Los Alamos Environmental Restoration Records Processing Facility

ER Record I.D.# 0009733

DATE RECEIVED: 9/28/92 PROCESSOR: YCG

ENTERED

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ENVIRONMENTAL RESTORATION
Records Processing Facility
ER Record Index Form
(Side 1 of 2)

Part I: Complete all fields; indicate if not applicable or appropriate; please write legibly.

DOCUMENT TO: File DOCUMENT DATE: 09/17/91

ORIGINATOR NAME: Dorothy Hoard ORGANIZATION: CLS-1

SYMBOL: CLS-1/91-303-DH PAGE COUNT: 2

SUBJECT/TITLE: Conversation with John Dougherty RE TA-33

RECORD TYPE (Circle relevant type for primary record; type of attachments should be selected on *Keywords List*):

Analytical Data	FAX	Map	Plan	Study
Chain-of-Custody	Figure	Memo	Procedure	Telephone Record
Computer Output	Form	Microform	Purchase Request	Transcription
Contract	Interview	Notebook	Receipt Acknowledgment	Video
Controlled Distribution	Letter	Personal Notes	Report	Work Plan
Drawing	Logbook	Photo	Review	Other

RECORD CATEGORY: P
(P for Programmatic or R for Reference)

RECORD PACKAGE #: —

RECORD FILMED (Y/N): Y

RECORD LOCATION: —
(Indicate location of record if not filmed.)

Part II: Complete all fields; indicate if not applicable or appropriate; please write legibly. Use *ER Record Index Form Attachment Sheet* if needed.

ATTACHMENTS FILMED (Y/N): —
(Were attachments to this record filmed?)

LOCATION: —
(Indicate location of attachments.)

TECH AREA(S)	ADS NO(S)	WBS NO(S)	STRUCTURE NO(S)/MDA
LIST RELEVANT TECH AREA(S).	LIST RELEVANT ADS NO(S).	LIST RELEVANT WBS NO(S).	LIST RELEVANT STRUCTURE NO(S)/MDA.
TA-33	1122	1.5.16	AREA G Building 9 AREA E

32267

Part III: Complete all fields; indicate if not applicable or appropriate; please write legibly. Use *ER Record Index Form Attachment Sheet* if needed.

PRS NO(S)	DOCUMENT TO	ORIGINATOR NAMES
LIST RELEVANT PRS NO(S).	LIST MULTIPLE RECIPIENTS.	LIST MULTIPLE ORIGINATORS.
33-011(b)	—	—

CORRECTION (Y/N): —
(Is this a correction to a record previously processed?)

CORRECTED #: —
(If answer is Yes, please give ER Record # for corrected record.)

CORRECTION DESCRIPTION (Optional): —

SUPERCEDE: — **REPLACE:** — **DELETE:** — **ADD:** — **REVISE:** —

ATTACHMENT LIST

N/A

KEYWORDS: Circle relevant KEYWORDS from the list below for ER Record #: 9733

MISCELLANEOUS (List other indexing criteria as necessary; please write legibly):

OU 1122 / HP-2[illegible] / HP-25 / HP-26 / HP-97 / Aluminum
HP-16 / HP-21 / HP-63 / HP 102 / HP-146 / Titanium

Abandon
Aboveground Tank
Absorption
Abstract
Accelerator
Access
Accident
Accumulation
Acid
Active
Administrative
ADS (Activity Data Sheet)
Adsorption
AEC (Atomic Energy Commission)
Aerial
Agenda
Agreement
Air
Alpha
Americium
Analysis
Analytical
AOC (Area of Concern)
Approval
Aquifer
ARAR (Applicable, Relevant, or Appropriate Requirements)
Archaeology
Archive
Area
Arsenic
Asbestos
Asphalt
Assessment
Audit

Backfill
Bacteria
Barium
Baseline
BCP (Baseline Change Proposal)
Beds
Bermed Area
Beryllium
Beta
Biology
Blank
Boiler
Boneyard
Bunker
Buried
Burn
Burn Site

Cadmium
Caisson
Calibration
Canyon
Capacitor
Caustic
CEARP (Comprehensive Environmental Assessment and Response Program)
Cement
CERCLA (Comprehensive Environmental Response, Compensation, and Liability Act)
Certification
Cesium
Chain of Custody
Chamber
Change Control
Change Order
Charge
Chart
Checklist
Chemical
Chromium
Cleanup
Clearance
Closure
Clothing
CMI/RA (Corrective Measures Implementation/Remedial Action)
CMS/FS (Corrective Measures Study/ Feasibility Study)
Cobalt
Comment
Committee
Community Relations
Compliance
Compressed Gas
Computer Modeling
Computer Output
Concern
Concrete
Concurrence
Configuration
Construction
Container
Containment
Contaminant
Contract
Control
Controlled Distribution
Core
Corrective Action
Correspondence
Criteria
Cyanide

Data
Deadline
Debris
Decision Analysis
Decommission
Decontamination
Deficiency
Deliverable
Demolition
Description
Detection
Detonation
Development
Discharge
Disposal
Documentation
DOE (Department of Energy)
Dose
DQO (Data Quality Objectives)
Draft
Drainage
Drainline
Drawing
Drilling
Drop Tower
Drum
Dry Well
Dump
Duplicates

Ecology
Effluent
EIS (Environmental Impact Statement)
Emission
Engineering
Environmental
EPA (Environmental Protection Agency)
Equipment
ERDA (Energy Research and Development Administration)
Erosion
Error
ES&H (Environment, Safety, and Health)
Estimate
Evacuation
Evaluation
Evaporator
Excavation
Exclusion
Exhaust
Experiment
Explosive
Exposure
Extension
Extraction

Facility
Fallout
Farm
FAX
Fence
Field
Figure
Filter
FIMAD (Facility for Information Management, Analysis, and Display)
Finding
Fire
Firing Site
Fiscal
Fission
Five-Year Plan
Flow
Flow chart
Fluid
Form
Framework
Free
Fuel
Fume

Gamma
Gas
Generation
Generic
Geochemistry
Geology
Geophysics
Glass Beaker
Glove Box
Graph
Guidance
Gun

Handling
Hazardous
Health
HE (High Explosive)
History
Hole
Home Owner
Hood
HSWA (Hazardous and Solid Waste Amendments)
Hydrology
Hygiene

Impact
Implementation
Implosion
Impoundment
Inactive
Incident
Incinerator
Industrial
Infiltration
Injection Well
Injury
Inorganic
Inspection
Installation
Interim
Interim Action
Internal
Interview
Inventory
Investigation
IRM (Interim Remedial Measure)
Isotope
IWP (Installation Work Plan)

Lab Job
Laboratory
Lagoon
Land
Landfill
Laundry
Leach
Lead
Leak
Legal

Letter
Limit
Lines
Liquid
List
Log
Logbook

Magazine
Management
Manhole
Map
Material
MDA (Material Disposal Area)
Media
Meeting
Memo
Mercury
Metal
Microform
Minimization
Minutes
MIS (Management Information System)
Mixed Waste
MOA (Memo of Agreement)
Model
Modification
Money (Allocation, Appropriation, Budget, Cost, Funding, etc.)
Monitoring
Monthly Report
Mortar Impact Area
MOU (Memo of Understanding)
MSA (Major System Acquisition)

NEPA (National Environmental Policy Act)
NFA (No Further Action)
Nitrate
NMED (New Mexico Environment Department)
NMEID (New Mexico Environmental Improvement Division)
NOD (Notice of Deficiency)
Nonexplosive
Notebook
Notification
NPDES (National Pollutant Discharge Elimination System)
NRC (Nuclear Regulatory Commission)
Nuclear

Observation
Off-gas
Oil
Open
Open Burning
Operation
Order
Organic
Organization
OSHA (Occupational Safety & Health Administration)
OU (Operable Unit)
Outfall
Outline

Pad
PA/RFA (Preliminary Assessment /RCRA Facility Assessment)
PCB (Polychlorinated Biphenyl)
Permit
Personal Notes
Personnel
Personnel Qualification
Photo
Pilot Study
Pipe
Pit
Plan
Plant
Plutonium
Pollution
Polonium
Polaroid
Potential
Presentation
Prevention
Priority
Procedure
Program
Programmatic
Project
Project Leader
Propellant
Property
Proposal
Protection
Protocol
PRS (Potential Release Site)
Public
Pump
Purchase Request

Quality
QA (Quality Assurance)
QP (Quality Procedure)
Quarterly Report

Radioactive
Radiochemistry
Radionuclide
Radium
Rationale
RCRA (Resource, Conservation, and Recovery Act)
Reactor
Receipt Acknowledgment
Recommendation
Reconnaissance
Records
Recovery
Recycle
Reduction
Reference
Regulation
Release
Remediation
Removal
Report
Request
Requirements
Research
Resin Bed
Resolution
Resource
Respirator
Response
Restoration
Restriction
Results
Review
Revision
RFI/RI (RCRA Facility Investigation/Remedial Investigation)
Risk
RPF (Records Processing Facility)

Safety
Salamander
Salvage
Sample
Sampling Plan
Sanitary
Satellite
Schedule
Scope
Scrap
Scrap Detonation Site
Screening
Scrubber
Search
Security
Seep
Seminar
Semivolatile
Septic
Sewer
Shaft
Sheet
Shell
Shot
Silver
Site
Sludge
Soil
Solid
Solvent
SOP (Standard Operating Procedure)
SOW (Statement of Scope of Work)
Specific
Spill
Stack
Standard
Statistics
Steamline
Steel
Storage
Strontium
Structure
Study
Subcontractor
Subsurface
Summary
Sump
Support
Surface
Surveillance
Survey
Swipe
SWMU (Solid Waste Management Unit)
System

Table
Tank
Task
TCLP (Toxicity Characteristic Leaching Procedure)
TDD (Technical Document Description)
Technical
Technical Team
Technology
Telephone Record
Test Area
Testing
TLD (Thermoluminescent Dosimeter)
TOC (Table of Contents)
Townsite
Toxic
Tracking
Training
Transcription
Transfer
Transformer
Transport
Treatment
Trench
Trip Report
Tritium
TRU (Transuranic)
TSCA (Toxic Substances Control Act)
Tuballoy
Tuff

Underground
Uranium
Urine
USGS (United States Geological Survey)
UST (Underground Storage Tank)
Utility

Validation
Variance
VE (Value Engineering)
Ventilation
Verification
Video
Volatile
Volume

Warehouse
Waste
Water
WBS (Work Breakdown Structure)
Weapon
Well
Work
Working Group

Zinc

02-019

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

(2)

memorandum

TO: File

DATE: September 17, 1991

FROM: Dorothy Hoard, CLS-1

MAIL STOP/TELEPHONE: G740/7-9624

☒ UNCLASSIFIED
☐ CONFIDENTIAL
☐ SECRET

SYMBOL: CLS-1/91-303-DH

SUBJECT: CONVERSATION WITH JOHN DOUGHERTY RE TA-33

Personal Communication July 11, 1990
Dorothy Hoard, CLS-1

John Dougherty joined W-3 on May 8, 1950. He worked at TA-33 until 1972, when the group was disbanded. The group tested gun-assembled nuclear devices.

John Dougherty worked first at Area 6 developing and testing Po-Be initiators for gun (vs. implosion) weapons. The initiator for the gun assembly used Be and Po in contact to provide a source of neutrons. The electronics for instrumentation were in HP-16; the gun was on the pad to the west of HP-16. various assemblies tested may have contained Po, Be, U, Cu, W, stainless steel. They also tested nuclear gun mock-ups in the cinder cone section of Area 6. The indentations on HP-16 are from this shrapnel.

HP-2 was a machine shop. The machines were on the concrete half of the floor. Here they machined parts - mostly nickel, some titanium and brass. They did not machine beryllium, probably not uranium.

The slit saw in HP-21 was a small one inside a glove box. It was used to section initiators to see what had taken place mechanically during the shot. The "Squab" assemblies had to be spinning to initiate, requiring they be shot from a rifled 105 mm gun.

At HP-South, John worked in the HP-25 gun building. The building has steel roll-up doors to allow operations to project beyond the building. The tests involved using a modified navy gun to fire projectiles into a target placed near the muzzle of the gun. The projectiles were of tuballoy and steel-tungsten alloy, containing some copper parts. The projectile was loaded into the breech of the gun. The target was also tuballoy, with some copper, tungsten and nickel parts. The target was placed near the muzzle of the gun. When the projectile was fired, the impact carried the target and projectile into the berm HP-63. The assembly had pin contacts to measure motion and actuate cameras for photos of the shots.

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John also conducted test for the "Nemo" program at HP-South. These were mounted on the pad over the HP-26 X-Unit Vault (also called building 9). These shots were the source of the shrapnel on the surrounding hillsides and at Bandelier. They fired assemblies containing more than a thousand pounds of HE. The assemblies also contained large uranium components, which were broken up and dispersed on firing. Later shots were smaller and contained less HE; some contained Be. The list of shots is classified. Often the entire assembly was encased in a copper can as an electrical shield.

The main disposal area was SWMU 33-011(b) at HP-VBLA. Area E was a general dumping pit for all kinds of scrap and used uranium projectiles.

All chamber shots were finished when John arrived. Robert Spaulding may have conducted some of the shots. Chamber shots tested the mixing efficiency of Be-Po initiators using HE. The chamber contained alpha counters connected with outside leads.

Area 6 was only the NW site around HP-16. HP-1 and 2 were built at this site, never moved.

The X-Unit was an electronic device to fire detonators.

Art Williams fired "Elsie" shots in the Tower Area of HP-South. These used a tuballoy-molybdenum alloy.

He does not know why this was called the Tower Area.

John does not remember a gun near HP-26 (The HP-146 concrete pillars). Brooklyn Betsey was a C-2 Army wrecker with a crane.

Cut-off saw = Slit saw

John Dougherty described activities at the new east firing site as follows:

At the HP-97 firing pad, they fired projectiles for the "Silo" initiator development program. The initiator was mounted inside a large, doughnut-shaped liquid scintillation tank, containing about 20 photomultiplier tubes and several hundred gallons of scintillator. A uranium projectile was fired at the initiator mounted in the tank. Neutron counts were recorded by the scintillator system. The guns for the tests were made in the TA-33 shop; the bore was about 4" in diameter with a short barrel. The projectiles could achieve a velocity of a few hundred feet/sec. The gun was mounted to the side of firing pad HP-97. Bullets were fired into the berm, though they did not penetrate deeply. Dougherty does not know if the bullets were ever recovered. Don Winchell, W-3, was in charge of the shots; many were fired. A very small amount of tritium was involved.

The east area also contained sites for large guns. These fired projectiles with the assembly to be tested placed inside the projectile. The projectile was later cut open to inspect the assembly. A catcher box was constructed near the HP-98 berm for these projectiles. The box was made of 8" x 8" timbers held in place with I-beams. The box was 10' x 10' by 100 feet long, filled with sawdust. Co-60 needles were put in the projectiles to locate them inside the catcher box with a gamma counter after firing. Between the gun and the catcher box was a Flash X-Ray building. X-Rays were fired at the projectile in flight. Film was mounted in a cassette to the side of the building. "Timing was crucial."

The "Breakup" series involved firing a uranium slug into a uranium target. The shot target was thin; for air-burst artillery a light projectile was needed. The assembly had a thin steel coat. The slug shot past the target assembly then kept going into the HP-97, 98 berms. Materials involved were Be, BeO, U, tritium, aluminum, steel, and titanium.

Some comments:

Some experiments had a cadmium component, about 150 grams. The cadmium was machined on the hill, only handled in the TA-33 shops.

There were lead cushions within the projectile to buffer the contents during deceleration in the sawdust catcher box.