

PI – Catherine M. Snelson
Institution – New Mexico Institute of Mining and Technology
Long Name - Humble Redwood Seismic Refraction Experiment – Kirtland Air Force Base
Short Name – Kirtland AFB

The Humble Redwood (HR) Experiment took place in August 2007. Instruments were deployed from August 26 to August 31, 2007. The experiment was designed to develop methodologies to estimate the yield of an explosive source in an urban area. NMT's component of the experiment was to record the blasts using RT125a seismic recorders to develop a velocity model of the field site. Instruments were deployed approximately every 50 m from Ground Zero (GZ) at the Chestnut site (see HR_Geometry.xls – page receivers) in a radial pattern. One long line was laid out from Chestnut to GRABS.

There were 8 shots recorded from August 27 to August 31, 2007 (see HR_Geometry.xls – page sources). The shots at GZ were all 657.7 kg of ANFO and GRABS was 45.5 kg of C4. Detail of explosives used can be found below, taken from the SOP of the group doing the shooting.

Notes from deployment:

Stations mislabeled:

5008A = 5009

5074B = 5073

Shifted numbers up to be consecutive

Instruments with problems:

RT125a #	Station #	Problem
1919	1013	unburied on pick-up
2179	1014	instrument wet on pick-up
2142	1015	instrument wet on pick-up
1555	1021	according to the notes there was no sensor
2837	1022	according to the notes there was no sensor
1683	3004	unburied on pick-up
1779	4004	unburied on pick-up
1798	4006	unburied on pick-up
1598	5016	unburied on pick-up
2362	5088	unburied on pick-up
2153	5099	no green light
2703	6006	no green light

From DTRA SOP:

“Explosive Limits for Area 1: Each of the seven HR tests conducted at the Chestnut Site will consist of a main charge of up to 1450 pounds of Ammonium Nitrate and Fuel Oil (ANFO) (1189 pounds TNT equivalence). Two boosters of up to two pounds each of Pentolite (5 pounds TNT equivalence) (Hazard/Class 1.1) or 3.65 pounds Comp C-4 (5 pounds TNT equivalence) (Hazard/Class 1.1) will be used to boost the charge. Up to two

RP-83 Exploding Bridge Wire (EBW) detonators (Hazard/Class 1.4) and up to 40 feet of 50 grain/foot detonating cord (0.36 pounds TNT equivalence) (Hazard/Class 1.1) will be used to detonate each charge.

Explosive Limits for Area 2: One HR test will be conducted at the GRABS and will consist of up to 100 pounds Comp C-4 (137 pounds TNT equivalence) (Hazard/Class 1.1). Up to six RP-83 Exploding Bridge Wire (EBW) detonators (Hazard/Class 1.4), and up to 150 feet of 50 grain/foot detonating cord (1.4 pounds TNT equivalence) (Hazard/Class 1.1) will be used to detonate the charge.”