76109

ENVIRONMENTAL RESTORATION PROJECT
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LOS ALAMOS NATIONAL LABORATORY
ENVIRONMENTAL RESTORATION
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Miscellaneous Comments:

N/A

32065

THIS FORM IS SUBJECT TO CHANGE. CONTACT THE RPF FOR LATEST VERSION. (JUNE 1997)

Los Alamos

NATIONAL LABORATORY

memorandum

Chemical Science and Technology
Responsible Chemistry for America

CST-7 Environmental Science & Waste Technology
Los Alamos, New Mexico 87545

To/MS: ~~Don~~ DAN Stout, EM/ER/D&D, MS-M773
From/MS: William C. Francis, CST-7, MS-J534
Phone/FAX: 505-665-2422/5-9118
Date: September 1, 1995

RECEIVED
MAY 27 2003
By AAP-RPF

Subject: **Recent History of Dye Testing Piping Outlets in Buildings TA-21-3, TA-21-4 and TA-21-146 at Technical Area 21**

At your request, I have checked into the history of the dye tests conducted on the piping drains at Building TA 21-146 in an effort to determine what happened to the dye poured into the sink drain in Building 146 and the Fire Suppression Plenum drain at the outside southwest corner of Building 146. Both of these drains are, according to construction drawings, connected to the 4" extra heavy cast iron radioactive liquid waste main that is under the roadway south of Building 146 and drains east to the Radioactive Waste Disposal Plant, TA-21-257. Dye tests were conducted in October 1994 on the drain from the Fire Suppression Plenum and on August 18, 1995 on the sink drain and the plenum drain. The results of these tests are disturbing and puzzling. During the October 1994 test, no dye was noticed at the grit chamber at Building 257 but the blue dye was noticed at the grit chamber at the Sanitary Waste Disposal Plant east of DP East. The result of the August 18, 1995 dye test was completely negative with no dye appearing at the grit chamber at the Radioactive Waste Disposal Plant, TA-21-257, or the grit chamber of the Sanitary Waste Disposal Plant, TA-21-227.

In view of the negative results from the TA-21-146 dye tests, it could be concluded that there is a break in the 4" extra heavy cast iron main that runs east and west and is north of Buildings 2 through 5 and terminates at Building 257. This acid sewer main was designed to pick up acid waste effluent from Buildings 2, 3, 4, 5, 150 and 146. At this time, Buildings 2, 3 and 5 have been isolated from it.

In an effort to locate the possible break, research of the maintenance and dye testing history of Buildings 3 and 4 was done. The results of this research and a description of the dye tests conducted at Building 146 follows:

TA-21-146

In 1993 Santa Fe Engineering, Ltd. was under contract to the Los Alamos National Laboratory to identify all of the drains from the buildings and structures at TA-21 and to determine where they terminated. Some of the drains were dye tested by pouring dye into them, flushing the lines with water and tracing the dye through the piping system to its final destination. Santa Fe Engineering, Ltd. identified the drain from the sink inside of Building 146 and the drain from the Fire Suppression Plenum outside of Building 146 at the southwest corner. They did not dye test the drain and no changes were recommended (see Exhibit No. 1).

In October 1994 the drain servicing the Fire Suppression Plenum was dye checked by David Salazar, CST-13. Mr. Salazar told me that he waited about an hour and a half at the grit chamber at the Radioactive Liquid Waste Treatment Plant, TA-21-257, but the dye did not appear. Acting on a hunch, Mr. Salazar went to the TA-21 Sanitary Waste Treatment Plant, TA-21-227. There were two JCI employees there and they told him that they had seen blue dye in the influent entering the grit chamber. Mr. Salazar did not see the dye in the influent dumping into the grit chamber but he did see vestiges of the dye in the grit chamber. As far as Mr. Salazar knows, no dye reached the grit chamber of TA-21-257.

On August 18, 1995, at your direction, JCI personnel conducted a dye test on the sink drain and the Fire Suppression Plenum drain at TA-21-146. It was witnessed by JCI employees, Miguel Velasquez, Construction Field Supervisor, and Gilbert Sosaya, pipefitter, and by myself. At 10:00 A.M. water was started flowing into the sink by means of a garden hose. At 11:00 A.M. a maroon colored dye was added to the water flow at the sink. At 1:30 P.M. the garden hose was moved to the Fire Suppression Plenum drain and a yellow/green dye, about the color of antifreeze, was poured into the drain while the hose was running. The outlet of the 4" case iron radioactive liquid waste main at the grit chamber at TA-21-257, the sanitary sewer manhole TA-21-242 which receives the effluent from Building 257 and is located about 90'-0" from the building and the grit chamber at the Sanitary Waste Treatment Plant, TA-21-227, were watched simultaneously from 11:00 A.M. to about 3:15 P. M. At the time, I left and Mr. Velasquez checked the grit chamber at TA-21-257 intermittently until 5:00 P. M. Until about 2:45 P. M. the influent into the grit chamber was just a trickle (about 3/8" in diameter). The flow then increased significantly to a volume four or five times what it had been. However, as long as the increased flow was observed, until 5:00 P. M., no dye was observed. In the meantime, between 1:45 P. M. and 2:15 P. M., the covers were removed from the sanitary sewer manholes TA-21-273, TA-21-274 and TA-21-275 on the south side of Buildings 3, 4 and 5. No dye was observed in these manholes. The hose at Building 146 was turned off about 3:00 P.M.

The increase in the volume of water at the Radioactive Liquid Waste Treatment Plant, TA-21-257, at 2:45 P.M. could have been the result of the water from the garden hose at Building 146 finally arriving or it could have been because water was being released to the acid sewer main from other buildings.

On Tuesday August 22, 1995, I checked with Jiri Kubicek, CST-25, TA-21 Building Manager, to determine sources that could have put water into the radioactive liquid waste collection system. He told me that the sink drains in Building 4 North were used by the JCI demolition crews to take water pumped from 55-gallon drums periodically, otherwise, the building is stripped of all equipment and inoperable. Building 150 is still operating with sinks in the south end and sinks and equipment in the basement that drain to a sump with a sump pump that is connected to the radioactive liquid waste main. Rooms 500-A, 533 and 3151-A have sinks and equipment that drain to sumps with sump pumps connected to the radioactive liquid waste main.

I checked with Will Gonzales, JCI Construction Field Supervisor, about the 55-gallon drums that are periodically emptied into the sinks in Building 4 North. He said that they had used the sinks Wednesday, August 16, 1995 but not Friday, August 18, 1995, the day of the dye test. I then checked with the LANL operating personnel in the south end of Building 150. I was informed that the sink in Laboratory Room 604 was run continuously Friday from about 2:00 P.M. until 4:00 P.M. and that sinks in Lab Rooms 606 and 607 had run more or less continuously from about 3:00 P.M. until 5:00 P.M. I could not find any personnel in the basement of Building 150 or Rooms 500-A, 533 and 3151-A. It is certainly possible that the increase in the flow into the grit chamber at TA-21-257 about 2:45 P.M. August 18, 1995 could have been caused by the flow from the sinks in TA-21-150.

TA-21-3

From January 23, 1991 through June 14, 1991, dye tests were conducted on the piping outlets from Building 3 (see Exhibit No. 2). Dye came through to Building 257 from all of the drains that were connected into the radioactive liquid waste main except a sink in Room 312. These tests were conducted by LANL. I am not sure which division or section.

During November 1993, Santa Fe Engineering, Ltd. conducted dye tests in Building 3 (see Exhibit No. 1-page 5). This report indicated that the dye reached its intended destination, Building 257, from the sinks that were connected to the radioactive liquid waste main. However, the comments on page 5 of Exhibit No. 1 state that the radioactive liquid waste was tested by absence of dye in sanitary sewer or daylight outfall. In my opinion, this elimination type of testing is not proof that the dye got to Building 257. I may not be interpreting the comment correctly, however.

In late September 1994, because of a low flow coming to the Radioactive Waste Treatment Plant, TA-21-257, dye tests were conducted by CST-13 at Building 2 (see Exhibit No. 3). There was no evidence that any dye got to Building 257 and, on October 14, 1994, the Building Manager, Jiri Kubicek, decided to stop the operation until further tests could be conducted. On October 25, 1994, Santa Fe Engineering, Ltd., at the request of ESH-18, conducted a series of dye tests in Building 3 and confirmed that the dye was not getting through to Building 257. On November 29, 1994 CST-13 pushed camera equipment into the radioactive liquid waste lateral that connects Building 3 to the radioactive waste main north of Building 3. Entrance to the lateral was made in the underfloor utility tunnel at the northeast corner of the building. The camera was inserted slowly about 20'-0" into the pipe and, at this point, the pipe turned downward. A little further down stream the pipe contained standing water. The camera was pushed slowly into this water for about 5'-0" but the liquid was very murky and the camera was withdrawn.

The New Mexico Environment Department was notified of this situation by ESH-18 on November 30, 1994.

TA-21-4

On October 6, 1987, a work order was issued to replace the radioactive liquid waste lines in the underloor utility tunnels around the inside perimeter of Buildings 3 and 4 (see Exhibit No. 4). The work was started April 13, 1988 and closed out December 14, 1989. The estimate was $80,000 and the final cost was $60,760 for just Building 4. The sludge took up 50% of the volume of the pipe and was extremely contaminated and treated as TRU (-700 nCi/g). There was not enough money left in the work order to do Building 3 so Building 3 was put on hold. As of this date, the removal and replacement of the radioactive liquid waste lines in the underfloor tunnel of Building 3 has not been started.

On April 22, 1993, David Salazar, CST-13, conducted dye tests on the sink drains in the north end of Building 4. The dye drained to Building 257 (see Exhibit No. 2, bottom of the sheet).

During November 1993, Santa Fe Engineering, Ltd. dye tested a sink in Building 4. The dye reached the expected destination (see Exhibit No. 1 - page 5).

The sinks in Building 4 are being used at this time to pump liquid from 55-gallon drums. This liquid comes from the demolition area on the south side of Buildings 3 and 4.

CONCLUSIONS

It is evident that effluent from Building 146 is not reaching the Radioactive Waste Treatment Plant, TA-21-257. The dye testing and camera insertion tests that were done in October and November of 1994 indicate that there is a leak and/or blockage in the Radioactive Waste Main down stream from where the lateral line from Building 3 is connected to the main. I do not believe that the lateral line is blocked because it doesn't have the volume capacity to store the amount of water used in the dye tests. Because the radioactive liquid waste drain system is working in Building 4, I believe that the main is leaking between Buildings 3 and 4. Jiri Kubicek shares this opinion. Jiri Kubicek believes that the dye observed at the Sanitary Waste Treatment Plant, TA-21-227, during October 1994 was dye that was finally making its way through the sanitary sewer system from previous tests conducted by LANL and Santa Fe Engineering, Ltd. or it was dye that got into the sanitary sewer system when CST-13 and Santa Fe Engineering, Ltd. were dye testing in Building 3 from late September 1994 through October 25, 1994. In my opinion, this is certainly a possibility because I do not believe that a cross connection exists in Building 257 between the radioactive liquid waste system and the sanitary waste system. Also, it is approximately 130' from the radioactive liquid waste main south of Building 146 to the nearest sanitary sewer lateral on the west side of Building 3 and no evidence of dye was found in the sanitary waste system during the August 18, 1995 dye test at Building 146.

xc/with exhibits: Jiri Kubicek, CST-25, MS-C345
David Salazar, CST-13, MS-E518

~~ATTACHMENT~~ NO. 1 PAGE 1
EXHIBIT
Mike Saladen, ESH-18
5-6085

21-144-OPN-1 is to the site RLW system and includes an area drain (1), a floor drain (1), and a sump pump (1). The equipment room is potentially contaminated and currently in disrepair. It is recommended that the user plug the area drain to avoid receiving storm water in the radioactive waste system and that the user replace the grate for the floor drain. No permitting is recommended and no EPA forms have been prepared.

12.0 RECOMMENDATIONS FOR BUILDING 21-146 [redacted]

Table 10 is a list of the drains to the building outfalls and Figure 9 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain piping. Outfall 21-146-OPN-1 is to the site RLW system and includes a sink drain (1), and an acid tank drain (1). No changes or permits are recommended for this outfall. No EPA forms have been prepared.

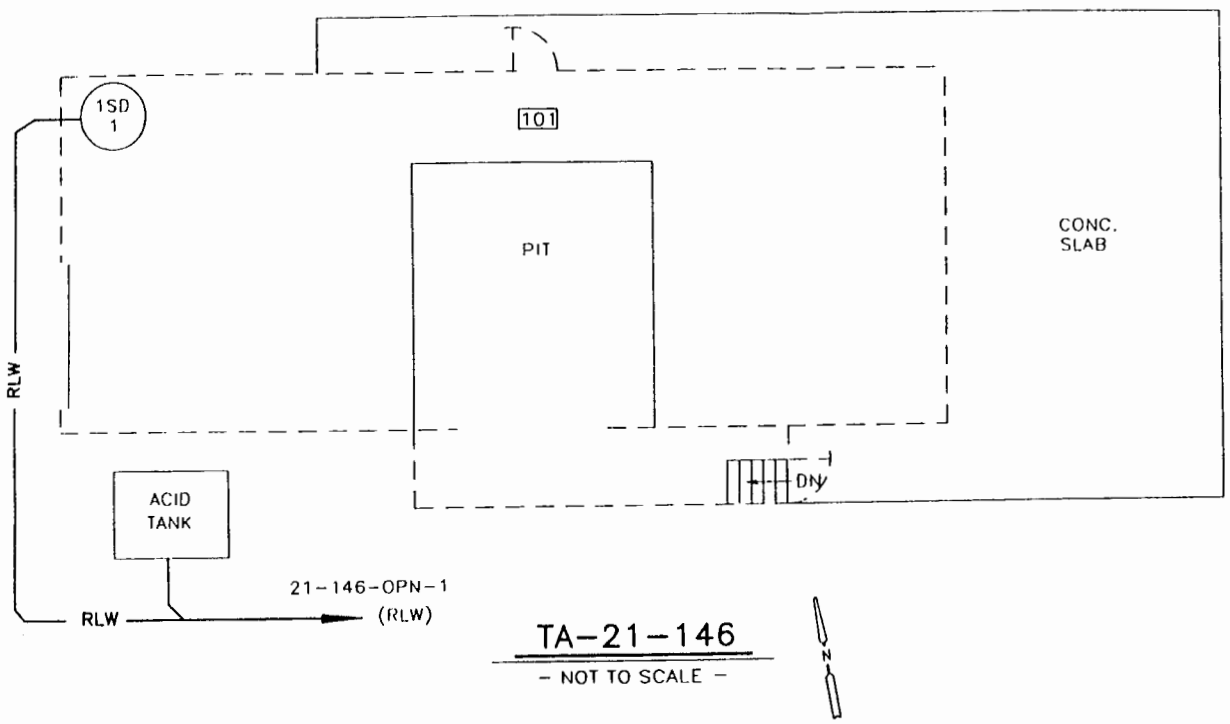
13.0 RECOMMENDATIONS FOR BUILDING 21-149

Table 11 is a list of the drains to the building outfalls and Figure 10 is a schematic of the piping. The table lists the drains that connect to the outfall pipe and includes recommendations for changes to the drain piping. The discussion below gives the reasoning for the recommendations.

13.1 Outfall 21-149-OPN-01

This outfall to the site sanitary sewer system includes lavatory drains (4), toilet drains (3), and urinals (4). No changes or permits are recommended for this outfall. No EPA forms have been prepared.

PAGE 2



TA-21-146

- NOT TO SCALE -

SYMBOL LEGEND	
SD	SINK DRAIN
— RLW —	RAD. LIQUID WASTE

SANTA FE ENGINEERING, LTD.

TA-21-146
DRAIN SCHEMATIC

DRAWN	C.S.
DESIGN	D.T.K.
CHECKED	S.C.D.
DATE	11-15-83

SUBMITTED | RECOMMENDED | APPROVED

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

SHEET / OF

CLASSIFICATION | REVIEWER | DATE

REQUESTING DIVISION	LAB JOB NO.	DRAWING NO.	REV.
REQUESTING GROUP EM-8	11056-78	FIGURE 9	

TABLE 8: TA 21-143 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
21-143-OPN-01 03A031	N/A	COOLING TOWER (NOT IN USE)	EXT	DELETE PERMIT	YES

TABLE 9: TA 21-144 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
21-144-OPN-01 RLW	BAD01	EQUIP ROOM	N/A	PLUG	NO
	BFD01	EQUIP ROOM	N/A	MODIFY	
	BSP01	EQUIP ROOM	N/A	NO CHANGE	

TABLE 10: TA 21-146 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
21-146-OPN-01 RLW	1SD01	LAB	101	NO CHANGE	NO
	N/A	ACID TANK DRAIN	N/A	NO CHANGE	

TABLE 11: TA 21-149 DRAIN SUMMARY

OUTFALL NUMBER	ID NUMBER	ROOM ACTIVITY	ROOM NUMBER	STATUS OR RECOMMENDATIONS	EPA FORM PREPARED
21-149-OPN-01 SANITARY	1LV01	REST ROOM	102	NO CHANGE	NO
	1LV02	REST ROOM	102	NO CHANGE	
	1LV03	REST ROOM	102	NO CHANGE	
	1LV04	REST ROOM	102	NO CHANGE	
	1TL01	REST ROOM	102	NO CHANGE	
	1TL02	REST ROOM	102	NO CHANGE	
	1TL03	REST ROOM	102	NO CHANGE	
	1UR01	REST ROOM	102	NO CHANGE	
	1UR02	REST ROOM	102	NO CHANGE	
	1UR03	REST ROOM	102	NO CHANGE	
	1UR04	REST ROOM	102	NO CHANGE	
21-149-OPN-02 O4A142	1FD01	EQ ROOM	1491	REPIPE/DELETE PERMIT	YES
	PFD01	EQ ROOM	P537	REPIPE/DELETE PERMIT	
	PFD02	EQ ROOM	P536	REPIPE/DELETE PERMIT	

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REPORT # 78

TA	BLDG	OUTLET PIPING NO	EPA OUTFALL #	DRAIN #	ROOM #	ROOM DESCRIPTION	FLOW RATE		PERIODICITY	SEASONAL	SOURCE TYPES
21	5	21-005-OPN-09	DAYLIGHT	N/A	EXT	GAS CONNECTION			NO FLOW	No	BOTTLE GAS CONN
21	5	21-005-OPN-10	DAYLIGHT	N/A	EXT	GAS CONNECTION			NO FLOW	No	BOTTLE GAS CONN
21	5	21-005-OPN-11	DAYLIGHT	N/A	EXT	GAS CONNECTION			NO FLOW	No	BOTTLE GAS CONN
21	5	21-005-OPN-12	DAYLIGHT	N/A	EXT	GAS CONNECTION			NO FLOW	No	BOTTLE GAS CONN
21	5	21-005-OPN-13	DAYLIGHT	N/A	EXT	GAS CONNECTION			NO FLOW	No	BOTTLE GAS CONN
21	5	21-005-OPN-14	DAYLIGHT	N/A	EXT	GAS CONNECTION			NO FLOW	No	BOTTLE GAS CONN
21	5	21-005-OPN-15	DAYLIGHT	N/A	EXT	GAS CONNECTION			NO FLOW	No	BOTTLE GAS CONN
21	5	21-005-OPN-16	DAYLIGHT	N/A	EXT	VENT			NO FLOW	No	VENT
21	42	21-042-OPN-01	DAYLIGHT	N/A	EXT	PUMP HOUSE			FLOW IS NIL	No	PUMP BLEED VALVE
21	42	21-042-OPN-02	DAYLIGHT	N/A	EXT	PUMP HOUSE			FLOW IS NIL	No	PUMP BLEED VALVE
21	57	21-057-OPN-01	DAYLIGHT	AD1	EXT	FUEL TANK			NO FLOW	No	SECOND. CONT. DRAIN
21	57	21-57-OPN-02	N/A	N/A	N/A	FUEL TANK			AS NEEDED	No	FUEL OIL STORAGE TANK
21	57	21-57-OPN-03	N/A	N/A	N/A	FUEL TANK			AS NEEDED	No	FUEL OIL STORAGE TANK
21	57	21-57-OPN-04	N/A	N/A	N/A	FUEL TANK OVERFLOW			FLOW IS NIL	No	FUEL OIL STORAGE TANK
21	116	21-116-OPN-01	N/A	N/A	EXT	CONDUIT			NO FLOW	No	ELECTICAL CONDUIT
21	143	21-143-OPN-01	03A031	N/A	N/A	COOLING TOWER			NO FLOW	No	NO SOURCE (TOWER NOT USED)
21	144	21-144-OPN-01	RLW	BAD01	N/A	EQUIP ROOM			MOSTLY SUMMER	Yes	STORM WATER
21	144	21-144-OPN-01	RLW	BFD01	N/A	EQUIP ROOM			FLOW IS NIL	No	FLOOR WASHING
21	144	21-144-OPN-01	RLW	BSP01	N/A	EQUIP ROOM			7 DAYS PER WEEK	No	FLOOR AND AREA DRAIN
21	146	21-146-OPN-01	RLW	1SD01	101	CHEMICAL LAB			5 DAYS PER WEEK	No	LAB SINK
21	146	21-146-OPN-01	RLW	N/A	N/A	ACID TANK			FLOW IS NIL	No	ACID TANK DRAIN
21	149	21-149-OPN-01	05S/SWSC	1LV01	102	REST ROOM			5 DAYS PER WEEK	No	LAVATORY
21	149	21-149-OPN-01	05S/SWSC	1LV02	102	REST ROOM			5 DAYS PER WEEK	No	LAVATORY
21	149	21-149-OPN-01	05S/SWSC	1LV03	102	REST ROOM			5 DAYS PER WEEK	No	LAVATORY
21	149	21-149-OPN-01	05S/SWSC	1LV04	102	REST ROOM			5 DAYS PER WEEK	No	LAVATORY
21	149	21-149-OPN-01	05S/SWSC	1TL01	102	REST ROOM			5 DAYS PER WEEK	No	TOILET
21	149	21-149-OPN-01	05S/SWSC	1TL02	102	REST ROOM			5 DAYS PER WEEK	No	TOILET
21	149	21-149-OPN-01	05S/SWSC	1TL03	102	REST ROOM			5 DAYS PER WEEK	No	TOILET
21	149	21-149-OPN-01	05S/SWSC	1UR01	102	REST ROOM			5 DAYS PER WEEK	No	URINAL
21	149	21-149-OPN-01	05S/SWSC	1UR02	102	REST ROOM			5 DAYS PER WEEK	No	URINAL
21	149	21-149-OPN-01	05S/SWSC	1UR03	102	REST ROOM			5 DAYS PER WEEK	No	URINAL
21	149	21-149-OPN-01	05S/SWSC	1UR04	102	REST ROOM			5 DAYS PER WEEK	No	URINAL
21	149	21-149-OPN-02	04A142	1FD01	1491	EQUIP ROOM			FLOW IS NIL	No	EXPANSION TANK DR

DYE STUDY INFORMATION

BUILDING NUMBER	DRAIN NUMBER	DID DYE REACH EXPECTED DESTINATION?	COMMENTS
21-3	1FD02	NO	UNABLE TO LOCATE OUTFALL
21-3	1SD01	YES	RLW TESTED BY ABSENCE OF DYE IN SS OR DAYLIGHT OUTFALL
21-3	1SD08	YES	21-3-OPN-1 SANITARY
21-3	1SD11	YES	RLW TESTED BY ABSENCE OF DYE IN SS OR DAYLIGHT OUTFALL
21-3	1SD15	YES	RLW TESTED BY ABSENCE OF DYE IN SS OR DAYLIGHT OUTFALL
21-3	1SP01	NO	UNABLE TO LOCATE OUTFALL
21-3	1SH01	YES	21-3-OPN-1 SANITARY
21-3	1TL01	YES	21-3-OPN-1 SANITARY
21-3	1TL03	YES	21-3-OPN-1 SANITARY
21-3	2SD01	YES	RLW TESTED BY ABSENCE OF DYE IN SS OR DAYLIGHT OUTFALL
21-3	2UR01	YES	21-3-OPN-1 SANITARY
21-3	PFD01	YES	21-3-OPN-8 DAYLIGHT
21-3	RD03	YES	21-3-OPN-8 DAYLIGHT
21-4	1SD05	YES	21-4-OPN-1 RLW
21-4	1TL01	NO	SUSPECTED BREAK IN SANITARY LINE
21-5	BFD01	YES	21-5-OPN-2 DAYLIGHT
21-149	1FD01	YES	21-149-OPN-2 DAYLIGHT
21-149	PFD05	YES	21-149-OPN-2 DAYLIGHT
21-149	1TL03	YES	21-149-OPN-1 SANITARY
21-150	1SD02	YES	RLW TESTED BY ABSENCE OF DYE IN SS OR DAYLIGHT OUTFALL
21-150	1SD12	YES	RLW TESTED BY ABSENCE OF DYE IN SS OR DAYLIGHT OUTFALL
21-150	1SD14	YES	RLW TESTED BY ABSENCE OF DYE IN SS OR DAYLIGHT OUTFALL
21-150	1TL01	YES	21-150-OPN-1 SANITARY
21-150	AD02	YES	21-150-OPN-3 DAYLIGHT
21-150	BED01	YES	21-150-OPN-3 DAYLIGHT
21-150	RD1	YES	21-150-OPN-3 DAYLIGHT
21-313	1FD04	NO	UNABLE TO LOCATE OUTFALL
21-313	1TL02	YES	21-313-OPN-1 SANITARY
21-314	1FD02	YES	21-314-OPN-1 DAYLIGHT
21-315	1FD01	YES	21-315-OPN-3 DAYLIGHT

NOTE:
BLDG. 146 WAS NOT DYE TESTED
FD = FLOOR DRAIN TL = TOILET RD = ROOF DRAIN
SD = SINK DRAIN UR = URINAL SH = SHOWER DRAIN

PTM per Diana Hollis 9/28/09

~~OFFICIAL USE ONLY~~

ESH401

ES&H Application
Sector Leader Data Entry Report

04 Dec 1990
Page: 209

(Records with Incomplete Data)
Sector Area: 6

EXHIBIT 2

Unique ID:	35874
Inspector Z Number:	93494
Date of Entry Sheet:	17-SEP-1990
TA:	21
Building:	3
Room:	
Other:	BLDGS: 3, 4, 5, 150; EACH ROOM
Problem Description:	SINKS AT BLDGS. 3, 4, 5, AND 150, ENG-5 AND HSE-8. PLEASE POST SIGN ON EACH SINK AT BLDG. 3, 4, 5, AND 150.
Organization:	INC-4
Priority:	2
FanAM:	X
Fund Code:	
Estimated Cost:	.00
Contact Name:	J. KUBICEK
Phone:	7-6660
Actual Cost:	.00
Projected Correction Date:	
Actual Correction Date:	
Assessment Verification:	
Work Order:	
Small Job Ticket:	
Major Category:	C
Minor Category:	2
Corrective Action	
Comments:	

Who	When	Comment
Inspector	29-NOV-1990 16:11	THIS NEEDS TO BE DONE SAS?

Date	Sink	Dye Came Through (Y/N)
1-23-91	312	N
	307 } Sinks	Y
	307A } Sinks	Y
	150 bsmt	Y ← John Hannias's Rm.
2-07-91 →	306	Y
2-8-91	301A	Y
4-19-91	210 Showers	N & Bldg. Y South Shower N
4-26-91	401B, 350 Showers	N
4-29-91	Bldg 150, Rm 603	Y ← Janitor's Sink
4-30-91	302	Y
5-6-91	301A (cup sink) Hood area	Y
6-14-91 ~~5-9-91~~ →	361	Y

2-06-91 Rm 317A Y

4-24 Shower Rm. 176 N

Trailer in South West Area (210) N (Ladies Change Room)

5/09/91 301A Sink Y

~~OFFICIAL USE ONLY~~

BLDG-4N: R403 Done, R405 Done, R406, R401E } all done 4-22-93 By David Solarae

7-6904 104-2101

DAVID SALAZAR → this information is being documented & sent to us.

DATE	SINK	DID DYE SHOW UP IN HSE-7 Y/N
1-23-91	312	N
	307	Y
	307A	Y
	150 (John Hamers area)	Y
	~~306~~ 306	Y
2-8-91	301A	Y
4-19-91	210 Showers	N
4-26-91	401B, 350 Showers	N
4-29-91	Bldg 150, 603 Janitors sink	Y
4-30-91	302	~~Y~~ Y
5-6-91	301A Hood area	Y
5-9-91	361	Y

Allen Smith

T-7137

EXHIBIT NO 3

Rcd. CAC 3/31/9-

Action #24

State of New Mexico
ENVIRONMENT DEPARTMENT
Ground Water Protection and Remediation Bureau
Harold Runnels Building
1190 St. Francis Drive, P.O. Box 26110
Santa Fe, New Mexico 87502
(505) 827-2918 phone
(505) 827-2965 fax

GARY E. JOHNSON
GOVERNOR

MARK E. WEIDLER
SECRETARY

EDGAR T. THORNTON, III
DEPUTY SECRETARY

CERTIFIED MAIL - RETURN RECEIPT REQUESTED

March 17, 1995

Mr. Dennis J. Erickson
Division Director, ES&H
Los Alamos National Laboratory
P.O. Box 1663, Mailstop A-120
Los Alamos, New Mexico 87545

Mr. Joseph C. Vozella
Chief Environment, Safety & Health Branch
Los Alamos Area Office
Department of Energy
Los Alamos, New Mexico 87544

Gentlemen:

RE: Investigation of Los Alamos National Laboratory's (LANL) Technical Area 21 (TA-21); Liquid Waste Line at Building 3 (21-3)

On 12/06/94 LANL provided notification of discharge pursuant to Water Quality Control Commission (WQCC) regulation 1-203. A discharge of liquid contaminants may have occurred at TA-21 (Building 21-3 lateral waste lines). LANL's notification indicates direct evidence that the probability of a release to the environment is likely, and the need for additional characterization is needed.

NMED appreciates LANL's prompt notification. WQCC Regulation 1-203.A. also requires:

> "With respect to any discharge from any facility of oil or other water contaminant, in such quantity as may with reasonable probability injure or be detrimental to human health, animal or plant life, or property, or unreasonably interfere with the public welfare or the use of property, the following notifications and corrective actions are required; ...;" and

Dan Stout
7-9948
D&D Plan & Updated Schedule

Mr. Erickson and Mr. Vozella
March 17, 1995
Page 2

> "5. As soon as possible after learning of such a discharge, the owner/operator of the facility shall take such corrective actions as are necessary or appropriate to contain and remove or mitigate the damage caused by the discharge."

In order to properly contain and remove or mitigate the damage caused by this possible discharge, LANL needs to first perform an investigation.

NMED hereby requests a Corrective Action Report pursuant to WQCC Regulation 1-203 within thirty (30) days of your receipt of this letter. Please contact Dennis McQuillan of my staff at 827-2831 if any questions arise concerning this matter. LANL's cooperation in this matter will be greatly appreciated.

Sincerely,

Ed Kelley

Ed Kelley, Director
Water and Waste Management Division

xc: Marcy Leavitt, Chief, GWPRB
Dennis McQuillan, GWPRB Remediation Section
Benito Garcia, Chief, HRMB
Michael Dale, GWPRB Remediation Section

NPDES Permit No. NM0028355
Release Notification Form

Sara Helmick/Chem Fac

Responsible Facility/User Group CST-13 Contact Person Steve Hansen

Phone # 667-9383/667-4301 Pager # N/A

Discharge location: TA-21, Bldg 3 (Break in pipe discovered)

Discharge occurred: Unknown (date time) Discharge discovered: N/A (See Attached) (date time)

Discharge stopped: N/A (date time) Method: N/A

Corrective Actions: Investigation of waste lines with video camera will proceed to determine if additional breaks in line between Bld. 3 and Bldg. 257 have occurred. (See Attached)

Nearest watercourse and/or canyon affected: None X Describe No Visible Discharge

Source and cause of discharge: Hole discovered in pipe located at TA-21 (See Attached)

Materials spilled: N/A (See Attached)

Estimate Amount: Potential Release of Unknown Volume

Cleanup started: Yes ____ No X Date ____ Time ____

Cleanup finished: Yes ____ No X Date ____ Time ____

Weather conditions: N/A

*24 hr Notification: EPA Person: N/A Time: ____ Date: ____ NMED Person: N. Decker Time: 3:00 PM Date: 12/1/94

EM&R Person: N/A Time: ____ Date: ____ DOE Person: K. Zamora Time: 8:00 AM Date: 12/2/94

Written follow-up within 7 days: Date: 12/7/94
Corrective action report within 15 days: Date: 12/7/94
NMED/EPA Approval on file: Date: N/A

Comments: There has not been a discharge identified. This is being reported as a potential concern

Release Notification Form Completed By AAP

Larry Kirkman
Area Manager
Department of Energy
Los Alamos Area Office
Los Alamos, New Mexico 87544
(505) 667-5105

Dennis J. Erickson
Division Director, ESH-DO
University of California
Los Alamos National Laboratory
P.O. Box 1663, MS K491
Los Alamos, New Mexico 07545
(505) 667-4218

(Form Rev. 3/95)

Section 1-203 Release Notification

CST-13 Summary

TA-21, Bldg. 3

December 6, 1994

In mid September 1994, CST-13 personnel observed what seemed to be low flow coming in to the radioactive liquid waste treatment facility at TA-21-257. A conservative approach was taken and an inspection of the pipes was started. Dye tests, where a dye is poured into a sink that is connected to the radioactive liquid waste collection system, began in late September. These tests were conducted in cooperation with the area building manager.

After a period of testing the building manager made the decision to discontinue the use of the sinks and drains in Building 3 until further tests could be conducted to determine if a problem with the collection system existed. Use of the sinks and drains was discontinued on October 14, 1994.

On October 25, 1994, Santa Fe Engineering also conducted a series of dye tests at the request of ESH-18. The Santa Fe Engineering report confirmed the results of the tests conducted by CST-13 and the TA-21 building manager. These results showed that the dye did not travel to the holding tanks at the Building 257 treatment facility.

In November 1994, an effort to inspect the pipes which connect Building 3 sinks and drains to the Building 257 treatment facility were conducted using CST-13 camera equipment. Entry into the pipes was attempted at three different locations. These attempts failed to gain access farther than 5 to 15 feet because the pipes were too small. No leaks were observed during these investigations.

On November 29, 1994 entry was attempted in another location. A breach in a four inch waste line was discovered under Room 307 in Building 3. The inside of the line appeared corroded and contained debris such as small beakers and pieces of pipe. Because this pipe lies in a concrete trough there was no reason to believe that any liquid had escaped into the environment.

On November 30, 1994, entry into the waste line was attempted at a point where the line could be inspected between Building 3 and main line that leads to the treatment facility. This pipe appeared clean with no visible corrosion. Approximately 70 feet into the pipe there was a downward turn in the pipe. Down stream of this turn the pipe contained standing water. At this point the pipe contained metal shavings and other debris. The camera was slowly pushed through this water to prevent creating a cloud. Approximately 3 feet into the standing water the liquid became opaque. Approximately 5 feet into this dark liquid the camera was withdrawn.

The facility manager was reached on November 30, 1994 and notified of CST-13's findings. Notification to the New Mexico Environment Department (NMED) was made by ESH-18 on November 30, 1994. This notification, made on the initial findings, reported a potential leak into the environment.

There is no indication that liquid has escaped into the environment at this time.

Additional inspections need to be performed to determine if a blockage exists or a breach in the pipe has allowed an escape into the environment.

A critique of the findings was conducted on December 1, 1994. It was decided to report this incident as an off normal potential concern under DOE Order 5000.3B (Category 9C) pending further investigation. All additional information gathered by CST-13 will be forwarded to the facility manager as it is gathered.

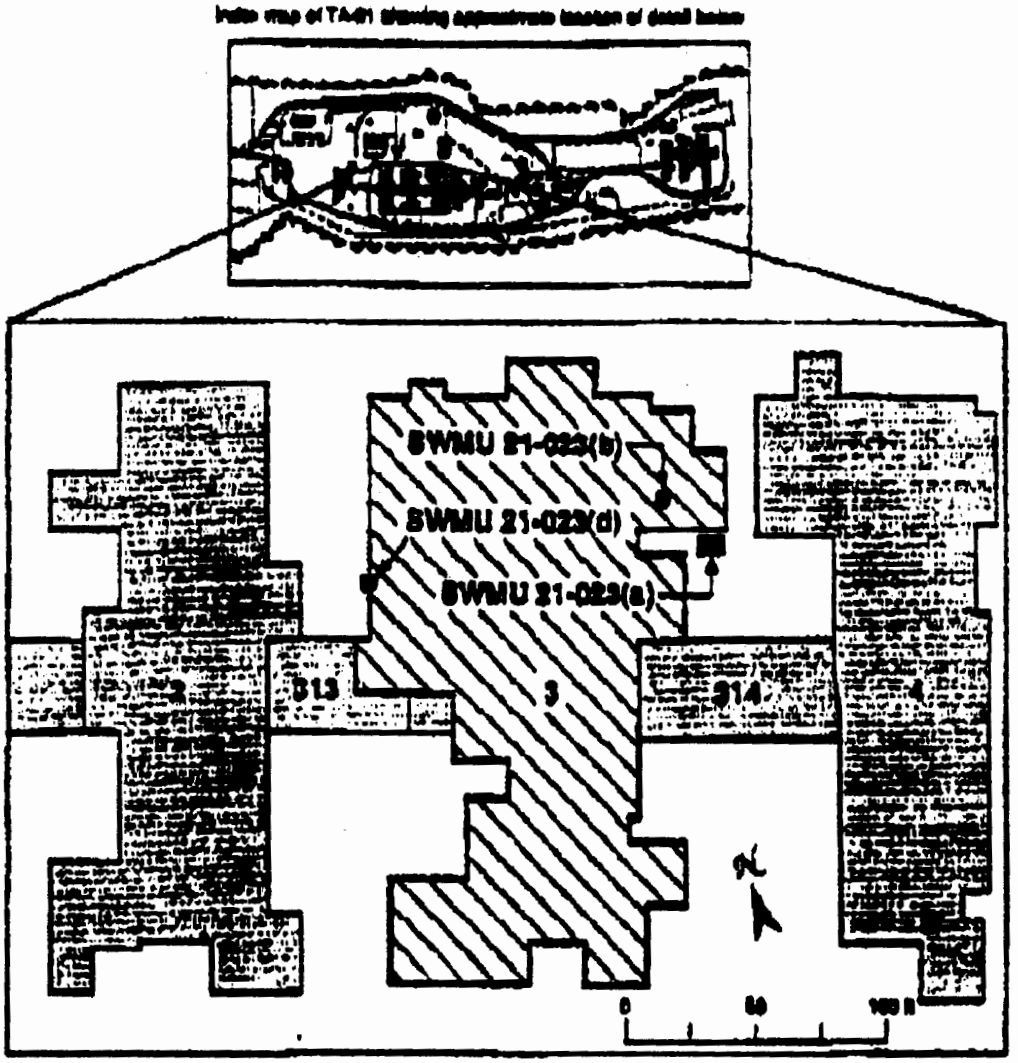
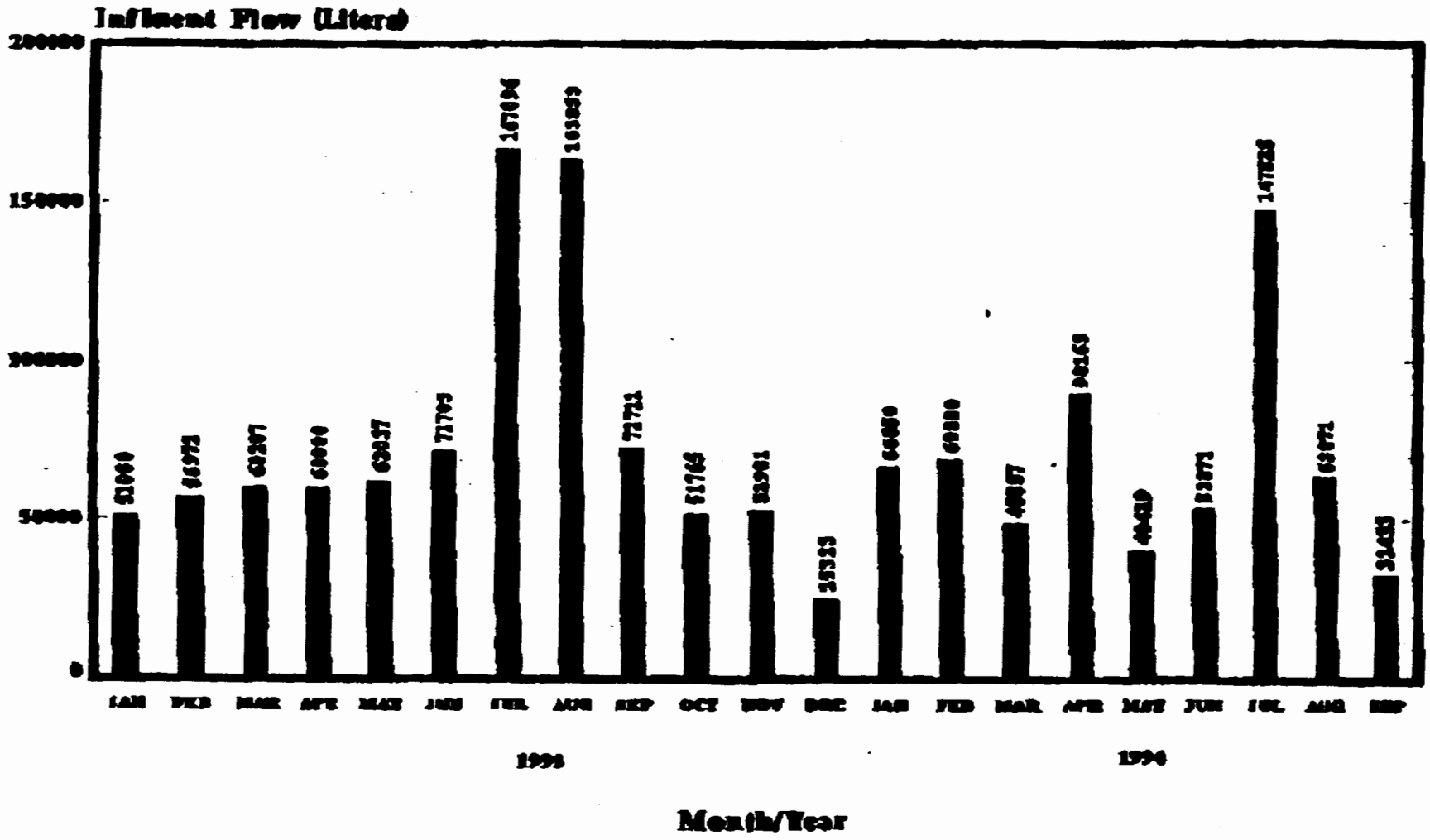


Fig. 18.9-1 Location of SWMUs 21-023(a), (b), and (d) in relation to current configuration of Building 3. (LASL 1994, 1988a)

TA-21-DP-257

INFLUENT FLOW - 1993/1994



WOC4

307

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lamos National Laboratory

LABORATORY/ZIA
WORK ORDER

11-23-87

S.J.T.

11-18-87

Supplement A

1-7 W.O. 9082-84

OR P. JONES	ASSOC. W.O. NUMBER 5-6901-68	LASL	ZIA	8-9 SUPPL.	10 A/C/I/D I
DATE 11/16/87	21-24 REQUESTOR GROUP 8405	03 13-19 LABOR	04 13-19 LABOR	05 13-14 LAB ENGR. 35	06 13-14 ZIA ENGR 26
28-31 BLDG. 0000	32-37 ROOM 16 / 38-48 COMMENTS SR 22505	20-26 MATERIAL	20-26 LOAD	15-25 LAB JOB NO.	15-18 ZIA ACCT. 6005
LE PLACE PROCESS WASTE LINES		27-33 EQUIPMENT	27-33 MATERIAL	26-35 EQUIP. CODE - A	19 G & A 1
79 P/A A	80 L/Z Z	34-40 A-E	34-40 HANDLING	36-45 EQUIP. CODE - B	20 PREM. CODE — / —
		41-47 CONTINGENCY	41-47 EQUIPMENT	46-48 CATEGORY	21-22 TYPE 04
ACCT / EXP. / PROG. / PAREN / PERCENT		48-54 OTHER	48-54 OTHER	49-51 COORD. AREA	23 CLR. REQ.D ? - 750 -
4-17 / 18-20 / 21-24 / 25-29 / 30-34		55-61 TOTAL	55-61 G & A	52-59 TARGET COMPLETION DATE	24-27 WORK DAYS REQ.D
6-39 / 40-42 / 43-45 / 47-51 / 52-56					
8-61 / 62-64 / 65-67 / 73 / 74		NO CHG	62-68 TOTAL	60 I.O. / 61-63 CODE	64-71 RESTR RELEASE DATE

JOB FILE

SAFETY

ONTACT HSE-1 & HSE-5 REPS.; SWP/RW REQ'D; NOTE: PAN AM

AFETY TO ADDRESS LIMITED EGRESS CONFINED SPACE, AND
PECIAL WORK PERMIT REQUIREMENTS

C: T. BUSH, MS M700 L. ALEXANDER, MS M989
I. SUAZO, MS E518 R. LOPEZ, MS M700

OCATION: UTILITY TUNNELS 3 AND 4

HIS SUPPLEMENT IS ISSUED TO PROCEED WITH WORK TO REPLACE
ROCESS WASTE LINES AS FOLLOWS:

. CONFINED ACCESS CANNOT BE HELPED. D. BARNES, HSE-1, WILL WORK WITH CRAFTS TO MAKE INGRESS AND EGRESS AS EFFICIENT AS POSSIBLE.

PREFABRICATE WASTE LINES IN SECTIONS AND ARRANGE A SHUTDOWN THROUGH GROUP INC-4 BEFORE DISCONNECTING ANY EXISTING LINES. FLUSH REMOVED SECTIONS WITH CLEAN WATER FOR A MINIMUM OF 30 MINUTES.

ASSEMBLE ALL NEW WASTE LINES FROM ACID RESISTANT POLYPROPYLENE PIPE AND FITTINGS. FURNISH A SPECIAL NONSPARKING, NONFLAMMABLE ELECTRICAL WELDING MACHINE TO CUT NEW PIPE TO LENGTHS NO GREATER THAN 6' AND ASSEMBLE ON THE TUNNEL FLOOR. SEND THE MACHINE TO DECONTAMINATING AND STORAGE BY D. MOSS, HSE-7, FOR USE ON FUTURE SIMILAR PROJECTS IN CONTAMINATED AREAS.

CRAFT	R/C	MANHOURS
37		
72/75 CARPENTERS		
76/94 ROOFERS		
FLR. CRW. 59/66 PAINTERS		
62/56 MASONS		
46/47 LABORERS		
T'MSTRS 50/48 DRIVERS		
OP'TNG. 68/54 ENGINEERS		
63/64 MECHANICS		
RIGGERS 79/74 IRONWORKERS		
81/85 TINNERS		
FITTERS 82/90 REFRIG. SPRINKLER		
78/71 INSULATORS		
84/87 ELECTRICIANS		
41/ JANITORIAL		
57/58 MACHINIST		
J. Pickett Job File	122	

LIFE STAYS BRIGHT WITH SAFETY IN SIGHT!!!!!!!!!!!!!!!

CVP

	FOREMAN	COMPLETION DATE
Burkett		

13

os Alamos

Alamos National Laboratory

10-15-87

LABORATORY/ZIA
WORK ORDER

S.J.T.

10-8-87

20

BK 10/13

EXHIBIT 4

OCT 19 1987

1-7 W.O. 9082-84

HOR P. JONES	ASSOC. W.O. NUMBER 5-6901-68	LASL	ZIA	8-9 SUPPL.	10 A C I D
20 DATE 10/06/87	21-24 REQUESTOR GROUP 8405	03 13-19 LABOR 30000	04 13-19 LABOR 18558	05 13-14 LAB ENGR 35	06 13-14 Z-A ENGR 24
A 21	28-31 BLDG. 0008 & 4 / 32-37 ROOM 16 / 38-48 COMMENTS SR 22505	20-26 MATERIAL 50000	20-26 LOAD 6866	15-25 LAB JOB NO.	15-18 ZIA ACCT 6005
ITLE EPLACE PROCESS WASTE LINES		27-33 EQUIPMENT	27-33 MATERIAL 36846	26-35 EQUIP. CODE - A	19 G & A 1
	79 P/A A / 80 L/Z Z	34-40 A-E	34-40 HANDLING 5527	36-45 EQUIP. CODE - B	20 PREM CODE - / -
ACCT. / EXP. / PROG. / PAREN / PERCENT		41-47 CONTINGENCY	41-47 EQUIPMENT	46-48 CATEGORY 003	21-22 TYPE 04
14-17 2086 / 18-20 / 21-24 / 25-29 0101 / 30-34 10000		48-54 OTHER	48-54 OTHER	49-51 COORD. AREA 001	23 CLR. REQ.D ? - YES -
36-39 / 40-42 / 43-46 / 47-51 / 52-56		55-61 TOTAL 80000	55-61 G & A 12203	52-59 TARGET COMPLETION DATE 06/30/88	24-27 WORK DAYS REQ.D
58-61 / 62-64 / 65-68 / 69-73 / 74-78			62-68 TOTAL 80000	60 I.D. / 61-63 CODE	64-71 RESTR RELEASE DA

& SAFETY

CONTACT HSE-1 & HSE-5 REPS.; SWP/RW REQ'D; NOTE: PAN AM

SAFETY TO ADDRESS LIMITED EGRESS CONFINED SPACE, AND SPECIAL WORK PERMIT REQUIREMENTS DOE APPROVED AS COVERED FILE NO 88-42 DATED 10/13/87

CC: T. BUSH, MS M700 L. ALEXANDER, MS K989

TWO SKETCHES, MATERIALS LIST, AND SPECIAL WORK PERMIT FOR RADIATION WORK ATTACHED

LOCATION: UTILITY TUNNEL 3 AND 4

FURNISH LABOR AND MATERIAL TO REPLACE 5" PIPE APPROX 90', " PIPE APPROX 130' AND 2" PIPE 360' PER ATTACHED SKETCH.

EPLACEMENT DUE TO DETERIORATION CAUSED BY ACID.

OTES: 1. CPM AND WORK PLAN WILL BE PROVIDED BEFORE START OF WORK.

2. WORK PLAN WILL BE TRANSMITTED BY SUPPLEMENT.

3. A SUPPLEMENT WILL BE ISSUED WITH MORE INFORMATION, AND TYPE OF PIPE TO BE INSTALLED. FULL SET

CRAFT	R/C	MANHOUR
07		
72/75 CARPENTERS		
76/94 ROOFERS		
FLR. CRW. 59/66 PAINTERS		
62/56 MASONS		
46/47 LABORERS		
T'MSTRS 50/48 DRIVERS		
OP'TNG. 68/54 ENGINEERS		
63/64 MECHANICS		
RIGGERS 79/74 IRONWORKERS		
81/85 TINNERS		
FITTERS 82/90 REFRIG. SPRINKLER	69	685
78/71 INSULATORS		
84/87 ELECTRICIANS		
41/ JANITORIAL		
57/58 MACHINIST		
T. Pickett	122	
JOB FILE		

ANY OFF GUARD MINUTE CAN HAVE AN ACCIDENT IN IT.

	FOREMAN	COMPLETION DATE
Randy Cata		

/OC4

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LABORATORY/ZIA WORK ORDER

PAGE 2

S.J.T.

I-7 W.O. 9082-84

R P. JONES	ASSOC. W.O. NUMBER	LASL	ZIA	8-9 SUPPL.	10 A/C/I/D I
DATE 11/16/87	21-24 REQUESTOR GROUP 8405	03 13-19 LABOR	04 13-19 LABOR	05 13-14 LAB ENGR. 35	06 13-14 ZIA ENGR.
28-31 BLDG.	32-37 POCM	38-48 COMMENTS	20-26 MATERIAL	20-26 LOAD	15-25 LAB JOB NO.
			27-33 EQUIPMENT	27-33 MATERIAL	26-35 EQUIP. CODE - A
			34-40 A-E	34-40 HANDLING	36-45 EQUIP. CODE - B
			41-47 CONTINGENCY	41-47 EQUIPMENT	46-48 CATEGORY
			48-54 OTHER	48-54 OTHER	49-51 COORD. AREA
			55-61 TOTAL	55-61 G & A	52-59 TARGET COMPLETION DATE
				62-68 TOTAL	60 I.D. / 61-63 CODE

E

PLACE PROCESS WASTE LINES

79 P/A: P 80 L/Z: L

ACCT.	EXP.	PROG.	PAREN	PERCENT
4-17	18-20	21-24	25-29	30-34
6-39	40-42	43-46	47-51	52-56
8-61	62-64	65-68	69-73	74-78

19 G & A	
20 PREM. CODE	
21-22 TYPE	
23 CLR. REQ.D ?	
24-27 WORK DAYS REQ.D	
64-71 RESTR. RELEASE DATE	

SAFETY

- AN EXHAUST FAN WITH ATTACHED HEPA FILTER WILL BE PROVIDED BY D. MOSS TO PROVIDE GOOD BREATHING AIR WITHOUT EXHAUSTING CONTAMINATED AIR INTO THE ENVIRONMENT. CARPENTERS WILL CONSTRUCT A FRAME AND SEAL AROUND THE EXHAUST FAN. AN AIR QUALITY SAMPLER AND ALARM WILL BE PLACED NEXT TO THE EXHAUST FAN.

- ALL WORKMEN WILL BE FULL-FACE RESPIRATOR FITTED. ADDITIONALLY, EACH MAN INSIDE THE TUNNEL WILL WEAR TWO (2) PAIRS OF COVERALLS, TWO (2) PAIRS OF GLOVES (ONE PLASTIC AND ONE LEATHER PALMED), AND BOOTIES. IT WAS SUGGESTED THAT INEXPENSIVE TENNIS SHOES BE PURCHASED ON THE WORK ORDER FOR USE BY THE WORKMEN DURING THE JOB AND DISCARDED AT END OF JOB.

- DISPOSE OF ALL OLD WASTE LINES BY WRAPPING THE ENDS OF EACH PIPE SECTION AS IT IS REMOVED, PLACE PIPE SECTIONS INSIDE A PLASTIC BAG; SEAL AND PLACE BAG WITH PIPE INTO 55-GAL DRUMS, WHICH HAVE BEEN PREPARED WITH A SMALL AMOUNT OF SORB-ALL OR DRY CONCRETE. SEAL THE DRUMS AND SEND TO HOT DUMP. IF RETRIEVABLE QUANTITIES OR RADIOACTIVE MATERIALS ARE DETECTED, SPECIAL ARRANGEMENTS WILL BE MADE. BECAUSE OF THE 55-GAL DRUMS, NO REMOVED SECTION OF PIPE WILL BE LONGER THAN 32".

- BEFORE STARTING THE WASTE LINE REMOVAL, THE ELECTRICIANS WILL CHECK THE TUNNEL LIGHT SYSTEM AND RELAMP IF REQUIRED. IF NECESSARY THE WORK WILL BE DONE USING DROP LIGHTS.

07 CRAFT	R/C	MANHOURS
CARPENTERS 72/75		
ROOFERS 76/94		
PAINTERS FLR. CRW. 59/66		
MASONS 62/56		
LABORERS 46/47		
DRIVERS T'MSTRS 50/48		
ENGINEERS OP'TNG. 68/54		
MECHANICS 63/64		
IRONWORKERS RIGGERS 79/74		
TINNERS 81/85		
FITTERS REFRIG. SPRINKLER 82/90		
INSULATORS 78/71		
ELECTRICIANS 84/87		
JANITORIAL 41/		
MACHINIST 57/58		

XL	FOREMAN	COMPLETION DATE

DC4

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LABORATORY/ZIA
WORK ORDER

S.J.T.

PAGE 3
(LAST PAGE)

I-7 W.O. 9082-84

P. JONES	ASSOC. W.O. NUMBER	LASL	ZIA	B-9 SUPPL.	10 A/C/I/O I
ATE 11/16/87	21-24 REQUESTOR GROUP 8405	03 13-19 LABOR	04 13-19 LABOR	05 13-14 LAB ENGR. 35	06 13-14 ZIA ENGR.
29-31 BLDG.	32-37 ROOM 38-48 COMMENTS	20-26 MATERIAL	20-26 LOAD	15-25 LAB JOB NO.	15-18 ZIA ACCT.
LACE PROCESS WASTE LINES		27-33 EQUIPMENT	27-33 MATERIAL	26-35 EQUIP. CODE - A	19 S & A
79 P/A P	80 L/Z L	34-40 A-E	34-40 HANDLING	36-45 EQUIP. CODE - B	20 PREM. CODE
CT. / EXP. / PROG. / PAREN / PERCENT		41-47 CONTINGENCY	41-47 EQUIPMENT	46-48 CATEGORY	21-22 TYPE
17 / 18-20 / 21-24 / 25-29 / 30-34		48-54 OTHER	48-54 OTHER	49-51 COORD. AREA	23 CLR. REQ.D ?
39 / 40-42 / 43-46 / 47-51 / 52-56		55-61 TOTAL	55-61 G & A	52-59 TARGET COMPLETION DATE	24-27 WORK DAYS REQ'D
61 / 62-64 / 65-68 / 69-73 / 74-78			62-68 TOTAL	60 I.D. / 61-63 CODE	64-71 RESTR RELEASE DATE

SAFETY

AT ALL TIMES, THERE MUST BE NO LESS THAN TWO MEN INSIDE THE TUNNEL AND ONE MAN AT THE TUNNEL EXIT. SOME FORM OF VOICE COMMUNICATIONS, PREFERABLY A FIELD PHONE AND HEAD SET, HAVE BEEN REQUESTED.

BECAUSE OF THE TIME SPENT GETTING INTO AND OUT OF THE ANTI-C PROTECTIVE CLOTHING (APPROX 0.5 HOUR PRO-LUNCH, 0.5 HOUR POST-LUNCH AND .75 HOUR END OF DAY), I RECOMMEND THAT NO COFFEE BREAKS BE ALLOWED.

OTE: T. PICKETT, PAN AM CA2D, AND R. BEAVERS, WILL COMPLETE MATERIAL LIST AND ORDER PIPE AND FITTINGS NO LATER THAT 11/10/87. T. PICKETT WILL ALSO CHECK COST AND AVAILABILITY OF 55-GAL BLACK DRUMS AND PLASTIC BAGS FOR OLD PIPE.

CRAFT 07	R/C	MANHOURS
72/75 CARPENTERS		
76/94 ROOFERS		
FLR. CRW. 59/66 PAINTERS		
62/56 MASONS		
46/47 LABORERS		
T'MSTRS 50/48 DRIVERS		
OP'TNG. 68/54 ENGINEERS		
63/64 MECHANICS		
RIGGERS 79/74 IRONWORKERS		
81/85 TINNERS		
FITTERS 82/90 REFRIG. SPRINKLER		
78/71 INSULATORS		
84/87 ELECTRICIANS		
41/ JANITORIAL		
57/58 MACHINIST		

L	FOREMAN	COMPLETION DATE

PAN AM WORLD SERVICES, INC.
FIELD AUTHORIZATION

DATE 7-5-89
% COMP. 50%
FA# 2

PART A: DESCRIPTION AND JUSTIFICATION

PRIME NO. 9082-84 TITLE Replace Process Waste Lines
ASSOCIATE NO. 5-6901-68 TA 21 BLDG. 3 & 4 North

Request approval for change in scope based on test results of sludge in contaminated pipe removed from 4 N tunnel. HSE-7 certifies the sludge to contain high counts of TRU (600 nano Cipergm). This count exceeds the limit for transporting, therefore it will be necessary to remove the sludge from the contaminated piping (per HSE-1 and HSE-7 procedures). This needs to be accomplished as soon as possible before the sludge dries which will create a more hazardous condition. We suggest using remaining funds to accomplish this task, and place tunnel 3N on hold. Approximately 28K remaining funds. This work is NTE this amount.

REVISED TARGET DATE _____ ACTIVITY NO. (S) 700-45, 49 & 53

PART B: CAUSES

- ___ PROJECT REVISION < 2K
- ___ WORK DEFINITION
- ___ PRODUCTIVITY
- ___ WORKMANSHIP
- ___ SCHEDULING
- ___ ESTIMATE ___ PLAN ___
- ___ SUPERVISION
- ✓ FIELD DIRECTION
- ___ MATERIALS ___ TOOLS ___
- ✓ TRANSP. ✓ EQUIP. ✓
- ___ PLANS & SPECIFICATIONS
- ___ CONGESTION
- ___ OVERTIME
- ___ SITE ACCESS
- ___ FIELD CONDITIONS
- ___ RATE CHANGES
- ✓ H. ___ S. ___ OR E. ✓
- ___ WEATHER
- ___ OTHER ___

PART C: HOURS

CARPENTERS		FITTERS	
ROOFERS		INSULATORS	
FLOOR CREW		ELECTRICIANS	
PAINTERS		LINEMEN	
MASONS		RIGGERS	
LABORERS		FAB SHOPS	
TEAMSTERS		S & T	
OPERATORS		CUSTODIAL	
IRON WKRS			
TINNERS			
		NON-MANUAL	
SUB-TOTAL		SUB-TOTAL	

TOTAL HRS. ___
Can not be determined due to radiological concerns.

PART D: COSTS

LOADED LABOR	$ ___	INCLUDES $ ___ FOR NON-MANUAL
MATERIAL & HANDLING	$ ___	
EQUIPMENT	$ ___	INCLUDES ___ HOURS
SUBTOTAL	$ ___	
G&A — GRT	$ ___	
TOTAL ESTIMATED COST	$ ___	BASIS: ___ WORKSHEET ___ PLANNERS ___ ESTIMATORS

PART E: APPROVALS

FUNDING ORGANIZATION	W.O. AUTHOR	PAN AM CONST. SUPV.
DATE ___	DATE 7/21/89	

PAN AM WORLD SERVICES, INC.
COMPLETION REPORT

ME NO. 9082-84
OCIATE NO. 5-6901-68
LE REPLACE PROCESS WASTE LINES
21 BLDG. 3+4 NORTH

CURRENT TARGET DATE 9-30-90
PRIORITY NO. 3
DATE JOB STARTED 7-13-88

RT A: NOTIFICATION OF FIELD COMPLETE

IIS W.O. IS 100% FIELD COMPLETE THIS DATE: 12-14-89
OMMENTS:

USER (OPTIONAL)
DATE

WORK ORDER AUTHOR
12/14/89

PAN AM CONST. SUPV.
12-14-89

COPY: PAN AM WORK ORDER CONTROL

ART B: ESTIMATE AND COST RECAP

RIGINAL ESTIMATE.....$ 80,000
O. OF FAs/SUPPLEMENTS 4 1 VALUE...$ -0- %INC -0-
REVISED ESTIMATE...$ 80,000

FINAL COST...$ 60,760.65
VARIANCE.....$ 19239.35 %INC/DEC 24%

ART C: DETAILS

XCEPTIONS TO WORK ORDER

HECKED: SUBMITTALS 12/14/89 X P.O.s 12/14/89 X PALLETIZED 12/14/89 X SALVAGE 12/14/89 X

ART D: RETRIEVE WORK ORDERS

RAFT COMPLETED W.O. ATTACHED: OTHER:

LABORERS	FITTERS	ELECTRICIANS	CARPENTERS	PAINTERS	TINNERS	
IRONWORKERS	INSULATORS	MASONS	ROOFERS	TEAMSTERS	OPERATORS	UTILITIES

VERRUN EXPLANATION:

IELD PROJECT CLOSEOUT IS COMPLETE THIS DATE:

Los Alamos

Los Alamos National Laboratory
Los Alamos, New Mexico 87545

memorandum

TO: Nate King, HSE-3, MS G726

DATE: August 7, 1989

FROM: Gilbert Montoya, HSE-7

MAIL STOP/TELEPHONE: E520/7-7800

SYMBOL: HSE7-89-390

SUBJECT: PACKAGING AND TRANSPORTING CONTAMINATED ACID WASTE LINES (AWL) FROM TA-21 TO TA-50

I. SCOPE

Pan Am is replacing ~600 feet of pipe from the utility tunnels at TA-21-3 and -4 North. The acid waste lines (AWLs) contain a large amount of sludge (~ 50% volume of the pipe), which was analyzed by the Health and Environmental Chemistry Group (HSE-9). HSE-9 determined that the predominant isotopes are ^{235}U and ^{238}U. A variety of chemicals were also present in large quantities. A quantitative analysis on a one-foot section of pipe indicated that the sludge is TRU (~700 nCi/g).

In a meeting, HSE-1 and HSE-7 personnel determined that the sludge should be removed. The AWL will be transported to TA-50 where the sludge can be removed and packaged appropriately in DOT 17-C drums. The pipe will be flushed with water and disposed of as low-level waste. A total of 300-ft. of pipe has been removed; therefore, the total estimated activity is 1 Ci, based on an estimated 300 pounds of sludge.

II. PACKAGING CONTAMINATED PIPE

This section specifies general procedures for packaging the pipe to be transported to TA-50.

The pipe will be cut in various lengths not exceeding 8-ft. sections, wrapped in double-reinforced plastic, and placed inside a 4′ x 4′ x 8′ plywood box lined with plastic. Spill blankets will be placed inside the box for absorbency. The plywood box will then be placed inside a metal container measuring 5′ x 6′ x 12′. The vehicle used for transport will be tarpaulin-covered and plastic-lined with sides and a tailgate.

III. TRANSPORTING CONTAMINATED PIPE

The following are requirements for waste transport.

All radioactive solid waste must be packaged and labeled in accordance with the requirements of HSE-7, Waste Management, as described in AR 10-2 and AR 10-5 in the Health and Safety Manual and in the On-Site Transportation Manual.

The HSE-1 area representative must verify that all waste packaging/labeling requirements are met.

A teamster must inspect for safety the vehicle used for transporting radioactive waste.

Pan Am laborers and the teamster must secure the load for shipment to TA-50 by chaining down the container and covering it with a tarpaulin. The HSE-1 HPS at TA-21 must sign the HSE-7 Waste Disposal Form only after approving the loading and securing of the waste load.

The truck must not leave TA-21 until HSE-1 has approved the load for transport to TA-50. The HSE-1 health physics surveyor (HPS) and the waste generator must not sign HS Form 10-2A, Radioactive Waste Disposal Record, until the HPS approves the load.

The pipe must be sent to TA-50 only during hours when traffic is not expected to be heavy. An official HSE-1 escort vehicle must escort the waste to TA-50.

Occupants of vehicles transporting the waste must always wear dosimetry badges.

The vehicle transporting the waste must display the radiation transport placards on all four sides of the vehicle.

IV. ADMINISTRATIVE CONTROLS

HSE-1, Health Physics

HSE-1, Health Physics, establishes radiological safety procedures for safe transport. The HPS assigned to the project must

- assist HSE-7 in maintaining radiation exposures to as low as reasonably achievable;
- provide personnel radiation exposure control; and
- sign the Radioactive Solid Waste Disposal Forms.

HSE-1 provides full-time monitoring and establishes radiation protection guidelines and procedures, including approvals for radiation and special work permits, and the like.

HSE-3, Safety

HSE-3 provides consulting on the industrial safety of work being performed.

HSE-5, Industrial Hygiene

HSE-5 provides consulting and recommends personnel protective equipment.

HSE-7, Waste Management

HSE-7 will coordinate all activities to ensure a safe operation.

ENG-5

ENG-5 coordinates the Pan Am effort.

Pan Am

Pan Am provides personnel, materials, and equipment as requested by ENG-5 to perform the work.

V. Emergency Procedures

During the packaging and transport of AWLs, no emergency is expected to arise that would significantly endanger personnel or the public.

Material can be released into the environment if a traffic accident or other accident or incident causes the material to be dispersed to the immediate area. Emergency procedures will be handled as follows (see also Attachment A, Specific Instructions for Emergencies).

Transportation Accident

1. The driver or escort must immediately contact the supervisor by radio, phone, or whatever other means are at hand. The supervisor must immediately call HSE Division, 7-7878.

2. In a fire or the immediate possibility of fire, the driver of the escort vehicle must notify the HSE-1 Base Station on the HSE-Division net (192), which will in turn notify appropriate personnel.

3. In all vehicle accidents occurring outside of a Laboratory technical area, the driver of the escort vehicle must notify the HSE-1 Base Station on the HSE-Division net (192), which will in turn notify the appropriate personnel.

Release of Radioactive Materials

1. Evacuate the immediate vicinity and post the area to prevent unauthorized reentry.

2. Notify the HSE-7 Group Office, 7-4301.

3. Call the HSE-DO emergency number, 7-7878 (8:00 a.m. to 5:00 p.m.).

Serious Injury

1. Assist any injured personnel.

2. Call 9-911 for an ambulance. Give as much detail as possible about the location and nature of the injury.

3. Notify the HSE-7 Group Office, 7-4301; the HSE-7 site representative; and the HPS at the site.

4. Call the HSE-DO emergency number, 7-7878 (8:00 a.m. to 5:00 p.m.).

Att: a/s

xc:
R. Koenig, HSE-7, MS E518
R. Garde, HSE-7, MS E518
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D. Martinez, HSE-1, MS C336
D. Broughton, PAA-CA1D, A199, TA-21

Attachment A

Specific Instructions for Emergencies

Before starting the transport, familiarize yourself with the nature of the packaged contents and existing dose rates at surface and at three feet.

Make radio contact with the transport driver, then the HSE-1 base station (192) to inform personnel that an escort is in progress. Inform personnel when the transport is completed.

In case of an accident or fire, immediately radio the HSE-1 base station and request assistance from the HSE-1 Emergency Response Team. Immediately take any necessary action to stop traffic and to clear private vehicles and bystanders from the immediate area.

In a fire, regardless of its severity, call the fire department, 9-911. Keep all personnel upwind. Laboratory personnel are not instructed or expected to fight fires.

When the fire is out or if no fire is present, assess the integrity of the package being transported by visual and instrument inspection. By swiping the accessible surface areas, determine whether there has been a significant increase in dose rates external to the package and whether significant removable contamination is present.

If contamination has been released from the package, post the area at the point where the count is essentially undetectable, and keep personnel out of the area.

Establish boundaries, posting the area at the 5 mR/hr line.

Don a respirator only as you deem justifiable for close-in monitoring surveillance and when gross contamination is apparent.

Control further leakage with plastic bags and tape.

Remain calm and do not alarm bystanders. Keep your assessment of the conditions in perspective.

Keep other emergency personnel informed of your findings in lay language and express the significance of the conditions present.

Do not release any information to the press. HSE-DO/HSE-1 supervision will contact the Public Affairs Office.