dick Stevistan Dolfer 540-5656 cock in usd Q jure, edu	Brenna Goggin	DEQ	540-574-7853	brangin @ DED. Virginia, gov
John Schmeltelo John Schmeltelo Jand He Guiselli-Elie Julian Johnson Jane Jane Jane Jane Jane Jane Jane Jan	Robert Crent	DEQ	540-574-7848	rabreat oder. Virginia. gov
Carry Flory DER 540-574-7840 gaflor @ deg. Virstnin. 500 Aundhe Guiseki-Elle Dulland 80+383454 annette guisep. elie Dusa. dugat.com Ralph Stahl Dulont 302 892 1369 raph.g.stahl-jr @ usa.dugat.com Dang Guden Mithel & nV 570-432-8760 neutrold @ anv.edv Mary 10h ristiansen Frishen. 540-135-5874 Machael @ earth link. rul Brue Lundeen Firshen 540-135-5874 Machael @ earth link. rul Brue Lundeen Firshen 540-135-5874 Machael @ UNIL Virginite.gov Mill Sudam VDH 540-382-5835 bruce @ pure water forum.com Alleri Guitshell V A H 410-332-7830 Mill Guden Me VIN. Virginite.gov Mull PMERS D617 740-248-43400 Miller Mill VII. Virginite.gov Mull PMERS D617 740-248-43400 Miller Mill VII. Virginite.gov Bill Sudam VDH 540-382-5835 Statter & diff. Statter. Vir US Bill Child Statter Wire 3 00-360-6760 Miller Miller VII. Virginite.gov Bill Van Wart DEQ 540-347-9350 Statter & diff. Statter. Vir US Bill Van Wart DEQ 540-544-7486 Jost Miller VII. Com Bill Van Wart DEQ 540-544-7488 Jost Bertie USA.DUPONT, Com Bill Van Wart DEQ 540-544-7858 Pt Horner & deg. Virginia.gov Orac Severe Diff. 540-348-8219 Miller Miller Miller, Schwalter, NET Ralph Turner BTGe 604-815-8219 Miller Miller & deg. Virginia.gov DEM Cocking JMU 540 568-6586 cockina deg. jmu.edu	JOHN SCHMERFELD	USFWS	807/893-6694×10	7 John schmerfeld @ fws. gov
Audle Gusell-Elle D. land- 80+383454 anothe guisepi-die Dusa dupat com Ralph Stahl Dulont 302 892 1369 raph-g.stahl-jr @ usa dupont. Com Dang Guber Mithel & NV 570-432-570 neutoddl@env.edv Merg 10h ristiansen Frishen. 540-135-8874 mehris@earthlink. rul Price Londeen Purce 132 - 575 bruce @gure water forum.com filler Gutshell V A H 40-332-7830 Hill. Gutshell@vall. Viegini & gov Mul Sudam VDH 540-332 7830 William Jorden Wilt. Viegini & gov Mul Priles D617 540-248-4360 philosof 2018 Viegini & gov Bill Sudam VDH 540-332 7830 William Jorden Wilt. Viegini & gov Mul Priles D617 540-248-4360 philosof 2018 Viegini & gov Bill C. BERTI Du Pont 3 09-360-6710 Williams R. BERTIE USA. DuPONT, Con Bill Van Wart DEQ 540-574. 7861 with an and C. Reguining gov Qua Sever Dofor Stores 2080 Jansen @ Dechawate, NET Ralph Turner RTGe 604-815-8219 rrt goo & direct. ca TOD JENNE DEQ (540) 544-7858 H turner @ deg.virginia.gov DEA (540) 568-6586 cockinud @ j.mu.edu	Gary Flory	DEQ	540-574-7840	gatlong@ deg. virsinia.gou
Ralph Stahl Dulont 302 892 1369 raph.g. stahl-jr @ usa. dupont. com Dang Guder Method & nv 510-432-840 neitelille env. edv Mety (Christiansen Fr. 5402. 340-135-5877 mohris@earthlink. rul Price Undeen Provide 540-535-8877 mohris@earthlink. rul Price Undeen Provide 540-532-7730 Men. Guter forum.org Aller Gutshell VDH 40-332-7730 Men. Guter forum.org Aller Gutshell VDH 40-332-7730 Men. Guter forum.org MUC Prilokts D61F 540-248-970 phula off) dgif. state. UR. US Steve Reeser UDGIF 540-248-9860 Stevet Bdgif. state. UR. US Steve Reeser UDGIF 540-248-9860 Stevet Bdgif. state. UR. US BILL BERTI Du Pont 300-3W-Willian de BERTI@USA.BUPONT. CON Bill Van Wart DEQ 540-541-2861 Signander & Reg. Virginia.gov O.W. JEWSEN Doffer 540-248-986 JEWSEN @ Deux 448E.NET Ralph Turn.ev RTGeo 644-815-8219 mt goo direct. ca TOD Jewser DCQ (540) 574-7853 r + turnes@deg. virginia.gov DEAN Cocking JMU 640) 568-6566 cockin wd @ j. Mu. edu	Annelte Guiselli-ELIE	pu Pont-	80+ 383 4584	anothe guiseppi-elie Dusa. dupout com
Dang Gueber Aktol 5 En V 570-432-840 neitelblacine edv Mory (Christiansen Fr. 5402. 340-135-5877 mehrisla earth link. rul Price Water Forward 50, 568-8773 bruce @perewater forum is 9 Allen but shell VDH 40-332-7830 Hillion Jockin Gilth. Virginia. gov Bill Jordan VDH 540-332-7830 Hillion Jockin Gilth. Virginia. gov MUC PULOKS Do IF 540-248-9860 phulpa of gif. State. UR. US Steve Reeser VDGIF 540-248-9860 Starte Odgif. State. UR. US Steve Reeser VDGIF 540-248-9860 Starte Odgif. State. UR. US BILL BERTI Du Pont 300-3W-6702 WILLIAM. R. BERTIQUSA. BUPONT, CON Bill Van Wart DEQ 540-541-2861 sijuandarte Reg. Virginia. gov O.W. JEWSCO Doffer 640-815-8219 mt goo Odirect. Ca TOD Jenve DEQ (540) 574-7853 Fritund Cj. Mar. edu	Ralph Stahl	DuPont	302 892 1369	ralph.g.stahl-jr e usa.dupont.com
Maty ICh ushansen Frishen. 540-135-5877 machinske earst husk in ut Price Water Firstim 540-568-8773 bruce @ pure water forum is of Firstim 540-322-7830 Has Cidshe He volt Vieginia gov Allen Cutshell VAH 410-322-7830 Hustin Seden With Vieginia gov MUC PUCKS D617 540-248-9360 phuspace (VDH Vieginia gov MUC PUCKS D617 540-248-9360 scient Odgit itele van us Steve Reeser UDGIF 540-248-9360 scient Odgit itele van us BILL BE KTI Du Pont 3-03-366-6788 William iteration of the science of the scienc	Doug Graber Neutro	Env	540-432-840)	nevfedd@env.edv
Price Lundeen Prive Unit 540-568-8773 proce @ processofer forum .sog Fride Lunder forum .sog Alley Gutshell VAH 410-322-7830 Alley Gutshelle VOH Virginsh.gov Bill Jordan VDH 540-332-7830 William Jordan OVIN.Virginsh.gov MUC PUERS D61F 540-248-4860 Phuga 60 Ogi State. Vie. US Steve Reeser UDSIF 540-248-4860 Phuga 60 Ogi State. Vie. US Steve Reeser UDSIF 540-248-4860 Phuga 60 Ogi State. Vie. US Steve Reeser UDSIF 540-248-4860 Phuga 60 Ogi State. Vie. US BILL BE RTI DU Pont 3-03-360-6710 WILLIAM.R. BERTIE USA. BUPONT, CON Bill Van Wart DE Sto 574.7861 William alarte Reg. Virginia.gov Our Stever Dogon 502-547-6826 Stoven @ Decan water. NET Ralph Turner RTGeo 604-815-8219 NT goo @ direct.ca TOD JENNER DE (Sw) 574-7852 Ft turner edg. Virginia.gov DEAN Cocking JMO 640 Stor 6566 cockinwd @ jmu.edv	Mory IChristiansen	Fr. Sher.	540-635-5874	mchris@ earthlink. nit
HILEN Gut Shell V D.H 40-332-7830 Hilen Gut She No VDH. Virginia gov Bill Jordan VDH 540-332-7830 <sup>88</sup> William Jorden OVDH. Virginia gov MUL PRUGHS D617 540-248-9360 Store of Odgif. State. U.G. U.S Steve Reeser UDGIF 540-248-9360 Store of Odgif. State. U.G. U.S BILL BE RTI BU Pont 3.02-364-6762 WILLIAM. R. BERTI @ USA. BUPONT, CON Bill Van UJart DEQ 540-374-7861 William Warte Req. Virginia gov Que JEUSER Que Blog 502-547-6286 JENSEN @ DELAWARE, NET Ralph Turner BTGee 604-815-8219 rt geo Q direct. Ca TOD SJENNE DEQ (544) 544-7858 rt turnes @ deg. Virginia. Gov DEAM Cocking JMU 640) 568-6586 cockin wed Q jmu. edu	Brice Lundeen	Forum Forum	540-568-879	3 bruce @ purewater forum, org
Bill Jordan UDH 540-332-5835 <sup>88</sup> William Jordan OVINH Virgund, gov MUC PULGAS DOIF 540-248-4360 phugas Odjif. State. U.E. U.S Steve Reeser UDGIF 540-248-9360 State. Ddjif. State. U.E. U.S BILL BERTI DU Pont 300-366-6760 WILL INFA. R. BERTIEUSA. BUTONT, CON Bill Van Wart DEA 540-574. 7861 wijvandart Odeg, virginia gov O.W. SEUSED Dofont 302-547-6286 JEAN WALE, NET Ralph Turner RTGeo 604-815-8219 MT goo Odirect. Ca TOD SJENKE DEQ (S4) ST4.7858 H turnes Odeg, virginia. Gov DEAN Cocking JMU (540) 568-6566 cockin wed Q jmu, ody	Aller Gutshall	VAH	540-332-7930	Alles. Cutshalle VOH. Vice Nit. gov.
Muc Pulats DEIF 540-248-9360 phugus () dgif. state. Ne. US Steve Reeser UDGIF 540-248-9360 sizest-Ordgit. state. Ne. US BILL BERTI DU Pont 300-366-6760 WILL INFA. R. BERTIQUSA. BUPONT, CON Bill Van Wart DEQ 540-547. 2861 wijvan wart Q leg. virginia gov O. W. JEUSEN DSPORT 302-547-6286 STENSEN @ DELAWARE, NET Ralph Turner RTGe 604-815-8219 rnt goo direct. Ca TOD SJENCK DEQ (S40) 574-7855 rt turner 2 deg. virginia. gov DEAN (Schung JMO 640) 568-6566 cockinwd Q jmu. odv	Bill Jordan	VDH	540-332-7830	William. Jordan & VDH. VIVGINIA, gov
Steve Reeser UDGIF 540-248-9360 Stevent Odgif. State. Va. US BILL BERTI DU Pont 309-364-6762 WILLIAM. R. BERTIQUSA. BUPONT, CON Bill Van Wart DEQ 540-574. 7861 Wildow Wart Q leq. Virginia god Orac SENSED Dobar 302-547-6286 Stansen @ Decander, NET Relph Turner RTGeo 604-815-8219 Martapo D direct. Ca TOD STRNKR DEQ (Su) 574-7855 Ft turner @ deg. Virginia. God DEAN Cocking. JMO (540) 568-65565 cockinwd @ jmu. odu	PAUL PULAAS	DEIF	540-248-9360	phugas of dgif. state. va. us
BILL BERTI DU Pont 302-366-6762 WILLIAM.R. BERTIQUSA. BUPONT, CON Bill Van Wart DEQ 540-574.7861 wijvan warte deg. virginia god Orac SEWSEN Osport 302-547-6286 JEWSEN @ DELAWARE, NET Ralph Turner RTGEO 604-815-8219 Mtgeo Odirect. Ca TOD FJENNER DEQ (SW)574.7855 Htwmes @ deg. virginia.god DEAN Cocking JMU 640) 568-6586 cockinwd @ jmu.odu	Steve Reeser	VDGIF	540-248-9360	Sreeser@dgif. state. Va. US
Bill Van Wart DER 540 574. 7861 wijvan warte Req. virginia gov Oial JEUSIAN Dofone 302-547-6286 JENSEN @ DELAWARE, NET Ralph Turner RTGeo 604-815-8219 rttgeo O direct. ca TOD JENKR DER (540)574-7858 rttvrnes@deg.virginia.gov DEAN Cocking JMU 540) 568-6586 cockinwd@jmu.edu 	BILLBERTI	Dupont	302-366-6762	WILLIAM. R. BERTIQUSA. BUPONT, CON
Vice JEUSEN Volon 302-547-6286 JENSEN @ DELAWARE, NET Relph Turner RTGeo 604-815-8219 rtgoo @ direct.ca TOD TURNER DER (S40)574-7855 rtturner@deg.virginia.gov DEAN Cocking JMU (S40) 568-6566 cockinwd @ jmu.edu 	Bill Van Wart	DEA	540 574. 7861	wjuanwart@ Leg. Virginia gov
Ralph Turner RTGeo 604-815-8219 rrtgpo @ direct. ca TOD FURNER DEQ (540) 574-7858 rtturner@deg.virginia.gov DEAN Cocking JMU (540) 568-6566 cockinwd@jmu.edu 	QILL JEUSEN	Defort	302-547-6286	JENSEN @ DELAWARE, NET
TID TJENKR DEQ (54)574.785 + + + vrner @ deg. virginia. gov DEAN Cockinut JMU (540) 568-6566 cockinud @ jmu. odu 	Ralph Turner	RTGeo	604-815-8219	rrtgeo @ direct.ca
DEAN Cockinsof. JMU (540) 568-6566 cockinsod @ jmu.edu 	TODJJRNER	DER	(540) 574-7858	rtturner@deg.virginia.gov
	DEAN Cocking	JMO	(540) 568-656	6 cockinwd@jmu.odu
				5
		×		
				· . · · · · · · · · · · · · · · · · · ·
		20		
		6		

#### SOUTH RIVER SCIENCE TEAM MEETING - August 10, 2004