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</table>
FRANK: ENGELUND
Private: KVADESEGRANGEN 4
3460 BIRKERØD
Tel.: (01) 813365
Lab.: INSTITUTE OF HYDRODYNAMICS
BUILDING 115
TECHN. UNIVERSITY OF PENN.
Tel.: (01) 884200

Fl. Bo Pedersen, Kirkebak, 1940
KAMSTRUPSTI 5
4000 Roskilde
CARL F. NORDIN, JR.
WATER RESOURCES DIV.
U.S. GEOLOGICAL SURVEY
BLDG. 53, RM H-2904
FEDERAL CENTER
LAKWOOD, CO 80225

Office - 303-234-2320
Home - 303-278-1302

14667 W. Ellsworth Ave
Golden, CO 80401
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<tr>
<th>Name</th>
<th>Hours</th>
<th>Days</th>
<th>Status</th>
<th>Role</th>
<th>Grade</th>
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<td>After</td>
<td>M-W-F</td>
<td>GRA</td>
<td>Ph.D.</td>
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<td>(25 + 3)</td>
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<td>156,900</td>
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1. Map
2. Belcham
3. Alpha Helix
4. The River
5. Flooding
6. Jungle
7. Obidos Marsh
8. A Frame
9. Paint Sample
10. Bay Sample
11. Belley - Smith
12. 3 M 5 4
13. Pipe Dredge
14. Lab
15. Bank Erosion
16. Jungle
17. Dig 10's
18. Racing
19. Loads
20. St. Louis
21. Obidos
Altamira Radioisotope Plant at Hazleton 1973:
- Decaturville: 1HD claim A site
- WSP 1668 v. Kennedy

Alcove channelization program: SCS:
- SCS - 170 programs

Donald A. Goodsky
Rm. 244 Federal Bldg.
Ocala, Florida

W. Pherson - Biologist - Miami

John Warren: S. Fla discharge records using digitizers

Matt Koehl: Water Exp in Jensen
Bruce R. Colby
1740 77th Ave N.E
Minneapolis, Minnesota, 55432
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<td>1610 G</td>
<td>30,000</td>
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410541 5,000

208106

61740

50700

46000

Full Time Staff

C. Nordik
V. Schulten
Ron Zeilken
J. P. Brinkhuis
H. Jobson
D. McDonald
H. P. Guy

Pay 4/4

46,000
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ZMR: 20

116 F
1963 F.Y.  74,500  Simoons
130,700  Total
(All Sediment Related)

1973 F.Y.  64,800  Nordin
1967

GRA's
Bennett
McQuade
Keeler
Layman
Carillo
Goswami
Kumar
Young
Grigg
Newhouse
Ramirez
Morganzki  Hourly
FLUME OPERATION & MODIFICATIONS

1. Guard Rail Around Level
2. Event Marker
3. Sampler
4. Two Bubble Gages & Digital Punch Tape Recorders for Continuous Slope Record
5. Pressure Transducer for Continuous Slope Record
1. NO BEGINNING OF MOTION STUDY

2. BUDGET SUMMARIES

3. DEAL WITH UNIV.

4. UNIV HELP L FAX LIST

5. TECH. ASSISTANCE [ADD. REPORT. SERVICE]

6. COMPUTER [USE WASHINGTON. COM]

7. WALKER

8. STUDENT SUPPORT - R. ABINGTON

29 Apr. - George Caddie -
WANTS TO TALK TO HERB FLETCHER
WILL WRITE IF NEEDS HOTEL

Personal Coding - 3.2.4

MEANDER WAJE LENGTH ~ 2.17 W
IDENT. OF VARIABLES

GS 14 = 17.00
GS 13 = 21.00
GS 12 = 12.00

Step Length GS 13 = 12.00

6-21-66
q = 4.78
V = 2.08
D = 2.30
S = .00055

6-22
q = 4.85
V = 2.11
D = 2.30
S = .00057

6-23
q = 4.75
V = 2.16
D = 2.20
S = .00056

Tw 66-68
VELOCITY DISTRIBUTIONS AND SEDIMENT

CONCENTRATION DISTRIBUTIONS IN SHALLOW FLOW

OVER DUNE BEDS.

1. In what ways do these distributions vary from theoretical distributions?

2. How do these distributions vary along the flow? (i.e., over a dune.)

3. Are there any reasonable methods for predicting these distributions given char. of dunes & bulk flow parameters.

1. Dune Bed, Shallow Flow

2. Plane Bed, High Transport

LITERATURE REVIEW

1. Rich's Thesis

2. Einstein & Chien

3. Chao's Thesis
TIME SERIES ANALYSIS OF SEDIMENT

DISCHARGE: POINT SAMPLES

& POINT VELOCITIES,

1. CONSTANT DISTANCE FROM W.S
2. " " " " " " BED

a) DO WE NEED VOL OF WATER OF CAN WE GET Q FROM METER & NOZZLE AREA?
b) ARE WE INTERESTED IN SIZE?
c) HOW LONG?
d) DO WE NEED CONTINUOUS RECORD OR SHOULD WE RECORD ONLY DISCRETE TIME INTERVALS?
TRI FLUOROMETER FOR COIX MEASUREMENTS
THESIS TOPIC:

USE CONCEPT OF DIST, OF SURPLUS, DEFICIT & RANGE
TO STUDY 1) LOCAL SCOUR & FILL FROM DUE

MIGRATION

2. LONG TERM SCOUR & FILL FROM DISCHARGE MEAS. RECORDS
Time series Analysis in Sedimentation

Problems: Survey for ascar?
Jillie Chin. of Soonder.

1. Run over a drum at 3 depths for each depth 2 carriage speeds on cloud speeds.

Can calibrate against a solid block. However, have no assurance so will have some influence.
1. Statistics of dunes

\[
\begin{align*}
\overline{A}, \sigma_A \\
L, \sigma_L \\
corr A & \& L, A = d + \beta L + e \\
e = \sqrt{\frac{\sigma_L^2}{\sqrt{L}}} 
\end{align*}
\]

Change with flow

2. Investigate models

a

b \[ L, A \text{ R.V. (from 1)} \]

L, A, \theta, R.V.

Solve in closed form

[generate sample with Pearson
\text{Stat. from 1}]

{\text{Bartlett
\text{and spec}}}

C 1st a, Markov

d 2nd a Markov

(from 1)

How should \text{models vary with flow}

\text{compare models with actual data}
Fisher - Tunnel Lodge

Fritz : CHART OF TEMP. CORRECTION ON DYE INJECTION

200-300 cfs.

Mohammed Athaullah: 482 2292

Liqui-nox Alcohol Inc., U.S.

1. Shade tanks & injection line.
2. Use funnel inlet line.
3. Mix enough dye for entire run.
4. 2 drops detergent.

1. Send JA. program to C. Huggeus
2. Send flame data for study of basic effect
3. Send Alb. main data to ORD
4. Call mostly on chart speed.
1. Reproduce Field from conditions.

2. Side effects: too many sounding simultaneously.

3. Check dummy properties, Dist if L, A cpr, L vs A for dummy.

4. Send data points to Dave.

5.

a) Given L, A, t, what is spectrum. Try single wave first.

b) If \( A = d + B + C \), what is spectrum.
12 July 1966

Sounder run overnite, 8°/H2

Tw: 76°F 44 0810
6.50
2.18
4.41
June 25, 1963
Hydrology Seminar
Carl Izzard: USBPR

Hydrology of small watersheds - Bill Potter

"Peak rates of runoff from small watersheds."
30% of a Billion on planning
25% in data collection
15% in research

for states from fed. funds

1.5 Billion/yr on hydraulic structures

- 40 Stratus comp w/usgs on small w.shd hydr.
  Regional filing, flooding analysis
  - Brook, crest stage gauges
  - Continusus gages
  Hydro of bridges sites

Nec: 1) Collection of data on small watersheds

2) Analysis of

USBPR Research Section

1) Approval of USGS flood drag and
2) Potter N.C. predmt, long term

Log Area

10 yr flood

3) Design of detention basins
   a) Contd. research
   b) Coop with Int. Agency Subcom. on fed.
Potter's Report
Telluride, Colo

Food

$2.50  Cushman

"  Pardymer

"  Jack

"  Joe

$13.15  C.
Major problem in determining runoff from small watershed.

A Handbook of

1) Hydrology of Small W.S. for highway design

2) Channel Storage as a factor in culvert design

Hydrological Parameters

1) Area
2) Shape
3) Area of lobes, % of total area
June 17, 63

Left Ft. Collins 0430 - Foggy.
Breakfast Colo Sp 0700.
Left Walsenburg at 0930 for Ft. Garland 012345.
10 Am stopped on La Salle pass to take pictures of sheep with 27.

12 30 Corserto Co.

Air All at 5:30 PM.
<table>
<thead>
<tr>
<th>INDEX</th>
<th>PAGE</th>
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<tr>
<td>MEETINGS - 1977</td>
<td>4</td>
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<td>AMAZON PAPERS</td>
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<td>Things to do</td>
<td>14</td>
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<td>Channel 6 w/m 25-26 Jan 77</td>
<td>16</td>
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<td>DATE</td>
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<td>14-18 Feb</td>
<td>Fish &amp; wildlife training course (US)</td>
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<td>7-18 Mar</td>
<td>Adv. Sediment transport training USGS</td>
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<td>16 Mar</td>
<td>SEPM - Denver</td>
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<td>April</td>
<td>Berkeley - Visit Ackerman</td>
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<td>15 May</td>
<td>Amazon River study</td>
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<tr>
<td>5-10 July</td>
<td>River Mechanics Institute</td>
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<td>14-19 Aug</td>
<td>IAHE</td>
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<td>17-21 Oct</td>
<td>AXE</td>
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<td>26-28 June</td>
<td>U. of Waterloo</td>
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DATA REPORTS:
1. Bed Material     BU
2. Susp & Vel.      RM

Papers
1. Hydraulic Geom   RM
2. Susp. Load       RM
3. Bedload & Bed vol BU

Queries
1. Susp          science    RM
2. Bedload        "          BU
3. Bed vol        "          ?
4. ASC (text only) BU
5. Equipment      Skinner
6. Turbulence     
Send Harry outline of Amazon work for info on wind project.

ORDER: 15 lb weight w/helmet & pins
014-48

Bottles
County for mag. head
Metric fog line

2od [2-2m rod w/hex plate]

Bottle carrying case

8Feb - Program makes & camp
Prot abs us camp

A-2 USS

Prot sets dist X - Soc

Prot Ave

Look at long profiles of (wind) sand dunes (2-18-77)
MTG ON CH. GEOM.

OBJECTIVES

1. What are people doing
2. Where do we stand
3. What do we do next

Pete Scott: N.M.
1. Ch. geom for predicting flood flow
2. Mean flows in ephemeral streams

Bob Henan
1. R.I. to handout

W. Ostercamp
1. Pediment shr. & mean annual flow
2. Multiple reg. on bed & bank rev
3. Refer to handout

C. Biggs: 1330
1. Classification
2. Testing on 22 streams in Wyoming by 7 land
3. Local ch. slope not useful

H. Lohman - Hand out report 7-6-112

K. Wahl - California flow
  freq. report would out.
1. Are we measuring the same thing?
2. When was the feature formed?
3. Why does it work for one but not the other?
   different histories.

Riggs:
1. 3 widths defined
2. \( w = Q_{50} \)

Maddox:
1. \( Q_{50} = \theta^d \), \( d > \frac{1}{2} \) \( \Rightarrow \) no flood plain
2. Time history may determine.

Woolman
Disk: Low-channel bars:
Active " " width.

Woolman
Delta: Definition
1. bank forming \( \rightarrow \)
2. 1, 5 recurrence interval.
Wolman: Dynamics

Historical

Luna: w/D, q, t & s related efficiencies

regional char. ref. in duration curve

Tom: Need 4 equations

\[ \frac{w}{D} = f \left( \frac{PL^2}{x} \right), \quad x = \text{resistance coef} \]

REDs: Time scale \( t \)

Luna: ARES OF COOPERATION

1. Testing equations
2. Collection of data
3. Studies using available data
4. Special field investigations

1) Riparian vegetation: LBL-Costar

progression of veg. in ref. to some level

Measure of density (root density)

Slope meas: Luna:

Red profile 20 ch. widths
w.s. profile flood plain
Terese shape
Role of slope of Os - Q relation & presence or absence of flood plain - Maddox will write up something on this.

Luna: Compile stage at basefull flow.

CH: Seems we'll extend up W.S.

1. What to do about terminology?
Bob Wagner  482 3834
Dist. Ranger
Red Feather Dist
N.W. Dead Man River
$.50/cord, Min 15.00
<p>| | | | |</p>
<table>
<thead>
<tr>
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<tr>
<td>2.1</td>
<td></td>
<td>14 in</td>
<td>169.99</td>
</tr>
<tr>
<td></td>
<td></td>
<td>17 in</td>
<td>169.99 Self Shap</td>
</tr>
<tr>
<td>3.7</td>
<td>17 in</td>
<td>280</td>
<td></td>
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<td></td>
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<td></td>
<td>14 in 160 Power Shap</td>
</tr>
</tbody>
</table>
EQUIP. FOR LAS VEGAS WASH

Level & Tripod (Transit?)
Rod (metric)
Chain & pins
Sledge & hammer
Stakes
4' Poles (20)
Pack
Pack Hammer
Sample bags w/tags
Camera & Film
Waders
DH 49 w/Bottles
Current meter
metric trolley
Nancy - 6694 - Hurst

Michael R. Galuzzi
Call Carroll on this
Does Hadley have papers?

Pete Antilla
Michigan WRD District
FTS 374-1561
Context in Peru:

Fl. Bo Pedersen
Institute of Hydrodynamics &
Hydraulic Engineering
Tech. Univ. of Denmark
Bldg. 115
2800 Lyngby
Denmark
5/16/75
EQUIPMENT TO LOAD

Level, Tripod, Rod
Sounding Rod
Cable pullers
Sample bags
Thermometers
Can be seen
Waders
Camera gear
Maps & photos

5/24/75
The concept of the incompetent river

Highland Company Inc
Pinedale, Wyoming 82941
307 - 367 4444
30 Sept '14

left Don. F.C. 0900 W/ R. Meade in 661-9171

Arr. Wyo D.O @ 1120, saw D.C., Son W., Al

pendleton (on D.W. Review). Gordon Craig (K.Ro model)

Hugh Lowman (Disp studies, channel geom.,

river study) Hugh has

Qg = 2.32 w 1.55

with Qg the geometric mean of all flood

peaks. Has some case study data for

are erosion from coal mine wastes

(Rose Springs area) & photos of most

Wyo. channels

To casper w 1800, stayed at Ramada

Inn, dinner, as seen

1 Oct '14

left Casper 0700, stopped at S. Fork,

Middle Fork powell at haylee, (coffee run)

N. Fork, then to Crazy woman Creek

when we heard up 2 antelope & 1 deer

Buffalo for lunch, then to Arvada

(powder R.), stopped at conference of

Clear & Powder, then cross country

to breddes, Montana along powder.
<table>
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<th>Area</th>
<th>1/4&quot; Nozzle (ID)</th>
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<td>0.1781 cm²</td>
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**Fill time in seconds**

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Mo

iTtLAA

cpc4

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two, 4) ,

4
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"A- 4- 3

4-0*

14_

14.

100 8

1000 8

8 796

\[ t = \sqrt{\frac{V_{01}}{VA}} \]

\[ t = \frac{\sqrt{2l}}{A} \]

\[ 2l^2 + (1-l)^2 + (3f-2)^2 \]

\[ 4f + 2(1-f) + 2(3f-2) = 0 \]

\[ 4f + 2 - 2f + 6f - 6 = 0 \]

\[ 8f - 4 = 0 \]

\[ f = \frac{1}{2} \]

\[ 4f + 2(1-fx-1) + 3 \cdot 2(3f-2) \]

\[ 4f - 2 + 2f + 18f - 12 = 0 \]

\[ 24f - 14 = 0 \]

\[ f = \frac{14}{24} = \frac{7}{12} \]
REMARKS

HALF

Bill 1 2 3 4 5 6
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<td>50-64</td>
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<td>1</td>
<td></td>
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<tr>
<td>15</td>
<td></td>
<td>99</td>
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</tbody>
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Copy from LBL Notebook
5/21/75

MARKED ON 8-3-67 AIR PHOTO

BM 1 - 10" nail on 6' ground fence,
R.B. on neck 15' wide between
mouth of irrigation ditch & Rin
250' below a beam, damn now
completed (1968) 5' high

BM 2 - 10" nail on 3' fence R.B
opposite mouth of muddy creek
Elev 91.32'

BM 3 - 10" nail on L.B. on grassed
4' fence Elev 90.54'

MAIN B.M. #1 orig Elev 100 used
base of bolt which is bent 1/2" 6, on
12" piling ds RH Bridge 26' inland

MD - Elev 102.98 rel to BM 1
Rebars all

Gravel Cays

[Signature]
Levels - one level rod

Wading rods - order bottom sections (5)

$25' Rod

Brass tags

Non-official copy form

Current water -

Wade's - 7 of 8

Look out W/ Dugan J. Shindom

5287 W Louisiana

adv. by Capt Bonneville

Norman

Univ of Okla press

Digested from his Journal

by Washington Irving

Ed. E. W. Todd
1) Lippizaner (Austria)

2) Dahmen Mollen Gellschaft & Co
  Rheinhausen
  1971 Deutzer, Donner Spitzese

Poodle
Mrs. Geo Burns
23.3.22-01
Dr. Stanley Morain
Dept. Geography
Univ. of U. Mek
Assistant BLM on E5 for
Rio Seco Drainage Area.
1700 - 15 Jan 1973

Who would think Tel Aviv could be so cold? I arrived at 0430 & after floundering around a little, found a message from Aker to take a cab to his house. We got about 25 km, then were turned back by police. Snow a lee ahead, Jerusalem was cut off. Back to Tel Aviv - to a "prince's class" hotel. The poor, the driver must get a cut - definitely not 1st class but ok. I cleaned up, had breakfast, walked, had another breakfast at the Hilton, walked some more, slept 12.30 - 15.30, walked another hour, then back to get note from Aker - will try again tomorrow to get to Jerusalem.

20 Jan 1973

Tuesday, for 00 I was the cab brought me directly to the Belgian house, arriving about 11.30. The hill & mountains & city itself were shrouded in fog with snow everywhere. After lunch we toured the lab & I talked in with a book. Fred arrived directly after breakfast, then I made off morning, Fred talked at 1 & I at 1.30 after a hurried lunch with staff. My talk, I think, was of little interest to the group here, I should have stuck to sediment problems. - The council met for a couple of hours, dinner w/Fred
8 to bed early. Thursday an intense windy 0930-1730, results will be transcribed. Dinner w/Silvester, Barry's Siam Clare & crew J, a Chinese meal at the Mandarin restaurant. Friday to Letch, dead sex, lunch w/pants well & coffee w/Pale & muriel L Shome story house, friends of M. Grad 630am I walked in the old city till 4.30 a.m. on campus, everything shut like a tomb. Dinner from an in chest, read a to bed early. Friday up at 0730, walked the campus till 9am breakfast, 10-1-315 of National Museum.

21 Jan 73

This am I caught a cab to the central bus station, joined the Езгеге tour of the old city, we were only 4 so we had plenty of time. Tower of David, the wailing wall, Dome of the Rock, Church of the H.S. included. I stopped until 12:05 I had a leisurely lunch w/Аshorn. Too bad, no seats on the Linoski. Busman drove me to the airport we left T.A at 16:35. The hard drinkie I had on the way was

wed 2010, wine, coffee, dessert.
I saw nothing in Israel that I wanted to
take home. Bargained for a rug but no deal.
I looked for a handmade lamp but never did
find the one I wanted.

THURSDAY 25 JAN 73

Touried Hydra. Lab
Disc. with M. Dyer, Nielsen
" " " Dan Robyberg
" " " Neil, Echo

FRIDAY 26 JAN 73

TO Univ. AT LUND W/F. Engblom
& E. Hansen. Met by Peter
Larsen [lown AGE HTG in Aug 71,
was been at worcester Polytech]
[ice rippled.] now working on
settling basins, velocity wate,
to 3 mm/sec. - Prof. Lindh.
work on experimental basin.

MOONDAY 29 JAN 73

TO UPPSALA - HTG W/ Roger Horne [ANDER]
ANDERS RAPP I work in AFRICA

John Norman - Dinner at Normans
Tues. 30 Jan 73

1000 MTC w/ Ulla Schytt, geocologist on INO basin work and glacial streams [presumably member of INO]

1100-1230 - Gunnar Østrem, work on Norwegian glacier streams w/ Nor. light & power.
1. Disc
2. Report by F & S to N.E.R.
3. 1st Contact at Istanbul & define common tasks.
4. Liaison w/Bernier

- Santure: Fl40, comm
- Torbaq: Syskus
- Tertiary: Flow in porous medium

Common platform of action

1. Draft by Fonsor to Santure; Fonsor to Hayashi; Fonsor to Rabir
2. If draft approved, tech committees work out details
3. Then joint symposium

[Both know role in UNESCO]

1. Pollution & dispersal of waste
2. Effect of industrial impact & hydr. structure on T. M.
Sedimentation
Flood propagation
Diffusion, mixing, & suspension
Lakes & closed basins
To extend seed data - work
to Asher & Fred on this Comm.
with ]65 on joint meeting
to extend & generalize sediment
yield data:

Roger Heeke
John Norman
Andrew Rapp

Rapp willing to work with
Asher on some of this
- Rapp: Reports on Afri
studies. "Geographica Americana.

Volker Stelter 1-30-73
18 Jan 1973

ISO Headquarters in Copenhagen - are they doing any work on hydrologic measurement or equip. for sediment sampling.

Send Eggert, Wilson & Sales papers.
8 March 1973

1. Bill Holcheris - Add 1 man to my project, support relevant scholars (as a matter of policy) - High priority on Bermudian flora data

2. Cochrane - Remote sensing

3. Move toward applied research?

4. Contract Revision

5.

NOAA NOSR 72-1

Black Hills Flood of June 9, 1972
Remote sensing for evaluating flood damage conditions

Harrisons
Nekkleton, Chief of operations (of resources)
Mellomaz - A Report

3) Conclusion: 1 50. 0 50 - no money left

This means we will prepare suggestions on this
1/16/73

Revue de Geomorphologie Dynamique

Nov. XVIII. Annee, Oct Dec 1967

Int'l Geographical Union

"Field methods for the study of slope and fluvial processes."

Can we get copies of Russian book?

Or call USGS on this.

Send for this: Hill Greenehow Co

Box 520

Hornell, N.Y.

Zip 14843

"Flood"

The Southern Tier June

1972 DISASTER

A PICTORIAL REVIEW #1

Garson - John Nagursis

working w/ Rob's 

Send Asher copies of all my papers

Asher - Sub tahil & start summer 1974
VISITING STAFF

JACK MABBOTT - UNIV OF NSW
LEN BERRY - CLARK

DAN YAALON - Hebrew Univ.
Geological Dept

Peter K (a Muriel) Weyl
Prof. of Oceanography
SUNY, Stony Brook
visiting prof. at Hebrew Univ.
16 Jan 1973

Caves & Karst
Research in Speleology
V 13 No 2
March/April 1971
To Cave Research Associates
3842 Brookdale Blvd
Castro Valley, Calif 94546
"Acoustic Tracking of Karst Springs"

Send E. Hooe info on
Stan Schummi's work
Roy Barre - Work group on data for projects. Will meet in Madrid.

Rodier: CHM working group on experimental basin

Peres, Nagel

Prediction of sed. dist in reservoirs - could publish as tech. note.

Get Clesun on student housing

2.15

To J.O.

Krantz: 1760

2-11-73

6760 - Proj

8520
Donald J. O'Connor
Manhattan College,
New York, New York

Richard J. Frankel
Univ. of California
Berkeley, California
U.S. Army, Envtl Hygiene Agency

George K. Young (Harvard)
FWPCA
Washington, D.C.

Robert V. Thomann
Dept. of New

(Ph.D. N.Y. Univ. 1962)
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<td>Gold Flax</td>
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2-7-68

31.3141

31.3420

31.341

Gms.

to

Neil Gray - Acc't

offin. Safe
2-12-68

Red 3" Stainless Sieve Set:

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Top Pan

2 - 4" Spatulas
2-20-68

Red gold samples from Jack Antworth

Drew Lindsay

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2 Dec 1971

1. Dug of a soil on the fault line - disc. العليا
   in Kedanehian.

2. Klutina: design flood?
    buried 13½ ft below
    halfway

T. Blanch: face in - concentrate in:

\[ \text{ch W} = 1.8 \times 0.5 \times \frac{1.8120500}{20} = \]

\[ q_b = \frac{Q}{W} = \]

1.7 d below high water mark
+ 4 feet

Est ideal slope S:

Compare with measured, Sm, 5700 ft

\[ \frac{Sm}{Si} < 3 \text{ or } \]

1.5 Si/Sm, inspect in field

compare 1.7 d w/ 0.7 ft/min

average his level.
Bernardo Conveyance Channel Study

USBR 1961 - 5 year water salvage - Bernardo to San Acacico
Rio Grande, N. Mex

USGS USBR agreement to construct control structure
1) model study Ft. C. Harris & Richardson
2) construct summer 1963 (Aug)

Features: 1) Control for accurate streamflow
Control & 2) Sill & footbridge - 1021 break T.C.
gage 3) Pump sampler for continuous sediment records
  a) Inlet pipe for sediment inflow about 4.5 miles upstream
Channel 34,000 ft channel, ~ 6.5 milac
Qm ~ 2000 cfs
W ~ 300 ft
D ~ 80 ft
V ~ 6 fps
dm ~ .24 mm
full range of bed configurations
~ 4' range in bed elevation due to local scour & fill
study reaches available both upstream & downstream from control.

Project is designed to obtain accurate & complete field data for a range of bed configurations discharges depths & particularly concentrations not heretofore available.

Has the major advantage of
1) accurate stream flow
2) Total sediment load capability
3) Continuous sediment records.

Some specific questions to be studied.

1. What effect does the control of bed elevation have on channel adjustments upstream and downstream of the control?

   Adjustments: water surface slopes
   a. mean bed elevation
   b. bed slopes
   c. channel cross sections
   d. Bed material size distributions
Vance Kennedy

1. Duplication 3
2. Sediment Work 2
3. Channel 30-50', Stage 1-15'~450m^2
4. Willapa & North Rivers
5. Some marine Geology
6. Pump & Drain into Columbia

Chemical Balance
30 ppm dissolved solids

Dis = Ads + Solids = Tons of elements/yr

Dissolved ions
Continuous record needed & will be

Collected on:
Na
Cl
pH

Conductivity - 40-70 microhm\(\cdot\)cm

Correlate observed data with a study of
trace elements; & interpretable for a continuous
record of trace elements,

Adsorbed ions: Use aluminum flake to replace
adsorbed ions. Extraled in field lab.

Demanganization
Hard exchange Cap. of Sediment 3

Catalyst - Alm. Clay 60 me/100g
Dial et. 20 samples per yr.

Need info on seaweed discharge & sewage dust.
Empirical relation between dissolved and adsorbed cations.

clay 60% silt 20% Use this to determine pH of Clay.

Solids: If chemical weathering is assisted by small time gaps use these to determine their elements. Correlate these elements with Ca, Mg, C. Some of these have elements known as heavy elements, along them bed. Use fluorescent here technique, dilution method. coarse sand to cobbles in bed.

Effect of organics on transport of elements.
uptake of pesticides; on sediments of stream bottom. Parameters which influence the uptake.

Is it preferentially absorbed on clay?

77c Query: WAE until course work is complete.

A policy item: Thesis support not approved until course work is essentially complete.
1. Grad. Student Support
2. Flume Studies for Pesticides

Valuable products: Contributions

1. Identifying bed configurations & defining range of hydraulic conditions & transport rates under which they occur. - Stages, discharge discontinuities. Roughness coefficient of plan bed.
2. Predicting transport rates for sand beds, using V, D, T, d, EC, etc.
3. Colby's work - Scour & fill
5. Mathematical model of step length & rest period for bed modification. - Dispersal & momentum.
6. Training.
7. Interpreting hydraulic environments of sedimentary deposits.
Send Scott papers by
methods on macro-turbulence
Laws
Note on vortices.
Any other figures
Send cartographic paper on large
Submarine sand waves.

An interim report on methods being
used for the design of link controls on
an Indian basin project

T & K, Inc., Engineers
Sept. 1963

Coda Robertson .... 265-7861
3217 Butts. 265-2846 8531

298-5448
16,950
1. Bed configurations

2. Ripples
   Small triangular shaped elements
   \( L < 30 \text{ cm} \quad A < 3 \text{ cm} \)
   \( 3 < \frac{U}{U^{*}} < 80 \quad V < 1.5 U^{*} \)
   \( C = 200 \text{ ppm} \quad q_s = 0.14 \text{ gm/sec/cm} \)

3. Dunes - Larger
   \( \frac{U}{U^{*}} > 20 \quad 20-80 = \text{ripples on dune} \)
   \( 1.5 U^{*} < V < 3.5 U^{*} \quad q_s = 0.14 \text{ to } 8.6 \)
   \( A = f(D), \quad L = f(D, d) \)

4. L/A FREE Dist

5. L/A vs \( T_{0}/U^{*} \)
6. Ripples - Note Segregation

7. Ripples - Side view - Stratification

8. Dunes - Side view

9. Antidunes - Side view

10. Antidunes, Breaking

11. Bed Configuration = f(\text{var}, d.)

12. Q_s = f(V, D) \quad d \& T \text{ constant}
18 Sept 1964

Intro: PCB

History, personal, objectives of project
"Flow in Alluvial Channels" - EBP

Film:

Results:
1. Define bed conf. & flow regime
2. Confirm Shields diagram
3. Emphasize fall velocity
4. Sedimentation
5. Emphasize variable stage-Q relation
6. Influence of fine Sediment

Resistance to Flow

\[ \frac{1}{k} = 7.4 \log \frac{D}{d} \]

AD method

Sediment transport - no repeat

Future studies

Inner mechanics - Turbulence
Particle movement
Dependent, Independent variables
Non - Equilibrium

Dispersion & Transport - W.W.S.

Predict distribution of group of contaminated particles, given
1) Initial distribution
2) Channel geometry
3) Flow characteristics
4) Sediment characteristics

1) Bed material
2) Suspended material - Dye, clay, oils.
**Tagged Particles Studies**

1. Loop River studies - Iodine 131 - 74 day HL
2. Flume Studies - Antimony - 3 day HL

**Dispersion Theory**

Basic equation on

\[ f(x) = \sum_{n=1}^{\infty} f(x/n) P(n) \]

<table>
<thead>
<tr>
<th></th>
<th>1/k_1</th>
<th>1/k_2</th>
<th>( \frac{k}{E} = \frac{k^2}{E} )</th>
</tr>
</thead>
<tbody>
<tr>
<td>N. Loop</td>
<td>36</td>
<td>12</td>
<td>3 PH/ft</td>
</tr>
<tr>
<td>Flume</td>
<td>1.7</td>
<td>24</td>
<td>10 PH/ft</td>
</tr>
<tr>
<td>Einstein (30um gravel)</td>
<td>3.5</td>
<td>10 S_</td>
<td>1300 PH/ft</td>
</tr>
</tbody>
</table>

**Suspended Fine Sediments**

Dye & bentonite  
Coarse Silt

Polyethylene particles on surface to eliminate convective current from net, grid

Lateral diffusion from a point source
FLUME EXPERIMENTS

1. WHAT QUESTIONS ARE TO BE ANSWERED BY THESE FLUME EXPERIMENTS?

2. WHAT VARIABLES MUST BE CONTROLLED?
   WHAT VARIABLES MUST BE MEASURED TO PROVIDE ANSWERS TO THESE QUESTIONS?

3. WHAT RANGES OF VALUES OF THE VARIABLES ARE REQUIRED TO YIELD SIGNIFICANT RESULTS & HOW MANY VALUES OF THE VARIABLES ARE NEEDED (THAT IS, HOW MANY RUNS DO WE NEED TO ANSWER A PARTICULAR QUESTION)?

4. HOW CAN WE DESIGN OUR EXPERIMENTS TO ANSWER THE MOST QUESTIONS WITH THE FEWEST RUNS?

5. WHAT IS THE ESTIMATED COST, NUMBER OF PEOPLE REQUIRED, & NUMBER OF MAN-HOURS TO PERFORM A PARTICULAR GROUP OF EXPERIMENTS?

6. WHAT TOTAL RESOURCES (MONEY & MANPOWER) ARE AVAILABLE TO PERFORM EXPERIMENTS?
SOME MINOR BUT RELATED QUESTIONS:
A) WHAT INSTRUMENT ACCURACY IS REQUIRED FOR EACH VARIABLE?
B) DO WE HAVE INSTRUMENTS AVAILABLE, & IF SO, ARE THEY CALIBRATED?
C) IF NOT, ARE INSTRUMENTS COMMERCIALLY AVAILABLE, OR MUST THEY BE DESIGNED & BUILT HERE?
D) WHAT PROVISIONS ARE NEEDED FOR RECORDING & PROCESSING DATA?
1. Total load 1 cont'd, 2 each day mon - thurs
2. E/E, plan & drum read, d.s. see 4 each day with
3. B.M. thurs. d.m. p. & pl. read mo nth
4. Stop staff - sun. thurs. daily
Levels 2 each day 25' intervals at 6 steps by rows
5. Water discharge: july 3 4 5
6. Sonic sounding
   a) Jan 29 - cont'd to 515
      14 1 cont'd to 515
      3 11-14 A
      A-14 2 & c ½ point
      A-C 4 line 15° 28' from 600' (71' work)
      A - A-14, 4 350 point
   b) Cross tie
      july 3 A, B, C, D, E, F
      B 13 10 min for 2½ km
      C 13 " " " " 3½ km
7. Vertical velocity - 5 points
   A.M. see E, 5' intervals
   july 3 pm - C " " " 
   A.M. see " " " " " " 
   4 pm see 5° 43' 30' long profile 2½'1
8. Juduline:
   july 3 see E, plan leg 3 verticals
   4, sec leg 2 3 verticals
9. Conc. Dist. (same as 7 but 10' intervals)
10. Trace study: k. l. patrick
11. Fluorescent study: m. kennedy
   calcite waverly
   ABC done rec'd
   M = 13.5
   M = 0.5
12. Width measurements at 17

Cross sections (level) on FEB 3

13. Ground water elevations in obs. wells. on at DR-2 & at DE-2

14. Continuous water temperature

Mon: slopes.

ETR's
FRI
SAT
SUN?
MON?
TUES?

Observe visually the movement of

dem. reach toward for next few
days.

Mon - 3700 reach of slopes

Perhaps again in 2 weeks

Probe below control for
depth of seep.

How much slope deviation next run if

how do we get it.

Sampling bed material: How many & what kinds?

Kennedy: what samples did he take?

How will they be analyzed?
C ~ 510 ppm Sand 
~ 2000 ppm total

Mean depth ~ 3.5'
Dune, up to 2 1/2'
Dune length ~ 20'

Base gage of meters: Better will go
al Bureau of Standards
Cosine meter didn't work
Small off meter worked OK, 5 min time
intervals, 5 points (same as | meter)

How to get fluorescent effect
Sample in vel. to nozzle intere velocity

Why do we pump gravel at control
Sand moves across orifice of bubbler
Sand box effects stage at conventional
gage U.S. from control
Eventually - a report on control behavior.

Suggested staffs on stream every 200'
with cross section at each to determine
diff. of cross section properties. to slope,

Install 2 more digItals. One between 021 & 2
& on go! U.S.
ORE- 5-73  Bar Mines
Pub. List 654, Feb 73

A numerical model for the study of particle interactions in relation to

A.C. Wong & T.S. Liu
Carn.-Mellon Univ., Pittsburgh
Some questions: 6 Jan 69

1. Will ripple form in laminar flow?
2. Error in Raynold's paper?
3. Size in transport not same as bed stock?
4. Why do heavy minerals separate along riffle crest?
5. Dune flow model

Instead of sinusoidal, a continuous series of truncated arcs.
An account of Egypt: Herodotus - Harvard classics, 1910, P.F. Collier & Son
33 Voyages & Accents
Delta formation
"gift of the Nile"
1) wind blowing S
Rivers rise
2) ocean currents world rise
3) melting snow
7-27-76 Mt 6 Reno

1) paper on peclean use forms II

I Trout cool GT 6:14 7-28

1 Point bar - used on mes

2 done

Only one defined been ~ 500 yds ds

of bridge

3 Ripples in sou

w/cmnt 180° out of plane

4 Point bar was

by KB 9' 1 ft

II

5-8 upper tucker no. Meyer

Point bar DB w/100 yd ds gage

GHT 4:19

34 ft wide

Sec 2, 200 yd ds

9-12 29 St 0, 1, 2, 3, 4, 5, 6, 7, 8, 1, 2, 1, 6, 1, 7

200 ft

12.7

Est w.e. 0.045

120° YJ Gage, course 100, 200

w, 1.3

0 Reno

0, 1, 8

w, 34, 0.6 ds w oem

0.3, 1, 9, 1, 1, 0.8 0.6 0.4 0.5 0.3
11-18 Class at Pond bar
17-20 Dressed

1-2

Br_REMOVE EVERYTHING
new empire (ephemeral state)
8 June 15

B&W pictures

1) Run DS from high knee 2B Sec 3

2) 11 VS

3) Sec 3 & 4

4) 

5) Sec 5A

6) Sec 5B

7) Sec C
14 Jan 76

Solomon

UW of Waterloo

Hydrologic
meteorologic

Phytiographic

data Bank

Bases on grid

System, now

New for a

10 x 10 km system,

Working on

Flexible system

1. Implement Modeling

2. Identify gaps

System: Contours

Soils

Land Use

Compared snow cover for:

Test

1. By snow survey

2. " Gauss Radiation

3. " Model

Used to predict flow in March & April: Best

Prediction is by model.

1. Data networks must be designed

Cooperatively, i.e., data are related [Hydro, etc]

2. Can use present tech. to improve

existing networks, i.e., digitize topo data.

3. Measurements and surveys are necessary & productive

(~50% labor) Measurements pay off anywhere you have development.

4. Most econ. to conduct means during recession,

So you have avg. data during period of expansion
Most research system in light of satellite and remote sensing data. Complete copy of Envar of
[Some in Tucson from Qureshi] Canada.
Phone Solomon to get more information.

A.S. Qureshi

Ottawa - In charge of data bank,
I can provide printout of data bank for
spec. coordinators.
If there needs manual to set up data
bank.
Prof. S.I. Solomon
DyT A.C.E.
U of Waterloo
W, Ontario
Ph. 885-1211 ext. 2407

A distributed digital model for
estimation of flow and sediment
load from large unga
d watersheds.

by
Jantosh Kumar Gupta
Mar. 1974
Pine Not Forest

$15 / cord for dead wood & min 6 cord

Purchased 7 June 30: Green Wood
50 $ cord Lindenme
spray & cover 1 month

279-9757 same info
on heating: Linden $17/gal

1 junk 14 ft. poles dead
on debris & dry

check w/ Fairplay Dist ranger

Bob Wagner -
D.W. Dead man area: $508/cord
(pole dead) Crown present area

(put here Dist)
6 Apr '71 - To H.C. ERC - Rogers - Trish to visit.

Dr. A. Samplers finished but not balanced.

Nozzle of 3 > spec & short, but may be ok. Pump burned out on 2' flume so cannot calibrate today. Can work in 3' flume tomorrow w/ Jim Ruff. Shop still to drill only hole & lengthen shot at bottom for weight.

Warm (~20°) & clear. T = 18°C @ 1800

7 Apr '71 - Need plastic bottles

" bucket

Scale

Cable & clamps

T = 9.5°C @ 0700

18°C @ 1800

To FTC ERC w/ wife & Trish.

Try to calibrate samplers - See p. 6 & 7.
Fri 8 APR 77 - 12° & 0600

To GBC (1988-450) 1045 - can
Fabricate sampler head next week. Drawings
Mon. A.M. Hertland F. Bloomstraw (Hasley) will
do this.

Sat 9 Apr 77 T=20 at 0900
0945 - Off w/c to P.O. Bank & to.
Adiko springs return 6th to end
week.
2020 - T=16:5 - To Adiko Springs.
A man - wind, perk - still much shown in
weights.

10 Apr 77 - Eagles - T=22:5 @ 0900
T=15° @ 1800 - Unusual, cloudy. 1130-1430,
worked on design of sampler head. Turkey dinner
at 1730.

11 Apr 77 - T=8 @ 0645
0930 - To GBC with revised plan for
sampler head. - P.M. - plans for pipe dudge.
to GBC - To Sears Line. Ac Hardware for
chain, skidder batthw - washers x misc. Hardware
ob欧 for. 1500 - Red off with, from
Jame - 6° at 21:30, Rainy

Shopped 8:30-10:00
12 Apr 77 - T=5.5 @ 0430 - Foggy.
Est Bedford Obongs 1-2 x10^6 T/A
R.M. - work on core by size class
- Justifications for trip to mound's office
today 18 30 - 4° & cloudy - rained most
of p.m.

13 Apr 77 5° @ 0715 - Clear
Design ext & tail for sampler. Sue wrote
called - wants to reopen mae. safety. Lunch
W/Tom Keenan - Ernie Pemberton will
work w/me on effects of mine dimensions.
- DAN KING - USBR - Head, Hyd. Lab Ext 4238
Tom Rhone - 3000 I will set up there
Mick Colgate - 3839] in USBR lab
to calibrate sampler.
1400 - TO GBC to check sampler heads
will be finished Fri AM. Dinner
Red Lobster, Ford garage door, T=6.5 @ 2200

14 Apr 77 T=7.5 @ 0600
Rudy Freeman will send poles for mud mill
Steven pecking for Amagron work
Pick up samplers from GBC @ 1430
Appl. for travel still in mound's office

15 Apr 77 - 0600 - 5° & raining
AM. To wheel一句 lumber for mill to
make sampler head - Shirley to lunch, hus
Birthday was 12 April. To museum of Nat'l Hist
& airport - Lee on standby - Did not slow
16 Apr 77 - Left in from Durango at 0825
Woked on sampler head.

17 Apr 77 - 0830 - Church.
19 Apr 77 - 0830 - Foggy.
30 Apr 77 - Called Tom Rhone - May be

18 Apr 77 - T = 2° @ 0730 - Mist.
To sound s H.M. Weld for body putty or
W/C - spent pm on sample heads.
T = 4° @ 2230 - Finished one sampler
sprayed with epoxy - will test
tomorrow.

19 Apr 77 - T = 4° @ 0600 - Foggy.
0820 - Called Tom Rhone - May be
\[\text{\LaTeX} \text{\begin{equation} T = 4° @ 0600 - Foggy. \end{equation}}\]

20 Apr 77 - 1° @ 0730, Snowing.
To GBC @ 1000 & than USBR with

21 Apr 77 - 1° @ 0700, Snowing.
8@7 following. Samples not consistent in

21 Apr 77 - Closed. Left 1500 on GBC.

thesis. To lab at 1330 & worked till

1900 on sampler calibration - Looked ok.
80% of water at 90 cm/sec - 7.5°C at 2120.
22 Apr 77: 7°C at 0700 - Returned equipment from USBR Lab & returned balance to dist spt lab.
John Skinner said increase taps on sample nozzle would increase efficiency only 5 or 6%. Called Scripts - they say ship early. Worked on Gonzales dissertation most of day.

23 Apr 77: T = 12°C at 0700 - Worked on DOC theory till 1200, met W/D 1215 - 1300
Wayne & Dorothy Allen arrived 1600 - warm & sunny.

24 Apr 77 - Warm - 22° midday, 12° @ 1900
Visit on Allens

25 Apr 77 - Left for Ft C w/ bsb at 0645:
Coffee w/ s&p, DSS, Later VMY, but - got typing pool going on Don's dissertation - 24th to DEC 1, 1745, home 1800 - 10:50 @ 2100
Ralph says body putty will dissolve in water.

26 Apr 77 @ 0800
Passed Amazon Equipment

27 Apr 77 - 14° @ 0630: Shipped Amazon equipment at noon - 9 pieces, 640 lbs.

28 Apr 77 - 12° @ 0700 - Clear - Partly overcast p.m. Called Scrupps w/ W3 # see p 39
15° & mostly cloudy @ 1800

29 Apr 77 - 11° @ 0700 - Clear - Called Braniff - Miami - F17 left FL977 Braniff 28th, Arr Bogota 2200 28 Apr 77
30 Apr 77 - 18° at 2000 - Sunny & hot - planted strawberries & confirmed trees - worked in yard. Al &

ready went shooting. Boo to work at 9 pm.

1 May 77 - 18° at 1000 - Boo still sick.

Cloudy & cool - Brief rains at 9° at 2200.

Boo feeling better. Read most of day.

2 May 77 - 1st Amazon export loaded 0800 - 77 - 400 on the

bed material of the Amazon. Worked until noon.

Picked up railroad ties, coarse sand, began to
terrace garden.

3 May 77 - 10° at 0100 - To FR Collins for DBC

exam at 10° - Rtn calibration - 2030 - Max called -

load used to till farm.

4 May 77 - 10° at 0700 - Revise last part G, pray for Am

A.L. 3 p.m. worked on yard, phones for Insp - Lee got
tired today. Hauled 1500 lbs fertilizer from DBC, finished
terrace garden.

5 May 77 - 6° at 0700 - 7° at 2000 - Worked

on yard till 1030. To office 1100, to Col. Camera.

Said to Mahoney @ 1440, harness in 1750 - T & L

OPR. Al worked late at Veldkamp & didn't go.

6 May 77 - 7° at 0630 - Met w/AC 10, DH, RM

on Missouri - Assign to Gap? Big hop with

AC & DBC - Slides & Allegro than 6 M photos. Tried to

tiny corrections for Amazon samples - very

frustrating. 14° C at 1120.
7 May 77 - Saturday - 10\textsuperscript{th} at 0630 - cloudy, west of
day - dug out 3\textsuperscript{rd} concrete tom beer yard - shopping
w/lee for M.D., bought tomatoes, pepper & onions
A few large hail at 1800.  All home from
work (Veldraup) ~ 2030

8 May 77 - Finished garden, hauled trash to dump, Warm &
sunny all day - 16.5\textdegree C at 2200

9 May 77 - Mtg w/Ernie Pemberton on TAP
test group - Called Al Harrison - Talks to
Lee.

10 May
Canoe paddle
1 at $7.21 \times 7.00$
8.35

Coleman
5255C Snow Lite Campstove 51 cubic
5255C Octob. 56 qts. 5 29.99

Coleman

2 5410A 200
32.40

2 - Pondra 50 x 80
92.5

Prop reg. 6064
7.99

Coleman Fuel
17.9
1977

15 June - 26° at 1000 HRS - C. Colbertson visit
34° at 1430 - worked at Apts

16 June - 19° at 0915
27° at 1600

17 June - 17° at 0745 - watched 100's S.B.
from (little girls) - worked

18 June - 30° at 1630 (in sun)

19 June - 21° at 1030

23 June - 17° at 0700

26 June - 32° at 1500

27 June - To S. Sioux City, Neb., for Oxbow

1st study

28 June - Mtg on Oxbow Lace - S. Sioux City,
Neb.; 45 attending

29 June - Rtn to D at 0830, Arr 930

30 June - 15° at 0830 - Faced to amrport

21 July - 60th - Dale Hufn - Oak Ridge

Bon Yen - U of Ill.

1 July - 6:00 - phono
2 3:00 - game - PM
2 July 31° at 1100
3 July 33° at 1400
25° at 1900 - cloudy, R and C in field
4 July 23.5° at 0800
5 July 24° at 0850
<table>
<thead>
<tr>
<th></th>
<th>A/F</th>
<th>Toos</th>
<th>CFS</th>
<th>T/D</th>
<th>RPM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sioux City</td>
<td>22 x 10^6</td>
<td>1.4 x 10^8</td>
<td>30 x 10^3</td>
<td>385 x 10^3</td>
<td>4770</td>
</tr>
<tr>
<td>Mound</td>
<td>52 x 10^6</td>
<td>2.7 x 10^6</td>
<td>712 x 10^3</td>
<td>740 x 10^3</td>
<td>3800</td>
</tr>
</tbody>
</table>
20 Jun - 77 - Fannie on delta studies
Called and off on 10 June 4
fin FEG
1430 - Call from Tom Dorello
Northern Eng. Service Co., Ltd.
635 54 Ave S.W.
Calgary, Alberta, T2P 0T5
403-265-8500 - Send SF171
will be here in Aug
1730 - L.G. game - Heavy rain at
1845 - Lee's game at
Daneel park, Capitol
Rained all pm

21 Jun - 77
0700 - Some walk in basement
Cool, cloudy, some rain
0900 - Pick up lunch at Mswr
15th & 5-25

22 Jun - 77 - w/l E. pembroton on IAHE

23 Jun - 77 - Dinner w/pages at 9th
Air Squad, n. airport
24 July 77 - 28° at 1700
Built frame for pole beam
Received Kinugawa's paper
WPC for dinner.

25

26

27th - Scout Freeze area wYAR.

28th - Lounge - Tree left 1/2 ease
water. Per Albuquerque.

29 July 77 - load of wood from Frankie area

30 July 77 - Set to freezer for load
of wood, vic. of current
Cutting area.

31 July 77: Sunday. To Joe Wright Res to get load of wood - 12th v 1830
<table>
<thead>
<tr>
<th>Chain</th>
<th>Axe</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gas</td>
<td>Wedge</td>
</tr>
<tr>
<td>Spr. Oil</td>
<td>Sledge</td>
</tr>
<tr>
<td>Tarp</td>
<td>Pouches</td>
</tr>
<tr>
<td>Rope</td>
<td>Canoe</td>
</tr>
<tr>
<td></td>
<td>Lunch</td>
</tr>
</tbody>
</table>
1 Aug 77 - 15° at 0630 - uneventful

2 Aug 77

Truck runs - 2100

3 To dinner area for wood - Nothing

4 - USBR promotion committee

5 Aug 77 - Raining - Called JEC & HBG on training course - Outline to both - sound in paper on "graphical aide" for art survey for off. Placed H. M. for vacancy in Bills project.
13 July 77

Cochrane: Pas has $17,000 problem w/sulfate. Do
highflow w/relief. Look at mineralogy & sediment.

Some direct money available this year? Fritz
Kelpner

and Roundsmart Papers

to Leo
FY 77 1st Qrt Coal Hydr. Proj
10 major coal leases
areas - 4 POS = Contract

Prop 8th CO:
San Juan Pto 2
Wyo. Mountain Pto 3
600 - 700 wells = 3

Contract: Paul Tyler
Envir. Rs. & Tech., Inc.
19 July 71

JFK: Comm Hydr. Lab in Dauver area. Will carry on in 2 years.

Need Managing Director

Prin: Crypton Enger. - Canada

Simon family buying out

Tom Simon - Simmons, paper mills, etc.

Employ 1, 2500, 4000 in Atlanta

Woolley model but operation & development some field work

Current Comm Labs

Redden (S. Aust.)

Hydro Research Science - Calif

Akers Eng - Virginia Tech

Abou - Worcester Poly

Tetra-Tell may head one

Tom Wheeler - Hydrosearch - consulting firm in Dauver

RFP for and bases in W. M. Ax

flow & sediment measuring
11 Aug 71: Cloudy, Cool - To airport all 10:30
To airport Pol for Baden - Baden
17:44 Congress 1A1+2
11:20: Arr. airport - Flight 160, UA
to JFK - D.E
Arr. JFK - 17:45
40.71 => 90 6.171mks
Flt 66. Frankfurt - Gate 16K
- Sented to JFK w/ couple from
Kaufman, who had been on 6 wk
sojor tour of W. U.S. from Denver,

11 Aug 71 - 0030 MDT - Left JFK 1 hr
late, ~ 19:45 - 6½ hr flt to
Frankfurt. Should arrive ~ 0230
Denver time. Has been light
40 min & sun now is up.
Arr. Fr ~ 09:40 (02:30 Denver)
1 way to Bremen - Bremen - 37 DM
11:49 Train to Baden-Göb, Taxi to conf. Center 15-20 DM
Some mixup on res. but
ended up at Allee - Hotel Bären
at 12:30
1700 - Exhausted - so for a bad trip!

Forgot my smile, rough trip over, spilled wine on my lap. Hotel won't take AE, will move to Bannin's Pendleton tomorrow. Very expensive.

2145 - Dinner took 2 hours of chose soap, chrome wine & coffee.

34.00 D.M. Service good but food very slow coming. Good local red wine. Too much salt mushroom. Fish & sauce scooped & chow very good. Salad bar was fair.

A small cooler in this room holds A beer, 2 pepsis, 2 mineral waters, 2 champagnes, 2 whiskeys, 2 Steinhagens, 1 Weinbrand, 1 Jagermeister. I thought the champagne was wine.

Room is small, clean, modern, down quilts & pillows. Obviously remodeled from other times.
Saturday, 13 Aug 77  
Sleep till 0820, breakfast at 0900  
Walked downtown, bought a knife.  
Very strange place, old trees  
and houses, old people.  Trees  
everywhere but only a few  
songbirds & no squirrels.  
Train to park. Hotel near conf. hall  
at 1200. Beautiful view of  
park & Hudson. Met Jack  
Cruise & I was leaving  
the Hotel Barston.  
Then is an outdoor chess  
board nearby & a girl in  
the park handing roses to  
everyone walking by.  
1830 -  
Beau w/J Cruise & friend  
M. Abbott here at Beerwy, w/f  
Mike on our - Dog rose has made  
model in flushing Ted from  
Bassano - WHE - RDR $20.00  
for 2 models, on 3 br, one  
on deck top Camp for? River  
I eat v beer & ten hot.  
- 24°C at 1845
Sunday

14 Aug 77 - well, I slept 3 hours. Tomorrow
0125 or Monday at least I'm off
to buy some bread, wine, cheese.
These prices are fantastic unreal.
0215 - still wide awake - instead of
7 hours behind I seem to
be 5 ahead.
0400 - finally sleepy.
1000 - Breakfast
I walked a lady unwatched suddenly
Grise gene. - met Bob & Kirsten.

Monday - 1st day - opening ceremony.
15 Aug 77
0900 - 1100 left last lecture
in French lunch w/ E. England.
Dinner w/Bob, Kirsten, France.
Reception till 7:30.
Presentation paper at 16:30.
1. View of park from hotel window 14:05 17 Aug '77
2. " of background 
3. View out of hotel window, looking down
4. " of background
5. Fountain on Karlplatz 14:30
6. " in park 14:20
7. Theater - Beer - Beer 14:20
8. Frank, Kirsten, Bo 12:30 18 Aug '77
9-12 - Gustav - Stop on Donau
13. View of River Neckar 14:30
14. Castle 15:00
15. Sheep Long Bridge
16-18. Locks
19. View of train bridge
20. Castle at Heidelberg
21. Tourist Info Center
22. Church nr. Congress!
Send Estuary reports to K. Suga
Leigh to summarise data on paper
16 Aug 77 at 18:30
Task
Group
Mtg

1. Scope of Publication?
   a) Start w/ state of art
   b) Expand to book-type manual?

Bosworth: Do during construction?

1. state of art of report

Green

[Signature]

Pemberton

8. Seminar or mtg in about
   one year or Task group & others
16 Aug 17 -

2200: Attended part of 1st session, walked w/ Lu Chin and F. Engelhard incld lecture at 10 AM, lunch w/Shen, Curley, Mrs. C, Rev. w/ Mrs. Abbott, disc. modeling effort in U.S. held in session on sediment modeling, very boring. Abbott's speech went good - he was somewhat critical of N. Fischer & L. Chin, etc - beach w/them dinner

Work group with

The work was interesting & I now see that W.G & D.B. have in some way interposed we seem to be back to zero on this. work was scheduled but I was not informed - why? Garbrodt very active in this. Decision - so soap soapy paper in 1979, then to decide when to go from there. G interested in large books or manual for this, see proposal, now interested to take lead in this.
Send Tom w. 1p. to Dean Chung

JPR - Comm on Computing
Saying, in S.F. in 1980 - H. Fischer
JPR will be on exp. Comm.

Kirsten furnished lunch & we joined
the cross-country excursion to Heidelberg
by bus & boat on Nacker R.
Return 7/10/00
1. Report of Secretary on past 2 years

Task Force

Sewer around bridge piers - finished
Alluvial channel depressions - Skip
Water diversions

Conferences
1. NATO - Symposium - Rome - Jan 78
   (Comm. reviewed all)
2. Workshop - Kumasi - Ghana
   7809.78 - Fin. Sup. by
   UN/ES - Low prof.
3. IHP Symposium in Paris

Contributions - IHP

Pty. 5.8

3.83 workshop on math modeling fl
   transport

3.84 USAR on sedimentation
   transport

5.3 River basin

Comm will review outline

Dr. Vories
Ackers
Graf

3.83 - Drift will host - Fleming
F & Dr. Vories - 7P or 79
Council - make bull bid for Comm
In order wee to comm unity
Raju

8 Europe (incl. USSR)
12 N.A.
2 Asia
0 Australia \\ N.Z.
0 Africa
0 S. \\ Central America
3. Task Force on Diversion

I. Prepare SOA report on host p
   Then consider moisture in group p
   a. prediction of water posted seeds prob
   b. apply of weed

   Still brown
   Flooding

II. Future Activities (New activities)

1) IHP - 3.84 Task Group
   Manual for sediment transport in rivers
   Draft for developing countries
   Avenues
   De Vries

2) 1979 - Cagliari - Seminar on Water Division
   4 Sec - 1 topic, each Div
   1 from host country

3) 1979 - Comm will review - plan to
   reduce no. of papers
   Comm will organize seminar
Next - propose sessions on French training for 1980 or later.

Next will write to president on this.

Contract: Everybody submit questions to person who will distribute? - no - Nurse will submit & send to everyone on commit for comments.

Must decide before next council wty whether this will be a special symposium or a seminar topic for 1981.

Finals? - no. Short statement on topics for discussion of '81 meeting or later.
5. Other Business

1) Together I receive all De Vries' correspondence for 1 year.

2) Pros - thanks to all members.

Dr. Vries will make minutes and give home.
TABLE COMM MTG

1. Plan of whole
2. Core and survey problems, development
3. Apply etc.
4. Methodist Small
5. Med - [Pemberton]
Large - [Pemberton]

1. Kennedy abstract & send to all
(Tab of Pemberton, Pemberton, R. Comer expanded) Pemberton, Pemberton

2. Expound after member comments, &
fill out - draft by Cagliari

5 p. Kennedy will be sent
to all. Expand - send to
everybody for comments -
& Chairman -

2. Monthlyairro

#4 -> Pemberton w/Pemberton
Division Head
1. Doc Orie
2. Nadzhen
3. Yevdjevich

1. Expressed not become member (instead advisor board)

2. Look carefully at reorganization (too complicated for our size)

3. Elitism in organization

Cunha:

1. Distribute proceedings before Congress — proposal

   1. mail proc 1 mo before
   2. let members indicate preference of being or picking up to duty
PLATE: Records on basis of 2-4 p. abstract & list titles in journal
Schoonmaker - yes - a issue special bulletin.

Hug - write to him or council on matters of association.

1. Open
2. Election of Council
   Pres Hug
   Vp Kennedy
   Sec Schoonmaker
   Council Silverts
   Mitilkhovana
   Gonzales
   Izakaki
   Chevalier
   Brook
   Elders

Australia
USSR
Venez
Japan
France
U.S.
Next mtg

Sept 10-15, 1979

A. Hydr. Engr. in water Res management & development
B. Mass & heat exchange in hydr. phenomenon
C. Engr. & Envir. problems in hydr. Component & design
D. Physical & math models

Panel

Seminar
1. Sod. prob. w/ withdrawal
2.
3.
4.
5.
6.
7.

New Delhi - 1981
Latin Amer. Congress
Quito - 1978

1715 - Bar w/Bill Stickling, to help
it had tea on the terrace.
So, the congress is over, and I am
happy to see it close. It was
in all a disappointment, too
crowded, too regimented, too
expensive, too many papers.
Also, I see a marked tendency for
strong domination by the Europeans;
a weakening of U.S., GB participation
and almost complete disregard of Asia,
Africa & S. America.

2230 Elegant dinner at hotel -
met Shen may, Can no &
Hayakawa downtown &
stopped for a glass of
wine.
Call Clare Shen man on Tues at 14th Wend Father

415-525-6836

Send Hayakawa reports on dispersion

Dr. Norio Hayakawa
Chief Research Engineer
Coastal Hydraulics Section
Chugoku Institute of Industrial Technology
15 000 Hirochachi
Kure, Japan 731-01
Sat AM 19 Aug 77
Left hotel at 0800 - $
carried train 0838 w/ H. Ross
$ some of the Dance. - An
hour at the airport - slight
delay into a end of JFK
left plane from Chi on 60
Hall by Lee & Trish WJ
arrived 2230 - Exhausted

Sunday 21 Aug 77

22 Aug 77
Monday: To went clear, done
used year’s closing, nothing
useful accomplished
Shopping for books w/ Lee
pm till about 80 -
August 23, 1977 - Seminar - Malcolm Anderson

Aug 24

Aug 25

Friday, Aug 26: $2175 to Robin & Dougard
7.25 from credit union
10:30 - Lee pick up to meet Robert

Aug 27 - Rained, 11° at 0845
29 Aug 77 - C. W. Honey - [handwritten]:

Study of DIS

Bill will send copy

Dave Baker ADR

[handwritten]:

Exhusted File - will send copy of order to us.

30 Aug - Dave Sapire came thru.
1400 - 1 Sept 77

64 Ford: (Al)        Line 250/par 500/Accident
16934

25 K prop Damage

NO FAULT: In own car
100 kIlls

Unins. mat's

Driver of own car [Mine]

57 vw - Same
66 96

Pinto - Same
plus

[83 90] + Comprehensives: 10 60

5 00 Ded coll 23 37

For Lee

145 87 w/so comp 22 77

131 85 200 28 05

138 94 premium 100 34 45

17 00 Policy Fee (two time)

155.97

71 paid

80 94 1477
2 Sept 77 - Lee's car in for service
1000 - pick up wrench, H. Supply
Al in on single only
Al pendulum, 2000 on test
1630 - pick up Lee's car

6 Sept 1977

Letter, 1 referred to John A
Cond. Taught by me at Yale
There is add in Science

Letter of indent, prop 1, March
Funding out 1, 78 miss

Yukon - July 79

BLM - ONP were vessel in
area - 85' Alumina
Barge traffic to port
Yukon

Ganges - After Yukon
Dutch have done some work on Congo.
Niger is possibility.

Cousin flying up Nib - Barry will go with him & get samples on Nib.

7 Sept 1977 - Called J. Ritter on Apr 79
Nat'l AGU mtg. set up 1/2 day joint oceanography-hydrology session.
- Corrected conc for Obidos
- Sent in abs. for W. AGU mtg.
- Bob Litchy - PM & J del 1/2 cord
  wood to WFC.

8 Sept 77 - worked on Obidos conc.
corrections - Slobol called on paper.

9 Sept 77 - 8° at 06:15 - worked on
Obidos conc. corrections - Drumore went 13/00 PM.

10 Sept 77 - Shopped PM

11 Sept 77 - AM - Delivered 1/2 cord wood
to WFC. Called Lee.
12 Sept 77 - Pick up truck at motor pool. Called Joe on tape - no, stopped by fuse office. Truck home for Ft Collins with tomorrow.

13 Sept 77 - 0835  CAA. FT C
31136
Ken Bruce - Hyrod
Lee Lamb - Pol. Sc.
Clair Stansifer -
Ted Van Sande -
Lloyd Anderson
Gary Freuden

0900 - Introduction by - Stansifer

Lamb - Legal & Institutional affairs
S. Dornan - Some ways;
1. Guidelines for special witnesses
2. Series of W. Law Short Courses
   (includes courtroom procedure)
3. Collection of papers on Instant
   flow - Strategies
4. - Contract w/ Environ. Control
   (Washington, outflit) & a couple of Utah
   lawyers.
Stainaxor: - Assessment techniques
Physical models to predict
Hydraulics - Melkne investigating
this - USAE w.s. program, USGS
has computer, specialized on loan.
CSU models -
- Need to predict velocities

Median monthly
7-day (monthly) long term
10-10 year, 20 year ale frequencies

Ken Bonee - A matter of hydraulics
Representative reaches:
Stratified samples

1. Establish representative reach
2. 5-8 transects / reach reach to
define habitats
3. Hydr. models:
   NEC
   PSEUDA
   Hydra - Grant - Manning Eq.
1. Hydro model - turn into program

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INPUT DATA:

Pseudo slope
And
Q at 1 station

\[ Q = 1.49 \frac{2\sqrt{3}}{5^2} A \]

Assign Q value

Modify - measure Q at each section
and get N at each vertical
Reach 1 - 
2. Stream types
   a) PUD - Spawning d.
   b) Spawning channel

Reach PUD - se cannot be modified and must be used as is.

Reach S.C. to Huxley Creek is homogeneous. It is sensitive to dye flow (engineering channel, etc.)
modification & should be evaluated.

Selection of measurement sites will be done in random initial selection with field verification of adequate selection coverage.

Reach 1 has total flow control & minimum and problems because it is an area.

Reach 2 is relatively homogeneous stream config & should be evaluated separately from reach 1.
P.2 differs from P.1 due to a broken crane inflow, a reduction in inflow, a diversion & reduction source due to lack of capacity.

P.2 criteria flow can be modified & should be evaluated subject to a decision.

Meas. at the valve can range from 1000 reach w/ 5 transacts to 3-1000 sec w/ similar transacts. The transacts shaped circumference to probable range of flows expected under assumed operating ranges of 3-6 valves.

The transacts individually shall consist of at least 20 depth & velocity measurements for each flow. At the lowest flow, lab material shall be evaluated. W.S. elevation & flow shall be set at all transacts. Stage vs. slope.

After selection of valve, an evaluation of measures would be made to ensure measures would be made. 

21000 meals distributable to LA pump.
Proposed

1. Evaluate what presently exists in each of Owens R. Blows plv dampeners. I second grade is most likely to be production to measure only 1 or 2 recesses traversing. If there is a restriction of effort of measurement, give reach precision. Measurements to be used in "pronounced and of all channels in steam flow & channel characteristics," as developed by IFG, I shall be of a professional quality & nature.

Date selection in November letter called 5th. The likely caps. I
Bob Hain - USE her program
Will Ready (Supervisor)
Hain did programming

1A Sept 77 - Leslie A. due (call in - Showing)
   Friday 100 pm - Called Lee -
   She'll come home tomorrow

15 Sept 77 - Pay for Lee's ticket
   Call Shawn
   Unload truck
   Load samples (may do this
   Friday
   Lee arr. home - 2200
16 Sept 77 - To Ft C for funeral - Rth - 1800
17 Sept 77 - To bank at 1100
   From Office
   Truck
   Slides
   Samples & Bottles
   Samples
   Camera
   Field book
   Letters, etc to SM
x y z

10 m

Readings
every 0.2 Sec.
1200/mi² cost

Eq. /zero and cost

2 Tellurometers w/ Sine Sounder
Range of tellurometers = 45 km
18 Sept '77 - 11:15 - Filled w/gas here
Tampa - 15-
mileage - 31299
Someone drained tank?

14:30 625 Sandunes Vision Center
23 Left / shots @6
24 Center / Grant dam
25 127
26-28 at Vision Center

16:20 mileage 31475
15 - 16 89 Alamosa

19 Sept '77 10:10 - Mileage 31627
11 0 - 7 69
add 1 qt 10-30 oil

Map 0.25 $

13 30 Lunch in Cubic
1600 Left Albuquerque
20 Sept 77 - Bruce & Dave
John A Turnbull
Environmental Improvement Agency
P.O. Box 2348
Santa Fe, New Mexico
505-827-5271 - 308
State of New Mexico
Health & Social Services Dept

Non-point sources of Pollution

Rio Puerco: BLM, USBE, State & private consultant have asked about this.

Do to supply graying tracts.

Ann Wright - Librarian
Dave Wilkins - Report Specialist

Bibliography on Rio Puerco
9-12 Thursday - mtg w/ John Turnbull
check w/Daw F. 21 & 25 Am

22 Sept 12 06:30 LV Alb. for Santa Fe
Mileage - 31911
13 40 g 00
10:30 - 11:30 mtg w/ John Turnbull
1430 - 1500
miles - 32035
16 1 6 10
174 miles

1000 - Rosamond
1500 - Return
22:00 - home v 22:30
John Turnbull

208 - Stewardship planning
    OWC → EIA
    State Cons contracting
    → EIA

1. Erosion Assessment
2. Impact on OWC
3. Best Management
4. Management Strategy
Send info on Instream Flow Group.

Send Annual data for New Mexico.

Dick Hadley

Oct 78

Chemical Quality,
Names of people
References - Directors of Future
Send reference
Planning report to John

WSNP 1475 - I
23 Sept - Lined up brush, bag, Seminole closed door, only W. H. Shelley went. Bowland came by 1500 - 1600 - Took truck home to unload & clean, left came home at 12:30.

24 Sept - Cleaned truck, stored grain, worked on shell & back door.

26 Sept - Dressed a.m. - Draft letter of request on/ton. P.M. off - Took pubs in, worked w/Truck on deliveries.

27 Sept - To Ft. Collins
   1) Sea Shy
   2) pec. west. E.E
   3) Balance

28 Sept - Shingoji - Epa Corvallis
   with an initiation of
   Motion - Got pubs
   A. Ship 384
Call Chen on Temp study & Shen's comments

29 Sept - 'Bri bag' seminar
30 Sept - Start AGU paper

1 Oct 17 - 0900 - 13°C

2 Oct 17 - To Fraser for load of wood - some snow on ground, roads deteriorating, cool & sunny - Road to 1900 w/full load
3 Oct 77 - HPG arrived, wate w1
Training center on course
Handout - Prepare talk
1300 wide on course

4 Oct 77 - Training course - Erosion & Sedimentation concepts

7 Oct 77 - 1/2 cup used for Dr Hall

Longitudinal Dispersion in Rivers

I. Time Scales

1) Applicability of G. Taylor's theory was demonstrated to apply to
   1. Pipes
   2. D wide
   3. 3D flow in main channel

2) In the cases, u' was deduced from 5
   3 turb. diff neglected

3) Fische suggested from Dain
   Consider: 1496 the appropriate T was 0.31
   so X = 0.31^2/2
   5/3 for 

\[ \text{for} \]
8 Oct 77 - 13° sunny at 0900 -
Rented car to AZ - Homecoming.
9 Oct 77 - Warm & clear - cleaned garage &
cleared spot away garden tools - To Everyone
to see "Potemka" w/erich's - Francis ill, took Randy.
10 Oct 77 - 1°C at 0830 - A few flurries
Snowed all day - Changed furnace
filter - bought window well covers.
11 Oct 77 - 6°C at 0700 - Freight due 10-12.
Oct - LV for Meese - Tomorrow.
12 Oct 77 - LV Denver barracks 1/4 mile.
Lunch at Dillon - Stopped d.3. a.
Rio Blanco where dry wash debris
flow covered road about 100 yd
ago - Dlr. Meese 1700. Dine at
Lazy card in 18 mi ws, on white hor.
Meese. Some notes on these
observations in field book.
13 oct 77 - 0600 - up, news, coffee

0830 -

11:8 @ Rio Blanca
13.6 at wash
1.8 mi
14.5 another big
canyon showed some
tough flow, wiped out road
but did not cover road

20.5 big stick
cr from north (R1)

09:35 - Boulder slid down slope

22.5 picture 30, 31, 32
slope 6 58º

34 - Trail of boulders

28.5前沿 of stick 10º
1000  Piccumi below Rio B1
along Stewart Gorge
Sample 1, bed rocks on contact
Sample 2, point box 30 m below contact
SHT = 1.77
Picture # 35 - Sign & contact

1030  Started hillslope traverse
D/west endw of WFC
Drawing BM on top of
Steward Bend' tagline, tape
bellow tagline

E:

sandstone ledge

\[\text{At 155-15} \text{ continuous}
\text{sandstone ledge}\]

1530- Finished traverses @ 370 & 285
Took pictures 30, 37 of hillside
on west Rock, Stewart Gulch

Erosion transects along hill.

Notes in Ned Andrews' field book.
13 Oct 72  1530
1600  Walked up Sangrium Gulch to inspect control & stn.
   Gage control & pump sample
   Picture 1  Ch. U.S
   2, 3 gage
   (Ralph H. Peters Co)
1630  Stopped at tract Ch
   Jerry Brun  878-5731
   Project Coordinator - Occidental oil
   Occidental oil will be at tract center
   Vern Norman should control - they will call
   If it rains in watershed
1700  USBM 120" test shaft - 2 stations
   Drive on down piece of creek to confluence w/ white R. & back along
   while to Mecca - return
   about 1830
Sorghum Gulch at Mouth N.R. Rio Blanco, Co.

Date: 13 Oct 72
Time: 1607

Bottle No.

- Ground has built up here
- Low Swale
- Potential cutoff
- High Terrace
- Studen Lodge

May try control here
14 Oct 1977

To office x 0900 - Usm still sick - Left Key, headed out no Busard.

15 Oct 1977

Call from Paul, NMU - 27, 28 Oct
17 Oct 77
Pat Glancy - will meet in LV 1100 AM, inspect L.V. Wash headcut problem, meet with Bureau, lay in some K-seed.
Call Frank Haddad - Dist chief
He says OK
Lee D.

Called John B on China - he said to go ahead

18 Oct 1977
Lee D. on China - or Mom called low offer on farm note & offered to do sorted slides.

19 - Rob to Shaw resume to B. Ness Bettye 2110 Monterey S.E Albuquerque 87106 266-4253
20 oct 77 - Missouri R: data are available.

See Bent Christiansen for computing Go from Vol. prof. 6

\[ i = \frac{v_2 - v_1}{2.5 \ln \frac{y_2}{y_1}} \]

Send T. Yong E. For data

Check: Muncel - Alaska data

Call Bob W on Miss data
31 Oct 77 - Dr. L. in Utah. CE Dept. 12:00?

1520 - Sayre called - Why on Missouri
& Des Moines R. maybe before

1 Jan 78

Varona - Yang
Simmonds - Kennedy
Wincley - Sayre
Christian - Gem Nulberg 14-01-65
Harrison - 31-07

- E. pedestrian - Sand - Doreen - Cowan -
Voeller - Exp

1 P.M. 77

Ticket 144.00 144.00

Unit 69.78 69.78

P.D. 48.00 38.26

$261.78 252.04

Room Res. Sommerset Hotel
7 th Nov - Las Vegas

Germany 802

Rangoon 59

Vienna - SF 165.56
2 Nov 77 - Got title revised & now 109
On win - 2000 Bond
15% t.v. reissue
Cost from Drancy - Bourj
Leval
Tripod
Fed
Taglia
7 Nov 77  Call Betty Hess not in
R. Winkley
Send new stuff to panchton
paper to Shirley
pick up figures from
Cand to Food

10:00
Nov 200
Breakfast
2:00
Lunch
3:25
Dinner

11:45
5:25
Lunch

28
13 30

14th - Mom called 0700
Called Lee
R. Winkley
E. Panchton
picked up figures, light table
Said slides
G. School called

15:45
Parking .50
.50
Cost 3.12 + .50 = 3.62
18 Nov - Met w/ Chiu & Barnes, went w/ FIS (chui sue of fr, short outline to be sent) Barnes was supposed to send outline to me, Chiu sent it in 2 weeks ago - 
Letter to Chiu from Ignace, will be at Kimball Filler may in May in Pittsburgh -
Gelled JFK on Stochastics
IPB hydraulic bit
HWS

3 W2 A L -
Chiu resigned war to get contract to use Chinese grad student

29 Nov - Figures to GM photo
Lunch w/ Trish at Sunnys Landing -
Looked at Audi

1 Dec- met on team & Miss P.
15 in January
9. Deal in Cell B Wunding an Eric Wood
2. Save Ujaji Gupta references
3. Note to England
4. " " Leopold
5. Cell J. Ritter
6. Send IAMR key word outline
7. Indonesian meeting
8. Fund stochastic model 7/43
9. Get inside to Brazil for meeting
10. Write to Ignazio

Shift 1, 2. From VAC SF to D, Toporg.
along Western flank of
Rocca Red 50 - 100 m w/12
Grand Junction
14 DEC 77 - Finally got John for A6U unit -
Pat Borma on Des Moines R.
Jody Paupmara on Galley proofs
We will test on outline for stochastic high list.
Red equipment from Amazon ship.
John Biedenhaupt came here.
16 Dec 77 - Finished paperwork on invoice to hold F6U until 17-21 Apr., Miami Beach.

19 Dec 77 - Galley proof due to Judy B.

#3 - Home construction, 6th Ave. West.
Mrs. Berth Slife
8188 S.E. Swan Ave
Nate Sound, Florida 33455
305 546 5705
DES MOINES RIVER

L = 535 miles
A = 14,540 mi²

Study reach
14.3 miles

S = 1.3 ft/sec near Lona Red Rock
  1.6 ft/sec near mouth

W = 300 - 500 ft

Berm Height = 15 ft
Depth = 6 ft

Red Rock Lake in operation in 1968

Peak flow = 135,000 cfs in 1947

Bankfull flow near mouth = 20,000 cfs

\[ W = 1.8 \times 1.44 \times 10^2 = 252 \text{ ft} \]
1 Jan 78 - Called mother - She will have cataract operation 16th January - St Joseph hospital

6 Jan 78 - Start skiing at Red 82

Hypothermia - 1st danger
Frose water - piece of dark plastic
to melt snow

Avalanche - Bracelet
Snow avalanche 03 04
Winter sports

18 1/2 Open Red 82

Hand for Bernard

5 miles / Foot Water
22 JAN 78 - Arr arrived at 13:45
Frontier 104 in quake at 13:37
ARR. Quake v 1600 Local time.
Cheered up, walked & drove till 1800. Wayy & very cold. Ate at
Shrek's egg next door. Joined by
Vanner v 19:00, dP., using. Solved
witha et. al. Vanner arr. v 19:30

26 JAN 78
Dr. Hansen (of Hansen & Hansen)
is brother of "Hold That River"
Hansen -
Length of spawning should be
at least 1.5 L when L is
length of bank to be protected,
27 JAN 78  - 0300
Nanda - uses Iown dist
Runs their sed samples
(B.I. Corp.)
conc. 1 to 7)
size 1 to 2)
Sam Mummy (uses retired)
collects samples at 12
sta. for 8/12/78?

DBS - Formed Res. Institute
Enc. as non-profit
will build 9 x 10^3 ft^2
facility across from ERC
- owns 67 yr. old
retirees, ie VMY, MA,
Hedge against Joe
Schoemane?

21 has no experience w/sediment & no bed
collects samples of Des Moines
River.
Salcha R.

Baurchul: D ~ 3–4 m
  Q ~ 1000 m³/sec
  V ~ ½–1 D
  ~ 2–3 m/yr.

East For

Baurchul: D ~ 2 m
  Q ~ 70 m³/s
  V ~ ¼ D ~ 4 m/yr.

Amazon: D ~ 30 m
  Q ~ 60 000 m³/s
  V ~ ¼ D ~ 60 m/yr.

High Temple
  V ~ 4 m/yr.
  80 m ~ 20 yr.
10 Feb 78 -

Wright - McLaughlin advised city of Telluride to put wells below tailings?

Red - American Colony home from JFK, Mary & Marlene Jansson

Wine with Melvin Falkner

Rosemarie 17th, Nora 23rd

Vis. w/John Brookhout

Call to Simone & Larry Shier

Try to get together in March

Sat for lunch

Finished Hoffman paper except Fig

Captions & references

15 Feb 78 - 6000 to Legal Account

16 Feb 78 - Much snow - Al smashed L E Whal

on Fox - 2/143 -
17 Feb 78 - M. F Ebnewort called, will stay at Wilma
A.M. To visit directors (Bob Evans), he will
have lunch with us.
Al to Ft Lewis - 0600, called about
1130, everything OK.
- Dist ch. conf - saw Sam W. & Bill H.
picked up VW (met Andy & ran me to
shop) - 1600
-Saw Bill Notchiss - Geo Dempshie left about
1300 - Randy Parker was in yesterday.
Lunch w/ M. Moss, he has offer w/ weather Sewin' (the school's shop)
-Tried & j to dinner at Simms
Landing.
18, 19, 20, Feb - Slewed
22nd - Picked up main. F Ebnewort at
airport - Lee called, spent w/ & did at 00 P.M.
23rd - F Ebnewort visit
24th - Slewed
25th - Slewed - Lee at home
26th - Lazy day
27th - Amogen size
28th - Lunch w/ Curtis, Dinwiddie
1 Mar 78 - Finished sieving all but 16 bed samples of Amoxon
B.B. Swaim today on time.
Scales must finish more on this before April.
Dr. Wolf in town.
J. Reesman to see Dr. Negriologist.
G. Salz called - will visit in May.

2 Mar 78 - 10:15 Dr. Bachke
12:15 Lunch w/ Eva & Billie
McBrien - Ath. Dir
Danny Collahan - Dir of Ath. Dept.
Dr. Nancy O'Connor - Dir of Women's Athletics

12:03 Bell N Called - will visit.
Western States Machinery
2400 w 7th Fri. will get together for lunch.
Irish Nick pm - Caterwomb food?
Heavy snow all night.

3 Mar 78 - Bill called home, may be tied up for lunch. will call later.
If no call by 1245, forget it.
4 Mar.

1. Hadley will send copy of general objectives. He has 7 objectives.
4 May 78
Al skiing
Lee skiing FL tomorrow
Trish to class

Pictures
1 - Views of dune from hill 15 m
2 - no snow
3 -
4 - head cut
5 - 11 Al birthday
12 - Lee took them at Golden, approx. 66 games.

Al home from skiing about 1800
6 Mar 78 – Training course started

Calls - V.K. needs revised schedule
Don Albin - Dept meeting at Minn. on M.55 R.
Bruce D - outdoor wind flow

7 Mar 78
0945
To: NCAR
U of C - Dr. John Eddy
NCAR
High Alt. obs.
Sunspot Res.
Phone -

leaving 12th - call tomorrow

Diane Johnson
Info office

1200 Lunch at Cottonwood
Cottage - Newot. Food & service very good
EVR - DBS had application last week

Told to Larry Shiro
1. Resistance:

Form loss

\[ C_L \frac{V^2}{g} = \frac{b}{h} \]

Send Winton details to

Shaw

molecular force on dust w/ shear plate.

2. X, value:

Calibrate flush mounted probe

3

30

30

\[ \overline{X} \rightarrow \overline{X} \text{, hypo particle} \]

\[ \overline{X} \text{, impact measure, step length} \]

4. Effects of external drift on design:

(uwaterloo note)

\[ \text{Growth} \begin{bmatrix} \text{Typo} \end{bmatrix} \begin{bmatrix} \frac{X_{n+1}}{X_n} \end{bmatrix} \leq \left( \frac{\text{bg} h_1}{\text{bg} h_2} \right) \]

\[ \frac{1000 \text{ yr}}{10 \text{ yr}} = 3 \]
$F(\theta) < 0.01$, Ratio < 2.167

Type I - log Pearson

$$\frac{1000}{10} = \sqrt{103}$$

texas uses cola

march USGS

11th DBS

Modeling
James Kircher

8 Mar 78 - Big Sandy

Big Sandy Reservoir

482 - 4101

Lawyer:

J. E. Baylound
5601 S. Broadway
795-2121

Ohio - 1937 Flood

75 ft high
1000 mi long
Jan 2, 1937 - Rain
= 35 days rain
Jan 18 - Flood level

3 ft over 1 ft/hr.
54,000 rescued
36,000 homeless (Evangelists?)
60,000 Cincinnati
230,000 Louisville

Jan 26 Citie, please 80
72. flood control dam now constructed.

9 MAR 77 - E.P called - 64 survey of Big Sandy - Mrs. Young

10 MAR 77
Call Dr. Kitchen
Call Dr. Hall will all
To BANK.

Typewriter tapes
Things to do:

Note on RMTLL
Letters on A60

Dick H. met w/c c/o Tony Shira
Cell Poison K
Call Harry B on RMTLL

Slides to Lee

Call on Fox
To Lab 7:30 - 9:30
P.O. for Shan, Simon's
Glasses

Trans, 2000 to DEICU
60 to Lee's Accnt.
Send Lee's app. to CSU
13 Mar 78 - Slides to Lew
   to Bank
   Lawyer at 1430

14 Mar 78

60 to Leo's Accr
   Call Mosley
   Burkem report
   AGU notes
   Leo's appric to $30
   Call Jim Kitcher on big sandy
   for Shan, someone
   Glasses
   Get Gem Mitchell's address

Chair session at Claymore Conf
   May 22-24
   JFK - Memo Falcon to
   East Fee w/ of 5 June

Call Ralph on boat - pick up 1st w/a expire
15 Mar 78 - Skiing -

16 Mar 78 - To lawyers on Will - Notes for participants - packed up to town -

17 Mar 1978

1) Skis - & bag - $200
2)继承 deposits - $100
3) cleaning - 1030
4) Film - 1130
5) Slides - 1400
6) Sale on Fri. - 0800
7) Pay Bill & Rents - Don -
8) Send note to Bill & Capitals - 0800
9) Fix stuff & get cleaning stuff
10) Note to Lee
11) Note for June Webster

AE - 2096 - 296 - 800 - 894 - $100
BG - 99 - 739 - 705 - 707 - $100

18 - Slides & papers (Time Saving Red Soil & Water)
        cleaning
          Film
\[ \text{RCD} = V_\text{gs} \]

\[ V_\text{gs} = \frac{V}{R} \]

\[ q_\text{gs} = e_0 V + \frac{V}{\sqrt{B}} \]

\[ = \frac{V}{2} \left( e_0 + \frac{V}{2} \right) \]
Nov 3, 1977

2000 - Bond for
vww triple change

Mildred J. Morris
2000 Ridgeley Dr. N.E
Albuquerque 87108

N. Mex 1-505-268-3890

5646 88

operation 16th Jan
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<th>Qty</th>
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</table>
A1 - 278-2563

1-505-243-8811
Ext 7533
Room 3021
Mildred Nordin
4004 Ridgeley Dr NE
Albuquerque, NM
87108
505-768-3890

Backpacker 12.00

Backpacker, Inc.
65 Adam St
Bedford Hills, NY
10507

Hiking Hocks #605180 295 + 50 shipping

The Backpacker's Song Book #750101 295 + 50 shipping

Backpacker's Books
Main Street
Orwell Vermont
05760
19 March 1978

S. Fukunaka - Bill says his 1st shy.
H. Kikkawa - Sr. scientist. Nido
c
K. Horikawa, Kiyoshi
S. Ikeda, Syunsuke
T. Kishi, Tsutomu
A. Murata, Akira
M. Hino, Mikio
T. Hayashi, Taizo
K. Ashida, Kazuo
T. Nakagawa, Hiroji
21 MAR 78

- Kiefer's model Q is log normal distribution.
- Send Woolhiser - Rennard paper to G. Sabol.
- Rennard - sod yield for small w.s. are log normal.
- Send Cunha
  1. Data 
  2. Amazon results
  3. Excel four data
  4. Info on who sus. sod

Standardization?
23 Mar 1978 - Send Ikeda

The Vicksburg potromology reports that Ikeda's paper has a many more results natural cutoff of meanders.

#1 - 4 - old cube eroded by erosion.
Handmade dry beach rock.

24 Mar 78 - Look at tail water elevation below Ft. Randall.
Looks exponential - Tony Thomas has these data.

Nakagawa has investigated interaction of seepage flow & main flow effect on shear stress.

Ashida $\Theta < 15$ $\rightarrow$ $\rightarrow$
\begin{align*}
\text{Flow of particles} \\
\text{is deeper.}
\end{align*}
<table>
<thead>
<tr>
<th><strong>Genus</strong></th>
<th><strong>Species</strong></th>
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<tbody>
<tr>
<td>Scleris</td>
<td>Cyathoidea</td>
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Other handwritten notes are not clearly visible.
25 MAR 77 - USGS Guest House
ARR L 1200

Peter Lipman
Steve Coleman
Alan Swenson 65-Boulder

Steve worked w/D. Janda a couple of years.

26 MAR 77 #12, 13, 14 - 0715
Killed w/wound 150 in background
15, 16 0720

Bob #7
Candia's in web flow
17-22 MISC

23, 24, 25 - The calders
400 in line

26 - Steam went

27 - Erosion channels
Kau desert in 0800

Bob Koyanagi - Seismology HAwH Volcano Observatory

27 Mar 1630 Pillar E
32 - View U.S. Hwy Bridge
3d - "  "  "
3f - High water meters
at 35' 4 radians 10 = 15 m
D = 3.2
Daw = 4
S = 4-5 ZB
35 view of bridge
36. plunge pool below bridge
Someone has run levels up this river

27 mar 72 - Roll # 3

#1, 1700 - Mura River
view US, span bridge
2 " D.S. twin bridge
channel 15 m
3 view US, around bend
from bridge
4 view of coast just past
Whitington beach 1705
28 Mar 78 - City of Refuge
11, 12. View of Cannings

13, 14. Cannings

15. View of best well from

18, 19. Kolekole P. Bridge

20. Falls

21, 25. Delta area
Hideo Gushiken
WRD Hilo, HI
will be in
Denver next week

Eugene Capellan
WRD Hilo, HI

546-8331 - USGS - WRD

610 - New Federal Bldg
South St - up 201
down on punch bowl
on Rt.

punch Bose & Almoano
3 Apr 78 - RMHL - Home Percy Write

Letter to chief hydrologist
making offer.

Set up fund.

John will be here wed. to
leave same day.

13 Apr 78
1. Stuff to Boss
2. Cast Dot Day
3. Selma
4. T. Scales
5. Shopping w/Frish - bought coat & shoes

14 Apr 77
1. Cleaning
2. Cast DES
3. Stuff to boss
4. Velin
5. Fine Scales
6. Shoes
7. Amazon data
8. Bring Jack & lug w/ish
9. TAX FORMS
17 - 112 Everglades
13 - Cypress knee - how breathe them
14 - At high water
15 - Greatland in Everglades - P.E. Huy - Okeo
16 - Close-up of Cypress overlook
17 - Song - The dalm, or salt
Bayhead - harbor deer, cap
18, 19 - Melaleuca himmack - many
death trees around b., why?
20, 21 - Mangrove
Mileage - 22,729

Fleming - 22,743
6 30 0 0
22 - Mangrove swamp

24 - Rizosphere
What lives does go through
24 - 27 Mangrove
28 - 36 mangrove hose near west lake
1750 - 22,791 - on sunpike
Send Tony Yutaw Dale
Send John Hansini duty
1977

28 April 78

Truck to Auto Glass
800 to CA
Call Bob
irk DBS
Note to Steve
= Show 5 CH HWE
Call D. Rubin
NSF Proposal

Meymin 2
Y 1.8
Tifken 52 mm haze filter!
Sec 28  T6
R 71
Sub 4166 corner with
Lot 53 8 Florence Rd
2nd platting
Don E. Cavall - cut block
229 G511

Bill Emmett

Will wish be sold 20th of June &
early July -

Bill - can we borrow post.

Jacob & Son. Equip for California?

him ph & cord white

LBL went to New York

New Year -

of new river.

- French -

1876 - Mejabo

his Amazon Delta:
1 May 78 - Truck for trap
2 May 78 - 1 NE AL
3 May 78 - Get tobacco

" Chen & Harri

PP 552-F

1100 AM - Nut - Can not spec.
Car delayed - No map
SAND WAVES IN RIVERS

1st - Wi bit on scales

2nd - Review conventional hydraulic engineering folklore

3rd - Some motivation for statistical methods

4th - Finally, a few examples

1. Oval Sand Dunes

2. Dune slip face

3. Note various directions of faces

4. Small-scale sand waves - note sorting
Scales

1. Wind ripples
2. Small scale features
3. Large scale features
4. The dune field

Some Engineering folklore w/examples

6. Flow regimes
7. Bed forms
8. Ripples
9. Dunes w/ripples
10. Flat bed
11. Antidune
12.  
13. Field - Trains of Antidunes
14. Close up - Coarse m+1 w/ slip face
15. Flow impinging d.s.
16. " " " " 
18 - Definition Sketch - bars
19 - Classic Point bar
20 - " " " - Not Sorting
21 - Alternate bars - Colo
22 - " " - Rio Grande
23 - note cutting across bar
24 - X-sec surveys

A Bit ON PREDICTIO

25 - Boll vs d
26 - Southard - 1971
27 - " " - 1973
27 - Engelund - 1971
- Stability analysis
28 - Temp effect - Loup
29 - " " - Loup Missouri

Geometric Properties

31 - Definition Sketch
32 - Ideal Soundings - 2-3 ft

Jones
33 - H as a func of D, depth. no function
34 - Field data, L & H - local depth
35 - Disch of L/H

**STATISTICAL PROPERTIES**

36 - Bed profile
37 - Velocity Record
38 - Definition sketch - pipe crossing
39 - Spectra
40 - For Ittisco - hole bar effect
41 - Dimensionless spectra
42 - $l_0$ vs $E(l_0)$
43 - $l_0/l_0$ vs $h$
44 - Theoretical maxima as a function of $B$
45 - Comp. Obs. - theory
46 - $a$ vs $R$

A few Examples
48 - Tongue River - multiple forms
49. " " " Dunes
50. " " " Ripples
51 - Dunes
52 - Reverse ripples
53 - Large bar?
54 - Amegjan - bedrock & dunes
55 - Small feature - $D = 45 \text{ m}$
56 - Over 2 Crossing
57 - 20 m L, 1 m high, $D = 18 \text{ m}$
58 - 50 m L, 3-4 m H, $D = 20 \text{ m}$
59 - 200 m L, $D = 25 \text{ m}$
60 - 10-15 m H, 300 m D

61-80 - Amegjan
4 May 1978 - To Regional Council, visit Ralph Chong, Jim Bruce, Peter, Eric Rubin
1100 - To Wilson building, meet with Dave Rubin
1200 - Seminar
1300 - Meeting w/ Monte A. Hampton - doing work in Cook Inlet - Sand lenses will be on R.V. Seward Sound in Alaska
20 - 24 July - Seward
31 July - 2 Aug - Homer
Ralph Hayles - cross bedding & stratification - Fluvial & saline environments

C. Hans Nelson - work on Yukon would like to have seen report on Yukon delta.
- NOAA is doing some chemistry offshore in Yukon
Contact Dick Feely
PMEL Seattle
Paul Dopperey - Univ of Houston
WAE - Seward has bad samples in Yukon diet.

Hans has taken 1 x 10^3 samples off-shore
Get copies of

Environmental Assessment of the Alaska Cont. Shelf
Quarterly report of principal investigators

Curt Nancy Hardin
8-323 - 6531
our liason person in Boulder
NOAA
Environmental Assessment Program Office
Boulder

Send Peter Powers to Havana.

Send the wills, papers & belongings address to Dave Rubin
Smith & H. Lein

Get this V 82 no 12
Apr 20, 1977
May 11, 1976

1. Research needs in river hydraulics etc. for journal

Istanbul:
1. yalin?
2. Akers c/o canoe
Call Jack Kennedy

Nordin - confirm cheap w/devices
Send note to DBS - send copies to comm

Prepare papers for Germany or
for journal?

Task Comm. on parent comm
report? Who reviews

Current & future research
needs

Proposal: Develop outline
Math Modeling

Physical Modeling

Support of math & field

Geomorphic

Predicting short & long term response

Interaction of W/S & channel

Basic Research

1. Sorting & Armoring

2. Transport & hydraulics of U.S. flow
   - Models
   - Field studies

3. Measurement of sediment transport
Design of data collection

Scheme

Sensitivity analysis

Selection of research problems

Rel. of sed to hydraulic structures

1. Scours & armor near embankments
2. Sed. control
   exclude
3. Highway crossings
4. Navigation
Stochastic Modeling

Sediment in reservoirs

1. Distribution
2. Bypassing
3. Bank, shoal, etc.

Hydraulics Controls
Sediment Water Quality?
 Forrest Holley's addressed

EPA: FS:

DBG has students working
with Lief, might be available.
Call DBG: (1)

Leif: Jim Magnuson student

(2) Chuck Lief:

[Signature: Diana Dunford]
Elementary Hydraulics

Diffusion Eq

Turbidity current

Coast & Deltas

Rivers & beaches

Tidal zone

Meyer's Home Center

CR-92

12" Steel, holes 5"-11"
18 May 78 - Jeff Richey
1330

Metabolic activity on various size fractions of particulate matter.

River Continuum Program
Oregon State
Decca Stdt
Wich Stdt
ndow

Select regime 4 rivers to look at varying processes as dim of salmon order

Sand size stuff
5 hydrol data

Estimate of total vol of samples - Landsat photos
1981 - Amazon

1. Repeat runs at low water

2. Work on major trib esp where deforestation may take place

3. Maybe contract work on trib to Brazilians

4. CO₂ effects of deforestation

Replan:
1) Low water study
2) Terrestrial production & baseline

Papers by fall '78 - papers done hypotheses formulated.
Tom Fisher

Primary productivity

There is a reaction of humus to US/Clays
Ned Andrews - 494 5945
8 May 78 - Mosquito repellent  
First Aid Kit  
Talg line & Stakes  
Door hammer  
Hand level  
Map  
Leave note for Bill Emmett to call  
Sum Ward  
Call Columbus

11 May - Letter on china  
check on paper  
Flowers  
Arr. pinedale x 2000 - 12 May 78
A: Rod & pack - to Denny Holley Smith
1st Corp Singer 7 Ahead at Highland 50
30 lb sounding w/F
Boat X piece at Forrest Service Yard

B-1 1130 GMT 0.38
Posts, stanch or staff

B-2 1140 GMT 1.62
Pool, slate, staff or

B-3 1150 GMT 1.94
Post pega or
new bottom down

B-4 Below dam - stuff out
11.12 Lake framed d. s by

B-5 Just down confluence
Staff almost out -
B-6 just below confluence
Needs stuff plate

B7 - Bear cany, stuff is still in but needs resitting
One post missing along L.B

B-8 no stuff plate

B9, 10, 11 ok

#13 - U.S. 80 10
14, 15 - Bear cany U.S. 11
16 - Small delta from high bluff

B-11 ok
B-13 needs staff
B-14 ok

15 - Needs staff
16 - Near bridge - Area 10k
17 - Trap

Met Jim Noble
A works for 10
Tony & Joanne? work in corn store
Live at old corn place
Check on mugs. Bring light.
15 May 78 - L.V. wish - call from Glanny at 1830
bypass channel cut along L&B
using wall. One man can
handle T.V.
Pat staying at orbit home
702-382-6071

16 May 78

22-25 May - Pittsburgh

5-24 Jun - Pinedale

10-15 July - Pinedale
23-30 July - Alaska

1 wk August - Wyoming

10-16 Sept - Missouri R.
17 May 78 - Call Foss on large producers
- Call U.H. on Fox 239.810
- Call Ralph on boat
- Call OBS

8.30 Fri morning - Fox
Get this
pp 1019

23 May 78 - Pittsburg
- Flow in bends - we of July 10th
- Sand regular title of progressing boat
- Sand Shen "River Channel changes"

24 May 78 - Stephen Moore
- Model uncertainty
- Sparse data
- Measurement error statistics

$\text{Gain} = \frac{1}{\text{m}}$

$z = \text{measurement}$
Brock, Young, & Whibread: Studies of River Eom, & Bedford System

1. What is point of stationarity?
2 June 78

1. Order Marsh McBurney flores
   Maker
2. Letter: Reserve on Amago
3. Budget
4. Inventory for East for study
Proc Code 1 - 777 0688
Ron Eichler 755-5051 - Owner
Turn of Century 758-7360
Call Good
Call Dr. Lyn"j

1. Campu receipt to Shirley
2. Bank
3. Order March-McBreeny
4. Check on Mungis
5. Call Stan
6. Get cable film
7. Pick up Holley-Smith Samples from Supply
8. Letter to Fish
9. Letter to Basso
10. " " Kerr
11. " " Paulo
12. From GSA Store
   Gloves
   Paint
   W.O. Reynolds
   Flashlight D
   T.P.
Daily Log

6 Jan 78 German to Pinedale

From Emmett's store

5.6 pen
8 lid
11.2
16
22? a wood pan
32 brushes

Emmett
Pinedale
307-367-4705
Log Count
367-4579
Highland Co
367-4444
2036 - 2x20 = 17/45 basement

1930

10 x 28, 30 x 44, 3 x 22, 20 x 8, 10 x 20, P.L x 20

28
17
10

10 x 28 = 280
30 x 42 = 1260
8 x 20 = 160
8.6 x 20 = 172

2.1 x 20 = 428

Total:

1872
600
1272

Total:

1872
1272
428
26 June 78

Appleseed Seed Co
833 Perfect 233 - 1611
N. of levit
0845 JFK - NO
(maybe will call later)
1130 Al china trip ok

4 Hr. A.L.
To Jefferson, Morrison, K.S.
ten pheas.

27 June 78 - office 8-10.
F f o l l o w a r o u n d l o o k i n g f o r g r a v e l .
Extension Sen.
15200 W 6th Ave

28 June 1978 - Cut sod along beac fence.
Met pm with Bob Miller from Wilmore.
To Lee's game at 1845 - Her team lost 8-3.
29 June 1978 - Call Tom Fisher

Call Morgan, Dyson, Nielsen

0830 - Fisher - funded for me

1 trip & 30 days paid, in '79

Start in Sept '79

Corley, type current maker

Assume I will be available

- Nov-Dec '79 -

Sample:

Ch 2-3 m
+10 m at high water

20 m across

Hooks

Russell & muddy type

Thero & Thompson
27 June 78

Channel Geometry Meeting

W. Hudson
R. Hadley
G. Williams
N. Andrews
K. Wahl
L. Hedman
W. Oster camp

Ger will do literature reviews on definitions.

Why Hudson? Where was Dutchess? Ervematt?
Who set this up?

Project will be funded from research funds.
30 June 78

To Miller's Steerman, R.S., Appleswood to sign petition for tax hunt. P.M. to Lee's games at Harlow Complex
Turn of Century (Man Eichler) 24.15
on Fox repair.

3 July 78 - Ti office ~10 30 E
to Lee's games at Harlow

5 July 78 - All in 2 no Grand project
Lee W. Watts, Emmett on Wednesday

6 July 78 - Lord thanks - to home
Maid
Bar dance called - Paul house
808 - 546 - 833
Wants me to go to Grandma &
Concert w/Navvy (yes or no) can
see Sunday - let Oh 79 -
Navvy regale for here on Sunday
Vax I und Tobey & 200' deep down
down. Initial tip of my experience
23 June 73 - 1930
Jim Woolf
31 Oct
2026 1st F1
1926 Broken
32
170
3000

3840

42356

5000

30% of
Actual Value
$47360

5/77 mil levy 1294
91.129

1982 - Next reappraised

Kens body shop
341-7200

behind Tynan
3-4-80

238-8101 - Negotiated
8 July 78 - To Los Angeles. Breakfast
1957 VW RV 2027
1964 Ford P.U. RV 1418
1974 Pinto stc.w RV 2026
Frontier 399-0808
Continental 398-3000
LV D am Ep
Wed: 3 15 am 4 39 non stop
Flt #: 8 30 10 34
3 5 12 45 3 09 pm
202 Friday 4 15 p 5 40
$144.00

Kertz car, El Paso, reserved

Colloquium:
"Measuring the sediment discharge of the Amazon River."
Reservation at
Howard Johnson
$0.5 call: 646-2022 [Barbara Morrison

Host: Dr. Issacs 1967
Sanitary Environmental
will meet & pick up
Jack Hall
Jesse's Office
Call at home after checking in
Albert E. Utton, Prof. of Land Use
Editor: Natural Resources Journal
UNM Press
Lynn Gelbard - NM/MT (MIT)
Groundwater
Samuel P. Mangold - PhD 1963 - Purdue
Structural Design

Gerald W. Thomas - PhD 1954, Texas A&M
President

Donald C. Roush - VP Dr. E., C.O. U. of N. Colo
Assoc. Adm. U. Ph.D. U. of Utah

Carrv Edw. Caruthers - Acting Dir. W.E.R.
Ag Econ - 1968 Iowa State Univ.
4 people - Dew will make decision.
1. Fish Creek, Alaska
2. " " " " Spawning
3. Critical Vel Curves
4. Bridge Scout - Bijou Cr.
5. Flood, St Louis
6. Yellowstone River
1. Roll & int. Comm. work - travel?

2. Comm. Corp


4. China

5. Yamamoto

6. Grad. fac. status? Major Prof
   Any limits

7. Inst. Funds, discretionary funds?
   Fund visiting scientists?
For CC

1. Travel - who approves?
2. Just reports? Then?
3. Books & journals

4. Descarl funds

200
150 15
1. Data Entry, Tolând - Comm. Work
2. Consultant - Cap
3. BOD - Comm. Hyd. Lib
4. China?
5. Residency Status
6. Ind. Funds? Discretionary Funds
7. Yamamoto ?? ?? ??
8. Graduate Faculty Status? Major Prog. Any Limit?
9. Institute Reports?
10. Buy books & subscribe to tech. journals?
working with
our scale
plant for research.
Current meter
Nozzles
Rubber tube
cord
Thermometer
stop watch
Beam Balance
Fiberglass

Resin
Pumps
Legues
Choc
Cotton 2739
Callow
24 July 78 - Unloaded truck
Applied for passport
AC&LD 10:
Fisher's Amazon proj
Guam
Office space
Sail water - on off
water - 2 weeks, next
year
McA has contract for
dependence model of Missouri

25 July 78

Carrie: Take to airport Fri:
For Fl. 528 - 78 July Fri
4:05 pm
13:05 pm
Oct 3-6th: Training
made - ok
Himble - ok
Hodgins - ok
Leaunsky (Bob Lichtley) - ok
JKC - yes

Lunch will be today: EMFM (5020) or

Ben Jones - Lt Cinda Bob Norris
was interested in reservoir survey
of Green -

28 July 78
0800 off - Reviving DI-1175
Matthew - Lead - unknown
Herb Fleming - 928-4110
will call back
Hodgins - will coordinate course,

Robert Blair - Geomorph - Ft Lewis College
working on animal husbandry equipment
Choose any
comparing 1/2 opening
we
can do it.

1000 - Call Heresh Fleming:
Scott Halford - Dept Stab
Dear office & Heresh Fleming
Contact.

Call office on itinerary
OBS will be with
LEAP code - Mon & Tues
Lasung
Turn into Ohio River
Vehel: Wed. F

Dean Peterson: [redacted]
High in AID - OBS
will contact if necessary
PANACE R1 = 1828'
R-L  Start 230' from shore
1345 Stop 230' from shore
L-R  35' from shore
R1 - Right 120' from shore 1845'

122 - 2653 45' from flag (\frac{1}{4} 2653)

36.250 = 2100

LH 540

LB 25' from L B Flag = 1405

R3 - L 1585'
1580 - Shala
10' from water, 45' from edge
1280
980
780
525
50
180
70

R3 - R 21 1420 HRS
Jim Blanton
Mickey Owens

R. Hall
L. Shores
D. Hobbl
B. Curtis

75
73
225
325
5475
9000
57 55
243 L Found RM (8770)
Water is 150 ft. from RM
Started sounding 100' from bank

1730 L W

R44 L Started 250' from Sow
Notes on sounder chart
11 meters = 825'
R.B. flag is ~90' from Sow (Raced)

R40 L
2300 Sliding

2240
30' from flag
Check this sound; distance is
about 200' too much.
8 Aug 78

R10 - Can't get all of this:

vegetarian along left side

1400
1100
900
700

By 7°37'30" LH - Tower

Leg 1 1° 21' 50"
RH - RGR (red line)

2° 36' 50"
RGR (true)

300' to EW at 1130

we are about 50 yards of line

Leg 2 25° 19' 00"
Tower

RGR

20° 36' 40"
292

At Road 3° 34' 50" 10' 10"
Tower

72 56 40
RGR

33 54' 50' 10"
RGR
8 Aug 78  10,350 ft on B.Lin

P 84

80' from well at 1340

150' between

800' from B.Lin on hill

Pipe line 60' from P 84

150' from P 84 to B.M
Keyhole 9 Aug 78

WS 95.99 @ 0800

0900 - Chequed Squared
0M to Fleeg 60R on High Back 11T pce
to Fleeg W.S. 1031

Steet +80'

90 x 15

+25 h stem

1200 Finished R60, R61, R62
Notes on sounder chart.

50 M Speedr 980
Current m 965
<table>
<thead>
<tr>
<th>9 Aug 78</th>
<th>ASA 25 - 20 shot res</th>
</tr>
</thead>
</table>

<table>
<thead>
<tr>
<th>70</th>
<th>75</th>
</tr>
</thead>
<tbody>
<tr>
<td>675</td>
<td>100</td>
</tr>
<tr>
<td>6850</td>
<td>525</td>
</tr>
</tbody>
</table>

| 1610 | 21 |
| 730  | 75 |
| 260  | 25 |
| 965  | 410 |
How deep will we be

Corp - Spare 12V Battery, 203 repair
Spare reel motor & winch gear?
220V standby
Core liners - order 150
Boat layout - Real for BM 54?

100 8#/4

Plastic Bags

1. Boat cannot move

2. Too soft - very long & small cable

3. Too hard - you will lift

Don't kink cable

Housing might leak - samples last
used 1971

Dane will be at Cricket diary
Minneapolis
184.5 cm

4 cm from end of pipe

3 1/2

3 cm cutter edge

Cut liner 18.5 cm —

2.75 cm

2.125 cm

2.11.6

Insert 395

#10 1/2 nipples, cores 1" thick

for cores

9 1/2 core for piston 1 1/2" thick

250 V

5 A

Slow blow fuse
25 Aug 78 - Mary will call

Newport  757-3351
2170 S Grove
BPA CR 49

Mary 260-6901
Car 01819 21-
3AG 013005

3 down slow blow  313005
3 0 48

1 25 ft Col - turn at Evans, 2nd
East on Evans 1/2 mi
S on Grove - cross to Evans
19 Sept 78

1300

C. Hedley
E. Prudenton
Rick Gold (Billings)
J. Baudouin

only in C. Prudenton office

1. USGS will plot X-sec from monument to monument
   a) pick from X-Y coordinates
   b) punch to USBR format
   c) USBR will send us old X-sec on field book

2. USBR continue

    Staff. -
    " - Capacity

   Modifications in March