REDACTED VERSION

OKD987096591

REMOVAL SUPPORT REPORT
FOR
Sooner Dial
Clinton, Custer County, Oklahoma

June 13, 1997

Prepared for:

Henry Thompson, Jr.
Project Officer
Program Management Branch
EPA - REGION 6

Contract No. 68-W6-0013

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OKD987096591

Date: June 13, 1997

To: Patrick Hammack, TM
EPA Region 6, Response and Prevention Branch

Thru: Henry Thompson, Jr., PO
EPA Region 6, Program Management Branch

Thru: Chris Quina, STL
Region 6, Superfund Technical Assessment and Response Team

From: Maxine LaPierre
Region 6, Superfund Technical Assessment and Response Team

Subj: Removal Support: Sooner Dial
Clinton, Custer Co., OK
TDD No.: S06-9608-017
PAN: 019601RAXX
Latitude: 35 30'18" N
Longitude: 98 58'19" W

I. INTRODUCTION

The Superfund Technical Assessment and Response Team (START) was tasked by the Region 6 United States Environmental Protection Agency (EPA) to provide removal support at the Sooner Dial site in Clinton, Custer County, Oklahoma. START was tasked to prepare a Health and Safety Plan (HASP), provide written and photographic documentation, conduct radiological air monitoring, and assist in cleanup monitoring and health and safety issues under the direction of EPA On-Scene Coordinator (OSC) Pat Hammack. Also, START was asked to investigate real-time radium-226 monitoring methods. Site coordinates were obtained from the EPA site assessment report under TDD No. T06-9510-044 (Refer to Attachment B.)

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Site files containing technical, photographic, and confidential data have been submitted to EPA. Some of the documents referred to in this report are available in site files as noted. Refer to Attachment A for a list of documents in the site files submitted to EPA.

II. BACKGROUND

The Sooner Dial site includes the residential and commercial area surrounding the former Sooner Dial Company facility. The facility occupied a 1/4-acre plot in a commercial area of Clinton in the vicinity of Wilson and Tenth streets. (Refer to the site files for the site location map.) From the 1950s to 1969, the facility refurbished aircraft instrument dials containing radium-226 based luminous paint by removing and replacing the paint. Originally, the Sooner Dial Company consisted of two buildings. One building was demolished in 1984, leaving a vacant lot where the majority of the radium contamination was found. The other building remains at 1002 S. Tenth Street and is an automobile body repair shop located north of the vacant lot. The vacant lot is used to stage automotive parts and vehicles. Three adjacent residential properties are west of the vacant lot; an alley separates the vacant lot from the residences. A discount retail store was located south of the vacant lot, but that building was condemned at the beginning of the removal action and was unoccupied. Sooner Dial also operated in a nearby small building at 829 S. Tenth Street that formerly housed a kite shop and is currently the location of Clinton Communications. (Refer to site files for site sketches and maps.)

The Oklahoma Department of Environmental Quality (ODEQ) requested that EPA investigate the site for potential removal action. EPA conducted a site assessment (TDD No. T06-9510-044) that determined that there was widespread radium-226 soil contamination on the vacant lot, the three adjacent residential yards, and the area behind the former kite shop. Approximately 1 acre of residential and commercial property soils contained radium-226 at concentrations above the 5 picoCurie per gram (pCi/g) soil cleanup action level. The highest site assessment sample results indicated a concentration of 4,540 pCi/g radium-226 in soil in the vacant lot; the highest gamma exposure reading noted at the vacant lot was 650 micro Roentgen per hour (R/hr), compared to the background of 7 to 10 R/hr at the site. The site area is not fenced and allows unrestricted access to the public.

III. ACTIONS TAKEN

In August 1996, START provided technical assistance as requested by the EPA-OSC by reviewing appropriate in situ field radiation monitoring approaches for low concentrations of radium-226 soil contamination. Techniques were investigated that would supplement START radiation surveys before and after soil excavation. START briefed the OSC on options for real-time monitoring capable of measuring the action level concentration of 5 pCi/g. Additionally, START prepared a draft HASP for the removal work for review by the EPA-OSC and ERCS (Emergency Response Cleanup Services) contractor. (Refer to the site files for a copy of the draft HASP.)

On September 4, 1996, START members Rick Neeley and Maxine LaPierre mobilized to the site and met with OSC Pat Hammack, OSC Lon Biasco, U.S. Coast Guard Marine Safety Officer (CGMSO) Jim Crouse, and the ERCS contractor to discuss the removal activities and health and safety issues. The Coast Guard had been tasked to provide health and safety oversight of the removal work. EPA-OSC Lon Biasco provided oversight for one week during a vacation of OSC Hammack. The command post was established in a nearby vacant store. ERCS cleared the debris on the vacant lot, erected a safety fence, and constructed a decontamination area. Personnel and equipment decontamination procedures were performed by the ERCS crew and the CGMSO. START provided the ERCS contractor, who arranged for laboratory support, with optional radiological analytical methods information and a list of radiological laboratories. The first pollution report (POLREP No. 1) was prepared on September 4, 1996.

The removal approach focused on excavation and off-site disposal of radium-contaminated soil. Site soils were excavated in 6-inch layers. After each layer was excavated, START performed radiation monitoring on the floor of the excavated area to determine whether cleanup levels were achieved or more excavation was required. The site cleanup levels were 5 pCi/g radium-226 in the top 15 cm (6 inches) of soil and 15 pCi/g in subsequent lower 15 cm layers. The 5 pCi/g radium-226 action level had been accepted by the Agency for Toxic Substances and Disease Registry (ATSDR) and approved by the Oklahoma Department of Environmental Quality (ODEQ) for the Sooner Dial site. START performed radiation surveys using a Bicron Surveyor M Ratemeter with a G-2 (gamma) probe at the surface and a Ludlum 19 Micro R Meter 1 meter above the surface to identify areas needing further excavation. Areas were excavated in 6-inch increments until field instrument readings correlated to the cleanup level, based

on the site assessment field readings and analytical results.

Excavation was conducted at the three site residential yards, the former kite shop, the alley, and the vacant lot. After each excavation, START performed radiation surveys and placed flags in areas requiring additional excavation by ERCS. Contaminated soil was removed in layers to various depths, depending on the amount of contamination, and stockpiled in the center of the vacant lot. Excavation in the residential back yards was continued until radiation readings were reduced to background levels. After the back yards were found to be clean, ERCS backfilled the yards with clean soil and placed sod on them. In other portions of the site, areas excavated to a 2-foot depth that still contained radium concentrations above the action level were not excavated further at that time, pending results from the planned future radiological survey by the EPA Radiological Response Team. START collected air particulate samples during excavation activities using SKC Model 224 personal sampling pumps and mixed cellulose ester filters. The sample filters were scanned for radiation using the Bicron Surveyor M Ratemeter with a PGM probe to verify that airborne dust did not pose a hazard. No readings above background levels were detected. (Site files contain the SKC pump calibration field forms.) POLREP No. 2 was prepared on September 15, 1996.

On September 16, 1996, Scott Faller and James Shura from the EPA Radiological Response Team (RRT) brought radiation monitoring equipment to the site to determine the radium-226 levels. The RRT collected field gamma-ray spectra with a high-purity germanium detector (HpGe) and portable multichannel analyzer/tabletop computer. Total gamma-ray exposure rates were measured with a pressurized ion chamber (PIC) and compared to the HpGe readings. The RRT established background readings and measured radium-226 levels in excavated areas. Some interference was encountered because of the small site area and proximity to the stockpiled excavated soil. (Site files contain two drawings of the RRT readings in various site areas.) The RRT monitoring data were used to determine whether areas were clean or required additional excavation. As areas were found to be clean to the appropriate action level of 5 pCi/g or 15 pCi/g radium-226, they were backfilled with clean soil and covered with sod (kite shop area) or gravel (alley and vacant lot) by ERCS. START videotaped the RRT activities. (Site files contain the videotape.)

Representatives from ODEQ periodically visited the site to monitor the clean up process and observe various activities. During the EPA site assessment, one small section of cement floor in the automobile repair shop was found to have elevated

radiation readings, because previous Sooner Dial operations had occurred in that building. START surveyed and identified that area, which was removed by ERCS. A local cement contractor placed concrete in the hole and poured a new concrete slab in the area between the automobile repair shop and the alley to replace the concrete that had been removed during excavation activities. One residential shed and some buried telephone, gas, and water lines were accidentally damaged during excavation, necessitating shed replacement and line repairs.

The excavated soil and related removal-generated waste were transferred by ERCS from the stockpile into 1.4-cubic-yard-capacity Super Saks staged east of the vacant lot in the parking area. The soil was sampled for waste profile analysis by START and the ERCS Response Manager (RM) before it was placed in the bags. An estimated 1,100 cubic yards of contaminated soil were placed into approximately 700 Super Saks. The EPA-OSC, START, and ERCS RM conducted a radiation survey of the cleaned and backfilled areas; no readings above background were detected. The filled Super Saks were covered with plastic sheeting, tied together, surrounded by a safety fence, and left at the site October 11, 1996, pending disposal and transportation arrangements. EPA, START, and ERCS left the site on that date. During the removal work, START maintained the logbook and photographed the activities. (Site files contain an article published in the October 10, 1996, Clinton Daily News about the Sooner Dial cleanup.)

Under a Memorandum of Understanding between the EPA and the U.S. Army Corps of Engineers, the OSC made arrangements to dispose of the Sooner Dial contaminated waste at Envirocare of Utah, Inc. Facility in Clive, Utah. The ERCS Response Manager (RM) Leroy Cassidey initiated establishment of a contract for the transportation arrangements with Landstar Ranger trucking firm. The TDD was amended to extend the completion date to January 1, 1997, to finish the transportation and disposal activities.

In December of 1996, ODEQ representatives reported to the OSC that some fencing around the Super Saks had blown down and some Super Saks might be missing. Per request of the OSC, START visited the site, made minor fence repairs, observed that all bags appeared to be present, and noted that the adjacent discount center building was collapsing. START photographed the site conditions. The TDD was amended to extend the completion date to March 1, 1997.

During January and early February 1997, activities focused on final approval and acceptance of the waste by Envirocare. START

assisted the ERCS RM with estimates of anticipated radiation levels in the Super Saks for radioactive waste shipping documents using past field radiation monitoring results. START inventoried the remaining empty Super Saks at the EPA warehouse. Also START assisted the ERCS RM with sample calculations required by Envirocare for prior approval for shipment paperwork; estimates were based upon assumptions provided by Envirocare for radium-226. The OSC requested that two START members perform the field work to monitor radiation and provide assistance with the completion of the shipping documents.

Envirocare required 10 working days notification prior to shipment of the waste. (Site files contain the Envirocare 10 Working-Day Advanced Shipment Notification forms submitted by ERCS.) START prepared a field form to document radiation readings for each Super Sak and calculations of radium-226 concentrations. After disposal approval and acceptance of the shipping paperwork were granted by Envirocare, the OSC, START, and ERCS mobilized to the site on February 21, 1997. (Site files contain the Envirocare Notice To Transport that authorized the shipments.) The TDD was amended to extend the completion date to April 1, 1997, due to delayed transport activities, and to amend the costs because of the need for two START members for the field work.

At the site, the filled Super Sacks and fence were found to be intact. The adjacent discount center had been demolished, with only the foundation remaining. ERCS placed the filled Super Saks onto wood pallets and loaded them into closed Landstar Ranger trucks for transport to Envirocare. During ERCS loading of the bags onto the trucks, START performed radiation monitoring of each bag, calculated the approximate radium-226 concentration, and recorded values on field forms. (Site files contain the field forms.) Also, START assisted with completion of the shipping forms required by the disposal facility for each truck. (Site files contain a copy of the Envirocare Waste Shipment and Disposal Records which were completed for each truck shipment.) In addition, START developed a truck shipment tracking form for field use. (Site files contain that form.) Landstar Ranger truck shipments were limited because a maximum of five trucks per day was accepted at the Envirocare facility. START provided photographic and logbook documentation of activities and maintained files of the Envirocare shipment forms. (Refer to site files.) A total of 712 filled Super Saks were loaded onto 51 trucks and sent to Envirocare. After the bags were shipped, ERCS spread and leveled gravel on the vacant lot. START photographed the cleaned site after the removal was finished. The shipments and field work were completed on March 9, 1997.

START assisted the TM with development of the Final POLREP prepared on March 13, 1997. START initiated preparation of the report and prepared labeled photographs and lists of photographs for the report. Additional TDD amendments to extend the report completion date were issued because the OSC and the START PM mobilized to lengthy emergency responses during April and May. The last TDD amendment extended the completion date to June 13, 1997.

The EPA Standard 1900-55 Forms are included with the EPA site files.

EPA ATTACHMENTS:

A. Federal Records Center Transmittal and Receipt (FRCTR) List
B. Environmental Justice Report
   (From report under TDD No. T06-9510-044)
C. Copy of TDD No. S06-9608-017 and Amendments A, B, C, D, E, F
D. Disk Copy of Report (OSC File)

START FILE ATTACHMENTS:

A. Federal Records Center Transmittal and Receipt (FRCTR) List
B. Environmental Justice Report
   (From report under TDD No. T06-9510-044)
C. Site Location Map
D. Site Drawings:
   HpGe and PIC Measurement Locations
E. Draft HASP (Health and Safety Plan)
F. Photographs (85 pages)
G. Negatives
H. Clinton Daily New October 10, 1996, article
I. Field Form: SKC Pumps Calibration Log
J. Field Form: Sooner Dial Waste Radiation Monitoring
K. Field Form: Truck Tracking
L. POLREPS (No. 1,2, and Final) - Working Copies
M. Copy of Logbooks:
   Logbook 1 (Pages 1-43)
   Logbook 2 (Pages 1-7)
   Logbook 3 (Pages 1-9)
   Logbook 4 (Pages 1-35)
M. Disk Copy of Report
O. Copy of TDD No. S06-9608-017 and Amendments A, B, C, D, E, F

ATTACHMENT A

SITE FILES FOR SOONER DIAL
CERCLIS NO. 0KD987096591

1. Contractor Confidential: ERCs 1900-55 signed originals, Site Health and Safety Plan

2. Photographs, Videos, and News: Site Photographs (labeled, September 1996 through March 1997); Historical aerial photographs; video tape; and newspaper article (October 10, 1996)

3. Site Location Maps

4. Site Sketches

5. Environmental Justice Report

6. Copy of EPA Potential Hazardous Waste Site Review

7. Copy of Oklahoma Department of Health Preliminary Assessment File

8. SKC Pumps Calibration Log

9. Waste Radiation Monitoring Form

10. Truck Tracking Form

11. 10 Day Advanced Shipment Notification Forms

12. Notice to Transport Records

13. Radioactive Waste Shipment and Disposal Records

14. Radon Electrets Environmental Data

15. TLD Environmental Monitor Report

16. Copy of Field Logbooks

TARGET SHEET

SITE NAME: SOONER DIAL COMPANY

CERCLIS I.D.: OKD987096591

TITLE OF DOC.: REMOVAL SUPPORT REPORT FOR SOONER DIAL

DATE OF DOC.: 06/13/1997

NO. OF PGS. THIS TARGET SHEET REPLACES: N/A

SDMS #: 9532758

CONFIDENTIAL ?		MISSING PAGES ?	
ALTERN. MEDIA ?		CROSS REFERENCE ?	X

LAB DOCUMENT ?		LAB NAME:	
CASE #:		SDG #:	

COMMENTS : ITEM 7 ON LIST, COPY OF OKLAHOMA DEPARTMENT OF HEALTH PA FILE ARE RELATED DOC IDS: 9527459-9527461,9527465-9527478. ITEMS 11 - 15 ARE RELEATED DOC IDS: 9527484-9527488

TARGET SHEET

SITE NAME: SOONER DIAL COMPANY

CERCLIS I.D.: OKD987096591

TITLE OF DOC.: REMOVAL SUPPORT REPORT FOR SOONER DIAL - ATTACHMENT A

DATE OF DOC.: 06/13/1997

NO. OF PGS. THIS TARGET SHEET REPLACES: N/A

SDMS #: 9532758

CONFIDENTIAL ?		MISSING PAGES ?	
ALTERN. MEDIA ?		CROSS REFERENCE ?	X

LAB DOCUMENT ?		LAB NAME:	
CASE #:		SDG #:	

COMMENTS : ITEM NO. 6, COPY OF EPA POTENTIAL HAZARDOUS WASTE SITE REVIEW, WAS NOT LOCATED IN THE SUPERFUND RECORD CENTER FILE

POTENTIAL ENVIRONMENTAL JUSTICE (EJ) INDEX PILOT

Date : 10 Jan 95 19:34:56 Tuesday
Requestor : tat
Site Id Number : OKD987096591
Site Name : Sooner Dial Company
Location : -98 58 19 35 30 18'
Quality Assurance Resource : 3

==========

Sooner Dial Company
POTENTIAL ENVIRONMENTAL JUSTICE INDEX, 50 square mile study area

Minority Ranking Value (DVMAV)	: 3	Percent Minority	= 25.3
Economic Ranking Value (DVECO)	: 2	Percent Economically Stressed	= 34.5
Exposure Factor Value (Ef)	: 1	Total Population	= 9827

Potential Environmental Justice Index (DVMAV * DVECO * Ef) = 6

==========

METHODOLOGY CRITERIA

Environmental Justice Indexes are indicators of potential EJ concern. 1990 Census data for a Study Area is evaluated and ranked in relationship to state percentages. Ranking variables are multiplied to produce an index for prioritizing applications. The ranking variables are :
Minority Status, Degree of Vulnerability (DVMAV),
Economic Status, Degree of Vulnerability (DVECO),
Total Population, Exposure Factor (Ef).

MINORITY STATUS (DVMAV) For OK the percent minority is 19 %.
ECONOMIC STATUS (DVECO) Economically Stressed is defined as Households making less than $15,000 a year. For OK the percent economically stressed is 32 %.

The Methodology for ranking values associated with Degrees of Vulnerability is

Ranking	Criteria
1	<= the State %
2	> the State Percentage but <= 1.33 times the State %
3	> 1.33 times the State Percentage but <= 1.66 times the State
4	> 1.66 times the State Percentage but <= 1.99 times the State %
5	>= 2 times the State %

EXPOSURE FACTOR Total Population is calculated and ranked using the following criteria.

Ranking	Criteria (evaluated on a 1 square mile basis)
0	Total Population = 0
1	Total Population > 0 and < 200
2	Total Population > 200 and < 1000
3	Total Population > 1000 and < 5000
4	Total Population > 5000

Reference for Quality Assurance Resources

1	Personal Verification	6	CERCLIS
2	Reconciliation with Quad maps	7	AIRS
3	Reported from archived files	8	PCS
4	TRIS	9	GIS Verified
5	RCRIS	10	Professional Judgement

POTENTIAL ENVIRONMENTAL JUSTICE (EJ) INDEX PILOT

Date : 10 Jan 95 19:34:56 Tuesday
Requestor : tat
Site Id Number : OKD987096591
Site Name : Sooner Dial Company
Location : -98 58 19 35 30 18'
Quality Assurance Resource : 3

==========

Sooner Dial Company
POTENTIAL ENVIRONMENTAL JUSTICE INDEX, 1 square mile study area

Minority Ranking Value (DVMAV)	: 2	Percent Minority	= 20.5
Economic Ranking Value (DVECO)	: 2	Percent Economically Stressed	= 39.9
Exposure Factor Value (Ef)	: 3	Total Population	= 2325

Potential Environmental Justice Index (DVMAV * DVECO * Ef) = 12

==========

METHODOLOGY CRITERIA

Environmental Justice Indexes are indicators of potential EJ concern. 1990 Census data for a Study Area is evaluated and ranked in relationship to state percentages. Ranking variables are multiplied to produce an index for prioritizing applications. The ranking variables are :
Minority Status, Degree of Vulnerability (DVMAV),
Economic Status, Degree of Vulnerability (DVECO),
Total Population, Exposure Factor (Ef).

MINORITY STATUS (DVMAV) For OK the percent minority is 19 %.
ECONOMIC STATUS (DVECO) Economically Stressed is defined as Households making less than $15,000 a year. For OK the percent economically stressed is 32 %.

The Methodology for ranking values associated with Degrees of Vulnerability is

Ranking	Criteria
1	<= the State %
2	> the State Percentage but <= 1.33 times the State %
3	> 1.33 times the State Percentage but <= 1.66 times the State
4	> 1.66 times the State Percentage but <= 1.99 times the State %
5	>= 2 times the State %

EXPOSURE FACTOR Total Population is calculated and ranked using the following criteria.

Ranking	Criteria (evaluated on a 1 square mile basis)
0	Total Population = 0
1	Total Population > 0 and < 200
2	Total Population > 200 and < 1000
3	Total Population > 1000 and < 5000
4	Total Population > 5000

Reference for Quality Assurance Resources

1	Personal Verification	6	CERCLIS
2	Reconciliation with Quad maps	7	AIRS
3	Reported from archived files	8	PCS
4	TRIS	9	GIS Verified
5	RCRIS	10	Professional Judgement

ACE
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OKLAHOMA CITY

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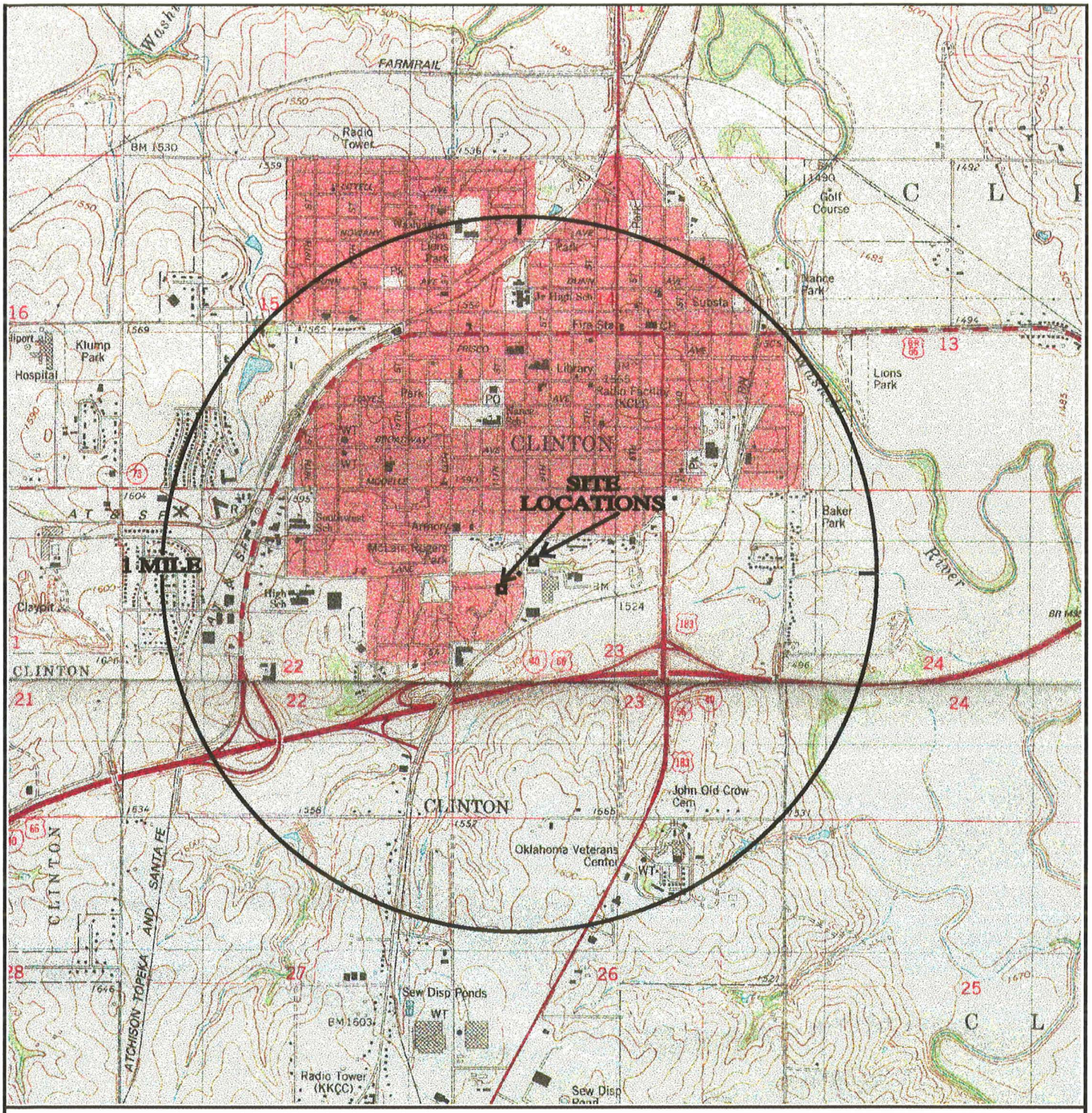
CLINTON, OKLAHOMA



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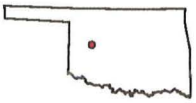
1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET



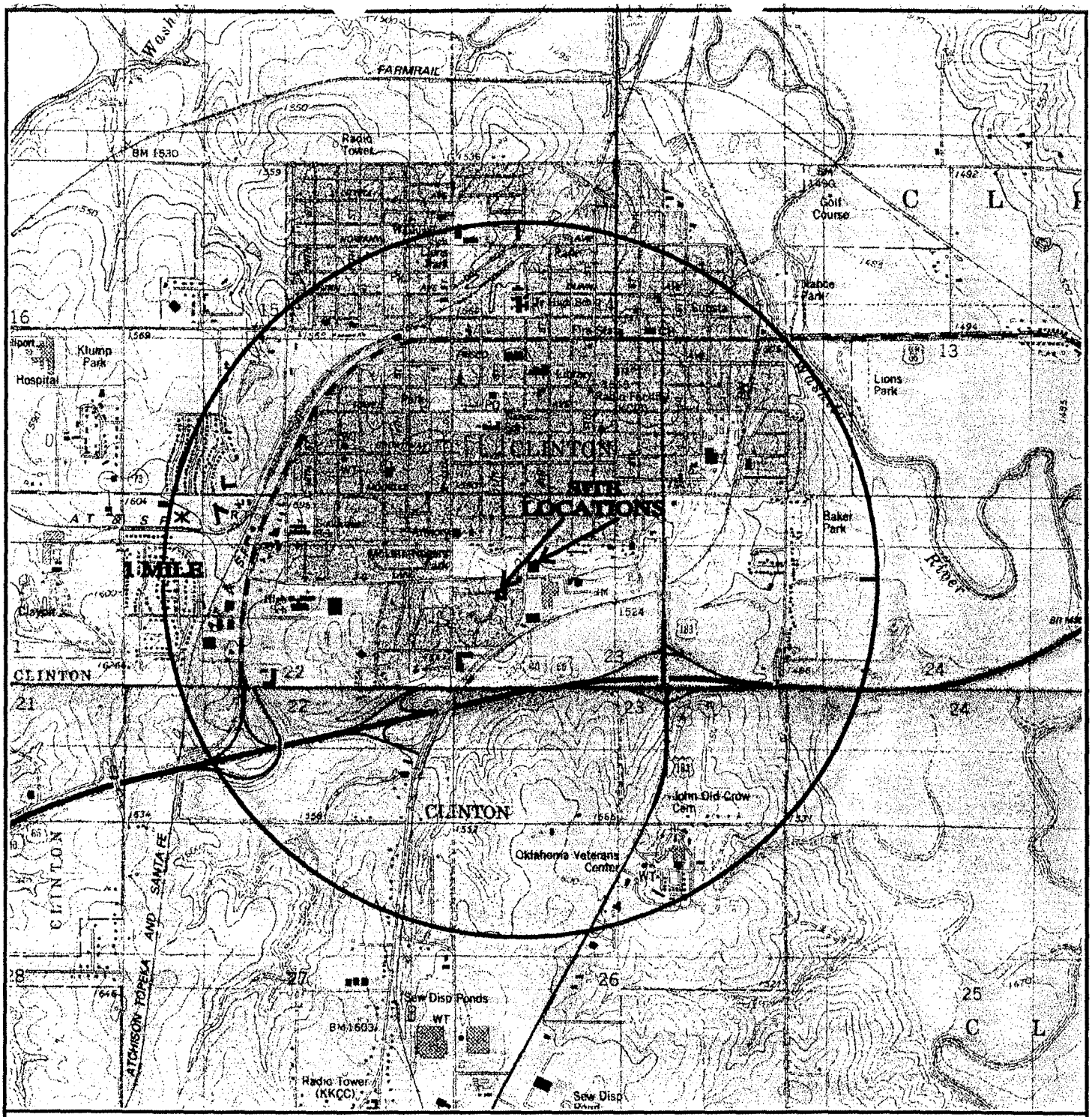
QUADRANGLE LOCATION

ecology and environment, inc.
Technical Assistance Team
Region 6

CERCLIS/CASE#: OKD987096591 TDD# T06-9510-044

SOURCE: U.S.G.S. 7.5 MIN. TOPOGRAPHIC QUADRANGLES
CLINTON & BESSIE, OKLAHOMA

ATTACHMENT A
SITE LOCATION MAP



N

SCALE 1:24 000

1 1/2 0 1 MILE

1000 0 1000 2000 3000 4000 5000 6000 7000 FEET

1 .5 0 1 KILOMETER

CONTOUR INTERVAL 10 FEET

QUADRANGLE LOCATION

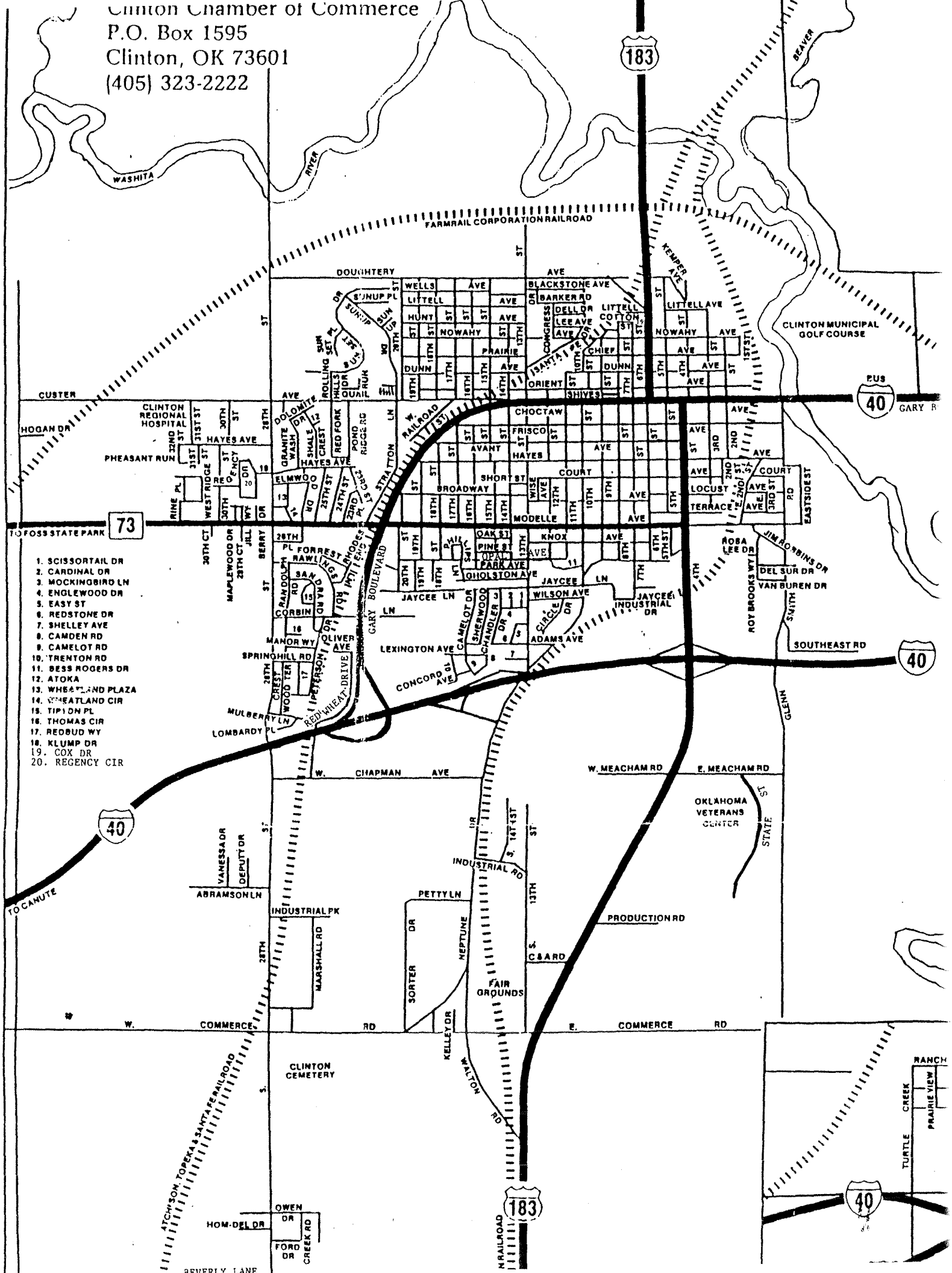
ecology and environment, inc.

CERCLIS/CASE#: OKD987096591 TDD# S06-9608-017

SOURCE: U.S.G.S. 7.5 MIN. TOPOGRAPHIC QUADRANGLES
CLINTON & BESSIE, OKLAHOMA

ATTACHMENT A
SITE LOCATION MAP

Clinton Chamber of Commerce
P.O. Box 1595
Clinton, OK 73601
(405) 323-2222



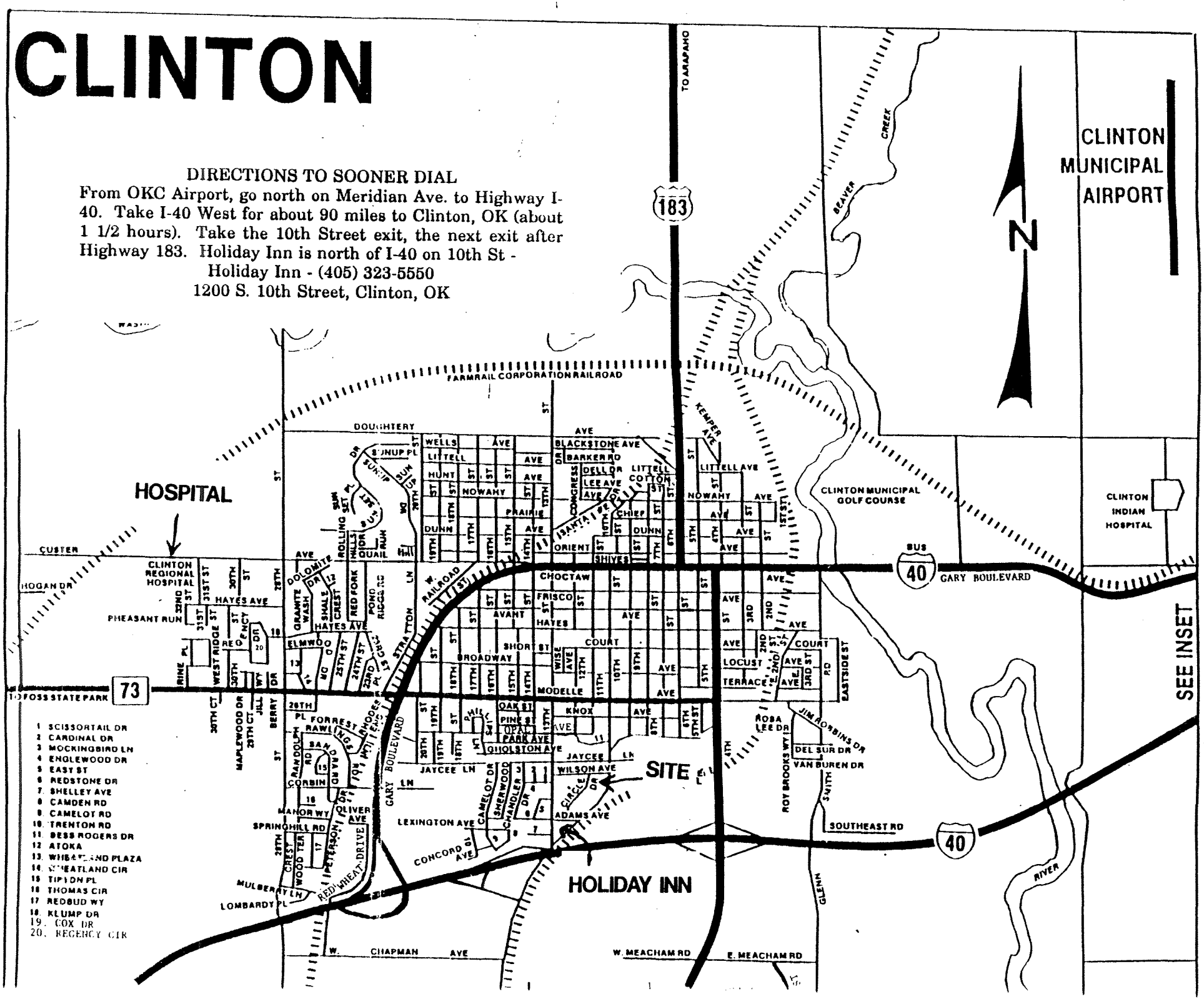
CLINTON

DIRECTIONS TO SOONER DIAL

From OKC Airport, go north on Meridian Ave. to Highway I-40. Take I-40 West for about 90 miles to Clinton, OK (about 1 1/2 hours). Take the 10th Street exit, the next exit after Highway 183. Holiday Inn is north of I-40 on 10th St -

Holiday Inn - (405) 323-5550

1200 S. 10th Street, Clinton, OK



SITE HEALTH AND SAFETY PLAN

Site Name : Sooner Dial

Date: 08/28/96

Prepared By : Rick Neeley
START

With the assistance of HASP

1.0 INTRODUCTION

This section of the Site Health and Safety Plan (HASP) document defines general applicability and general responsibilities with respect to compliance with Health and Safety programs.

1.1 Scope and Applicability of the Site Health and Safety Plan

The purpose of this Site Health and Safety Plan is to define the requirements and designate protocols to be followed at the Site during investigation and remediation activities. Applicability extends to all Government employees, contractors, subcontractors, and visitors.

All personnel on site, contractors and subcontractors included, shall be informed of the site emergency response procedures and any potential fire, explosion, health, or safety hazards of the operation. This HASP summarizes those hazards in table 3.1 and defines protective measures planned for the site.

This plan must be reviewed and an agreement to comply with the requirements must be signed by all personnel prior to entering the exclusion zone or contamination reduction zone.

During development of this plan consideration was given to current safety standards as defined by EPA/OSHA/NIOSH, health effects and standards for known contaminants, and procedures designed to account for the potential for exposure to unknown substances. Specifically, the following reference sources have been consulted:

- OSHA 29 CFR 1910.120 and EPA 40 CFR 311
- U.S. EPA, OERR ERT Standard Operating Safety Guides
- NIOSH/OSHA/USCG/EPA Occ. Health and Safety Guidelines

1.2 Visitors

All visitors entering the contamination reduction zone and exclusion zone at the the Site will be required to read and

verify compliance with the provisions of this HASP. In addition, visitors will be expected to comply with relevant OSHA requirements such as medical monitoring (Sec. 6.0), training (Sec. 4.0), and respiratory protection (if applicable). Visitors will also be expected to provide their own protective equipment.

In the event that a visitor does not adhere to the provisions of the HASP, he/she will be requested to leave the work area. All nonconformance incidents will be recorded in the site log.

2.0 KEY PERSONNEL/IDENTIFICATION OF HEALTH AND SAFETY

2.1 Key Personnel

The following personnel and organizations are critical to the planned activities at the Site. The organizational structure will be reviewed and updated periodically by the site supervisor.

EPA Representatives

Pat Hammack	U.S. EPA On-Scene Coordinator 1445 Ross Avenue Dallas, TX 75201
Lob Biasco	U.S. EPA Remedial Project Manager

START Representatives

Rick Neeley	Project Manager Ecology and Environment, Inc. 1999 Bryan St. Sui. 2000 Dallas, TX 75201
Maxine LaPierre	Site Safety Officer

ERCS Representatives

Leroy Cassidy	Response Manager

2.2 Site Specific Health and Safety Personnel

The Site Health and Safety Officer (HSO) has total responsibility for ensuring that the provisions of this HASP are adequate and implemented in the field. Changing field conditions may require decisions to be made concerning adequate protection programs. Therefore, it is vital that personnel assigned as HSO be experienced and meet the additional training requirements specified by OSHA in 29 CFR 1910.120 (see Section 4.0 of this HASP). The HSO is also responsible for conducting site inspections on a regular basis in order to ensure the

effectiveness of this plan.

The HSO at the site is Pat Hammack

Designated alternates include:

- o Lon Biasco

2.3 Organizational Responsibility

U.S. Environmental Protection Agency (EPA): Either in the capacity as On-scene Coordinator (OSC), Remedial Project Manager (RPM), or Site Inspection Officer (SIO), the EPA representative is responsible for overall project administration and contractor oversight. As a part of that oversight function, EPA will ensure that project plans meet OSHA requirements at a minimum, and that the Health and Safety of all site personnel is a primary concern. As an OSC or RPM, EPA serves in the capacity of site supervisor.

Superfund Technical Assessment and ResponseTeam (START): The Superfund Technical Assessment Team (START) is responsible for providing the OSC with assistance and support in regards to all technical, regulatory, and safety aspects of site activity. The START is also available to advise the OSC on matters relating to sampling, treatment, packaging, labeling, transport, and disposal of hazardous materials.

Emergency Response Contractor System (ERCS): ERCS have primary responsibility for supplying personnel and equipment for emergency removal operations under an OSC's oversight. The response manager for ERCS has overall responsibility for ensuring that safety aspects of the removal project are implemented and technical progress is constant.

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS

3.1 Historical Overview of Site

This HASP defines the hazards and methods to protect personnel from those hazards as identified in previous site work or background information. For a thorough overview of historical information concerning the Site see the following documents:

Site Assessment Report

Ken Long
START
November 9, 1995

The Sooner Dial Site consists of two locations, 829 and 1002 S. Tenth St. in Clinton, Custer County, Oklahoma. The Sooner Dial Co. was an aircraft dial refurbishing facility which began operations in the 1940's. Old aircraft instrument dials were stripped and repainted with paint containing radium-226, to give the dials luminescent qualities. The use of radium paint products ceased in 1967 and all operations were concluded in 1969. Reportedly, radium-226 contamination at the 829 S. Tenth St. location occurred when the facility temporarily moved operations there. The building which housed the stripping process was demolished in 1984. Remnant radioactive waste from previous site operations were suspected to be present in subsurface soils at that location. Rubble from the demolished building was taken to the Ray Witchert property, also in Clinton, Oklahoma. An automobile repair shop presently operates inside the remaining building originally occupied by the Sooner Dial Co. and a discount retailer occupies the building to the south of the 829 S. Tenth St.(vacant lot) location.
Beginning in 1965, the Oklahoma State Dept. of Health conducted soil sampling and surveys of the site using radiation monitors. Radioactive contamination was indicated in these investigations. A preliminary assessment (PA) was conducted in 1992 by the Oklahoma Dept. of Environmental Quality (ODEQ). ODEQ referred the site to EPA for removal potential.

Background levels at the Sooner Dial Site were approximately

1.2 pCi/g of Ra-226 in soil. Radium-226 is naturally radioactive normally present in soils and rocks in trace amounts and constitutes both an external and internal hazard. Radium-226 decays to form radon gas (Rn-222) and other radioactive materials. Site assessement showed indoor Rn-222 levels below EPA indoor limits.

Removal activity at the site is scheduled to begin September 5, 1996. This will include the excavation of contaminated soil and replacement with clean backfill for restoration. Soil samples will be monitored for radiation.

3.2 Task by Task Risk Analysis

The evaluation of hazards is based upon the knowledge of site background presented in Section 3.1, and anticipated risks posed by the specific operation.

The following subsections describe each task/operation in terms of the specific hazards associated with it. In addition, the protective measures to be implemented during completion of those operations are also identified.

Table 3.1 provide a summary of task analysis and chemical hazards for each task at the Site.

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS

3.1 Historical Overview of Site

This HASP defines the hazards and methods to protect personnel from those hazards as identified in previous site work or background information. For a thorough overview of historical information concerning the Site see the following documents:

Site Assessment Report

Ken Long
START
November 9, 1995

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3.3 Task Hazard Descriptions

Perimeter monitoring:

General hazards frequently encountered during perimeter monitoring include:

- Heat or cold stress.
- Proximity to heavy equipment operation and excavation areas.
- Hazards associated with ambient environment being monitored.
- Radioactive contaminated soil and airborne dust..

HAZARD PREVENTION

- Be aware of stress symptoms - take frequent breaks and drink fluids.
- Keep safe distance from heavy equipment operations; listen for backup alarms.
- Walk/work carefully near excavation areas and observe all barricades, banner tape, etc.
- Be aware of presence of contaminated soil.
- Wear personal protective equipment as appropriate.
- Be aware of presence of radiation in soil at site. Wear thermoluminescent dosimeter (TLD) badge and pocket dosimeter.

Written/Photographic documentation:

General hazards frequently encountered during written/photographic documentation include:

- Heat or cold stress.
- Proximity to heavy equipment operation and excavation areas.
- Hazards associated with ambient environment being monitored.
- Radioactive contaminated soil.

HAZARD PREVENTION

- Be aware of stress symptoms - take frequent breaks and drink fluids.
- Keep safe distance from heavy equipment operations; listen for backup alarms.
- Walk/work carefully near excavation areas and observe all barricades, banner tape, etc.
- Be aware of presence of contaminated soil.
- Wear personal protective equipment as appropriate.
- Be aware of presence of radiation on site. Wear thermluminescent dosimeter (TLD) badge and pocket dosimeter.

Monitor samples for radiation:

General hazards frequently encountered during monitoring samples for radiation:

- Heat or cold stress.
- Proximity to heavy equipment operation and excavation areas.
- Hazards associated with ambient environment being monitored.
- Radioactive contaminated soil.

HAZARD PREVENTION

- Be aware of stress symptoms - take frequent breaks and drink fluids.
- Keep safe distance from heavy equipment operations; listen for backup alarms.
- Walk/work carefully near excavation areas and observe all barricades, banner tape etc.
- Be aware of presence of contaminated soil.
- Wear personal protective equipment as appropriate.
- Be aware of presence of radiation on site. Wear thermoluminescent dosimeter (TLD) badge and pocket dosimeter.
- Avoid direct contact with contaminated soil. Use proper personal hygiene to

avoid inhalation or ingestion of contaminated dusts.

Collect soil samples:

General hazards frequently encountered during the collection of soil samples include:

- Heat or cold stress.
- Proximity to heavy equipment operation.
- Sample collection in excavated areas.
- Radioactive contaminated soil.

HAZARD PREVENTION

- Be aware of stress symptoms - take frequent breaks and drink fluids.
- Keep safe distance from heavy equipment operations; listen for backup alarms.
- Walk/work carefully in or near excavation areas and observe all barricades, banner tape etc.
- Be aware of presence of contaminated soil.
- Wear personal protective equipment as appropriate. (level C for soil sampling)
- Avoid contact with samples.
- Be aware of presence of radiation on site. Wear thermoluminescent dosimeter (TLD) badge and pocket dosimeter.

TABLE 3.1
TASK ANAYLSIS
CHEMICAL HAZARDS OF CONCERN

CONTAMINANT	SOURCE/ TLV/IDLH	CONCENTRATION	ROUTES OF EXPOSURE
**** Perimeter monitoring ****			
Radium-226 (alpha & gamma emmitter) Half life= 1600 yrs.	DAC 3E-10 uCi/ml MPC 3E-11uCi/ml (air)	Soil: 0.2-4540 pCi/g	Inhalation Ingestion, Dermal, External Radiation exposure
**** Written/Photographic documentation****			
Radium-226 (see above)	DAC 3E-10 uCi/ml MPC 3E-11 uCi/ml (air)	Soil: 0.2-4540 pCi/g	Inhalation Ingestion, Dermal, External Radiation exposure
****Monitor samples for radiation****			
Radium-226 (see above)	DAC 3E-10 uCi/ml MPC 3E-11 uCi/ml (air)	Soil: 0.2-4540 pCi/g	Inhalation Ingestion, Dermal External Radiation exposure
****Collect soil samples****			
Radium-226 (see above)	DAC 3E-10 uCi/ml MPC 3E-11 uCi/ml (air)	Soil: 0.2-4540 pCi/g	Inhalation Ingestion, Dermal External Radiation exposure

4.0 PERSONNEL TRAINING REQUIREMENTS

Consistent with OSHA's 29 CFR 1910.120 regulation covering Hazardous Waste Operations and Emergency Response, all site personnel are required to be trained in accordance with the standard. At a minimum all personnel are required to be trained to recognize the hazards on-site, the provisions of this HASP, and the responsible personnel.

4.1 Preassignment and Annual Refresher Training

Prior to arrival on site, each employer will be responsible for certifying that his/her employees meet the requirements of preassignment training, consistent with OSHA 29 CFR 1910.120 paragraph (e)(3). The employer should be able to provide a document certifying that each general site worker has received 40 hours of instruction off the site, and 24 hours of training for any workers who are on site only occasionally for a specific task. If an individual employee has work experience and/or training that is equivalent to that provided in the initial training, an employer may waive the 40-hour training so long as that equivalent experience is documented or certified. All personnel must also receive 8 hours of refresher training annually.

4.2 Site Supervisors Training

Consistent with OSHA 29 CFR 1910.120 paragraph (e)(8), individuals designated as site supervisors require an additional 8 hours of training.

The following individuals are identified as site supervisors:

Name	Title/Responsibility
Pat Hammack	OSC

4.3 Training and Briefing Topics

The following items will be discussed by a qualified individual at the site pre-entry briefing(s) or periodic site briefings.

Training	Frequency
Radioactive waste	Periodic

5.0 PERSONAL PROTECTIVE EQUIPMENT TO BE USED

This section describes the general requirements of the EPA designated Levels of Protection (A-D), and the specific levels of protection required for each task at the Site.

5.1 Levels of Protection

Personnel wear protective equipment when response activities involve known or suspected atmospheric contamination vapors, gases, or particulates may be generated by site activities, or when direct contact with skin-affecting substances may occur. Full facepiece respirators protect lungs gastrointestinal tract, and eyes against airborne toxicants. Chemical-resistant clothing protects the skin from contact with skin-destructive and absorbable chemicals.

The specific levels of protection and necessary components for each have been divided into four categories according to the degrees of protection afforded:

Level A: Should be worn when the highest level of respiratory, skin, and eye protection is needed.

Level B: Should be worn when the highest level of respiratory protection is needed, but a lesser level of skin protection. Level B is the primary level of choice when encountering unknown environments.

Level C: Should be worn when the criteria for using air-purifying respirators are met, and a lesser level of skin protection is needed.

Level D: Should be worn only as a work uniform and not in any area with respiratory or skin hazards. It provides minimal protection against chemical hazards.

Modifications of these levels are permitted, and routinely employed during site work activities to maximize efficiency. For example, Level C respiratory protection and Level D skin protection may be required for a given task. Likewise the type of chemical protective ensemble (i.e., material, format) will depend upon contaminants and degrees of contact.

The Level of Protection selected is based upon the following:

- Type and measured concentration of the chemical substance in the ambient atmosphere and its toxicity.

- Potential for exposure to substances in air liquids, or other direct contact with material due to work being done.

- Knowledge of chemicals on-site along with properties such as toxicity, route of exposure, and contaminant matrix.

In situations where the type of chemical, concentration, and possibilities of contact are not known, the appropriate Level of Protection must be selected based on professional experience and judgment until the hazards can be better identified.

5.2 Level A Personnel Protective Equipment:

- Supplied-air respirator approved by the Mine Safety and Health Administration (MSHA) and National Institute for Occupational Safety and Health (NIOSH). Respirators may be positive pressure-demand, self-contained breathing apparatus (SCBA), or positive pressure-demand, airline respirator (with escape bottle for Immediately Dangerous to Life and Health (IDLH) or potential for IDLH atmosphere)

- Fully encapsulating chemical-resistant suit

- Coveralls

- Long cotton underwear

- Gloves (inner)

- Boots, chemical-resistant, steel toe and shank (depending on suit construction, worn over or under suit boot)

- Hard hat (under suit)
- Disposable gloves and boot covers (worn over fully encapsulating suit)
- Cooling unit
- 2-way radio communications (intrinsically safe)

5.3 Level B Personnel Protective Equipment:

- Supplied-air respirator (MSHA/NIOSH approved). Respirators may be positive pressure-demand, self-contained breathing apparatus (SCBA), or positive pressure-demand, airline respirator (with escape bottle for IDLH or potential for IDLH atmosphere)
- Chemical-resistant clothing (overalls and long-sleeved jacket; hooded, one or two-piece chemical-splash suit; disposable chemical-resistant, one-piece suits)
- Long cotton underwear
- Coveralls
- Gloves (outer), chemical-resistant
- Gloves (inner), chemical-resistant
- Boots (outer), chemical-resistant, steel toe and shank
- Boot covers (outer), chemical-resistant (disposable)
- Hard hat (face shield)
- 2-way radio communications (intrinsically safe)

5.4 Level C Personnel Protective Equipment:

- Air-purifying respirator, full-face, cartridge-equipped (MSHA/NIOSH approved)
- Chemical-resistant clothing (coveralls; hooded, one-piece or two-piece chemical splash suit; chemical-resistant hood and apron; disposable chemical-resistant coveralls)

- Coveralls
- Long cotton underwear
- Gloves (outer), chemical-resistant
- Gloves (inner), chemical-resistant
- Boots (outer), chemical-resistant, steel toe and shank
- Boot covers (outer), chemical-resistant (disposable)
- Hard hat (face shield)
- Escape mask
- 2-way radio communications (intrinsically safe)

5.5 Level D Personnel Protective Equipment:

- Coveralls
- Gloves
- Boots/shoes, leath or chemical-resistant, steel toe and shank
- Safety glasses
- Hard hat

5.6 Reassessment of Protection Program

The Level of Protection provided by PPE selection shall be upgraded or downgraded based upon a change in site conditions or findings of investigations.

When a significant change occurs, the hazards should be reassessed. Some indicators of the need for reassessment are:

- Commencement of a new work phase, such as the start of drum sampling or work that begins on a different portion of the site.

- Change in job tasks during a work phase.
- Change of season/weather.
- When temperature extremes or individual medical considerations limit the effectiveness of PPE.
- Contaminants other than those previously identified are encountered.
- Change in ambient levels of contaminants.
- Change in work scope which effects the degree of contact with contaminants.

5.7 Work Mission Duration

Before the workers actually begin work in their PPE ensembles the anticipated duration of the work mission should be established. Several factors limit mission length, including:

- Air supply consumption (SCBA use).
- Suit/Ensemble permeation and penetration rates for chemicals (section 5.8).
- Ambient temperature and weather conditions (heat stress cold stress).
- Capacity of personnel to work in PPE.

5.8 Chemical Resistance and Integrity of Protective Material

The following specific clothing materials are recommended for the site:

Perimeter monitoring - (Level D)

Gloves - surgical - as needed (polyethylene, vinyl, or nitrile)

Boots - Steel Toe leather. Latex boot covers as needed.

Outer Garment/Coveralls - Tyvek if appropriate.

Safety Glasses

Hard Hat - as needed.

Written/photographic documentation - (Level D)

Boots - Steel Toe leather. Latex boot covers as needed

Outer Garment/Coveralls - Tyvek if appropriate.

Safety Glasses

Hard Hat and Hearing protection as needed.

Monitor samples for radiation - (Level D)

Gloves - surgical (polyethylene, vinyl, or nitrile

Boots - Steel Toe leather. Latex boot covers as needed.

Outer Garment/Coveralls - Tyvek if appropriate.

Safety Glasses

Collect soil samples - (Level C)

Gloves - inner surgical (polyethylene, vinyl, or nitrile
outer - nitrile

Boots - Steel Toe leather. Latex boot covers.

Outer Garment/Coveralls - Tyvek

APR - H Cartridge

5.9 SOP for Respiratory Protection Devices

The following subsections define standard operating procedures for air purifying respirators and self-contained breathing apparatus.

5.9.1 Cleaning and Disinfecting Air Purifying Respirators

APRs in routine use should be cleaned and disinfected at least daily. Where respirators are used only occasionally or when they are in storage, the cleaning interval is

weekly or monthly, as appropriate.

5.9.1.1 Daily Cleaning Procedure

The steps to be followed for cleaning and disinfecting daily are as follows:

- Respirator Disassembly. Respirators are taken to a clean location where the filters, cartridges or canisters are removed, damaged to prevent accidental reuse, and discarded. For thorough cleaning, the inhalation and exhalation valves, speaking diaphragm, and any hoses are removed.

- Cleaning. In most instances, the cleaning and disinfecting solution provided by the manufacturer is used, and is dissolved in warm water in an appropriate tub. Using gloves, the respirator is placed in the tub and swirled for a few moments. A soft brush may be used to facilitate cleaning.

- Rinsing. The cleaned and disinfected respirators are rinsed thoroughly in water to remove all traces of detergent and disinfectant. This is very important for preventing dermatitis.

- Drying. The respirators may be allowed to dry in room air on a clean surface. They may also be hung upside down like drying clothes, but care must be taken not to damage or distort the facepieces.

- Reassembly and Inspection. The clean, dry respirator facepieces should be resembled and inspected in an area separate from the disassembly area to avoid contamination. Special emphasis should be given to inspecting the respirators for detergent or soap residue left by inadequate rinsing. This appears most often under the seat of the exhalation valve, and can cause valve leakage or sticking.

5.9.1.2 After Routine Use in Exclusion Zone

The steps to be followed for cleaning and disinfecting in the field are as follows:

- The mask may be washed/rinsed with soap and water.

- At a minimum, the mask should be wiped with disinfectant wipes (benzoalkaloid or isopropyl alcohol), and allowed to air dry in a clean area.

5.9.2 APR Inspection and Checkout

1. Visually inspect the entire unit for any obvious damages, defects, or deteriorated rubber.

2. Make sure that the facepiece harness is not damaged. The serrated portion of the harness can fragment which will prevent proper face seal adjustment.

3. Inspect lens for damage and proper seal in facepiece.

4. Exhalation Valve - pull off plastic cover and check valve for debris or for tears in the neoprene valve (which could cause leakage).

5. Inhalation Valves (two) - screw off cartridges/ canisters and visually inspect neoprene valves for tears. Make sure that the inhalation valves and cartridge receptacle gaskets are in place.

6. Make sure a protective cover lens is attached to the lens.

7. Make sure the speaking diaphragm retainer ring is hand tight.

8. Make sure that you have the correct cartridge.

9. Don and perform negative pressure test.

5.9.3 Storage of Air Purifying Respirators

OSHA requires that respirators be stored to protect against:

Dust
Sunlight
Heat
Extreme cold
Excessive moisture
Damaging chemicals
Mechanical damage

Storage of respirators should be in a clean which minimizes the chance for contamination or unsanitary conditions.

5.10 SOP for Personal Protective Equipment

5.10.1 Inspection

Proper inspection of PPE features several sequences of inspection depending upon specific articles of PPE and it's frequency of use. The different levels of inspection are as follows:

- Inspection and operational testing of equipment received from the factory or distributor.
- Inspection of equipment as it is issued to workers.
- Inspection after use or training and prior to maintenance.
- Periodic inspection of stored equipment.
- Periodic inspection when a question arises concerning the appropriateness of the selected equipment, or when problems with similar equipment arise.

The primary inspection of PPE in use for activities at the Site will occur prior to immediate use and will be conducted by the user. This ensures that the specific device or article has been checked-out by the user that the user is familiar with its use.

Table 5.1 Sample PPE Inspection Checklists

CLOTHING

Before use:

- o Determine that the clothing material is correct for the specified task at hand.
- o Visually inspect for:
  - imperfect seams
  - non-uniform coatings
  - tears
  - malfunctioning closures

- o Hold up to light and check for pinholes.
- o Flex product:
  - observe for cracks
  - observe for other signs of shelf deterioration

- o If the product has been used previously, inspect inside and out for signs of chemical attack:
  - discoloration
  - swelling
  - stiffness

During the work task

- o Evidence of chemical attack such as discoloration, swelling, stiffening, and softening. Keep in mind, however, that chemical permeation can occur without any visible effects.

- o Closure failure.

- o Tears.

- o Punctures.

- o Seam Discontinuities.

GLOVES

Before use:

- o Visually inspect for:

- imperfect seams
- tears
- non-uniform coating
- pressurize glove with air; listen for pin-hole leaks.

5.11 Specific Levels of Protection Planned for the Site

The following levels of protection will be utilized during activities at the Site:

- Level C
- Level D

Table 5.2 presents the level of protection planned for the completion of individual task assignments and the specific components of each protective ensemble.

TABLE 5.2
SPECIFIC LEVELS OF PROTECTION PLANNED FOR THE TASK ASSIGNMENTS AT THE SITE

LEVEL A Tasks

LEVEL A Tasks (modified)

LEVEL B Tasks

LEVEL B Tasks (modified)

LEVEL C Tasks
- Collect soil samples

LEVEL C Tasks (modified)

LEVEL D Tasks
- Perimeter monitoring
- Written/photographic documentation
- Monitor samples for radiation

LEVEL D Tasks (modified)

6.0 MEDICAL SURVEILLANCE REQUIREMENTS

Medical monitoring programs are designed to track the physical condition of employees on a regular basis as well as survey preemployment or baseline conditions prior to potential exposures The medical surveillance program is a part of each employers Health and Safety program.

6.1 Baseline or Preassignment Monitoring

Prior to being assigned to a hazardous or a potentially hazardous activity involving exposure to toxic materials employee must receive a preassignment or baseline physical. The contents of the physical is to be determined by the employers medical consultant. As suggested by NIOSH/OSHA/USCG/EPA's Occupational Safety & Health Guidance Manual for Hazardous Waste Site Activities, the minimum medical monitoring requirements for work at the Site is as follows:

- Complete medical and work histories.
- Physical examination.
- Pulmonary function tests (FVC and FEV1).
- Chest X-ray (every 2 years).
- EKG.
- Eye examination and visual acuity.
- Audiometry.
- Urinalysis.
- Blood chemistry
  and heavy metals toxicology.

The preassignment physical should categorize employees as fit-for-duty and able to wear respiratory protection.

6.2 Periodic Monitoring

In addition to a baseline physical, all employees require a periodic physical within the last 12 months unless the advising physician believes a shorter interval is appropriate. The employers medical consultant should prescribe an adequate medical which fulfills OSHA 29 CFR 1910.120 requirements. The preassignment medical outlined above may be applicable.

All personnel working in contaminated or potentially contaminated area's at the Site will verify currency (within 12 months) with respect to medical monitoring. This is done by

indicating date of last physical on the safety plan agreement form.

6.3 Site Specific Medical Monitoring

For activities at the Site, the following specific tests will be required prior to individuals entering the Exclusion Zone or Contamination Reduction Zone.

6.4 Exposure/Injury/Medical Support

As a follow-up to an injury or possible exposure above established exposure limits, all employees are entitled to and encouraged to seek medical attention and physical testing. Depending upon the type of exposure, it is critical to perform follow-up testing within 24-48 hours. It will be up to the employers medical consultant to advise the type of test required to accurately monitor for exposure effects.

6.5 Exit Physical

At termination of employment or reassignment to an activity or location which does not represent a risk of exposure to hazardous substances, an employee shall require an exit physical. If his/her last physical was within the last 6 months, the advising medical consultant has the right to determine adequacy and necessity of exit exam.

7.0 FREQUENCY AND TYPES OF AIR MONITORING/SAMPLING

This section explains the general concepts of an air monitoring program and specifies the surveillance activities that will take place during project completion at the Site.

The purpose of air monitoring is to identify and quantify airborn contaminants in order to verify and determine the level of worker protection needed. Initial screening for identification is often qualitative, i.e., the contaminant, or the class to which it belongs, is demonstrated to be present but the determination of its concentration (quantification) must await subsequent testing. Two principal approaches are available for identifying and/or quantifying airborne contaminants:

- The onsite use of direct-reading instruments.
- Laboratory analysis of air samples obtained by gas sampling bag, collection media (i.e., filter, sorbent), and/or wet-contaminant collection methods.

7.1 Direct-Reading Monitoring Instruments

Unlike air sampling devices, which are used to collect samples for subsequent analysis in a laboratory, direct-reading instruments provide information at the time of sampling, enabling rapid decision-making. Data obtained from the real-time monitors are used to assure proper selection of personnel protection equipment, engineering controls, and work practices. Overall, the instruments provide the user the capability to determine if site personnel are being exposed to concentrations which exceed exposure limits or action levels for specific hazardous materials.

Of significant importance, especially during initial entries, is the potential for IDLH conditions or oxygen deficient atmospheres. Real-time monitors can be useful in identifying any IDLH conditions, toxic levels of airborne contaminants, flammable atmospheres, or radioactive hazards. Periodic monitoring of conditions is critical, especially if exposures may have increased since initial monitoring or if new site activities have commenced.

Table 7.1. excerpted from Occupational Safety and Health Guidelines for Hazardous Waste Site Activities, provides an overview of available monitoring instrumentation and their specific operating parameters.

TABLE 7.1 SOME DIRECT-READING INSTRUMENTS FOR GENERAL SURVEY

Instrument: Combustible gas indicator (CGI)

Hazard Monitored: Combustible gases and vapors.

Application: Measures the concentration of a combustible gas or vapor.

Detection Method: A filament, usually made of platinum, is heated by burning the combustible gas of vapor. The increase in heat is measured. Gases and vapors are ionized in a flame. A current is produced in proportion to the number of carbon atoms present.

General Care/Maintenance: Recharge or replace battery. Calibrate immediatly before use.

Typical Operating Time: Can be used for as long as the battery lasts, or for the recommended interval between calibrations, whichever is less.

Instrument: Flame Ionization Detector (FID) with Gas Chromatography Option. Example: Foxboro OVA.

Hazard Monitored: Many organic gases and vapors.

Application: In survey mode, detects the concentration of many organic gases and vapors. In gas chromatography (GC) mode identifies and measures specific compounds. In survey mode, all the organic compounds are ionized and detected at the same time. In GC mode, volatile species are separated.

General Care/Maintenance: Recharge or replace battery. Monitor fuel and/or combustion air supply gauges. Perform routine maintenance as described in the manual. Check for leaks.

Typical Operating Time: 8 hours; 3 hours with strip chart recorder.

Instrument: Portable Infrared (IR) Spectrophotometer

Hazard Monitored: Many gases and vapors.

Application: Measures concentration of many gases and vapors in air. Designed to quantify one or two component mixtures.

Detection Method: Passes different frequencies of IR through the sample. The frequencies absorbed are specific for each compound.

General Care/Maintenance: As specified by manufacturer.

Instrument: Ultraviolet (UV) Photoionization Detector (PID) Example: HNU.

Hazard Monitored: Many organic and some inorganic gases and vapors.

Application: Detects total concentration of many organic and some inorganic gases and vapors. Some identification of compounds are possible if more than one probe is measured.

Detection Method: Ionizes molecules using UV radiation; produces a current that is proportional to the number of ions.

General Care/Maintenance: Recharge or replace battery. Regularly clean lamp window. Regularly clean an maintain the instrument and accessories.

Typical Operating Time: 10 hours. 5 hours with strip chart recorder.

Instrument: Direct Reading Colorimetric Indicator Tube

Hazard Measured: Specific gas and vapors.

Application: Measures concentration of specific gases and vapors.

Detection Method: The compound reacts with the indicator chemical in the tube, producing a stain whose length or color change is proportional to the compound's concentration.

General Care/Maintenance: Do not use a previously opened tube even if the indicator chemical is not stained. Check pump for leaks before and after use. Refrigerate before use to maintain a shelf life of about 2 years. Check expiration date of tubes. Calibrate pump volume at least quarterly. Avoid rough handling which may cause channeling.

Instrument: Oxygen Meter

Hazard Monitored: Oxygen (O2)

Application: Measures the percentage of O2 in the air.

Detection Method: Uses an electrochemical sensor to measure the partial pressure of O2 in the air, and converts that reading to O2 concentration.

General Care/Maintenance: Replace detector cell according to manufacturers recomendations. Recharge or replace batteries prior to expiration of the specified interval. If the ambient air is more than 0.5% CO2, replace the detector cell frequently.

Typical Operating Time: 8-12 hours.

Instrument: Real Time Aerosol Monitor

Hazard Monitored: Particulates

Application: Measures total particulates in air.

Detection Method: Uses an internal light source. The particulates defract the light beam and the amount of diffraction is converted into concentration (mg/m3).

General Care/Maintenance: Recharge batteries. Replace dessicant when necessary.

Typical Operating Time: 8-12 hours.

Instrument: Monitox

Hazard Moniored: Gases and Vapors

Application: Measures specific gases and vapors

Detection Method: Electrochemical sensor relatively specific for the chemical species in question.

General Care/Maintenance: Moisten sponge before use; check the function swith; change the battery when needed.

Instruments: Gamma Radiation Survey Instrument

Hazard Monitored: Gamma Radiation

Application: Environmental radiation monitor

Detection Method: Scintillation detector

General Care/Maintanence: Must be calibrated annually at a specialized facility.

Typical Operating Time: Can be used for as long as tha battery lasts, or for the recommended interval between calibrations, whichever is less.

Instrument: Rate meter with alpha, beta, and gamma probes

Hazard Monitored: Alpha, Beta and Gamma Radiation

Application: Sample monitoring, location of "hot spots", personnel monitoring

Detection Method: Probe specific. Scintillator, Geiger-Mueller

General Care/Maintenance: Must be calibrated annually at a specialized facility.

Typical Operating Time: Can be used for as long as the battery lasts, or for the recommended interval between calibrations, whichever is less.

After site mitigation activities have commenced, the selective monitoring of high-risk workers, i.e., those who are closest to the source of contaminant generation, is essential. Personal monitoring samples should be collected in the breathing zone and, if workers are wearing respiratory protective equipment, outside the facepiece.

Those employees working closest with the source have the highest likelihood of being exposed to concentrations which exceed established exposure limits. Representative sampling approaches emphasizing worst case conditions, those employees with the greatest risk of exposure, is acceptable. However, the sampling strategy may change if the operation or tasks change onsite or if exposures potentially increase.

7.3 Specific Contaminants to be monitored at the Site

The following checklist provides a summary of the contaminants to be monitored for and frequency/schedule of monitoring. The air sampling checklist will serve as a site monitoring plan.

7.3.1 Site Air Monitoring and Sampling Program

A. Air Monitoring Instruments

Gamma Radiation Survey Instrument

Frequency : Continuous monitoring
Locations :
Excavation area
Hot zone area

B. Action Levels

Radiation:

Action Level	Action
< 2 mrem/hr	Radiation above background levels (normally 0.01-0.02 mrem/hr)g signifies

the possible presence of radiation sources.
Continue investigation with caution.
Perform thorough monitoring. Consult with a health physicist.

> 2 mrem/hr Potential radiation hazard. Evacuate site.
Continue investigation only upon the advice of a health physicist.
(site contains radioactive contamination in soil)

C. Reporting Format

- Field notebook

8.0 SITE CONTROL MEASURES

The following section defines measures and procedures for maintaining site control. Site control is an essential component in the implementation of the site health and safety program.

8.1 Buddy System

During all Level B activities or when some conditions present a risk to personnel, the implementation of a buddy system is mandatory. A buddy system requires at least two people who work as a team; each looking out for each other. For example, Level B operations generally require three people. Table 8.1 lists those tasks which require a buddy system and any additional site control requirements.

8.2 Site Communications Plan

Successful communications between field teams and contact with personnel in the support zone is essential. The following communications systems will be available during activities at the Site.

- Two-way radio

8.3 Work Zone Definition

The three general work zones established at the Site are the Exclusion Zone, Contamination Reduction Zone, and Support Zone. Figure 8.1 provides a site map with the work zones designated on it.

The Exclusion Zone is defined as the area where contamination is either known or likely to be present, or because of activity, will provide a potential to cause harm to personnel. Entry into the Exclusion Zone requires the use of personnel protective equipment.

The Contamination Reduction Zone is the area where personnel conduct personal and equipment decontamination. It is essentially a buffer zone between contaminated areas and clean areas. Activities to be conducted in this zone will require personal protection as defined in the decontamination plan.

The Support Zone is situated in clean areas where the chance to encounter hazardous materials or conditions is minimal. Personal protective equipment is therefore not required.

8.4 Nearest Medical Assistance

Figure 8.2 provides a map of the route to the nearest medical facility which can provide emergency care for individuals who may experience an injury or exposure on-site. The route to the hospital should be verified by the HSO, and should be familiar to all site personnel.

The following individuals on site have current certification in CPR and/or first aid:

- (other agencies/organizations to add names)
- Rick Neeley
- Maxine LaPierre

8.5 Safe Work Practices

Table 8.2 provides a list of standing orders for the Exclusion Zone.

Table 8.3 provides a list of standing orders for the Contamination Reduction Zone.

8.6 Emergency Alarm Procedures

The warning signals described in section 10.4 "Evacuation Routes and Procedures," will be deployed in the event of an emergency. Communication signals will also be used according to section 8.2.

TABLE 8.1. PERSONNEL REQUIREMENTS

Task	Control Measures	Comments
**Perimeter monitoring		
	Buddy system	
	Line of Sight	
**Written/photographic documentation		
	Buddy system	
	Line of Sight	
**Monitor samples for radiation		
	Buddy system	
	Line of sight	
** Collect soil samples		
	Buddy system	
	Line of sight	

FIGURE 8.1
SITE MAP DEPICTING WORK ZONES

(To Be Determined by OSC)

FIGURE 8.2
MAP DEPICTING ROUTE TO NEAREST MEDICAL FACILITIES

FIGURE 1 VICINITY MAP

HOSPITAL ROUTE

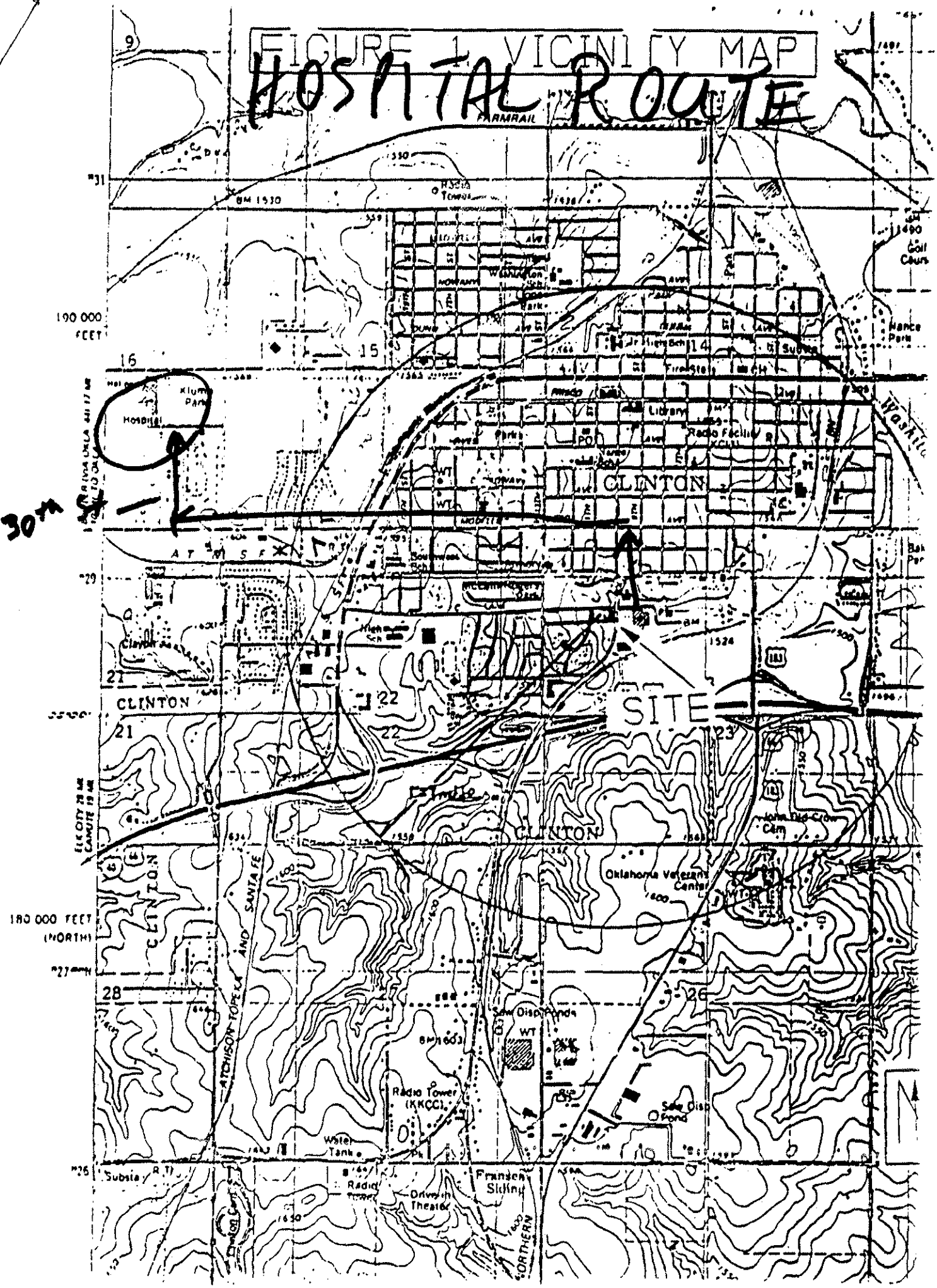


TABLE 8.2 STANDING ORDERS FOR EXCLUSION ZONE

- No smoking, eating, or drinking in this zone.
- No horse play.
- No matches or lighters in this zone.
- Check-in on entrance to this zone.
- Check-out on exit from this zone.
- Implement the communications system.
- Line of sight must be in position.
- Wear the appropriate level of protection as defined in the Safety Plan.

TABLE 8.3 STANDING ORDERS FOR CONTAMINATION REDUCTION ZONE

- No smoking, eating, or drinking in this zone.
- No horse play.
- No matches or lighters in this zone.
- Wear the appropriate level of protection.

9.0 DECONTAMINATION PLAN

Table 5.2 lists the tasks and specific levels of protection required for each task. Consistent with the levels of protection required, the decontamination figure provides a step by step representation of the personnel decontamination process for either level A, B, or C. These procedures should be modified to suit site conditions and protective ensembles in use.

9.1 Standard Operating Procedures

Decontamination involves the orderly controlled removal of contaminants. Standard decontamination sequences are presented in the decontamination figure. All site personnel should minimize contact with contaminants in order to minimize the need for extensive decon.

9.2 Levels of Decontamination Protection Required for Personnel

The levels of protection required for personnel assisting with decontamination will be (to be determined)

The Site Health andSafety Officer is responsible for monitoring decontamination procedures and determining their effectiveness.

9.3 Equipment Decontamination

Sampling equipment will be decontaminated in accordance with procedures as defined in the other, QASP.
The sequence of decontamination steps required for non-sampling equipment and heavy machinery can be found in the Quality Assurance Sampling Plan.

9.4 Disposition of Decontamination Wastes

All equipment and solvents used for decontamination shall be decontaminated or disposed of properly. Commercial laundries or cleaning establishments that decontaminate protective clothing or equipment shall be informed of the potentially harmful effects of exposures.

FIGURE 9.1.
LEVEL A DECONTAMINATION STEPS

Step 1 Segregated equipment drop
Step 2 Boot cover and glove wash
Step 3 Boot cover and glove rinse
Step 4 Tape removal - boot and glove
Step 5 Boot cover removal
Step 6 Outer glove removal
Step 7 Suit/safety boot wash
Step 8 Suit/safety boot rinse
Step 9 Safety boot removal
Step 10 Fully encapsulating suit and hard hat removal
Step 11 SCBA backpack removal
Step 12 Inner glove wash
Step 13 Inner glove rinse
Step 14 Face piece removal
Step 15 Innver glove removal
Step 16 Inner clothing removal
Step 17 Field wash
Step 18 Redress

FIGURE 9.2.
LEVEL B DECONTAMINATION STEPS

Step 1 Segregated equipment drop
Step 2 Boot cover and glove wash
Step 3 Boot cover and glove rinse
Step 4 Tape removal - outer glove and boot
Step 5 Boot cover removal
Step 6 Outer glove removal
Step 7 Suit/safety boot wash
Step 8 Suit/SCBA/boot/glove rinse
Step 9 Safety boot removal
Step 10 SCBA backpack removal
Step 11 Splash suit removal
Step 12 Inner glove wash
Step 13 Inner glove rinse
Step 14 Face piece removal
Step 15 Inner glove removal
Step 16 Inner clothing removal
Step 17 Field wash
Step 18 Redress

FIGURE 9.3.
LEVEL C DECONTAMINATION STEPS

Step 1 Segregated equipment drop
Step 2 Boot cover and glove wash
Step 3 Boot cover and glove rinse
Step 4 Tape removal
Step 5 Boot cover removal
Step 6 Outer glove removal
Step 7 Suit/safety boot wash
Step 8 Suit/safety boot rinse
Step 9 Safety boot removal
Step 10 Splash suit removal
Step 11 Inner glove wash
Step 12 Inner glove rinse
Step 13 Face piece removal
Step 14 Inner glove removal
Step 15 Inner clothing removal
Step 16 Field wash
Step 17 Redress

FIGURE 9.4.
LEVEL D DECONTAMINATION STEPS

Step 1 Remove outer garments (i.e., coveralls)
Step 2 Remove gloves
Step 3 Wash hands and face

10.0 EMERGENCY RESPONSE/CONTINGENCY PLAN

This section describes contingencies and emergency planning procedures to be implemented at the Site. This plan is compatible with local, state and federal disaster and emergency management plans as appropriate.

10.1 Pre-Emergency Planning

During the site briefings held periodically/daily, all employees will be trained in and reminded of provisions of the emergency response plan, communication systems, and evacuation routes. Table 10.1 identifies the hazardous conditions associated with specific site activities. The plan will be reviewed and revised if necessary, on a regular basis by the HSO. This will ensure that the plan is adequate and consistent with prevailing site conditions.

10.2 Personnel Roles and Lines of Authority

The Site Supervisor has primary responsibility for responding to and correcting emergency situations. This includes taking appropriate measure to ensure the safety of site personnel and the public. Possible actions may involve evacuation of personnel from the site area, and evacuation of adjacent residents. He/she is additionally responsible for ensuring that corrective measures have been implemented, appropriate authorities notified, and follow-up reports completed. The HSO may be called upon to act on the behalf of the site supervisor, and will direct responses to any medical emergency. The individual contractor organizations are responsible for assisting the project manager in his/her mission within the parameters of their scope of work.

The Site Supervisor(s): Pat Hammack.

The HSO is Pat Hammack

Alternates are:

- Lon Biasco

10.3 Emergency Recognition/Prevention

Table 3.1 provides a listing of chemical and physical hazards

onsite. Additional hazards as a direct result of site activities are listed in Table 10.1 as are prevention and control techniques/mechanisms. Personnel will be familar with techniques of hazard recognition from preassignment training and site specific briefings. The HSO is responsible for ensuring that prevention devices or equipment is available to personnel.

10.4 Evacuation Routes/Procedures

In the event of an emergency which necessitates an evacuation of the site, the following alarm procedures will be implemented:

Evacuation alarm notification should be made using three short blasts on the air horn, supplemented using the hand held radios. All personnel should evacuate upwind of any activities. Insure that a predetermined location is identified off-site in case of an emergency, so that all personnel can be accounted for.

Personnel will be expected to proceed to the closest exit with your buddy, and mobilize to the safe distance area associated with the evacuation route. Personnel will remain at that area until the re-entry alarm is sounded or an authorized individual provides further instructions.

TABLE 10.1
EMERGENCY RECOGNITION/CONTROL MEASURES

HAZARD	PREVENTION/CONTROL	LOCATION
Fire/Explosion	Fire Extinguisher	Buildings/Vehicles
Air Release	Water Spray	Excavation sites

Figure 10.1 provides a map depicting evacuation routes for the site and immediate area. Also indicated are muster areas and safe distances in the event of a major incident.

(To Be Determined by OSC)

10.7 Emergency Contact/Notification System

The following list provides names and telephone numbers for emergency contact personnel. In the event of a medical emergency, personnel will take direction from the HSO and notify the appropriate emergency organization. In the event of a fire or spill, the site supervisor will notify the appropriate local, state, and federal agencies.

Organization	Contact	Telephone
Ambulance:		911
Police:City of Clinton	Dispatcher	911
Fire:City of Clinton	Dispatcher	911
State Police:		
Hospital 1:Clinton Regional Hospital 100 N. 30th St. Clinton, OK		405-323-2363
Hospital 2:		
Poison Control Center		
Regional EPA:Region 6	Pat Hammack	214-665-2214
EPA Emergency Response Team		908-321-6660
State Authority:		
National Response Center		800-424-8802
Center for Disease Control		404-488-4100
Chemtrec		800-424-9555

FIGURE 10.1
EVACUATION ROUTES AND SAFE DISTANCES

(To BE Determined by OSC)

10.8 Emergency Medical Treatment Procedures

Any person who becomes ill or injured in the exclusion zone must be decontaminated to the maximum extent possible. If the injury or illness is minor, full decontamination should be completed and first aid administered prior to transport. If the patient's condition is serious, at least partial decontamination should be completed (i.e., complete disrobing of the victim and redressing in clean coveralls or wrapping in a blanket.) First aid should be administered while awaiting an ambulance or paramedics. All injuries and illnesses must immediately be reported to the project manager.

Any person being transported to a clinic or hospital for treatment should take with them information on the chemical(s) they have been exposed to at the site. This information is included in Table 3.1.

Any vehicle used to transport contaminated personnel will be treated and cleaned as necessary.

10.9 Fire or Explosion

In the event of a fire or explosion, the local fire department should be summoned immediately. Upon their arrival, the project manager or designated alternate will advise the fire commander of the location, nature, and identification of the hazardous materials onsite.

If it is safe to do so, site personnel may:

- Use fire fighting equipment available onsite to control or extinguish the fire; and,

- Remove or isolate flammable or other hazardous materials which may contribute to the fire.

10.10 Spill or Leaks

In the event of a spill or a leak, site personnel will:

- Inform their supervisor immediately;

- Locate the source of the spillage and stop the flow if it can be done safely; and,

- Begin containment and recovery of the spilled materials.

10.11 Emergency Equipment/Facilities

Figure 10.2 provides a map of the site and identifies the location of the following emergency equipment:

- First aid kit
- Fire extinguisher
- Mobile telephone

FIGURE 10.2
SITE MAP WITH EMERGENCY EQUIPMENT LOCATED

(To Be Determined by OSC)

11.0 CONFINED SPACE ENTRY PROCEDURES

A confined space provides the potential for unusually high concentrations of contaminants, explosive atmospheres, limited visibility, and restricted movement. This section will establish requirements for safe entry into, continued work in, and safe exit from confined spaces. Additional information regarding confined space entry can be found in 29 CFR 1926.21, 29 CFR 1910 and NIOSH 80-106.

11.1 Definitions

Confined Space: A space or work area not designed or intended for normal human occupancy, having limited means of egress and poor natural ventilation; and/or any structure, including buildings or rooms, which have limited means of egress.

Confined Space Entry Permit (CSEP): A document to be initiated by the supervisor of personnel who are to enter into or work in a confined space. The Confined Space Entry Permit (CSEP) will be completed by the personnel involved in the entry and approved by the HSO before personnel will be permitted to enter the confined space. The CSEP shall be valid only for the performance of the work identified and for the location and time specified. The beginning of a new shift with change of personnel will require the issuance of a new CSEP.

Confined Space Observer: An individual assigned to monitor the activities of personnel working within a confined space. The confined space observer monitors and provides external assistance to those inside the confined space. The confined space observer summons rescue personnel in the event of emergency and assists the rescue team.

11.2 General Provisions

- When possible, confined spaces should be identified with a posted sign which reads: Caution - Confined Space.

- Only personnel trained and knowledgeable of the requirements of these Confined Space Entry Procedures will be authorized to enter a confined space or be a confined space observer.

- A Confined Space Entry Permit (CSEP) must be issued prior to the performance of any work within a confined space. The

CSEP will become a part of the permanent and official record of the site.

- Natural ventilation shall be provided for the confined space prior to initial entry and for the duration of the CSEP. Positive/forced mechanical ventilation may be required. However, care should be taken to not spread contamination outside of the enclosed area.

- If flammable liquids may be contained within the confined space, explosion proof equipment will be used. All equipment shall be positively grounded.

- The contents of any confined space shall, where necessary, be removed prior to entry. All sources of ignition must be removed prior to entry.

- Hand tools used in confined spaces shall be in good repair explosion proof and spark proof, and selected according to intended use. Where possible, pneumatic power tools are to be used.

- Hand-held lights and other illumination utilized in confined spaces shall be equipped with guards to prevent contact with the bulb and must be explosion proof.

- Compressed gas cylinders, except cylinders used for self-contained breathing apparatus, shall not be taken into confined spaces. Gas hoses shall be removed from the space and the supply turned off at the cylinder valve when personnel exit from the confined space.

- If a confined space requires respiratory equipment or where rescue may be difficult, safety belts, body harnesses, and lifelines will be used. The outside observer shall be provided with the same equipment as those working within the confined space.

- A ladder is required in all confined spaces deeper than the employee's shoulders. The ladder shall be secured and not removed until all employees have exited the space.

- Only self-contained breathing apparatus or NIOSH approved airline respirators equipped with a 5-minute emergency air supply (egress bottle) shall be used in untested confined

spaces or in any confined space with conditions determined immediately dangerous to life and health.

- Where air-moving equipment is used to provide ventilation, chemicals shall be removed from the vicinity to prevent introduction into the confined space.

- Vehicles shall not be left running near confined space work or near air-moving equipment being used for confined space ventilation.

- Smoking in confined spaces will be prohibited at all times.

- Any deviation from these Confined Space Entry Procedures requires the prior permission of the On-Scene Coordinator.

11.3 Procedure for Confined Space Entry

The HSO and Entry Team shall:

- Evaluate the job to be done and identify the potential hazards before a job in a confined space is scheduled.

- Ensure that all process piping, mechanical and electrical equipment, etc., have been disconnected, purged, blanked-off or locked and tagged as necessary.

- If possible, ensure removal of any standing fluids that may produce toxic or air displacing gases, vapors, or dust.

- Initiate a Confined Space Entry Permit (CSEP) in concurrence with the project manager or designated alternative.

- Ensure that any hot work (welding, burning, open flames, or spark producing operation) that is to be performed in the confined space has been approved by the project manager and is indicated on the CSEP.

- Ensure that the space is ventilated before starting work in the confined space and for the duration of the time that the work is to be performed in the space.

- Ensure that the personnel who enter the confined space and the confined space observer helper are familiar with the

contents and requirements of this instruction.

- o Ensure remote atmospheric testing of the confined space prior to employee entry and before validation/revalidation of a CSEP to ensure the following:

  1. Oxygen content between 19.5% - 23.0%.
  2. No concentration of combustible gas in the space. Sampling will be done throughout the confined space and specifically at the lowest point in the space.
  3. The absence of other atmospheric contaminants space has contained toxic, corrosive, or irritant material.
  4. If remote testing is not possible, Level B PPE is required as referenced in III 13.

- o Designate whether hot or cold work will be allowed. If all tests in a. through c. in IV 8 are satisfactory, complete the CSEP listing any safety precautions, protective equipment, or other requirements.

- o Ensure that a copy of the CSEP is posted at the work site a copy is filed with the project supervisor, and a copy is furnished to the project manager.

  The CSEP shall be considered void if work in the confined space does not start within one hour after the tests in IV 8 are performed or if significant changes within the confined space atmosphere or job scope occurs.

  The CSEP posted at the work site shall be removed at the completion of the job or the end of the shift, whichever is first.

11.4 Confined Space Observer

- o While personnel are inside the confined space, a confined space observer will monitor the activities and provide external assistance to those in the space. The observer will have no other duties which may take his attention away from the work or require him to leave the vicinity of the confined space at any time while personnel are in the space.

- The confined space observer shall maintain at least voice contact with all personnel in the confined space. Visual contact is preferred, if possible.

- The observer shall be instructed by his supervisor in the method for contacting rescue personnel in the event of an emergency.

- If irregularities within the space are detected by the observer, personnel within the space will be ordered to exit.

- In the event of an emergency, the observer must NEVER enter the confined space prior to contacting and receiving assistance from a helper. Prior to this time, he should attempt to remove personnel with the lifeline and to perform all other rescue functions from outside the space.

- A helper shall be designated to provide assistance to the confined space observer in case the observer must enter the confined space to retrieve personnel.

12.0 SPILL CONTAINMENT PROGRAM

The procedures defined in this section comprise the spill containment program in place for activities at the Site.

- All drums and containers used during the clean-up shall meet the appropriate DOT, OSHA, and EPA regulators for the waste that they will contain.

- Drums and containers shall be inspected and their integrity assured prior to being moved. Drums or containers that cannot be inspected before being moved because of storage conditions, shall be positioned in an accessible location and inspected prior to further handling.

- Operations on site will be organized so as to minmize the amount of drum or container movement.

- Employees involved in the drum or container operations shall be warned of the hazards associated with the containers.

- Where spills, leaks, or ruptures may occur, adequate quantities of spill containment equipment (absorbent, pillows, etc.) will be stationed in the immediate area. The spill containment program must be sufficient to contain and isolate the entire volume of hazardous substances being transferred.

- Drums or containers that cannot be moved without failure, shall be emptied into a sound container.

- Fire extinguishing equipment meeting 29 CFR part 1910. subpart 1 shall be on hand and ready for use to control fires.

13.0 HAZARD COMMUNICATION

In order to comply with 29 CFR 1910.1200, Hazard Communication, the following written Hazard Communication Program has been established. All employees will be briefed on this program, and have a written copy for review.

A. CONTAINER LABELING

All containers received on site will be inspected to ensure the following: (1) all containers will be clearly labeled as to the contents; (2) the appropriate hazard warnings will be noted; and (3) the name and address of the manufacturer will be listed.

All secondary containers will be labeled with either an extra copy of the original manufacturer's label or with generic labels which have a block for identify and blocks for the hazard warning.

B. MATERIAL SAFETY DATA SHEETS (MSDSs)

Copies of MSDSs for all hazardous chemicals known or suspected on site will be maintained in the work area. MSDSs will be available to all employees for review during each work shift.

C. EMPLOYEE TRAINING AND INFORMATION

Prior to starting work, each employee will attend a health and safety orientation and will receive information and training on the following: (1) an overview of the requirements contained in the Hazard Communication Standard, 29 CFR 1910.1200; (2) chemicals present in their workplace operations; (3) location and availability of a written hazard program; (4) physical and health effects of the hazardous chemicals; (5) methods and observation techniques used to determine the presence or release of hazardous chemicals; (6) how to lessen or prevent exposure to these hazardous chemicals through usage of control/work practices and personal protective equipment; (7) emergency procedures to follow if they are exposed to these chemicals; (8) how to read labels and review MSDSs to obtain appropriate hazard information; (9) location of MSDS file and location of hazardous chemical list.

** Table of Contents **

1.0 INTRODUCTION.....1-1

1.1 Scope and Applicability of the Site Health and Safety Plan.....1-1

1.2 Visitors.....1-1

2.0 KEY PERSONNEL/IDENTIFICATION OF HEALTH AND SAFETY.....2-1

2.1 Key Personnel.....2-1

2.2 Site Specific Health and Safety Personnel.....2-1

2.3 Organizational Responsibility.....2-1

3.0 TASK/OPERATION SAFETY AND HEALTH RISK ANALYSIS.....3-1

3.1 Historical Overview of Site.....3-1

3.2 Task by Task Risk Analysis.....3-1

4.0 PERSONNEL TRAINING REQUIREMENTS.....4-1

4.1 Preassignment and Annual Refresher Training.....4-1

4.2 Site Supervisors Training.....4-1

4.3 Training and Briefing Topics.....4-1

5.0 PERSONAL PROTECTIVE EQUIPMENT TO BE USED.....5-1

5.1 Levels of Protection.....5-1

5.2 Level A Personnel Protective Equipment.....5-2

5.3 Level B Personnel Protective Equipment.....5-2

5.4 Level C Personnel Protective Equipment.....5-3

5.5 Level D Personnel Protective Equipment.....5-4

5.6 Reassessment of Protection Program.....5-4

5.7 Work Mission Duration.....5-4

5.8 Chemical Resistance and Integrity of Protective Material.....5-5

5.9.1 Cleaning and Disinfecting Air Purifying Respirators.....5-5

5.9.1.1 Daily Cleaning Procedure.....5-5

5.9.1.2 After Routine Use in Exclusion Zone.....5-6

5.9.2 APR Inspection and Checkout.....5-6

5.9.3 Storage of Air Purifying Respirators.....5-7

5.10.1 Inspection.....5-8

6.0 MEDICAL SURVEILLANCE REQUIREMENTS.....6-1

6.1 Baseline or Preassignment Monitoring.....6-1

6.2 Periodic Monitoring.....6-1

6.3 Site Specific Medical Monitoring.....6-1

6.4 Exposure/Injury/Medical Support.....6-2

6.5 Exit Physical.....6-2

7.0 FREQUENCY AND TYPES OF AIR MONITORING/SAMPLING.....7-1

7.1 Direct-Reading Monitoring Instruments.....7-1

7.3.1 Site Air Monitoring and Sampling Program.....7-6

8.0 SITE CONTROL MEASURES.....8-1

8.1 Buddy System.....8-1

8.2 Site Communications Plan.....8-1

8.3 Work Zone Definition.....8-1

8.4 Nearest Medical Assistance.....8-2

8.5 Safe Work Practices.....8-2

8.6 Emergency Alarm Procedures.....8-2

9.0 DECONTAMINATION PLAN.....9-1

9.1 Standard Operating Procedures.....9-1

9.2 Levels of Decontamination Protection Required for Personnel.....9-1

9.3 Equipment Decontamination.....9-1

9.4 Disposition of Decontamination Wastes.....9-1

10.0 EMERGENCY RESPONSE/CONTINGENCY PLAN.....10-1

10.1 Pre-Emergency Planning.....10-1

10.2 Personnel Roles and Lines of Authority.....10-1

10.3 Emergency Recognition/Prevention.....10-1

10.4 Evacuation Routes/Procedures.....10-2

10.7 Emergency Contact/Notification System.....10-5

10.8 Emergency Medical Treatment Procedures.....10-7

10.9 Fire or Explosion.....10-7

10.10 Spill or Leaks.....10-7

10.11 Emergency Equipment/Facilities.....10-7

11.0 CONFINED SPACE ENTRY PROCEDURES.....11-1

11.1 Definitions.....11-1

11.2 General Provisions.....11-1

11.3 Procedure for Confined Space Entry.....11-3

11.4 Confined Space Observer.....11-4

12.0 SPILL CONTAINMENT PROGRAM.....12-1

13.0 HAZARD COMMUNICATION.....13-1

PHOTOGRAPH TRACKING SYSTEM

START REGION 6

DATE	TIME	PHOTO	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
12/28/96	1300	601	NORTHWEST	PORTION OF BROKEN FENCE LOCATED IN THE SOUTHEAST CORNER OF THE BAGS (DISPOSAL) AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1301	602	NORTHWEST	PORTION OF BROKEN FENCE LOCATED ALONG EASTERN PERIMETER OF THE DISPOSAL AREA AND ADJACENT TO THE STREET.	STEVE COWAN/MAXINE LaPIER
12/28/96	1302	603	WEST	PORTION OF BROKEN FENCE AT THE NORTHEAST CORNER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1303	604	W-NW	PORTION OF BROKEN FENCE ALONG THE NORTHERN PERIMETER OF THE SITE.	STEVE COWAN/MAXINE LaPIER
12/28/96	1304	605	EAST	PORTION OF BROKEN FENCE LOCATED AT THE NORTHWEST CORNER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1306	606	EAST-SE	PORTION OF THE BROKEN FENCE ALONG THE WESTERN PERIMETER OF THE DISPOSAL AREA. IT APPEARED THAT SOME OF THE BAGS COULD BE MISSING.	STEVE COWAN/MAXINE LaPIER
12/28/96	1307	607	SOUTH	COLLAPSED DISCOUNT CENTER LOCATED ADJCENT TO THE SOUTHWEST CORNER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1310	608	SOUTHEAST	TRAILER AND PART OF THE COLLAPSED DISCOUNT CENTER . TRAILER USED TO CARRY DEBRIS FROM COLLAPSED BUILDING.	STEVE COWAN/MAXINE LaPIER
12/28/96	1311	609	EAST	PORTION OF BROKEN FENCE ALONG NORTHERN PERIMETER OF THE COLLAPSED BUILDING.	STEVE COWAN/MAXINE LaPIER
12/28/96	1312	610	SOUTHEAST	VIEW OF MATERIAL WITHIN THE COLLAPSED DISCOUNT CENTER BUILDING.	STEVE COWAN/MAXINE LaPIER
12/28/96	1313	611	SOUTHEAST	SAME AS PHOTO 610.	STEVE COWAN/MAXINE LaPIER
12/28/96	1314	612	NORTHEAST	VIEW OF THE RIPPED BAG CONTAINING THE CONTAMINATED SOIL.	STEVE COWAN/MAXINE LaPIER
12/28/96	1315	613	NORTH	PORTION OF BROKEN FENCE LOCATED ALONG SOUTHERN PERIMETER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1446	614	WEST-NW	FIXED FENCED LOCATED IN THE SOUTHEAST CORNER OF DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1447	615	NORTHWEST	FIXED FENCE ALONG EASTERN PERIMETER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1448	616	WEST-SW	FIXED FENCE LOCATED ALONG THE NORTHERN PERIMETER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1450	617	EAST	FIXED FENCE ALONG THE NORTHWEST PERIMETER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1451	618	SOUTHEAST	FIXED FENCE ALONG THE WESTERN PERIMETER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1452	619	EAST-SE	COLLAPSED BUILDING AFTER FENCE HAD BEEN REMOVED.	STEVE COWAN/MAXINE LaPIER

PHOTOGRAPH TRACKING SYSTEM

START REGION 6

DATE	TIME	PHOTO	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
12/28/96	1453	620	NORTHEAST	FIXED FENCE ADJACENT TO RIPPED BAG.	STEVE COWAN/MAXINE LaPIER
12/28/96	1454	621	EAST	FIXED FENCE ALONG SOUTHERN PERIMETER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1455	622	NORTHEAST	FIXED FENCE ALONG SOUTHEAST PERIMETER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER
12/28/96	1456	623	WEST	VIEW OF THE VISQUEEN PLACED ON TOP OF THE BAGS CONTAINING THE CONTAMINATED SOIL.	STEVE COWAN/MAXINE LaPIER
12/28/96	1457	624	WEST	VIEW OF SOUTHERN PERIMETER OF THE DISPOSAL AREA.	STEVE COWAN/MAXINE LaPIER

PHOTOGRAPH TRACKING SYSTEM
START REGION 6

DATE	TIME	PHOTO #	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
02/22/97	1455	701	SOUTHWEST	SITE WITH BAGS; ONE TRUCK WAITING ACROSS 10TH STREET	PAT HAMMACK/MAXINE LAPIERR
02/22/97	1505	702	SOUTHEAST	FORKLIFT LOADING ONE BAG OF WASTE ONTO TRUCK # 4	M LAPIERRE/J LUO
02/22/97	1507	703	SSE	CAB OF LANDSTAR RANGER TRUCK # 4	M LAPIERRE/J LUO
02/22/97	1632	704	NORTH	CAB OF LANDSTAR RANGER TRUCK # 5	M LAPIERRE/J LUO
02/23/97	1405	705	EAST	FORKLIFT LOADING BAG OF WASTE ONTO PALLET	M LAPIERRE/J LUO
02/26/97	0955	706	EAST	FLOOR OF TRUCK # 17	P HAMMACK/J LUO
02/26/97	1104	707	EAST	FLOOR OF TRUCK # 18	J LUO/M LAPIERRE
02/26/97	1106	708	WEST	START VAN AND JAMES LUO	M LAPIERRE/J LUO
02/26/97	1225	709	EAST	FLOOR OF TRUCK # 19	P HAMMACK/J LUO
02/27/97	0735	710	NORTH	RADIATION EQUIPMENT IN PLASTIC BAGS IN MOTEL	M LAPIERRE/J LUO
03/06/97	1340	711	NORTHWEST	VIEW OF REAR OF KITE SHOP WITH SOD	M LAPIERRE/J LUO
03/06/97	1343	712	WNW	REAR VIEW OF KITE SHOP	M LAPIERRE/J LUO
03/06/97	1353	713	NORTHEAST	ROLL OFF CONTAINER	M LAPIERRE/J LUO
03/06/97	1358	714	EAST	ROLL OFF CONTAINER AT FORMER LOCATION OF DISCOUNT CENTER	M LAPIERRE/J LUO
03/07/97	1453	715	EAST	DUMPSTER (ROLL OFF CONTAINER) BEING REMOVED	J LUO/M LAPIERRE
03/07/97	1455	716	NORTHEAST	10TH STREET SITE WITH GRAVEL	J LUO/M LAPIERRE
03/07/97	1533	717	EAST	BACKYARD OF 1016 WILSON AVE. HOUSE	J LUO/M LAPIERRE
03/07/97	1534	718	SOUTHEAST	BACKYARD, WITH SHED, OF 1016 WILSON AVE. HOME	J LUO/M LAPIERRE
03/07/97	1537	719	NORTH	BACKYARD OF 1005 CIRCLE DR. HOME	J LUO/M LAPIERRE
03/07/97	1539	720	EAST	BACKYARD OF 1005 CIRCLE DR.	J LUO/M LAPIERRE
03/07/97	1543	721	NORTH	ALLEY SHOWING GRAVEL	J LUO/M LAPIERRE
03/08/97	1309	722	SOUTH	ALLEY SHOWING GRAVEL	J LUO/M LAPIERRE
03/08/97	1310	723	EAST	GRADED SITE WITH GRAVEL; FINAL CONDITION	J LUO/M LAPIERRE
03/08/97	1314	724	SOUTHEAST	GRADED SITE AND FORMER DISCOUNT RETAILER LOCATION (FOUNDATION)	J LUO/M LAPIERRE

PHOTOGRAPH TRACKING SYSTEM
START REGION 6

DATE	TIME	PHOTO #	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
03/08/97	1316	725	NORTHEAST	GRADED SITE AND AUTO REPAIR SHOP	J LUO/M LAPIERRE
03/09/97	0858	726	NORTHWEST	ERCS FORKLIFT, PALLET JACK, AND BULLDOZER BEING LEFT AT SITE	M LAPIERRE
03/09/97	0901	727	NORTHEAST	NORTH PART OF PARKING AREA WHERE BAGS HAD BEEN STORED	M LAPIERRE
03/09/97	0903	728	SOUTHEAST	SOUTH PART OF AREA WHERE BAGS HAD BEEN STORED	M LAPIERRE
03/09/97	0904	729	WEST	VIEW OF SITE FROM 10TH ST.	M LAPIERRE
03/09/97	0905	730	NORTHWEST	VIEW OF SITE FROM 10TH ST.	M LAPIERRE
03/09/97	0906	731	SOUTHWEST	VIEW OF SITE FROM 10TH ST.	M LAPIERRE
03/09/97	0910	732	WEST	BACK YARDS OF HOUSES	M LAPIERRE
03/09/97	0912	733	SOUTHEAST	ALLEY, GAS METER	M LAPIERRE

PHOTOGRAPH TRACKING SYSTEM
START REGION 6

DATE	TIME	PHOTO #	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
09/13/96		0			R. NEELEY
09/13/96		0			R. NEELEY
09/13/96		22			R. NEELEY
09/05/96	1030	101	N	EPA COMMAND POST AT 909 S. 10TH STREET	R. NEELEY
09/05/96	1430	102	SW	ERCS CONSTRUCTING SAFETY FENCE AROUND VACANT LOT AREA	R. NEELEY
09/05/96	1432	103	S	ERCS CONSTRUCTING SAFETY FENCE AROUND VACANT LOT AREA	R. NEELEY
09/05/96	1434	104	S	PAN 1 - VACANT LOT AREA	R. NEELEY
09/05/96	1434	105	SW	PAN 2 - VACANT LOT AREA	R. NEELEY
09/05/96	1434	106	W	PAN 3 - VACANT LOT AREA	R. NEELEY
09/05/96		107		MISS SHOT	R. NEELEY
09/05/96	1436	108	NE	EPA COMMAND POST AS SEEN FROM VACANT LOT	R. NEELEY
09/06/96	1730	109	NW	VACANT LOT AREA, AREA BETWEEN YELLOW AND RED BANNER TAPE IS THE CONTAMINATION REDUCTION ZONE	R. NEELEY
09/06/96	1735	110	S	VACANT LOT AREA. ERCS HAVE CUT THE WEEDS AND GRASS	R. NEELEY
09/06/96	1737	111	SE	TELEVISION CHANNEL 4 NEW CREW ON-SITE FROM OKLAHOMA CITY	R. NEELEY
09/06/96	1738	112	SW	CONDEMMED BUILDING ADJACENT TO THE VACANT LOT	R. NEELEY
09/07/96	0912	113	E	MINIEXCAVATOR REMOVING CONTAMINATED SOIL FROM THE WELLS' BACK YARD	R. NEELEY
09/07/96	0914	114	SE	EXCAVATED YARD OF RENTAL PROPERTY SOUTH OF WELLS' RESIDENCE	R. NEELEY
09/07/96	0915	115	E	MINIEXCAVATOR REMOVING CONTAMINATED SOIL FROM WELLS' BACK YARD	R. NEELEY
09/07/96	0916	116	SE	STOCKPILE OF CONTAMINATED SOIL FROM RESIDENTAL YARDS IN MIDDLE OF VACANT LOT	R. NEELEY
09/07/96	0918	117	W	CONTAMINATED SOIL STOCKPILE IN VACANT LOT AND DECONTAMINATION AREA IN FOREGROUND	R. NEELEY
09/07/96	1115	118	E	ERCS EXCAVATING CONTAMINATED SOIL FROM WELLS' BACK YARD	R. NEELEY
09/07/96	1116	119	E	ERCS EXCAVATING RESIDENTAL YARD	R. NEELEY

PHOTOGRAPH TRACKING SYSTEM
START REGION 6

DATE	TIME	PHOTO #	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
09/07/96	1116	120	SE	SKC AIR SAMPLE PUMP AND FILTER TO MONITOR AIR DURING EXCAVATION ACTIVITIES	R. NEELEY
09/07/96	1118	121	W	CONTAMINATED SOIL FROM RESIDENTAL YARDS STOCKPILED IN VACANT LOT	R. NEELEY
09/07/96	1120	122	W	ERCS BRINGING CONTAMINATED SOIL FROM RESIDENTAL YARDS TO STOCKPILE IN VACANT LOT	R. NEELEY
09/07/96	1122	123	SW	DECONTAMINATION AREA AND CONTAMINATION REDUCTION ZONE ADJACENT TO VACANT LOT	R. NEELEY
09/07/96	1125	124	NE	VIEW OF EPA COMMAND POST (909 S. 10TH ST) AS SEEN FROM VACANT LOT	R. NEELEY
09/07/96	1730	201	w	ERCS PERFORMING DECONTAMINATION PROCEEDURES	R. NEELEY
09/07/96	1731	202	W	ERCS PERFORMING DECONTAMINATION PROCEEDURES	R. NEELEY
09/07/96	1731	203	W	ERCS PERFORMING DECONTAMINATION PROCEEDURES	R. NEELEY
09/07/96	1733	204	W	ERCS PERFORMING DECONTAMINATION PROCEEDURES	R. NEELEY
09/09/96	1700	205	D	ERCS CHECKING WATER MAIN AT NW CORNER OF VACANT LOT	R. NEELEY
09/09/96	1702	206	SE	CONTAMINATED SOIL STOCKPILE IN VACANT LOT	R. NEELEY
09/09/96	1702	207	SE	ERCS BACKFILLING CLEAN SOIL ONTO RESIDENTAL YARDS	R. NEELEY
09/09/96	1703	208	SE	ERCS USE BACKFILL SOIL TO COVER RESIDENTAL YARDS	R. NEELEY
09/09/96	1705	209	SW	ERCS SPREADING CLEAN BACKFILL ON RESIDENTAL YARDS	R. NEELEY
09/09/96	1705	210	NE	ERCS ERECTING TENT FOR THE REST/BREAK AREA	R. NEELEY
09/10/96	1055	211	w	ERCS EXCAVATING VACANT LOT	R. NEELEY
09/10/96	1410	212	SE	ERCS EXCAVATING VACANT LOT	R. NEELEY
09/10/96	1411	213	SE	ERCS EXCAVATING VACANT LOT	R. NEELEY
09/10/96	1413	214	SW	ERCS SPREADING CLEAN FILL SOIL ON RESIDENTAL YARD	R. NEELEY
09/10/96	1415	215	SW	ERCS SPREADING CLEAN FILL SOIL OVER RESIDENTAL YARD	R. NEELEY
09/11/96	1000	216	W	ERCS EXCAVATING CONTAMINATED SOIL FROM VACANT LOT	R. NEELEY
09/11/96	1000	217	W	ERCS EXCAVATING CONTAMINATED SOIL FROM VACANT LOT	R. NEELEY
09/11/96	1001	218	W	ERCS BUILDING STOCKPILE OF CONTAMINATED SOIL IN CENTER OF VACANT LOT	R. NEELEY

PHOTOGRAPH TRACKING SYSTEM
START REGION 6

DATE	TIME	PHOTO #	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
09/11/96	1015	219	W	ERCS EXCAVATING CONTAMINATED SOIL ADJACENT TO AUTOBODY REPAIR BUILDING ON NORTH SIDE OF VACANT LOT	R. NEELEY
09/13/96	0845	220	NE	ERCS EXCAVATING CONTAMINATED SOIL AT FORMER KITE SHOP (NOW CLINTON COMMUNICATIONS) AREA	R. NEELEY
09/13/96	0848	221	SW	PAN 1 - ERCS EXCAVATING CONTAMINATED SOIL AT FORMER KITE SHOP	R. NEELEY
09/13/96	0848	222	SW	PAN 2 - ERCS EXCAVATING CONTAMINATED SOIL AT FORMER KITE SHOP	R. NEELEY
09/13/96	1450	223	SE	ERCS LAYING SOD OVER CLEAN FILL DIRT AT WELLS' RESIDENCE	R. NEELEY
09/13/96	1452	224	SE	ERCS LAYING SOD OVER CLEAN FILL DIRT AT WELLS' RESEDENCE	R. NEELEY
09/13/96	1453	225	E	CONTAMINATED SOIL STOCKPILE AT VACANT LOT	R. NEELEY
09/13/96	1455	226	NE	KITE SHOP EXCAVATION AREA AND CONTAMINATED SOIL STOCKPILE COVERED WITH VISQUEEN	R. NEELEY
09/17/96	1100	301	NE	EPA WORKER USING GERMANIUM AND GAMMA DETECTOR (PIC) INSTRUMENTS TO OBTAIN IN SITU GAMMA-RAY SPECTOMETRY FOR THE MEASUREMENT OF RADIUM 226 IN SOIL OF FORMER KITE SHOP.	R. NEELEY
09/18/96	1010	302	NW	EPA WORKER USING GERMANIUM AND GAMMA DETECTOR (PIC) INSTRUMENTS TO OBTAIN IN SITU GAMMA-RAY SPECTOMETRY FOR THE MEASUREMENT OF RADIUM 226 IN SOIL OF VACANT LOT	R. NEELEY
09/18/96	1012	303	SW	EPA WORKERS USING INSTRUMENTS TO COLLECT INSITU MEASUREMENTS OF RADUIM 226 IN SOIL OF VACANT LOT	R. NEELEY
09/18/96	1330	304	S	EPA WORKERS USING INSTRUMENTS TO COLLECT MEASUREMENTS OF RADIUM 226 IN SOIL OF VACANT LOT	R. NEELEY
09/19/96	1430	305	S	FIRE DEPARTMENT AND GAS COMPANY WOEKERS ON-SITE TO FIX GAS LINE LEAK	R. NEELEY
09/19/96	1515	306	W	FIRE DEPARTMENT AND GAS COMPANY WORKERS ON-SITE TO REPAIR GAS LINE LEAK	R. NEELEY
09/20/96		307		MISS SHOT	R. NEELEY
09/20/96	0955	308	D	AIRCRAFT INSTRUMENT DIAL FOUND IN VACANT LOT LOCATION OF FORMER SOONER DIAL	R. NEELEY
09/20/96	0956	309	W	HOPPER FOR LOADING CONTAMINATED SOIL IN STOCKPILE INTO 1.4cu. yd. SUPERSACKS	R. NEELEY
09/20/96	0957	310	NW	EPA WORKERS USING INSTRUMENTS TO COLLECT MEASUREMENTS OF RADUIM 226 IN SOIL OF VACANT LOT	R. NEELEY

PHOTOGRAPH TRACKING SYSTEM
START REGION 6

DATE	TIME	PHOTO #	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
09/20/96	0958	311		UNKNOWN MATERIAL FOUND IN VACANT LOT SHOWING A LUDLUM READING OF 150 mR/hr	R. NEELEY
09/20/96	1115	312	W	ERCS USING TRACKHOE TO EXCAVATE ALLEY BEHIND VACANT LOT	R. NEELEY
09/20/96	1350	313	N	ERCS PULLING CABLE TV POLE FROM GROUND TO EXCAVATE SOIL AROUND IT	R. NEELEY
09/20/96	1350	314	N	ERCS USING TRACKHOE TO REMOVE CABLE TV POLE	R. NEELEY
09/20/96	1351	315	N	ERCS USING TRACKHOE TO REMOVE CABLE TV POLE	R. NEELEY
09/20/96	1359	316	S	ERCS LOCATING WATER AND GAS LINES BEFORE EXCAVATION OF CONTAMINATED SOIL	R. NEELEY
09/23/96	1432	317	W	ERCS HAND DIGGING TO REMOVE RADIUM 226 CONTAMINATED SOIL AROUND GAS METER	R. NEELEY
09/23/96	1433	318	W	ERCS COLLECTING A COMPOSITE SAMPLE OF STOCKPILE CONTAMINATED SOIL FOR A DISPOSAL PROFILE	R. NEELEY
09/23/96	1435	319	W	ERCS COLLECTING A COMPOSITE SAMPLE OF CONTAMINATED STOCKPILE SOIL FOR A DISPOSAL PROFILE	R. NEELEY
09/23/96	1530	320	W	ERCS UNLOADING A DELIVERY OF SUPERSACKS	R. NEELEY
09/23/96	1530	321	W	ERCS STAGING PALLETS OF 1.4cu.yd. SUPERSACKS ON-SITE	R. NEELEY
09/25/96	1400	322	NW	SOD AND BACKFILL NEARLY COMPLETED AT FORMER KITE SHOP AREA	R. NEELEY
09/25/96	1415	323	SW	ERCS ATTACHING SHEET METAL FUNNEL TO HOPPER TO FACILITATE THE FILLING OF SUPERSACKS WITH STOCKPILE SOIL.	R. NEELEY
09/25/96	1420	324	NW	BALES OF HAY USED TO FILTER SEDIMENT FROM WATER MIGRATING OFF-SITE	R. NEELEY
09/26/96	1040	401	W	ERCS LOADING SUPERSACKS WITH STOCKPILE SOIL	R. NEELEY
09/26/96	1042	402	W	ERCS LOADING STOCKPILE SOIL INTO SUPERSACKS	R. NEELEY
09/26/96	1044	403	W	ERCS LOADING STOCKPILE SOIL INTO SUPERSACKS	R. NEELEY
09/26/96	1046	404	SE	ERCS STAGING FILLED SUPERSACKS FOR TRANSPORTATION AND DISPOSAL	R. NEELEY
10/01/96	0927	406	S	ERCS PREPARING SUPERSACK FOR THE LOADING OF SOIL	R. NEELEY
10/01/96	0927	407	W	ERCS FILLING SUPERSACK WITH STOCKPILE SOIL	R. NEELEY
10/01/96	0928	408	SW	ERCS STAGING FILLED SUPERSACKS IN STORAGE AREA FOR TRANSPORTATION AND DISPOSAL	R. NEELEY
10/01/96	0930	409	S	PAN 1 - ERCS FILLING AND STAGING SUPERSCKS	R. NEELEY

PHOTOGRAPH TRACKING SYSTEM
START REGION 6

DATE	TIME	PHOTO #	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
10/01/96	0930	410	SSW	PAN 2 - ERCS FILLING AND STAGING SUPERSACKS	R. NEELEY
10/01/96	0930	411	SW	PAN 3 - ERCS FILLING AND STAGING SUPERSACKS	R. NEELEY
10/01/96	0930	412	SW	PAN 4 - ERCS FILLING AND STAGING SUPERSACKS	R. NEELEY
10/03/96	1045	414	SE	ERCS LOADING SUPERSACK WITH STOCKPILE SOIL	R. NEELEY
10/03/96	1046	415	S	EXCAVATED ALLEY BEHIND AUTOBODY SHOP AND VACANT LOT	R. NEELEY
10/03/96	1047	416	SE	ERCS LOADING SUPERSACKS WITH CONTAMINATED SOIL	R. NEELEY
10/03/96	1048	417	SE	ERCS LOADING SUPERSACKS WITH CONTAMINATED SOIL	R. NEELEY
10/03/96	1053	418	SW	PAN 1 - STAGING AREA OF SUPERSACKS	R. NEELEY
10/03/96	1053	419	SW	PAN 2 - STAGING AREA FOR SUPERSACKS	R. NEELEY
10/03/96	1420	420	NE	ERCS LOADING STOCKPILE SOIL FROM KITE SHOP INTO PICKUP FOR TRANSPORT TO STOCKPILE IN VACANT LOT	R. NEELEY
10/03/96	1645	421	S	ERCS SPREADING CLEAN FILL DIRT IN ALLEY BEHIND AUTOBODY SHOP	R. NEELEY
10/03/96	1646	422	S	ERCS SPREADING CLEAN FILL DIRT IN ALLEY BEHIND AUTOBODY SHOP	R. NEELEY
10/07/96	1415	423	SW	ERCS DECONNING TRACKHOE AND FORKLIFT	R. NEELEY
10/07/96	1416	424	S	ERCS SPREADING CLEAN BACKFILL SOIL IN ALLEY BEHIND AUTOBODY SHOP AND VACANT LOT	R. NEELEY
10/07/96	1417	425	SE	ERCS DECONNING BACKHOE	R. NEELEY
10/07/96	1418	426	SW	PILES OF CLEAN BACKFILL SOIL TO BE SPREAD OVER VACANT LOT	R. NEELEY
10/08/96		501	SW	ERCS SPREADING CLEAN SOIL OVER VACANT LOT	R. NEELEY
10/08/96		502	SW	ERCS SPREADING CLEAN SOIL OVER VACANT LOT	R. NEELEY
10/09/96		503	SW	CEMENT CONTRACTORS PREPARING AREA BEHIND AUTOBODY SHOP TO BUILD FRAME FOR CEMENT	R. NEELEY
10/09/96	1010	504	SW	PAN 1 - VIEW OF SITE	R. NEELEY
10/09/96	1010	505	SW	PAN 2 - VIEW OF SITE	R. NEELEY
10/09/96	1400	506	SW	WORKERS SMOOTHING POURED CONCRETE	R. NEELEY

PHOTOGRAPH TRACKING SYSTEM
START REGION 6

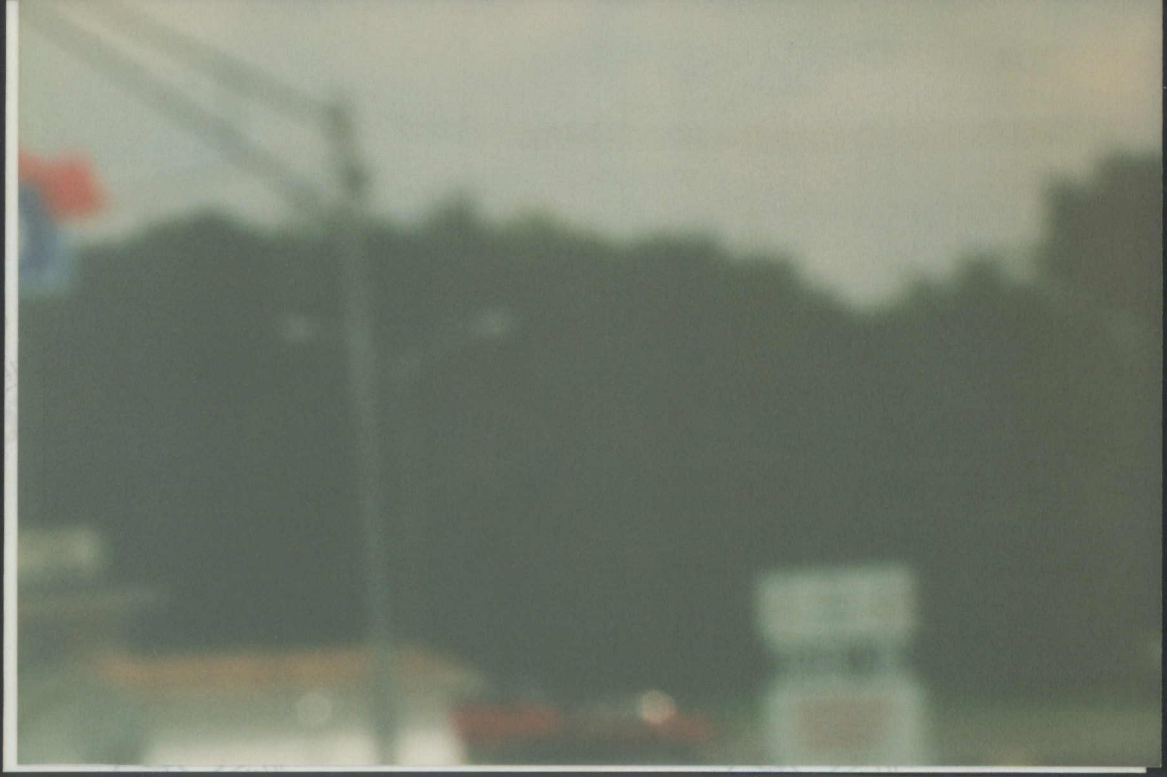
DATE	TIME	PHOTO #	DIRECTION	COMMENTS	PHOTOGRAPHER\WITNESS
10/09/96	1402	507	SW	WORKERS SMOOTH POURED CONCRETE	R. NEELEY
10/09/96	1402	508	D	WORKERS FILL HOLE IN AUTOBODY SHOP FLOOR WITH CONCRETE	R. NEELEY
10/10/96	0900	509	NW	TRUCK DELIVERING LOAD OF GRAVEL FOR ERCS TO SPREAD OVER ALLEY AND VACANT LOT	R. NEELEY
10/11/96	0740	510	NE	PAN 1 - VIEW OF COMPLETED SITE	R. NEELEY
10/10/96	0743	511	NE	PAN 2 - VIEW OF COMPLETED SITE	R. NEELEY
10/10/96	0744	512	NNE	PAN 3 - VIEW OF COMPLETED SITE	R. NEELEY
10/10/96	0746	513	SE	VIEW OF COMPLETED VACANT LOT COVERED WITH GRAVEL	R. NEELEY
10/10/96	0747	514	S	VIEW OF COMPLETED ALLEY/VACANT LOT COVERED WITH GRAVEL	R. NEELEY

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 101 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/05/96 TIME: 1030 DIRECTION: N
EPA COMMAND POST AT 909 S. 10TH STREET

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 102 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/05/96 TIME: 1430 DIRECTION: SW
ERCS CONSTRUCTING SAFETY FENCE AROUND VACANT LOT AREA

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 103 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/05/96 TIME: 1432 DIRECTION: S
ERCS CONSTRUCTING SAFETY FENCE AROUND VACANT LOT AREA

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 104 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/05/96 TIME: 1434 DIRECTION: S
PAN 1 - VACANT LOT AREA



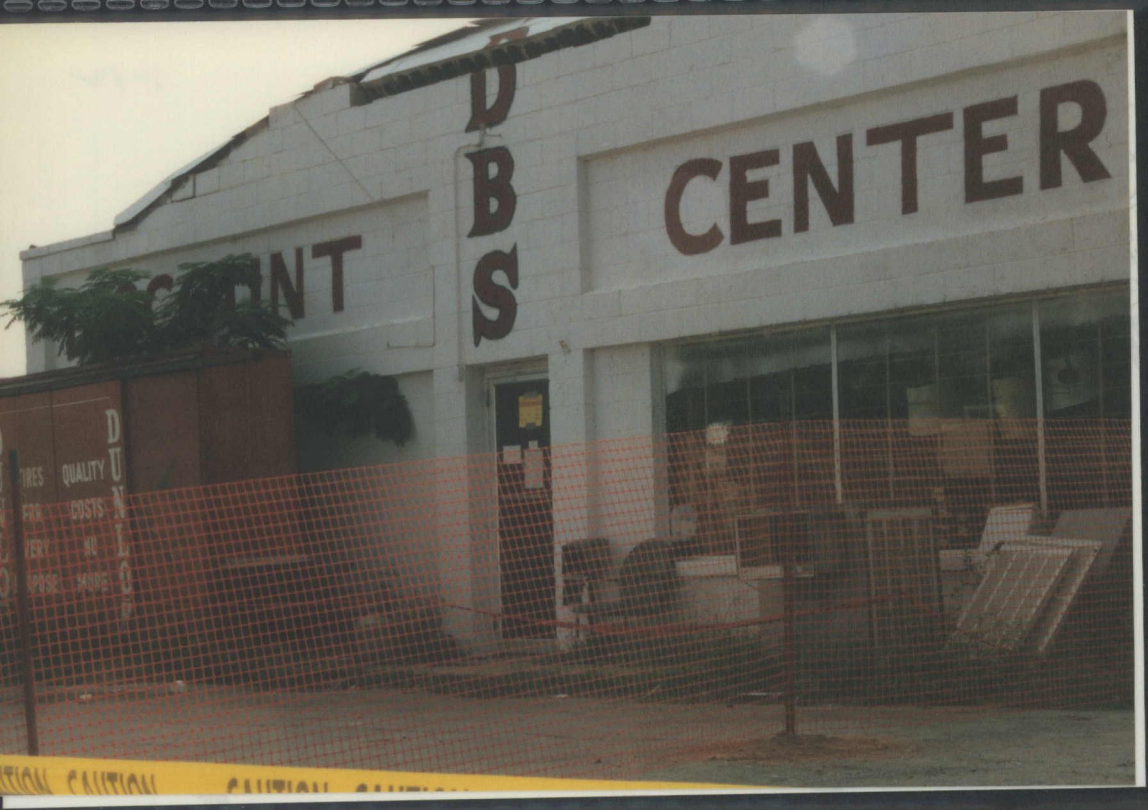
SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 107 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/05/96 TIME: DIRECTION:
MISS SHOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 108 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/05/96 TIME: 1436 DIRECTION: NE
EPA COMMAND POST AS SEEN FROM VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 109 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/06/96 TIME: 1730 DIRECTION: NW
VACANT LOT AREA, AREA BETWEEN YELLOW AND RED BANNER TAPE IS THE CONTAMINATION REDUCTION ZONE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 110 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/06/96 TIME: 1735 DIRECTION: S
VACANT LOT AREA. ERCS HAVE CUT THE WEEDS AND GRASS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 111 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/06/96 TIME: 1737 DIRECTION: SE
TELEVISION CHANNEL 4 NEW CREW ON-SITE FROM OKLAHOMA CITY



SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 112 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/06/96 TIME: 1738 DIRECTION: SW
CONDEMMED BUILDING ADJACENT TO THE VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 113 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 0912 DIRECTION: E
MINIEXCAVATOR REMOVING CONTAMINATED SOIL FROM THE WELLS' BACK YARD

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 114 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 0914 DIRECTION: SE
EXCAVATED YARD OF RENTAL PROPERTY SOUTH OF WELLS' RESIDENCE

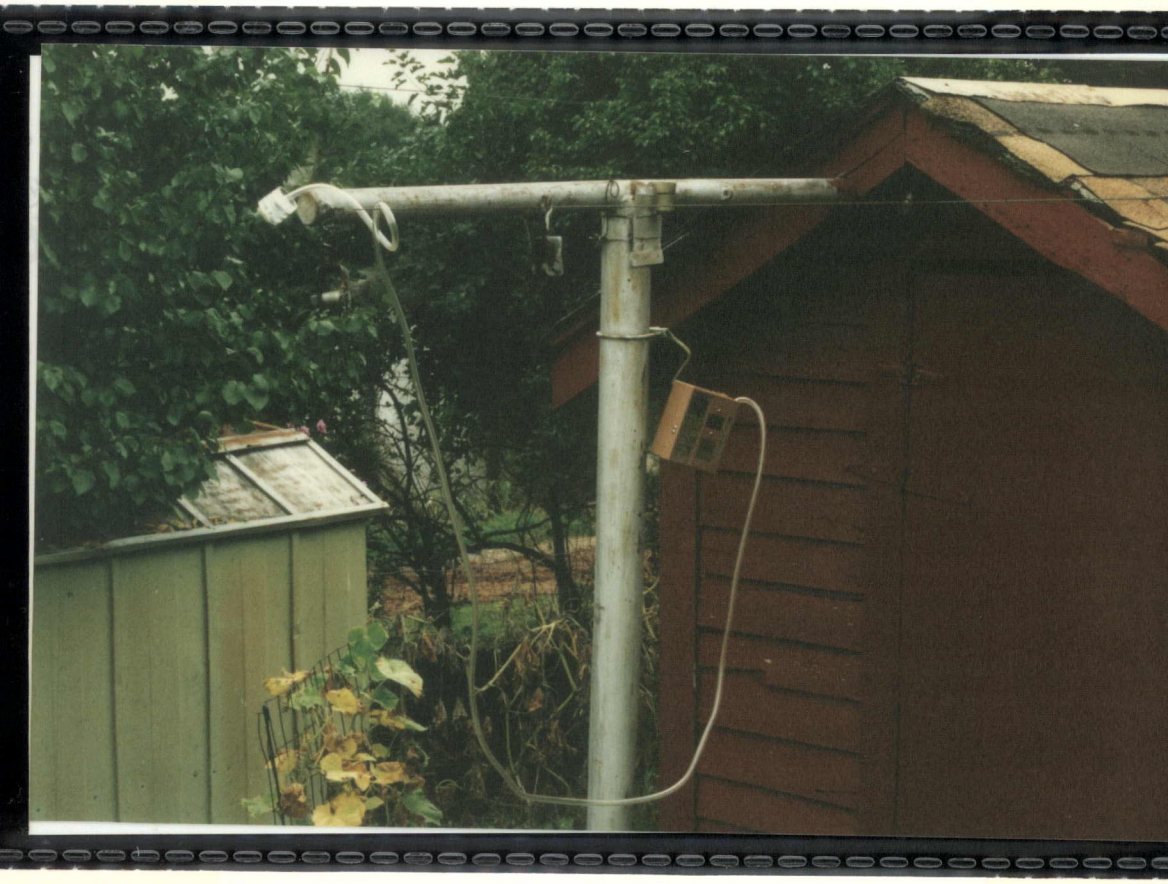
SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 115 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 0915 DIRECTION: E
MINIEXCAVATOR REMOVING CONTAMINATED SOIL FROM WELLS' BACK YARD

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 116 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 0916 DIRECTION: SE
STOCKPILE OF CONTAMINATED SOIL FROM RESIDENTAL YARDS IN MIDDLE OF VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 117 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 0918 DIRECTION: W
CONTAMINATED SOIL STOCKPILE IN VACANT LOT AND
DECONTAMINATION AREA IN FOREGROUND

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 118 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1115 DIRECTION: E
ERCS EXCAVATING CONTAMINATED SOIL FROM WELLS' BACK YARD

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 119 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1116 DIRECTION: E
ERCS EXCAVATING RESIDENTAL YARD



SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 120 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1116 DIRECTION: SE
SKC AIR SAMPLE PUMP AND FILTER TO MONITOR AIR DURING EXCAVATION ACTIVITIES

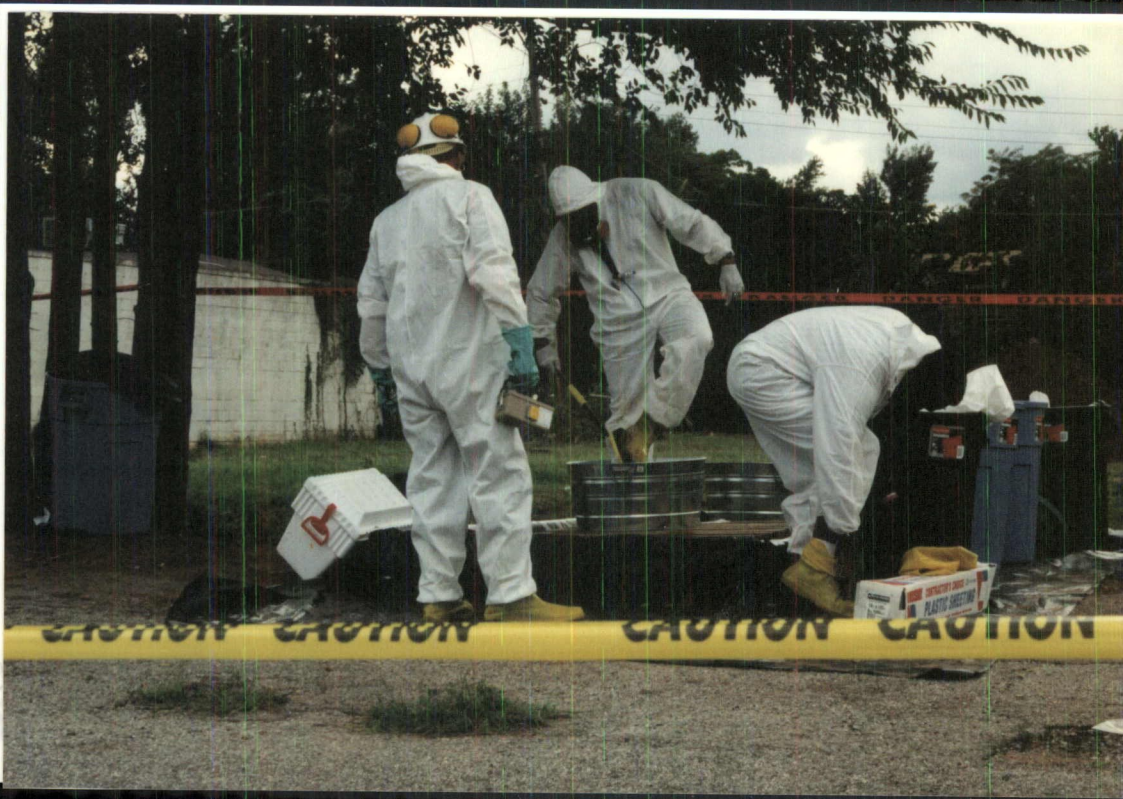
SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 121 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1118 DIRECTION: W
CONTAMINATED SOIL FROM RESIDENTAL YARDS STOCKPILED IN VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 122 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1120 DIRECTION: W
ERCS BRINGING CONTAMINATED SOIL FROM RESIDENTAL YARDS TO STOCKPILE IN VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 123 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1122 DIRECTION: SW
DECONTAMINATION AREA AND CONTAMINATION REDUCTION ZONE ADJACENT TO VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 124 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1125 DIRECTION: NE
VIEW OF EPA COMMAND POST (909 S. 10TH ST) AS SEEN FROM VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 201 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1730 DIRECTION: w
ERCS PERFORMING DECONTAMINATION PROCEEDURES



SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 202 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1731 DIRECTION: W
ERCS PERFORMING DECONTAMINATION PROCEEDURES

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 203 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1731 DIRECTION: W
ERCS PERFORMING DECONTAMINATION PROCEEDURES

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 204 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/07/96 TIME: 1733 DIRECTION: W
ERCS PERFORMING DECONTAMINATION PROCEEDURES

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 205 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/09/96 TIME: 1700 DIRECTION: D
ERCS CHECKING WATER MAIN AT NW CORNER OF VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 206 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/09/96 TIME: 1702 DIRECTION: SE
CONTAMINATED SOIL STOCKPILE IN VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 207 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/09/96 TIME: 1702 DIRECTION: SE
ERCS BACKFILLING CLEAN SOIL ONTO RESIDENTAL YARDS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 208 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/09/96 TIME: 1703 DIRECTION: SE
ERCS USE BACKFILL SOIL TO COVER RESIDENTAL YARDS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 209 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/09/96 TIME: 1705 DIRECTION: SW
ERCS SPREADING CLEAN BACKFILL ON RESIDENTAL YARDS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 210 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/09/96 TIME: 1705 DIRECTION: NE
ERCS ERECTING TENT FOR THE REST/BREAK AREA

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 211 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/10/96 TIME: 1055 DIRECTION: w
ERCS EXCAVATING VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 212 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/10/96 TIME: 1410 DIRECTION: SE
ERCS EXCAVATING VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 213 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/10/96 TIME: 1411 DIRECTION: SE
ERCS EXCAVATING VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 214 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/10/96 TIME: 1413 DIRECTION: SW
ERCS SPREADING CLEAN FILL SOIL ON RESIDENTAL YARD

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 215 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/10/96 TIME: 1415 DIRECTION: SW
ERCS SPREADING CLEAN FILL SOIL OVER RESIDENTAL YARD

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 216 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/11/96 TIME: 1000 DIRECTION: W
ERCS EXCAVATING CONTAMINATED SOIL FROM VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 217 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/11/96 TIME: 1000 DIRECTION: W
ERCS EXCAVATING CONTAMINATED SOIL FROM VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 218 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/11/96 TIME: 1001 DIRECTION: W
ERCS BUILDING STOCKPILE OF CONTAMINATED SOIL IN CENTER OF VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 219 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/11/96 TIME: 1015 DIRECTION: W
ERCS EXCAVATING CONTAMINATED SOIL ADJACENT TO AUTOBODY REPAIR BUILDING ON NORTH SIDE OF VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 220 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/13/96 TIME: 0845 DIRECTION: NE
ERCS EXCAVATING CONTAMINATED SOIL AT FORMER KITE SHOP (NOW CLINTON COMMUNICATIONS) AREA

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 221 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/13/96 TIME: 0848 DIRECTION: SW
PAN 1 - ERCS EXCAVATING CONTAMINATED SOIL AT FORMER KITE SHOP

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 222 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/13/96 TIME: 0848 DIRECTION: SW
PAN 2 - ERCS EXCAVATING CONTAMINATED SOIL AT FORMER KITE SHOP

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 223 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/13/96 TIME: 1450 DIRECTION: SE
ERCS LAYING SOD OVER CLEAN FILL DIRT AT WELLS' RESIDENCE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 224 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/13/96 TIME: 1452 DIRECTION: SE
ERCS LAYING SOD OVER CLEAN FILL DIRT AT WELLS' RESEDENCE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 225 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/13/96 TIME: 1453 DIRECTION: E
CONTAMINATED SOIL STOCKPILE AT VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 226 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/13/96 TIME: 1455 DIRECTION: NE
KITE SHOP EXCAVATION AREA AND CONTAMINATED SOIL
STOCKPILE COVERED WITH VISQUEEN

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 301 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/17/96 TIME: 1100 DIRECTION: NE
EPA WORKER USING GERMANIUM AND GAMMA DETECTOR (PIC) INSTRUMENTS TO OBTAIN IN SITU GAMMA-RAY SPECTOMETRY FOR THE MEASUREMENT OF RADIUM 226 IN SOIL OF FORMER KITE

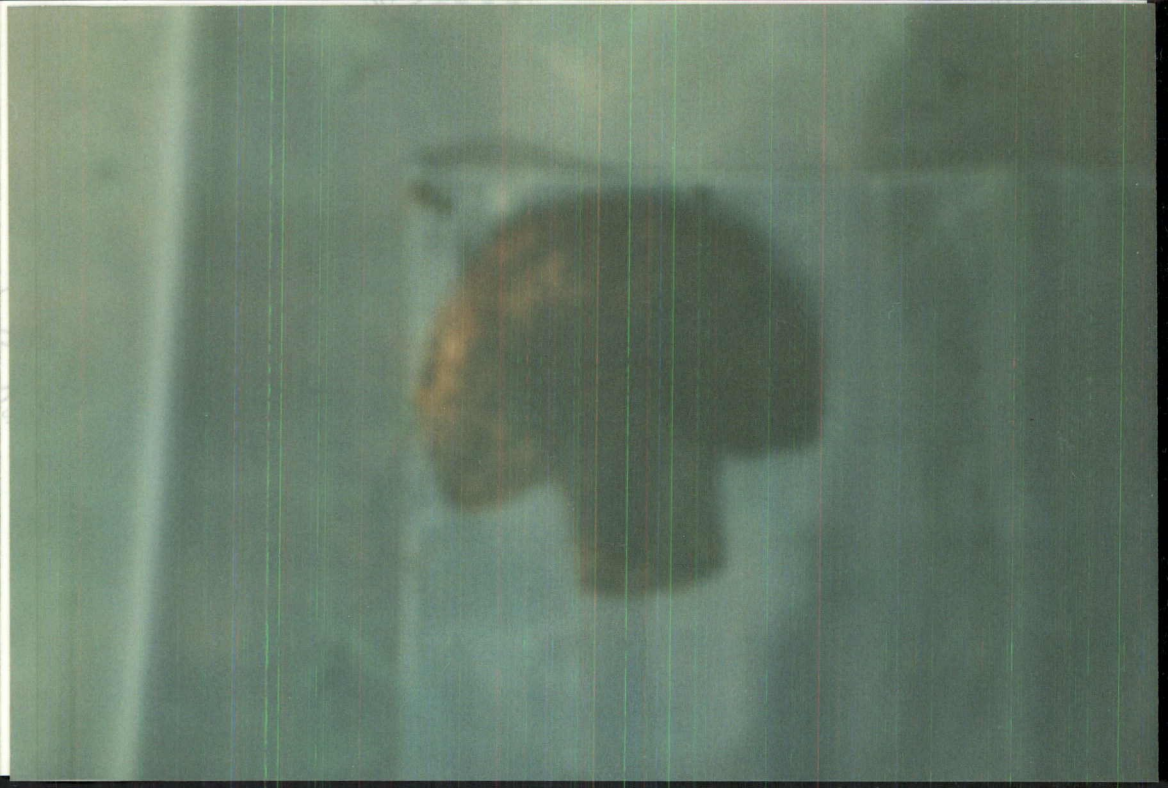
SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 302 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/18/96 TIME: 1010 DIRECTION: NW
EPA WORKER USING GERMANIUM AND GAMMA DETECTOR (PIC) INSTRUMENTS TO OBTAIN IN SITU GAMMA-RAY SPECTOMETRY FOR THE MEASUREMENT OF RADIUM 226 IN SOIL OF VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 303 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/18/96 TIME: 1012 DIRECTION: SW
EPA WORKERS USING INSTRUMENTS TO COLLECT INSITU
MEASUREMENTS OF RADUIM 226 IN SOIL OF VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 304 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/18/96 TIME: 1330 DIRECTION: S
EPA WORKERS USING INSTRUMENTS TO COLLECT
MEASUREMENTS OF RADIUM 226 IN SOIL OF VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 305 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/19/96 TIME: 1430 DIRECTION: S
FIRE DEPARTMENT AND GAS COMPANY WOEKERS ON-SITE TO FIX GAS LINE LEAK

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 306 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/19/96 TIME: 1515 DIRECTION: W
FIRE DEPARTMENT AND GAS COMPANY WORKERS ON-SITE TO REPAIR GAS LINE LEAK



SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 307 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: DIRECTION:
MISS SHOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 308 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: 0955 DIRECTION: D
AIRCRAFT INSTRUMENT DIAL FOUND IN VACANT LOT LOCATION OF FORMER SOONER DIAL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 309 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: 0956 DIRECTION: W
HOPPER FOR LOADING CONTAMINATED SOIL IN STOCKPILE INTO 1.4cu. yd. SUPERSACKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 310 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: 0957 DIRECTION: NW
EPA WORKERS USING INSTRUMENTS TO COLLECT MEASUREMENTS OF RADUIM 226 IN SOIL OF VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 311 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: 0958 DIRECTION:
UNKNOWN MATERIAL FOUND IN VACANT LOT SHOWING A LUDLUM READING OF 150 mR/hr

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 312 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: 1115 DIRECTION: W
ERCS USING TRACKHOE TO EXCAVATE ALLEY BEHIND VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 313 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: 1350 DIRECTION: N
ERCS PULLING CABLE TV POLE FROM GROUND TO EXCAVATE SOIL AROUND IT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 314 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: 1350 DIRECTION: N
ERCS USING TRACKHOE TO REMOVE CABLE TV POLE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 315 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: 1351 DIRECTION: N
ERCS USING TRACKHOE TO REMOVE CABLE TV POLE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 316 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/20/96 TIME: 1359 DIRECTION: S
ERCS LOCATING WATER AND GAS LINES BEFORE EXCAVATION OF CONTAMINATED SOIL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 317 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/23/96 TIME: 1432 DIRECTION: W
ERCS HAND DIGGING TO REMOVE RADIUM 226 CONTAMINATED SOIL AROUND GAS METER

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 318 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/23/96 TIME: 1433 DIRECTION: W
ERCS COLLECTING A COMPOSITE SAMPLE OF STOCKPILE CONTAMINATED SOIL FOR A DISPOSAL PROFILE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 319 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/23/96 TIME: 1435 DIRECTION: W
ERCS COLLECTING A COMPOSITE SAMPLE OF CONTAMINATED STOCKPILE SOIL FOR A DISPOSAL PROFILE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 320 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/23/96 TIME: 1530 DIRECTION: W
ERCS UNLOADING A DELIVERY OF SUPERSACKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 321 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/23/96 TIME: 1530 DIRECTION: W
ERCS STAGING PALLETS OF 1.4cu.yd. SUPERSACKS ON-SITE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 322 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/25/96 TIME: 1400 DIRECTION: NW
SOD AND BACKFILL NEARLY COMPLETED AT FORMER KITE SHOP AREA

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 323 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/25/96 TIME: 1415 DIRECTION: SW
ERCS ATTACHING SHEET METAL FUNNEL TO HOPPER TO FACILITATE THE FILLING OF SUPERSACKS WITH STOCKPILE SOIL.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 324 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/25/96 TIME: 1420 DIRECTION: NW
BALES OF HAY USED TO FILTER SEDIMENT FROM WATER MIGRATING OFF-SITE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 401 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/26/96 TIME: 1040 DIRECTION: W
ERCS LOADING SUPERSACKS WITH STOCKPILE SOIL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 402 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/26/96 TIME: 1042 DIRECTION: W
ERCS LOADING STOCKPILE SOIL INTO SUPERSACKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 403 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/26/96 TIME: 1044 DIRECTION: W
ERCS LOADING STOCKPILE SOIL INTO SUPERSACKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 404 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 09/26/96 TIME: 1046 DIRECTION: SE
ERCS STAGING FILLED SUPERSACKS FOR TRANSPORTATION AND DISPOSAL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 406 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/01/96 TIME: 0927 DIRECTION: S
ERCS PREPARING SUPERSACK FOR THE LOADING OF SOIL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 407 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/01/96 TIME: 0927 DIRECTION: W
ERCS FILLING SUPERSACK WITH STOCKPILE SOIL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 408 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/01/96 TIME: 0928 DIRECTION: SW
ERCS STAGING FILLED SUPERSACKS IN STORAGE AREA FOR TRANSPORTATION AND DISPOSAL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 409 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/01/96 TIME: 0930 DIRECTION: S
PAN 1 - ERCS FILLING AND STAGING SUPERSCKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 410 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/01/96 TIME: 0930 DIRECTION: SSW
PAN 2 - ERCS FILLING AND STAGING SUPERSACKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 411 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/01/96 TIME: 0930 DIRECTION: SW
PAN 3 - ERCS FILLING AND STAGING SUPERSACKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 412 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/01/96 TIME: 0930 DIRECTION: SW
PAN 4 - ERCS FILLING AND STAGING SUPERSACKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 414 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/03/96 TIME: 1045 DIRECTION: SE
ERCS LOADING SUPERSACK WITH STOCKPILE SOIL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 415 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/03/96 TIME: 1046 DIRECTION: S
EXCAVATED ALLEY BEHIND AUTOBODY SHOP AND VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 416 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/03/96 TIME: 1047 DIRECTION: SE
ERCS LOADING SUPERSACKS WITH CONTAMINATED SOIL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 417 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/03/96 TIME: 1048 DIRECTION: SE
ERCS LOADING SUPERSACKS WITH CONTAMINATED SOIL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 418 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/03/96 TIME: 1053 DIRECTION: SW
PAN 1 - STAGING AREA OF SUPERSACKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 419 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/03/96 TIME: 1053 DIRECTION: SW
PAN 2 - STAGING AREA FOR SUPERSACKS

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 420 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/03/96 TIME: 1420 DIRECTION: NE
ERCS LOADING STOCKPILE SOIL FROM KITE SHOP INTO PICKUP
FOR TRANSPORT TO STOCKPILE IN VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 421 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/03/96 TIME: 1645 DIRECTION: S
ERCS SPREADING CLEAN FILL DIRT IN ALLEY BEHIND AUTOBODY SHOP

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 422 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/03/96 TIME: 1646 DIRECTION: S
ERCS SPREADING CLEAN FILL DIRT IN ALLEY BEHIND AUTOBODY SHOP

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 423 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/07/96 TIME: 1415 DIRECTION: SW
ERCS DECONNING TRACKHOE AND FORKLIFT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 424 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/07/96 TIME: 1416 DIRECTION: S
ERCS SPREADING CLEAN BACKFILL SOIL IN ALLEY BEHIND
AUTOBODY SHOP AND VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 425 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/07/96 TIME: 1417 DIRECTION: SE
ERCS DECONNING BACKHOE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 426 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/07/96 TIME: 1418 DIRECTION: SW
PILES OF CLEAN BACKFILL SOIL TO BE SPREAD OVER VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 501 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/08/96 TIME: DIRECTION: SW
ERCS SPREADING CLEAN SOIL OVER VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 502 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/08/96 TIME: DIRECTION: SW
ERCS SPREADING CLEAN SOIL OVER VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 503 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/09/96 TIME: DIRECTION: SW
CEMENT CONTRACTORS PREPARING AREA BEHIND AUTOBODY
SHOP TO BUILD FRAME FOR CEMENT

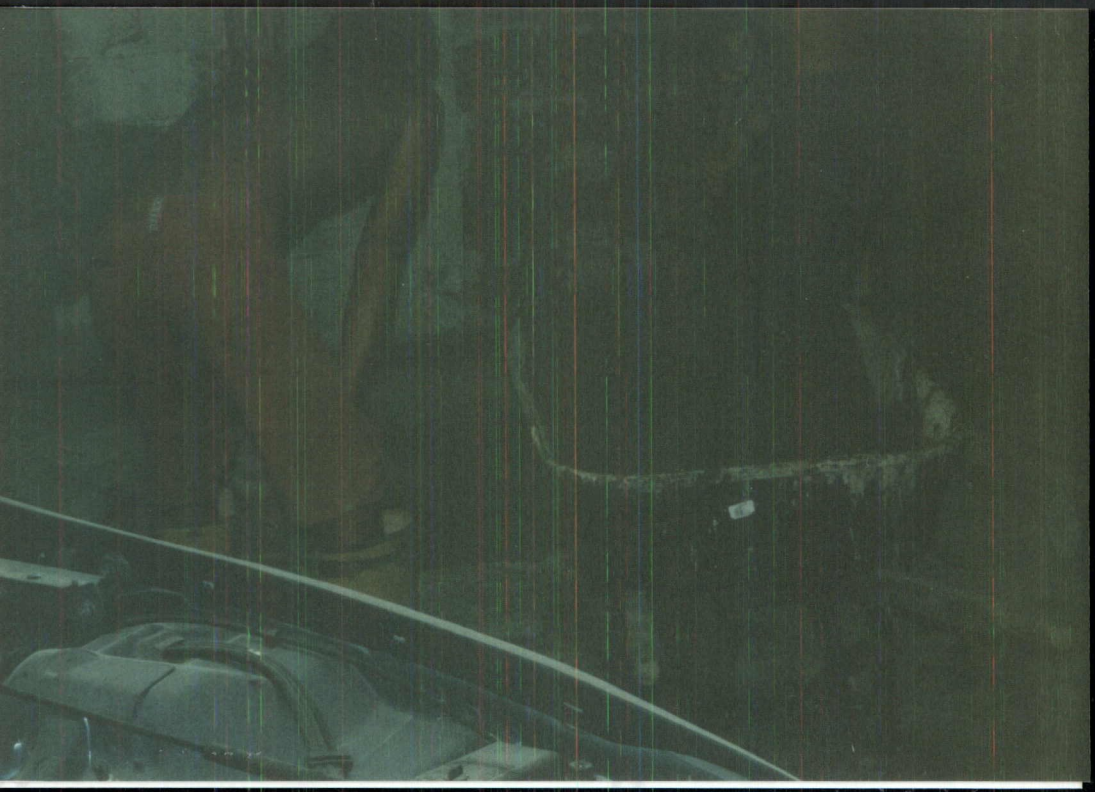
SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 504 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/09/96 TIME: 1010 DIRECTION: SW
PAN 1 - VIEW OF SITE

C-LINE #52964
4"x6" PRINTS

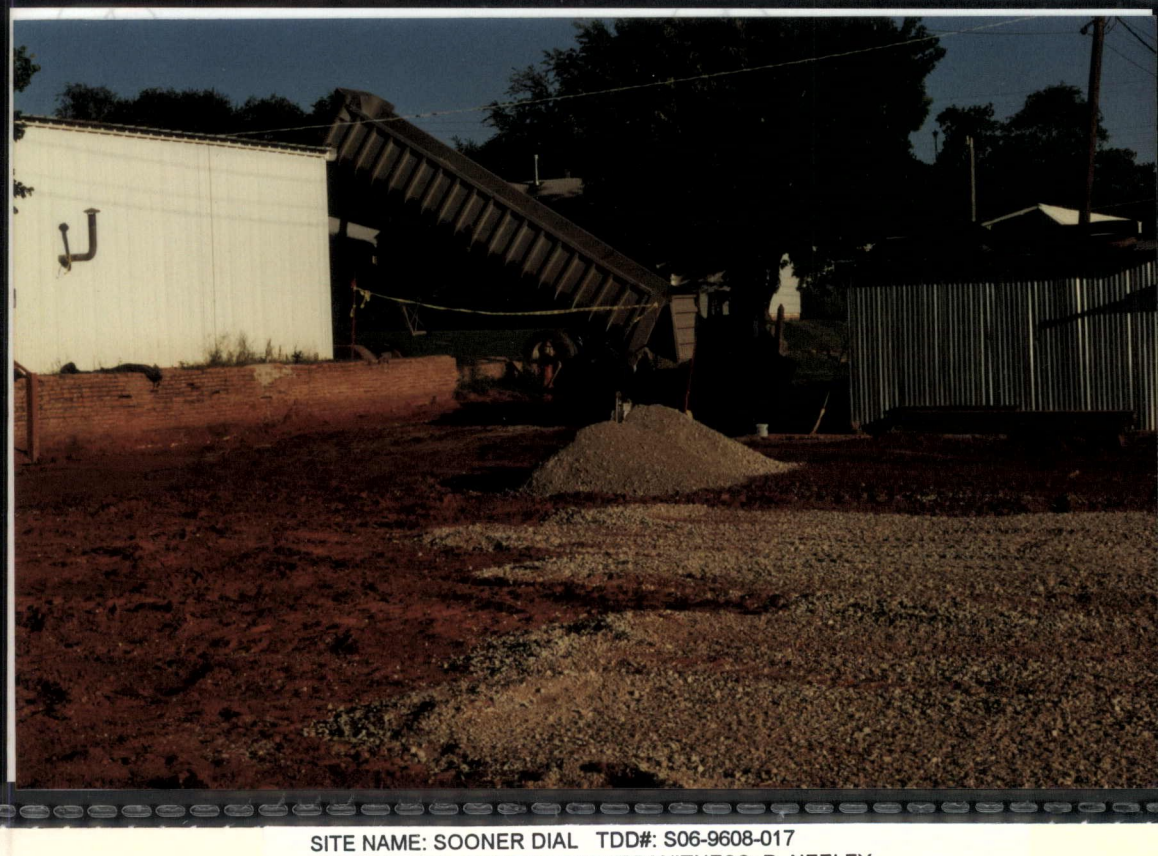
SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 505 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/09/96 TIME: 1010 DIRECTION: SW
PAN 2 - VIEW OF SITE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 506 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/09/96 TIME: 1400 DIRECTION: SW
WORKERS SMOOTHING POURED CONCRETE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 507 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/09/96 TIME: 1402 DIRECTION: SW
WORKERS SMOOTH POURED CONCRETE



SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 508 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/09/96 TIME: 1402 DIRECTION: D
WORKERS FILL HOLE IN AUTOBODY SHOP FLOOR WITH CONCRETE



SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 509 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/10/96 TIME: 0900 DIRECTION: NW
TRUCK DELIVERING LOAD OF GRAVEL FOR ERCS TO SPREAD OVER ALLEY AND VACANT LOT

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 510 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/11/96 TIME: 0740 DIRECTION: NE
PAN 1 - VIEW OF COMPLETED SITE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 511 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/10/96 TIME: 0743 DIRECTION: NE
PAN 2 - VIEW OF COMPLETED SITE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 512 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/10/96 TIME: 0744 DIRECTION: NNE
PAN 3 - VIEW OF COMPLETED SITE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 513 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/10/96 TIME: 0746 DIRECTION: SE
VIEW OF COMPLETED VACANT LOT COVERED WITH GRAVEL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 514 PHOTOGRAPHER/WITNESS: R. NEELEY
DATE: 10/10/96 TIME: 0747 DIRECTION: S
VIEW OF COMPLETED ALLEY/VACANT LOT COVERED WITH GRAVEL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 601 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE
DATE: 12/28/96 TIME: 1300 DIRECTION: NORTHWEST
PORTION OF BROKEN FENCE LOCATED IN THE SOUTHEAST CORNER OF THE BAGS (DISPOSAL) AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 602 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE
DATE: 12/28/96 TIME: 1301 DIRECTION: NORTHWEST
PORTION OF BROKEN FENCE LOCATED ALONG EASTERN PERIMETER OF THE DISPOSAL AREA AND ADJACENT TO THE STREET.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 603 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1302 DIRECTION: WEST
PORTION OF BROKEN FENCE AT THE NORTHEAST CORNER OF THE DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 604 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE
DATE: 12/28/96 TIME: 1303 DIRECTION: W-NW
PORTION OF BROKEN FENCE ALONG THE NORTHERN PERIMETER OF THE SITE.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 605 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1304 DIRECTION: EAST
PORTION OF BROKEN FENCE LOCATED AT THE NORTHWEST CORNER
OF THE DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 606 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE
DATE: 12/28/96 TIME: 1306 DIRECTION: EAST-SE
PORTION OF THE BROKEN FENCE ALONG THE WESTERN
PERIMETER OF THE DISPOSAL AREA. IT APPEARED THAT SOME OF
THE BAGS COULD BE MISSING.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 607 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1307 DIRECTION: SOUTH
COLLAPSED BUILDING LOCATED ADJCENT TO THE SOUTHWEST CORNER
OF THE DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 608 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE
DATE: 12/28/96 TIME: 1310 DIRECTION: SOUTHEAST
TRAILER AND PART OF THE COLLAPSED DISCOUNT CENTER .
TRAILER USED TO CARRY DEBRIS FROM COLLAPSED BUILDING.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 609 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1311 DIRECTION: EAST
PORTION OF BROKEN FENCE ALONG NORTHERN PERIMETER OF THE COLLAPSED BUILDING.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 610 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE
DATE: 12/28/96 TIME: 1312 DIRECTION: SOUTHEAST
VIEW OF MATERIAL WITHIN THE COLLAPSED DISCOUNT CENTER BUILDING.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 611 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1313 DIRECTION: SOUTHEAST
SAME AS PHOTO 610.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 612 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE
DATE: 12/28/96 TIME: 1314 DIRECTION: NORTHEAST
VIEW OF THE RIPPED BAG CONTAINING THE CONTAMINATED SOIL.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 613 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1315 DIRECTION: NORTH
PORTION OF BROKEN FENCE LOCATED ALONG SOUTHERN PERIMETER OF THE DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 614 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1446 DIRECTION: WEST-NW
FIXED FENCED LOCATED IN THE SOUTHEAST CORNER OF DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 615 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1447 DIRECTION: NORTHWEST
FIXED FENCE ALONG EASTERN PERIMETER OF THE DISPOSAL AREA.

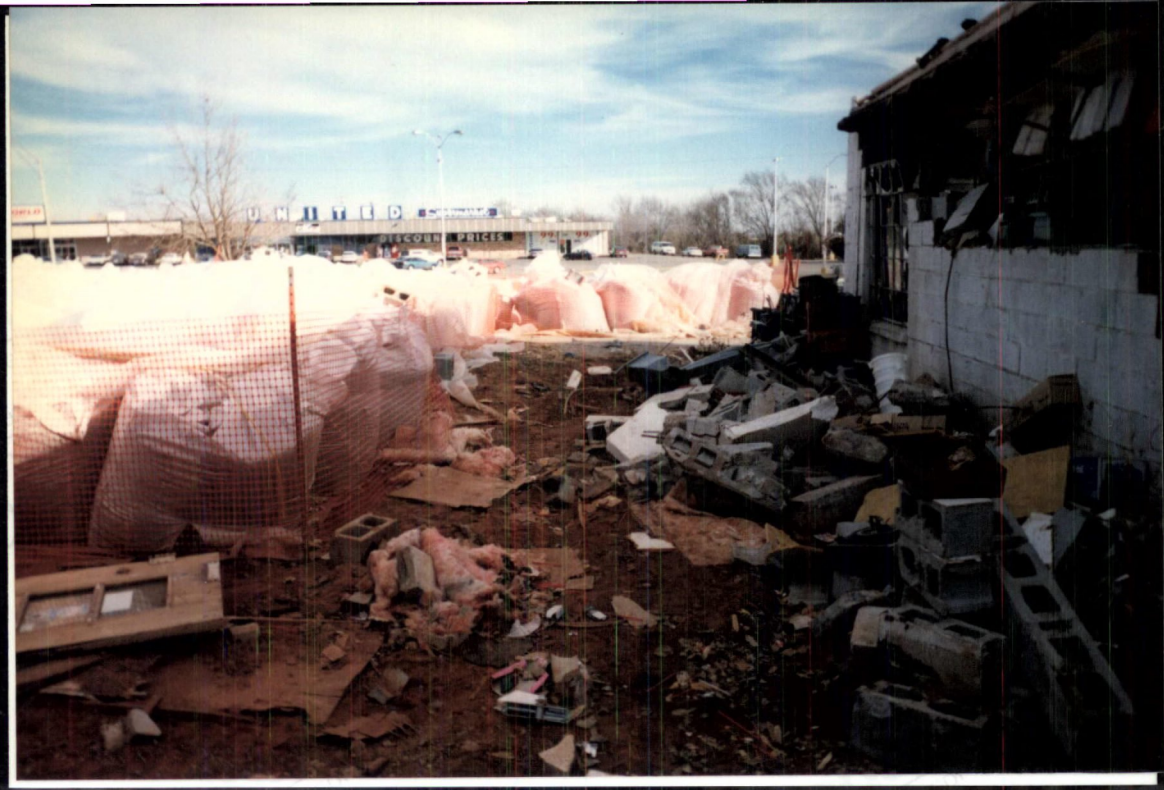
SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 616 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1448 DIRECTION: WEST-SW
FIXED FENCE LOCATED ALONG THE NORTHERN PERIMETER OF
THE DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 617 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1450 DIRECTION: EAST
FIXED FENCE ALONG THE NORTHWEST PERIMETER OF THE DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 618 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1451 DIRECTION: SOUTHEAST
FIXED FENCE ALONG THE WESTERN PERIMETER OF THE DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 619 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1452 DIRECTION: EAST-SE
COLLAPSED BUILDING AFTER FENCE HAD BEEN REMOVED.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 620 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE
DATE: 12/28/96 TIME: 1453 DIRECTION: NORTHEAST
FIXED FENCE ADJACENT TO RIPPED BAG.



SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 621 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1454 DIRECTION: EAST
FIXED FENCE ALONG SOUTHERN PERIMETER OF THE DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 622 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1455 DIRECTION: NORTHEAST
FIXED FENCE ALONG SOUTHEAST PERIMETER OF THE DISPOSAL AREA.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 623 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE
DATE: 12/28/96 TIME: 1456 DIRECTION: WEST
VIEW OF THE VISQUEEN PLACED ON TOP OF THE BAGS
CONTAINING THE CONTAMINATED SOIL.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 624 PHOTOGRAPHER/WITNESS: STEVE COWAN/MAXINE LaPIER
DATE: 12/28/96 TIME: 1457 DIRECTION: WEST
VIEW OF SOUTHERN PERIMETER OF THE DISPOSAL AREA.

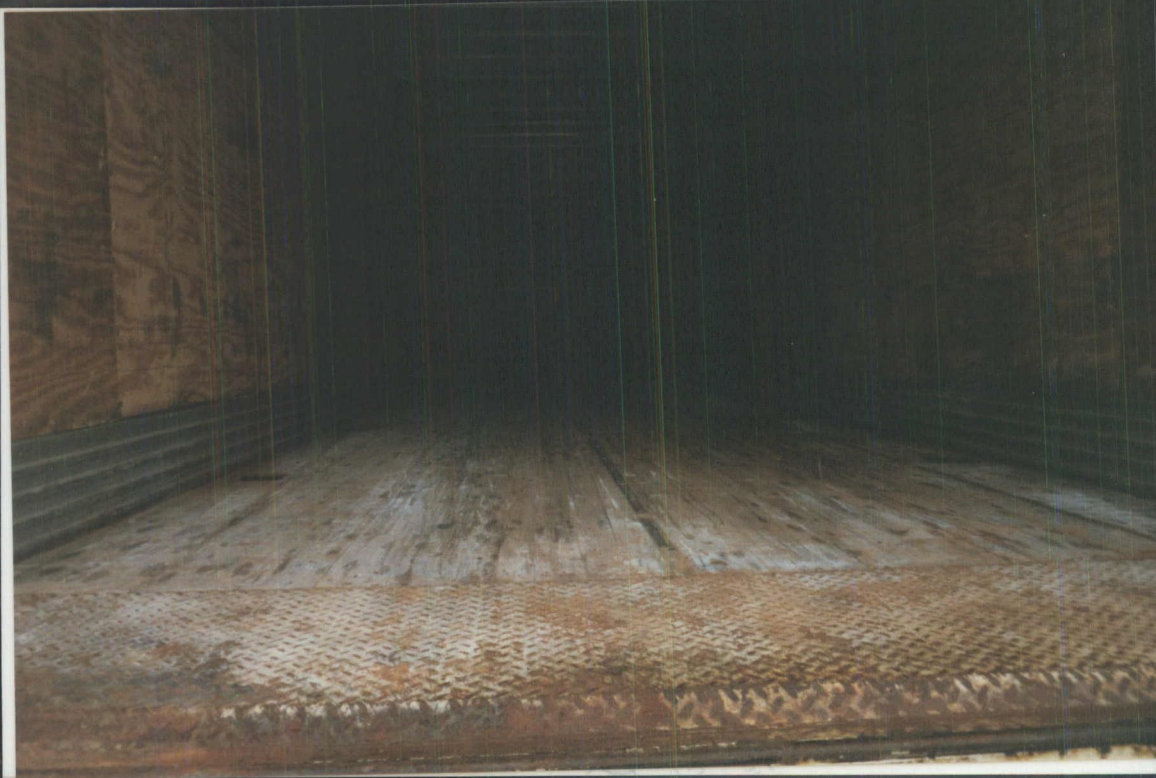
SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 701 PHOTOGRAPHER/WITNESS: PAT HAMMACK/MAXINE
DATE: 02/22/97 TIME: 1455 DIRECTION: SOUTHWEST
SITE WITH BAGS; ONE TRUCK WAITING ACROSS 10TH STREET

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 702 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 02/22/97 TIME: 1505 DIRECTION: SOUTHEAST
FORKLIFT LOADING ONE BAG OF WASTE ONTO TRUCK # 4

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 703 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 02/22/97 TIME: 1507 DIRECTION: SSE
CAB OF LANDSTAR RANGER TRUCK # 4

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 704 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 02/22/97 TIME: 1632 DIRECTION: NORTH
CAB OF LANDSTAR RANGER TRUCK # 5

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 705 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 02/23/97 TIME: 1405 DIRECTION: EAST
FORKLIFT LOADING BAG OF WASTE ONTO PALLET



SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 706 PHOTOGRAPHER/WITNESS: P HAMMACK/J LUO
DATE: 02/26/97 TIME: 0955 DIRECTION: EAST
FLOOR OF TRUCK # 17

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 707 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 02/26/97 TIME: 1104 DIRECTION: EAST
FLOOR OF TRUCK # 18

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 708 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 02/26/97 TIME: 1106 DIRECTION: WEST
START VAN AND JAMES LUO

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 709 PHOTOGRAPHER/WITNESS: P HAMMACK/J LUO
DATE: 02/26/97 TIME: 1225 DIRECTION: EAST
FLOOR OF TRUCK # 19

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 710 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 02/27/97 TIME: 0735 DIRECTION: NORTH
RADIATION EQUIPMENT IN PLASTIC BAGS IN MOTEL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 711 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 03/06/97 TIME: 1340 DIRECTION: NORTHWEST
VIEW OF REAR OF KITE SHOP WITH SOD

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 712 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 03/06/97 TIME: 1343 DIRECTION: WNW
REAR VIEW OF KITE SHOP

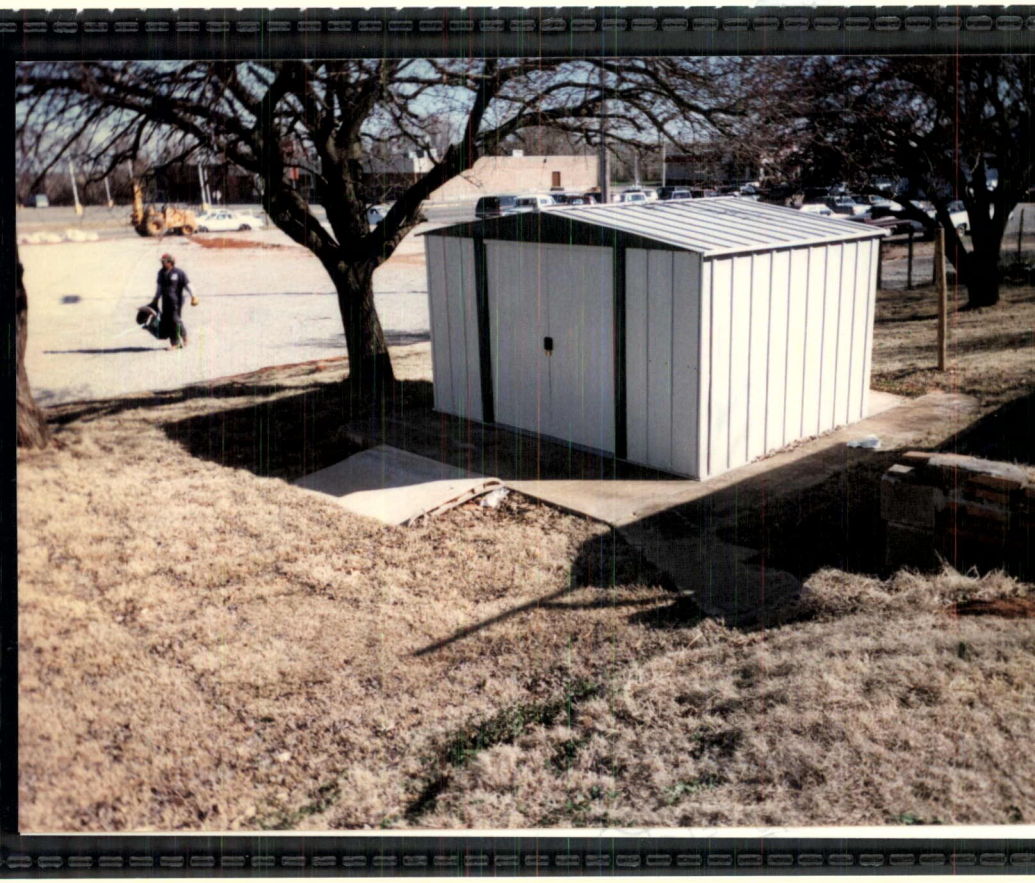
SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 713 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 03/06/97 TIME: 1353 DIRECTION: NORTHEAST
ROLL OFF CONTAINER

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 714 PHOTOGRAPHER/WITNESS: M LAPIERRE/J LUO
DATE: 03/06/97 TIME: 1358 DIRECTION: EAST
ROLL OFF CONTAINER AT FORMER LOCATION OF DISCOUNT CENTER

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 715 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/07/97 TIME: 1453 DIRECTION: EAST
DUMPSTER (ROLL OFF CONTAINER) BEING REMOVED

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 716 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/07/97 TIME: 1455 DIRECTION: NORTHEAST
10TH STREET SITE WITH GRAVEL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 717 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/07/97 TIME: 1533 DIRECTION: EAST
BACKYARD OF 1016 WILSON AVE. HOUSE



SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 718 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/07/97 TIME: 1534 DIRECTION: SOUTHEAST
BACKYARD, WITH SHED, OF 1016 WILSON AVE. HOME

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 719 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/07/97 TIME: 1537 DIRECTION: NORTH
BACKYARD OF 1005 CIRCLE DR. HOME

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 720 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/07/97 TIME: 1539 DIRECTION: EAST
BACKYARD OF 1005 CIRCLE DR.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 721 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/07/97 TIME: 1543 DIRECTION: NORTH
ALLEY SHOWING GRAVEL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 722 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/08/97 TIME: 1309 DIRECTION: SOUTH
ALLEY SHOWING GRAVEL

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 723 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/08/97 TIME: 1310 DIRECTION: EAST
GRADED SITE WITH GRAVEL; FINAL CONDITION

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 724 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/08/97 TIME: 1314 DIRECTION: SOUTHEAST
GRADED SITE AND FORMER DISCOUNT RETAILER LOCATION (FOUNDATION)

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 725 PHOTOGRAPHER/WITNESS: J LUO/M LAPIERRE
DATE: 03/08/97 TIME: 1316 DIRECTION: NORTHEAST
GRADED SITE AND AUTO REPAIR SHOP

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 726 PHOTOGRAPHER/WITNESS: M LAPIERRE
DATE: 03/09/97 TIME: 0858 DIRECTION: NORTHWEST
ERCS FORKLIFT, PALLET JACK, AND BULLDOZER BEING LEFT AT SITE

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 727 PHOTOGRAPHER/WITNESS: M LAPIERRE
DATE: 03/09/97 TIME: 0901 DIRECTION: NORTHEAST
NORTH PART OF PARKING AREA WHERE BAGS HAD BEEN STORED

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 728 PHOTOGRAPHER/WITNESS: M LAPIERRE
DATE: 03/09/97 TIME: 0903 DIRECTION: SOUTHEAST
SOUTH PART OF AREA WHERE BAGS HAD BEEN STORED

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 729 PHOTOGRAPHER/WITNESS: M LAPIERRE
DATE: 03/09/97 TIME: 0904 DIRECTION: WEST
VIEW OF SITE FROM 10TH ST.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 730 PHOTOGRAPHER/WITNESS: M LAPIERRE
DATE: 03/09/97 TIME: 0905 DIRECTION: NORTHWEST
VIEW OF SITE FROM 10TH ST.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 731 PHOTOGRAPHER/WITNESS: M LAPIERRE
DATE: 03/09/97 TIME: 0906 DIRECTION: SOUTHWEST
VIEW OF SITE FROM 10TH ST.

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 732 PHOTOGRAPHER/WITNESS: M LAPIERRE
DATE: 03/09/97 TIME: 0910 DIRECTION: WEST
BACK YARDS OF HOUSES

SITE NAME: SOONER DIAL TDD#: S06-9608-017
PHOTO#: 733 PHOTOGRAPHER/WITNESS: M LAPIERRE
DATE: 03/09/97 TIME: 0912 DIRECTION: SOUTHEAST
ALLEY, GAS METER

~~701~~

733

Clinton Daily News October 10, 1996 (SEE REVERSE)

THOSE ORDERLY ROWS OF WHITE APPARITIONS haunting the lot in the 1000 block of South 10th Street which was the former home of the Sooner Dial Company will be hanging around through Halloween and may possibly even wind up as Thanksgiving turkeys, depending on the whims of a Corps of Engineers disposal facility in Utah where the dirt contaminated with low levels of radium-226 will be hauled. (Staff Photo by Melissa Stangl)

Bags of low-contamination soil to haunt S. 10th awhile

The final numbers from the much-publicized Environmental Protection Agency contaminated dirt removal project in the 1000 block of South 10th Street in Clinton are now in:

Cost . . . . . under $500,000
# of Bags 710
Cubic Yards 1,100
# of Truckloads . . 50 to 55

It was estimated before work started back in late August that the cleanup project would cost $1.4 million, but a couple of things have served to more than cut that estimated cost in half, according to Patrick L. Hammack, senior on-scene coordinator for the EPA, who was presiding Thursday afternoon on the shutting-down of the temporary office for the project in the J.C. Lane Shopping Center across the street from the main contamination removal site.

First off, the amount of low-level contamination soil that had to be removed was about 400 cubic yards less than had been expected. Also, Hammack said that the EPA's ability to access disposal facilities of the federal Corps of Engineers also helped cut the cost.

While the EPA's operation here will be closing down as of Friday, the bags lined up impressively on 10th Street will be hanging around for about a month to a month and a half, and possibly even longer.

Hammack explained that the Utah disposal site officials will dictate how soon the bags will be removed, "We're really at their mercy." It is even possible, he said, that the disposal authorities won't accept all of the bags at once. They may only accept half at first.

As for the bags, Hammack said they are made of a tough nylon-reinforced material designed specifically for this type of disposal project.

Since the bags are somewhat porous, Hammack said they have been covered with plastic sheeting to keep out rain (which will keep transporting costs down by keeping the soil dry).

The existing orange barrier fencing at the former site of the Sooner Dial Company, which refurbished aircraft instrument dials in the 1950s and 1960s with a luminous paint, is "merely there to warn people away," said Hammack. It won't be replaced.

Gravel is being delivered to the site. With the removal of the bags, the lot and alley will be graveled over, making a better parking facility for businesses in the vicinity.

Pretty soon, commented Hammack, the operation will just be an unpleasant memory and a possible carcinogen source will be gone.

The Clinton (Oklahoma)

Daily News

Our 94th Year Serving Oklahoma

Friday's Forecast

Tonight, clear. Low in the upper 40s. Friday, sunny and warmer. High near 80.

THURSDAY

October 10, 1996

50 CENTS

Vol. 70, No. 76

USPS 118640

EPA 691691-4 #15

Location: SW corner of vacant lot (upwind)

Date

9/7/96

1 1.91 L/m
2 1.96 L/m
3 2.02 L/m

Ave 1.96 L/m

Start Time 1005 hours

Stop Time 1755 hours

Elapsed Time 467 mins

1 1.9[illegible] L/m
2
3

9/7/96 EPA # 696746 #7 Location: NW corner of vacant lot (upwind)

1 1.98 L/m
2 2.10 L/m
3 2.15 L/m

Ave 2.08 L/m

Start time 1005 hours

Stop time ~~1752 hours~~ 1755 hours

Elapsed time 467 mins

9/7/96 EPA # 691699 #3 Location: Back yard near end shed (downwind)

1 2.15 L/m
2 2.02 L/m
3 1.94 L/m

Ave 2.04 L/m

Start time 1005 hours

Stop time 1752 hours

Elapsed Time 466 mins

SKC Pumps Calibration Log.

Date 9/8/96

Pump # 696746 #7

calibration 1 1.92 L/m
2 1.93 L/m
3 2.15 L/m

Average $\frac{6}{3} = 2$ L/m

Pump Location: Near Red Shed in Resident #1 yard

Start time 0814 hours.

End time 1446 hrs

Elapsed time 391 mins

Pump # 691699 #3

calibration 1 1.92 L/m
2 2.10 L/m
3 2.04 L/m

Average $\frac{6.06}{3} = 2.02$ L/m

Pump Location: SW corner of vacant lot

Start time 0819 hrs

End time 1449 hrs

Elapsed time 387 mins

Pump # 691691-4 #15

calibration 1 2.10 L/m
2 1.92 L/m
3 1.96 L/m

Average $\frac{5.98}{3} = 1.99$ L/m

Pump Location: NW corner of vacant lot

Start time 0819 hrs

End time 1449 hrs

Elapsed time ~~387~~ 390 mins

SKC Pumps Calibrator Log.

Date 7/9/96

Pump # 691691-4 #15

calibration 1 1.95 L/m
2 2.12 L/m
3 1.95 L/m

Average $\frac{6.02}{3}$ = 2.07 L/m

Pump Location: on Tree adjacent to decon area (Downwind Location)

Start time 0830 hrs

End time ~~081840~~

Elapsed time 606 mins

Pump # 691699 #3

calibration 1 1.99 L/m
2 1.92 L/m
3 1.98 L/m

Average $\frac{5.89}{3}$ = 1.96 L/m

Pump Location: NW. corner of vacant Lot

Start time 0826 hrs

End time 1840

Elapsed time 605 mins

Pump # 696746 #7

calibration 1 2.15 L/m
2 2.02 L/m
3 2.08 L/m

Average $\frac{6.25}{3}$ = 2.08 L/m

Pump Location: SW corner of Vacant Lot

Start time 0828 hrs

End time 1840

Elapsed time 605 mins

SKC Pumps Calibration Log.

Date 9/10/96

Pump # 691691-4 #15

calibration 1 1.96 L/m
2 1.96 L/m
3 1.97 L/m

Average $\frac{5.91}{3}$ = 1.97 L/m

Pump Location: NW corner of vacant lot (upwind)

Start time 0736 hrs

End time 1745

Elapsed time 606 ~~sec~~ min 10.1 hrs

Pump # 691699 #3

calibration 1 1.97 L/m
2 1.92 L/m
3 1.99 L/m

Average $\frac{5.88}{3}$ = 1.96 L/m

Pump Location: on tree adjacent to decon area (downwind)

Start time 0733 hrs

End time 1745

Elapsed time 609 ~~sec~~ min

Pump # 696746 #7

calibration 1 2.15 L/m
2 2.14 L/m
3 2.13 L/m

Average $\frac{6.42}{3}$ = 2.14 L/m

Pump Location: SW corner of vacant lot (upwind)

Start time 0735 hrs

End time 1745

Elapsed time 609 ~~sec~~ min

SKC Pumps Calibration Log.

Date 9/11/96

Pump # 691699 #3

calibration 1 1.96 L/m
2 2.00 L/m
3 2.03 L/m

Average $\frac{6.01}{3}$ = 2.00 L/m

Pump Location: SW corner vacant lot (upwind)

Start time 0800 hrs

End time 1720 hrs

Elapsed time 557 mins

Pump # 696746 #7

calibration 1 2.14 L/m
2 2.09 L/m
3 2.12 L/m

Average $\frac{6.35}{3}$ = 2.12 L/m

Pump Location: NW corner vacant Lot (upwind)

Start time 0800 hrs

End time 1720 hrs

Elapsed time 556 mins

Pump # 691691-4 #15

calibration 1 1.99 L/m
2 1.96 L/m
3 1.94 L/m

Average $\frac{5.91}{3}$ = 1.97 L/m

Pump Location: Tree adjacent to decon area (downwind)

Start time 0800 hrs

End time 1720 hrs

Elapsed time 558 mins

SKC Pumps calibration Log.

Date 9/12/96

Pump # 696746 #7

calibration 1 2.11 L/m
2 2.07 L/m
3 2.06 L/m

Average $\frac{6.24}{3}$ = 2.09 L/m

Pump Location: Tree adjacent to decon area (downwind)

Start time 0800 hrs

End time 1640 hrs

Elapsed time 521 mins

Pump # 691699 A3

calibration 1 2.13 L/m
2 2.04 L/m
3 1.96 L/m

Average $\frac{6.13}{3}$ = 2.04 L/m

Pump Location: NW corner of lot (upwind)

Start time 0800 hrs

End time 1640 hrs

Elapsed time 517 mins

Pump # 691691-4 #15

calibration 1 1.95 L/m
2 1.94 L/m
3 1.95 L/m

Average $\frac{5.86}{3}$ = 1.95 L/m

Pump Location: SW corner of lot (upwind)

Start time 0800 hrs

End time 1640 hrs

Elapsed time 519 mins

SKC Pumps Calibration Log.

Date 9/13/96

Pump # 691699 #3

calibration 1 1.98 L/m
2 2.08 L/m
3 2.06 L/m

Average $\frac{6.12}{3}$ = 2.04 L/m

Pump Location: North side of Kite shop building

Start time 0735 hrs

End time 1410 hrs

Elapsed time 399 mins

Pump # 691691-d #15

calibration 1 2.08 L/m
2 1.99 L/m
3 1.95 L/m

Average $\frac{6.02}{3}$ = 2.01 L/m

Pump Location: Sitting on top of Green high voltage SE corner of excavation area.

Start time 0735 hrs

End time ~~39~~ 1410 hrs

Elapsed time 398 mins

Pump # _____

calibration 1 _____ L/m
2 _____ L/m
3 _____ L/m

Average $\frac{\_\_\_\_}{3}$ = L/m

Pump Location:

Start time _____

End time _____

Elapsed time _____

SKC Pumps Calibration Log.

Date 9/20/96

Pump # 691699 #3

calibration 1 2.14 L/m
2 1.94 L/m
3 1.95 L/m

Average $\frac{6.03}{3}$ = 2.01 L/m

Pump Location:

Start time 0805 hrs.

End time 5:30

Elapsed time 565 min.

Pump # 691691-4 #15

calibration 1 2.10 L/m
2 2.13 L/m
3 2.13 L/m

Average $\frac{6.36}{3}$ = 2.12 L/m

Pump Location:

Start time 0804 hrs.

End time 5:40

Elapsed time 575 min

Pump # _____

calibration 1 _____ L/m
2 _____ L/m
3 _____ L/m

Average $\frac{\_\_\_\_}{3}$ = L/m

Pump Location:

Start time _____

End time _____

Elapsed time _____

SKC Pumps Calibration Log.

Date 9/21/96

Pump # 691691-4 #15

calibration 1 1.98 L/m
2 2.16 L/m
3 2.04 L/m

Average $\frac{6.18}{3}$ = 2.06 L/m

Pump Location:

Start time 0800 hrs

End time 1300 hrs

Elapsed time 298 min

Pump # 691699

calibration 1 2.09 L/m
2 1.95 L/m
3 2.08 L/m

Average $\frac{6.12}{3}$ = 2.04 L/m

Pump Location:

Start time 0800 hrs

End time 1300 hrs

Elapsed time 300 min

Pump # _____

calibration 1 _____ L/m
2 _____ L/m
3 _____ L/m

Average $\frac{\_\_\_\_}{3}$ = _____ L/m

Pump Location:

Start time _____

End time _____

Elapsed time _____

SKC Pumps Calibration Log.

Date: 9/~~27~~ 26/96

Pump # 691691-4 #15

calibration 1 1.95 L/m
2 1.98 L/m
3 2.10 L/m

Average $\frac{6.03}{3}$ = 2.01 L/m

Pump Location: Fence Post on Well's property adjacent to alley (upwind)

Start time 1100 hrs

End time ~~1626~~ 1822 hrs

Elapsed time 436 mins

Pump # 691699 #3

calibration 1 2.13 L/m
2 1.99 L/m
3 1.96 L/m

Average $\frac{6.08}{3}$ = 2.03 L/m

Pump Location: on tree near decon area (downwind)

Start time 1100 hrs

End time ~~1622~~ 1826 hrs

Elapsed time 442 mins

Pump # _____

calibration 1 _____ L/m
2 _____ L/m
3 _____ L/m

Average $\frac{\_\_\_\_}{3}$ = _____ L/m

Pump Location:

Start time _____

End time _____

Elapsed time _____

SKC Pumps Calibration Log.

Date _____

Pump # _____

calibration 1 _____ L/m
2 _____ L/m
3 _____ L/m

Average $\frac{\_\_\_\_\_}{3}$ = L/m

Pump Location:

Start time _____

End time _____

Elapsed time _____

Pump # _____

calibration 1 _____ L/m
2 _____ L/m
3 _____ L/m

Average $\frac{\_\_\_\_\_}{3}$ = L/m

Pump Location:

Start time _____

End time _____

Elapsed time _____

Pump # _____

calibration 1 _____ L/m
2 _____ L/m
3 _____ L/m

Average $\frac{\_\_\_\_\_}{3}$ = L/m

Pump Location:

Start time _____

End time _____

Elapsed time _____

EPA 691691-4 #15

Location: SW corner of vacant lot (upwind)

Date

9/7/96

1 1.91 L/m
2 1.96 L/m
3 2.02 L/m

Ave 1.96 L/m

Start Time 1005 hours

Stop Time 1755 hours

Elapsed Time 467 mins

1 1.9[illegible] L/m
2
3

9/7/96 EPA # 696746 #7 Location: NW corner of vacant lot (upwind)

1 1.98 L/m
2 2.10 L/m
3 2.15 L/m

Ave 2.08 L/m

Start time 1005 hours

Stop time ~~1752 hours~~ 1755 hours

Elapsed time 467 mins

9/7/96 EPA # 691699 #3 Location: Back yard near end shed (downwind)

1 2.15 L/m
2 2.02 L/m
3 1.94 L/m

Ave 2.04 L/m

Start time 1005 hours

Stop time 1752 hours

Elapsed Time 466 mins

Sooner Dial Waste Radiation Monitoring

Date: 3/9/97

S1

Truck #51

0812 started

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
815	1	20	9	.0099	7.1	
	2	16	8	.0088	6.3	
	3	40	14	.0154	11.0	
	4	18	8	.0088	6.3	
	5	36	12	.0132	9.4	
	6	18	9	.0099	7.1	
	7	20	10	.0110	7.8	
	8	30	12	.0132	9.4	
	9	30	14	.0154	11.0	
	10	24	12	.0132	9.4	

.1188

Sooner Dial Waste Radiation Monitoring

Date: 3/8/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck #45 0810		1	32	11	0.0121	8.6	
		2	24	9	0.0099	7.1	
		3	40	13	0.0143	10.2	
		4	45	13	0.0143	10.2	
		5	32	11	0.0121	8.6	
		6	50	14	0.0154	11.0	
		7	42	13	0.0143	10.2	
		8	40	13	0.0143	10.2	
		9	48	14	0.0154	11.0	
		10	29	10	0.0110	7.8	
		11	28	10	0.0110	7.8	
		12	22	8	0.0088	6.3	
		13	28	10	0.0110	7.8	
		14	20	8	0.0088	6.3	
0850							

0.1727

Sooner Dial Waste Radiation Monitoring

Date: 3/8/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck #50

1355

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	45	13	0.0143	10.2	
	2	35	12	0.0132	9.4	
	3	31	11	0.0121	8.6	
	4	24	9	0.0099	7.1	
	5	32	11	0.0121	8.6	
	6	50	14	0.0154	11.0	
	7	40	13	0.0143	10.2	
	8	28	10	0.0110	7.8	
	9	50	15	0.0165	11.8	
	10	40	13	0.0143	10.2	
	11	45	13	0.0143	10.2	
	12	52	16	0.0176	12.6	
	13	44	16	0.0176	12.6	
	14	35	14	0.0154	11.0	

1435

0.1980

Sooner Dial Waste Radiation Monitoring

Date: 3/7/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck # 43
0810

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	32	11	0.0121	8.6	
	2	21	9	0.0099	7.1	
	3	34	11	0.0121	8.6	
	4	23	9	0.0099	7.1	
	5	42	13	0.0143	10.2	
	6	24	9	0.0099	7.1	
	7	20	8	0.0088	6.3	
	8	28	10	0.0110	7.8	
	9	35	11	0.0121	8.6	
	10	32	11	0.0121	8.6	
	11	40	13	0.0143	10.2	
	12	50	15	0.0165	11.8	
	13	54	15	0.0165	11.8	
	14	52	15	0.0165	11.8	

0850

0.176

Sooner Dial Waste Radiation Monitoring

Date: 3/7/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck #46		1	28	11	0.0121	8.6	
0900		2	60	16	0.0176	12.6	
		3	36	13	0.0143	10.2	
		4	26	9	0.0099	7.1	
		5	27	9	0.0099	7.1	
		6	40	13	0.0143	10.2	
		7	75	17	0.0187	13.4	
		8	55	15	0.0165	11.8	
		9	90	20	0.0220	15.7	
		10	50	14	0.0154	11.0	
		11	40	13	0.0143	10.2	
		12	36	13	0.0143	10.2	
		13	45	14	0.0154	11.0	
		14	43	14	0.0154	11.0	
0945							

0.2101

Sooner Dial Waste Radiation Monitoring

Date: 3/7/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck # 41

D953

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	55	15	0.0165	11.8	
	2	50	14	0.0154	11.0	
	3	30	11	0.0121	8.6	
	4	40	13	0.0143	10.2	
	5	42	13	0.0143	10.2	
	6	36	12	0.0132	9.4	
	7	38	12	0.0132	9.4	
	8	24	9	0.0099	7.1	
	9	52	14	0.0154	11.0	
	10	24	9	0.0099	7.1	
	11	32	11	0.0121	8.6	
	12	40	13	0.0143	10.2	
	13	32	11	0.0121	8.6	
	14	36	12	0.0132	9.4	

1035

0.1859

Sooner Dial Waste Radiation Monitoring

Date: 3/7/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (EnviroCare)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck #44
1045

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	23	9	0.0099		
	2	27	9	0.0099		
	3	43	13	0.0143		
	4	38	12	0.0132		
	5	33	11	0.0121		
	6	36	12	0.0132		
	7	36	12	0.0132		
	8	32	11	0.0121		
	9	30	10	0.0110		
	10	35	12	0.0132		
	11	26	9	0.0099		
	12	70	17	0.0187		
	13	39	13	0.0143		
1130	14	36	12	0.0132		

0.1782

Sooner Dial Waste Radiation Monitoring

Date: 3/7/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (EnviroCare)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck # 48 1235		1	40	13	0.0143	10.2	
		2	75	18	0.0198	14.1	
		3	38	13	0.0143	10.2	
		4	42	14	0.0154	11.0	
		5	32	12	0.0132	9.4	
		6	29	11	0.0121	8.6	
		7	32	11	0.0121	8.6	
		8	36	12	0.132	9.4	
		9	44	13	0.0143	10.2	
		10	32	12	0.0132	9.4	
		11	36	12	0.0132	9.4	
		12	40	14	0.0154	11.0	
		13	35	12	0.0132	9.4	
		14	18	8	0.0088	6.3	
1320							

0.1925

Sooner Dial Waste Radiation Monitoring

Date: 3/7/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (EnviroCare)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck #49
1345

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	28	9	0.0099	7.1	
	2	30	10	0.0110	7.8	
	3	40	12	0.0132	9.4	
	4	55	15	0.0165	11.8	
	5	22	8	0.0088	6.3	
	6	50	15	0.0165	11.8	
	7	55	15	0.0165	11.8	
	8	43	13	0.0143	10.2	
	9	23	8	0.0088	6.3	
	10	34	11	0.0121	8.6	
	11	26	9	0.0099	7.1	
	12	42	13	0.0143	10.2	
	13	40	12	0.0132	9.4	
	14	45	13	0.143	10.2	

1435

0.1793

Sooner Dial Waste Radiation Monitoring

Date: 3/6/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck #41

1615

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	65	16	0.0176	12.6	
	2	37	13	0.0143	10.2	
	3	36	13	0.0143	10.2	
	4	60	16	0.0176	12.6	
	5	50	14	0.0154	11.0	
	6	55	15	0.0165	11.8	
	7	36	13	0.0143	10.2	
	8	36	13	0.0143	10.2	
	9	32	12	0.0132	9.4	
	10	37	13	0.0143	10.2	
	11	60	16	0.0176	12.6	
	12	65	16	0.0176	12.6	
	13	62	16	0.0176	12.6	
	14	65	16	0.0176	12.6	

1700

0.2222

Sooner Dial Waste Radiation Monitoring

Date: 3/6/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck #42		1	40	13	0.0143	10.2	
1715		2	34	12	0.0132	9.4	
		3	35	12	0.0132	9.4	
		4	24	9	0.0099	7.1	
		5	26	10	0.0110	7.8	
		6	24	9	0.0099	7.1	
		7	65	16	0.0176	12.6	
		8	65	16	0.0176	12.6	
		9	50	15	0.0165	11.8	
		10	55	15	0.0165	11.8	
		11	42	13	0.0143	10.2	
		12	44	14	0.0154	11.0	
		13	40	13	0.0143	10.2	
		14	28	11	0.0121	8.6	

1755

0.1958

Sooner Dial Waste Radiation Monitoring

Date: 3/5/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck # 36

0805

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	38	12	0.0132	9.4	
	2	32	11	0.0121	8.6	
	3	26	10	0.0110	7.8	
	4	36	12	0.0132	9.4	
	5	33	11	0.0121	8.6	
	6	45	13	0.0143	10.2	
	7	27	10	0.0110	7.8	
	8	40	13	0.0143	10.2	
	9	38	12	0.0132	9.4	
	10	31	11	0.0121	8.6	
	11	15	7	0.0077	5.5	
	12	28	10	0.0110	7.8	
	13	23	9	0.0099	7.1	
	14	33	12	0.0132	9.4	
	15	32	11	0.0121	8.6	

0855

0.1804

Sooner Dial Waste Radiation Monitoring

Date: 3/5/16

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck #37		1	24	8	0.0088	6.3	
0905		2	15	7	0.0077	5.5	
		3	20	7	0.0077	5.5	
		4	20	7	0.0077	5.5	
		5	38	12	0.0132	9.4	
		6	26	9	0.0099	7.1	
		7	24	8	0.0088	6.3	
		8	22	8	0.0088	6.3	
		9	24	8	0.0088	6.3	
		10	28	10	0.0110	7.8	
		11	40	12	0.0132	9.4	
		12	28	10	0.0110	7.8	
		13	28	9	0.0099	7.1	
		14	22	8	0.0088	6.3	
0945		~~15~~	~~25~~	~~9~~	removed		

0.1452 → 0.1353

Sooner Dial Waste Radiation Monitoring

Date: 3/5/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck # 38

0950

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	30	12	0.0132	9.4	
	2	32	12	0.0132	9.4	
	3	24	9	0.0099	7.1	
	4	28	10	0.0110	7.8	
	5	20	8	0.0088	6.3	
	6	20	8	0.0088	6.3	
	7	18	7	0.0077	5.5	
	8	24	9	0.0099	7.1	
	9	14	7	0.0077	5.5	
	10	25	9	0.0099	7.1	
	11	18	7	0.0077	5.5	
	12	22	8	0.0088	6.3	
	13	24	9	0.0099	7.1	
	14	23	9	0.0099	7.1	
	~~15~~	~~22~~	~~9~~	removed		

1040

0.1462

Sooner Dial Waste Radiation Monitoring

Date: 3/5/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)
Assumption: 1 rem = 1 R
Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck #39
1140

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	23	8	0.0088	6.3	
	2	28	10	0.0110	7.8	
	3	19	7	0.0077	5.5	
	4	30	11	0.0121	8.6	
	5	36	12	0.0132	9.4	
	6	20	7	0.0077	5.5	
	7	30	11	0.0121	8.6	
	8	29	11	0.0121	8.6	
	9	38	12	0.0132	9.4	
	10	42	13	0.0143	10.2	
	11	31	11	0.0121	8.6	
	12	26	10	0.0110	7.8	
	13	40	13	0.0143	10.2	
	14	37	12	0.0132	9.4	
	~~15~~					

1230

0.1628

Sooner Dial Waste Radiation Monitoring

Date: 3/5/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck #40		1	38	12	0.0132	9.4	
1355		2	35	12	0.0132	9.4	
		3	42	13	0.0143	10.2	
		4	43	13	0.0143	10.2	
		5	38	13	0.0143	10.2	
		6	40	13	0.0143	10.2	
		7	55	14	0.0154	11.0	
		8	36	12	0.0132	9.4	
		9	45	13	0.0143	10.2	
		10	52	14	0.0154	11.0	
		11	75	20	0.0220	15.7	
		12	65	18	0.0198	14.1	
		13	32	12	0.0132	9.4	
		14	44	13	0.0143	10.2	
1440							

0.2112

Sooner Dial Waste Radiation Monitoring

Date: 3/3/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck #31

0815

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	65	15	0.0165	11.8	
	2	43	13	0.0143	10.2	
	3	48	14	0.0154	11.0	
	4	38	13	0.0143	10.2	
	5	55	14	0.0154	11.0	
	6	38	13	0.0143	10.2	
	7	50	14	0.0154	11.0	
	8	45	13	0.0143	10.2	
	9	40	13	0.0143	10.2	
	10	30	11	0.0121	8.6	
	11	32	11	0.0121	8.6	
	12	32	11	0.021	8.6	
	13	30	11	0.0121	8.6	
	14	40	12	0.0132	9.4	

0910

0.1958

Sooner Dial Waste Radiation Monitoring

Date: 3/3/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck #32 0920		1	60	14	0.0154	11.0	
		2	25	9	0.0099	7.1	
		3	26	9	0.0099	7.1	
		4	36	11	0.0121	8.6	
		5	35	11	0.0121	8.6	
		6	42	13	0.0143	10.2	
		7	30	10	0.0110	7.8	
		8	39	12	0.0132	9.4	
		9	44	13	0.0143	10.2	
		10	55	14	0.0154	11.0	
		11	42	13	0.0143	10.2	
		12	60	15	0.0165	11.8	
		13	45	13	0.0143	10.2	
1010							

0.1727

Sooner Dial Waste Radiation Monitoring

Date: 3/3/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (EnviroCare)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck # 33

1125

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	42	13	0.0143	10.2	
	2	30	11	0.0121	8.6	
	3	38	12	0.0132	9.4	
	4	43	13	0.0143	10.2	
	5	45	13	0.0143	10.2	
	6	30	10	0.0110	7.8	
	7	32	11	0.0121	8.6	
	8	60	15	0.0165	11.8	
	9	41	13	0.0143	10.2	
	10	50	14	0.0154	11.0	
	11	38	13	0.0143	10.2	
	12	32	11	0.0121	8.6	
	13	29	10	0.0110	7.8	
	14	50	14	0.0154	11.0	
1215						

0.193

Sooner Dial Waste Radiation Monitoring

Date: 3/3/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck # 34 1325		1	50	14	0.0154	11.0	
		2	40	13	0.0143	10.2	
		3	38	12	0.0132	9.4	
		4	55	14	0.0154	11.0	
		5	60	16	0.0176	12.6	
		6	38	12	0.0132	9.4	
		7	34	11	0.0121	8.6	
		8	70	17	0.0187	13.4	
		9	25	9	0.0099	7.1	
		10	35	12	0.0132	9.4	
		11	42	13	0.0143	10.2	
		12	28	9	0.0099	7.1	
		13	45	13	0.0143	10.2	
		14	36	12	0.0132	9.4	
1435		~~15~~	~~28~~	~~9~~	~~mx~~		

.1947

Sooner Dial Waste Radiation Monitoring

Date: 3/3/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck #35

1480

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	42	14	0.0154	11.0	
	2	30	10	0.0110	7.8	
	3	40	12	0.0132	9.4	
	4	38	12	0.0132	9.4	
	5	32	11	0.0121	8.6	
	6	26	9	0.0099	7.1	
	7	28	10	0.0110	7.8	
	8	32	11	0.0121	8.6	
	9	27	10	0.0110	7.8	
	10	38	13	0.0143	10.2	
	11	38	13	0.0143	10.2	
	12	60	15	0.0165	11.8	
	13	65	16	0.0176	12.6	
	14	55	15	0.0165	11.8	

1625

0.1881

Sooner Dial Waste Radiation Monitoring

Date: 3/2/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck #25
0815

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	28	9	0.0099	7.1	
	2	46	12	0.0132	9.4	
	3	40	11	0.0121	8.6	
	4	18	7	0.0077	5.5	
	5	20	8	0.0088	6.3	
	6	24	8	0.0088	6.3	
	7	20	8	0.0088	6.3	
	8	18	8	0.0088	6.3	
	9	17	7	0.0077	5.5	
	10	21	8	0.0088	6.3	
	11	24	9	0.0099	7.1	
	12	20	8	0.0088	6.3	
	13	16	7	0.0077	5.5	
	14	30	10	0.0110	7.8	
0910						

0.132

Sooner Dial Waste Radiation Monitoring

Date: 3/1/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck #29		1	55	17	0.0187	13.4	
0815		2	60	18	0.0198	14.1	
		3	25	9	0.0099	7.1	
		4	65	18	0.0198	14.1	
		5	40	12	0.0132	9.4	
		6	26	10	0.0110	7.8	
		7	32	12	0.0132	9.4	
		8	32	12	0.0132	9.4	
		9	~~40~~ 41	13	0.0143	10.2	
		10	40	12	0.0132	9.4	
		11	32	11	0.0121	8.6	
		12	36	12	0.0132	9.4	
		13	36	12	0.0132	9.4	
0900		~~14~~					

0.1848

Sooner Dial Waste Radiation Monitoring

Date: 3/1/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck #30

1420

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	36	12	0.0132	9.4	
	2	40	12	0.0132	9.4	
	3	38	12	0.0132	9.4	
	4	50	13	0.0143	10.2	
	5	32	11	0.0121	8.6	
	6	33	11	0.0121	8.6	
	7	35	12	0.0132	9.4	
	8	45	13	0.0143	10.2	
	9	55	14	0.0154	11.0	
	10	45	13	0.0143	10.2	
	11	45	13	0.0143	10.2	
	12	50	14	0.0154	11.0	
	13	75	17	0.0187	13.4	
	14	55	15	0.0165	11.8	

1515

0.2002

Sooner Dial Waste Radiation Monitoring

Date: 2/28/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (EnviroCare)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck # 22

0800

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	35	11	0.0121	8.6	
	2	38	12	0.0132	9.4	
	3	40	13	0.0143	10.2	
	4	50	14	0.0154	11.0	
	5	38	12	0.0132	9.4	
	6	38	13	0.0143	10.2	
	7	45	13	0.0143	10.2	
	8	50	14	0.0154	11.0	
	9	30	10	0.0110	7.8	
	10	35	11	0.0121	8.6	
	11	43	13	0.0143	10.2	
	12	30	11	0.0121	8.6	
	13	29	10	0.0110	7.8	
	14	38	12	0.0132	9.4	
	15	38	12	0.0132	9.4	

0850

0.1991

Sooner Dial Waste Radiation Monitoring

Date: 2/28/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck #23 0900		1	28	10	0.0110	7.8	
		2	33	11	0.0121	8.6	
		3	40	13	0.0143	10.2	
		4	27	10	0.0110	7.8	
		5	26	10	0.0110	7.8	
		6	29	10	0.0110	7.8	
		7	28	10	0.0110	7.8	
		8	31	11	0.0121	8.6	
		9	30	11	0.0121	8.6	
		10	26	9	0.0099	7.1	
		11	30	10	0.0110	7.8	
		12	32	11	0.0121	8.6	
		13	30	11	0.0121	8.6	
		14	32	11	0.0121	8.6	
0950		15	31	11	0.0121	8.6	

0.1749

Sooner Dial Waste Radiation Monitoring

Date: 2/28/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck # 24

1005

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	26	9	0.0099	7.1	
	2	30	10	0.0110	7.8	
	3	28	10	0.0110	7.8	
	4	30	10	0.0110	7.8	
	5	30	10	0.0110	7.8	
	6	32	11	0.0121	8.6	
	7	32	11	0.0121	8.6	
	8	30	11	0.0121	8.6	
	9	29	10	0.0110	7.8	
	10	34	11	0.0121	8.6	
	11	33	11	0.0121	8.6	
	12	42	13	0.0143	10.2	
	13	32	11	0.0121	8.6	
	14	32	11	0.0121	8.6	

1045

0.1639

Sooner Dial Waste Radiation Monitoring

Date: 2/28/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck #26
M15

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	32	10	0.0110	7.8	
	2	33	11	0.0121	8.6	
	3	22	8	0.0088	6.3	
	4	26	10	0.0110	7.8	
	5	30	10	0.0110	7.8	
	6	28	10	0.0110	7.8	
	7	35	11	0.0121	8.6	
	8	30	11	0.0121	8.6	
	9	36	11	0.0121	8.6	
	10	24	10	0.0110	7.8	
	11	28	10	0.0110	7.8	
	12	26	10	0.0110	7.8	
	13	27	10	0.0110	7.8	
	14	30	11	0.0121	8.6	
	15	40	13	0.0143	10.2	

1200

0.1717

Sooner Dial Waste Radiation Monitoring

Date: 2/28/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck #27 1255		1	44	13	0.0143	10.2	
		2	40	13	0.0143	10.2	
		3	46	13	0.0143	10.2	
		4	30	11	0.0121	8.6	
		5	24	9	0.0099	7.1	
		6	28	10	0.0110	7.8	
		7	25	9	0.0099	7.1	
		8	40	12	0.0132	9.4	
		9	34	11	0.0121	8.6	
		10	24	9	0.0099	7.1	
		11	23	9	0.0099	7.1	
		12	25	9	0.0099	7.1	
		13	42	12	0.0132	9.4	
		14	45	14	0.0154	11.0	
1337							

0.1694

Sconer Dial Waste Radiation Monitoring

Date: 2/28/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck #28
N345

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	36	12	0.0132	9.4	
	2	23	8	0.0088	6.3	
	3	42	13	0.0143	10.2	
	4	24	9	0.0099	7.1	
	5	35	11	0.0121	8.6	
	6	23	8	0.0088	7.1	
	7	25	9	0.0099	7.1	
	8	26	9	0.0099	7.1	
	9	33	12	0.0132	9.4	
	10	35	12	0.0132	9.4	
	11	35	12	0.0132	9.4	
	12	85	19	0.0209	14.9	
	13	90	20	0.0220	15.7	
	14	50	15	0.0165	11.8	
	15	30	12	0.0132	9.4	

1432

0.1991

Sooner Dial Waste Radiation Monitoring

Date: 2/27/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck # 21

1730

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	30	10	0.0110	7.8	
	2	38	11	0.0121	8.6	
	3	38	11	0.0121	8.6	
	4	32	10	0.0110	7.8	
	5	35	11	0.0121	8.6	
	6	36	11	0.0121	8.6	
	7	40	12	0.0132	9.4	
	8	32	10	0.0110	7.8	
	9	30	10	0.0110	7.8	
	10	34	11	0.0121	8.6	
	11	35	11	0.0121	8.6	
	12	60	15	0.0165	11.8	
	13	36	12	0.0132	9.4	
	14	40	13	0.0143	10.2	
	15	35	13	0.0143	10.2	

0.1881

Sooner Dial Waste Radiation Monitoring

Date: 2/26/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck 16 0820		1	22	9	0.0099	7.1	
		2	32	10	0.0110	7.8	
		3	32	11	0.0121	8.6	
		4	25	10	0.0110	7.8	
		5	30	11	0.0121	8.6	
		6	20	9	0.0099	7.1	
		7	26	11	0.0121	8.6	
		8	35	13	0.0143	10.2	
		9	22	10	0.0110	7.8	
		10	60	16	0.0176	12.6	
		11	26	10	0.0110	7.8	
		12	25	10	0.0110	7.8	
		13	26	11	0.0121	8.6	
0945		14	65	18	0.0198	14.1	

0.1749

Sooner Dial Waste Radiation Monitoring

Date: 2/26/91

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck #17

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
1000		1	48	15	0.0165	11.8	
		2	65	16	0.0176	12.6	
		3	20	9	0.0099	7.1	
		4	80	19	0.0209	14.9	
		5	60	16	0.0176	12.6	
		6	45	15	0.0165	11.8	
		7	48	15	0.0165	11.8	
		8	75	17	0.0187	13.4	
		9	30	11	0.0121	8.6	
		10	60	16	0.0176	12.6	
		11	85	18	0.0198	14.1	
1055		12	55	16	0.0176	12.6	

0.2013

Sooner Dial Waste Radiation Monitoring

Date: 2/26/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck #18
1105

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	65	16	0.0176	12.6	
	2	70	17	0.0187	13.4	
	3	60	15	0.0165	11.8	
	4	35	11	0.0121	8.6	
	5	85	19	0.0209	14.9	
	6	55	16	0.0176	12.6	
	7	26	10	0.0110	7.8	
	8	50	15	0.0165	11.8	
	9	60	15	0.0165	11.8	
	10	55	15	0.0165	11.8	
	11	85	20	0.0220	15.7	
	12	60	16	0.0176	12.6	
	13	36	13	0.0143	10.2	
	14	65	18	0.0198	14.1	
	~~15~~	~~60~~	~~17~~	removed		

1215

0.2563

Sooner Dial Waste Radiation Monitoring

Date 1/26/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck 19

1335

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	60	15	0.0165	11.8	
	2	55	15	0.0165	11.8	
	3	38	12	0.0132	9.4	
	4	18	8	0.0088	6.3	
	5	35	13	0.0143	10.2	
	6	65	16	0.0176	12.6	
	7	42	14	0.0154	11.0	
	8	50	15	0.0165	11.8	
	9	60	15	0.0165	11.8	
	10	70	16	0.0176	12.6	
	11	60	16	0.0176	12.6	
	12	65	17	0.0187	13.4	
	13	120	24	0.0264	18.8	
	14	90	21	0.0231	16.5	

1500

0.2387

Sooner Dial Waste Radiation Monitoring

Date: 2/26/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

Truck #20

1512

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	70	18	0.0198	14.1	
	2	75	19	0.0209	14.9	
	3	65	16	0.0176	12.6	
	4	55	16	0.0176	12.6	
	5	46	15	0.0165	11.8	
	6	65	17	0.0187	13.4	
	7	35	12	0.0132	9.4	
	8	30	12	0.0132	9.4	
	9	45	15	0.0165	11.8	
	10	55	16	0.0176	12.6	
	11	50	16	0.0176	12.6	
	12	60	16	0.0176	12.6	
	13	58	17	0.0187	13.4	
	14	65	17	0.0187	13.4	
1610						

0.2442

Sooner Dial Waste Radiation Monitoring

Date: 2/25/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (EnviroCare)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck #10

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
1020	1	65	17	0.0187	13.4	
	2	70	18	0.0198	14.1	
	3	50	16	0.0176	12.6	
	4	110	23	0.0253	18.1	
	5	85	21	0.0231	16.5	
	6	31	11	0.0121	8.6	
	7	31	11	0.0121	8.6	
	8	65	16	0.0176	12.6	
	9	30	11	0.0121	8.6	
	10	85	20	0.0220	15.7	
	11	35	13	0.0143	10.2	
	12	70	18	0.0198	14.1	
	13	70	17	0.0187	13.4	
	14	28	12	0.0132	9.4	
1100						

0.2464

Sooner Dial Waste Radiation Monitoring

Date 2/24/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ uR/hr x 1.1 E-03 mCi/uR/hr (at 1 meter)

Truck 11	Time	Bag #	uR/hr Surface	uR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
0825		1	25	10	0.011	7.8	
		2	36	13	0.0143	10.2	
		3	27	10	0.011	7.8	
		4	26	10	0.011	7.8	
		5	26	10	0.011	7.8	
		6	60	~~14~~ 16	0.0176	12.6	
		7	50	15	0.0165	11.8	
		8	30	11	0.0121	8.6	
		9	27	11	0.0121	8.6	
		10	55	15	0.0165	11.8	
		11	45	15	0.0165	11.8	
		12	42	14	0.0154	11.0	
		13	37	14	0.0154	11.0	
		14	65	17	0.0187	13.4	
0907							

0.1991

Sooner Dial Waste Radiation Monitoring

Date 2/24/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ uR/hr × 1.1E-03 mCi/uR/hr (at 1 meter)

Truck #2

0922

Time	Bag #	uR/hr Surface	uR/hr 1 meter	mCi Contents (Calculated)	pCi/g	Comments
	1	39	12	0.0132	9.4	
	2	31	11	0.0121	8.6	
	3	42	14	0.0154	11.0	
	4	27	10	0.0110	7.8	
	5	33	13	0.0143	10.2	
	6	34	12	0.0132	9.4	
	7	30	11	0.0121	8.6	
	8	24	9	0.0099	7.1	
	9	60	15	0.0165	11.8	
	10	33	11	0.0121	8.6	
	11	34	12	0.0132	9.4	
	12	30	11	0.0121	8.6	
	13	37	12	0.0132	9.4	
	14	32	11	0.0121	8.6	
	15	28	11	0.0121	8.6	

1010

0.1925

Sooner Dial Waste Radiation Monitoring

Date: 2/24/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)
Assumption: 1 rem = 1 R

Calculation: mCi = _____μR/hr x 1.1E-4 mCi/μR/hr

Truck(s) 3
1020

Time	Bag #	μR/hr surface	μR/hr 1 foot	mCi content (Calculated)	PCi/g	Comments
	1	32	11	0.0121	8.6	
	2	24	10	0.0110	7.8	
	3	46	14	0.0154	11.0	
	4	35	12	0.0132	9.4	
	5	28	11	0.0121	8.6	
	6	23	9	0.0099	7.1	
	7	28	11	0.0121	8.6	
	8	37	14	0.0154	11.0	
	9	25	10	0.0110	7.8	
	10	28	11	0.0121	8.6	
	11	35	12	0.0132	9.4	
	12	30	11	0.0121	8.6	
	13	40	14	0.0154	11.0	
	14	40	14	0.0154 0.1969	11.0	
1122 hrs	~~15~~	~~42~~	~~15~~	removed		

.3 ≈
.3 ≈ 1000.
11.

Inv. Square law
(theor.)
N/s for bags ?? approx. for field

1 ft = ~30 cm
1 m = 100 cm

$$\frac{R_1 \text{ 1 meter}}{R_2 \text{ 1 ft}} = \frac{(d_1)^2}{(d_2)^2} = \frac{(3d)^2}{(1d)^2} = \frac{900}{10{,}000} \approx \frac{1}{10}$$

ratio = 11.55 ≈ 1 ≈

140 = 1.65×10^{-5}
20 = 20×10^{-5}
= 2.2×10^{-3}

in the 10^{-3} (E-3)
not 10^{-4} (E-4)

distances not acc. in field

2/22/97
Background 9-10 μR/hr

Sooner Dial Waste Radiation Monitoring

Date: 2/22/97

pCi/gr = mCi X 10^9 = pCi / 1.4 gr/bag X 10^6 = mCi X 10^3 / 1.4

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 ~~foot~~ (Envirocare)
Assumption: 1 rem = 1 R

Shipping forms need μR/hr at 1 meter, not 1 foot. Approx. (≈ 1/10) of 1 ft. in mr E-3 not E-4, (reverse)

Calculation: mCi = _____ μR/hr x ~~1.1E-4 mCi/μR/hr~~ 1.1E-3 (0.0011) at 1 meter

(C) = corrected for Bkgrnd

Calc'd 1 ft readings

Truck #1

Time	Bag #	μR/hr surface	μR/hr 1 ~~foot~~ (uncorrected at 1 meter)	mCi content (Calculated)	~10X one at 1 meter	Comments mCi	Calc'd pCi/gr
0920	1	30	(1) 10	30 x 0.0011 = ~~0.00330~~	~100	~~1 ft = 0.033~~ = 0.011 mCi	7.8
	2	22	(0) 9	0.00242	~90	0.0099	7.1
	3	20	(0) 9	0.00220	90	.0099	7.1
	4	20	(0) 9	0.00220	90	.0099	7.1
	5	22	(0) 9	0.00242	90	.0099	7.1
	6	28	(0) 9	0.00308	90	.0099	7.1
	7	28	(0) 9	0.00308	90	.0099	7.1
	8	22	(0) 8	0.00242	80	.0088	6.3
	9	30	(1) 10	0.00330	100	0.011	7.8
	10	24	(0) 9	0.00264	90	.0099	7.1
	11	20	(0) 9	0.00220	90	.0099	7.1
	12	21	10		100	.011	7.8
	13	32	11		110	.0121	8.6
	14	22	10		100	.011	7.8

Bag = ~~1.4 X 10^6 grams~~

mCi: ↓ pCi/gr

Sooner Dial Waste Radiation Monitoring

Date: 2/24/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

truck #14

1442

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	30	11	0.0121	8.6	
	2	30	11	0.0121	8.6	
	3	20	9	0.0099	7.1	
	4	31	11	0.0121	8.6	
	5	75	17	0.0187	13.4	
	6	29	11	0.0121	8.6	
	7	34	12	0.0132	9.4	
	8	22	10	0.0110	7.8	
	9	38	14	0.0154	11.0	
	10	46	15	0.0165	11.8	
	11	34	12	0.0132	9.4	
	12	33	12	0.0132	9.4	
	13	65	16	0.0176	12.6	
	14	65	17	0.0187	13.4	

1530

0.1958

Sooner Dial Waste Radiation Monitoring

Date: 2/24/96

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (EnviroCare)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Truck 15

1750

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
	1	65	16	0.0176	12.6	
	2	52	16	0.0176	12.6	
	3	36	13	0.0143	10.2	
	4	~~50~~ 55	15	0.0165	11.8	
	5	65	16	0.0176	12.6	
	6	50	14	0.0154	11.0	
	7	55	15	0.0165	11.8	
	8	26	11	0.0121	8.6	
	9	55	16	0.0176	12.6	
	10	30	13	0.0143	10.2	
	11	65	17	0.0187	13.4	
	12	30	11	0.0121	8.6	
	13	35	13	0.0143	10.2	
	14	32	12	0.0132	9.4	

1840

Sooner Dial Waste Radiation Monitoring

Date 2/23/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
Truck 1 0815		1	40	15	0.0165	11.8	
(Truck 6)		2	36	13	0.0143	10.2	
		3	30	12	0.0132	9.4	
		4	31	11	0.0121	8.6	
		5	29	11	0.0121	8.6	
		6	32	12	0.0132	9.4	
		7	120	28	0.0308	22	
		8	35	14	0.0154	11	
		9	60	20	0.022	15.7	
		10	50	16	0.0176	12.6	
		11	100	22	0.0242	17.3	
		12	30	13	0.0143	10.2	
		13	31	14	0.0154	11.0	
		14	33	15	0.0165	11.8	
		15	140	30	.0330	23.6	

Sooner Dial Waste Radiation Monitoring

Date 2/23/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra^{226} at 1 Foot (Enviro cave)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1E-03 mCi/μR/hr (at 1 meter)

	Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (calculated)	pCi/g	Comments
truck #2 0922 (truck #7)		1	28	12	0.0132	9.4	
		2	22	10	0.0110	7.8	
		3	27	11	0.0121	8.6	
		4	32	13	0.0143	10.2	
		5	29	11	0.0121	8.6	
		6	28	10	0.0110	7.8	
		7	35	14	0.0154	11.0	
		8	35	12	0.0132	9.4	
		9	25	11	0.0121	8.6	
		10	40	14	0.0154	11.0	
		11	35	14	0.0154	11.0	
		12	28	10	0.0110	7.8	
		13	27	10	0.0110	7.8	
1017		14	28	11	0.0121	8.6	
		~~15~~	~~140~~	~~32~~			

Sooner Dial Waste Radiation Monitoring

Date: 2/23/97

Conversion Factor = 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Envirocare)

Assumption: 1 rem = 1R

Calculation: mCi = ____ μR/hr x 1.1 E3 mCi/μR/hr at 1 meter

1032

Truck #8

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi contents (calculated)	pCi/gram	Comments
	1	60	20	0.0220	15.7	
	2	100	32	0.0352	25.1	
	3	60	20	0.0220	15.7	
	4	65	18	0.0198	14.1	
	5	65	20	0.0220	15.7	
	6	31	12	0.0132	9.4	
	7	26	10	0.0110	7.8	
	8	50	15	0.0165	11.8	
	9	48	14	0.0154	11.0	
	10	70	17	0.0187	13.4	
	11	70	20	0.0220	15.7	
	12	40	14	0.0154	11.0	
	13	25	11	0.0121	8.6	
	14	25	11	0.0121	8.6	

1130

Sooner Dial Waste Radiation Monitoring
Date: 2/23/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)
Assumption: 1 rem = 1R

Calculation: mCi = _____ μR/hr x 1.1 E3 mCi/μR/hr (at 1 meter)

truck# 9	Time	Bag #	μR/hr Surface	μR/hr 1meter	mCi contents (calculated)	pCi/g	Comments
1227		1	30	10	0.0110	7.8	
		2	42	15	0.0165	11.8	
		3	35	13	0.0143	10.2	
		4	60	15	0.0165	11.8	
		5	30	11	0.0121	8.6	
		6	55	15	0.0165	11.8	
		7	75	17	0.0187	13.4	
		8	32	12	0.0132	9.4	
		9	33	13	0.0143	10.2	
		10	32	13	0.0143	10.2	
		11	70	16	~~0.0143~~ 0.0176 slow	12.6	
		12	30	12	0.0132	9.4	
		13	32	12	0.0132	9.4	
1322		14	44	15	0.0165	11.8	

.3 ~
.3 ~ 1000
11.

Inv. Square law
(theor.)
N/A for bags?? approx. for field

1 ft = ~30 cm
1 m = 100 cm

$$\frac{R_1 \text{ 1 meter}}{R_2 \text{ 1 ft}} = \frac{(d_2)^2}{(d_1)^2} = \frac{(30)^2}{(100)^2} = \frac{900}{10{,}000} \approx \frac{1}{10}$$

ratio = 11.55 ≈ 12

$140 = 1.65 \times 10^{-5}$
$20 = 20 \times 10^{-5}$
$= 2.2 \times 10^{-3}$

is use 10^{-3} (E-3)
not 10^{-4} (E-4)

distances not acc. in field

2/22

Sooner Dial Waste Radiation Monitoring

Date: 2/22/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)
Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr x ~~1.1E-4 mCi~~ at 1 meter 1.1×10^{-3} (.0011) /μR/hr

mCi

$\frac{pCi}{gr} = \frac{mCi \times 10^3}{1.4}$

	Time	Bag #	μR/hr surface	μR/hr 1 ~~foot~~ meter	mCi content (Calculated)	Comments	
see 1st page		12	10	21			
		13	11	32			
finished 1100		14	10	22		Readings at vehicle surface: 24, 30, 22	
truck #2 ~1130	1	~~15~~	~~200~~ 150	22		~~0.022~~ 0.0242 mCi	~~15.7~~ 17.3
	2	~~16~~	38	20		0.022	15.7
	3	~~17~~	36	15		0.0165	11.8
	4	~~18~~	34	12		0.0132	9.4
	5	~~19~~	19	10		0.011	7.8
	6	~~20~~	20	10		0.011	7.8
	7	~~21~~	35	15		0.0165	11.8
	8	~~22~~	35	12		~~0.0132~~ 0.0132	9.4

using uncorrected values

2/22/97

Sooner Dial Waste Radiation Monitoring

Date: 2/22/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)
Assumption: 1 rem = 1 R

Calculation: mCi = _____ µR/hr x 1.1E-3 mCi/µR/hr

	Time	Bag #	µR/hr surface	µR/hr 1 ~~foot~~ meter	mCi content (Calculated)	Comments mCi	pCi/gr
Truck 2		9	25	11		0.0121	8.6
		10	24	11		0.0121	8.6
		11	20	10		0.011	7.8
		12	22	10		0.011	7.8
		13	20	11		0.0121	8.6
		14	24	12		0.01320 finished	~~120~~ 9.4 1226
Truck 3 1235		1	18	9		0.0099	7.1
		2	16	8		0.0088	6.3
		3	24	9		0.0099	7.1
		4	21	9		0.0099	7.1
		5	23	9		0.0099	7.1

Vehicle Surface 14.15.20

2/22/97

Sooner Dial Waste Radiation Monitoring

Date: 2/22/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)
Assumption: 1 rem = 1 R

Calculation: mCi = _____ µR/hr x 1.1E-~~4~~ 3 mCi/µR/hr

	Time	Bag #	µR/hr surface	µR/hr 1 foot	mCi content (Calculated)	mCi	pCi/gr	Comments
Truck 3		6	22	9		0.0099	7.1	
		7	28	10		0.011	7.8	
		8	34	14		0.0154	11.0	
		9	35	13		0.01430	10.2	
		10	22	10		0.011	7.8	
		11	21	11		0.0121	8.6	
		12	23	10		0.011	7.8	
		13	21	10		0.011	7.8	
truck 3 final 1330		14	32	12		0.0132	9.4	vehicle 16.14.22
truck 4 1417		1	23	10		0.011	7.8	
		2	20	9		0.0099	7.1	

Sooner Dial Waste Radiation Monitoring

Date: 2/22/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)
Assumption: 1 rem = 1 R

Calculation: mCi = _____ µR/hr x 1.1E-~~4~~ 3 mCi/µR/hr

truck 4

Time	Bag #	µR/hr surface	µR/hr ~~1 foot~~ meter	mCi content (Calculated)	mCi Content	Comments	pCi/g
	3	23	10		0.011		7.8
	4	25	11		0.0121		8.6
	5	22	10		0.011		7.8
	6	21	9		0.0099		7.1
	7	28	13		0.0143		10.2
	8	28	12		0.0132		9.4
	9	25	11		0.0121		8.6
	10	30	13		0.0143		10.2
	11	32	14		0.0154		11.0
	12	23	11		0.0121		8.6
	13	23	10		0.011		7.8
	14	19	9		0.0099		7.1

1515 hrs

1474

Sooner Dial Waste Radiation Monitoring

Date: 2/22/97

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)
Assumption: 1 rem = 1 R

Calculation: mCi = _____ µR/hr x 1.1E-3 mCi/µR/hr

	Time	Bag #	µR/hr surface	µR/hr 1 ~~foot~~ meter	mCi content (Calculated)	pCi/g	Comments
Truck 5 1530		1	28	10	0.0110	7.8	
		2	30	12	0.0132	9.4	
		3	30	11	0.0121	8.6	
		4	24	10	0.0110	7.8	
		5	26	10	0.0110	7.8	
		6	30	12	0.0132	9.4	
		7	36	13	0.0143	10.2	
		8	32	12	0.0132	9.4	
		9	29	12	0.0132	9.4	
		10	31	12	0.0132	9.4	
		11	30	10	0.0110	7.8	
1625		12	28	10	0.0110	7.8	

Sooner Dial Waste Radiation Monitoring

Date:_____

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 foot (Envirocare)
Assumption: 1 rem = 1 R

Calculation: mCi = _____μR/hr x 1.1E-4 mCi/μR/hr

Time	Bag #	μR/hr surface	μR/hr 1 foot	mCi content (Calculated)	Comments
		Original blank field form; not used because shipping paperwork required reading at 1 meter from surface, not 1 foot			
		Modified 2/22/97 in the field			

Sooner Dial Waste Radiation Monitoring

Date: _____

Conversion Factor: 9.03 rem/hr = 1 Ci Ra-226 at 1 Foot (Enviro Care)

Assumption: 1 rem = 1 R

Calculation: mCi = _____ μR/hr × 1.1 E-03 mCi/μR/hr (at 1 meter)

Time	Bag #	μR/hr Surface	μR/hr 1 meter	mCi Content (Calculated)	pCi/g	Comments
		Blank Field Form Used to Record Readings at Surface and 1 meter From SuperSak				

Sooner Dial Truck

DATE	Truck #	# Bags		TOTAL BAGS SHIPPED	APPROX. BAGS REMAINING	OTHER
2/22/97	1	14		14		Trlr 485043
	2	14	68	28		
	3	14		42		Trlr 9625
	4	14		56		Trlr 43005
	5	12		68		Trlr 08366
2/23/97	6	15		83		Trlr 714392
	7	14	57	97		Trlr 717411
	8	14		111		Trlr 94194
	9	14		125		Trlr 43835
2/24/97	11	14		139		Trlr 713873 T
	12	15	71	154		Trlr 90109
	13	14		168		Trlr 38205
	14	14		182		Trlr 138593
	15	14		196		Trlr 3261
2/25/97	10	14		210		Trac 31716 Trlr 260268

58205

DATE	Truck #	# Bags		TOTAL BAGS SHIPPED	APPROX. BAGS REMAINING	OTHER
2/26/97	16	14		224	~~43~~	Trac 12332 Trlr 9625
	17	12	68	236		Trac. 25973 Trlr 08366
	18	14		250		Trac. 33005 Trlr 43005
	19	14		264		Trac, 35174 Trlr 485043
	20	14		278	438	Trac. 33817 Trlr. 43817
2/27/97	21	15	15	293	423	Trac. 10933, Trlr. 717411
2/28/97	22	15		308	408	Trac 35996 Trlr 94194
	23	15	88	323	393	Trac 33835 Trlr 43835
	24	14		337	379	Trac. 11683 Trlr 714392
	26	15		352	364	Trac. 128593 Trlr 138593
	27	14		366	350	Trac 33506 Trlr 713873
	28	15		381	335	Trac. 33528 Trlr 90109
3/1/97	29	13		394	322	Trac 64757, Trlr 3261
	30	14	27	408	308	Trac 28205 Trlr 38205
3/2/97	25	14		422	294	Trac 31716 Trlr 260268

DATE	Truck #	# Bags		TOTAL BAGS SHIPPED	APPROX. BAGS REMAINING 294	OTHER
3/3/97	31	14		436	280	Trac 12332 Trlr 9625
	32	13	69	449	267	Trac 25973 Trlr 08366
	33	14		463	253	Trac 35174 Trlr 6610
	34	14		477	239	Trac 33817 Trlr 43817
	35	14		491	225 (221)	Trac 33005 Trlr 43005
3/5/97	36	15		506	206	Trac 35996 Trlr 94194
	37	~~15~~ 14		520	192	Trac 11683 Trlr 714392
	38	14	71	534	178	Trac 33835 Trlr 43835
	39	14		548	164	Trac 128593 Trlr 138593
	40	14		562	150	Trac 10933 Trlr 717411
3/6/97	41	14	28	576	136	Trac 31716 Trlr 260268
	42	14		590	122	Trac 33506 Trlr 713873
3/7/97	43	14		604	108	Trac 64759 Trlr 3261
	46	14	84	618	94	Trac 33005 Trlr 43005
	~~44~~ 47	14		632	80	Trac 12332 Trlr 9625
	44	14		646	66	Trac 33528 Trlr 90109
	48	14		660	52	Trac 35174 Trlr 6610
	49	14		674	38	Trac 33817 Trlr 43817

Date	Truck #	# Bags	Total Bags Shipped	Approx. Bags Remaining	Other	
3/8/97	45	14 } 28	688	24	Trac 28205	Trlr 38205
	50	14	702	10	Trac. 35272	Trlr 46563
3/9/97	57	14	712	0	Trac 128593	Trlr 138593

Trac = Tractor

Trlr = Trailer

13.02

From: GROUP ERB-REG-VI
To: R6DAL01.R6TOXLAN(BLACK-BRENDA),R6DAL02.R6HAZRD1(BR...
Date: Thursday, September 19, 1996 5:09 pm
Subject: Sooner Dial Polrep #01

POLREP NO: 1

Date: September 4, 1996
Subject: Sooner Dial Site, Clinton, Oklahoma
From: Pat Hammack, Senior OSC, RPB, Region 6
To: Director, Office of Emergency & Remedial Response
Charles A. Gazda, Chief, RPB, Region 6
Scott Thompson, ODEQ

Site ID#: AB
FPN No: N/A
Response Authority: CERCLA
NPL Status: Non-NPL Site
State Notification: ODEQ
Incident Category:
Abandoned Contaminated Lot
Action Memo.Status: Signed 8/22/96

CERCLIS No: OKD987096591
Delivery Order No: 0035-06-117
ERNS No: N/A
Action Lead: Fund
Start Date: 8/22/96
Completion Date: N/A
Event Qualifier: TC

I. SITUATION INFORMATION

A. Site description

The Sooner Dial site is the residential and commercial area surrounding the former Sooner Dial Company facility. The Sooner dial Company facility is a 1/4 acre property located in a commercial area of Clinton, Custer County, Oklahoma. From the 1950's until 1969, the company refurbished aircraft instrument dials which contained radium-226 based luminous paint. The site is immediately adjacent to a resale shop and three residential properties.

B. Description of threat

There is a potential for exposure to the human population as a result of radium contamination at the site. Radium-226 is a radionuclide that emits ionizing radiation. Radium has a half-life of 1,620 years and degrades to radon. Ionizing radiation has the potential for being a carcinogen, mutagen and teretogen. Exposure of reproductive cell to ionizing radiation can cause gene mutations to occur in excess of the spontaneous mutation rate. Developmental defects have been observed in experimental animals exposed to ionizing radiation.

C. Preliminary Assessment Results:

Radium-226 concentrations have been found above the 5 picocuries per gram action level in the vacant lot, alley, and 2 residential properties. Additionally, contamination has been discovered at a location approximately one block from the original site in the yard behind a location known as the Kite Shop.

D. Site History/Background

The Sooner Dial Company was a facility which maintained aircraft instruments including the finishing of instrument dials with radium-226 based paint. The company began operation in the 1950's and worked with Frank Say Airmotive, Inc., and/or Carruth Laboratories, Inc., at the 1002 S. Tenth Street address. Records indicate that the Sooner Dial Company actually performed the refinishing on dials provided by Frank Say Airmotive, Inc. The State Department of Environmental Quality requested that the EPA investigate the site for a removal action.

Historical actions taken: N/A

II. SITE INFORMATION

A. Site Activities to Date

The Action Memo was singned on August 22, 1996 and an initial site walk through was conducted the following day with the ERCS contractor. Site work was postponed until after the Labor Day Holiday. On September 4, 1996, the crew initiated the excavation work at the site. The command post was established and the site was fenced to prevent access.

B. Next Steps:

Obtain a member of the Coast Guard Strike Team to monitor health and safety for the site.

Begin excavation of residential properties.

Begin excavation of former kite shop area and vacant lot area.

Procure the services of the EPA Radiological Response Team to conduct real time radiation monitoring to determine if cleanup levels have been acheived.

Transportation and disposal of contaminated soil.

C. Key Issues: N/A

III. COST INFORMATION

	Amount Obligated	Cost to Date	Ceiling
ERCS	$300,000		$915,000
START	$ 38,000		$101,300
USCG	25,000		25,000
COE	100,000		300,000

Percent of Project Funds Remaining: 100%

START PM: Rick Neely

V. DISPOSITION OF WASTES/ENVIRONMENTAL INDICATOR SUMMARY

Pending

Waste stream	Medium	Goal Attainment	Direct Contact Threat Add.	Material Date	Material Vol.
LA		SO	RM		

Material Type	Technology	Population Type	Population Number
SO	RM		

From: GROUP ERB-REG-VI
To: R6DAL01.R6TOXLAN(BLACK-BRENDA),R6DAL02.R6HAZRD1(BR...
Date: Thursday, September 19, 1996 5:10 pm
Subject: Sooner Dial Polrep #02

POLREP NO: 2

Date: September 15, 1996
Subject: Sooner Dial Site, Clinton, Oklahoma
From: Pat Hammack, Senior OSC, RPB, Region 6
To: Director, Office of Emergency & Remedial Response
Charles A. Gazda, Chief, RPB, Region 6
Scott Thompson, ODEQ

Site ID#: AB
FPN No: N/A
Response Authority: CERCLA
NPL Status: Non-NPL Site
State Notification: ODEQ
Incident Category:
Abandoned Contaminated Lot
Action Memo.Status: Signed 8/22/96

CERCLIS No: OKD987096591
Delivery Order No: 0035-06-117
ERNS No: N/A
Action Lead: Fund
Start Date: 8/22/96
Completion Date: N/A
Event Qualifier: TC

I. SITUATION INFORMATION

A. Site description

The Sooner Dial site is the residential and commercial area surrounding the former Sooner Dial Company facility. The Sooner dial Company facility is a 1/4 acre property located in a commercial area of Clinton, Custer County, Oklahoma. From the 1950's until 1969, the company refurbished aircraft instrument dials which contained radium-226 based luminous paint. The site is immediately adjacent to a resale shop and three residential properties.

B. Description of threat

There is a potential for exposure to the human population as a result of radium contamination at the site. Radium-226 is a radionuclide that emits ionizing radiation. Radium has a half-life of 1,620 years and degrades to radon. Ionizing radiation has the potential for being a carcinogen, mutagen and teretogen. Exposure of reproductive cell to ionizing radiation can cause gene mutations to occur in excess of the spontaneous mutation rate. Developmental defects have been observed in experimental animals exposed to ionizing radiation.

C. Preliminary Assessment Results:

Radium-226 concentrations have been found above the 5 picocuries per gram action level in the vacant lot, alley, and 2 residential properties. Additionally, contamination has been discovered at a location approximately one block from the original site in the yard behind a location known as the Kite Shop.

D. Site History/Background

The Sooner Dial Company was a facility which maintained aircraft instruments including the finishing ofinstrument dials with radium-226 based paint. The company began operation in the 1950's and worked with Frank Say Airmotive, Inc., and/or Carruth Laboratories, Inc., at the 1002 S. Tenth Street address. Records indicate that the Sooner Dial Company actually performed the refinishing on dials provided by Frank Say Airmotive, Inc.

The State Department of Environmental Quality requested that the EPA investigate the site for a removal action.

Historical actions taken: N/A

II. SITE INFORMATION

A. Site Activities to Date

The ERCS began and completed excavation of the two residential properties west of the site. The START collected one five point composite soil sample from each property to confirm cleanup levels were acheived and backfilled and sodded each yard. The ERCS completed excavation of the Kite shop area and preliminary excavation of the vacant lot area based upon radiological measurements by the START. Further excavation may be warranted when real time monitoring in picocuries is conducted by the EPA Radiological Response Team. Approximately 1,200 cubic yards have been excavated and stockpiled on-site to date.

B. Next Steps:

Arrange for the services of the EPA Radiological Response Team to conduct real time radiation monitoring to determine if cleanup levels have been acheived. Re-excavate areas as needed outlined by the EPA Radiological Response Team as being above the 15 picocuries/gram action level. Backfill and cover excavated areas. Bag contaminated soil for disposal. Arrange for Transportation and Disposal of contaminated soil.

C. Key Issues: N/A

III. COST INFORMATION

	Amount Obligated	Cost to Date	Ceiling
ERCS	$300,000	49,405	915,000
START	38,000		101,300
USCG	25,000	4,500	25,000
COE	$100,000		300,000
TOTAL			

Percent of Project Funds Remaining: 84%

START PM: Richard Neeley

V. DISPOSITION OF WASTES/ENVIRONMENTAL INDICATOR SUMMARY

Pending

Waste stream	Medium	Goal Attainment	Direct Contact Threat Add.	Material Date	Material Vol.

Material Type	Technology	Population Type	Population Number

From: GROUP DALLAS-TAT
To: R6DAL01.R6TOXLAN(BLACK-BRENDA),R6DAL02.R6HAZRD1(BR...
Date: 3/19/97 11:15am
Subject: Final Sooner Dial POLREP

FINAL POLREP 4

Date: March 13, 1997
Subject: Sooner Dial Site, Clinton, Oklahoma
From: Pat Hammack, Senior OSC, RPB, Region 6
To: Director, Office of Emergency & Remedial Response
Charles A. Gazda, Chief, RPB, Region 6
Scott Thompson, ODEQ

Site ID#: AB
CERCLIS No: OKD987096591
FPN No: N/A
Delivery Order No: 0035-06-117
Response Authority: CERCLA
ERNS No: N/A
NPL Status: Non-NPL Site
Action Lead: Fund
State Notification: ODEQ
Start Date: 8/22/96
Incident Category: Abandoned Contaminated Lot
Completion Date: N/A
Action Memorandum Status:
Signed 8/22/96
Event Qualifier: RV

I. SITUATION INFORMATION

A. Site description

The Sooner Dial site was the residential and commercial area surrounding the former Sooner Dial Company facility. The Sooner Dial Company facility was a 1/4 acre property located in a commercial area of Clinton, Custer County, Oklahoma. From the 1950's until 1969, the company refurbished aircraft instrument dials which contained radium-226 based luminous paint. The site was immediately adjacent to a resale shop and three residential properties.

B. Description of threat

There was a potential for exposure to the human population as a result of radium contamination at the site. Radium-226 is a radionuclide that emits ionizing radiation. Radium has a half-life of 1,620 years and degrades to radon gas. Ionizing radiation has the potential for being a carcinogen, mutagen and teratogen. Exposure of reproductive cells to ionizing radiation can cause gene mutations to occur in excess of the spontaneous mutation rate. Developmental defects have been observed in experimental animals exposed to ionizing radiation.

C. Preliminary Assessment Results:

Radium-226 concentrationswere found above the 5 picocuries per gram action level in the vacant lot, alley, and 2 residential properties. Additionally, contamination was discovered at a location approximately one block from the original site in the yard behind a location known as the Kite Shop.

D. Site History/Background

The Sooner Dial Company was a facility which maintained aircraft instruments including the finishing of instrument dials with radium-226 based paint. The company began operation in the 1950's and worked with Frank Say Airmotive, Inc., and/or Carruth Laboratories, Inc., at the 1002 S. Tenth Street address. Records indicate that the Sooner Dial Company actually performed the refinishing on dials provided by Frank Say Airmotive, Inc. The Oklahoma Department of Environmental Quality requested that the EPA investigate the site for a removal action.

Historical actions taken: N/A

II. SITE INFORMATION

A. Site Activities to Date

Additional field activities continued to focus on achieving the soil cleanup levels of 5 pCi/g Ra-226 in the top 15 cm depth and 15 pCi/g in subsequent 15 cm layers. The U.S. Coast Guard Strike Team provided health and safety monitoring for the site. Rradiation surveys before and after excavation work identified areas that were either reduced to background levels or still contaminated. The EPA Radiological Response Team brought real time monitoring equipment to the site to determine both the Ra-226 pCi/g content and gamma radiation levels in excavated areas. Data from that monitoring was used to determine if areas were clean or if they required additional excavation. As areas were found to be clean, they were backfilled with clean soil and covered with sod (residential and kite shop areas) or gravel (alley and vacant lot area.) A small section of contaminated cement floor in the adjacent auto body shop was removed and replaced.

The excavated soil was stockpiled on plastic sheeting in the vacant lot and then placed into 1.4 cubic yard capacity Super Saks staged east of the lot in the parking area. Prior to being bagged, the soil was sampled for waste profile analysis. The filled bags were covered with plastic sheeting, surrounded by a fence, and left at the site in October 1996, pending transportation and disposal arrangements. A radiation survey of excavated and backfilled areas showed no readings above background. Under a Memorandum of Understanding between EPA and the U.S. Army Corps of Engineers, arrangements were made for disposal of the contaminated soil at the Envirocare of Utah, Inc. Facility in Clive, Utah. ERCS contracted the transportation arrangements with Landstar Ranger trucking firm.

In late February 1997, disposal approval and shipping paperwork acceptance were granted by Envirocare, and the OSC, ERCS, and START mobilized to the site. The filled Super Saks were placed on wood pallets and loaded into closed Landstar Ranger trucks for transport to Envirocare. Radiation monitoring of each bag was . A total of 712 filled Super Saks were loaded onto 51 trucks.

B. Next Steps:

No additional field work.
Receipt of documentation of disposal.
Preparation of Final Report.

C. Key Issues: N/A

III. COST INFORMATION

	Amount Obligated	Cost to Date	Ceiling
FPN	N/A		
BOA	N/A		
ERCS	$300,000	320,433	350,000
START	53,000	37,293 *	101,300
USCG	25,000	4,500	25,000
COE	$100,000		300,000

* START cost as of 3/1/97

Percent of Project Funds Remaining:91.55%

START PM: Maxine LaPierre

IV. DISPOSITION OF WASTES/ENVIRONMENTAL INDICATOR SUMMARY

Pending

Waste stream	Goal Medium	Direct Contact Attainment	Material Threat	Material Add.	Date	Vol.
Ra-226	LA	N/A	Y			1000 cu yd

Material Type	Technology	Population Type	Population Number
SO	DO	R01	
	BF	D01	

#1

ecology and environment, inc.

International Specialists in the Environment

Job Number

Sooner Dial

SOG-9608-017

KSG1021019601RAXX

E & E Job Number K5610

Telephone Code Number

Site Name Sooner Dic 1

City/State Clinton, OK

TDD S06-9608-017

PAN 0196012AXX

SSID AB

Start / Finish Date 9/4/96 / 10/11/96

Book 1 of 4

E & E Emergency Response Center: (716) 684-8940
E & E Corporate Center: (716) 684-8060
MEDTOX Hotline: (501) 370-8263
E & E Safety Director (Home): (716) 655-1260

9/4/96 Sooner Dial S06-9608-019

0800 START members Rick Neeley and Maxine L. Picard meet at E+E Warehouse to complete loading equipment into EPA van.
0820 START (2) leave to pick up mini van rent vehicle.
0850 START (2) at E+E office to pick up radiation equipment.
0940 START (2) depart Dallas for Sooner Dial site in Clinton, OK.
1530 START (2) arrive at motel and check in
1630 START (2) at command Post (909 10th street) adjacent to the site.
1645 START (2) meet with OSC Pat Nammack and Coast Guard MSO, Jim Grouse.
1730 START (2) leave CP for motel to unpack equipment etc.
1830 START finished for the day.

[signature]

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219 9/5/96 Sooner Dial S06-9608-017

0700 START Rick Neeley and Maxine LaPierre arrive CP. ERCS RM Leroy Cassidy, Jessica Meador Clerk and RTs at CP. (CG) Coast Guard MSO, Jim Crouse, and OSC's Hammock and Biasco on-site. warrant officer

0710 START (2) set up ~~tables~~ tables and chairs and work area LaPierre will keep a separate logbook for radiological activities.

0800 START (2) conduct Site Safety meeting.

0810 START (2), EPA, Coast Guard and ERCS conduct a meeting to discuss the site activities. (1) Begin weed clearing (also debris) at vacant lot. (2) construct or contract for fencing banner tape at vacant lot area. (3) Plan decontamination area. (4) start dirt excavation in low level areas in yards. (5) High media attention and will be in the public eye. (6) Stockpile contaminated soil in middle of vacant lot.

0825 EPA, START, ERCS, CG go on a site walk to discuss work activities. Will begin soil excavation ASAP in residential yards. START will set up SKC pumps (2-3) one upwind and one downwind at every excavation site. START will perform radiation survey to help determine the depth and area of excavation. EPA will bring in experts to conduct a more stringent survey using other equipment ~~to~~ to measure in real time to determine if levels are low enough. Cleanup level around 25-30 mR/hr START will collect soil composite confirmation samples at each excavation area before backfilling will clean soil and or sod. Coast Guard will conduct H+S monitoring at the decon areas. ERCS will bulk the soil and send to Envirocare.

0920 START LaPierre and CG Crouse discuss H+S issues and rad equipment requirements.

1005 START Neeley uses EPA van to help ERCS pick up equipment and tables for CP. ERCS rent weed eater and a hole digger to bury fence posts.

1025 ERCS begin clearing weeds and constructing temporary fence at vacant lot. ERCS clerk and RM setting up CP. START LaPierre preparing rad equipment.

1200 START, EPA, ERCS, Coast Guard break for lunch.

1300 START, EPA, ERCS, Coast Guard on-site.

1420 START photo documents and videotapes vacant lot area. ERCS nearly completed safety fence.

1550 Media crew (Television) Channel 4 ODEQ rep. on-site. Pam Rewardy.

[signature]

9/5/96 Soones Dial SOC-9608-017

1610 ERCS completed fence and banner tape areas. yellow tape decon zone, red tape hot zone. ERCS begin clearing weeds and brush from vacant lot area.

1730 STAFFORD(2) walk over to vacant lot area to observe ERCS activity

EPA and ERCS discuss using mini-excavator to dig up residential yards

1745 ERCS complete rolling and banner tape and seeding vacant lot area.

1800 STAFFORD off-site, ERCS and Coast Guard off-site.

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-017 Photo Log SOC-9608-017

Date	Time	Frame	Roll	Dir	Comments	P/W
9/5/96	1030	1	1	N	Command Post 909 S. 10th St.	RW
	1430	2	1	SW	ERCS constructing Safety fence Vacant lot	
	1432	3	1	S	" " " " " "	
	1434	4	1	S	Pan 1 Vacant lot	
	1434	5	1	SW	Pan 2 " "	
	1434	6	1	W	Pan 3 " "	
	1435	7	1		mis-shot	
	1436	8	1	NE	Command Post from vacant lot	
9/6/96	1730	9	1	NW	Vacant lot area	RW
	1735	10	1	S	Vacant lot area - weeds have been cut	
	1737	11	1	SE	Television NEWS ch. 4 mobile station truck	
	1738	12	1	RW SW	~~Vacant lot area~~ - Adjacent building to vacant lot	
9/7/96	0912	13	1	E	Mini excavator removing dirt in residential yards	RW
	0914	14	1	SE	Excavated yard	
	0915	15	1	E	Mini-excavator removing dirt in residential yards	
	0916	16	1	SE	Stockpile of soil in vacant lot from residential yards	
	0918	17	1	W	Stockpile and decon area in foreground.	
	1115	18	1	E	ERCS excavating residential yards	RW
	1116	19	1	E	" " " "	
	1116	20	1	SE	SKC air sample pump.	
	1118	21	1	W	Stockpile from residential yard soil	
	1120	22	1	W	" " " " "	
	1122	23	1	SW	Decon area and contam. reduction zone.	
	1125	24	1	NE	EPA Command Post 909 S. 10th St.	
	1730	1	2	W	ERCS undergoing decon procedures	
	1731	2			" " " "	
	1731	3			" " " "	
	1733	4			" " " "	
9/9/96	1700	5	2	D	ERCS checking water main - NW Area of vacant lot	RW
	1702	6		SE	Soil stockpile in vacant lot.	
	1702	7			ERCS backfill w/clean dirt residential yards.	
	1703	8			" " " " " "	

Photo log continued Pg. 11

9/6/96 Sooner Dial S06-9608-017

0800 START Rick Neeley, Maxine Lapierre, OSC's Pat Hammack and Lon Biasco and ERCS on-site.

0830 START, ERCS, OSC's and coastguard discuss disposal requirements for PPE etc. START also discuss the need to dispose of samples (approx. 600) MCE sample cups. ERCS RM Leroy Cassidey will discuss PPE and sample cups with disposal company. START will remove radiation and coc labels.

0845 START Neeley drives ERCS to pick up lumber and other equipment to construct a decon pit. ERCS workplan today is to ① clear and cut back tree branches, ② construct the decon area.

0925 START Neeley and LaPierre conduct the site safety meeting.

0950 START (2) begin wrapping equipment with plastic to avoid gallery it contaminated.

1108 ERCS crew takes a break

1125 ERCS crew have received mini excavator and bobcat.

1145 ERCS have removed fencing and have positioned the bobcat and mini-excavator in the resident's backyard.

1210 START (2) and ERCS RM and clerk off-site for lunch.

1310 START and ERCS on-site.

1330 START (2) conduct radiation survey to check out the Bicron and the Ludlum.

1508 ~~ST~~ OSC's off-site. Biasco is driving Hammack to the airport.

1540 START calibrates SKC pumps.

1730 ERCS perform a dry run of decon procedures out of the hot zone with coastguard Jim Crouse and START present. Worker at the command post installing security system at this time

1830 START, ERCS off-site.

[signature]

9/7/96

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will replace
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9/7/96 Sooner Dial SOG-9608-017

0700 START Rick Neeley, Maxine LaPierre, ERCS Leroy Cassity, Clerk, and 3 RT's, and OSC Lon Bieser on-site.

0705 ERCS discuss excavation activities to begin this morning on the two residential properties west of the vacant lot.

0715 START(2) conducted site safety meeting.

0800 ERCS donning PPE, START attempts to setup SKC pumps, but started running too hard. START will set up pumps after rain stops.

0915 ERCS nearly completed excavating first 6 inches of soil from the residential yards.

1005 START begins SKC Pumps. Two pumps set downwind. One pump in residential yard upwind on clothesline near small sod shed. One upwind pump set near NW corner of vacant lot next to tin shed of Automotive building. The other downwind pump set near SW corner of vacant lot 15 feet east of alley. ERCS crew on break at this time will enter hot zone at 1030 hours and work until lunch. Samples collected from site assessment (approx. 100 in plastic cups) will be added to the stockpile for disposal. START will remove all labels. Sample media for the SKC pumps were 37mm MCE filters in plastic cassettes supplied by SKC. The cassettes were pre loaded with the filter. Filters are 0.8um, MCE, with supported pad, catalog no. 225-3-01. Samplers were calibrated to run at 2 L/m and will run continuously all day long. START will keep separate log sheets for the pumps noting calibration data from the portable film calibrator, start, stop and elapsed times. Flow rate will be calculated if required by EPA. At end of each day, START will use the Bieron with PGM and record or note any readings on the cassette filters.

1115 ERCS in hot zone excavating residential yards. START video tapes activity.

1200 ERCS break for lunch.

1210 START(2) break for lunch, drive Maxine to the motel. Maxine will drive to Dallas after lunch and return the rental van.

1310 START on-site. ERCS donning PPE.

1335 ERCS enter hot zone to continue excavating residential yards. ERCS will replace resident's tin shed and plants/flowers damaged by the equipment.

1500 START Neeley and ERCS Rm Leroy Cassity survey excavation of residential

9/7/96 Sooner Dial 506-9608-017

properties. Vendor on-site to deliver another load of clean soil to backfill the yards. Soil is stockpiled on the alley. ERCS continue to excavate yards. ERCS have pruned trees and removed vegetation. ERCS will also remove and replace wire fence along alley to accomodate excavation.

1520 vendor arrive CP to deliver copier and FAX.

1725 ERCS ~~do~~ out of hot zone and undergoing decon procedures. No radiological readings above background during PPE scan by Coast Guard Petty officer Jim Krause.

1755 START receives SKC pumps to check if any radiation. Three SKC Pumps were run for 467 mins at ~2 L/min.

1810 START conducts radiation screening on SKC filters. START removed top of cassette to expose filter. No readings were above background. START used the Biccon meter with PGM and G-2.

1900 ERCS, OSC and START off-site.

9/8/96
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-017 Soone / Dia 1 506-9608-017

9/8/96

0700 START, ERCS, OSC on-site. Same personnel as yesterday.

0730 START conducts site safety meeting

0750 ERCS leave CP for vacant lot across to don. PPE. START's calibrate SKC pumps, and radiation equipment.

0850 ERCS excavating residential yards. START set up SKC pumps at 0815 hours at same locations yesterday 9/6/96.

1045 START Neeley and ERCS Cassidy enter hot zone residential yards to survey with radiation equipment. Yard #1 (Northyard) has 1 m² area slightly above the 20 μR/hr limit. ERCS will excavate another 2-3 inches. Rest of yard is below the action level. Yard #2 (South of #1) has approximately 1/3 of the yard still very high > 80 μR/hr. ERCS will excavate this area another 3 inches. START will survey these areas again after excavating.

1200 ERCS RT's and Coast Guard will work through lunch. ERCS in hot zone excavating.

1210 START off-site for lunch.

1232 START on-site. ERCS ready for another radiation survey.

1300 START conducts survey. Found very hot area approximately 1 m² in south residential yard and S.W. corner of cemented pad of white metal building in north residential yard.

1400 START checks areas again with radiation equipment. The two areas are now below 30 μR/hr and 30,000 cpm.

1430 Pam DeWoody from ODEQ on-site. ERCS have covered the piles and decontaminated the equipment for the day. The three RT's are off-site for the day.

1445 ERCS, OSC, Coast Guard off-site. START Picks up SKC pumps and takes readings.

1500 START off-site for the day.

9/9/96 Sooner Dial S06-9608-017

	Date	Time
0700 START Rick Neely, OSC Lon Biasco and ERCS RM Leroy Cassidey and		
Clerk and 3 RT's on-site. Clerk is Jessica Meador.	9/9/96	1705
0705 ERCS discuss work plan today. Backfill residential yards, begin excavating	"	1705
dirt/gravel alley. Prepare all work to keep dust down using water spray.	9/10/96	1055
0715 START conducts site safety.	9/10/96	1410
0745 ERCS donning PPE. RT Mike Leeds will begin excavating hot area at	"	1411
SW area of vacant lot down to 2 feet. Keefe Anderson and John Meilluer	"	1413
will backfill residential yards. START calibrates SKC pumps.	"	1415
0835 ERCS (1) in resident #1 yard removing shrub along alley with mini excavator.	9/11	1000
START sets up SKC pumps. Two upwind (NW and SW corners of vacant lot) and		1000
one downwind located on the tree adjacent to the decon area.		1001
0906 START completes calibrating the 3 pieces of radiation equipment.		1015
0915 ERCS meet with representative from the local gas company to discuss location	9/13	0845
and ownership of buried gas lines. The area around the alley lines will be residential	"	0848
only. The residents own the line from the main to their homes.	"	0849
1100 ERCS crew have excavated gas line area NW corner of vacant lot down	9/13/96	1450
to 1 foot. START discusses with OSC Biasco the need to excavate to two feet		1452
gas meter area and three feet in the other hot area near the SW corner.		1453
ERCS have used the two loads of soil as backfill. Will have three		1455
more loads delivered this morning.	9/17/96	1100
1200 ERCS in hot zone removing soil around gas meter area. NW corner of		
vacant lot area. Also removing soil on dirt alley.		
1300 ERCS break for lunch, Coast Guard breaks for lunch (CS)		
1400 ERCS on-site, CS on-site. One load of backfill has been delivered		
by this time.	9/18/96	1010
1630 ERCS on break. ERCS John Meilluer and L. Cassidey at doctor's	"	1012
office. Meilluer has problems with right elbow.	"	1330
1700 ERCS (2) in hot zone continue to backfill clean soil in residential yards.	9/19/96	1430
1830 START enters hot zone to get SKC pumps.	"	1515
1850 START scans filters (SKC) with radiation equipment - no reading above background.	9/20/96	
1900 START, ERCS, OSC, CS off-site for the day.		0955
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		0958

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S06-9608-017

	Date	Time	Frame	Roll	Dir	Comments	P/W
	9/9/96	1705	9	2	SW	ERCS spreading clean backfill on residential yard	RW
	"	1705	10	2	NE	ERCS Putting up tent for rest/break area.	
	9/10/96	1055	11	2	W	~~ERCS Putting tent up for break area~~ ERCS Excavating vacant lot	
	9/10/96	1410	12		SE	ERCS Excavating vacant lot	RW
	"	1411	13		SE	" " " "	
	"	1413	14		SW	ERCS spreading fill dirt on residential yard.	
	"	1415	15		SW	" " " " " "	
	9/11	1000	16	2	W	ERCS excavating soil of vacant lot	
		1000	17			" " " " "	
		1001	18			" " " " "	
		1015	19			" " " " "	
	9/13	0845	20	2	NE	ERCS excavating former kite shop area	RW
	"	0848	21	"	SW	Pan 1 ERCS excavating former kite shop area	
	"	0848	22	"	SW	Pan 2 " " " " " "	
	9/13/96	1450	23	2	SE	ERCS laying sod in Resident #1 (wells) yard	
		1452	24		SE	" " " " " "	
		1453	25		E	Stockpile contaminated soil at vacant lot	
		1455	26		NE	Visqueen covered excavation area of kite shop	
	9/17/96	1100	1	3	NE	~~Germanium~~ Germanium instrument and gamma detector at kite shop	RW
			~~2~~				
			~~3~~ RW				
			~~4~~				
			~~5~~				
	9/18/96	1010	~~6~~ 2	3	NW	Germanium instrument and gamma detector at vacant lot area	RW
	"	1012	~~7~~ 3		SW	" " " " " "	
	"	1330	4		S	Radiation equipment and EPA at SW corner of vacant lot	
	9/19/96	1430	5		S	Gas co. and fire department at SW corner gas line break.	
	"	1515	6		W	Gas co. and fire department at SW corner gas line break	
	9/20/96		7			Mis-shot	
		0955	8	3	Down	Aircraft dial found in vacant lot of former Sooner Dial.	
		0956	9		W	Hopper for loading supersacks	
		0957	10		NW	EPA personnel and Germanium and PIC instruments	
		[illegible]				~~Aircraft dial with~~ Highly radioactive [illegible]	

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9/10/96 Sooner Dial S06-9608-017

0700 ERCS, OSC Biasco, Coast Guard Crouse, START Neeley on-site. ERCS discuss today's workplan. Complete backfilling residential properties and excavating hot areas along alley and west side of vacant lot near gas meter.

0710 START Neeley conducts site safety.

~~0730~~ 0740 ERCS RPs (3) enter hot zone, START at 0730 hours sets up three SKC pumps (2 upwind, one downwind) to monitor airborne particulates ~~that~~ during excavation and backfilling activities that may contain radioactive particles.

~~ERCS~~ 0930 ERCS in hot zone backfilling yards. Dozier arrived on-site at approximately 0900 hours.

0955 ERCS out of hot zone on break.

1040 ERCS putting up tent for break area.

1100 Vendor brings another load of fill dirt to the site for backfill material.

1145 ERCS on break for lunch.

<1120> lake entry. ERCS received a shipment of PPE and other equipment.

1400 ERCS in hot zone excavating soil in vacant lot.

1630 ERCS cut a phone line and have stopped activity to determine the owner.

1700 ERCS don PPE and enter hot zone to cover soil piles.

1740 START enters hot zone to collect SKC pumps.

1755 START checks SKC filters with PGM and G2 probes. No readings above background.

1800 ERCS, START, CS off-site.

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17 9/11/96 Sooner Dial S06-9608-017

0700 ERCS, OSC Biasco, Coast Guard Crouse. START Neeley on-site.
ERCS discuss today's work plan. 1) continue backfilling residential properties.
2) excavating vacant lot area around contaminated soil stockpile. 3) begin
work along north wall of Retail discount center (1008 S. 10th St.). Wall has
buckled in ~~placed~~ places, and has structural damage. ERCS will keep all
excavation activities at least 3 feet from the wall.
0720 Two plumbers arrive at CP to repair water line at the meter NW
of vacant lot next to alley. Water pressure is very low into the Auto shop.
ERCS are donning PPE to enter hot zone. START calibrates SKC pumps (3).
0737 START conducts site safety.
0820 ERCS in hot zone excavating vacant lot with dozier (1). ERCS (2)
using mini excavator in alley to excavate areas to ~~two feet~~ eighteen inches.
<0758> (lake entry) START sets up SKC pumps at same locations as on 9/9/96.
0915 Plumber and telephone repair people on-site fixing their lines.
1000 ERCS excavating soil in vacant lot. Plumber working to fix plumbing
problems adjacent to hot zone. ERCS clerk off-site at this time to
Oklahoma City to pick up another clerk to aid in completing 1900-55's for OSC.
1020 ERCS RT's (3) take a break
1130 ERCS don PPE to enter hot zone. ERCS, OSC, START, CS meet to discuss
change in work plan. ① Coast Guard and ERCS RT(1) will monitor depth more closely to limit amount
of soil excavated. OSC wants two 3 inch passes instead of one six inch pass.
1150 ERCS enter hot zone to continue excavating.
1153 Two residents at CP to inquire about activities in vacant lot.
1215 START off-site. ERCS working in hot zone
1315 START on-site. ERCS RT's off-site for lunch.
1400 ERCS on-site from lunch
1430 ERCS donning PPE to continue excavating in vacant lot.
1700 ERCS in hot zone to cover the stockpile with plastic. ERCS clerks (2)
working to complete past 1900-55's.
1715 START collects SKC pumps
1730 START runs radiation survey on SKC filters using PGM probe - no readings above background.
1740 ERCS out of hot zone for the day due to exhaustion from heat and wearing PPE.
1800 ERCS RT's, START, RM ~~off~~ off-site.

[signature]

9/12/96 Sooner Dial S06-9608-017 9/12/96

0700 START Rick Neeley, ERCS, Coastguard and OSC Biasco on-site. ERCS discuss todays workplan (1) continue excavating vacant lot (2) START and ERCS RM Cassidey conduct radiation survey - Flag hot spots for additional excavation as needed (3) move stockpile onto visqueen sheeting. (4) start excavation at kite shop area.

0715 START conducts site safety

0718 START calibrates SKC air sampling pumps.

0730 START calibrates G-2 probe at Ludlum.

0800 START sets up SKC pumps. Same locations as previous days.

0830 START performs radiation survey using G-2 probe and Ludlum. START uses pin flags to outline areas possibly higher than the 15pc action level for 6" or greater depths. START, OSC Biasco and RM Cassidey discuss further excavation requirements. Two "hot" areas near meters at NW and SW corners of vacant lot will be further excavated another 6-12 inches. Portions of the alley and two areas in the vacant lot may be above the action level. OSC decides to not excavate further in these two areas and the alley until next week when the Geranimium instrument arrives on-site to have a survey run by EPA specialists to determine if cleanup levels were achieved rather than guess the levels with the G-2 and Ludlum and possibly increase the amount of uncontaminated soil to the stockpile. ERCS in hot zone excavating soil along north wall of former retail center.

1110 ERCS clerks and RM, START and OSC off-site for lunch.

1140 " " " " " on-site from lunch. ERCS RD's in hot zone.

1330 ERCS go to lunch, have finished excavating the vacant lot. Will wait until next week to do any more excavation, if required, when EPA conducts their radiation survey. ERCS expect sod delivered this afternoon and will re-sod residents (2) backyards and replace fences torn down for the excavation. Nitrogen cylinder on-site at this time for Geranium instrument.

1640 START pids up SKC filters.

1655 START uses PGM probe on SKC filters. no readings above background.

1730 ERCS clerks (2) off-site for the day.

1740 START and RM perform radiation survey of former kite shop. Pin flags

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-9608-017 9/12/96 Sooner Dial S06-9608-017

on-site. were placed outlining 'hot' areas. RT John Mueller off-site due to sickness.

START and ERCS RT's fixing brick well, fences and finished of residences.

additional 1900 ERCS RT's, START off-site. OSC and RM will remain on-site to wait

start for arrival of 8 pallets of sod.

1915 Lake entry. Sod delivered to the site.

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9/13/96 Sooner Dial S06-9608-017

0700 START Rick Neeley, ERCS RM Leroy Cassidy, OSC Lon Biasco, Coast Guard Petty officer James Krause on-site

0707 START Neeley conducts site safety. ERCS RT's at command Post discussing todays work plan. ERCS clerk drove other clerk this morning to the airport in OKC. ① Two RT's will work excavating soil at the former kite shop (now Clinton communications) six inches then START will conduct another radiation survey. ② One RT will mortar and fix the brick wall along alley at resident #1 (northern most home).

0720 START calibrates SKC pumps to ~2 L/min. Kite shop is small area and will only use two pumps. One upwind the other downwind as per OSC instructions. ERCS have deconned the equipment (bobcat, mini-excavator) and will use them to excavate the kite shop area.

0850 ERCS (2) excavating former kite shop area using mini-excavator. ERCS piling soil on visqueen and will use bobcat to transport soil to stockpile.

0915 START, OSC and RM off-site to pick up supplies

0950 START, OSC and RM on-site.

1000 START and RT John Meillaer collect confirmation samples at the two residences yards. RT dug below the backfill soil. START collected one 4-point composite sample from each yard, the Wells residence (north yard) and the rental yard (south yard). START will give samples to EPA for confirmation using the Geranium as per OSC Biasco instructions rather than sending them to a lab for analysis.

1025 START calibrates ~~PAM~~ G-2 and Ludlum.

1040 START and RM resurvey kite shop area after 6" excavation and flag areas for deeper excavation. START, OSC and RM leave CP to pickup materials to build fence and tin shed to replace the one damaged by ERCS at Wells residence during excavation activities.

1120 ERCS RM, Clerk, OSC, CS and START off-site for lunch.

1220 ERCS, RM, Clerk, OSC, CS and START on-site. ODEQ Pam Dewoody, on-site.

1230 START and RM conduct radiation survey with G-2 probe and Ludlum. ERCS reexcavated some areas to 1 foot in depth. Readings on G-2 probe in excavated areas ≤ 20,000 cpm.

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9/13/96 Sooner Dist 506-9608-017

1300 START, OSC, CS and ODEQ rep. Pam DeWoody in hot zone of vacant lot checking Ludlum and G-2 probe readings. Hot spots > 700,000 cpm on pile surface and small areas surrounding pile. Gas/water meter area (NW corner) still high > 700,000 cpm and 50-200 uR/hr. OSC discussed mixing soil pile and spreading back onto then covering with a layer of asphalt the entire lot.

1410 START collects SKC pumps and surveys filters with PGM probe. No readings above background levels.

1430 OSC and ODEQ representatives DeWoody and coworker discuss cleanup of vacant lot. ERCS RT's working in residential yard laying sod and fence. ERCS have excavated areas of lot shop and stockpile covered with visqueen.

1500 ERCS laying sod in resident's yards.

1645 ERCS laying sod in rental property yard. ERCS plan to work tomorrow from 0700 hrs to 1400 hrs.

1700 START off-site for the weekend. Jim crosses off-site at approx 1600 hrs.

9/16/96 Sooner Dial SOC-9608-017

0930 START Neeley on-site. ERCS RM, clerk and RT's(3) and Coast Guard on-site at this time. ERCS RT's in hot zone covering piles in vacant lot. Area had 5 inches of rain yesterday.

0950 START conducts site safety.

1130 START off-site to check in hotel and for lunch.

1250 START on-site. OSC's Hammack and Biasco on-site at this time.

1305 ERCS begin putting together a kit for a tin storage shed to replace the tin shed damaged by excavation activities of Well's residential back yard.

1330 ERCS RT's(3) off-site for the day. Do not have correct equipment to build shed. Expect equipment/tools tomorrow.

1337 Coast Guard Jim Crouse off-site for the day.

1530 START, EPA-OSC's and ERCS RM and clerk at CP. START is waiting for the arrival of EPA technicians who will run the ~~Germanium~~ Germanium radiation equipment. The equipment arrived Friday 9/13/96.

1540 Approximately 1,200 cubic yards of soil are stockpiled on-site. ERCS will use Supersacks (1.5 yds ea.) to store the soil during the downtime for transportation and disposal.

1807 ERCS clerk and RM off-site. James ~~Shuler~~ Shura and Scott Fowler from EPA to run the Germanium and ~~pef~~ perform radiation monitoring.

1815 Fowler and Shuler unpack the equipment. Must cool the instrument using the nitrogen for 2-4 hours.

1830 EPA finishes filling instrument with nitrogen. OSC's take Fowler and Shura on a site walk to discuss the site.

1900 START, EPA and OSC's off-site.

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-9608-017 9/17/96 Sooner Dial 506-9608-017

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0800 ERCS RM, clerk and 3 RT's on-site. STARD Neeley, OSC's Hammack and Biasco, and EPA Fawler and Shura on-site.

0807 START conducts site safety

0820 Fawler and Shura obtaining a background reading. ERCS will decon the dozier this morning and begin putting the tin shed together. Background reading taken at grassy area SE of kite shop accross Opal st.

0825 STARD calibrates radiation equipment.

0910 EPA having trouble with the software on the computer for the germanium instrument. EPA Radiological RRT Response Team is the group which Fawler and Shura belong to. Coast Guard Petty Officer Crouse on-site at this time.

1040 EPA-RRT complete conducting background reading. 2 pci/g was the level. will move instrument accross the road to the kite shop area and try to obtain a reading. Problem is the stockpile may cause problem in skewing the reading. Instrument measures an area out to 30 foot radius from the instrument. May try to subtract out the soil pile from readings.

1115 RM off-site to pick up extension cord to power the computer running the ~~Germanium~~ Germanium. EPA also using a very sensitive gamma detector. The instruments are a Hyper Pure Germanium and a Pressurized Ion chamber (PIC).

1150 START, ERCS off-site for lunch.

1230 START on-site. ODEQ representative Pam DeWoody on-site. ERCS on-site.

1300 ERCS RT's in hot zone to clear out trash/salvageable items stacked al piled up at S.E. corner of vacant lot.

1305 EPA conducted a survey and got ~9 pci/g at the kite shop

1330 STARD videotapes EPA using Germanium. EPA has moved the instrument north near the stockpile in the kite shop yard to obtain a background of the stockpile to see how much influence it has on the overall reading.

1400 EPA working with germanium detector at the kite shop. ERCS RT's put up banner tape around perimeter of kite shop excavation area.

1550 EPA obtains two readings at two other locations at the kite shop. 15 pci/hr and 18 pci/hr. Each location was approx. the same distance from the soil pile. The soil stockpile may be ~~adding~~ adding 15 pci to the readings therefore, 3 pci/hr may be the actual value (18-15 = 3 pci/hr). ERCS (RT's) leave site for the day no work to do. RT's have sorted through

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9/17/96 Sooner Dial SOC-9608-017

trash pile and deconned salvageable items.

1700 EPA obtained another germanium reading near the utility pole but area around 20 pci/g OSC requested pin flags around the area for further excavation. Area near pole excavated at 1 foot will be dug another 6 inches. Surface 6 in. will be expanded around the pole as well.

1820 EPA collects data from 9 points. EPA is bringing all packing up equipment for the day.

1830 START, EPA, and OSC's (2) off-site for the day. EPA takes 9 readings using radiation equipment at the kite area

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06-9608-017 9/18/96 Sooner Dial S06-9608-017

0800 START Neeley, OSC's Hammack and Biasco, ERCS (5), EPA Fowler and Shura on-site. Fowler and Shura fill the PIC with nitrogen. The weather is cloudy with rain. May be too wet to run the radiation equipment.

0812 START conducts site safety.

0830 ERCS workplan today is to excavate flagged areas at the kite shop.

1015 EPA calibrating PIC, but having problems with weather conditions affecting instrument. Weather is cloudy with a light sprinkling of rain. ERCS crew, not much to do. Expect to excavate kite shop area. ERCS RT's will sort through debris stored in a pile SE corner of vacant lot. Coast Guard scanned the debris for radiation. Clean debris was put in the dumpster.

1050 EPA takes first reading using the PIC near the decon area in the contamination reduction zone under the tree. Reading was 9.2 pci/hr.

1120 OSC's Hammack and Biasco off-site to drop off Biasco at OKC airport. RM Cassidy off-site for OKC also to obtain drum samples associated with another ERCS job. RT's John Meillaer and Keefe Anderson off-site at this time due to sickness. RT Mike Leeds calling vendors to obtain larger backhoe with a larger bucket to fill the sacks with stockpile soil. Sacks will hold 1.5 cubic yards each. Mini excavator out of hydraulic fluid RT Leeds will fill it up and begin excavation of flagged areas at kite shop.

1200 START off-site for lunch.

1230 START on-site. EPA in hot zone running radiation equipment.

1330 Germanium PIC obtains a reading of 15 pci/hr around SW corner of site. will set up near telephone pole at SW corner where high μR/hr were obtained, to get a pci/hr value. ERCS (1) have completed re-excavation of kite shop area. ERCS (2) constructing tin shed for Wells resident.

1500 EPA (2) have moved equipment to NW corner of vacant lot at this time.

1515 EPA have measurement of 420 pci/hr and 160 PIC micro R/hr at NW corner near water meter. EPA have moved instruments to NE corner.

1540 EPA moved to NE corner of vacant lot to take radiation measurements

1600 OSC Hammack and RM Cassidy on-site.

1730 ERCS (2) building tin shed. EPA (2) obtaining rad measurements. START, EPA Fowler and RM place pin flags for additional excavation in vacant lot.

1900 START, EPA, OSC off-site. [signature]

9/19/96 Sooner Dial S06-9608-017 9/19/96

0800 START Neeley, ERCS cassidy, Meador, Meillaer, Anderson, al Leeds on-site. Coast Guard Jim Crouse, EPA Fowler and Shura on-site.
0812 START conducts site safety. ERCS work plan today is to begin re-excavation of Vacant lot area flagged by EPA. EPA Fowler al Shura will collect three more points of data in the vacant lot.
0910 ERCS crew working on building tin storage shed for Wells residence. EPA back at Kite shop checking radiation readings at re-excavated areas. START and RM set pin flags in further areas to be excavated in alley.
1010 EPA finishes gathering measurements at Kite shop. Overall reading for the area is 9 pCi/gr. A small area near the power pole approx 1 sq. yard needs to be excavated down another 6 inches just to be sure since still had high micro R/hr readings on the Ludlum ~ 80 mR/hr. EPA will move instruments back over to the vacant lot and alley area to take additional measurements.
1045 ERCS (2) building shed at Wells property. ERCS (1) excavating small area at Kite shop.
1110 ERCS (1) complete excavating Kite shop area and discuss with OSC. EPA consider area ok to backfill and sod. Overall radiation level approx 9 pCi/g. EPA has moved equipment to NW corner northward to in alley to set up ~~2x~~ and take a reading. ERCS will begin excavating at S.W corner area outlined by EPA pin flags.
1150 OSC, RM, ERCS off-site for lunch. OSC al EPA representatives discuss removing ~~hot~~ soil in alley up to 1 ft in depth all the way north to the street (Wilson st)
1200 START off-site, ERCS clerk on-site.
1250 START, OSC, ERCS RM on-site at this time.
1315 ERCS RT's (3) on-site. EPA radiation reading for north alley area approximately 15 pCi/g. EPA (2) will stop taking measurements in the hot zone of Vacant lot area to allow excavation of hot areas in alley to begin.
1340 ERCS begin re-excavation of areas outlined by pin flags.
1415 ERCS cut a gas line in SW corner of vacant lot. ERCS notify the gas company and fire department to come out immediately. ERCS notify the adjacent auto shop and are monitoring the situation.
1420 Fire department arrives at the site.
1540 Fire department al Gas company crew fixing gas line break.

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1630 Gas line fixed
1730 ERCS excavating area in alley (SW near pole) and area just south of automotive shop flagged by EPA. ERCS building shed. Plumber fixing automotive shop lines.
1830 ERCS out of hot zone.
1900 EPA, ERCS, OSC, START off-site

9/20/96 Sooner Dial SOO-96088-017

	Date	Time
0700 START Neeley, RM Cassidey on-site.		
0708 ERCS Meador and RT's on-site. ERCS Barry Nichols on-site	9/20/96	111
to set up Supersack hopper.		135
0710 EPA Scott Fowler and James Shuck on-site. EPA fills Germanium		135
radiation equipment with nitrogen.		135
0730 ERCS discuss removing hopper for supersacks from trailer. Hopper is		13
large and difficult to move. START conducts site safety.	9/23/96	143
0800 START calibrates SKC pumps and sets up two pumps. one upwind and		14
one downwind. ERCS crew re-excavating areas in vacant lot area. Hopper is		14
set up south side of stockpile in vacant lot.		15
0920 ERCS re-excavating areas in vacant lot. EPA setting up radiation		15
equipment to collect measurements in vacant lot.	9/25/96	140
1000 EPA found a old aircraft dial buried in the vacant lot area yesterday	"	14
EPA found more charcoal looking substance very highly active. The hottest	"	14
stuff found so far on-site. Measured at 150 mR (milli Rem). OSC and Coast	9/26/96	10
Guard Crouse off-site. Coast Guard personnel on-site at this time to	"	10
replace Mr Crouse who is leaving today.	"	10
1045 EPA re-measures re-excavated area along auto shop wall and is now 9.6 pCi/g.	"	10
1100 Representative of cable company discusses with RM excavation around the	10/1/96	09
cable poles. Cable company is going to remove the two poles one at the		09
S.W corner, the other along the alley NW corner gas/water meter area		09
1115 ERCS (1) using trackhoe to re-excavate area along alley that are still high		0
>15 pCi/g according to EPA measurements using the germanium and PIC.		0
1200 START off-site for lunch		
1230 START on-site.		
1307 ERCS donning PPE to move debris/etc. away from alley area to facilitate		
cable company moving poles. ERCS will use trackhoe to pull poles from ground.	RM 10/3/96	1
1340 ERCS Move from NW corner to S.W corner to pull cable pole from	10/3/96	10
ground. START discuss with EPA Shuck and Fowler the base of ~~the~~ wooden poles		10
most likely radioactive.		1
1410 ERCS complete pulling poles (2) from ground. Can now excavate		1
areas around poles. OSC and Coast Guard Warrant officer Crouse on-site.		1
1500 EPA and ERCS dig out radioactive pieces of charcoal/material at the S.W.		1
		1

Photo log

SOC-9608-017

Date	Time	Frame	Roll	Dir	Comments	P/N
9/20/96	1115	12	3	W	ERCS with Trackhoe re-excavating alley area	RW
	1350	13		N	ERCS Pulling cable pole out of ground SW corner vacant lot	RW
	1350	14		N	" " " " " "	
	1351	15		N	" " " " " "	
	1359	16		S	ERCS locating water and gas lines	
9/23/96	1432	17	3	W	ERCS hand digging around gas meter NW corner of site ~~ERCS collecting disposal profile sample~~	RW
	1433	18		W	ERCS collecting disposal/profile sample	
	1435	19		W	" " " " "	
	1530	20		NW	ERCS unloading Super Socks	
	1530	21		SW	Super socks 1½ cu yd³ for stockpile of soil	
9/25/96	1400	22	3	NW	Sod and backfill at kite shop area	
"	1415	23		SW	ERCS attaching sheetmetal funnel to hopper	
"	1420	24		NW	Hay bales used to filter sediment from water draining offsite.	
9/26/96	1040	1	4	W	ERCS loading Supersacks with stockpile soil	RW
"	1042	2		W	" " " " " "	
"	1044	3		W	" " " " " "	
"	1046	4		SE	ERCS staging bags filled with stockpile soil	
10/1/96	0925	5	4	Down	<Photo too dark for prints> ERCS using jackhammer on concrete floor in Autobodyshop	RW
	0927	6	~~4~~	S	ERCS staging supersacks with stockpile soil.	
	0927	7		W	ERCS filling supersack in hopper with soil	
	0928	8		SW	ERCS with forklift w/supersack.	
	0930	9		S	Pan 1	
		10		SSW	Pan 2 — Supersack filling and staging	
		11		SW	Pan 3 — activities at vacant lot area	
		12		SW	Pan 4	
RW 10/1/96	1545	13	4 ~~1515~~	Down	<Photo too dark for prints> 3x4ft area of cement cut out at Autoshop.	RW
10/3/96	1045	14	4	SE	ERCS loading Supersacks with stockpile soil	
	1046	15	4	S	Excavated alley behind Autobody shop and vacant lot.	
	1047	16		SE	ERCS loading Supersacks	
	1048	17		SE	" " "	
	1053	18		SW	Pan 1 - view of staged supersacks and loading activity	
	1053	19		SW	Pan 2 " " " " "	
	1420	20		NE	ERCS loading kite shop stockpile soil into pickup.	

9/20/96 Sooner Dia 1 SOC-9608-017

corner area around the hole of the cable pole. ERCS (1) using trackhoe to dig out radioactive soil at NW corner around the other cable pole. STARD uses G-2 probe on alley surface soil not yet excavated on north side. obtains 800,000 to 1,000,000 cpm. Residue soil on pole ~300,000 cpm. ERCS will decontaminate the base of poles before putting back into ground. Cable company will immediately hook ~~back up the~~ the cable back to the pole.

1530 ERCS clerk off-site to drive EPA James Shura to airport.

1630 ERCS (1) excavating hot areas in alley. ERCS (2) clearing tree branches stored in north alley so area can be excavated.

1700 START assisting EPA Fowler in collecting radiation measurements.

~~1720~~ ERC <1650> late entry - ERCS hit a water line with a trackhoe. All excavation work stops to call the water department. Line in alley.

1730 Lots of water in vacant lot, ERCS build berms to keep it on-site. START picks up SKC pumps and notes run times. No readings above background.

1800 STARD assists EPA in packing up radiation equipment.

1830 OSC, EPA, ERCS, EPA, coast guard off-site.

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9/21/96 Sooner Dial SO6-9608-017

0700 START Neeley, ERCS, Coast Guard, OSC on-site. ERCS discuss site safety.

0715 START conducts site safety.

0725 START calibrates SKC pumps.

0830 ERCS crew hits another gas line. All work has stopped to call gas company and Fire company.

0730 ERCS digging with shovels in NW area. ERCS (1) using trackhoe to move excavated soil from S.W. corner onto stockpile.

1130 START, EPA, ERCS check out RM off-site.

1200 START, EPA, ERCS check out RM on-site.

1215 START, EPA and RM flag areas to further excavation.

1280 Complete pin flags. RM will show RP's pin flags and where to dig

1430 START off-site for Dallas. Will drop off equipment at warehouse.

9/23/96 Sooner Dial SOC-96026-017

0700 START Neeley leaves Dallas for Clinton, OK. Driving EPA vehicle.

1000 (Late Entry) ~~START~~ EPA vehicle tire blows out.

1215 START arrives Clinton EPA command post.

1245 OSC and START off-site for lunch

1325 OSC and START on-site.

(Late Entry) ERCS hit another water pipe. North area of vacant lot covered with water. Work has stopped. EPA Fuller has declared the S.W. corner of vacant lot 'clean'.

1430 ERCS RM and START collect soil from stockpile for profile for disposal. One 5-gal paint bucket and 3 4-oz jars.

1515 START off-site to get new tire for EPA vehicle

1645 START on-site. Supersacks have arrived on-site.

1700 Water department has fixed the break. ERCS have nearly completed excavation of flagged areas. RP Mike Leeds will begin re-excavating N.W. corner.

1720 ERCS unloading supersacks from transport truck. ~~1/2~~ 1.4 y^3 sacks will be used for contaminated soil and will be stored on-site until transportation and disposal can be arranged.

1740 ERCS perform a dry run using supersacks, hopper, forklift and trackhoe.

1750 EPA attemps to use Germanium instrument to measure radiation of 5-gal pail of contaminated soil for disposal profile. Batteries are low and will try again tomorrow. ERCS RT's begin covering the stockpile with visqueen and will fix banner tape around the site and clean up as needed.

1900 ERCS, Coast Guard, EPA, START off-site

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9/24/96 Source Dig 506-96066-017

0700 START Neeley, ERCS, OSC and Coast Guard Petty officer Ken Biskupiak on-site. ERCS conducts site safety meeting. Scott Fadler on-site charging Germanium with nitrogen.

0707 START conducts site safety.

0710 START calibrates SKC pumps.

0815 ERCS crew working to complete re-excavation (N.W area) of vacant lot.

0925 ERCS cleaning up around soil pile in vacant lot. OSC does not want any more soil added to soil pile unless absolutely necessary. Bobcat has a flat tire. RM calls tire shop to make a service call.

1200 START, OSC and EPA off-site for lunch

1240 START, OSC and EPA on-site.

1300 ERCS complete excavation

1415 ERCS(1) have decomed bobcat and trackhoe to move from vacant lot to Kite shop to begin backfilling clean soil and laying sod. EPA collecting data at north end of alley using Germanium. START and RM use pin flags to outline area for further excavation in middle portion of alley around gas and water pipes. Pipe area digging will be done by shovels.

1430 START and RM off-site to Elk City to pick up some hay. Hay will be used at the vacant lot area to filter the water decomed by the soil. Water will drain through the hay and the hay will trap any sediments from going off-site. ERCS (2) will enter vacant lot to dig around pipes. ERCS(1) spreading (backfill) soil (clean) at Kite shop.

1540 EPA collects Germanium reading at north end of alley of 8.9 pCi/g. ERCS ~~will have~~ have completed excavation in center portion of alley.

1800 EPA and START have finished collecting Germanium reading in middle of alley approximately 10 pCi/g. OSC considers the vacant lot clean enough to begin backfilling. ERCS have also sodded the Kite shop area.

1830 ERCS RTS off-site for the evening. OSC, Coast Guard and START off-site

9/25/96 Sooner Dial S06-9608-017

0730 ~~0730~~ START Neeley, ERCS, OSC, EPA and coast Guard on-site. Another RT arrived last night Reed Watson to work on the hopper.

0735 ERCS discuss today's workplan ① finish shed, ② begin sacking soil.

0740 START conducts site safety.

0800 START and RM prepare profile samples and COC paperwork and shipping information. One 5 gallon bucket and three 4 oz. jars will be sent to Data Chem in Salt Lake City, Utah.

1000 ERCS(2) finishing up the tin shed, ERCS(2) draining water out of the hole dug around the N.W corner filled with water from broken water pipe and rain. EPA Scott Fowler off-site to check out of hotel will return to Las Vegas this afternoon. EPA has completed radiation measurements. OSC considers vacant lot clean enough to backfill. NW corner area still above 15 pci/g, but should be below this value once area is backfilled with soil and gravel.

1300 ERCS crew (2) completing final touches on the tin shed for Mrs. Wells. ERCS(2) excavating 6 more inches of soil at north end of alley.

1400 ~~START~~ ERCS and sheetmetal workers working to attach sheet metal funnel to the hopper to facilitate loading soil into the supersacks.

1540 ERCS(4) begin bagging soil testing the setup etc.

1800 ERCS loading supersacks. Sacks hold approx 1.5 yd³ but handles rip out due to weight. May have to load less to keep from ripping. START off-site for the day.

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8-017 9/26/96 Sooner Dial S06-9608-017

- RT 0730 START Neeley, OSC Nemmack, ERCS and Coast Guard on-site.

0740 START conducts site safety

1. 0900 ERCS attempting to load bags but no power. Will pick up generator to

can motor to raise hopper. Hopper must be raised to load/unload bags from

under hopper.

he 1040 ERCS(4) in hot zone filling supersacks with stockpile soil. Have to

decrease soil volume in bags since they are ripping near the handles if

t of too full. OSC has decided to add more ERCS(2) to the crew and

another forklift to speed the loading of the bags. Currently it takes

hotel 7-8 minutes for each sack.

tion 1130 START, ERCS RM and OSC off-site for lunch

NV 1200 START, ERCS RM and OSC on-site.

1330 ERCS bagging stockpile soil.

1335 ERCS RM and START measure off small 3x4 ft area in Autoshop

ls. with high CPM readings on the G-2 probe. Area is near the north wall and

already outlined with yellow tape. ERCS will cut out the area Saturday 9/28/96.

et And contract a laborer to fill in with cement. START and RM measure out an

ocks. area behind the autoshop to be filled with concrete up to the alley.

1515 ERCS crew(4) bagging stockpile soil. 19 bags have been filled by this time.

andles 1620 ERCS(4) take a 30 minute break.

TART 1820 ERCS have 35 supersacks filled to date. ERCS are covering the stockpile

and securing the equipment for the evening. The START picks up SKC pumps. Two

were set up today due to windy conditions during bag filling. No readings above

background.

1845 ERCS RT's(4) at the CP discussing bagging expectations. 31 supersacks

filled today. OSC off-site. Coast Guard off-site. Hope for 96 supersacks filled per day.

1900 START and ERCS off-site.

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9/27/96 Sooner Dial S06-9604-017 9/30/96

0730 START Neeley, ERCS (6), coast Guard, OSC on-site. ERCS discuss todays workplan to continue filling supersacks with stockpile soil.

1000 ERCS bagging stockpile soil into supersacks.

1130 ERCS bagging stockpile soil into supersacks.

1200 START off-site for lunch

1230 START on-site.

1240 Workers on-site to discuss with RM specifications for the cement work to be done on-site. ERCS plan to cut out area of cement contaminated in the autobody shop tomorrow Saturday.

1250 ERCS RT's break for lunch. Have 24 supersacks filled today so far.

1330 START all RM off-site to return generator and pickup a cement saw and jackhammer

1350 START all RM on-site. ERCS Receive two sets of longer forks for forklifts (2) to make loading supersacks easier.

1400 START off-site for Dallas.

1840 START arrive Dallas.

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08-017 9/30/96 Sooner Dial S06-9608-017

iscuss 0645 STARD Neeley leaves home for E+E Warehouse.

0735 STARD arrives warehouse to get EPA van.

0810 STARD arrives at EPA Warehouse to load supersack in van.

0930 STARD leaves Dallas for Clinton, OK.

1230 STARD at lunch

1300 STARD continues drive to Clinton

ent work 1430 STARD arrives EPA CP. ERCS filling supersacks with stockpile.

in the 1440 STARD off-site to checkin hotel.

1530 STARD at CP

ar. 1630 STARD, Coast Guard and RM unload supersacks from EPA van.

aw and <Laterentry> ERCS worked Saturday 9/28/96 loading supersacks with soil.

1730 ERCS have filled 100 sacks so far today. ERCS (1) began

for cutting and breaking small 384 ft area of cement in Autobody shop on Saturday 9/28/96. Cement is thick 6-8 in. ERCS (1) continued today to complete the job using a jackhammer. ERCS (2) arrived Saturday for a total of 5 RTs. ERCS are using two forklifts to load and move supersacks.

1900 ERCS, STARD, Coast Guard off-site. 101 sacks filled today. 288 supersacks have been filled to date.

[signature]

10/1/96 Sooner Dial S06-9608-017

0730 START Neeley, RM Cassidey, Clerk Meador, Coast Guard Petty officer Biskupiak and ERCS Foreman Watson and 5 RT's on-site.

0750 START conducts site safety. Two new RT's arrived saturday 9/28/96 Steven Day and Diallo Herbert.

0800 ERCS workplan today is to continue bagging soil and chipping out cement in Autoshop.

0930 ERCS bagging soil and staging filled supersacks on east side asphalt area up to curb of highway 10. ERCS (1) using jackhammer to chip away cement on floor in Autobody shop.

1055 ERCS bagging soil into supersacks.

1200 START off-site for lunch

1300 START on-site. ~~ERCS crew breaking for lunch~~ RW ERCS crew donning PPE.

1340 ERCS crew bagging soil into supersacks. ERCS (1) removing contaminated cement in Autobody shop. ERCS spraying down areas on ground with water to reduce dust stirred up by equipment. ODEQ Pam Dewoody and another representative on-site.

1445 ERCS crews working to bag contaminated soil from the stockpile.

1545 ERCS crews bagging soil from stockpile. START takes reading of soil under 3x4 ft area of concrete ERCS finished cutting out. G-2 probe readings ~ 80,000 cpm. Background areas in Autoshop ~ 60,000 cpm. Contractor will fill in hole with RW concrete later this week or next week.

1800 ERCS bagging soil in vacant lot area stockpile.

1900 ERCS, Coast Guard, OSC off-site. 114 Sacks filled today. 402 total to date.

[signature]

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1240 STAR
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10/2/96 Sooner Dial S06-9608-017

0730 START Neeley, ERCS, Coast Guard and OSC Biasco on-site.

0735 ERCS discuss with OSC and Coast Guard area requirements for staging supersacks. Decon area will be moved and sacks will be staged further towards the stockpile.

0745 START conducts site safety.

0940 ERCS bagging soil into supersacks. ERCS(1) using bobcat to level ground in areas of vacant lot.

1030 ERCS crews bagging stockpile soil into supersacks.

1115 START and RM survey areas around and in former decon area to determine if decon procedures contaminated the area. Readings of the areas using the G-2 probe ~~[illegible]~~ ranged from 15,000-18,000 cpm. Background readings out of hot zone were around 9000-10,000 cpm. Readings of some of the filled supersacks ranged from 40,000-80,000 cpm. All readings with G-2 probe through the fabric of the sack.

1140 ERCS RT's and Foreman in CP, break for lunch.

1210 START off-site for lunch

1240 START on-site. ERCS RT's on-site

1400 ERCS bagging soil approximately 40 bags filled ~~to date~~ on so far today

1600 ERCS RT's out of hot zone on break. Approximately 65 bags filled so far.

1630 ERCS donning PPE to enter hot zone and continue loading supersacks.

1740 ERCS bagging soil.

1900 START, ERCS, Coast Guard and OSC Biasco off-site. 92 sacks filled today for a grand total of 494.

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10/3/96 Sooner Dirt SO6-9608-017

0730 START Neeley, ERCS, OSC Lon Biasco, Coast Guard on-site
0740 START conducts site safety. OSC off-site for a meeting in Oklahoma City.
ERCS workplan today. ① continue filling supersacks ② move small stockpile of soil from kite shop (now Clinton Communications) to vacant lot area to be bagged.
③ contractor expected today to pour concrete in hole in floor at Autobody shop. and in back of the shop pour concrete pad to the alley.
0900 ERCS in hot zone bagging soil.
1000 ERCS takes a break.
1045 ERCS loading supersacks ERCS (1) using Pickup truck lined with visqueen to transport stockpile soil from former kite shop ~~to~~ stockpile to stockpile in vacant lot to be bagged.
1410 ERCS bagging stockpile soil into supersacks. ERCS (2) loading stockpile soil from kite shop into pickup to transport to stockpile at vacant lot for bagging.
1600 ERCS continue to bag soil and transfer soil from kite shop.
1645 ERCS spread first load of fill dirt in north end of alley. ERCS also continue to bag stockpile soil and transfer stockpile soil from kite shop.
1705 ERCS RT's take a break
1730 Another load of fill dirt arrives on site.
1800 ERCS ~~continue~~ are spreading fill dirt in alley and will continue bagging soil. Three dump truck loads delivered so far today. One more expected before the end of day. START off-site for the day. The ERCS crew will work until 1900 hours. 66 Supersacks filled today. ~~760 to date~~ 560 to date

Date
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10/10/96
10/11/96

Photo Log

SCC-SC05-017

Date	Time	Frame	Roll	Dir	Comment	P/W
10/3/96	1645	21	4	S	ERCS spreading ~~topsoil~~ fill dirt in alley	R
"	1646	22	4	S	" " " " "	"
10/7/96	1415	23	4	SW	ERCS decanning trackhoe and forklift.	R
	1416	24		S	ERCS using bobcat to fill area w/ backfill for area to be cemented	R
	1417	25		SE	ERCS decanning trackhoe	R
	1418	26		SW	Piles of backfill in vacant lot to be spread over lot	R
10/8/96		1	5	SW	ERCS spreading backfill soil over vacant lot	
		2		SW	" " " " " " "	
10/9/96		3		SW	cement contractor preparing area to build frame for cement	
	1010	4		SW	Pan 1 overview of site	
	1010	5		SW	Pan 2 " " "	
	1400	6		SW	Workers smoothing poured concrete	
	1402	7		SW	" " " "	
	1402	8		D	workers putting concrete in hole in floor of Autobody shop	
10/10/96	0900	9	5	NW	Gravel truck delivering load / ERCS spreading gravel.	
10/11/96	0740	10	5	NE	Pan 1 Site backfill and gravel completed.	
	0743	11		NE	Pan 2 " " " " "	
	0744	12		NWE	Pan 3 " " " " "	
	0746	13		SE	View of vacant lot and alley - completed with gravel over backfill ~~View of alley covered with gravel - site completed~~	R
	0747	14		S	view of alley covered with gravel - site completed	

10/4/96 Sooner Dial S06-9608-017 10/7

0730 START Neeley, ERCS, Coast Guard and OSC Biasco on-site. 0700

0740 ERCS workplan today is to continue bagging soil, transferring remaining drive t

stockpile soil from kite shop to vacant lot stockpile for bagging, spreading 0820

top soil over clean areas of the vacant lot. 1345 s

0745 START conducts site safety. filled

0800 ERCS donning PPE to begin work in hot zone. ERCS have completed moving gas m

kite shop soil ~~from~~ stockpile to stockpile in vacant lot. 1450

1020 ERCS working to bag soil. area

1140 ERCS bagging soil. START off-site to check out hotel. No need for 1515

EPA supersacks START brought this week. START will drive them back hole

to Dalles today. and

1300 ERCS have filled 53 supersacks so far today for a grand total of 613. START

ERCS expect to complete bagging soil by 1200 hours Saturday 10/5/96. out.

ERCS can then backfill the entire area. ~~Some backfillin~~ Backfilling activities befor

have ceased until all stockpile soil has been bagged. ERCS are at lunch after

at this time. at 10

1350 START off-site for Dalles. 1630

1845 START arrives E+E warehouse. Unloads equipment 1730

1905 START leaves warehouse for home. <Lake

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10/7/96 Sooner Dia 1 SO6-9608-017

0700 START Neeley leaves home for E&E warehouse to pick up EPA van and drive to OKC.

0820 START of EPA warehouse to drop off supersacks that will not be used.

1345 START arriving Sooner Dia 1 CP. OSC Hammack on-site. ERCS have filled 696 supersacks to date. ERCS have dug deeper area around NW corner geometer and will fill supersacks with the soil.

1450 START calibrate G-2 probe and Ludlum to perform scanning of NW corner area. START conducts site safety.

1515 START and RM check radiation levels with G-2 probe and Ludlum around hole (Geometric area N.W corner) two small areas defined at ~150,000 cpm and ~80 mR/hr. ERCS will remove more soil (~1 yd³) from these areas.

START also scanned cement pieces of trough near hole that ERCS chipped out. Some pieces were above ~~act~~ background levels and will be cleaned by ERCS before putting cement in hole before backfilling. START will scan each piece after cleaning. ERCS finished bagging stockpile soil on Saturday 10/5/96 at 1030 hours.

1630 ERCS RT's and crew leave site due to thunderstorm and rain.

1730 ERCS check, RM, START off-site.

<Late Entry> On Saturday 10/5/96 ERCS collected samples of stockpile soil for waste profile analysis.

10/8/96 Sooner Dial SOC-9608-017

0730 START Neeley, OSC Hammack, ERCS RM, Foreman and 1 RT on-site.
0740 START conducts site safety. ERCS clerk and 3rd RT's on-site
0750 ERCS workplan today: (1) Backfill alley (2) Backfill site (vacant lot) (3) decon cement pieces, (4) Wrap supersacks with visqueen. ERCS RT's John Meilluer and Keefe Anderson at motel. They are leaving the site today.
0830 START conducts radiation survey of broken cement pieces from trough near NW corner. ERCS washed off soil. A few pieces (top of trough surface) were ~80 mR/hr after cleaning. OSC wants ERCS to bury all cement pieces in hole around NW area (gas meter area). 80 mR/hr pieces will be buried upside down. ERCS have decanned the hopper and will arrange to have it transported off-site.
0935 ERCS receiving backfill soil and spreading soil over alley. Expect gravel to arrive tomorrow. OSC and RM decide 6 in for alley and 4 in for vacant lot thickness of gravel.
1000 OSC and RM survey vacant lot.
1105 Clerk Meador on-site after dropping off Meilluer and Anderson at the OKC airport. ERCS spreading backfill.
1140 ERCS spreading backfill in alley. All supersacks have been tied.
1200 ERCS RM, START, OSC off-site for lunch.
1230 ERCS RM, START, OSC on-site.
1415 ERCS (2) decanning trackhoe and forklift. ERCS foreman using bobcat in alley to backfill area to be covered with cement.
1435 ERCS complete decanning equipment.
1600 ERCS (1) packing up equipment for demob. ERCS (1) decanning road with water. Soil from trackhoe and forklift is not contaminated but needed cleaning off Wilson street. Water however, is running under some supersacks and will be diverted to the storm sewer.
1630 ERCS (2) tying down supersacks with visqueen to keep them from getting wet.
1740 ERCS discuss fencing off area with safety fence for duration of down time for Phase II transportation and disposal to begin in approximately 6 weeks.
1800 START off-site. ERCS will work until 1900 hours.

[signature]

10/9/96 Sooner Dial SOC-9608-017

0730 START Neeley, OSC Hammack, ERCS RM, clerk, foreman and 3 RT's on-site.

0740 ERCS discuss todays activities. (1) Secure fence and tie down visqueen on bags (2) level out backfill soil and gravel. (3) prepare area for cement contractor. (4) pick up PPE and equipment. START conducts site safety.

0805 cement contractors on-site to discuss forms for cement work. START and RM prepare waste profile samples for shipment.

0910 cement contractors on-site clearing and leveling area behind autobody shop to begin making forms for cement work. Dozier expected on-site this morning so ERCS can begin leveling out backfill soil over vacant lot.

<Late Entry> 0800 START discusses with OSC the two confirmation samples collected from the two residential properties. OSC said to empty the soil from the sample jars onto the vacant lot since they were considered clean.

0920 Dozier arrives on-site. Vendor also on-site to pick up the trackhoe.

1000 START photodocuments the site. Workers discuss with OSC areas/forms for cement.

1020 START uses PGM probe to scan hay bales used to filter runoff water from the site. START also scans debris in drum left with Autobody shop from site assessment activities by the TAT. Hay bales and drum contents at background levels.

1100 704 superacks have been filled to date. This should be the final count. Contractors are ready to begin mixing concrete. Approximately 12 yards will be used. ERCS contact concrete vendor to arrange earlier to the site. ERCS also expects 2 truck loads of gravel this afternoon and 8 tomorrow. Additional backfill will be delivered today as well.

1230 START off-site.

1300 START on-site. ERCS RT's, clerk, & Foreman go to lunch. OSC & RM on-site.

1400 Concrete poured, workers spreading concrete. Workers also filled in hole in Autobody shop floor also.

1515 ERCS leveling out backfill soil in vacant lot. Cement workers putting final touches on cement work. ERCS have also been tying down superacks.

1645 ERCS spreading backfill and 2 loads of gravel. Another truck load of fill dirt arrives. OSC being interviewed by Clinton paper reporter.

1740 START, OSC & RM conduct radiation survey of site now covered with backfill. No readings above background levels.

1800 START, ERCS, OSC off-site.

10/10/96 Sooner Dial S06-9608-017

0730 STARD Neeley, OSC Hammock, ERCS on-site.
0740 ERCS discuss today's activities: ① complete spreading gravel (crush + Run) ② clean up and prepare CP for departure ③ Pack equipment and decon equipment before returning to vendors ④ STARD assist ERCS-RM packaging and sending waste profile samples.
0750 STARD conducts site safety.
0840 1,100 cubic yards of contaminated soil bagged on-site.
0900 Load of gravel delivered to the site. ERCS spreading gravel.
1000 ERCS nearly complete spreading gravel on the alley.
1100 ERCS receive another truck load of gravel and begin spreading it over the vacant lot area. STARD videotapes site activities.
1110 Worker on-site to disconnect security system in CP.
1145 STARD, OSC, RM off-site for lunch.
1215 STARD, OSC, RM on-site. ERCS have bobcat stuck in hole next to gas meter. ERCS contact gas company to come to site just in case there is a problem
1245 ERCS pull out bobcat, resume spreading rock.
1330 OSC off-site for Dallas, TX
1340 ERCS receive two loads of rock and resume spreading rock
1445 STARD, ERCS RM return tables to vendor.
1600 ERCS spreading gravel
1800 ERCS preparing to demobilize the site, waiting for the last delivery of gravel.
1900 ERCS, STARD off-site.

10/11/
0730 S
0800 S
0840 S
1410 S
1530

-017 10/11/96 Sooner Dig 1 SOG-9608-017

0730 START on-site to photodocument completion of Phase I activities.

+Run) 0800 START checks out of hotel.

pment 0840 START drives back to Dallas, TX E+E Warehouse.

ding 1410 START arrives E+E Warehouse. Unloads equipment from EPA vehicle.

1530 START leaves Warehouse.

over

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#2.

ecology and environment, inc.

International Specialists in the Environment

Radiation Equipment
(Radiation Health + Safety)

Job Number KJ6100, S06-9608-017
TDD # →
PAN 019801RAXX

Sooner Dial Site

E & E Job Number KJ6100

Telephone Code Number 00217

Site Name Sooner Dial

City/State Clinton, Custer Co., Oklahoma

TDD S06-9608-017

PAN 019601RAXX

SSID AB

Start / Finish Date 9/5/96 / 9/7/96

Book 2 of 4

E & E Emergency Response Center: (716) 684-8940
E & E Corporate Center: (716) 684-8060
MEDTOX Hotline: (501) 370-8263
E & E Safety Director (Home): (716) 655-1260

9/5/96 Sooner Dial S06-9608-017 9/5/96

0720 START: Rich Neeley + Maxine LaPierre arrived in Clinton late afternoon 9/4/96. Sooner Dial a known radiation site containing Radium-226, an alpha and gamma emitter. Hazards here are both internal + external. Radium present in soil. START drove hospital route 9/4/96.

Entries in this logbook to be cross-referenced to site logbook. PM = Rich Neeley

Equipment present at the site brought by START:

1) S.E. International Monitor 4 ("RAM-4")
EPA decal # 611689, S/N 19230. Calibr'd 12/28/95

2) Bicron Surveyor M Ratemeter EPA # 903299, S/N B160N
Calibrated 3/4/96
Probes:
A-50 probe, S/N B519G
PGM " , S/N B333N
G-2 " , S/N B181N

3) Bicron Surveyor M Ratemeter, EPA 903298, S/N B155N
Calibrated 3/4/96
A-50 probe, S/N B517G
PGM " , S/N B337N
G2 " , S/N B609M

4) Ludlum Model 19 micro R Meter, EPA 903778, S/N 101768
Calibrated 3/4/96

5) Dosimeter Corp. Dosimeter charger, EPA 724373, S/N 72-I289
Pocket dosimeter: Model 862
S/N 0010794
S/N 870630
S/N 870629
S/N 870628

6) Dosimeter Corp. Dosimeter charger, EPA 903070, S/N 225-393
Pocket dosimeter Model 862
S/N 001079 (?3)
S/N 6040619, EPA 465732

Maxine LaPierre

17 9/5/96 Sooner Dial S06-9608-017

wired S/N 3050473, EPA 903074

Dial a S/N 3050467, EPA 903067

226, 7) Ludlum Model 19 Micro Rmeter. S/N 76268 (E+E's) Calibrated 1/17/96

are 0800 START Safety mtg held - conducted by M LaPierre.

in Daily safety mtgs info being recorded on my "Daily

Safety meeting Record" sheets. Also recorded in

rence site ~~safety~~ my log book. Rick Neeley had read safety plan.

0805 OSC Pat Hammack conducted general meeting

by START: of ERCS, START, USCG representative, EPA reps. Lou

Biasco to be a site during OSC's vacation. Overview

28/95 of site, work. Walked around site

0915 Back from site

LaPierre had asked Jim Crouse USCG about his

expected role. Said he'll be running decon

line + monitoring items with radiation equipment

he brought.

S/N B155N ~0920 START LaPierre + USCG Jim Crouse discussing

radiation monitoring. USCG brought Ludlum 14C

unit with external probe for α, β, γ - screen on it. He

has 2. To use for decon scanning

1155 Finished Briefing - very gen'l overview/intro by LaPierre

S/N 101768 to Neeley of basics of rad. equip. LaPierre gave Neeley

handwritten table of past monitoring results from site

S/N 72-I289 assessment

1158 Left for lunch

1255 To site

OSC - several conversations. Wants START to collect

confirmation sampler, ERCS to procure lab. LaPierre

gave lab (radiation labs) list (E+E's list) to

225-393 ERCS Leroy Cassidey to use for reference.

LaPierre gave OSC copy of handwritten table of past

TAT analytical / field screening site assessment

results. OSC - wants to use 20 μR/hr estimate,

maxine LaPierre

9/5/96 Sooner Dial S06-9608-017

as he had planned, for estimation of presence of 5 pCi/gr Ra-226

OSC - gen'l discussion of work plan - he wants USCG to find TLDs, pocket dosimeters. LaPierre gave USCG Crouse info - vendors TLD's - and address/tel # of ETE/START dosimeters vendors

ERCS Cassidy going to procure lab 10 confirmation samples.

? time R Neeley, per OSC request, called Dallas START Hayes - ordered explosimeter to be sent

~1500 LaPierre, Neeley reviewing dosimeter procedures, etc.

~135 mt 1550 Pam DeWoody from ODEQ arrived at Command Post. Stated she's planning to visit site as often as possible to see cleanup progress. Introduced her to Neeley & OSC Hammack ~1610 after TV interview he did

1717 Finished briefing Neeley on rad cooler contents except file box

1750 START's back from site - see progress of ERCS work

Had walked to it - ERCS constructing decon area. Continuing gen'l discussion of rad cooler contents - small black case - items & uses. Discussion re future work - schedule uncertain - ERCS awaiting arrival of HASP supplies. Discussed site assessment sampler, options - samples in MCA cups with radioactive labels on them - re disposal. OSC to be consulted 9/6 about plans for them

1900 left. OSC - 9/5/96 work to start 0800 hrs.

1930 LATE ENTRY: at mtg held 0805, OSC stated that disposal to be at Envirocare, apparently via arrangements with Corps of Engineers

Maxine LaPierre

9/6/96

0800 at mt ST,
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9/6/96 Sooner Dial S06-9608-017

0800 ~~At~~ mx STARTs Rich Neeley, Maxine LaPierre LaPierre at C. Post OSC Hammack, SAM Jon Biasco there. Jim Crouse of USCG there, ~~At~~ mx

OSC, START, USCG discussed decon. USCG Crouse stated to do comb. dry + wet decon. OSC arranged disposal for reuse of decon liquid as dust suppressant for soil excavation work. USCG to scan when people come out of hot zones - use wet decon if needed.

OSC, START discussed site assessment samples - for waste. Remove labels, seals, add dirt to pile to be accumulated. Decon MCA cups/glass lab jars in decon soln. [illegible] scan, dispose of as clean trash.

0832 START Neeley left with ERCL to get supplies in van. LaPierre preparing to wrap equipment

0925 Safety mtg conducted by START ~~Log~~ mx LaPierre

1010 Bicron ratemeters, etc. - same equip as those listed on pg 2, this log book

Bicron Surveyor M ratemeter EPA 903298 with G2 probe B609M - wrapped in plastic

1050 Bicron Surveyor M ratemeter EPA 903299 with PGM probe B333N - wrapped in plastic

Ludlum EPA 903778 - wrapped in plastic

1055 OSC Hammack has another Ludlum at the site, so decision has been made by TAT to return E+E Ludlum to E+E.

START discussed shipping, sampling procedures, shipping calculations

1150 LaPierre called Donna Kassel, E+E health physicist, to confirm approximate efficiency to use for PGM probe - DOT calculations - shipping

~1330 STARTs doing rough survey of area near kite shop to familiarize Neeley with radiation equip. No work being done there

Maxine LaPierre

9/6/96 Sooner Dial 506-9608-017

approx. 1445-1500 Bradley Jessup of ERCS called - LaPierre gave him info on START monitoring equip.

approx 1530-1600 B Jessup called LaPierre - discussed HASP limits (NRC) shown in draft HASP - DAC and MPC values. Discussed NRC occupational dose limit of 1.25 mrem/qtr. Jessup working on ERCS portion of HASP

Time not noted - LaPierre showed USCG Crouse TAT site assessment values - lab results. Discussed. Crouse planning anticipated decon for ERCS workers. Crouse checked USCG equip - one a Ludlum 14C rate meter, other a Ludlum 12 unit; both probes (? Geiger)?

appeared to be 44-7; Crouse manuals indicate GM detectors

Approx 1630hrs - ERCS Cassidey, STARTs reviewing past site assessment results by depth. Cassidey doing work plan

1715 START with ERCS Cassidey to vacant lot - ERCS crew had set up decon line - ERCL + USCG Crouse discussing decon/scanning procedures - exiting hot zone. START LaPierre had earlier shown USCG Crouse plastic-wrapped START equip - no decon anticipated

1755 [illegible] LaPierre to make sample calculations for shipping samples - earlier had shown START Neeley briefly sampler shipping supplies, procedures

Maxine LaPierre

9/7/96
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9/6/96 Soona Dial S06-9608-017

mtg 0715 Safety mtg conducted by M LaPierre.

0720 Radiation equip. same as that listed on pg 2, this logbook except:
Ludlum, Model 19 S/N 76268 is going to be taken to Dallas by LaPierre & shipped back to E+E

0748 Finished operational chk of rad. monitoring equip.

0807 " assigning pocket dosimeters LaPierre, Neeley. Had shown USCG Crouse use, procedures. - Another START set at site (set #2) to be used as needed by USCG for H/S monitoring. Neeley, LaPierre wearing dosimeters from set #6

0920 LaPierre finished briefing Neeley on sample packing procedures, steps. Also, LaPierre wrote procedure to leave with Neeley.
LaPierre showed Neeley more contents of 2 coolers of radiation supplies, forms, past site assessment info, results, etc. - Misc. items

Approx 1000 START LaPierre starting to remove/obliterate 'radioactive' labels & EPA decal info from site assessment samples

1200 LaPierre departing site - leaving for lunch, drive to Dallas ——— Maxine LaPierre ———

#3

ecology and environment, inc.

International Specialists in the Environment

Job Number KJ6102 Sooner Dial

TDD S06-9608-017

PAN C19601RAXX

E & E Job Number KJ6102

Telephone Code Number

Site Name Avoner Dial

City/State Clinton / Custer Co. / Oklahoma

TDD S06-9608-017

PAN 019601RAXX

SSID AB

Start / Finish Date 12/28/96 / 12/30/96

Book 3 of 4

E & E Emergency Response Center: (716) 684-8940
E & E Corporate Center: (716) 684-8060
MEDTOX Hotline: (501) 370-8263
E & E Safety Director (Home): (716) 655-1260

2

12/28/96 Sooner Dial S06-9-08-017

0530 STARTs Steve Cowan + Maxine LaPierre have left warehouse (Dallas START) in R-2 vehicle. Have packed minor fence repair supplies. OSC Hammack had called 1405 Hrs 12/27/96, St. of Oklahoma rep. Mike Broderick had notified OSC that fence reportedly blown down + some plastic sheeting had blown away - maybe a "gap" in rows of Super Sacks that had been left at site. 702 sacks left at site. START tasked to go to site, investigate situation, do minor fence repair if needed (ex, upright poles, reattach fence etc.). Notify OSC via phone of site conditions so he can determine appropriate actions. OSC-said going Sat 12/28/96 was fine - driving OK so supplies can be taken. LaPierre informed OSC she was carrying R-2 keeper, so Jim Mullins should be informed; OSC said he'd speak with Jim Mullins. LaPierre called J Mullins + they discussed situation. STARTs to go, pu OSC and keep R-2 in case needed. On 12/27/96 START took Ludlum Micro Rmeter, RAM-4, camera w film + portable phone. LaPierre prepared SSP Addendum

1044 hrs Arrive at Site. Fence near street is down.

1045 hrs START Cowan conducts site Safety Meeting.

Items discussed: Objectives: Assess site conditions, fence determine if bags of contaminated soil spilled or removed. Notify OSC after assessment. Level of Protection: Level D with Level C modification. Hazards: < gal gamma rad (Rad 226) Physical: Vehicular traffic, slip/Trip/Fall Weather: Partly Cloudy, Approx. 55°F, Little wind

Steve Cowan Steve Cowan

Maxine LaPierre Maxine LaPierre

Maxine LaPierre

12/28/96 Sooner Dial 506-9608-017

Equipment with START:

1) Ludlum Model 19 Micro R meter
S/N 101768, EPA decal 903778
2) RAM-4 S/N 19233, EPA decal 647269
3) Camera: Halina Ansco, 28 mm lens; Vision Compact 35
4) Phone: Motorola Metro Cel Cellular

1109 STARTS have finished operational check of Ludlum background = 9μR/hr

1110 START visiting site in level D. (Sketch pg. 7)
SE corner of site (10th St side next to Discount Center) fence down (poles still in place) ~30 ft from corner & going N. Bags appear to be intact. Fence completely down on south side; 4 poles remaining. Appearance of looting, pilfering of the crumbling N wall interior of the Discount Center. A trailer located in SE corner of graveled area; no cab. West part of fence also ~~down~~ down. On N side, most fence intact; some down; poles intact. Smith Env. pickup parked in ~~NW~~ NE corner of gravel area, near NW corner of bag area.

1135 START talked with Mr. Folsom of Folsom Auto Repair - he said trailer is being used by owner of Discount Center to remove items from store. There have been a couple of strong windstorms that knocked down fence. Also he said Smith truck was left - needs transmission work.

1153 START called OSC & briefed him on site conditions & conversation with Mr. Folsom and observations. He asked START to do all fence repair possible as much as START can, said it was fine for START to spend night if needed; no call to him necessary when leaving site.

1205 STARTS Cowan & La Pierre break for lunch

1250hrs STARTS arrive back at site. (Cont'd pg 6, this logbk)
Maxine LePierre

12/28/96 Sooner Dial S06-9608-017 12/28/96

Camera/Lens (Model): Halina ANSCO Compact 35, 28mm Lens 12/28/96

Date	Time	FR#	Roll#	Dir.	Subject	P/W	
12/28/96	1300	1	~~6~~ (NW)	NW	Fence down in S.E Corner of area	LaPierre / Cowan	12/28/96
12/28/96	1301	2	~~6~~	NW	Same as above	LaPierre / Cowan	12/28/96
12/28/96	1302	3	~~6~~	W	Open area in S.E Corner of Area	LaPierre / Cowan	12/28/96
12/28/96	1303	SC ~~3~~ 4	~~6~~	W-NW	Part of fence coming off of post	LaPierre / Cowan	
12/28/96	1304	5	~~6~~	SC ~~W~~ E	N.E corner of Disposal Area	LaPierre / Cowan ~~LaPierre / Cowan~~ SC	12/28/96
12/28/96	1306	6	~~6~~	E-SE ~~E-SW~~ SC	Opening in North side of Disposal Area	LaPierre / Cowan	12/28/96
~~12/28/96~~	~~1307~~	SC ~~6~~ 7	~~1~~	SC ~~E~~ S	~~N.W. side of Disposal Area~~ SC	~~LaPierre / Cowan~~ SC	12/28/96
~~12/28/96~~	~~1308~~	~~8~~	~~1~~	~~E-SE~~	~~Indented area on west side~~ SC ~~of Disposal Area~~ SC	~~LaPierre / Cowan~~ SC	
12/28/96	1309	9	~~6~~	S	Collapsed building and fence on South side	LaPierre / Cowan	12/28/9
12/28/96	1310	10	~~6~~	SE	Trailer and part of collapsed building	LaPierre / Cowan	12/28/96
12/28/96	1311	11	~~6~~	E	Collapsing of Wall on Discount Center	LaPierre / Cowan	12/28/9
12/28/96	1312	12	~~6~~	SE	View of Material in collapsing building	LaPierre / Cowan	12/28/
12/28/96	1313	13	~~6~~	SE	Same as above	LaPierre / Cowan	12/28/
12/28/96	1314	SC ~~13~~ 14	~~6~~	NE	Ripped bag in Southwest Corner	LaPierre / Cowan	

12/28/96 Sonner Dial S06-9608-012

12/28/96	1315	15	6	N	Fence Down on South Side	P/W Lafierre/ Cowan
12/28/96	1446	16	6	WNW	Fixed fence SE corner	Cowan/ Lafierre
12/28/96	1447	17	6	NW	Fixed fence along NE side	"
12/28/96	1448	18	6	WSW	Fixed fence along N side of disposal area	"
12/28/96	1450	19	6	E	View of disposal area (bag area)	"
12/28/96	1451	20	6	SE	Fixed fence on West side of bag area	"
12/28/96	1452	21	6	ESE	Discount Center N wall after fencing on ground was removed	"
12/28/96	1453	22	6	NE	Corner of bags area (SW corner)	"
12/28/96	1454	23	6	E	S side of bags area	"
12/28/96	1455	24	6	NE	Fence repair of SW corner	"
12/28/96	1456	25	6	W	SE corner of bags area	"
12/28/96	1457	26	6	W	Southern fenceline	"

Maxine Lafierre

12/28/96 Sooner Dial S06-9608-017

1315 Finished taking photos of perimeter of fence

1443 START finished retieing fence onto fence posts. Relocated fence from along N side of Discount Center to alongside bagged area where no fence was in place

1459 START leaving site. Have photographed fence repairs. Repairs primarily consisted of re-tieing fence back on to posts. Fencing that was on the ground by crumbling N wall of Discount Center was used/placed around the "Super Sacks" - bags of waste - on W side. A door was moved that had fallen & was placed on ground between the tractor trailer & the bags because it was touching a bag. A closer look revealed one bag at SW corner of bag area had a tear at bottom. START attempted to place plastic sheeting over some of the bags because the old sheeting had blown away; very little could be achieved because there wasn't any way to anchor down the sheeting. Earlier sheeting had been tied in place. START placed plastic sheeting over the bags in SW corner of area, on 10th St side; there was 1 bag that was partially opened - looked as if it had come loose; START covered it also. The sheeting was weighted down with rocks, blocks. Two "aisles" appeared to be intentional in the bags area. The empty space in SW corner area (bags area) appeared to be intentional - no evidence observed of bags having been there in the past.

START photographs depicted site conditions prior to repairs and after repairs.

NOTE: Ludlum Micro R readings at most locations at site were near background; 20 μR/hr noted at SE corner of grand area near tel. pole, meter (1 m above surface)

Sketch pg. 7

Maxine LaFierre

12/28/96 [illegible]

Discount Center

cars parked

START

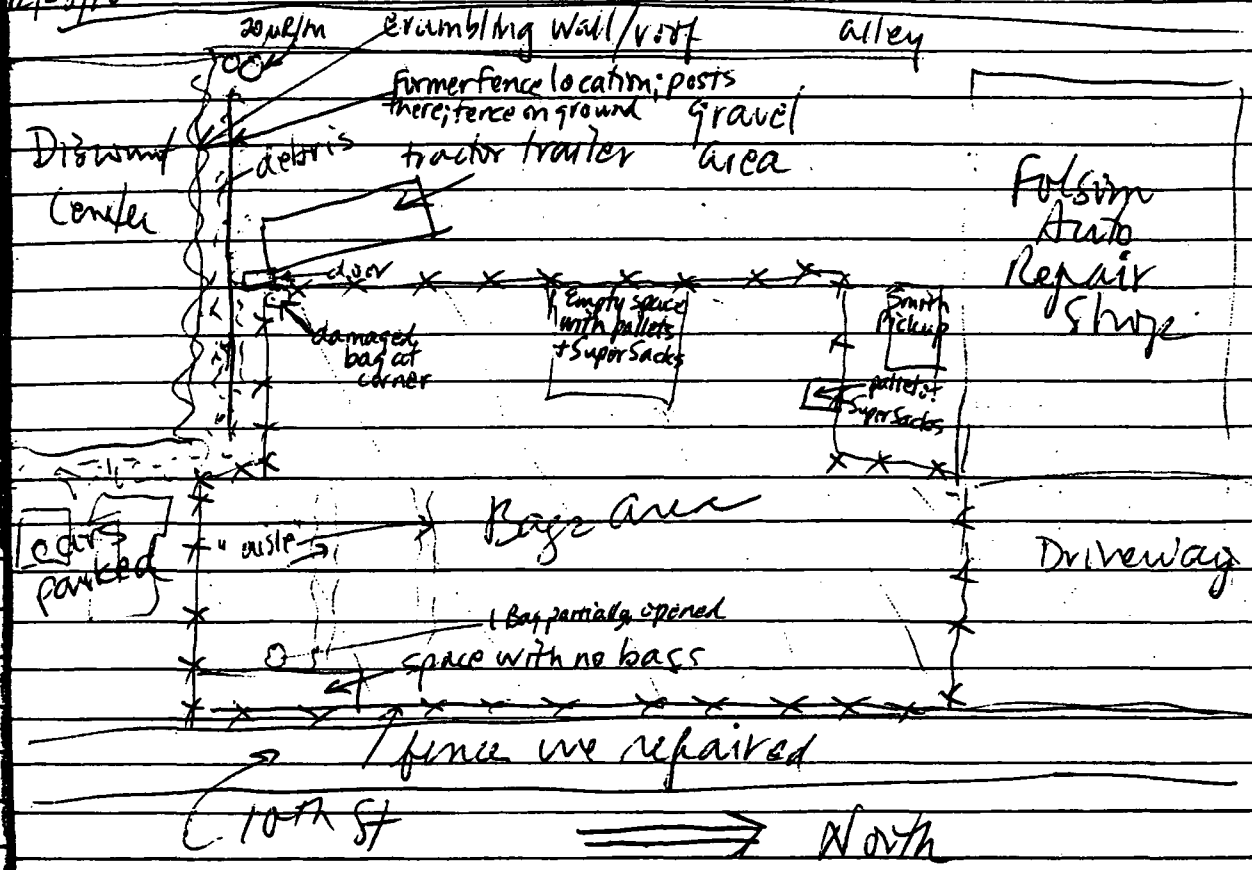
2030 STA

2043 STA

Ludlum

in a.m

12/28/96 Tooner Dial 806-9608-017



—x— fence as START left it 12/28/96 – retied it as much as possible. Weighted it down with cinder block pieces as possible/needed.

START drove back to Dallas.
2030 START @ Dallas whse. Unloaded supplies.
2043 STARTS leaving whse. Lafierre has R-2 vehicle, Ludlum, RAM-4, camera, telephone. To return R-2 in a.m.

Mayne Lafierre

8

12/29/96 Sooner Dial S06-9608-017 12/31/96

1040 START LaPierre - getting R-2 vehicle washed 0831 (

Home, reloaded equip. to turn in @ office, Home to corner

get things to turn in, assembled field items used. empty

~1215 Get gas for R-2. Drove to office/garage + put R-2 in fill-

R-2 slot tional

1250 in office to turn in gear used (camera, etc.). Note to Neeley

equip. coord. about vehicle repairs needed. Turned in

equip., R-2 keys

1330 left office

Maxine LaPierre

12/31/96 Sooner Dial SOB-9608-017

0831 Called OSC Hammach. Told him START found one bag at corner that was ripped. Empty space on 10th St. looks empty in photos I checked yesterday in START Neeley's file - appears nothing was ever there. OSC said no additional report required; add logbook & photos to START Neeley's file.

maybe future

#4

ecology and environment, inc.

International Specialists in the Environment

Job Number KJ6102; S06-9608-017

Sooner Dial
Clinton, Ok

E & E Job Number KJ6102

Telephone Code Number 00217

Site Name Boomer Dial

City/State Clinton, Custer Co., Oklahoma

TDD 506-9608-017

PAN 019601RAXX

SSID AB

Start / Finish Date 2/20/97 / 3/10/97

Book 4 of 4

E & E Emergency Response Center: (716) 684-8940
E & E Corporate Center: (716) 684-8060
MEDTOX Hotline: (501) 370-8263
E & E Safety Director (Home): (716) 655-1260

2/20/97 Looner Dial 506-9608-017

0830 START Maxine LaPierre en route to Love Field to pick up START James Luo. LaPierre/Luo to drive to Clinton in EPA vehicle 1057.

0900 LaPierre called TM Pat Hammack, left voice mail message. Call had been requested by TM on 2/19/97 due to one day delay reported to LaPierre by ERCS RM Leroy Cassidey.

0940 LaPierre picked up James Luo at Love Field.

0950 LaPierre called TM Hammack, who said he has no firm finalized ERCS plans yet. START to call TM at 12 to learn plans

1010 STARTs at START warehouse - pack rest of equip. onto truck

1200 LaPierre called TM Hammack. No answer; left voice mail message

1231 TM called START. Team leaving 2/21/97 in the morning to drive to Clinton. No travel today.
START finished warehouse work, went to lunch.

1500 START at Dallas E&E office. Prepared radiation meter foam-replacement for case. Got misc. office supplies.

1800 START left office. LaPierre took Luo to motel

LATE ENTRY: 2000 Hrs

Equipment Being Taken:

1) Ludlum Model 19 Micro R meter
S/N 101768, EPA decal 903778. Calibrated 2/17/97

2) Ludlum Model 19 Micro R meter
S/N 95533, EPA decal 903000. Calibrated 2/17/97

3) Dosimeter Corp. of America Model 862 pocket rad. dosimeter

S/N	EPA decal	Calibr. Date
6040616	465729	4/96
6040617	465730	4/96
6040618	465731	4/96
6040619	465732	4/96

Maxine LaPierre

2/20/97 Sooner Dial S06-9608-017

4). Dosimeter Corp. of America Dosimeter charger, model 909
S/N 225-393, EPA decal 903070

5 Motorola TAC 9800 XL cellular portable telephone
Tel# 214-906-5691, S/N ~~unable~~ mx unable to determine

6) Camera: Halina Ansco, Vision Compact 35, 28 mm lens
EPA decal: N/A, S/N: unable to locate

~~Discount Center gone - only foundation left~~ mx
~~all debris present in 12/96 gone.~~ mx

Maxine LaRiere

2/21/97 Sooner Dial 506-9608-017

0730 START LaPierre left home to go pick up START James Luo at motel. Plan for day: START get EPA van 1057 at Dallas E+E warehouse and drive to Clinton, OK. Travel day today. OSC flying into Oklahoma this afternoon

0843 START at E+E warehouse

0906 START LaPierre called, left message for TM to give him mobile tel. #.

0911 START leaving E+E warehouse in Dallas

1243 START stopping for lunch - Norman, OK

1323 START on road - leaving Norman

1515 START arrived at motel
Best Western Trade Winds Courtyard Inn
2128 Gary Blvd

1550 STARTS go to Chamber of Commerce - maps of Clinton; to Clinton Newspaper + an office supply co - both have FAX machine svc. Got costs. Both closed noon Sat. and on Sun.

STARTS drive to site - discuss brief history, past field work, removal activities. Observed wet conditions from past rains - some bags in water on south side of site. No bags appear to be missing since 12/96 visit. First visit by J. Luo. DBS bldg demolished.

START drove the hospital route. Then bought stress drinks.

1800 START to dinner

1940 ERCS RM Cannidey called LaPierre. Work to start at 8 am in morning at site. Tentative schedule 5 trucks per day, bags to be loaded onto pallets + lifted into truck.

1948 LaPierre called OSC Hammack to verify 8 am site arrival time. Meet at site

LaPierre + Luo wrapped equip. in plastic, prepared camera, maxine LaPierre

2/21/97
started op
started ph
LATE ENTRY:
All du

21/97 Sooner Dial 506-9608-017

started operational check logs, listed dosimeters on log. START
started photograph log on page 9, this logbook. Tel. on charge.
LATE ENTRY: Discount Center gone - only foundation left.
All debris present in 12/96 gone

maxine LaPierre

2/22/97 Sooner Dial 506-9608-017

0720 STARTS James Luo + Maxine LaPierre performing operational checks of radiation equip. - Ludlum model 19

NOTE: Equipment on hand listed page 2, this logbook Ludlum model 19 - bkgnd 8-9 μK/hr at motel

Dosimeters -	S/N	FPA
LaPierre	6040616	465729
Luo	6040618	465731

0739 START safety mtg conducted by LaPierre. See separate safety mtg form.

0758 STARTS at site. OSC Pat Hammack at site

0759 ERCS RM Leroy Cassidey and crew on site

Robert Stringfellow (ERCS crew on site)

Mike Patton (ERCS crew on site)

0826 Truck drivers were on site when STARTS arrived

Landstar Ranger

0830 Pallet World truck arrives.

0843 Pallet jack and Forklift were on site when STARTS arrived

0930 Luo to motel - get ERCS supplies

0920 1st monitoring of bags being loaded

0945 Luo back to ~~site~~ site

1100 The first truck was finished with 14 Super Sacks.

1115 The first truck leave the site and park on the parking lot of Wonder World shopping Center

1130 The ~~Sect~~ 1st Second truck start loading

1226 The Second truck finishes loading with 14 bags

1235 The third truck starts loading

1313 The first two trucks leave for Utah disposal site

1330 The third truck finishes loading with 14 bags

1332 ERCS Robert & Mike go to lunch

1338 STARTS go to lunch

1415 STARTS back. truck #4 starting to load

1515 Truck #4 finish loading with 14 bags

1625 Truck ~~#4~~ 1st 5 finish loading with 12 bags

Shuo

2 2/97 Sooner Dial S06-9608-017

1655 Truck #5 leaves site

1700 ERCS RM leaves site

1720 STARTs leave site. OSC/TM and ERCS techs are at site loading Supersaks onto pallets. no readings on dosimeters

2100 Late Entry Summary of Work:

5 trucks (Landstar Ranger Transporter) were loaded with Supersaks at site.

4 trucks - 14 bags each

1 truck - 12 bags - due to heavier weight of truck due to cab containing extra box used to transport explosives (truck #5) 68 ~~54~~ bags today

Trucks being taken to Envirocare of Utah, Inc. in Clive, Utah

Supersaks loaded onto wooden pallets by ERCS and lifted onto trucks (closed vans), using a forklift and pallet jack to position bags in truck

Radiation monitoring of Supersacks at surface and at 1 meter distance by START with Ludlum Model 19 micro R meter

Rad. monitoring and calculations noted on field forms prepared by START. Calculation formula adjusted to use readings at 1 m instead of 1 ft.

"Manifests" - Envirocare Rad. Waste Shipment & Disposal Record prepared for each shipment

4 Photos taken; see photo log, pg. 9, this log book

Original copy of "manifests" FAX'd by ERCS RM, for each truck load prior to departure, to Envirocare

2000 Hrs - START prepared additional field forms and portions of "manifests" for 2/23/97

Maxine LaPierre

2/23/97 Sooner Dial 506-9608-017

0715 START's LaPierre + Zuo start checking equipment - operational check. Sudlum background on both units - 8μR/hr. Dosimeter issued to both team members. Same order as 2/22/97 - listed on pg. 6, this logbook.

NOTE: Equipment on hand listed on pg. 2, this logbook.

0737 Safety mtg conducted by LaPierre. See safety meeting form. separate

0803 Safety mtg - ERCI, slips, pinch points, cold stress, truck traffic, radiation in waste. Level D. Cold & sunny. All ERCI + START attended

ERCS Rm Leroy Cassidey (Bkgrnd at site: 8μR/hr)

ERCS Techs Robert Strongfellow & Mike Patton

Mtg conducted by RM Leroy Cassidey

0812 Truck #1 - first bag being loaded onto it

actually truck #6

0932 Truck #6 full, preparing to leave

0932 Truck #7 loading is starting

~~1032~~ Truck #8 loading started. Truck #7 gone to be weighed

1123 Trucks #6 and #7 have left, one bag had been added to truck #6 to make total of 15 bags. Truck #7 had 14 bags

1130 Truck #8 finishes loading with 14 bags

1135 ERCS Techs go to Lunch

1145 START's go to lunch with TM

1215 START's and TM come back from lunch ERCS are on site

1230 ERCS starting to load truck #9

1322 Truck #9 loaded with 14 bags Truck #10 is not on the site yet.

1354 Trucks #8 and #9 left

1432 ERCS putting bags on pallets. START preparing manifest continuation sheets for next shipments

1700 START's left site. RM left site. OSC overseeing ERCI crew work - bags onto pallets. Truck #10 not here yet.

(Cont'd pg. 11, this logbook.) - Maxine LaPierre

Date	
2/22/97	1
2/22/97	1
2/22/97	1
2/22/97	1
2/22/97	1
2/26/97	0
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2/26/97	1
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2/27/97	0
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3/6/97	1
3/6/97	1
3/6/97	1
3/7/97	1
3/7/97	1
3/7/97	1
3/7/97	1

Sooner Dial — Sob-9608-017

Photograph LoG

Camera/Lens (Model): Halina Ansco, Vision Compact 35

28 mm Lens — EPA Decal: N/A

Date	Time	SQ/FR #	Roll #	Dir	Subject	P/W
2/22/97	1455	1	1	SW	Site with bags; one truck waiting	Hammack/LaPierre
2/22/97	1505	2	1	SE	Forklift loading one bag of waste onto truck #4	LaPierre/Luo
2/22/97	1507	3	1	SSE	Cab of Landstar Ranger truck #4	LaPierre/Luo
2/22/97	1632 ~~1400~~	4	1	N	Cab of Landstar Ranger Truck #5	LaPierre/Luo
2/22/97	1405	5	1	E	Fork Lift loading bag of waste onto pallet	Luo/LaPierre
2/26/97	0955	6	1	E	Floor of truck #17	Hammack/Luo
2/26/97	1104	7	1	E	Floor of truck #18	Luo/LaPierre
2/26/97	1106	8	1	W	START van + James Luo (to test flash on camera)	LaPierre/Luo
2/26/97	1225	9	1	E	Floor of truck #19	Hammack/Luo
2/27/97	0735	10	1	N	model: Radiation equipment in plastic (testing flash-OK)	LaPierre/Luo
3/6/97	1340	11	1	NW	View of kite shop rear with sod	LaPierre/Luo
3/6/97	1343	12	1	WNW	Rear view of kite shop	" "
3/6/97	1353	13	1	NE	Roll off container	" "
3/6/97	1355	14	1	E	Roll off container at former location of discount center	" "
3/7/97	1453	15	1	E	Dumpster (roll off container)	Luo/LaPierre
3/7/97	1455	16	1	NE	10th Street-side with gravel	" / "
3/7/97	1533	17	1	E	Backyard of 1016 Wilson Ave house	" / "
3/7/97	1534	18	1	SE	Backyard, with shed, of 1016 Wilson Ave	" / "

Maxine LaPierre

10

Loomis Dial SOL-9605-017

Date	Time	Sq/Fr	Roll #	Dir	Subject	P/W
3/7/97	1537	19	1	N	Backyard of 1005 Circle Dr	Luc/LaFiere
3/7/97	1539	20	1	E	Backyard of 1005 Circle Dr	" / "
3/7/97	1543	21	1	N	Alley showing gravel	" / "
3/8/97	1309	22	1	S	Alley showing gravel	Luc/LaFiere
3/8/97	1310	23	1	E	Graded site - final condition	" / "
3/8/97	1314	24	1	SE	Graded site + former discount retailer location (foundation)	" / "
3/8/97	1316	25	1	NE	Graded site + auto repair shop	" / "
3/9/97	0858	26	1	NW	ERCS forklift, pallet jack, + bull dozer being taken off site	LaFiere
3/9/97	0901	27	1	NE	North part of area where bags had been stored	LaFiere
3/9/97	0903	28	1	SE	South part of area where bags had been stored	"
3/9/97	0904	29	1	W	View of site from S. 70th St	"
3/9/97	0905	30	1	NW	" " " " " "	"
3/9/97	0906	31	1	SW	" " " " " "	"
3/9/97	0910	32	1	W	Back yards of houses	"
3/9/97	0912	33	1	SE	Alley, gas meter	"

Marjine LaFiere

23/97 Sooner Dirt 506-9608-017

STARTS, ERCS RM to go to motel, be ready for call from TM if truck #10 arrives.

720 Dosimeter reading recorded - no exposures noted.
STARTS starting time sheet work.

755 RM calls START - no more work today; ERCS crew coming in, per OSC/TM.

50 Late Entry Summary of work:
4 trucks loaded with Supersaks (bags)
3 trucks: 14 bags each; 1 truck 15 bags. Total 57 bags today
Loading, monitoring, recordkeeping, FAX notification (for each shipment) procedures same as those noted in Late Entry 2100 Hrs, pg. 7, this log book
Truck #10 never arrived at site as of 1800 Hrs
TM + RM discussed work/truck schedule options
RM to contact Envirocare 2/24/97 - a Monday - to finalize disposal slots availability based on truck schedules. Business Office not open today (Sunday)
1 photo taken
Weather cold, sunny, windy. Cloudy in afternoon. Snow predicted. Hi temp today approx 45°F.
Total bags shipped = 125

Maxine Lafleur

2/24/97 Sooner Dial 506-9608-017

0720 STARTs Maxine LaPierre + James Luo attending safety mtg conducted by LaPierre in motel. See separate safety mtg sheet. Ludlum bkgnds 7μR/hr STARTs - did operational check logs + assigned dosimeters - same order as on pg 6, this logbook.

0759 START at site - 2 trucks there. 7μR/hr bkgnd at site

0820 LaPierre discussed with TM Pat Hammack - at site - TDD amendment; current due date 3/1/97. to amend for 300 more hours -

ERCS on site { RM Leroy Lamdey
Robert Stringfellow
Mike Patton

0825 First truck being loaded - truck #11 (Skipped #10)

0830 RM discussing schedule of trucks with Landstar Ranger

0907 truck #11 finished loading

0920 truck #12 started loading

0945 truck #11 preparing to leave

1010 truck #12 finished loading with 15 bags.

1018 Truck #13 started loading

1045 LaPierre left to make copies

1105 TM + RM have spoken with Envirocare

1122 Truck #13 finished loading

1145 STARTs go to lunch

1215 STARTs Come back to the site

1230 truck #11, 12, 13 leave site

1250 START LaPierre called M. Rutledge in Dallas - told her TM approved 300 more hours on TDD. START to FAX paperwork.

1315 Trucks #14 + #15 not here yet - en route. Earlier ERCS RM talked with Envirocare, who has requirement for no visible dirt on outside of bags + in truck. Arrangements being made by ERCS to obtain

Maxine LaPierre

24 97 Sooner Dial 506-9608-017

more pallets + not have Envirocare return pallets.

1225 RM has told STARTs one bag removed from truck #13

1345 START FAX'd info at motel to M Rutledge

1431 Truck #14 arrived at site

1442 Truck #14 Start Loading

530 Truck #14 finished loading (14 bags). Truck #15 is not on site.

1645 OSC to motel with RM. ERCS crew at to start short break, START to buy supplies. ERCS technicians have been loading pallets.

1740 OSC, START, ERCS at site. Truck #15 just arrived.

1750 OSC told START 1 truck tomorrow, ERCS to load pallets: 8am start time. Need to have blank forms ready by Thurs for his signature - for shipments Fri - Sun; he'll be away from site Fri, Sat (a day off), and Sun Possibly Sun. off, dep. on ERCS RM arrangements.

1755 Loading of truck #15 started

1840 Finish loading of truck #15

1905 STARTs at motel - ERCS, TM, START left site. Truck #15 left

Dosimeters - no exposure.

2200 LATE ENTRY Summary of day's work

5 trucks loaded with Supersaks

4 trucks - 14 bags; 1 truck - 15 bags. Total 71 bags

No photos taken

Weather cold, windy - high about 40°F

Snow/rain mix predicted + lower temperature 2/25/9

Total bags shipped = 196

Maxine LaPicure

2/25/97 Hooper Dial 506-9608-017 2/25

0715 STARTs Maxine LaPierre + James Leo doing operational check logs for instruments. Equipment same as that on pg. 2, log book, Background TLR/hr at motel, Dosimeters issued - same order as on pg 6, this logbook

0735 STARTs have safety meeting conducted by Maxine LaPierre in Motel. (see separate safety meeting form)

0755 STARTs at site. ERCS RM Leroy Cassidy, Mike Patton + Robert Stringfellow at site. 0800 OSC Pat Hammack at site. Truck not yet here. Discussion about schedule, Envirocare form completion

0855 TM told STARTs to page him / call him each night to give summary of day's work while he is gone. Sat. will be an "off" day. Maybe Sun., dep. on ERCS arrangements. ERCS to try to put 15 bags per truck where possible. OSC leaving Th noon

0930 truck arrived - #10 . Cold, snowing

Approx 0940 Palletworld truck arrived. ERCS unloaded pallets then started loading truck #10 - only truck today

1100 truck #10 - finished loading (14 bags)

1100 truck #10 leaving

1130 ERCS RM, TM, STARTs leave site. ERCS technicians preparing for lunch break. RM leaving Clinton to go to OK. City. TM + STARTs to lunch

1230 TM + STARTs at site. ERCS technicians working loading pallets. Raining.

1235 STARTs go to motel to prepare Envirocare manifests forms

Dosimeter readings - no exposure noted

TM has START tel. at site

1310 STARTs preparing 1st + 2nd pages of Envirocare forms

1515 START stopped " " " " " " "

- have ~~done~~ finished 15 1st pgs + 14½ 2nd pgs

- still raining

1530 LaPierre to site briefly - TM + ERCS techs. there. Told TM

Maxine LaPierre

1/25/97 Looner Dial S06-9608-017

Hank Thompson has question about TDD amdt, per call to Marty Rutledge. TM to call him. LaPierre to lv. message RM, to call Envirocare

1550 LaPierre - KMart - bought skin lotion, looked at work gloves

1720 RM, TM, START LaPierre meet - TM's motel room. Envirocare concerns about possible low cont. of 2 trucks due to Envirocare in-house additional requirement beyond DOT removable cont. limits. Options discussed - such as plastic sheeting on truck floors. Rain, snow weather considerations. LaPierre to obtain ratemeters with pancake GM probe if needed by TM - to be determined 2/26/97.

1900 LaPierre, Luo ~~[illegible]~~ discussed Bicron ratemeter efficiencies, conversions from dpm to cpm, options for monitoring bags, etc. DOT limit, etc. - ext. removable cont.

200 Summary of Day

1 truck loaded - #10 = 14 bags

450 pallets arrived

ERCS placed bags on pallets for 2/26

Discussions with Envirocare by TM + RM about low ext. removable cont. possibly on 2 trucks - not certain

Weather - cold - high about 36°F; snow in a.m. then rain approx. noon until present

15 sets of forms - manifests blanks - prep'd by START

no photos

Total bags shipped: 210

From 2000-2100 LaPierre prep'd conversion info, table for TM, RM

Maxine LaPierre

2/24/97 Lonnie Dial 506-9608-017 2/24/

0715 STARTS Maxine LaPierre + James Luo doing operational checks on instruments. All equip. same as that listed on page 2, this log book. Dosimeters issued in same order as on pg. 6, this log book Ludlum backgrounds 8 μR/hr. 1328 1347 1400

0730 Safety mtg being conducted by LaPierre in motel. See separate safety mtg form 1500 1515

0755 STARTS to site. ERCS RM Leroy Cassidey, Mike Patton, Robert Stringfellow at site. 1610 1665 1710

3 trucks at site. 171

0800 TM at site. Acc. to first truck driver, a few bags were accidentally punctured by Envirocare. Facts not yet substantiated. 172 174 2105

~0820 TM left to go to motel - make calls about situation.

0835 First truck - truck #16 being loaded. 25mx Plastic sheeting had been placed on floor of truck

0909 Driver of tractor 33005, trailer 43005 Sheldon Wright reported that, from the tractor, he could see in the mirror one bag fmx brought out by Envirocare forklift was tipped over onto one side and spilled contents onto ground + truck floor - was spilling before it was removed.

Driver of tractor 25973 + trailer 08366 Mark Chisman stated he could see one bag spilling soil as it was brought out.

Above observations happened 2/24/97

~~0945~~ 0945 me Truck #16 finished loading (14 bags)

1010 Truck #17 being loaded - taking 12 bags

1030 Truck #16 leaving

1055 Truck #17 finished loading with 12 bags.

1110 Truck #18 is loading

1215 Truck #18 finished loading with 15 bags.

1220 STARTS, TM + RM to motel to FAX forms, then lunch

— Maxine LaPierre —

2/26/97 Sooner Dial S06-9608-017

1328. TM, RM + STARTs to site. Truck #18 overweighed - one bag to be removed

1247 Truck #18 calculations, forms changed to reflect fact that one bag removed from truck; 14 bags left on it

1400 Truck #19 has started loading - bentonite on floor, slippery

1500 Truck #19 finished loading with 14 Bags.

1515 Truck #20 starting loading

1610 Truck #20 finished loading with 14 bags

~~1655 TM + RM counted remaining bags - ~438~~

1710 RM + START LUO counted remaining bags - approx. 438.

1715 START leaving, RM left; OSC + ERCS techs. at site

1725 Dosimeters check - no exposures

1745 STARTs finish forms for next 3 days

2105 Summary of day

5 trucks loaded

1 truck = 12 bags; 4 trucks = 14 bags ea; total 68 bags loaded today

Approx. 438 bags left

ERCS placed ~~pallets~~ mx bags on pallets for 2/27/97

Weather cold, rain in a.m., high approx 38°F; conditions still wet, muddy.

5 sets of manifest forms prepared by START

4 photos taken; flash may not be working

Discussions between Envirocare + RM + TM - possible cont. - very low - on 1 bag. Last 3 trucks that arrived today there were fine.

Sat. to be a day off

Sun. 1-2 trucks to be loaded - tentative #

Total bags shipped = 278

Maxine LaPierre

2/27/97 Sooner Dial 506-9608-017 2/27/97

0715 START's James Lee + Maxine LaPierre started equip operational check log. All equip listed on page 2, this log book. Background 8 μR/hr. Dosimeters issued in same order as on pg. 6, this log book

0730 Safety meeting conducted by LaPierre. See separate safety meeting form (Temp 28°F)

0752 START's LaPierre + Lee at site. ERCS RM Leroy Cassidey at site + Mike Patton & Robert Stringfellow

0800 TM at site - Pat Hammack, ERCS - held safety mtg. No trucks have arrived yet

START gave TM the 15 prepared manifests to sign.

0810 For each shipment, START to add date on 1st sheet. TM leaving approx. noon today - flies to Dallas.

0815 TM told START LaPierre that START should watch ERCS load pallets on Sat. 3/1/97 because ERCS RM to have day off. Ea. START can work ½ day + split the duty. Mon. 3/2 work expected to be short - 1 or 2 trucks tentatively, dep. on schedule

0845 START working on forms (manifests) while waiting for trucks

1130 OSC left site

1150 START + ERCS to lunch

1230 Back from lunch

work on forms by START + loading of bags onto pallets by ERCS - all afternoon

1725 Truck #21 arrived

1830 Truck #21 finish loading with 15 bags. The truck leaves for weight station at 1840.

1930 ERCS crew (techs) leaving. Truck #21 weighed all right with 15 bags. Paperwork finished. ERCS RM + START preparing to leave

1944 LaPierre called TM Hammack + reported 1 truck of 15 bags loaded today - he wants no work in the dark.

Maxine LaPierre

2/27/97 Sooner Dial S06-9608-017

945 Dosimeter — no exposure noted

2120 Summary of Day

1 truck loaded: 15 bags

Approx. 423 bags left

ERCS placed ~~for~~ mx bags on pallets for 2/28/97

5-7 loads expected tomorrow, about 3 loads Sat.

Manifest blanks forms prepared by START

OSC/TM left site to go to Dallas

Weather cold, windy in afternoon, sunny briefly in afternoon. Dry. High approx 40-45°.

Total bags shipped = 293

No photos

Maxine Pierce

2/28/97 Sooner Dial S06-9608-017 2/28/97

0715 STARTs James Luo + Maxine LaPierre doing operational checks on equipment. Equipment listed on page 2, this logbook. Background 7 μR/hr with Ludlum. Dosimeters being issued at 0735 to both in same order as on pg 6, this log book. 1530 ER Approx 16 tru sche 1630 RM site 1700 L 1715 6 t 1720 2120

~~0740~~ 0730 safety mtg held in motel. See separate safety meeting sheet. Conducted by J Luo.

0754 STARTs at site. RM Leroy Lansdey at site.

0758 ERCS Mike Patton + Robert Stanley follow to site. three trucks waiting

0805 truck #22 started loading

0832 weather: overcast, windy, cold.

0850 truck #22 finish loading with 15 bags

0900 truck #22 gone to weigh

0920 truck #22 OK with 15 bags - to adjust rear wheels axle weight

0930 truck #23 has been loading. truck #23 Start loading at 0700

0950 truck #23 finish loading with 15 bags.

0955 truck #23 taking manifest with him to weigh station

1000 truck #24 preparing to start loading

1045 Truck #24 finished loading. Driver taking manifest with him. 14 bags

1107 Trucks # ~~25~~, 26 & 27 arrive - 3 trucks

1115 Truck # ~~25~~ 26 started loading

1140 Truck # ~~25~~ 26 - changed to #26. One truck missing - skipping #25

1200 Truck #26 finish loading with 15 bags

1202 STARTS, ERCS breaking for lunch

1250 Truck #27 has started loading.

1300 Truck #26 back; 15 bags weighed OK

1305 Truck #27 still loading

1337 Truck #27 finish loading with 14 bags

1350 Truck #28 starting to load

1432 Truck #28 finish loading with 15 bags

1515 Trucks 26, 27, + 28 expt.

— Maxine LaPierre —

2/28/97 Former Dixie 506-9608-017

1530 ERCS has been/is loading pallets. RM on site with them

Approx 1600 ERCS RM leave truck #25 due in tomorrow. No more trucks today. Calculations START + ERCS RM about bags, trucks scheduled.

1630 RM leave site for day. LaPierre takes truck to motel & returns to site

1700 LaPierre, ERCS techs leaving site

1715 LaPierre + RM Cassidy called TM Hammack - reported 6 trucks loaded, 4 with 15 bags, 2 with 14. Good day's work

1720 Perimeter check - all fine. 1830 LaPierre finished - drafting truck tracking form - completed 2 pages of it

2120 Summary of Day

6 trucks loaded:

4 with 15 bags, 2 with 14 bags; total 88 bags loaded today

ERCS loaded bags onto pallets for future shipments after trucks left

ERCS placed some plastic sheeting that was in the clean area around bags

Manifest forms prepared by START

Weather: very windy - up to 25 mph, dry, overcast, cold.

Total bags shipped = 381

Approx. 335 bags left.

LaPierre

Martin

3/1/97 Loomis Dial 506-9608-017

0715 STARTS Maxine LaPierre & James Luo performing equipment operational checks - Ludlums. Background 7 mR/hr at motel. Dosimeters being issued. Equip. same as that listed on pg 2, this log book. Dosimeters in same order as listed on pg. 6.

0725 Dosimeters issued.

0730 Safety meeting conducted by Luo in motel. See ~~attached~~ separate safety mtg sheet.

0755 STARTS LaPierre & Luo, RM Leroy Canidey, ERCS techs Robert Stringfellow & Mike Patton at site.

0802 Truck #29 arrives at site

0815 Truck #29 Started loading

0900 Truck #29 finish loading with 13 bags

1015 Trunk driver called - in Amarillo & expected to be in Clinton at 1400 Hrs. No word from the other truck

Approx 1215 STARTS & ERCS techs to lunch. RM had gone at 1130 & returned.

1245 START, ERCS back from lunch

START during day - prepared manifests, filled in tractor & trailer #2 on field-prepared form (by LaPierre in motel 2/28/97) for each truck load

1420 Truck #30 arrives

1515 Truck #30 finish loading with 14 bags.

1530 Truck #30 left. RM had called Ranger - #26 here was changed to slot for #25 by Ranger

1700 RM Canidey & START Luo leaving site.

Work schedule for 3/2/97. ERCS Stringfellow & Patton 8 am - 1600 Hrs

Shifts for others: RM Canidey 0800-1030 hrs, LaPierre 1030-1300 hrs

J Luo 1300-1600 hrs. Person at site to keep START tel. to call others if truck arrives.

1730 ERCS techs & START LaPierre leave site.

1750 LaPierre called TM Hammack ½ home - left tel. message 2 trucks loaded today, another had

Maxine LaPierre

3/1/97 Lorner Dial

mechanical problems to be here tomorrow. Site work starts 8am - rotating schedule - 3/2/97

1500 Dosimeters checked - no exposures

1830 Summary of Day:

2 Trucks loaded:

13 bags on one, 14 bags on other. Total today = 27 bags

ERCL loaded bags onto pallets for future shipments

Forms prepared by STARC

Weather - windy, cloudy - a little sunshine, cold

Total bags shipped to date = 408

Remaining bags approx. 308

No photos taken.

mechanic failure

3/2/97 Sooner Dial S06-9608-017

0750 Finished equip. check of Ludlum EPA 903778. Back ground = 7 μR/hr.

0800 RM called - truck here. LaPierre called J Luo, took forms, broom, Ludlum, clipboard to RM, then returned to motel to get J Luo. ERCS Stringfellow + Patton were at site 0800 also

0820 truck #25 loading

0920 truck #25 leaving - 14 bags
RM to motel to FAX form

0940 STARTs to motel. All ERCS at site.

1030 LaPierre to site to replace RM Leroy Lassiday. ERCS technicians Robert Stringfellow + Mike Patton at site loading bags onto pallets. J. Luo at motel

1305 LaPierre leaving site

1315 J Luo arrive at site ERCS techs loading bags onto pallet.

1600 START Luo & ERCS techs leave site

1640 LaPierre called TM Hammack - reported that 1 truck was loaded today. TM to arrive in the morning.

1730 Summary of Day
1 truck loaded - 14 bags
ERCS loaded bags onto pallets
Total bags shipped = 422
No photos

Maxine LaPierre

3/3/97
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3/3/97 Sooner Dial 506-9608-017

0715 STARTs James Luo + Maxine LaPierre doing operational checks of Ludlums. Equip. same as that listed on page 2, this logbook. Background 7 uR/hr.

0725 Safety meeting being conducted by James Luo. See separate safety meeting form - mtg recorded on it

Dosimeters issued in same order as on pg 6, this logbook

0755 STARTs arrive at site. RM Leroy Cassidey at site. Sunny day expected. approx 30°F now - up to 65°.

0800 Robert Stringfellow + Mike Patten at site, 2 trucks at site

0815 truck #31 starting loading

0910 truck #31 finish loading with 14 bags

0925 truck #31 left + #32 has started loading

1010 truck #32 left to go weigh - has 13 bags on it

1052 truck #32 - weight was acceptable

1125 truck #33 arrive at site and starting loading

1120 TM Hammack arrived at site

1215 truck #33 finish loading with 14 bags

1225 START, ERCS to lunch + TM

1310 All back from lunch, Trucks - 2 - there

1315 Truck #34 loading - started

1435 Truck #34 finish loading with 15 bags and go to weigh station

1446 Truck #35 starting to load

1458 Truck #34 back - needs to remove 1 bag - overweight

1532 Truck #34 left - 14 bags; removed + others have been rearranged

1533 Truck #35 loading again

1638 Truck #35 loaded, preparing to leave - 14 bags

1645 RM Cassidey + START Luo counted bags - approx 221 remaining

1647 TM told STARTs to take day off tomorrow

1700 TM left site

1730 STARTs & ERCS leave site

Luo

3/3/97 Looner Dial 506-9608-017

1735 Dosimeters turned in - no exposures noted

1945 Summary of Day

5 trucks loaded today

4 trucks - 14 bags ea.; 1 truck - 13 bags

total bags loaded today = 69

TM, RM planned truck loads, arrangement of remaining bags. ERCS to work 3/4/97.

Recount: approx 221 bags remaining

TM returned to site

START to be off tomorrow, per TM. START gave RM past manifests, telephone, Ludlum + to TM - stress drink cooler, supplies

TM, RM to discuss forms for site - 1955's; clerk from Star Drilling site in Elk City has been doing them.

No photos

No trucks to arrive 3/4/97

Total bags shipped = 491

Remaining bags 221

Maxine LaPierre

3/5/9
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131

017 3/5/97 Sooner Dial S06-9608-017

0715 Note: START had day off yesterday. According to RM Leroy Cassidey, the TM and all ERCS worked all day yesterday - ERCS put bags on pallets. RM & TM went over 1955's.

0725 START James Luo & Maxine LaPierre doing radiation equipment operational checks. Both Ludlums - 7uR/hr background.

0730 Dosimeters being issued to START members in same order as on pg 6, this log book

0735 Safety meeting being conducted by J. Luo. See separate safety meeting sheet/form

0755 START at site. ERCS Leroy Cassidey, Robert Stringfellow & Mike Patton at site. Truck #36 has arrived. TM on site - Pat Hammack at 0800 hrs.

0805 Truck #36 - loading starting

0855 Truck #36 finish loading with 15 bags and go to weigh station and leaving

0905 truck #37 starting loading

0945 truck #37 finish loading with 15 bags

Approx. 0910 Pam De Woody of State of Oklahoma visited site, took photos, observed loading, discussed activities with TM

~~0955~~ 0950 mx Truck #37 leaving to weigh - (a roll off box delivered earlier; time not noted.)

0955 Truck #38 starting to load

1015 Truck #37 back from weigh station - was over weight

1040 Truck #38 finish loading with 15 bags

1045 Truck #38 leaving

1050 Truck #37 bags being rearranged

1117 Truck #37 leaving - has 14 bags

1130 Truck #~~39~~ mx 38 overweight - 1 bag removed - now 14 bags preparing to leave

Approx. 1140 Truck #39 started loading

1230 Truck #39 finish loading with 14 bags

1235 TM, START, ERCS breaking for lunch

1315 Truck #39 leaving. TM, START, ERCS at site

Maxine LaPierre

recycled paper ecology and environment

3/5/97 Looner Dial S06-9608-017

~~1315~~ mt 1350 Truck #40 arrived

1355 Truck #40 loading started

1440 Truck #40 finish loading with 14 bags

1445 Truck #40 leaves site

1530 TM + STARTs have been discussing returning fence, fence posts, unused Super Sacks to Dallas in van. Van packing - probably Sat.

1545 START left site, for OSC. OSC/TM gone to motel briefly. RM meeting clerk from Star.

Dosimeter readings - no exposures noted

Summary of Day

5 trucks loaded:

4 trucks = 14 bags ea; 1 truck = 15 bags

total for day = 71 bags

150 bags remaining. Bags recounted by START Luo

Rolloff container delivered to site in morning - for plastic sheeting formerly covering the Super Sacks

No photos

ERCS loaded more bags onto pallets

Schedule: 5 trucks per day for next 2 days + 1 truck on Sun., dep on wind/snow conditions in states the trucks enter + leave.

Total bags shipped = 562

Bags remaining = 150

Maxine

LaPierre

3/6/97

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08-017 3/6/97 Sooner Dial 506-9608-017

0725 START Maxine LaPierre + James Luo doing radiation equipment operational checks. Ludlum background 6 μR/hr. Equip. listed pg. 2, this logbook.

0735 Dosimeters being issued in same order as on page 6, this logbook.

0740 Safety meeting being conducted by James Luo. See separate safety meeting form.

0755 STARTS at site. ERCS Robert Stringfellow and Mike Patton and RM Leroy Cassidey at site. TM Pat Hammack at site. No Trucks yet.

1045 ERCS + START finished collecting fence posts, unused Supersacks + fence - wrapped up. Put all those items in START van. Also collected rope used to secure bags + plastic sheeting

START monitored roll off container containing plastic sheeting - with Ludlum - got background readings.

1100 ERCS - rented bulldozer arrives + gravel truck

1140 TM, RM, START leave for lunch

1225 TM, RM, START back from lunch. ERCS crew had gone/come back from lunch - now working

1303 START has been taking photos

1317 START finished counting bags - 150 left

1422 ~~TM~~ MX START completed preparation of the shipping forms. TM reviewed

1600 ERCS has been spreading out the dirt brought in during last trip and then spreading / leveling gravel with bulldozer. START working on forms.

1615 Truck #41 arrives

1650 Truck #42 arrived

1700 Truck #41 finish loading with 14 bags and truck #42 Start loading at 1715

1755 Truck #42 finish loading with 14 bags.

30

3/6/97 Sooner Dial S06-9608-017

1758 TM told START to keep original ~~1955~~ 1900-551 – to be delivered by clerk from Star Drilling tomorrow.

Also, START to keep shipping document copies.

1800 TM, ERCS, START leaving site

approx 1810-1815 dosimeter readings – no exposures

Summary of Day

2 trucks loaded, 14 bags each. Total today = 28

Bull dozer & gravel delivered to site

ERCS, after staging remaining bags on pallets, started spreading / leveling remaining dirt & newly-received gravel with bull dozer

START EPA van loaded with unused bags, remaining fence, fence posts – to be taken to EPA warehouse

4 photos taken

Schedule of trucks – 7 to be loaded ~~Fri~~ (3/7) & ~~Sat~~ (3/8) upon arrival; 2 expected Sun 3/9/97 to complete removal of bags

TM leaving site approx. noon 3/7.

START, ERCS to finish approx. 3/9, dep. on truck arrivals

Total bags shipped = 590

Bags remaining = 122

Maxine LaPierre

7/97 Sooner Dial 506-9608-017

0720 STARTS Maxine LaPierre + James Leo doing operational checks on radiation equip. Equip. listed on page 2, this logbook. Tudlum background = 7μR/hr

START re-wrapped one Tudlum in plastic

0735 Dosimeters issued in same order as on page 6, this logbook.

0740 Safety meeting conducted by James Leo. See separate safety meeting sheet

0755 STARTs James Leo + Maxine LaPierre at site. RM + ERCS crew at site: Leroy Cassidy, Robert Stringfellow, + Mike Patton

Truck #43 at site.

0809 Truck #43 starting to load

0817 Truck #44 (46 mx) arrived

0825 Next truck arrived

0850 Truck #43 finish loading with 14 bags.

0901 Truck #46 starting loading

0945 Truck #46 finish loading with 14 bags

0953 Truck #44 (47 mx) starting to load (#44 changed to #47)

1035 Truck #44 (47 mx) finish loading with 14 bags

1040 Truck #44 starting loading

1130 Truck #44 finish loading with 14 bags

1140 TM left site to return to Dallas

1145 ERCS, START to lunch

1215 ERCS, START back from lunch

1225 Trucks #48, 49 arrived

1235 Truck #48 Starts loading

1320 Truck #48 finish loading with 14 bags

1345 Truck #49 starting loading

1435 Truck #49 finished loading 14 bags

1445 Truck #49 leaving

1550 ERCS picking up truck from Star Drilling site and Maxine LaPierre

3/7/97 Sooner Dial 506-9608-017

consolidating contents from Smith Truck that has been at Sooner & the Max Drilling truck the clerk brought this morning.

START took photos of residences yards where sod was placed — 1016 Wilson + 1605 Circle Drive.

The rolloff container (dumpster) was picked up approx 1455-1500 hrs.

1600 RM, START left site.

1605 START LaFleur " "

1615 Perimeters — no exposures

1617 LaFleur called TM — left message — 6 trucks came today; 2 to come Sat am + 1 Sun afternoon, took photos, dumpster picked up, crew grading now.

2200 Summary of Day

6 trucks loaded, 14 bags in = 84 bags today

ERCI continued grading / leveling gravel

Rolloff container removed from site

1966-55h given to START for filer

7 photos taken

TM left site

Schedule: 2 trucks 3/8 and 1 truck 3/9

Total bags shipped = 674

Bags remaining 38

2200 LaFleur finished Sooner Dial Paragraph

Maxine LaFleur

8-017
h that has
the clerk
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le Drive
picked up
trucks
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ags today
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3/9

3/8/97 Sooner Dial 506-9608-017

720 STARTS James Luo + Maxine LaPierre doing operational checks on equip. listed on pg 2, this log book.
Dosimeters issued in same order as on pg 6, this log book
0740 Safety meeting held - conducted by James Luo. See separate safety mtg form.
Ludlum background = 8 μR/hr
2755 START Maxine LaPierre + James Luo at site. Truck there
0800 ERCS Leroy Cassidey, Robert Stringfellow, + Mike Patton at site
0810 Truck #25 starting loading
0850 Truck #25 finished loading 14 bags
0900 ERCS finished grading.
0930 START has monitored clean areas - got background readings with Ludlum
ERCS, START leaving site
1025 START LaPierre FAX'd monthly paragraph for Sooner Dial to Marty Rutledge-Dallas
1100 STARTS finished time sheet to date this wk.
1300 ERCS, START all back at site. No truck yet.
1325 START has taken photos
1350 Truck #50 arrived
1430 Truck #50 finished loading
1445 Truck #50 left
1500 ERCS, START leaving site
1512 LaPierre called TM Hammack - briefed him - 2 trucks loaded, photos taken, grading completed
LaPierre took Luo to Oh. City airport + returned at 1800 Hrs

Summary of Day

2000 Hrs ERCS RM Cassidey called - truck #51 due Sam 3/9/97

2 trucks loaded, 14 bags ea = 28 today
Total shipped = 702
Bags remaining: 10

Maxine LaPierre

34

3/9/97 Sooner Dial S06-9608-017 3/10/97

0715 START Maxine LaPierre doing operational checks of equip. — same as that listed on pg 2, this log. Unle

Background with Ludlum — 7 μR/hr E

Dosimeter issued to LaPierre = that listed on pg 6, this log book — S/N 604016 Bo

0730 Safety mtg conducted by LaPierre, LaPierre the attendee. See separate safety meeting form

0758 START at site — 1 truck there Sta

0800 ERCs Leroy Cassidey, Robert Stringfellow, + Mike Patton at site To

0812 Truck #51 starting to load

0845 truck #51 finished loading

0913 START finishes photos, ERCs leaving site

0917 START leaving site

0930 Dosimeter reading — no exposure noted

0945 FAX'd time sheet

1025 LaPierre called TM Hammack — told him 1 truck came early — 10 bags; took photos, ERCs RM leaving today, crew tomorrow I think.

1030 LaPierre leaving Clinton — very windy —

1715 LaPierre home

Summary of Day

1 truck loaded — 10 bags

No bags remaining

Total shipped = 712 bags

Maxine LaPierre

3/10/97 Sooner Dial S06-9608-017

Unloaded van

EPA warehouse - lift fence, 28 Super Sak, bag of rope. Unable to lift the Super Sak bundle alone; fence posts underneath it

Got gas for EPA 1057

E&E warehouse - unloaded all else. Cleaned van as much as possible.

Started approx. 0815 hrs; finished 1700 Hrs.

Tomorrow to unload S. Sak bundle, fence posts & get van washed, vacuumed.

Maxine Lafieve

1A. Cost Center: KJ6100

1B. Account No.: 019601RAXX

REGION 6 START CONTRACT
CONTRACT NO. 68-W6-0013
TECHNICAL DIRECTION DOCUMENT (TDD)
ECOLOGY & ENVIRONMENT, INC.

2. No.: S06-9608-017

Amendment _____

3A. Priority:
[X] High
[ ] Medium
[ ] Low

4A. Estimate of
Total Hours: (b) [redacted]
Total Costs: $ (b) (4) [redacted]

5A. EPA Site Name: SOONER DIAL

5B. SSID No.: AB
Oper. Unit: 00

5C. City/County/State: Clinton /Custer / OK

7. CERCLIS ID: OKD987096591

8A. Completion Date: 11/01/96

3B. EPA Contact:
Name: Hammack
Phone: 214 665-2214

4B. Overtime Approved:
[X] Yes
[ ] No

6. Source of Funds:
[X] CERCLA
[ ] OPA (Site)
[ ] OPA (Non-Site)
[ ] CEPP
[ ] Other _____

8B. Reference:
[ ] Yes [ ] Attached
[X] No [ ] Pick-up

9. Type of Activity:

00217

RESPONSE ACTIVITY
[ ] Emergency Response (CERCLA)
[X] Removal Support (Funded)
[ ] Oil Spill Response *
[ ] Eng. Eval./Cost Anal.(EE/CA)
[ ] Reg. Reponse Center Support
[ ] Site Documentation

CERCLA ASSESSMENT
[ ] Preliminary Assessments
[ ] Site Inspections
[ ] Site Insp. Prioritization
[ ] Exp. Site Insp./Remedial Inv.
[ ] HRS/NPL Package
[ ] Removal Site Assessment
[ ] Combined Assessment

PREVENTION & PREPAREDNESS
[ ] Chemical Emergency (CEPP)
[ ] Contingency Planning
[ ] Chemical Safety Audits
[ ] SPCC Inspections *
[ ] Oil Program Initiatives *

TECHNICAL SUPPORT
[ ] Training
[ ] General Technical Support
[ ] Multi-Media Surveys
[ ] Site Discovery Program
[ ] Fed. Disaster Assistance
[ ] Enforcement - General
[ ] _____

Activity Code:
* OPA Funded Activities Only

10. General Task Description:

Provide Removal Support Funded support at the Sooner Dial site.
As provided under the Annual Workplan.

11. Desired Report Form:
[X] Formal Report
[ ] Letter Report
[ ] Formal Briefing
[ ] Other(Specify)
_____

12. Specific Elements:

1. Photodocument removal action (still and video).
2. Assist in cleanup monitoring and Health and Safety issues.
3. Conduct measurement of Radium 226 to 5 pico curies/gr. in real time. (Cost to be determined)
4. Provide necessary radiological monitoring (Alpha and micro Gamma detectors). (Cost To be determined)
5. Provide site Health and Safety Plan.

13. Interim Deadlines:
1-5. 09/04/96

Action Sequence Number:

IFMS Line Reference: 96 T06 72D TFA HQ AB SV 00

14. Authorizing DPO: [signature] Signature

15. Date: 08/27/96

16. Received by: [X] Accepted [ ] Accepted with Exceptions (Attached) [ ] Rejected

[signature] STL Signature

17. Date: 8/27/96

COI [ ] Yes
[ ] No

Neeley

1A. Cost Center: KJ6100	REGION 6 START CONTRACT CONTRACT NO. 68-W6-0013 TECHNICAL DIRECTION DOCUMENT (TDD) ECOLOGY & ENVIRONMENT, INC.	2. No.: S06-9608-017
1B. Account No.: 019601RAXX		Amendment A

3A. Priority:	4A. Estimate of	5A. EPA Site Name:	7. CERCLIS ID:
[X] High [ ] Medium [ ] Low	Total Hours: (b) Total Costs: $ (b) (4)	SOONER DIAL 5B. SSID No.: AB Oper. Unit: 00 5C. City/County/State: Clinton /Custer / OK	OKD987096591 8A. Completion Date: 01/01/97
3B. EPA Contact: Name: Hammack Phone: 214 665-2214	4B. Overtime Approved: [X] Yes [ ] No	6. Source of Funds: [X] CERCLA [ ] CEPP [ ] OPA (Site) [ ] Other _____ [ ] OPA (Non-Site)	8B. Reference: [ ] Yes [ ] Attached [X] No [ ] Pick-up

9. Type of Activity:

RESPONSE ACTIVITY	CERCLA ASSESSMENT	PREVENTION & PREPAREDNESS	TECHNICAL SUPPORT
[ ] Emergency Response (CERCLA)	[ ] Preliminary Assessments	[ ] Chemical Emergency (CEPP)	[ ] Training
[X] Removal Support (Funded)	[ ] Site Inspections	[ ] Contingency Planning	[ ] General Technical Support
[ ] Oil Spill Response *	[ ] Site Insp. Prioritization	[ ] Chemical Safety Audits	[ ] Multi-Media Surveys
[ ] Eng. Eval./Cost Anal.(EE/CA)	[ ] Exp. Site Insp./Remedial Inv.	[ ] SPCC Inspections *	[ ] Site Discovery Program
[ ] Reg. Reponse Center Support	[ ] HRS/NPL Package	[ ] Oil Program Initiatives *	[ ] Fed. Disaster Assistance
[ ] Site Documentation	[ ] Removal Site Assessment		[ ] Enforcement - General
	[ ] Combined Assessment		[ ] _____

Activity Code:
* OPA Funded Activities Only

10. General Task Description:

Provide Removal Support Funded support at the Sooner Dial site.
As provided under the Annual Workplan.

11. Desired Report Form:

[X] Formal Report
[ ] Letter Report
[ ] Formal Briefing
[ ] Other(Specify)

12. Specific Elements:

This TDD is being amended to add hours and extend the completion date to allow for completion of transportation/disposal activities and report preparation. The costs are being reduced to reflect actural costs for this task.
1. Photodocument removal action (still and video).
2. Assist in cleanup monitoring and Health and Safety Issues.
3. Conduct measurement of Radium 226 to 5 pico curies/gr. in real time. (Cost to be determined)
4. Provide necessary radiological monitoring (Alpha and micro Gamma detectors). (Cost To be determined)
5. Provide site Health and Safety Plan.

Prev. TDD Hours (b)	New Total TDD Hours (b)
Cost (b) (4)	Cost $ (b) (4)

13. Interim Deadlines:

1-5. 09/04/96

Action Sequence Number: IFMS Line Reference: 96 T06 72D TFA HQ AB SV 00

14. Authorizing DPO: Signature

15. Date:

16. Received by: [X] Accepted [ ] Accepted with Exceptions (Attached) [ ] Rejected

STL Signature

17. Date: 11/1/96

COI [ ] Yes
[ ] No

Noelen

1A. Cost Center: KJ6100	REGION 6 START CONTRACT CONTRACT NO. 68-W6-0013 TECHNICAL DIRECTION DOCUMENT (TDD) ECOLOGY & ENVIRONMENT, INC.	2. No.: S06-9608-017
1B. Account No.: 019601RAXX		Amendment B

3A. Priority:	4A. Estimate of	5A. EPA Site Name:	7. CERCLIS ID:
[X] High [ ] Medium [ ] Low	Total Hours: (b) (4) [redacted] Total Costs: $(b) [redacted]	SOONER DIAL	OKD987096591
		5B. SSID No.: AB Oper. Unit: 00 / 5C. City/County/State: Clinton /Custer / OK	8A. Completion Date: 03/01/97

3B. EPA Contact:	4B. Overtime Approved:	6. Source of Funds:	8B. Reference:
Name: Hammack Phone: 214 665-2214	[X] Yes [ ] No	[X] CERCLA [ ] CEPP [ ] OPA (Site) [ ] Other _____ [ ] OPA (Non-Site)	[ ] Yes [ ] Attached [X] No [ ] Pick-up

9. Type of Activity:

RESPONSE ACTIVITY	CERCLA ASSESSMENT	PREVENTION & PREPAREDNESS	TECHNICAL SUPPORT
[ ] Emergency Response (CERCLA)	[ ] Preliminary Assessments	[ ] Chemical Emergency (CEPP)	[ ] Training
[X] Removal Support (Funded)	[ ] Site Inspections	[ ] Contingency Planning	[ ] General Technical Support
[ ] Oil Spill Response *	[ ] Site Insp. Prioritization	[ ] Chemical Safety Audits	[ ] Multi-Media Surveys
[ ] Eng. Eval./Cost Anal.(EE/CA)	[ ] Exp. Site Insp./Remedial Inv.	[ ] SPCC Inspections *	[ ] Site Discovery Program
[ ] Reg. Reponse Center Support	[ ] HRS/NPL Package	[ ] Oil Program Initiatives *	[ ] Fed. Disaster Assistance
[ ] Site Documentation	[ ] Removal Site Assessment		[ ] Enforcement - General
	[ ] Combined Assessment		
			[ ] _____

Activity Code:
* OPA Funded Activities Only

10. General Task Description:

Provide Removal Support Funded support at the Sooner Dial site.
As provided under the Annual Workplan.

11. Desired Report Form:

[X] Formal Report
[ ] Letter Report
[ ] Formal Briefing
[ ] Other(Specify)

12. Specific Elements:

This TDD is being amended to add hours and extend the completion date to allow for completion of transportation/disposal activities and report preparation.
1. Photodocument removal action (still and video).
2. Assist in cleanup monitoring and Health and Safety Issues.
3. Conduct measurement of Radium 226 to 5 pico curies/gr. in real time. (Cost to be determined)
4. Provide necessary radiological monitoring (Alpha and micro Gamma detectors). (Cost To be determined)
5. Provide site Health and Safety Plan.

= Prev. TDD Hours (b) (4) [redacted]	New Total TDD Hours (b) (4) [redacted] =
= Cost $ [redacted]	Cost $ [redacted] =

13. Interim Deadlines:

1-5. 09/04/96

Action Sequence Number: IFMS Line Reference: 96 T06 72D TFA HQ AB SV 00

14. Authorizing DPO: _____ Signature

15. Date:

16. Received by: [X] Accepted [ ] Accepted with Exceptions (Attached) [ ] Rejected

COI [ ] Yes
[ ] No

STL Signature

17. Date:

Neeley

1A. Cost Center: KJ6100	REGION 6 START CONTRACT CONTRACT NO. 68-W6-0013 TECHNICAL DIRECTION DOCUMENT (TDD) ECOLOGY & ENVIRONMENT, INC.	2. No.: S06-9608-017
1B. Account No.: 019601RAXX		Amendment C

3A. Priority:	4A. Estimate of	5A. EPA Site Name:	7. CERCLIS ID:
[X] High [ ] Medium [ ] Low	Total Hours: (b) (4) Total Costs: $(b) (4)	SOONER DIAL	OKD987096591
		5B. SSID No.: AB Oper. Unit: 00 — 5C. City/County/State: Clinton /Custer / OK	8A. Completion Date: 04/01/97
3B. EPA Contact: Name: Hammack Phone: 214 665-2214	4B. Overtime Approved: [X] Yes [ ] No	6. Source of Funds: [X] CERCLA [ ] CEPP [ ] OPA (Site) [ ] Other _____ [ ] OPA (Non-Site)	8B. Reference: [ ] Yes [ ] Attached [X] No [ ] Pick-up

9. Type of Activity:

RESPONSE ACTIVITY	CERCLA ASSESSMENT	PREVENTION & PREPAREDNESS	TECHNICAL SUPPORT
[ ] Emergency Response (CERCLA)	[ ] Preliminary Assessments	[ ] Chemical Emergency (CEPP)	[ ] Training
[X] Removal Support (Funded)	[ ] Site Inspections	[ ] Contingency Planning	[ ] General Technical Support
[ ] Oil Spill Response *	[ ] Site Insp. Prioritization	[ ] Chemical Safety Audits	[ ] Multi-Media Surveys
[ ] Eng. Eval./Cost Anal.(EE/CA)	[ ] Exp. Site Insp./Remedial Inv.	[ ] SPCC Inspections *	[ ] Site Discovery Program
[ ] Reg. Reponse Center Support	[ ] HRS/NPL Package	[ ] Oil Program Initiatives *	[ ] Fed. Disaster Assistance
[ ] Site Documentation	[ ] Removal Site Assessment		[ ] Enforcement - General
	[ ] Combined Assessment		[ ] _____

Activity Code:
* OPA Funded Activities Only

10. General Task Description:

Provide Removal Support Funded support at the Sooner Dial site.
As provided under the Annual Workplan.

11. Desired Report Form:

[X] Formal Report
[ ] Letter Report
[ ] Formal Briefing
[ ] Other(Specify)

_____

12. Specific Elements:

This TDD is being amended to add hours, cost and extend the completion date to allow for completion of transportation/disposal activities and report preparation.
1. Photodocument removal action (still and video).
2. Assist in cleanup monitoring and Health and Safety Issues.
3. Conduct measurement of Radium 226 to 5 pico curies/gr. in real time. (Cost to be determined)
4. Provide necessary radiological monitoring (Alpha and micro Gamma detectors). (Cost To be determined)
5. Provide site Health and Safety Plan.

= Prev. TDD Hours	(b) (4)	New Total TDD Hours	(b) (4) =
= Cost		Cost	=

13. Interim Deadlines:

1-5. 09/04/96

Action Sequence Number: IFMS Line Reference: 96 T06 72D TFA HQ AB SV 00

14. Authorizing DPO: _____ Signature

15. Date: 2-22-97

16. Received by: [X] Accepted [ ] Accepted with Exceptions (Attached) [ ] Rejected

_____ STL Signature

17. Date: 3-6-97

COI [ ] Yes
[ ] No

1A. Cost Center: KJ6100	REGION 6 START CONTRACT CONTRACT NO. 68-W6-0013 TECHNICAL DIRECTION DOCUMENT (TDD) ECOLOGY & ENVIRONMENT, INC.	2. No.: S06-9608-017
1B. Account No.: 019601RAXX		Amendment D

3A. Priority:	4A. Estimate of	5A. EPA Site Name:	7. CERCLIS ID:
[X] High [ ] Medium [ ] Low	Total Hours: 0 Total Costs: $ 0.00	SOONER DIAL 5B. SSID No.: AB Oper. Unit: 00 5C. City/County/State: Clinton /Custer / OK	OKD987096591 8A. Completion Date: 05/17/97

3B. EPA Contact:	4B. Overtime Approved:	6. Source of Funds:	8B. Reference:
Name: Hammack Phone: 214 665-2214	[X] Yes [ ] No	[X] CERCLA [ ] CEPP [ ] OPA (Site) [ ] Other _____ [ ] OPA (Non-Site)	[ ] Yes [ ] Attached [X] No [ ] Pick-up

9. Type of Activity:

RESPONSE ACTIVITY	CERCLA ASSESSMENT	PREVENTION & PREPAREDNESS	TECHNICAL SUPPORT
[ ] Emergency Response (CERCLA)	[ ] Preliminary Assessments	[ ] Chemical Emergency (CEPP)	[ ] Training
[X] Removal Support (Funded)	[ ] Site Inspections	[ ] Contingency Planning	[ ] General Technical Support
[ ] Oil Spill Response *	[ ] Site Insp. Prioritization	[ ] Chemical Safety Audits	[ ] Multi-Media Surveys
[ ] Eng. Eval./Cost Anal.(EE/CA)	[ ] Exp. Site Insp./Remedial Inv.	[ ] SPCC Inspections *	[ ] Site Discovery Program
[ ] Reg. Reponse Center Support	[ ] HRS/NPL Package	[ ] Oil Program Initiatives *	[ ] Fed. Disaster Assistance
[ ] Site Documentation	[ ] Removal Site Assessment		[ ] Enforcement - General
	[ ] Combined Assessment		[ ] _____

Activity Code:
* OPA Funded Activities Only

10. General Task Description:

Provide Removal Support Funded support at the Sooner Dial site.
As provided under the Annual Workplan.

11. Desired Report Form:

[X] Formal Report
[ ] Letter Report
[ ] Formal Briefing
[ ] Other(Specify)

12. Specific Elements:

This TDD is being amended to extend the completion date to allow for report preparation.
1. Photodocument removal action (still and video).
2. Assist in cleanup monitoring and Health and Safety Issues.
3. Conduct measurement of Radium 226 to 5 pico curies/gr. in real time. (Cost to be determined)
4. Provide necessary radiological monitoring (Alpha and micro Gamma detectors). (Cost To be determined)
5. Provide site Health and Safety Plan.

Prev. TDD Hours	(b) (4)	New Total TDD Hours	(b) (4)
Cost $	[redacted]	Cost $	[redacted]

13. Interim Deadlines:

1-5. 09/04/96

William Dennigan 4/23/97
Action Sequence Number: IFMS Line Reference: 96 T06 72D TFA HQ AB SV 00

14. Authorizing DPO:

Signature

15. Date:

16. Received by: [X] Accepted [ ] Accepted with Exceptions (Attached) [ ] Rejected

STL Signature

COI [ ] Yes
[ ] No

17. Date: 4/28/97

LaPierre

EPA

Technical Direction Document Amendment

06-96-08-0017-E

START CONTRACT #: 68-W6-0013

Activity Type: IV.B.2 Removal Support (Fund lead) **Task:** medium **General Task Description:** Provide Removal Support Funded **Completion Date:** 05/30/97	**Created On:** 05/14/97 **DPO/PO:** Thompson **Task Monitor:** Hammack **Task Codes:** RA; RV
Site/Project Name: Sooner Dial **County Name:** Custer **City, State, Zip:** Clinton , OK **SSID #:** AB **CERCLIS #:** OKD987096591	**Estimated Cost :** $.00 **Estimated Hrs:** 0 **Dedicated:** 0 **Non-Dedicated:** 0
Funds Source: CERCLA	**Deliverable:** Formal Report **Overtime:** Yes **Reference:** No
TDD Expenditure Limit: (b) (4) [redacted] **Hours:** (b) [redacted] **Dedicated Hours:** (b) (4) [redacted] **Non-Dedicated Hours** (b) [redacted] See Comment #2	**Staffing:** Dedicated Staff **Priority:** High **Start Date:** 05/13/97

Specific Element(s):

Comments: 1. This amendment extends the completion date to accommodate reporting.
2. Correction to TDD Expenditure and Hours Limits fields above: correct expenditure limit is (b) (4) [redacted] and hours is (b) (4) [redacted]

A. TDD Created By: - Signed by William Jernigan/R6/USEPA/US on 05/14/97 08:44:49 AM, according to /

William Jernigan/R6/USEPA/US — Signed On: 05/14/97

B. Reviewed and Approved By: - Signed by William Jernigan/R6/USEPA/US on 05/14/97 08:44:49 AM, acc

Project Officer: William Jernigan — Signed On: 05/14/97

William Jernigan/R6/USEPA/US

Chris Jones — 5/14/97

Active Amendment #06-96-08-0017-E Printed On 05/14/97 at 08:45:10 AM

LaPierre

EPA

Technical Direction Document Amendment

06-96-08-0017-F

START CONTRACT #: 68-W6-0013

Activity Type: IV.B.2 Removal Support (Fund lead) **Task:** medium **General Task Description:** Provide Removal Support Funded **Completion Date:** 06/13/97	**Created On:** 05/21/97 **DPO/PO:** Thompson **Task Monitor:** Hammack **Task Codes:** RA; RV
Site/Project Name: Sooner Dial **County Name:** Custer **City, State, Zip:** Clinton , OK **SSID #:** AB **CERCLIS #:** OKD987096591	**Estimated Cost :** $.00 **Estimated Hrs:** 0 **Dedicated:** 0 **Non-Dedicated:** 0
Funds Source: CERCLA	**Deliverable:** Formal Report **Overtime:** Yes **Reference:** No
TDD Expenditure Limit: (b) (4) [redacted] **Hours:** (b) (4) [redacted] **Dedicated Hours:** (b) (4) [redacted] **Non-Dedicated Hours:** (b) (4) [redacted]	**Staffing:** Dedicated Staff **Priority:** High **Start Date:** 05/13/97

Specific Element(s):

Comments: 1. This amendment extends the completion date to accommodate reporting. Previous reporting schedule could not be met because of EPA-directed higher priority assignments of contractor personnel.

A. TDD Created By: - Signed by William Jernigan/R6/USEPA/US on 05/21/97 01:52:13 PM, according to /

William Jernigan/R6/USEPA/US — Signed On: 05/21/97

B. Reviewed and Approved By; - Signed by William Jernigan/R6/USEPA/US on 05/21/97 01:52:12 PM, acco

Project Officer: William Jernigan — Signed On: 05/21/97

William Jernigan/R6/USEPA/US

5/22/97

La Pierre

TARGET SHEET

SITE NAME: SOONER DIAL COMPANY

CERCLIS I.D.: OKD987096591

TITLE OF DOC.: VHS TAPE FOE SITE ASSESSMENT REPORT FOR SOONER DIAL COMPANY

DATE OF DOC.: 11/09/1995

NO. OF PGS. THIS TARGET SHEET REPLACES: N/A

SDMS #: 9527446

CONFIDENTIAL ?		MISSING PAGES ?	
ALTERN. MEDIA ?	X	CROSS REFERENCE ?	

LAB DOCUMENT ?		LAB NAME:	
ASC./BOX #:			
CASE #:		SDG #:	

COMMENTS : THIS REPORT CAME WITH A VHS TAPE. TO VIEW THIS TAPE CONTACT THE SUPERFUND RECORD CENTER

SOONER DIAL REMOVAL
9/4/96 - 10/11/96
TDD# S06-9608-017