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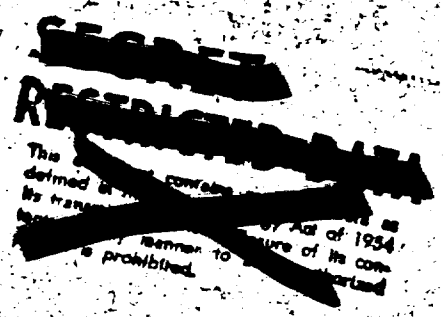

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This is copy 1 of 1 Series A.

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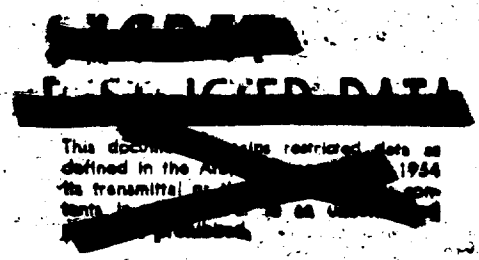


DANNYBOY - SEISMIC EFFECTS

From 0.8 - 340 km $a(g) = W(\text{krow's})^{0.75} \times 10^{-2.9} \times R(\text{km})^{-2}$

Measured values

R (km)	Acc (g) (10^{-2})
.76	4.7, 6.7, 6.8
1.22	2.8, 6.6, 9.4
2.13	1.11, 2.1, 3.2

LLNL

Event Name	Yield	Medium
Mississippi	110	SWT
Merrimac	DELETED	Slightly consol. all

LLNL

LLNL

Dried salmon

Event	W(kt)	Loc.	DOB (ft)
Aktanum	DELETED	U2L	750
Clearwater		U12c	1800
Tornillo		U9ag	500

LLNL

$$R = \frac{40 \times 3}{70 \times 70}$$

$$R = .16$$

$$= \sqrt[3]{.16}$$

$$R =$$

LLNL

Date		Name	Location
Nov 21 or 5 Dec	*	DELETED Greys	U9ax, 1050
~~31~~			

*Doe or other on 14th

* ~~Dec 6~~ Jan 16		~~Klickitat~~	~~U10e, 1625~~
		Oconto	U9ay, 875
Jan 30		Payette	U2ab, 750
Feb 6	DELETED	Flat.	U20a, 2050
Jan 16		Fore.	U10c, 1600 U9ao
Mar 4		Turf.	U10c, 1673
		Slice	U7a, 220'

LASL

DELETED

* Klickitat - 2/6 per Cont. T.B * ~~22~~ (7) LLNL

71

Con. Test Bull #72

Date Shot	W	Depth/Hole
Nov 21 or Dec 5	Greys	U9ax, 1000
Jan 16	Fore	U9ao, 1625
Feb 6	Klickitat	U10e, 1625

DELETED

4X163

CTE #72 – 29X63 –

W [redacted]

Date	W	Name	Location/DOB
11/21 or 12/5		Greys	U9ax, 1000'
> 1/6/64		Oconto	U9ay, 875
1/16		Fore	U9ao, 1625
2/6		Klickitat	U10e, 1625
2/27		Alva	U2j, 550

DELETED

LLNL

Throw-out -
Nothing on R/A aspects

Lacrosse — (W ~ 40 kT) Land surface Burst.
WT 1354 Reducing F/O studies

WT 1319 - Land F.O Studies
Proj 2.65 Evaluate B.S. transport

Baker - Howland Study —

Seminole — Opn Redwing — DELETED
— For the opn — Surveys @ H+1 to H+4
H+4 to H+8
D+1 & D+2.

13.7±1.5
~~12±~~ kt
Water tank - ground surface
Eniwetok.

per WT 1366 -
630,000 mr/hr on shot island at H
Reentry held up 2 days
Helicopter reentry to bunker not affected

Earlier shot I	mr/hr	
5 May	9,900	31 days
28	40	
31 May	70	

LLNL

1 KT = 1200 r/h @ 4 ft / mi²

La Crosse – DELETED Redwing

– 5 May – 40 kt – Ground surface – Eniwetok

+17 ft.

I mr/hr @ H+4 — 30,200 on Island

at edge (outer) of crater – H+1

57000 r/hr.

$A_t = A_b t^{-1.2}$

LLNL

WT 1311 –

Avg decay – 1.1 - 1.3

Some affected by rain leaching:
A ~ 50% of what
it would be from
decay alone.

Detectors in pipe: Collimation factor 4

LLNL

WT 1311 – Proj 2.2 – REDWING RAD SAFETY

Residual & Radiation: $I_t = I_1 t^{-1.2}$

$$r = \int_{t_1}^{t_2} I_t \, dt = 5 I_1 (t_1^{-.2} - t_2^{-.2})$$

Decay curves for Cherokee, Yuma, Flathead, Navajo, Tewa.

"Beach Ball" Crater residual detector used; Calibration problem? 50000 r/hr @ H+6.
No measurements (except beach ball) at 1 r/hr

WT 942 – CASTLE RAD SAFE.
Meteorological wave effect
Decay curves – See next pg –
Craters

WT 913. Castle – σ vs T
51R for 1st 25hr
1.28 decay between H+1 & H+12
70000 ft t_1 GZ

LLNL

WT 912. Spectral response of gage → uncertainty
Decay rate for koon < 1 generally
Reason not known

Total Max. (in/near crater)

DELETED 1500 r/hr @ H+4 (ex
15KT DELETED on reef
DELETED 11KT DELETED
on barge. H+4 extra 2000 r/hr in crater
DELETED Koon - 100 DELETED KT, DELETED
on Ground. 5000 R/HR @ H+4 in crater.
There were samples taken from some craters

WT1366

LaCrosse: H+4 on Short Island
30000 mr/hr.

WT-942 - Initial Hel. survey 50-1000' altitude at H+4 hrs.

Shot 1 - Land - 15 MT - DELETED
Rpt incl. A at a no of location (rem

Shot 3 - Land - 100-150 KT
"Small sand dunes around crater were washed away by
Crater A - 5000 r/hr at H+4

WT1366 - Work done in Mike, Crater for Apac
A - 4-5 ~~mr~~/hr @ ?

Helicopter surveys at H+2 H+4,
Detailed " " H+6
& succeeding days.
DELETED
Zuni Shot ~~is~~ land H+4 > 2500 ~~mr~~/hr
Dakota DELETED H+4 ~ 5000 mr/hr.

WT1346 - Edgs for Choppers of Probes converted to 3' land values.
Conversion includes:
Collimation
Depth of mixing in Ocean
Air Absorption

Effect of Sodium
Just outside
Crater A: H+1
57000 mr/hr - Lacrosse
13000 - ~~Zuni~~ Mohawk, not Zuni

LLNL

WT1317 - Very little of value.

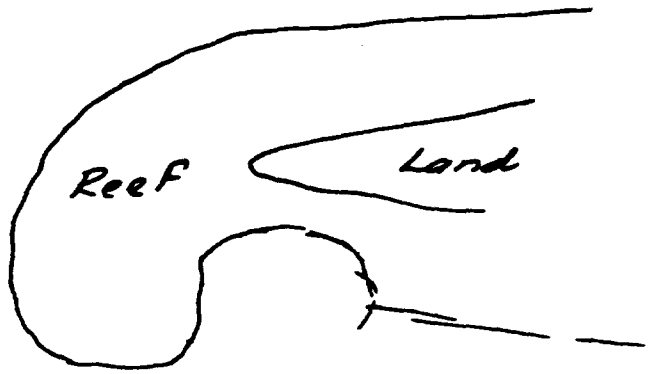
CASTLE I (WT 920) (Crater Study)

W_T = 14.5 MT ; DELETED On Reef under very shallow H$_2$O.

On D+6 – @ 10' above water 25-75 mr/hr

"Much higher" on nearby land.

No lip above water.



WT942

1500 r/hr on adjacent (sw) island. @H+4

Debris radius – 2-3 mi

CASTLE II DELETED

W_T = 11 MT, DELETED

Barge

D_{H+4} ≃ 2000 r/hr "in crater area)

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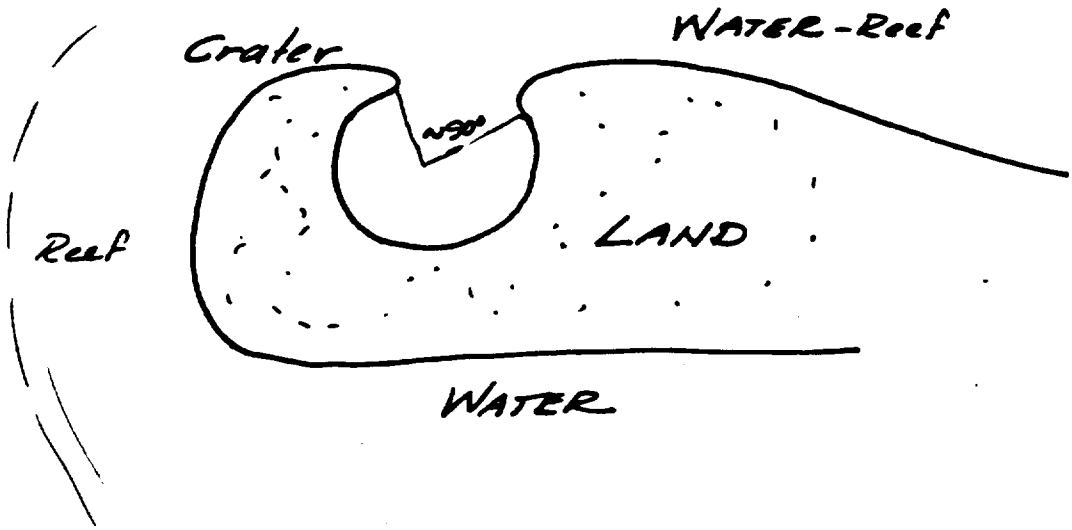
CASTLE 3 (WT 920 Gala survey)
D+24 - A ~ 1500-3500 mr/hr on lip
50 mr/hr 10' above water
Shot 4 had been fired between Shot 3 and D+24. Shot 4 wave had flooded C3 lip.
There was a lip.

WT942. Shot 4 did not significantly > R.A. at Shot 3 island.

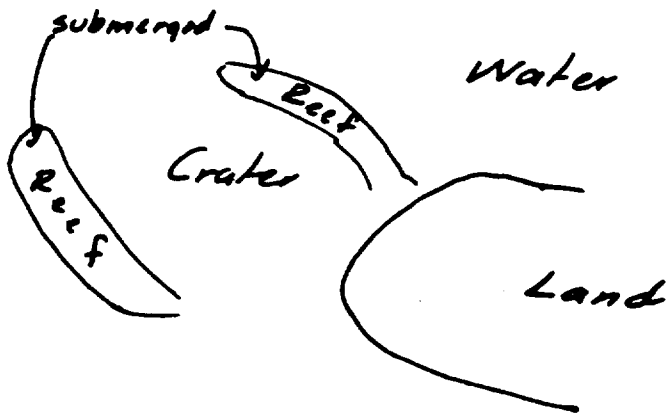


WT942- Koon- DELETED Castle 3. 130kT all F.
5000 r/hr @ H+4 in crater.
Samples taken fr. some craters.

Castle 4 DELETED
Barge in center of lagoon
~~H~~ 7 MT = WT
DELETED LLNL

Nearest land ~ 3 mi
D+4 on nearest land ~ 1400 r/hr

Zuni : 3.5 MT Total; DELETED
WT1307 - Breaching of crater permitted reentry at D+6



WT1366 H+4 - W_T . 3.5 MT
25000 mr/hr DELETED
on shot island
75000 mr/hr @ H+4 on Able (~25 mi.)

WT1311 - Beachball ~~sec~~ measurement
50000 r/hr @ H+6 in crater.

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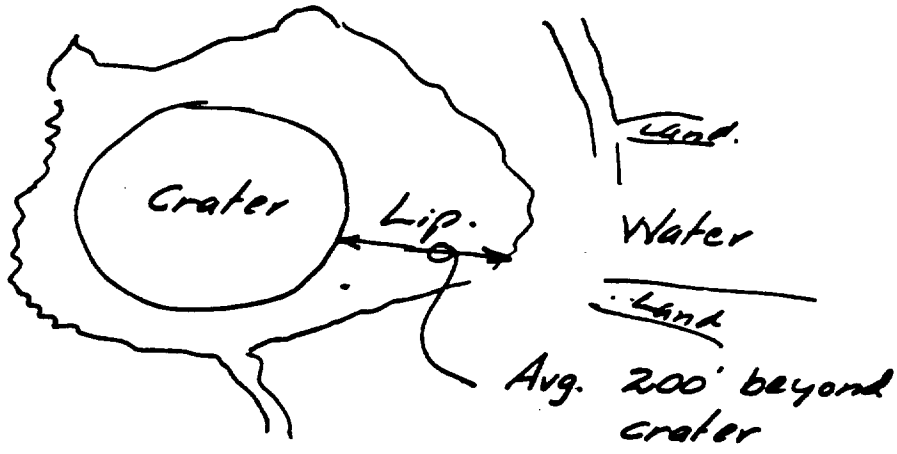
Lacrosse- no breaching - 40kt, hob = 17'
2' water over shot reef at Zero time.
Lip ~15' high



WT 1366 - H+4 on shot island 30000mr/hr

JASON MINKLER. See notes.

WT 1344 - 57000 r/hr at outer lip - H+1

WT 1319 - 57000 r/hr @ H+1 was isolated
Gen. level 1600-4800 r/hr @ H+1.

Tide had washed reef twice between shot & readings.

Dmax - 6000 - 6000 r/hr. @ H+1.

$\delta \simeq 1.36$ avg.

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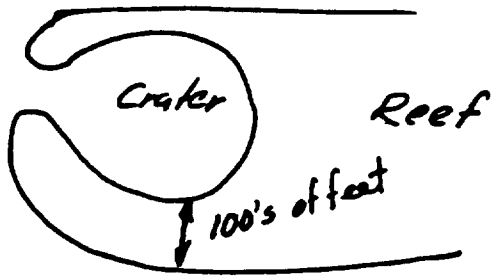
CACTUS.

Unwashed WT1604 (Water few ft deep)
∴ D should be down.



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TEIUM

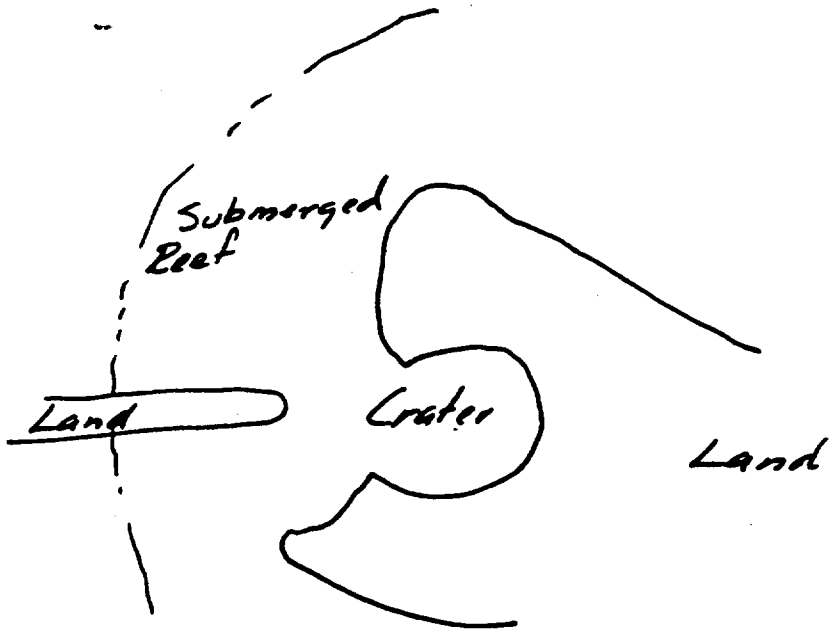
DANNY ≤ 1500-/hr on islands
2 mi distant.

- Reef shot. Barge, shallow water.

~ 4.7 MT, DELETED

LLNL

Seminole. 13.5 Kt.
Surf Water Tank



1366 - 630 r/hr @ H+4 on adjacent island.

LLNL

TE NA -

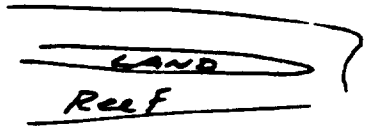
Shallow water barge shot

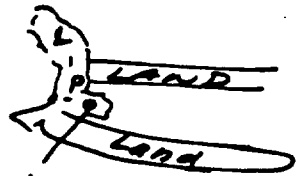
LLNL

MONA K — 3C Tower. on Land.

DELETED

WT 1344





13200 r/hr @ 4+1

Based on H+2 readings

H+1 around crater $\$^{00}_{=}$ 13000 r/hr

Area of high readings not submerged.

WT1366 - 1450 r/hr @ 1H+4 on Shot Isl.

LLNL

JCH

BL CICFOOT
WT 1344

DELETED

200' Tower

WT 1366 - $D_{H-d} \leq 360 v/hr$

LLNL

Erie

WT 1344

DELETED

300' Tower

WT 1366 - @ H+4 D= 200 r/hr.

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FLATHEAD (TS 28S)
WT1344 –

DELETED

Barge

WT1366 –

H+4 ~40 r/hr.

LLNL

PANUTE '68A EQPMT VULNERABILITY

Gnome:

Acc = 5 g. safe

For deep soil; hard rock shot

$a = .53 W^{.54} R^{-1.4}$

$R^{1.4} = \frac{.53 W^{.54}}{a} \simeq .1 W^{.54}$

$R \simeq (.1 W^{.54})^{.7} = .2 W^{.38}$

$R_{170} = .2 \times 7 = 1.4$ mi $\lesssim$ 7500'

$R_{500} = .2 \times 10.5 \simeq 2.1 \simeq$ 11000'

$R_{1000} = .2 \times 14 \simeq 2.8 \simeq$ 15000'

$R_{1500} = .2 \times 16 \simeq 3.2 \simeq$ 17000'

For rock/shallow soil; hard rock shot; say Terrain coef = 2

$a = \frac{.53}{2} W^{.54} R^{-1.4}$

$R = (R \text{ from above}) \times (\frac{1}{2})^{.7} \simeq .6 R$ from above

$R'_{170} = 4500$
$R'_{500} = 7,000$
$R'_{1000} = 9,000$
$R'_{1500} = 10,000$

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Velocity: Say 150 cm/sec.
For deep alluvium, hard rock shot: v

$v = 1.7 W^{.67} R^{-1.5}$ in/sec, mi, kt

$R^{1.5} = \frac{1.7}{v} W^{.67}$

$R = \left[\frac{1.7 W^{.67} \times 2.54}{150}\right]^{.67} = .1 W^{.44}$

(cont on page 25)

BILBY: Say safe motion = $\frac{2}{3}$ actual Bilby motion
$\simeq$ ~~4/3~~ 2g w/proper shock mtg of eq pt.

$R^{1.4} = \frac{.58}{2} W^{.54}$ for deep alluvium.

$R = .27^{.7} W^{.38} = .4 W^{.38}$ = ~~1.4x~~ Twice Gnome R

$\therefore$ R_{170} = 14,500'
R_{500} = ~~25000~~ 22000
R_{1000} = 25000
R_{1500} = 34,000

Using 3g (Bilby. acc.) (R = 1.4x Gnome R)
R_{170} = 11000
R_{500} = 18000
R_{1000} = 22000
R_{1500} = 25000

Using Tens. Coef = 2.

R' still = 2 x Gnome R'
R_{170} 9000
R_{500} 14000
R_{1000} 18000
R_{1500} 21000

Bilby Velocity (Say 70 $\frac{27\frac{1}{2}}{}$ cm/sec)

LLNL

$R = \left[\frac{1.7 W^{.67}}{27.5} \right]^{.67} = .15 W^{.44}$

R = 1½ times R from pg 25.

R_{170} = 10 000
R_{500} = 17000
R_{1000} = 22000
R_{1500} = 26,000

$R = .1 W^{.44}$

$R_{170} =$	.95 mi	≃	5000'
$R_{500} =$	1.6	≃	8500
$R_{1000} =$	2.1	≃	11,000
$R_{1500} =$	2.5	≃	13000

— from Gnome vel.

Occuppied Trlrs.

$V = 30$ cm/sec. ≃ 12 ips

$V = 1.7 W^{.67} R^{-1.5}$

$R = \left(\frac{1.7}{V} W^{.67}\right)^{.67} \cong (.14 W^{.67})^{.67} = .27 W^{.44}$

R_{170}	=	.27	× 9.5 × 5280	=	13,500'
R_{500}	=	↓	17	=	24 000'
R_{1000}	=		21	=	30 000
R_{1500}	=		25	=	35,500

Acc. 3g on Rock (T.C. = 2)

$a = .53 W^{.54} R^{-1.4}$

$R^{1.4} = \frac{.53 W^{.54}}{2a} = \frac{.53 W^{.54}}{6} \cong (.09 W^{.54})$

$R \cong .18 W^{.38}$ mi $= 950 W^{.38}$ ft

$R_{170} =$	950	× 7.2	=	7000
R_{500}	↓	11	=	10500
R_{1000}		14	=	13500
R_{1500}		17	=	16 000

LLNL

100

Cloud/aggr