34

ends:
RS - use performance stack
~~[illegible]~~ location (exact) TBD during
design

RS: also discussed length
of PWS line.

RS: discussed river sampling
and flooding.

2/23/92
gave draft ROD to
Roy Smith due 1/20
Peter Knight due 1/11
Nancy Cichowicz due 1/11

due 1/11
due 1/11
due 1/11

sent to Mary Matta @ NOAA
Don Henn DOE
John Kinneman NRC

35

note on John K's.

Please review by 1/11/93. of
particular importance + north
landfill section (capping). There
will be some pump + treat of GW
from this area. Do we need to
be concerned about radioactivity
in GW + then in treatment system
(metals precip. + air stripping). Also
look closely at TABLE 11 - list of
ARARs - are their NRC reqs
we need to consider?

Thx
Randy

[redacted]

AR321510

(36)

talked w/ Scott Simon of
EA Engineering - Consultants
for DelDOT about how
to get info on south landfill

12/30/92 Paul Kane WNG)
called & we discussed where
the project is now &
what will happen over
next year

1/11/93

Joel Karmazyn called 1/6/93
WWC to take velocity measurements

over 6 HR cycle at James
Street Bridge & Churchmans
Marsh

(37)

1/11/93
James Buzzola called
taking velocity measurements
every hour for six hours.

RS: how are you going to
use these with concern
taken earlier b/c of flooding
earlier?

JB: mainly want to ~~see~~
have a real number vs.
guess that is used in model

RS: how are you determining
actual flow? - taking
depth measurements?

JB - mainly interested in velocity
have good idea of cross section
- can try to get depth.

RS: will not oversee.

AR321511

38

[redacted]

1/19/93

~~Greg K. Fell~~

talked w/ Joanne Cassidy again about UST program review of the ROD she said it is back in Greg K's hands.

1/19/93 Mike Watson, C-G
Frank Hannigan, C-G.

C-G observed discharge out of riverbank - oily substance

- 90% downturn per testing
- cakes on riverbank due to tide changes.

39

C-G wondering if could also be kerosene

- can't find any present day problems from inspections

- could high water level move stuff in soils

Have

1/19/93 checked w/ Leg III ~~NRT~~ RRT - C-G has called NR# 4 times beginning 12/22/92

1

AR321512

(40)

1/26/93

Randy Sturgeon EPA III
Mark Springer ERT
Kurt Lambert HQ Hydro
Bob Davis EPA III

- RCRA ARARS.
- Riverbank
- Wetlands - wording - cleanup
- 1

~~AB~~:
EF. concern of derivation of cleanup criteria
MS: - never seen grain size normalization ROD but that doesn't make it bad
BD but gsn is very normalization
KL: what part of sample is thrown out.
MS. ① take bulk sediment sample analysis
② determine % fines 64 micron screen
③ divide % fines (as decimal) into bulk chem #

KL how pec 64 micron screen

(41)

MS/BD generally done for 64 micron probably an ASTM STD.
BD have RI put
~~RS - need to put~~ ASTM in ROD
KL: that would be fine

MS: feels need lower level cutoff or will be chasing stuff in river because @ 5% fines then bulk density has to be 65 ppm lead or would cleanup.

need lower boundary.

MS. is there a concern about review process do we need to have trigger points for going into ROD

RS: don't want because so complex that can't do a good job

MS: to have restoration of wetlands in ROD as per Section 404 of Clean water ACT

AR321513

(42) Discuss RCRA ARARs

KL: concern

KL - discuss RCRA in paragraph up front
EF: as read about off spec waste - raw materials

EF: in summary state
RCRA - NL - ~~YES~~ No
- SL - YES

Discuss of RBC over system

KL → discuss in alternative reason for still keeping RBC

p27) RCRA @ south landfill

* KL → CERCLA → once start treating have to go to health base standards

(43)

long discussion on cleaning up Columbia on South

KL:
MS - doing anything even if keep wells out of ~~the~~ wetlands will have impacts mostly likely but definitively
RS: perhaps show more reasons of likely or definite impacts

1/27/93
Steve Goldberg or Goldman of Ciba Geigy called to get [illegible] to submit PRAP comments by 1/28/93

[redacted]

AR321514

- discussion regarding RCRA LDR.
  George to review & get back
- discussion regarding gw ARAR waiver

George left

further discussion w/ EF about ARAR waiver

RS: talked complete thinking of why close waiver

EF generally try to cleanup before apply for waiver

RS that's good w/ tech impac b/c tried but w/ greater harm to environ if find out for sure the wetland to be affected then too late if train of damage is done.

AR321515

[redacted]

1/28/93 Petty Officer
discussion w/ Rick Felton
of Phila CG MSO regarding
who has jurisdiction over spill
of CG in Newport
for past week I've been

46

told CG Phila w/ response
then CG Balt
then CG Phila
NO EPA OSC

because Ciba G is
upstream from where
95 crosses Christina
River.

[redacted]

[redacted]

2/1/93
- check on toxicity again
- is it an oil or HS. (?)

talked w/ Greg Crystal - discussed
problems w/ CG MSO and they
Greg asked Terry Stillman to
check out site perhaps take a
sample to see if have imminent &
substantial endangerment.

2/1/93
told F Hannigan @ Ciba to
go ahead and report all sheets
from the river bank to NRC

(48)

2/2/93 DuPont requested
~~Conv w/ Bob Davis~~ — s

2/3/93
Carol Macbeth Dyn
Dave Schoch
Satya
Jon Cuzzon
Randy Sturgeon EPA

Conference call regarding ~~the~~ DuPont's Comments to the PRAP.

GW:
RS: told Dyn of 10,000000 vs 100,000,000 ↳ Correct value.

DSm might be able to get hydrographs

RS: need someone to determine method

(49)

2/5/93
message from John Kinmenan said NRC's view of thorium has changed some and he wants to discuss w/ me John said he ~~said~~ did say at one time that the thorium shouldn't be a problem (when we talked several years ago)

2/5/93
Paul Cain of Wilm New J called and wanted an response to DuPont's comments.

I said EPA not ready to respond - we are still reviewing.

AR321517

~~49~~ (50)

2/8/93

John Kinneman - ~~[illegible]~~ in past several years, there has been a lot re-thinking about this old disposal sites

at another site NRC will probably

- NRC - looking at "not acceptable to use institutional controls to prevent exposure" as ~~a policy issue~~ course of action

NRC HQ has decided to provide comments on this but it might take 2 to 3 wks

there response could range anywhere from here's what we would like to do to here's the law do it.

(51)

2/11/93 - 'no need to take depth borings in river to 4-6 ft depth as req'ted in DNREC 1/29/93 letter because will backfill w/ clean sed.

2/11/93 on 2/10/93 I requested Satya to look at feas of keeping road gen during excavation He & eng will go & look.

2/11/93 discussion w/ Satya: he feels need River bank cover more for ~~[illegible]~~ mining contam transport than erosion control.

2/11/93 faxed River bank cover drawing to Bob Landreath of RREL/ORD along w/ NL Cap diagram to get review do we need RBCS if have slurry wall

AR321518

(52)

Doug Donor

~~if have~~ even if only

treating for physical purposes, ~~if~~ even if done ex-situ then triggers LDR - using bulldozers & kiln dust wouldn't trigger LDR.

RI: this is not what pg 2-16 says

- If excavate & move if in same AOC then don't trigger LDR even if waste is RCRA Haz

If CERCLA Compl. w/ other laws manual Vol 1 8/88

2/11/93 Bob Landreth

- if have vertical cut off wall at the bottom of slope between river and slurry wall then design good if:

(1) if dont have cut off wall

(53)

then tide going up + down may undermine concrete bags

also mattress may undergo settling cracking

2/16/93

Joel Karmazyn called and ~~who~~ wanted to split Terry Stillman's samples → I said TS was supposed to have sampled 2/12 - but I didn't know if the snow got him

If he hasn't yet I will recommend to him that he split w/ you and will call you.

- JK wanted to know about how this relate to RI/FS → I said this is different although obviously related

Don't know what will happen would be nothing to early action ~~for~~ implement of remedy

- we have to get sampling results and talk → will discuss course of action w/ you

AR321519

2/17/93
talked w/ Bob Landreth of RREL (EPA) - had previously faxed him cross section of river bank cover system

- BL feels RBCS is not good idea → better for slurry wall to leave vegetation (I described to him type of vegetation on the bank - lots of mature trees) because it will provide better stability

if strip then have to pull all of roots out or will settle

BL also concerned that tidal action may cause settling of the concrete matrix in unacceptable way by washing fines from soil

RS: also during construction will be hard not to lose soil to river

AR321520

BL - what happens when flood
RS: had 4" in Dec - no problem (?)
BL if flood no problem wouldn't help vegetation

2/17/93 called Satya to discuss above
- feels RBCS offers no civil engineering value but he is concerned about contam transport from the wedge of soil between the rebed + slurry wall

RS: feel this may be less of a problem than those caused by losing the benefits of the vegetation and going to have soil transport to river during construction.

2/17/93 discussed above w/ Anne Miller
- told Anne to expect next draft by 2/22/93
- discussed compliance w/

DCZMA → before ROD or after ?

told her we wouldn't do it formally before ROD but would like DCZM comments so can incorporate in the ROD.

2/22/93

talked w/ John Austin of Nuclear Regulatory Commission 301-504-2560

- NRC feels thorium 232 is more dangerous than portrayed in PP because its daughter products emit gamma rays

NRC allows 30 pi Cu/g of highly enriched uranium on surface soil but only 5 pi Cu/g of Th-232 or 10 pi Cu/g Th-232 in secular equilibrium

NRC allows 5 times these amounts to be buried under 4 ft of soil but haven't ever approved actual application

explained other hazards & how EPA feels almost no possibility of residential land use so little to where didn't include it in Risk A.

(John concerned of dig cap & then exposed to gamma rad)

↳ alpha stopped by skin or paper gamma is like high energy X-ray

told John only 20 tons of thorated nickel in landfill @ 2 to 5% ThO_2

& explained calcs on pg 20 of this notebook made w/ Bill Belanger

told JA that BB approved PP language

JA said 1/10 Cu is starting to be high

will review & get back to me this week

58

2900,000
-350,000
-400,000

2,150,000 Cost of
C-G upgrade w/ wells
on river
see chart in
"Potential impacts of Rem Const
by Dames & Moore
AR 317792

[redacted]

AR321522

59

[redacted]

(60)

3/4/93 Mar
Margie Thang
Dave Carter
Rich Green
Karl Kalbacher
Raman
Peter Ludzia
Randy
Anne Hiller

Rich Green did review of DuPont's gw loading calcs
RG feels analysis was flawed & limited
- no one would dispute other sources esp Red Clay & White Clay
L 100 #/day [illegible]
L 100-200 #/day (total in water column)
w/ surface water toxics program consider does facility cause reasonable possible cause or contribute to (DNREC ~~intributes~~ interprets as significant contribution)

(61)

DNREC does first cut and compare site contribution to environ as assuming surrounding is pristine (this is supported by court)

RG feels seeps in and of themselves could causes exceedences - DuPont did not consider "near-field" exceedances nor did they take into account low flow period

→ DuPont used geometric mean ~~as~~ for contamination loading from seeps w/ no justification

→ the background station may have been with in tidal range of site.

→ RG feels missing some definitive data to determining specifics of where to remediate.

AR321523

→ bioavailable to aquatic falls between total & dissolved
- may fall closer to dissolved
- yet ~~too~~ particles can fall out and affect benthic organisms

RS: brought up idea of expressing charts in ppm vs ppb & problems w/ MDL

HK: so where does Du Pont liability lie

RG: in far-field if DuPont's ~~co~~ only contributed 1% may not be worth controlling but 5% is getting up there.

discussion of allocating loads w/ point sources & non-point sources.

PJL - we all agree site contributing to AWQC
- Superfund has

ability to trigger remedy

RS: feels thin basis for setting criteria. - perhaps use Long & Morgan values by NOAA - (ER-M, ER-L)

RS

RG - use AVS/SEM
- benthos vs
- metal concentration w/ statistics

RS: explained determination of cleanup criteria again esp beginning cut of ~~ASO~~ extrapolation of sediment chemistry between ASO3 & ASO5

RG/DC/RS discussion on Cleanup Criteria → RG is willing to go along w/ current criteria if beef up rational in writing per discussion since 5 yr review process allows revision of cleanup levels.

PJL/KK/AH/ → perhaps lay out

AR321524

(64)

grid & take chem + benthos and tox tests & have in ROD cut off points of
% survivability
benthic density (forex)
(as appropriate)

that trigger remediation
we can all review existing data and come up with cut off points

PS: I'm open to this if as long as ROD lays out concrete criteria so we are not negotiating the results of the delineation

Decided to have meeting with wetland folks on both sides to work out the points.

(65)

Discussion w/DC on CZMA

15 CFR 930.32 → defines what max extent practicable

CZMA had concerns over data to make consistency determination

→ if state disagrees/determ need to supply specific comments as to why and if lack of data is problem must supply details of what is lacking

→ DC said a NOAA attorney said our ARARs manual was wrong and we need to work w/state on comes as w/any other project.

Discussion of whether DNREC's surface water quality criteria apply to standing water in wetland

AR321525

under Definition wetlands are included in ~~wetlands~~ waters of US + State.

Water quality standards have two parts -
- use
- criteria based on dose response

Delaware

Section 12 - criteria for low flow waters - flow are lower than ~~7Q10~~ 7Q10 or ~~7Q~~ less than .1 CFs

(PG can calc 7Q10)

then numeric criteria can be waived (but must meet narative criteria

AR321526

~~Due to river~~
DNREC expressed much concern over what to do about river and do we have enough data to dredge - know where to dredge and know what will happen after dredging is complete.

To would come from upstream recontaminate clean fill sediments

Consensus was need to look at hydrodynamics more of river + perhaps take care of other sources first so take river out as operable unit.

US: need to discuss this w/ others before make final decision.

(68)

3/4/93
Brandt Butler called and wanted to make sure he understood my comment regarding the fact that I feel that DuPont's ~~to~~ river water data does support the need for the slurry wall along the river

explained that EPA felt like the range of 1.4-40# Pay of Zinc to river in DSM 4/89 prob represents the range of possible discharge effect & that DuPont's Ex calc of 3#

3/5/93 attached are notes were accidentally taken in Vol II (page 139-148)

pages 139-140 of VII 69

(69)

3/1/93 BTAG MTG

139

Dr Davis Robin Brine Daye Charters Pete Stokely
Fortnight Sean Morrison Ron Preston Mark Hudson (?) EZS
Person from Airprogram.

The criteria may have a site-specific waiver - need to check w/ Delaware.

ie if demonstrate have good life result then can have exceedances ~~[illegible]~~ probably need more data to say have good enough wetland to keep impacts of river

DC resist pulling tide gate because can't make Du Pont pay for flood control measures as part of superfund. That would be a twistorsine

D ① makes sense to get site-specific exceedance allowance.

Discussed whether to strip whole south wetland if necessary to comply to Del surface water quality reg.

DC - probably have pretty well mixed

PS - unless tidewater as part of mitigation for destruction from NL/SL

AR321527

Pages 139-140 of VII 69

(140)

RS: However there are more cost-effective ways to mitigate as already proposed.

PS: perhaps best to leave as is remediation

PS: Could strip + replace to grade

DC - will have whole thing full of rag — also get erosion channels opening up areas which might be contam if only excavate 18"

blank

blank

AR321529

(141)

3/2/93

Discussion w/ Pete Stokely
- of independent of ARARS - what would you like to see done at the South landfill?

- PS - reason didn't give a clear answer yesterday is tough decision

- probably want to error on side of caution and not strip unless could pull tide gate

- tidal wetlands will provide better habitat but if leave probably non-tidal than cleaning up won't give great increase in habitat value b/c tox test now say not broken too bad

RS: Dave Charters though is probably correct in we can't make DuPont pay for flood control.

PS - also since adjacent land uses will likely contribute degradation to SW - how much sense does it make to make pristine.

---

72 page 141 - 142 of valid

72 page 141 - 142 Quoted

(142) 3/2/93

Elisabeth Freed called

CAMU may fit very appropriately for NL

final rule in FR: take effect in April

- needs RA to determine that NL is a CAMU
  ie in ROD

see John Humphries

she discussed w/ Tracy Beck

3/2/93

Bob Wederhorn	Du Pont
Brandt Butler	"
Norm Griffith	"
Randy Sturgeon	EPA
Peter Ludgia	"
Wayne Walters	"
Tom Vottaggio	"

AR321531

(143)

meeting

- DuPont gave out handout
- discussion of overall DuPont remedial activities

- BW: when sold to C/G, indemnified C/G from past practices
  - have reached agreement w/ C/G to manage remediation

BW concerned that FFS cost estimate should have used 60% contingency vs. 20% contingency

BW - DuPont willing to agree to address human risks & long-term monitoring to meet data insufficiency

BW. willing to consider studies and possible contribution to mitigating impacts even on larger scale than site alone

AR321532

Pages 143-144 of vol II 73

Pages 143-144 of vol II

vol II

(144)

TV: right now in Decision-making stage - currently making decision - so we can't tell what we are going to do. so can't bypass ~~that~~ the admin process by making decisions today.

We care both about public health and environment concerns - we are (E__) P__A

at this site concerns lean toward environmental risks.

- EPA agrees w/ risk assessment driven remedy yet there are other factors that are very and equally important per NCP
ARARS
bias for treatment
concurrence ~~for~~ w/ State & loca

~~wh~~ we want remedy that deals w/ all nine criteria

(145)

74

Page 145-146 Vol II

- there are State ARARs also that we need evaluate & comply

WW: we ~~must~~ are not the only player, so we are not free to make any decision

NG - doesn't feel making new comments just embelishing the written comments.

BW: a major issue is whether Contam can get into Columbia then river ~~then~~ to extent that degrades significantly the river.

BW. - don't see need based on sampling upstream & downstream

RS. I feel review of data shows ≈ +20 ppb increase on average during flood conditions which verifies RI

~~BB~~

AR321534

Page 145-146 Vol II

(146)

BB: what about fact that more AWQC exceedances upstream than down

RS: caused because AWQC are hardness dependent and the AWQC was greatly at James Street Bridge - need to look at absolute #

BW: Intrex has been hired by DuPont to evaluate other river basin measures.

For ex: on White Clay creek (?) (Delaware's only trout stream) could install gates ~~to be~~ (?) to help aerate the water.

DuPont willing to do other things regionally to improve wetlands are far less the cost of PRAP.

TV: this type of info very important up trustees

AR321535

(147)

TV: we rely heavily on state input on water quality issues. the State maybe interested in potentially getting more bang for buck.

BW: what kind of time table

TV: want to get this out in weeks - not days, not months.

- discussion about who else has commented on PLAP
  - DOI
  - DuPont
  - Acme Crane Rentals
  - Ciba-Geigy
  - Town of Rehoboth.
  - DelDOT.

pages 147-148 vol II

(75)

AR321536

(75)

Pages 147-148 vol II

(148)

Blank

AR321537

3/5/93 Notes transferred from sheet of paper for 2/24/93 discussion w/

Frank Freestone EPA Edison

I called to discuss the problem of whether a RCRA cap is needed on the stabilized SL waste or if soil cover would do. Also to ask if stabilization was going to work w/ large suite of metals

FF several concerns: freeze thaw cycle will cause cracks to appear in stabilized material giving path for water to flow

→ stabilization works in two ways — reduces leaching capability and make waste a solid mass so a leachant can't get to waste material to leach anything

AR322538

What if have soil cover to prevent freezing of waste.

Mike Roger (EPA) entered discussion (MR is working on tech resource doc of metals sites)

MR has seen both soil covers and water tight covers on stabilized waste.

FF: long term viability of stab remains uncertain.

FF: when do TCLP - break up waste to go through 3/8" screen it is not pulverized

FF could specify leach test using site gw for performance stand.

tied Carlton Wiles EPA-RREL into

- do we need cap
- what kind of test to measure performance

(78)

RS will send data package to get RREL review

FF: send to Joan Colson

3/5/93

message of 2/25/93 from Peter Ludzia - on voice mail - relaying message of Brandt Butler that DuPont would like more involvement w/NOAA also ~~that~~ wants to discuss idea of "net benefits" where less $ is spent other places which give a much greater benefit to environment.

[redacted]

[redacted]

[redacted]

[redacted]

[redacted]

AR321539

(80)

DK said if could read either way then weight of CZMA reauthorization of 1990 would apply — no Fed prog is exempt.

3/9/93 talked of above w/ Elisabeth Freed EPA/HQ

See sec 4.6.2.1 for on-site activities "are not subject to to administrative processes"

ie we don't have to worry about 90 day

3/9/93 faxed section 4.6 to David Kaiser (202)(606) 4181

3/9/93 David Kaiser of NOAA believes that still need 90 day review because no pre-emption language in 1990 re-enactment.

90 day is a statutory language in CZMA.

(81)

[redacted]

3/9/93 .05 wt% = 100 pCi/g licensable amount.

this thorium is probably thrown in at 100000 pCi/g

if can bury up to 25 pCi/g Th-232 otherwise

15# of that Th-232 = 1½ milliCi

some of these cases: put back into license, others made big up + put in low level radio

AR321540

(82)

landfill

if NRC allows to stay then what ~~of~~ it clearly noted that there are ~~are~~ unacceptable levels of thorium

if would ~~have~~ leave on site need perpetual license deed duly noted ----

NRC in contact w/ Du Pont about disposals

3/10/93 Don McDonald, feels like on Superfund sites tend to be working w/ limited data bases so statistics can be easily misapplied

(83)

3/10/93 talked w/ Rich Green of DNREC

RG - your #aren't NEC wrong but I'm reserving judg. Consider because not defensible ~~[illegible]~~ water column tox tests + AVS/SEM

RG is pulling STORET data to ~~[illegible]~~ set up a river model - will take a year RS: if RS15/RS04/RS09 not bad then other dangers such as NVF aren't affecting sediments that much.

3/11/93 meeting @ DNREC to modify sediment cleanup criteria

- Mark Springer - EPA
- Rob Allen - DNREC
- Anne Hiller "
- Miriam Lynam "
- Monica Maghini USFWS
-

MS: need low cut off on sediment criteria because if have very low % fines then will cleanup to past background

MS: doesn't like putting all eggs in toxicity basket for figuring where to remediate also need chem levels that are not to exceed ~~[illegible]~~ want performance criteria for actual tox tests

for source controls

AR321541

(84)

- ~~Pd~~ ie need P.S. for ref/~~lab~~ station

~~Mo~~ Cant have reference station that is statis signif different from ~~co~~ lab control station

- lab/reference cutoff criteria is 80% survivability

- used current levels as highest possible levels as source control → to keep partitioning to surface water ~~and~~ low

River:
PK → ~~fee~~ believes that should go ahead and dredge river

RA: feels should go ahead and take river out

(85)

RA: still concerned about what contribution

M.S. go through ~~#~~ calc procedures of existing data of relative differences of numbers so can tell statisitically difference
ie in lookout to put realistic # for ~~measuring~~ determining when the difference between stations warrants cleanup
can put some tolerance in Perf S. on relative differences

or look @ STD Derivations of current data & see what kind std dev. to expect

Don't what situation where dupont says 40% survive vs. 80% lab & no statisical significant

then put in P.S. accept ~~stand~~ deviation

(86)

RS: what organism(s)

AH: what about chronic endpoints

MS: at Halby used only mortality because of universally degraded area

MS chion tentans not very metal sensitive - so can do growth test

go for Hyallela Azteca → acute
Chironimus tentans
{acute
+ chronic

MS: one way to make upper chemistry & defensible for source control is to figure out %

(87)

of contaminant removal expected by those #

- Discussion regarding monitoring of food chain organisms

MM: FWS concerned about migratory birds & ~~what~~ their food chains: ie instead of monitoring mushrats should monitor something in birds food chain

RS: discussed why mushrat picked → just at southpond to make sure protective since leaving high contaminant load behind.

ML: to check of natural heritage surveys to see breadth of critters

MM: what about wetland losses with increasing toe size of SL esp w/stab.? RS have to mitigate

AH: what about stormwater flow water off landfill - are there permit issued

however we haven't looked too much into what extent that will be

AR321543

88

89

Conf call
~~meeting~~ to discuss
3/1/93 letter of
DNREC

3/12/93
Anne Heller
Raman
Karl Kalbacher
Peter Ludzia
Randy Sturgeon

① Columbia - explained about why
ARAR waiver
KK feels that plume underneath
Necastro is not acceptable.
- most concerned about
~~concerned~~ applying regs in
consistent manner - don't want
to let DuPont off hook here if + others want elsewhere
PL. Where do you see plume going once it is done
~~[illegible]~~ KK to river or wetlands - ie don't expect
to migrate.
RS: can incorporate P3, P2 into ROD
- can put wells in to
~~[illegible]~~ location +
rate of movement w/
criteria of certain wells in P+C hitting
MCL as being calling for
KK can say in ROD
Institutional controls already
in place to prevent pumping
wells that ~~[illegible]~~ might cause
plume migration
if it grows too much
Containment ie @ Necastro ~~would~~ might put
pumping wells in at prop bound to pull
plume back

(90)

Long discussion of why there are AWQC in river and what contrib. DuPont has to (surface water & sediments)

KK wants shown in Rod & that have statis sign increase in zinc levels DNREC supports use of wall unit wants good from up to down RS: may not have enough data for stats but data definitely shows consistent increase

SL

AH: describe rational better for why ~~describe~~ contaminant where determined to be in SL

KK want to be consistent about how treat DelDOT vs. DuPont property.

~~DNREC: wl~~

RS: we are still gathering info to see if should cap or not also what type of performance standard is approp

RS: stab works by two princ solid & stabil so even if dont meet TCLP can help

(91)

Capping may be good to prevent water from going in cracks of stabilized material

RS: if dont cap then can examine leaving waste on DeDOT prop & just stab in place - concern is if leaving direct contact & threat behind in area that is more susceptible to exp than if on DuPont prop (water supply workers, DelDOT contractors etc)

harder to enforce institutional controls of safety plans, OSHA 1910.120

NL - ~~DN~~

AH - do we need wall all along river

RS: yes - wide range of seeps including at toe of landfill which wasn't sampled

~~NOTE~~ RS: meeting performance standards will set location

AR321545

(92)

DNREC to discuss waving SWQC for S+W

awaiting attorneys of NOAA & ERCLA to talk about CFMA

~~Not~~ no dredging from June to early mid July - major recruit of benthic & during anadronous fish run (probably September mid Nov mid Dec good time) Could dredge

least impact on

dust pan dredge is good, in soft sediments

grain size
Atterburg limits

use cutterhead
spec.
- speed of swing arm
- ratio of cutterhead to pumping head
use Troxler gage to determine % solids

find out tidal regime

stipulate dredging during low flow (November)

Bill Muir - v Region's dredging expert with ~18 years experience overseeing impacts of dredging & research on dredging impacts.

Frank Leanfranc COPP

302-739 4411

(94)

Conference Call
Topics

- ~~Can~~ Do you know about new criteria for cleanup?
- what all new data do you feel is necessary?
- can we get in RD?
- what policies are we weakest on.
- what is biggest concern

Bill Muir
Miriam Lynan
Dave Charters
Randy Sturgeon

(95)

DC - dredging - needing physical parameters.

BM - Closer to reconssance phase

DC - could phase consistency + include river

BM - Can map the river

① series of set borings
② surface mapping.
Dr NOKES UGA → Xray diffraction sled + tow
could this to determine where to do borings - can get gradient patterns

using borings + XRF to get

AR321547

(91)

[redacted]

3/30/93
talked w/ Anne Heller of DNREC regarding the schedule of Dupont ROD

- told her get sediment criteria paper out in 2 wks. and work from there

(97)

- would like DNREC to look @ ARARs and "other enforcement activities" at this time (of draft ROD)

3/1/93
talked w/ Frank Firestone

- can do screening level ~~tech~~ treatability study.

- it is proven tech ~~from~~ for metals but there are enough potential problems that

- Carlton head a research program and is very conservative + rarely gives an answer., Think more field oriented

- Frank feels personally that since don't have organics we should be able to stabilize - people do it all of time

- can also ask expert in Battelle.

AR321548

Trish Erickson

if design wrong can cause metals to increase

TE if increase pH to much lead/chrome can go back into solution easier just same

but can add sulfide or phosphide

- believes PRP can find something but it may be more expensive and complicated

- tie lab leaching tests to what gw quality

- need to see response of continued contact w/ gw

there is an ASTM wet/dry cycling test

& measure leaching

or measure strength or permability before + after

need big break in permability between cover + waste

if go w/ soil cover then need lots of durability tests + chem tests to make sure the stuff doesn't leach.

RS: writing ARAR waiver on gw so want to control source to max extent

TE: don't have much long term certainty of S/S so need cap for added protection

TE in raw waste, TCLP ~~can~~ will usually be the most stringent sample but after stab the gw may

AR321549

(100)

TE - may say GW leach test perf sta 1/2 mx gw contamination

PS: are we ok w/ specifying S/S @ this time & doing TS in RD?

TE: Cd
Ch
Pb

are ~~[illegible]~~ routinely stabilized in many waste materials

RREL rarely wks w/ BA b/c

Zn / Cu also amenable to stab but they are pH sensitive lib (Pb)

TE to look @ data on { Cu, Zn, BA

(101)

4/2/93 Trish Erickson EPA RREL

Cu, Zn } → Trish also

has lots of data showing different types wastes are treatable

Ba - one case w/ EPTox. 400-1000 ppm EPTox
Portland & Kiln dust very good at knocking Tox levels down

4/2/93

on 4-1-93 Mik Watson of C-G left a message that another sheen had been formed.
grow in width about 10 feet on either ~~[illegible]~~ side of where had been before

also called 4-2-93 because another sheen appeared 30 feet away - C-G ~~busy putting~~ will but oil sorbing booms out when tide goes down

AR321550

Mike said they have had unually high tides

4/5/93
The Coast Guard has been calling this AM. Ciba Geigy called CG (or NR Center) again this AM

contam @ surface injury to NRT.

(OSC) discussions with Terry Stelman

→ not serious enough to do time critical removal
- falls between non time critical and time critical
- need to write a determination of threat and then removal order.
- see Abe's 1/93 expedited removal actions

- booms are only emergency tools - they have outlived their usefulness

TS suggests digging a trench and installing a collection system

4-6-93. talked w/ Jon Cuizon of Dynamac
- Dyn is making progress
- may propose a different organism from Chronimus as there seems to be differences of opinion has to how good it is. (may not be ~~very~~ sensitive.)

submittal date changed to 4/9/93. LOE from 40 to 50 hours.

4/6/93 Elis called to discuss a conference EPA had w/ NOAA.
- Jo Teager / Elisabeth Freed. EPA
- George Wyeth EPA
- Mary O'Donnell
- Margo Jackson } NOAA
- David Kaaser

George reiterated that CERCLA ~~that~~ only has to comply to substantive reqments

AR321551

- ~~[illegible]~~ EPA said that R3 fully ready to comply w/ substantive requirements.

4/8/93 Conference call about the
- Karl Kalbacher DNREC
- Anne Hiller DNREC
- Randy Sturgeon EPA
- Peter Lukizia EPA

RS: explained where things are to date
- 20 000 to 30 000 ppm Dowtherm
- LC50 3 to 4 ppm

- ~~RS~~ Terry Stilman is examining whether emergency or time critical removal

KK requested copies of bioassay studies

AH: OK

AH: currently a time critical removal (?)

AH: No, currently emergency status - awaiting confirmation of NOAA - DOI

4/8/93 got copies of bioassay tests from NOAA. all show toxicity around 2-4 ppm.

4/8/93
- Ken Taft
- Terry Stilman
- Chris Thomas
- Greg Crystal
- Randy Sturgeon

~~RS~~:
TS: briefly described problem

KT: Can I record this

GC - Yes

TS: how often rooms changed
KT = 2-3 times week
TS: how often inspected?

AR321552

KT daily well maybe 2-3 times/per week

TS: C/G has called 2 to 3 times in past week

- need to inspect booms daily

KT - OK

TS: booms only temp

KT: yes, our attorney said we couldn't do remediation on Superfund Site

GC - now we are making this a removal action

KT: don't want this pulled out of current Superfund

GC - we are just concerned about getting job done

Ken Taft

Ciba attorneys
STEVE GOLDSARB
800 - 431-1874, Ext 4105

4/8/93 tried to call Joel Karmazyn and Brandt Butler

RS Randy Sturgeon
Terry Stilman
Greg Crystall EPA
Bill Hoffman DERS

Conference call about Dow Thurs keeping to river.

TS - describing problem to BH we are putting together an Action Memo but we would like to get DuPont and/or Ciba Geigy and we are opening a window of negotiations

Joel Karmazyn joined the call

(108)

JK - requested copy of actionmemo
GC ok when finished
JK pls fax Dow them results

4/12/93
Len Taft called late
4/8/93 + left message

- C-G wants this to be subset of NM site & wants any order issued to C-G & DuPont

- need legal contact.

4/12/93 - called Mike Watson + told him that Walters is attorney

John Austin
Mail Stop 5E&4
US NR C
washing 20555

(109)

4/12/93.
Spec activity
~~KDX~~ 1.09×10^{-7} cu/g.

NRC max 25 piC/g = 25×10^{-12} cu/g

we have ~ 5000 piC/g

~~we~~ NRC

conference call w/ John Austin NRC Randy Sturgeon, Peter Leidy

NRC requested.
Letter to JA pointing out that according to DuPont X amt of Th in barrels we propose to note cap. / institutional control

NRC concerned about direct exposure. daughter products are a problem.

NRC trys to prevent paper trail as to decision so can't revisit in 5 to 10 yrs;

- NRC approach is to assume cover is removed

AR321554

(115)

discussed Site status of Kathy Hodkiss and Peter Nyta

[redacted]

[redacted]

[redacted]

(111)

have to buy land, engineering
O&M —
IT — superfund negotiates for work
ie argue for work not $

IT — could measure losses in productivity, diversity, animal losses
IT suggests taking USFWS habitat values measure → run at uncontam area & then run at Site & measure difference

- measure vegetation production difference & use as multiplier

IT doesn't think economic values don't help us.

- strongly suggest reading
Ohio vs. Interior

880 F2D 432 DC Circuit
19

AR321555

(112)

JT - does Del have areas that are delisted off

1981 DOI FWS document (EF to send)

Federal trustees are supposed to issue a mitigation plan

2 Cases
→ trustees - negotiate fr $ then go do work
→ make a restoration plan then negotiate PRP to do ~~work~~ work

JT: where risk assessment you need to remediate you must per statute

AH: heard DuPont wanting to

JT - press for O&M Money to fund positions to monitor

JT: for GW Kennecott vs. Utah

AR321556

(114)

- Norman Griffiths - DuPont
- Wayne Walters - EPA
- Terry Stilman - EPA OSC
- Karen Wolper - EPA
- Steve Goldfarb. C-G
- Dean Jerrihan - EPA
- Anne Heller - DNREC
- Chris Thomas - EPA.
- Frank Hannigan - C-G
- Mike Watson - C-G
- Brandt. Butler. - Du Pont.

Mtg to discuss Dowtherm seep on Christina River

CT: preparing draft order once received - complete mego w/ one week if not complete then unilateral

CT: described history of release

(115)

10 calls to NRC since 12/22

CT Contemplating action to prevent Dowtherm/Thermino seeps

like trench with collection

TS/CT: don't get hung up w/trench if you can ~~con~~ up with a better idea

KW typically would give 5 days for WP

BB: Concerned about permit (stream encroachment) affecting schedule

KW: you have responsibility under order to coordinate w/state to comply w/ pertinent requirements.

AR321557

NG → what level can we turn off?

TS: NOAA ~~FWA~~ gave us 4ppm

KW - ~~need to complete~~ need to comply any NPDES for any discharge

FH: boom probably keeping us from calling NRC

NG: Can we submit draft WP while nego AOC

KW: during ~~for~~ first wk? probably not since those negotiating order also have to review WP

MW: when will draft order be issued

CT - next ~~w~~ 2 week hopefully

NG - public comment period

WW - No AOC.

NG - what would Agency's position be if only one signs order

KW - That's fine - work would proceed

WW - if AOC that's probably OK but UAO would go to both.

BB: Can we have access to findings of fact prior to negotiation

→ it ~~appears that~~ data you gave us so far is for ~~to~~ soil sample & show them

How do you go from soil to ~~sample~~ water

TS: we will make sure you get all of data.

KW: implementation of WP usually 5 business days after approval looking at - month for action

AR321558

[redacted]

4/16/93
Called John Austin of NRC - asked him if putting in the slurry wall or not would affect whether NRC allows drums to stay

IA - No - if EPA doesn't see heavy metals migrate to river the thorium is not going either.

4/22/93 talked w/ Carol McBeth @ Dynamac
need Dyn to figure out what relative mortality is right for site.

AR321559

4/22/93

MS. we could find no tests but cutoff probably in range of >40% mortality
- others have refined this line of but this done w/ multiple testing

Chronomus growth - insensitive organism ∴ chronic endpoint is most helpful - relatively robust particularly to metals
however we need something that will survive many environmental factors so you measure what you want.

- the greater the % mortality difference the cleaner break

MS. could support either straight chem or tox tests included
- not surprised that had hard time correlating b/c these metals are not co ~~precipitated~~ located

(20)

- tox tests give you possibility of remediating for reasons others the contam load.

[redacted]

(122)

DK to call state.

4/23/93 - talked w/ Carol MacBeth
- she has talked w/ Teresa Norberg King of EPA ERL - Duluth who ~~has been~~ is very knowledgable in Hyallela testing & CT testing
TNK feels that < 55% survival indicate definite contaminant toxic stress (assuming control station OK)

- discussed more w/ Carol about setting performance SODS based on site data
ie AS03
09
08
07
⋮
AS06
10
11
08

} BAD

} OK

per Risk Assessment.

(123)

pick PS that give this OK/BAD determination using
% surv } C.T.
growth
% surv } H.A.

also want # of samples
NW
River
½ SW
SW
to statis determine areas of removal and associated costs
by 4/27

4/26/93
Peter Knight NOAA
Randy Sturgeon EPA
Don McDonald NOAA
Alyce Fritz "
Mary Matta "
Conference call to discuss site sediment cleanup criteria
DM - still trying to correlate summation

AR321561

(124)

RS - explain where we are at

DM.

all sites where tox test locations exceeded at least one ERM

DM: Ed Long If exceeds ER-L possibility of toxicity
if exceed ER-M probability of toxicity

IC lot of room for variability

MM - will low level of tox wipe out population
- confortable

DM → can have statically significant difference from controls

AR321562

(125)

AF believes keep ~~data~~ criteria where we are: w/ caveate for pond then do hyalleb

MM → OK with current scheme.

DM → CT can adapt to lead ∴ must make sure test organisms are from noncontam areas.

must run a positive controls to make sure they are sensitive

MM - doesn't think CT will give us much new

DM: ~~make to~~ H.A. around 50 to 55 % survival is good cutoff

- DelDOT Mark Tudor
302/739-4396
- put ~~drill~~ decon water in hole
drill cuttings backfilled
- 15 borings on DelDot property.
- May 6th tentative date.

4/27/93 Discussions w/ Bob Foley

Concerned about muskrat monitoring

- a female may produce 20-30 young/year but they are dispersed
- there can be more than one lodge for only one pair of muskrats.

probably seven to 10 animals is unrealistic to correct

However if pop would not deplete pop so much

that in 3 yrs pop would recover so can resample

BF: proposed muskrat sampling is to protect muskrat since eat plant rhizomes which are contam.

BF → could sample voles

perhaps not a pathway for these critters to get contam.

BF: will send several papers on muskrat bio.

W Walters 4-27-93
- we don't have control of a superfund property unless there is a threat of release
ie DelDOT can

AR321563

(128)

4/28/93 Mark Tudor
DelDOT

reviewed the 4-27-93 fax of EA's proposal for borings

- several comments FYI

(1) EPA hasn't ever limited digging in this area to top of WT
- may have to go below to get waste material

(2) past EP Tox data did not show consistent results of contam level to Tox results
∴ even above 30 times might not be EP TCLP

- MT still to check of backfill

(3) pic may not be to scale but eastern borings are probably outside of landfill

AR321564

(129)

which only ~~wt~~ went to west edge of Old James St

→ in RD delin would need to find clear zone

- set Det lim based on cleanup criteria - to protect direct contact and gw.

4/28/93 - concerned about w/in station variability for chemical analysis
ie may have stations that one sample goes above gross criteria

elim AS07 extreme contam
elim RS12 zin/cd
" RS14 low metals suggest
" RS01 lab error or extraneous cont.

left 10 sites
lead vs. H.A normalize
grain size = R = .76

(130)

lead seems to be primarily
respons for tox yet ~~not~~ sat
wide - ie ~~so~~ at some
stations other

RS. also @ RS14 - reps = 0, 10, 50, 70

DM another reason not to include.

4/29/93

Ed Kabala of EA engineering

5/4/93

Anne Heller : DNREC
Scott Simone : EA
Ed Kabala : EA
~~Comm. McFarland~~
Mark Tudor DelDOT

SS: want to review DelDOT plans
and get seg. bryan.

also need to discuss presence

(131)

of H_2S.

: 15 soil borings w/ TB contin
splits.

- Goals - delineate contam in
DelDOT parcel - hoping to find
that less of whole parcel.
- esp horizontal, but also
- some.

this is to assist a more detailed
investigation in future.

RS: EPA's intent is to dig up only areas
where dumping occurs.

AR321565

132

4/5 Randy EPA
Mike Webber NRC
John Austin NRC
asking about our institutional controls.

wants
EA: - NRC has jurisdiction

- 1981 branch tech position. Options I + II

- since levels exceed option II and since

5/6/93
yesterday I Federed the draft CFMA compliance memo to Dave Carter of Del CFMA
today I faxed it (w/o attachments) to Dave Carter.

133

5/6/93
talked w/ John Austin of NRC

- told him to go ahead and send letter as he had intended (ie no final NRC decision) and EPA will review & decide how to proceed.

5/7/93

Called Mark Tudor of DelDOT to return his call

- he said EA was going to wear H2 gas masks to protect against H2S

PS: never heard of H2S problem before & Du Pont, to my knowledge hasn't used masks in past.
- the masks would scare, maybe, passersby
- pls verify need.

AR321566

(134) :192 conflict.

discussion w/ Elisafreed Freed about NRC

and George Wyeth

GW does not believe we have an ~~at~~ MOU w/NRC for Superfund (we have another one for air —)

RS explained

GW: best defense for not to dig up drums ~~[illegible]~~ is ~~to~~ for particular land use

nothing in CERCLE would take jurisdiction away from NRC for drums.

GW: likes idea of writing ROD that says if land use changes we may have to visit

(135)

GW: if NRC doesn't take stand on whether to dig up per TBC we shouldn't have to put too much weight on it

— could write as ~~[illegible]~~ protective because we can also go revisit.

GW: we shouldn't adopt a position that NRC is not willing to enforce

may see TBC getting limited weight b/c NRC unsure of what they would do EPA might reconsider remedy if NRC decided to give more weight "

GW feels it would look better if EPA willing to rewrite ROD vs. NRC coming in on ~~our~~ there own position & telling them something different from EPA

GW: by only considering reopener then don't have to worry about new PP.

AR321549

136

GW wouldn't have to put NRC's statement about authority over drums

5/11/93
tried to call Dave Caster & Miriam Lynam → they ~~haven't~~ weren't there
they also haven't returned calls from last week

5/11/93

talked w/ Bob Blama of USACE Navigation Division about dredging specs as they appear in draft CZMA determ.

BB said that hydraulic dredging will pull ~80% H_2O; it will not produce problem w/ turbidity - no need to dredge just on slack tide

- he would dredge just during slack

AR321568

(13)

tide if using mechanical (ie clam shell) dredging.

- dust pan good for shallow dredge depth - if going to 2 feet then use like a mud cat - has a cutter head but is hydraulic dredging

[redacted]

(138)

Sediment Cleanup

Mark Spranger of EPA's ERT called about review of 4/29/93 draft & pointed out several typos

while 35 samples may be give good statistically power but may not be necessarily need all of these

MS feels we were using these tox tests to validate the chemistry levels

RS: no use tox tests independent of chemistry test to determine need (after delin gross areas.

MS: feels when people are dancing and have a hard time stating firm position them I'm probably close to right answer.

(139)

MS. conceptually looks good - could support using tox tests or not - don't see that it will change the remedial area too much or modify cleanup criteria too much

5/13/93 talked w/ Miriam Lyanam of Del CZMP

about needing their review very quickly - at least verbal comments - so I can update the draft - need to know ~~wh~~ quickly what you think b/c has to do with splitting the site up, or not

RS: recognized time constraints but this is the way RODs are that's why I sent out a schedule of reviews.

MS. don't need formal review and concurrence but want your input to make sure I'm complying to

AR321569

~~13~~ 140 policy vs. tech

~~5/13/93 talked w/ Mar~~

talked to Frank Freestone about SL stab/capping

RS: I propose doing TCLP & leaching w/ ground water

voronsoft FF: yeah not always sure which will leach more

5/13/93 Don MacDonald of NOAA said best time to dredge is late summer and fall

fish runs are in spring and early summer and late summer/fall is also low flow time so that will help currents

since have gw contam then obviously leaching

discussion of whether to cap and stab

141

FF - how much XTRA costs?

RS: ~ 2.2 M

FF may not be justified since not surrounding to pristine area.

RS: But then need to worry about cracking in stabilized mass and permeability standard

and since not all soil may ~~see~~ fail TCLP then not all may need stab but then still have high perm material which would provide a preferential flow path & higher area for leaching.

FF be conservative go for capping.

RS. what I is be should seek mgt advice to see what is proper test proc for level on conservative leaching w/ gw → using TCLP but w/ H_2O instead of acetic acid

AR321570

(142)

[redacted]

5/14/93 Peter Ludzia
Randy Sturgeon
Karl Kalbacher
Anne Hiller

Conference call to discuss issues of difference between DNREC and EPA Rad, to discuss the meeting w/ Du Pont on Wed

We decided to only listen Du Pont + then discuss among ourselves

Nanci/Randy/Karl/Anne (143)

We agreed to put performance standards into the gw area for the monitoring re when would we trigger remediation

Columbia
use wells MW 26A
25A
24A
23A (?)

+ when levels here go above MCLs or 10^{-6} risk levels (must check background) then will initiate remedial measures - either containment or cleanup depending on situation

Potomac use MW 26BS/BD
6B
18B (?)
6C

AR321571

5/18/93
Tom Voltaggio
Kathy Hodgkiss
Sandy Sturgeon

meeting to discuss 5/19/93
meeting w/ DuPont / EPA.

brief Tom on where DNREC
DuPont and EPA are
w/respect to where ~~they~~ stands
on ROD

also briefed Tom on agenda
of meeting both w/ DuPont
and EPA

R32-1572

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5/18/93

- Robert Kuela — TWR in NC Office
- Anne Hiller — Mon Dover 7394636
- Wayne ~~Hd~~ Walters — FRI - DelDOJ 5772500
- Randy Sturgeon

- AH: needs to get w/ State RCRA to discuss CAMU.

WW: is Subpart X important

AH: do we need to be specific w/ citation
WW: Yes

RK: are the State superfund regs an ARAR

p4, #6 Del Wetlands Act is only for tidal

147

- Discussion of State Superfund law HSCA is it an ARAR

RS/WW does not make sense pls explain

RK. HSCA section has discussion of cleanup levels.
- feels this is relevant & appropriate

WW - need to ask HQ

further discussion w/ notes taken on table.

AR321573

(148)

5/19/93

Christophe Tulou Sec DNREC
Randy Sturgeon EPA RPM
Peter Ludzia EPA Sec Chief
Tom Voltaggio EPA Div Dir
Wayne Walters EPA attorney
Karl Kalbacher DNREC
Anne Hiller "
Rich Green DNREC (WR)
Joel Karmazyn DuPont Program
Brandt Butler DuPont Remed. Mgr.
Bob Weiderhorn DuPont Div of Rem Service
Norman A
Mary McKenzie
NV Raman
John Schneider (Program Mang WR - DNREC)
Bill Meredith Biologist (Del F+WS)

CT: opening remarks
TV: opening remarks
- interested in considering all viewpoints
- want to strike balance w/in constraints of NCP ---

(149)

- we will seriously consider what we hear today in decision making process.

BW: opening remarks - appreciate this mtg - DuPont never wants to hide info

- info packet handed out.

- we will propose a new remed plan propose operating units.

OU1 → Manuf site / Riverbank willing to move immediately
River

OU 3, 4, 5 → need to study
NW ↳ SL/SW

Ballfield in OU2 ~~w/~~ NL - want to give BP to Newport (town of)

OU-1 → DuPont doesn't consider any significant health risks (those for workers easily controlled)

AR321574

(150)

- don't feel site gw contributing to AWQC in river

- do have Dowtherm seeps
  - historically Dowtherm tanks + lines are not close to area of seeps

propose still the "enhanced" revetment mat (~~[illegible]~~ ie has (passive) recovery system)

WW: on 5/17/93 we rejected this system in removal negotiations

BW: would do Dowtherm

JS: asked about river encroachment
RS: 20-25 encroachment at low tide
JS: is their any current enhancement plans
BW: NO
JS: the state allows encroach in exchange for enhancement in other areas when

(151)

there is a net environmental benefit.

BW: we could discuss enhancement options

- tough to do source removal of Dowtherm b/c of Chem plant near the bank.

OU2 - NL → would not have recovery system under revetment mat unless further study says need to.

willing to proceed immediately

might make sense ~~for~~ to leave wetlands alone instead of destroying current habitat and then enhance other area to give net environmental benefit.

AR321575

(152)

OU-4 → keep open so can put river + SW sediments in

OU-5
dredging & capping would destroy current common

willing to work w/ DNREC to determine bio of metals and do " of dredging & capping really the way to go vs. making enhancement elsewhere and get a net environmental benefit.

RS: what type of enhancement?

BW: would like to work w/ DNREC about this since they know more about under system

perhaps river gates (?) on white clay creek

Dupont familiar w/ site in EPA Reg 4 where this was done.

RS: what ~~about~~ do you envision in river/study? + under what venue

NG: we would propose to keep under 88 order

RS: then w/ RODs on each OU?

NG: YES

RS: so then you would submit workplans for river/wetlands

BW: yes but ~~we~~ want to work w DNREC

RS: EPA + State ~~work~~ would review workplans so there would be state involvement,

TV: in regards to EPA's view of DuPont's premises and we have differences although I'm sure great areas of agreement.

CT: DNREC concerned about overall watershed and think we should take a step back
- river study would help us view site

TV: we want to meld our site into study, but need to do w/in such constraints

NG recognize that work would be going on so public couldn't say we are just studying more

TV - there are degrees of how much we study & how much we move

CT: need to convince the public that we are moving + justify why we are holding back.

TV: we have to support this split - we have to make this choice
thing most afraid of → not having enough info" stopping work - there has not been one ROD in Reg that didn't have someone who felt that more data was needed

- Data is often required to be collected during pre design

We have 6-12-24 months during post-ROD to get info so why delay this post-ROD period

we came into this meeting believing that we have enough

(186)

Data

we need to be convinced that we need to change

RS: ~~we have m~~ DuPont ~~co~~ ~~tgo~~ issue doc in 89 + 91 that are in Admin Rec that says there is enough data to ROD site

~~RS~~:
CT: we appreciate more about ROD dec process

RS: ~~B~~ would you pull non-site areas under Superfund order?

BW: Could under current order or could fund studies for other groups

NG: DuPont ~~not well~~ would rather not be put in position of ~~a~~ agreeing to

(157)

80% but ~~ZP~~ have to spend millions on the 20%

WW: what are the problems

NG: - dredging
- contribution of gw to river quality

WW: is position that zinc not hurting river

BW: yes site only contributing 2 to 5% of zinc in River

PART II

W/O DUPONT

NVR: yes there is enough data for human health
no for environ risk

AR321578

(158)

CT: my perspective —
broader ~~handle~~ problem on river
— DuPont willing to help study

— Concerned about recontamination of areas that would be dredged

KK — here is an outline of proposal for study of all hazwaste sites along watershed

assemble team to study these sites w/ consistent & sufficient data.

DuPont / Koppers / Halbly on river would coordinate these w/ State superfund sites

want to coordinate needs of Natural Resource Damage Assessment w/ RI.

(159)

WW: concerned about how to do this legally.

KK: Seven components
- enforcement
- environ investigation
- develop model for what are impacts & trigger for when to remediate
- integrate NRDA
- restoration intiative

BM "Northern Del Wetlands Rehab Program"
most of focus areas are tidal freshwater wetlands

KK — watershed assessment program through div of water resources

RG have agreed in FY94 to beef up monitoring in lower Christina river
JS: coordinating this w/ WMD + ESD @ Reg 3.
RG we are working w/ ~~the~~ Green ~~Jo~~ Jones ESD + Da Morris @ WMD

(160)

CT also have governor appointed group looking at water problems (?)

This is opportune time to address problems all of Del are seeing

ie all aspects of govt.

KK - DNREC needs to integrate team from across diffrent div. of DNREC

RG hopefully we will

if make DuPont dredge then they will be removing mat'l they are not responsible that will soon be recontam

CT: ~~not~~ we want to dredge at time

(161)

TV: with NL/Plant areas/gw no difference from DNREC

TRUE

DNREC : YES

TV → this is different from DuPonts proposal.

- ~~to~~ diffrence in SL only in sense of keeping open for disposal options

- basin wide approach great & we can probably do in some fashion

but how do you get someone to study something that is not theirs - how do you fill in liability holes

Superfund is a ~~site~~ site-specific statute.

There are portions of area

AR321580

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that may have to wait until find way to fund - through court or government

- DuPont won't spend except in exchange for stuff they won't have to do

- what options do we have

KK

at NVF Yorklyn would make at com

WW: can we draw map w/ sites and discuss what are the specific authorities to use

Map drawn on board of Chris River

or start at border of PA have: Koppers
DuPont
NVF
all give piece of study & negotiate ~~at~~ how much of a stake.

TV → what about other sources.

RK → can go after junk yards w/ state ~~yards~~ authorities.

KK window for wk now b/c Koppers just

KK Harvey & Knott landfill SE
Newport City landfill

AR321581

164

RS this is a difference of opinion about whether Newport would get recontaminated

we need help from DNREC understanding your view

RS: can still ROD + wait on implementation

WW: have court case where State considered river bottom ~~land~~ owner

JS: DNREC people will have to commit up front costs to gear up ~~other~~ for these cases.

KK/RG: at NVF can

monitor 100#/day ZN/day in river case ↳ nonpoint source

also 99#/day on point

165

KK → don't support use of sediment cleanup criteria to RG also concerned about equity.

TV: is there temporary way of to protect critters

perhaps dredging is way to do this.

JS: don't want to dredge only to recontaminate

TV: at other site need to clean lead dust from homes - do we leave dust in house

NVR: still don't support criteria

TV: do you think we aren't protective

AR321582

BM → problem w/ criteria is with Natural resource

↳ we may want to use ERL / ERM to protect wetlands at other area & dont want to attract anadromous to area that is not protective

AH. better soln is to mitigate plan release at 1m of PP

PS: but I can't collect NRDA during RI

AH. limited data points during RI

TV. I'm hearing one side say low-levels (BM)

another @ DNREC (LG/KK) saying

AH. also concerned about fact we have one criteria for several different ~~major~~ kinds of eco systems

PS: we do have consistency — the criteria do ~~protect~~ predict areas that need remediation

RH: ~~we~~ want to step back & look at basin

→ maybe to help overall river instead of 50 mil @ DNRPoint spend ~~5~~ 25 at Newport + 25 elsewhere on basin

AR321583

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maybe letter let river flush self out

May make sense ~~to~~ to take money for ultra remedy at site when get more bang for buck when use same $ for whole river

Could use NRDs to fund other areas

JS: watershed assessment is new to DNREC - lets look at timeline
what if DuPont challenges ROD

LWW → only we need to show we weren't arbitrary & capricious - we can be wrong - only take month(s)

& Company takes terrible ~~[illegible]~~ risk because of treble damages @ 25,000/day

769

RK: would ~~say that~~ not say that lead ex is transferable to

WW: you are asking EPA to forbear on remedy selection for parts of site

PJL: again lets look at sch CD neg / pre design data collection may be 24 months, so can parallel your study w/ the RD

[redacted]

AR321584

[redacted]

5/20/93 - talked w/ Don Henne - asked for DOE's position about splitting the site up as discussed in yesterday's meeting

AR32

5/21/93
Mike Webber NRC

- long term institutional controls
- monitoring
- other remedial measures

→ probably Commission would let make dig up BUT since Thorium has such a long half life 10^4 there is a concern

part 61 doesn't allow reliance on active maintenance measures and only 100 years of institutional controls part 61 looked at 500 yr range but Th still haz @ 500 yrs.

10^{-4} lifetime is 3 millirems/year each year

NRC big fear is dig into and then

(172)

Dorlett of NRC says Thorium salts may be present, not just Thorium oxide which is insoluble and since oxy well has some elevated Th → although it may be outlier or spurious whatever – it also may be from site ~~too~~

If it was definitely only ThOx then ~~not~~ for almost sure no problem leaving at site

5/21/93 NV Raman DNREC
Karl Kalbacher DNREC
Anne Heller DNREC
Randy Sturgeon EPA
Peter Ludzia EPA

PSL: ~~when~~ we are scoping more issues
– no one here has problems w/ river-wide benefit – but we think would result in delays for DuPont site.

(173)

PS: expressed concern over

KK → feels it is as much an issue but get to do PR with voluntary
KK sees DuPont as being OK

PS: will have to do SL later

AH: DuPont willing to

PS: savings potential not really there

KK: don't feel data can justify there costs we want to spend so need to study; we have stated something needs to be done in river

AR321586

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PJL have you thought of costs for basin wide study?

KK multiple studies by mult parties w/ common data w/ trigger points as to whats impacts are

then figure damages to lead to restoration

so have two funded

RS types of tests

KK chem/water/plants maybe ---

can be put on paper quickly plan being circulated asks a team to be put together!

PJL is there funding needed to kick the proj off

AR321587

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KK real funding needed is to do studies borne by PRP

RS: what about junkyard

NVR we may not be able to handle each and everything

KK: FY94 do PA/SI on junkyard piggyback w/ $ from NRDA ($ (310,000 waiting w/ C-G)

we've don invest, @ H+H+ Newport Landfill

big change is

NVR, what is sch need for second ROD

RS: our big priority completion

PJL → our experience w/ DuPont is they are slow see min of 3 yrs to do RI

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DNREC : we dont have answers

NVR :

PJL we would complete data collection in pre-design

NVR - our biggest problem is sediment cleanup criteria we see that leading to problems

Can't you ROD w/o the criteria?

RS : attorneys have problem I do as well when then have to arg w/ Du Pont

KK if put in ROD, tests

pull part II into Part I is something we may be able to live with.

NVR this would also

KK Karl

AR321588

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RS : we should have a meeting you put together a plan to discuss

KK OK - have to pull people together

NVR - really concerns me about OUs is DuPont's slowness

PJL - remember many of our concerns are for false negatives

KK perhaps have an upper threshold

Rick Green
Randy Sturgeon

RS, don't believe there is recontam problem because our upstream sampling does not

RS: feels 100#/day 7 days RC
- 200 ppb to 1ppm at red Clay
- White Clay also

(178)

Sed are extremely contamin below these sites & has said there is a plume in sediments & water column - there is equilibrium between the sediments & water

STORET data has concentration USGS would stream flow & map as go downstream

Jim Pizzuto - Univ of Del (1990-91) - fluvial transport of zinc

USFWS environ sources of contam of ~~wt~~ Red Clay Creek.

RG: ultimately want to get enough data to model river

RS: time to implement remedial decision at NVF yorklyn

RG 1 to 3 yrs

RS: easy 2 to 3 years to approve design & dredging won't be what status first

RS: need data that shows sediments are getting more contam in areas far away from NVF yorklyn

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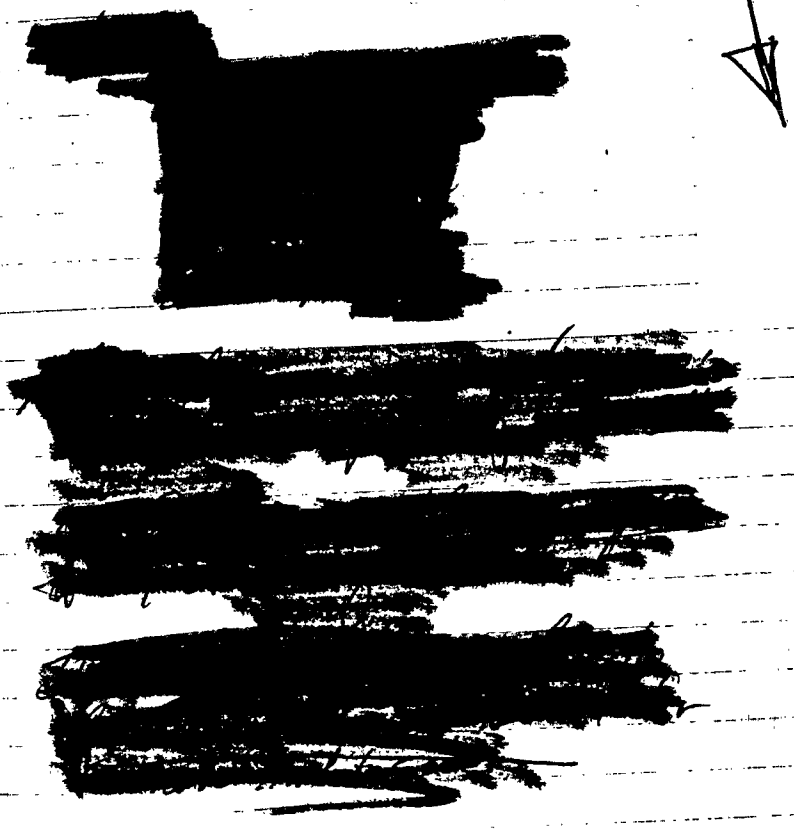
USFWS Cindy Rice 814-234-4090

Spec Proj Report 93-7 Red Clay Creek Sediment.

Weston Report - Chuck Kanestai Synoptic Toxics Report for Red Clay Creek



[redacted]

[redacted]

[redacted]

[redacted]

AR321589

(180)

5/25/93

George Wyeth –

GW: State ARAR issue: – statutory req maybe hard to get around if waive – if go "by book" then need to

EF: what about "our book" + fact state didn't tell us up front that we needed an ARAR

AR321590

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GW: statute doesn't address this specific issue but public does have right to review States comments on planned waiver

GW: we can take comments + go out w/o rerelasing plan except statute does talk specifically about waivers

Reg 1 site went back out w/ limited PP. – say 30 days

or treat as State Comment + just address as in ROD.

worse could happen is State could reject entry of CD
– State is only legal authority to challenge CD

biggest risk is public coming in + saying "I would have said not to"

EF: concerned that if always had to release PP then States in general could delay us by raising ARAR issue.

GW: our plans shouldn't be held up by State when they didn't clearly identify where the reg applied

121(f) - only requires us to make us aware of ~~public~~ states comments prior to release of PP which we did.

see also 117

EF if went out could we use 15 days
GW: probably, b/c ~~only~~ the State agrees ~~to~~ w/ ARAR waiver

NCP written for release of whole plan

Mary Matta
John Lindsey
Peter Knight
Randy Sturgeon

PS: went of DNREC/DuPont/EPA meeting of last 5/19/93

Could ROD & then go after WCD negotiation.

- IL need to figure how to leverage DUP to settle for covenant not to sue

104(d)(4) - non contiguous fac.
- EPA can make upstream source as NPL site.

NUF may be liable for NR damages.

AR321591

[redacted]

5/26/93 Bill Belanger
Randy Sturgeon

~~$ in escrow for cleanup~~

BB: need to meet institutional controls as if had waste disposal but disposal options may limit you if have to dig up

Def need to find out exactly where drums are

+ determine is there solvable thorium

if solvable then need to plan on taking out

- if can't prove have only ThO_2 then probably need to go ahead + dig up.

BB called Envirocare in UTAH

Steve Moynihan
801532-1330 + ~~have~~ he said they could the Th mixed w/ metals

PS: ~~NL~~ NL ~~couldn't~~ meet current LF requirements in 10 CFR 20

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NRC

5/26/93 George E Wyatt
Elis Fried
Randy Surgeon

RS, What about NRC & Thorium nitrate?

GW if had to dig up need to release pp
- perhaps keep RCRA now w/flagging issues &

RS what about MOU w/NRC

GW @ Churchrock NRC already performing cleanup

MOU may be valuable if we ~~we~~ knew what NRC would do

AR32 593

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RS: CAMU → concern about does this weaken State RCRA regs

GW - storage reg may not kick in for 90 days

CAMU does talk about temporary units.
- Fed rule will probably not trump state rule.

OERR has been tentative ~~[illegible]~~ in use of CAMUs

toward end of preamble - CAMU/ State implementation

line 53 FR 51444 -
~~[illegible]~~ 8762 + 63

6.5(~~d~~)(E)

Rich Green DNREC

5/27/93
screening level review
need dilution factor of 100 to 1
~~and~~ in order to comply w/ AWQC
at near field limit

"near field" has a definition
in regs

even if only 50% was bioavailable
would still need dilution of 100 to 1

and he doesn't see that happening
basing on his experience

6/2/93
called Anne Hiller
she said DNREC trying to get
states clean up criteria to EPA by
6-18-93 - (RS) probably too late

RS: how's comments on ROD going
AH: not close to being done
AH: review time on RS?
RS: 6/14 to 6/17

AR321594

6/3/93
asked Satya about appendix D
of

Mudcat 60-150 cubic yards/hour
FS of Dredging & (USACE) Newfoundland Harbor

assume $\frac{60+150}{2} = 105$ ave cu^3/HR

$(105\ yd^3/HR)\left(\frac{.4\ yd^3\ sed}{1\ yd^3\ total}\right)\left(\frac{2.16\ gram\ sed}{1\ ml}\right)\left(\frac{1000\ ml}{1\ l}\right)$

$\left(\frac{1\ m^3}{1000\ l}\right)^{-1}\left(\frac{1\ gal}{3.785\times10^{-3}\ m^3}\right)^{-1}\left(\frac{1\#}{454\ gr}\right)\left(\frac{7.48\ gal}{ft^3}\right)\left(\frac{27\ ft^3}{yd^3}\right)$

$\left(\frac{1\ ton}{2000\#}\right) = 92$ tons/HR
of in place sediments

~~60 + 390 yd³/HR for Pontoon~~

~~avg = 225 yd³/hr~~

6/3/93
$(2165\ mg/kg\ Zn)(13{,}800\ tons)\left(\frac{2}{\#}\right)$

$\left(\frac{1\ kg}{1000\ g}\right)\left(\frac{1\ g}{1000\ mg}\right)\left(\frac{454\ g}{1\ \#}\right)\left(\frac{1\ kg}{1000\ g}\right)$

= 27128 kg of Zn lost.

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$(2.92\times10^7\ l/day)\left(\frac{1g}{1\ mL}\right)\left(\frac{1000\ mL}{1\ l}\right)\left(\frac{1kg}{1000g}\right)$

$= 2.92\times10^7$ kg/day

6.15 ppm zinc in water colu
= 6150 ppb

Bill Belanger
Peter Ludzia
Randy Sturgeon

PS: NRC not comfortable since soluable thorium is buried possibly

BB: no EPA does nothing NRC will probably make DuPont clean-up

NRC revisiting old burial sites + looking at if

Kathy Hodgkiss joined discussion

BB: we should not allow thorium nitrate to be buried

PS: can we ROD as is 10 yrs for DuPont regarding nitrate disposal then if find it ~~RE~~ ROD amendment to dig out?

KH: likes this idea of going out. ROD amendment would be for just small area of the N.L.

BB: I would want a pathway analysis done of the thorium nitrate to see if would it cause any harm before requiring to dig up

PS: in ROD say if nitrate found to be buried we will reexamine need to remove

AR321595