

7-28-95

R2-839

REMOVAL AND DECONTAMINATION OF Q TANKS

Following a Corporate ESBU audit of the site operation and past practices in 1994, a concern was registered regarding the prior on-site burial of concrete quarantine tanks and future more restrictive NRC decommissioning requirements. These tanks were buried according to existing regulations in the early 1970 time frame. Nine tanks measuring 5'X 20'X 5' were decontaminated and buried southwest of the facility on the east side of the old farming concrete pad. External surveys indicated minimal contamination on the exterior of the tanks. Soil samples were taken from the trench and the values indicated background levels of contamination (i.e. Gross alpha < 1 pCi/gram).

The tanks were removed from the excavated trench in December 1995 and taken to the Chem Nuclear pad within the Controlled Access Area for removal of the dirt accumulated in the tanks; the tanks were subsequently cut into slabs and decontaminated by ultra high pressure water hose (35,000 psi) to free release limits by Valley Systems.

Approximately 86 drums of soil were removed from the inside of the tanks. Initial analysis of composite samples indicates that most of soil contamination levels in the drums were less than 30 pCi/gram Gross Alpha. One group averaged approximately 41 pCi/gram, and further analyses are proceeding. Following receipt of these analyses, a management decision will be made regarding processing the soil. Additional waste from the decontamination was collected in 5 gallon pails (approximately 97) which will be handled as low level radioactive waste.

A Radiation Work Permit was initiated to control contamination and assure health physics requirements were complied with. The tanks were decontaminated and cut into approximately 36 slabs. These slabs were used as a structural concrete base used for construction of a new pad (63'x60') south of the water storage tank (behind the low level waste building). The base was covered and leveled with approximately four inches of concrete to level the new pad.

Water collecting on the pad from the washings was pumped to the contaminated waste lagoon for ultimate disposal.

C-24



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EKR95163

Date: July 28, 1995
Subject: CONTAMINATION SURVEY RESULTS
Q TANK SLABS

To: J. Heath cc: S. Gantt

During the July 24-28, 1995 NRC inspection of the effluents and environmental program, the inspector requested a post decontamination survey of the Q Tank slabs which were removed from a burial spot on site and decontaminated on the Chem Nuclear Pad. The writer reviewed RWP 94-10, RWP 95-09 and the free release survey file in an attempt to locate these surveys. To date, the final survey results could not be located.

However, the RWP files do contain sufficient information to conclude that the slabs met the unrestricted release limits of Section 4.1 of SNM-1107, which references the "Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted or Termination of Licenses for Byproduct, Source, or Special Nuclear Material", August 1987. These limits are 1,000 dpm per 100 cm² smearable and 5,000 dpm per 100 cm² average total and 15,000 dpm per 100 cm² maximum total, as indicated below:

1. On 12/8/94, the slabs were surveyed prior to being decontaminated. The average alpha contamination measured was approximately 450 dpm per 100 cm². The highest measurement was 7,500 dpm per 100 cm². These are well below the license limit.
2. In-process checks were performed 1/26/95 on pressure washed slabs and slabs which were not pressure washed. The maximum alpha smearable measurement on the pressure washed slab was 9 dpm per 100 cm², and the maximum smearable measurement on the slab which was not pressure washed was 27 dpm per 100 cm². These are also well below the license limit.
3. On 2/7/95, direct alpha readings were taken on decontaminated slabs. For the slabs where the paint was removed, all direct alpha measurements were below 250 cpm using an Eberline PAC 4G instrument (<1,500 dpm per 100 cm²). These are also well below the license limit.



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All slabs were decontaminated using high pressure (35,000 psi) water spray. The slabs were subjected to this decontamination until all exterior materials, including paint, were removed. Therefore, in the conclusion of the writer, the tanks met the requirements of Section 4.1 of SNM-1107 prior to being released for use as a slab adjacent to the existing Chem Nuclear Pad.

This letter and the contents of RWP 94-10 and RWP 95-09 will be placed in the Decommissioning File for historical retrieval.

Ed Reitler

Ed Reitler
Regulatory Engineering & Operations

Soil Summary - Drums of Soil
Removed From Q Tanks

<u>Composite Sample</u>	<u>Drums</u>	<u>Gross Alpha, PCi/gram</u>
1	1-12	25.0
2	13-24	23.4
3	25-35	27.3
4	36-47	41.5
5	48-59	15.1
6	72-80	6.7
7	81-86	12.2

Water deion
Q-Tank Direct Survey Results

Summary Results
of Slabs
Done by CARVER on
12/8/94



~~Feedback~~

Butler Bldg

#1 ~~500~~ ~~2000~~
Average 500
Highest 2500

#7 Average 520
Highest 2500

#2 Average 350
Highest 3500

#8 Average 300
Highest 1500

#3 Average 350
Highest 2000

#9 Average 750
Highest 4000

#4 Average 500
Highest 7500

#10 Average 450
Highest 3000

#5 Average 450
Highest 5000

#11 Average 500
Highest 3500

#6 Average 300
Highest 2000

#12 Average 400
Highest 2000

All results in $\mu\text{g}/100\text{ml}$

CONTAMINATION SURVEY (ROUTINE)

BUD ERGLE

(Supervisor)

QTANK DECON PAD

(Area)

Instrument: PAC 46

Calib. Due Date: JULY 3 1995

Serial No: 3386

te: 4-26-95

Time: 7:00

Shift: 1ST

LIMITS		
AREA	SMEARABLE dpm/100cm ²	FIXED Pm-4G-cpm
1) Entry Tables	10	230
2) Clean	50	230
3) Limited	230	N/A
4) Controlled Area	3000	N/A
5) Controlled Area	5000	N/A

ACTION
<input checked="" type="checkbox"/> None
<input type="checkbox"/> Decon * areas within 24 hours
<input type="checkbox"/> Rope-off & decon circled areas immediately

	SMEAR DPM	DIRTCT CPM	AREA	LOCATION
1	0	50		QTANK DECON PAD
2	6	25		
3	12	50		
	3	BKG		
5	6	BKG		
6	3	25		
7	9	BKG		
8	18	BKG		
9	6	BKG		
10	12	BKG		

	SMEAR DPM	DIRTCT CPM	AREA	LOCATION
1	12	BKG		QTANK DECON PAD
2	6	BKG		
3	3	50		
4	18	BKG		
5	12	BKG		BLACK 5 Gallon PAIS
6	6	BKG		
7	3	BKG		
8	9	BKG		
9	18	BKG		
10	9	BKG		

	SMEAR DPM	DIRTCT CPM	AREA	LOCATION
1	9	BKG		SCRAP LUMBER
2	6	BKG		
3	0	BKG		
4	3	BKG		
5	0	BKG		
6	12	BKG		
7	6	BKG		
8	3	BKG		
9	9	BKG		
10	9	BKG		

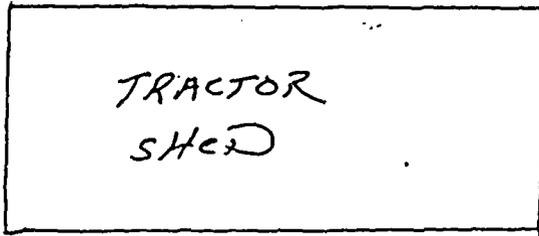
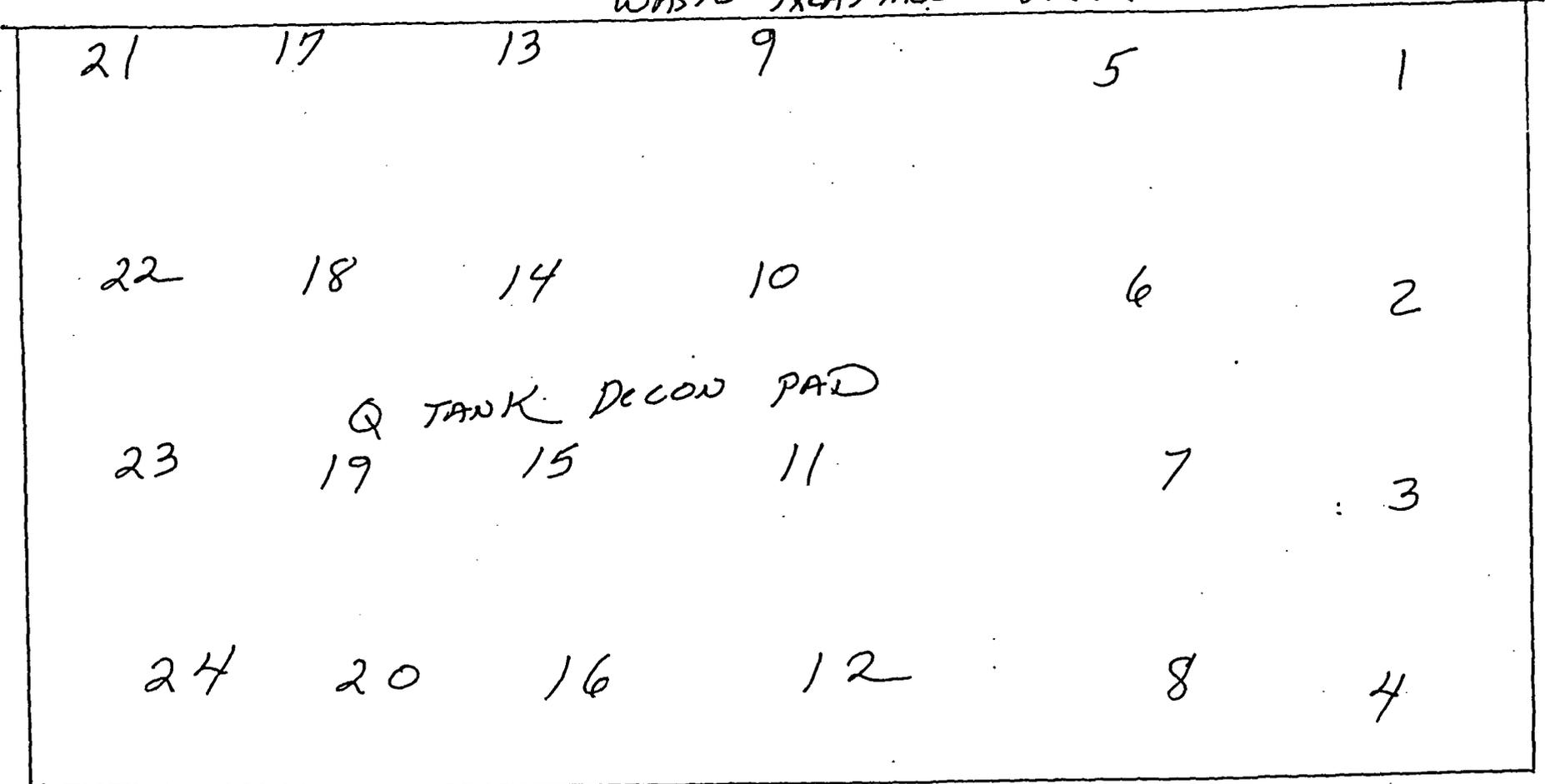
	SMEAR DPM	DIRTCT CPM	AREA	LOCATION
11	12	BKG		QTANK DECON PAD
12	9	BKG		
13	9	BKG		
14	15	BKG		
15	3	BKG		
16	12	BKG		
	3	BKG		
18	6	BKG		
19	6	BKG		
20	12	BKG		

	SMEAR DPM	DIRTCT CPM	AREA	LOCATION
1	6	BKG		BLACK 5 Gallon PAIS
2	6	BKG		
3	6	BKG		
4	0	BKG		
5	3	BKG		
6	6	BKG		
7	6	BKG		SCRAP LUMBER
8	18	25		
9	15	25		
10	12	BKG		

	SMEAR DPM	DIRTCT CPM	AREA	LOCATION
1	3	BKG		SCRAP LUMBER
2	6	BKG		
3	21	BKG		
4				
5				
6				
7				
8				
9				
10				

* SEE BACK FOR

WASTE TREATMENT AREA



* FIXED READINGS
AND SMEARS WERE
TAKEN AT THESE
LOCATIONS .

1 → 24 K. BARNETT
4-26-95