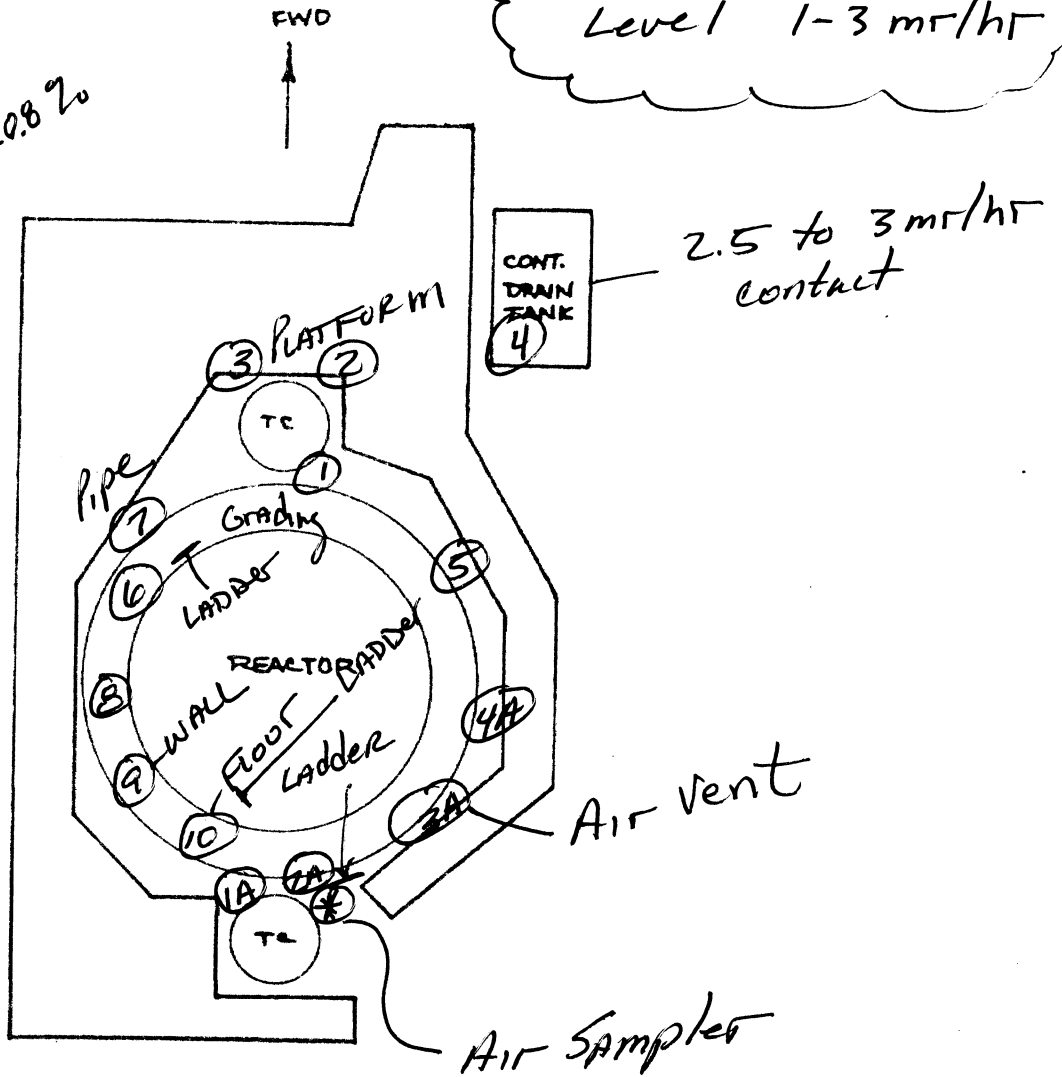


CONTAINMENT VESSEL  
4<sup>th</sup> LEVEL

O<sub>2</sub> Levels  
20.4 to 20.8%

Gen. Area - 4<sup>th</sup>  
Level 1-3 m<sup>3</sup>/hr



~~TSC-ND-127~~  
01/80

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0083

Date <u>4-12-05</u> Time <u>1000</u>	DOSE RATE	CONTAMINATION	
Surveyor <u>Bowen Scott</u>	Inst. Type <u>TECE</u>	Beta ___ Alpha ___	Beta ___ Alpha ___
Signature <u>[Signature]</u>	Serial No. <u>Detector</u>	Inst. Sn <u>N/A</u>	
Reviewed <u>[Signature]</u>	$\beta^-$ Factor <u>28991</u>	Eff. <u>/</u>	
		Bkg. cpm	cpm

AREA Containment Vessel 1st Level  
PRIMARY

COMPONENT \_\_\_\_\_

SEE ATTACHED DRAWING

$\mu R/hr$  METER  
SN 95469

SMEAR RESULTS <del>IN DPM/100 CM<sup>2</sup></del>		<del>B - BETA in mRAD/hr/100 CM<sup>2</sup></del>							
NO.	RESULTS	N O.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
5A	< BKG								
6A	< BKG								
7A	< BKG								
8A	< BKG								
9A	< BKG								
10A	< BKG								

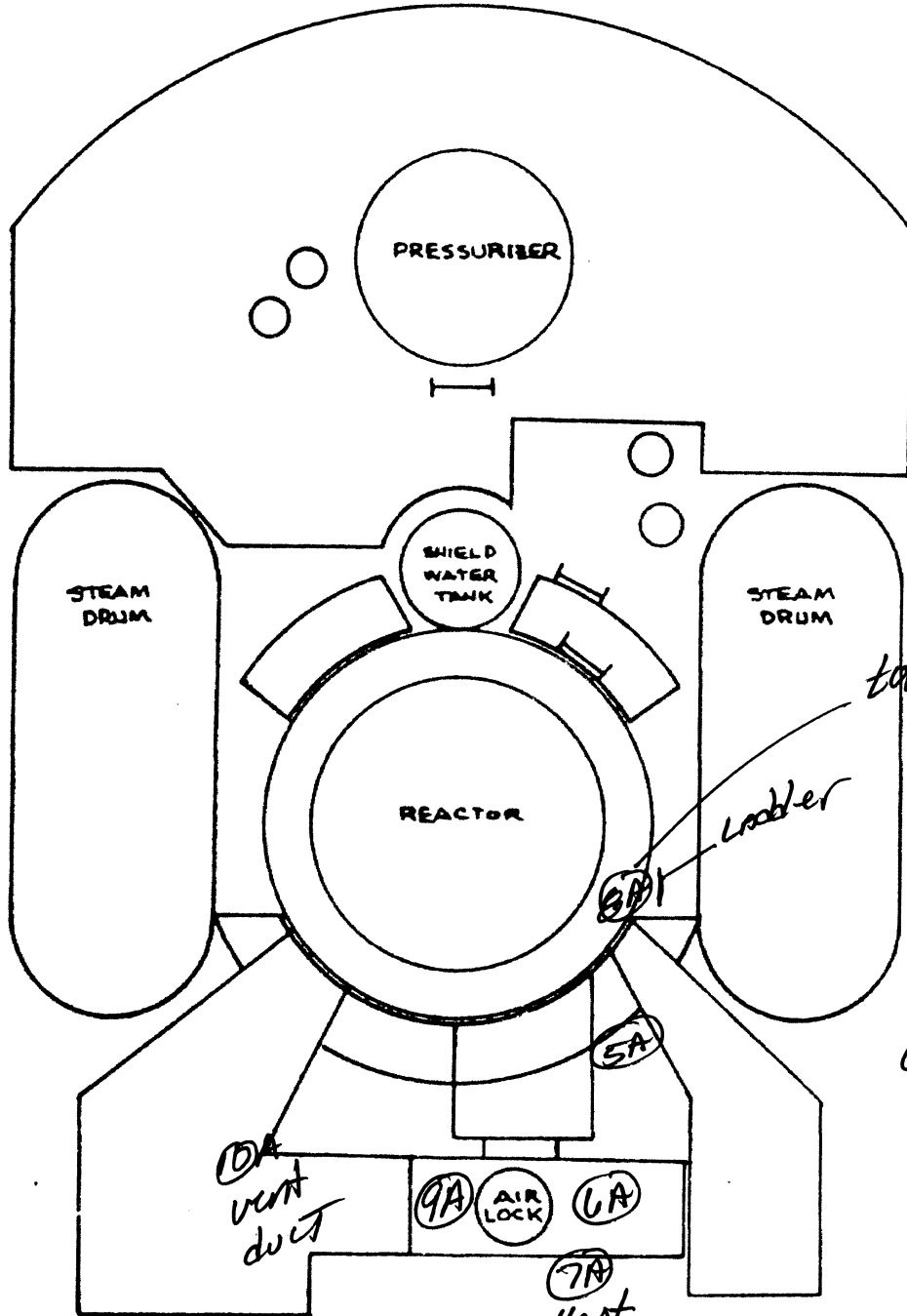
RA - RADIATION AREA      CA - CONTAMINATION AREA      ALL DOSE RATES IN  $\mu$ rem/hr  
RCA - RADIATION CONTROL AREA      AA - AIRBORNE AREA

Probe:

Cal. Date:

CONTAINMENT VESSEL  
1<sup>ST</sup> LEVEL

FWD  
↓



*top of Rt*

*Ladder*

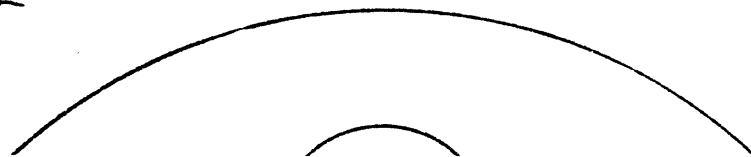
*Gen. Area  
600-800 M/hr*

*10A  
vent  
duct*

*7A  
Vent  
duct*

CONTAINMENT VESSEL  
3<sup>RD</sup> LEVEL

FWD  
↓



N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0084

Date <u>4-20</u> Time <u>1000 AM</u>	DOSE RATE		CONTAMINATION	
Surveyor <u>JULIEN SCOTT</u>	Inst. Type <u>tele detector</u>	Beta _____	Alpha _____	Beta _____ Alpha _____
Signature <u>[Signature]</u>	Serial No. <u>28991</u>	Inst. Sn		
Reviewed <u>[Signature]</u>	$\beta^-$ Factor	Eff.		
		Bkg. _____	cpm _____	cpm _____

AREA Primary containment - 2nd level

COMPONENT \_\_\_\_\_

*SEE ATTACHED DRAWING*

SMEAR RESULTS $\mu\text{BPM}/100\text{ CM}^2$				<del>B - BETA in mRAD/hr/100 CM<sup>2</sup></del>					
NO.	RESULTS	N O.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	< BKG	9	< BKG	10B	< BKG	9B	< BKG		
2	< BKG	10	< BKG	2B	< BKG	10B	< BKG		
3	< BKG			3B	< BKG				
4	< BKG			4B	< BKG				
5	< BKG			5B	< BKG				
6	< BKG			6B	< BKG				
7	< BKG			7B	< BKG				
8	< BKG			8B	< BKG				

RA - RADIATION AREA

CA - CONTAMINATION AREA

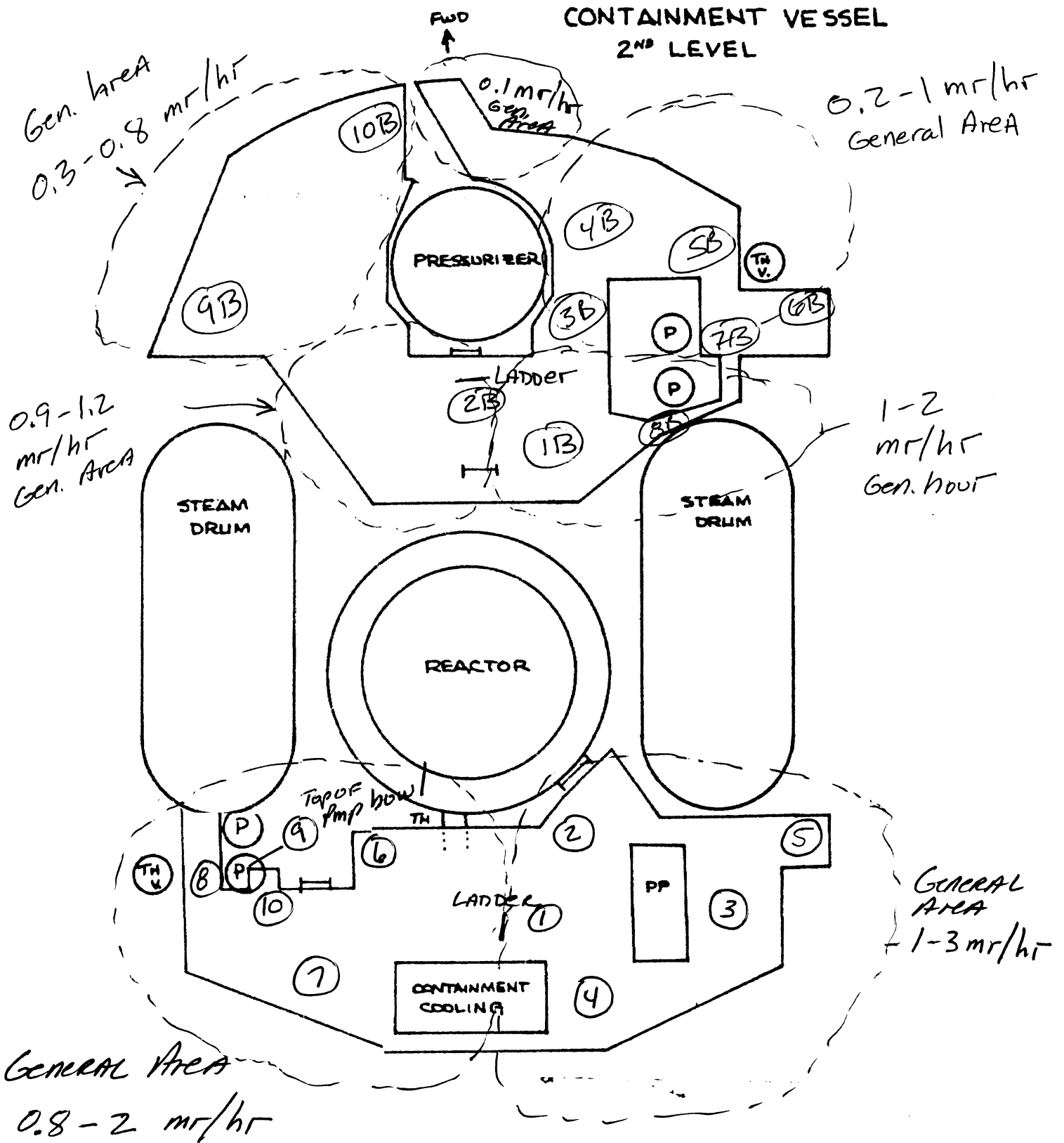
ALL DOSE RATES IN  $\mu\text{rem/hr}$

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

CONTAINMENT VESSEL SURVEY

Scaler:	Bgr:	c/m
Eff.:	%	Eff. Date:



N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. MISS-0095

Date <u>4-12</u> Time <u>10:00</u>	DOSE RATE		CONTAMINATION	
Surveyor <u>BOWEN, Scott</u>	Inst. Type <u>TELESCOPE</u>	Beta	Alpha	Beta Alpha
Signature <u>J.A. Acosta</u>	Serial No. <u>Dituly</u>	Inst. Sn		
Reviewed <u>Rubén Rumbach</u>	<del>β</del> Factor <u>28991</u>	Eff.		
		Bkg.	cpm	cpm

AREA PRIMARY CONTAINMENT

COMPONENT 3rd Level Vessel Containment

SEE ATTACHED MAP

*SMI*  
10A = 273 dpm/100cm<sup>2</sup>  
7 = 269 dpm/100cm<sup>2</sup>

SMEAR RESULTS <del>IN DPM/100 CM<sup>2</sup></del>				<del>B - BETA IN mRAD/hr/100 CM<sup>2</sup></del>			
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1A	< BKG	9A	< BKG	1	< BKG	9	< BKG
2A	< BKG	10A	*53 ct (106cpm)	2	< BKG	10	< BKG
3A	< BKG			3	< BKG		
4A	< BKG			4	< BKG		
5A	< BKG			5	< BKG		
6A	< BKG			6	< BKG		
7A	< BKG			7	*49 (98cpm)		
8A	< BKG			8	< BKG		

RA - RADIATION AREA

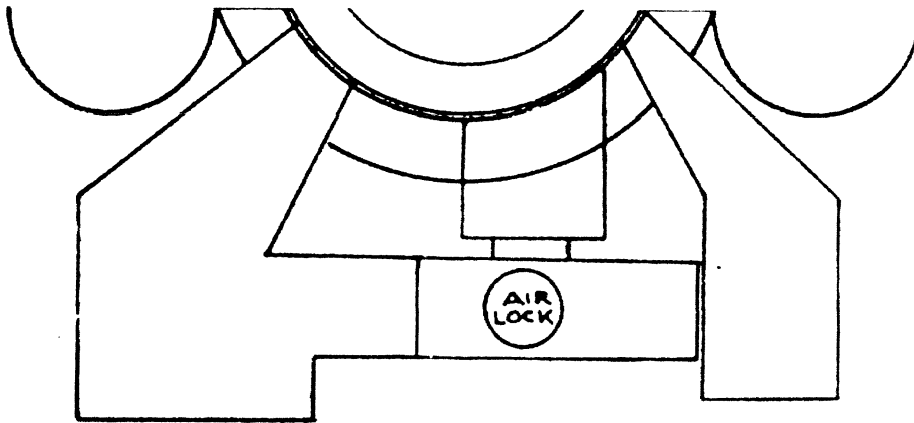
CA - CONTAMINATION AREA

ALL DOSE RATES IN µrem/hr

RCA - RADIATION CONTROL AREA

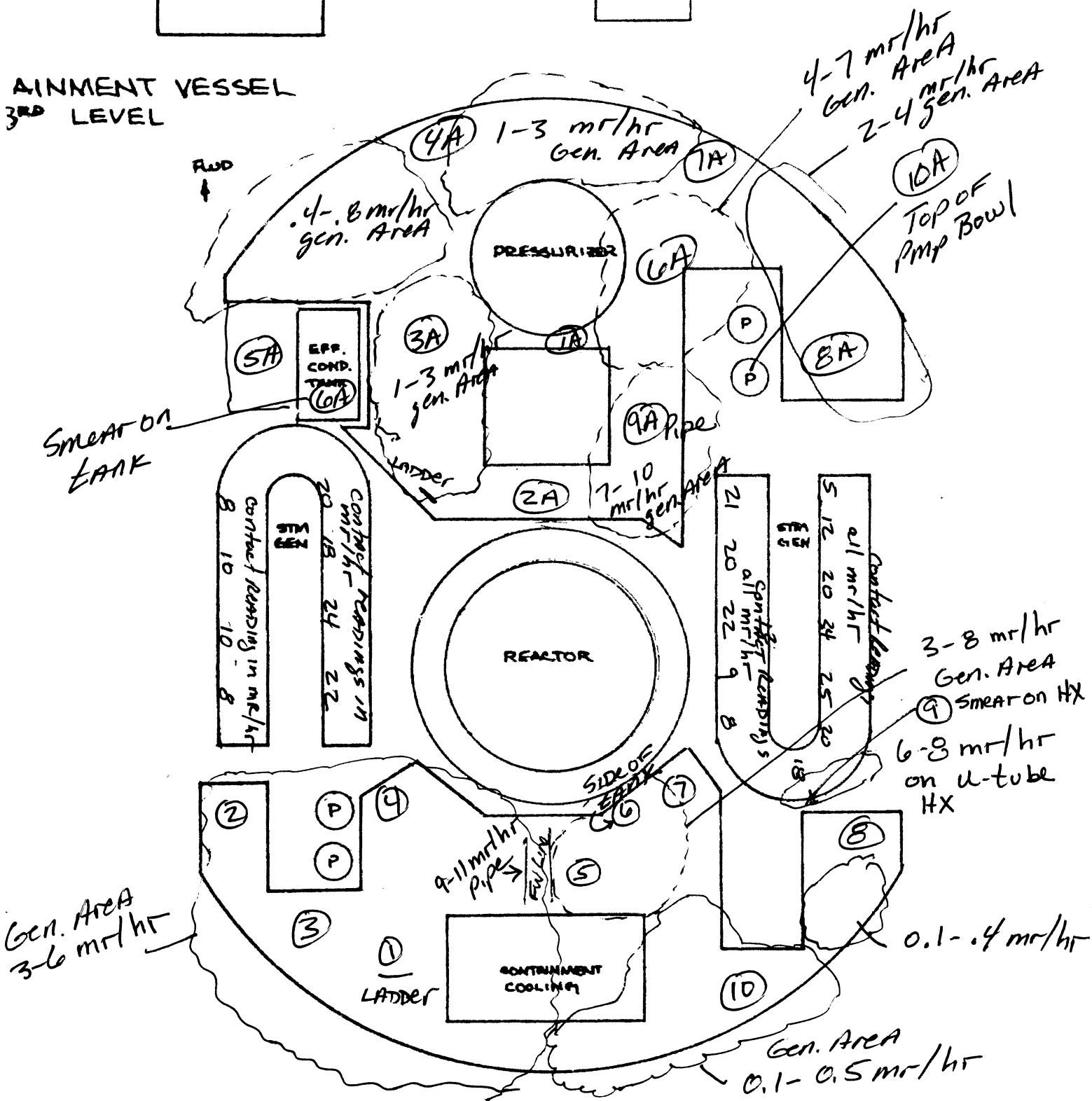
AA - AIRBORNE AREA

\* 5 smears 10A + 7 retained



3rd Level  
Containment

CONTAINMENT VESSEL  
3RD LEVEL



N. S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-008X6

Date <u>4/12/05</u> Time	DOSE RATE		CONTAMINATION	
Surveyor <u>Bon Scott</u>	Inst. Type <u>42972</u>	Beta <input checked="" type="checkbox"/>	Alpha <input type="checkbox"/>	Beta <input type="checkbox"/> Alpha <input type="checkbox"/>
Signature <u>Bon Scott</u>	Serial No. <u>Ludlum 19</u>	Inst. Sn <u>91037</u>		
Reviewed <u>Ralph P. Arnold</u>	$\beta$ Factor <u>/</u>	Eff. <u>10%</u>		
	<u>BKG 4 MR/H</u>	Bkg. <u>40</u> cpm	<u>/</u> cpm	

AREA Charge Pumps 1-3

COMPONENT \_\_\_\_\_

Charge Pump #2

STBD.

- #1 Floor
- #2 Top of Catch Tank
- #3 Floor
- #4 Controls for Sump Pump (AFT)
- #5 Large Valve (Pump SL-P1 Suct. SL-1V)
- #6 Large Machine (Worthington)
- #7 Controls for Sump Pump (Forward)
- #8 Large Metal Bell with Large Bolts
- #9 Controls for Waste Dilution Pump
- #10 Floor
- #11 Floor
- #12 Flow Gages

\* up against Charge Pump - D. Meter was 180 MR/H / FSKR was 280CPM

Charge Pump # 1 & 3 Port.

- #1 Floor
- 2 Primary Gate Valve Control
- 3 main feed H<sub>2</sub>O Control
- 4 floor
- 5 floor
- 6 walkway deck @ motor
- 7- floor btw motors
- 8- floor btw chg. pumps
- 9 top of Elec motor chg pump #3
- 10 Housing btw elec motor & chg pump
- 11 charge pump #3
- 12 top of Elec Motor chg pump #1
- 13 Housing btw motor & chg pump #1
- 14 chg pump #1
- 15- Catch tank
- 16- main feed Pump controls #2
- 17- main feed pump control #1

\* up against Charge Pumps - D meter was around 180 MR/H / FSKR was 280 CPM

Port chg Room Port

STB Chg Pump Room

< BKG / FSKR < 100CPM (General)

< BKG / FSKR < 100CPM (General)

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B - BETA in mRAD/hr/100 CM <sup>2</sup>				
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	
1	< BKG	9	< BKG	X	1	< BKG	9	< BKG
2	< BKG	10	< BKG		2	< BKG	10	< BKG
3	< BKG	11	< BKG		3	< BKG	11	< BKG
4	< BKG	12	< BKG		4	< BKG	12	< BKG
5	< BKG				5	< BKG	13	< BKG
6	< BKG				6	< BKG	14	< BKG
7	< BKG				7	< BKG	15	< BKG
8	< BKG				8	< BKG	16	< BKG
						17	< BKG	

RA - RADIATION AREA

CA - CONTAMINATION AREA

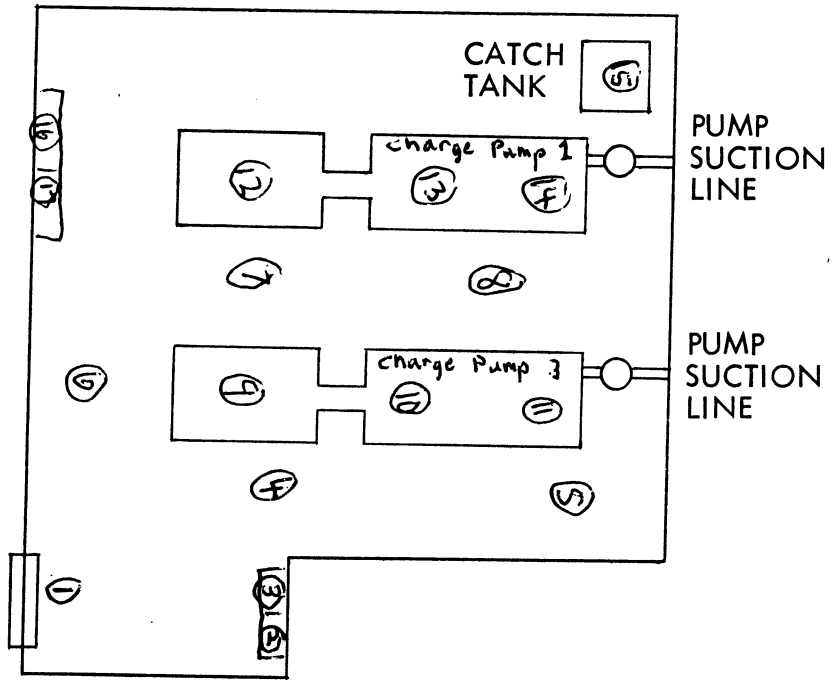
ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

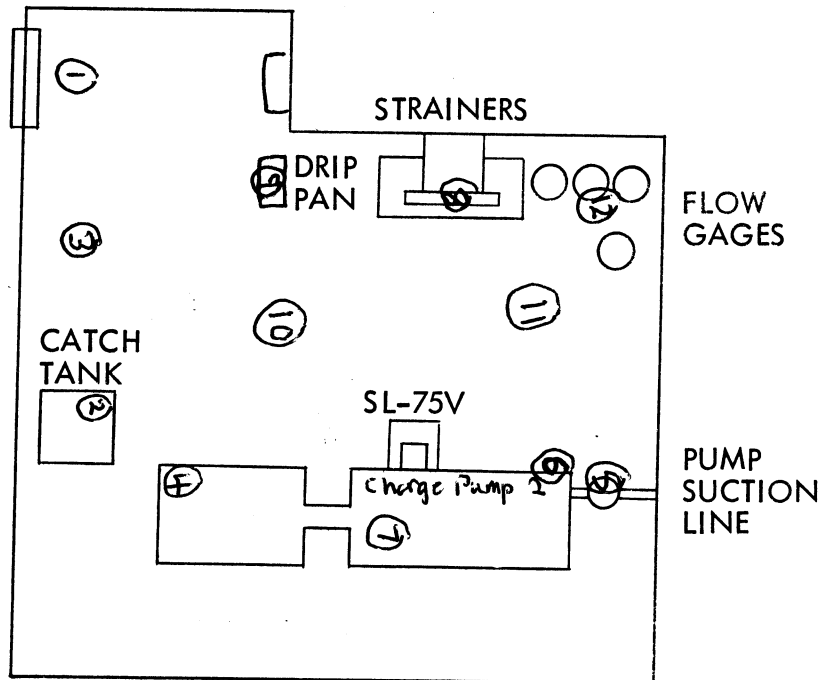


PORT  
CHARGE PUMP



FORWARD

STBD  
CHARGE PUMP



N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0087

Date <u>4-13-04</u> Time <u>9:15 AM</u>	DOSE RATE		CONTAMINATION		
Surveyor <u>TREAT PENNING</u>	Inst. Type <u>μRmeter</u>	Beta	Alpha	Beta	Alpha
Signature <u>R. L. Penning</u>	Serial No. <u>95469</u>	Inst. Sn	<u>NA (see below)</u>		
Reviewed <u>K. B. Baker</u>	β Factor	Eff.			
	<u>Bkg 2 μR/hr</u>	Bkg.	cpm	cpm	

AREA Primary Containment - 1st Level

OVER REACTOR & FORWARD

Contamination COMPONENT	<u>2929 #2</u>	<u>SN 160019</u>	<u>E/F/F .208</u>
Inst. <u>1346</u>	<u>42 cpm</u>	<u>30 sec counts</u>	

SEE ATTACHED DRAWING

TELETECTOR  
28991

RECOUNT for ALPHA

4-14-05

10 min count (ctr #2)

4 = 173 dpm/100 cm<sup>2</sup>  
6 = 615 dpm/100 cm<sup>2</sup>  
6A = 440 dpm/100 cm<sup>2</sup>  
8A = 327 dpm/100 cm<sup>2</sup>  
9A = 884 dpm/100 cm<sup>2</sup>  
10A = 106 dpm/100 cm<sup>2</sup>

G	α = 2 ct (0.2 cpm)	β = 1838 (184)	683
6A	α = 2 ct (0.2 cpm)	β = 1153 (115)	351
8A	α = 1 ct (0.1 cpm)	β = 1140 (114)	346
9A	α = 1 ct (0.1 cpm)	β = 2061 (206)	788

dpm/100cm<sup>2</sup>

All count rates < MDA  
< 3.81 dpm

6155 Counts/30 sec

SMEAR RESULTS		IN-DPM/100 CM <sup>2</sup> 30 sec		BETA in μRAD/hr/100 CM <sup>2</sup>					
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	< BKG	9	< BKG	1A	< BKG	9A	113		
2	< BKG	10	< BKG	2A	< BKG	10A	32		
3	< BKG			3A	< BKG				
4	39			4A	< BKG				
5	< BKG			5A	< BKG				
6	85			6A	72				
7	< BKG			7A	< BKG				
8	< BKG			8A	55				

RA - RADIATION AREA

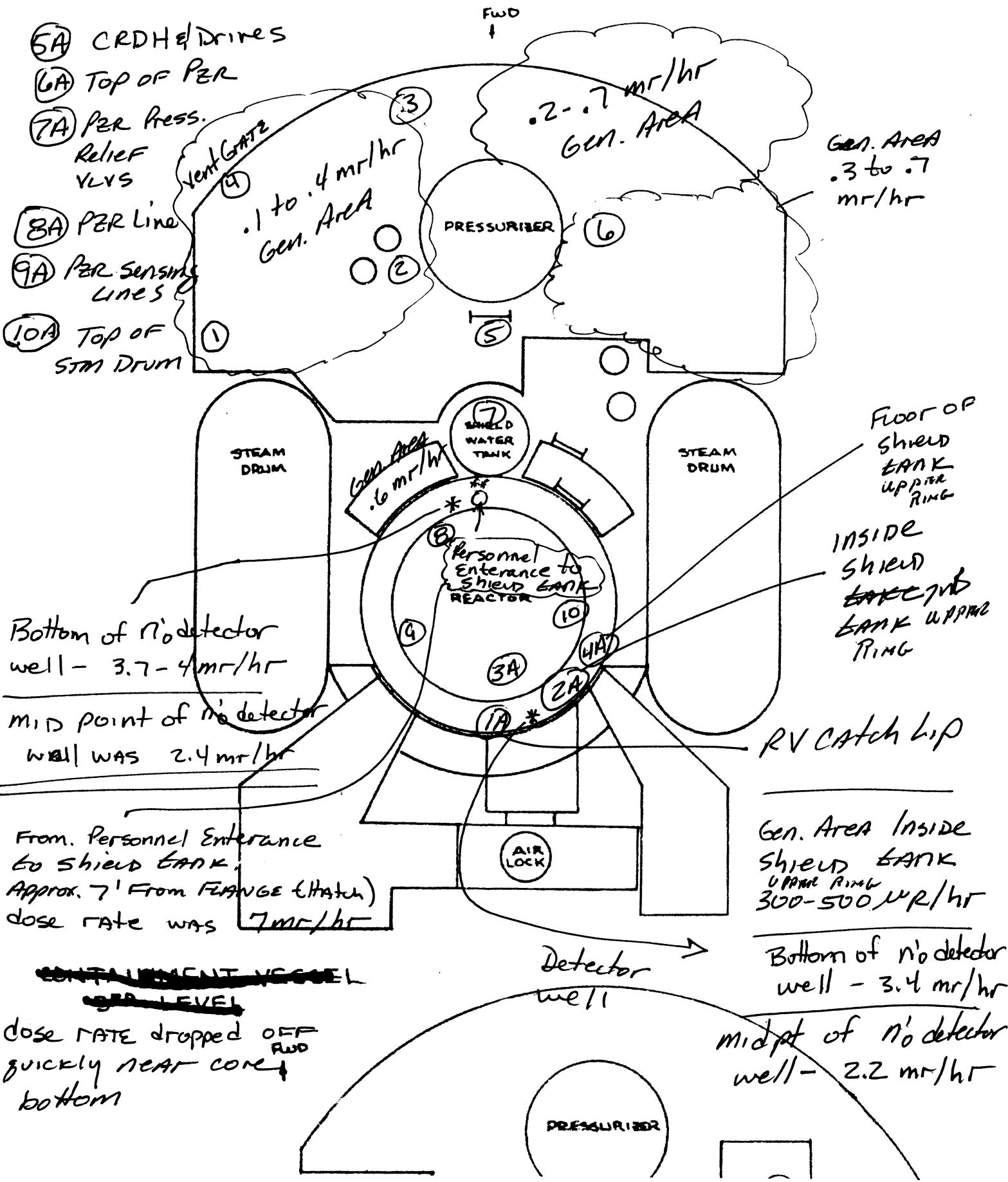
CA - CONTAMINATION AREA

ALL DOSE RATES IN μR/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

CONTAINMENT VESSEL  
1<sup>st</sup> LEVEL



- 5A CRDH & Drives
- 6A Top of PZR
- 7A PZR Press. Relief VLVS
- 8A PZR Line
- 9A PZR Sensing Lines
- 10A Top of STM Drum

Bottom of n<sub>0</sub> detector well - 3.7 - 4 mr/hr  
 Mid point of n<sub>0</sub> detector well was 2.4 mr/hr

From Personnel Entrance to Shield Bank, Approx. 7' From FRANGE (Hatch) dose rate was 7 mr/hr

~~CONTAINMENT VESSEL~~  
~~1<sup>st</sup> LEVEL~~  
 dose rate dropped OFF FWD quickly near cone bottom

FWD ↑  
 .2 - .7 mr/hr  
 Gen. Area

Gen. Area .3 to .7 mr/hr

Gen Area .6 mr/hr

FLOOR OF SHIELD BANK UPPER RING  
 INSIDE SHIELD BANK UPPER RING

RV Catch Lip

Gen. Area Inside Shield Bank UPPER RING 300-500 μr/hr

Bottom of n<sub>0</sub> detector well - 3.4 mr/hr  
 midpt of n<sub>0</sub> detector well - 2.2 mr/hr

Detector well

PRESSURIZER



N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0089

Date <u>4-14-05</u> Time <u>10:00</u>	DOSE RATE		CONTAMINATION	
Surveyor <u>JOHN BOWEN/BAD PENNER</u>	Inst. Type <u>TELETECTOR</u>	Beta _____	Alpha _____	Beta _____ Alpha _____
Signature <u>Bob Penner</u>	Serial No. <u>28991</u>	Inst. Sn <u>See Below</u>		
Reviewed <u>K. Blum</u>	$\beta$ Factor	Eff.		
		Bkg.	cpm	cpm

AREA U SHAPED STEAM GENERATORS IN PRIMARY CONTAINMENT

COMPONENT Smears Counted w/ Lud 2929 (#1) SN: 102001 (#2) SN: 160019

SEE ATTACHED DRAWING

STEAM BOARD STEAM GEN. DOSE RATE BETWEEN DOWN COMER 24 mR/hr MAX  
PORT " " " " " " " " 35 mR/hr MAX

Smear No.	Counter	gross counts	gross cpm	BKG cpm	Net cpm	dpm / 100cm <sup>2</sup>
1	(2)	52	104	42	62	298
6	(1)	49	98	37	61	242
7	(2)	87	174	42	132	635
8	(1)	64	128	37	91	361
9	(2)	38	76	42	34	163
10	(1)	60	120	37	83	329

Gross Counts / 30 seconds

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>		Gross Counts / 30 seconds		BETA in mRAD/hr/100 CM <sup>2</sup>	
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	52 (2)	9	38 (2)	A1	< BKG
2	< BKG	10	60 (1)	A2	< BKG
3	< BKG	#	< BKG	A3	< BKG
4	< BKG	11	< BKG	A4	< BKG
5	< BKG			A5	< BKG
6	49 (1)			A6	< BKG
7	87 (2)			A7	< BKG
8	64 (1)			A8	< BKG

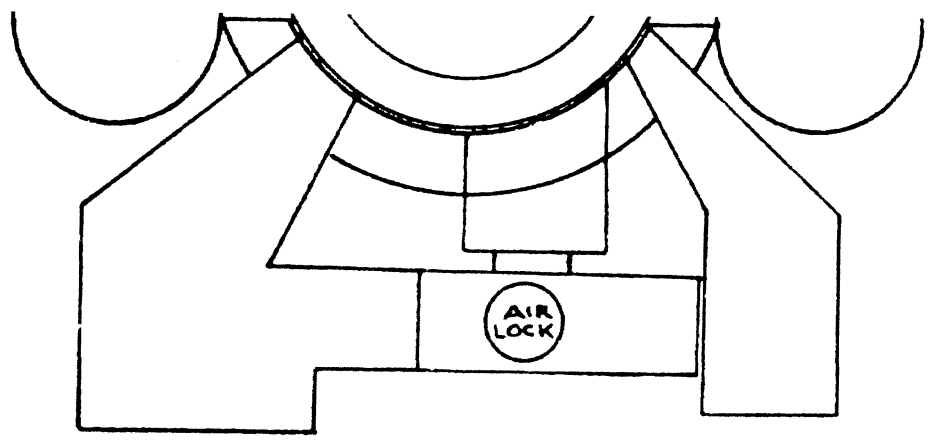
RA - RADIATION AREA

CA - CONTAMINATION AREA

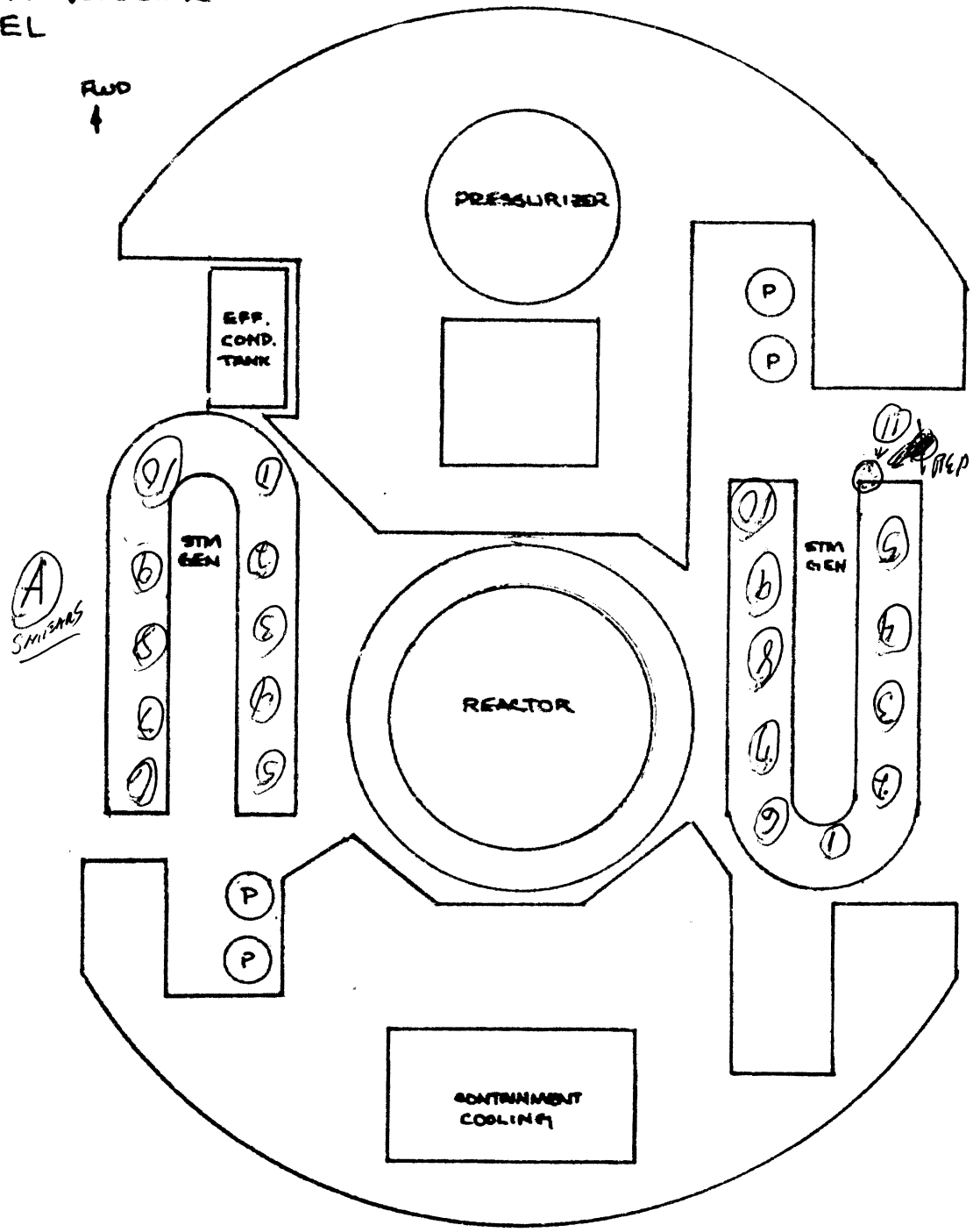
ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA



CONTAINMENT VESSEL  
LEVEL



N.S. SAVANNAH  
RADIOLOGICAL SURVEY

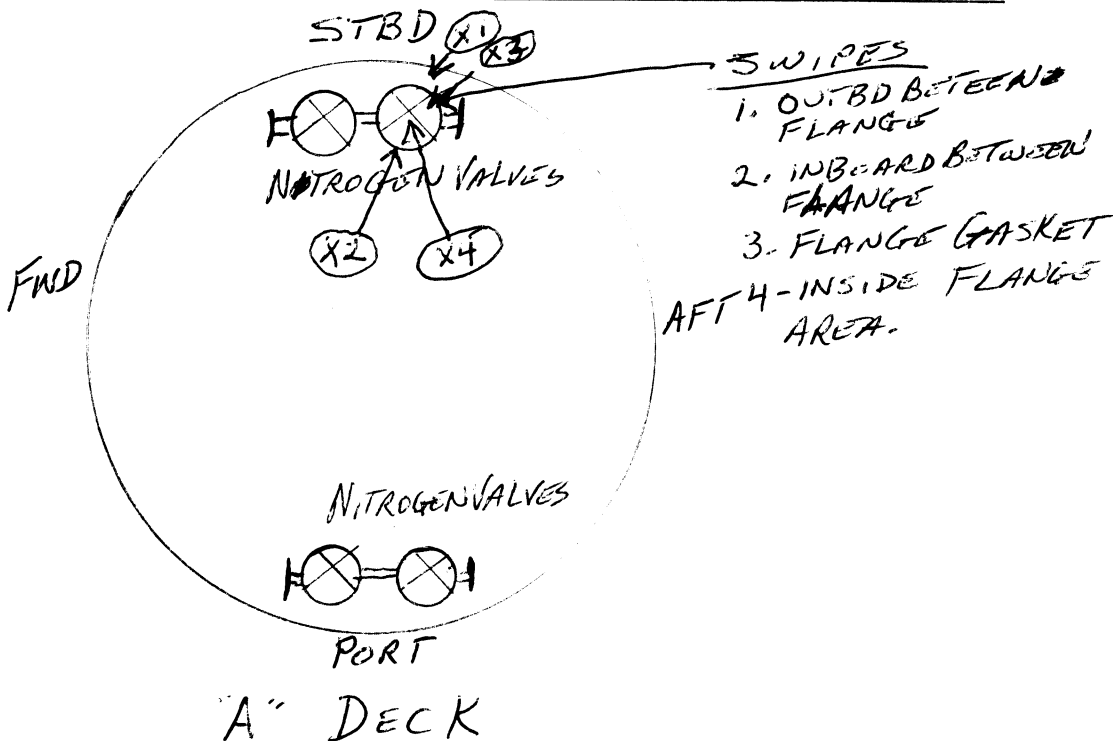
NSS-01

SURVEY NO. NSS-0090

Date <u>4/19/05</u> Time <u>10:30 AM</u>	DOSE RATE		CONTAMINATION	
Surveyor <u>JAMES LOVEDAHL</u>	Inst. Type <u>N/A</u>	Beta _____	Alpha _____	Beta _____ Alpha _____
Signature <u>James Lovdahly</u>	Serial No. _____	Inst. Sn <u>N/A</u>		
Reviewed <u>Bob Munnich</u>	$\beta$ -Factor _____	Eff. _____		
		Bkg. _____	cpm _____	cpm _____

AREA TOP OF CUPOLA STBD NITROGEN VALVE FLANGE

COMPONENT \_\_\_\_\_



SMEAR RESULTS $\alpha$ -N DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>					
NO.	RESULTS	N O.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	< BKGD								
2	< BKGD								
3	< BKGD								
4	< BKGD								

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0091

Date <u>4/9/05</u> Time <u>14:00</u>	DOSE RATE		CONTAMINATION	
Surveyor <u>J. Bowen</u>	Inst. Type <u>N/A</u>	Beta _____	Alpha _____	Beta _____ Alpha _____
Signature <u>J.W.B.</u>	Serial No. <u>N/A</u>	Inst. Sn <u>N/A</u>		
Reviewed <u>Robert Rummel</u>	$\beta^-$ Factor <u>N/A</u>	Eff.		
		Bkg. _____	cpm _____	cpm _____

AREA SMEAR SAMPLES FROM INSIDE SURFACES  
OF PRIMARY WATER SHIELD TANK

COMPONENT PRIMARY WATER SHIELD TANK

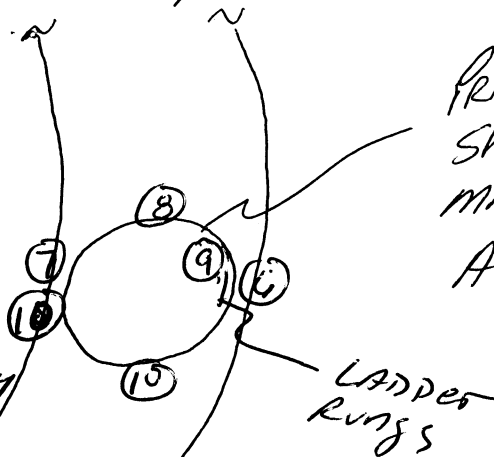
SMEAR # ALL SAMPLES WERE TAKEN INSIDE THE PRIMARY WATER SHIELD TANK.

- 6 - Outer wall
- 7 - Inner wall

- 8 - Top of tank - Both sides of manhole accessway

- 9. Top surfaces of 2 ladder rungs

- 10. Top of inner wall



PRIMARY WATER SHIELD TANK  
MANHOLE COVER /  
ACCESSWAY

Survey Personnel  
did not enter  
the PRIMARY WATER  
SHIELD TANK.

SMEAR RESULTS <del>IN DPM/100 CM<sup>2</sup></del>				<del>B</del> BETA in mRAD/hr/100 CM <sup>2</sup>			
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
6	< BKG						
7	< BKG						
8	< BKG						
9	< BKG						
10	< BKG						

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA



N.S. SAVANNAH  
RADIOLOGICAL SURVEY

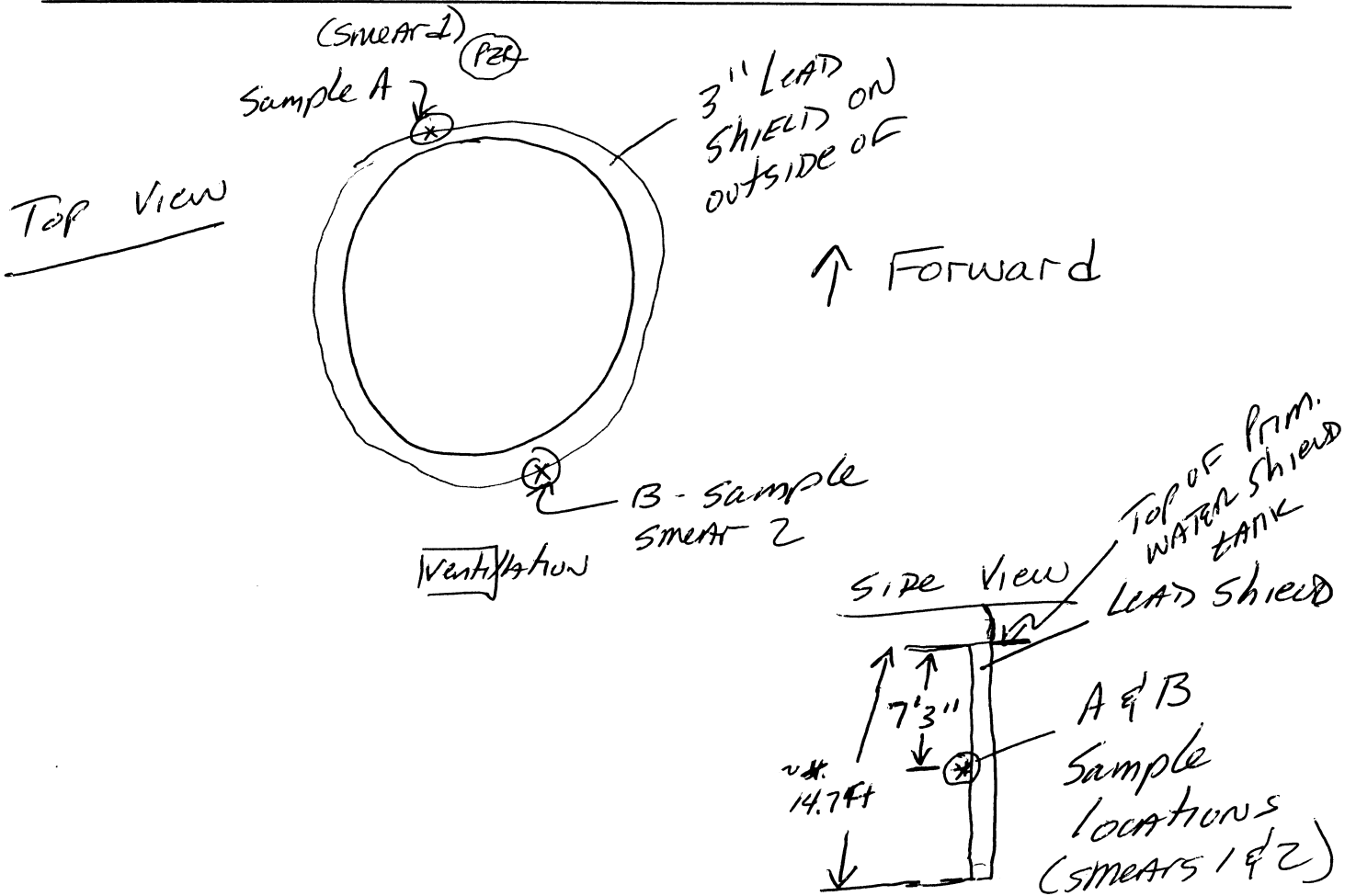
NSS-01

SURVEY NO. NSS-0092

Date <u>4/19/05</u> Time <u>14:00</u>	DOSE RATE		CONTAMINATION		
Surveyor <u>J. Bowen</u>	Inst. Type <u>NA</u>	Beta	Alpha	Beta	Alpha
Signature <u>J.W. B.</u>	Serial No.	Inst. Sn <u>NA</u>			
Reviewed <u>Robert R. Rasmussen</u>	$\beta$ Factor	Eff.			
		Bkg.	cpm	cpm	

AREA SMEAR OF LOCATIONS FOR LEAD SAMPLES

COMPONENT \_\_\_\_\_



SMEAR RESULTS $\alpha$ IN DPM/100 CM <sup>2</sup>				$\beta$ = BETA in mRAD/hr/100 CM <sup>2</sup>					
NO.	RESULTS	N O.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	< BKG								
2	< BKG								

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

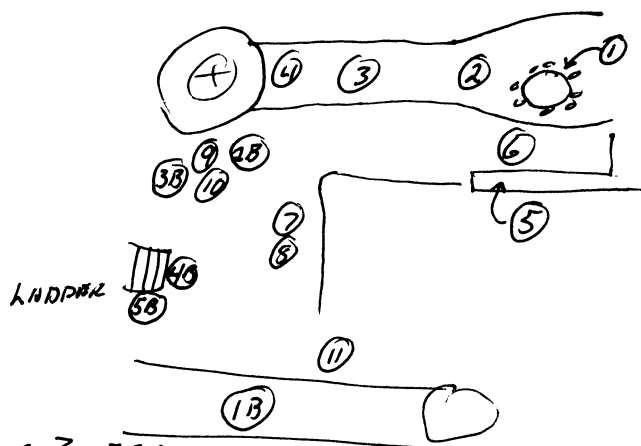
SURVEY NO. NSS-0093

Date <u>4-21-05</u> Time	DOSE RATE	CONTAMINATION	
Surveyor <u>ROBT E PENNOCK</u>	Inst. Type <u>N/A</u>	Beta _____ Alpha _____	Beta _____ Alpha _____
Signature <u>Robt E Pennock</u>	Serial No. <u>N/A</u>	Inst. Sn <u>N/A</u>	
Reviewed <u>M. Millone</u>	$\beta^-$ Factor	Eff.	
		Bkg. cpm	cpm

AREA PRIMARY CONTAINMENT FWID - STAD UTILITY STRADA GIBLI.  
HOT LEG WORK AREA

COMPONENT \_\_\_\_\_

- 1- SS PLUG & RIM
- 2- HOT LEG PLENUM
- 3- " " NEXT TO PLENUM
- 4- HOT LEG NEXT TO VALVE
- 5- BRACA BY ACCESS PORT
- 6- FLOOR BELOW WORK AREA
- 7- YELLOW FLASH LIGHT
- 8- BLUICH FLASH LIGHT
- 9- END OF WOODEN RULER
- 10- BOTH SCREW DRIVERS
- 11- OUTSIDE OF BAG CONTAINING BASTIK
- 1B- HOT LEG SAMPLER, TOP
- 2B- YELLOW HANNAH
- 3B- <sup>1/4"</sup> BOTTOM NUTS & BOLTS
- 4B- BOTTOM 2 RUNGS OF LADDER
- 5B- RUNGS 5 & 6 OF LADDER



- ACTIVITY
- 1 = 106 dpm
  - 2 = 154 dpm
  - 4 = 135 dpm
  - 5 = 471 dpm
  - 7 = 250 dpm
  - 8 = 125 dpm

SMEAR RESULTS		<del>IN DPM/100 CM<sup>2</sup></del>		<del>BETA IN MRAD/100 CM<sup>2</sup></del>					
NO.	RESULTS	N.O.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	32 cts	9	BKG	1B	< BKG				
2	37 cts	10	BKG	2B	< BKG				
3	< BKG	11	BKG	3B	< BKG				
4	35 cts			4B	< BKG				
5	70 cts			5B	< BKG				
6	< BKG								
7	47 cts								
8	34 cts								

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

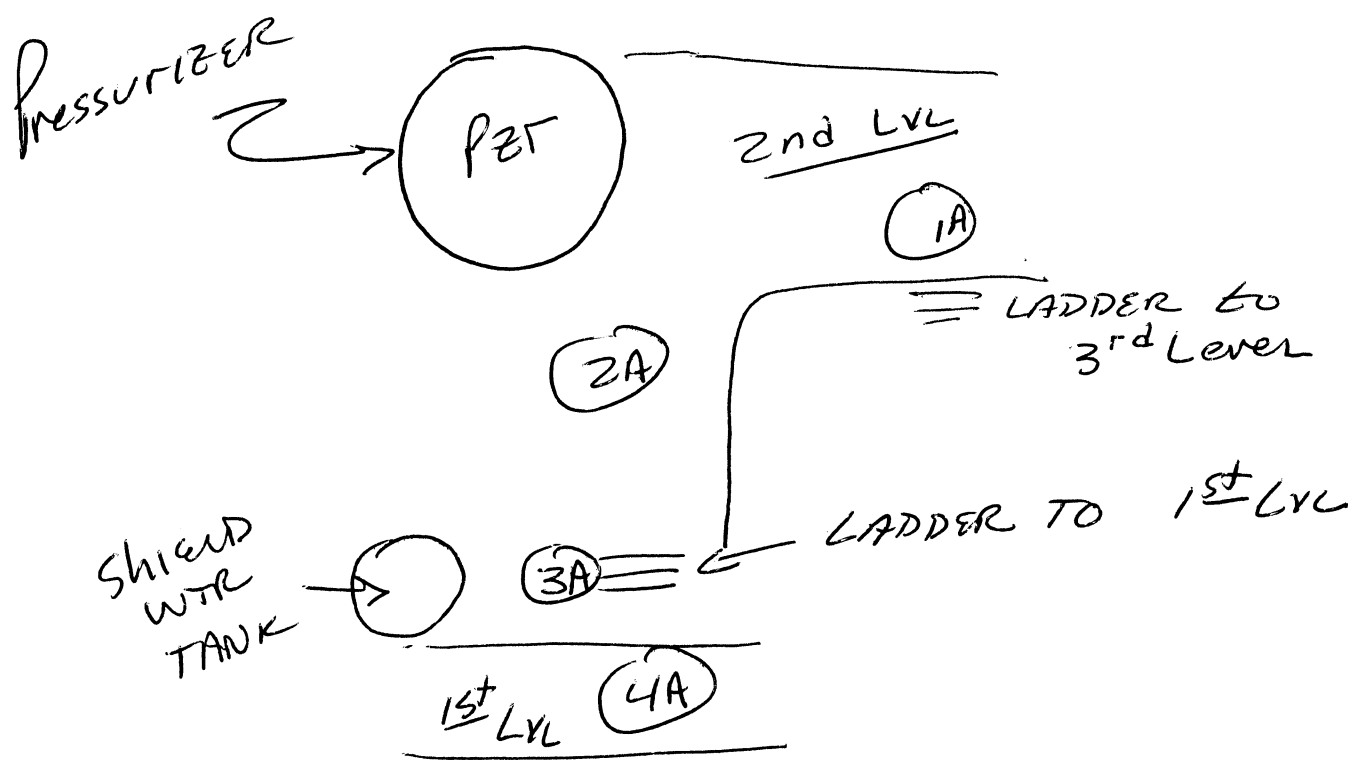
NSS-01

SURVEY NO. 1/55-6094

Date <u>4/21/05</u> Time <u>0900</u>	DOSE RATE		CONTAMINATION	
Surveyor <u>J. Bowen</u>	Inst. Type <u>N/A</u>	Beta <u>N/A</u>	Alpha _____	Beta _____ Alpha _____
Signature <u>J.W.B.</u>	Serial No. _____	Inst. Sn _____		
Reviewed <u>Robert P. ...</u>	$\beta^-$ Factor _____	Eff. _____		
		Bkg. _____	cpm _____	cpm _____

AREA FORWARD 1<sup>st</sup> & 2<sup>nd</sup> LVL - Primary Contaminated

COMPONENT \_\_\_\_\_



SMEAR RESULTS <del>IN DPM/100 CM<sup>2</sup></del>		<del>BETA IN RAD/100 CM<sup>2</sup></del>							
NO.	RESULTS	N.O.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1A	< BKG								
2A	< BKG								
3A	< BKG								
4A	< BKG								

RA - RADIATION AREA      CA - CONTAMINATION AREA      ALL DOSE RATES IN  $\mu$ rem/hr  
RCA - RADIATION CONTROL AREA      AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

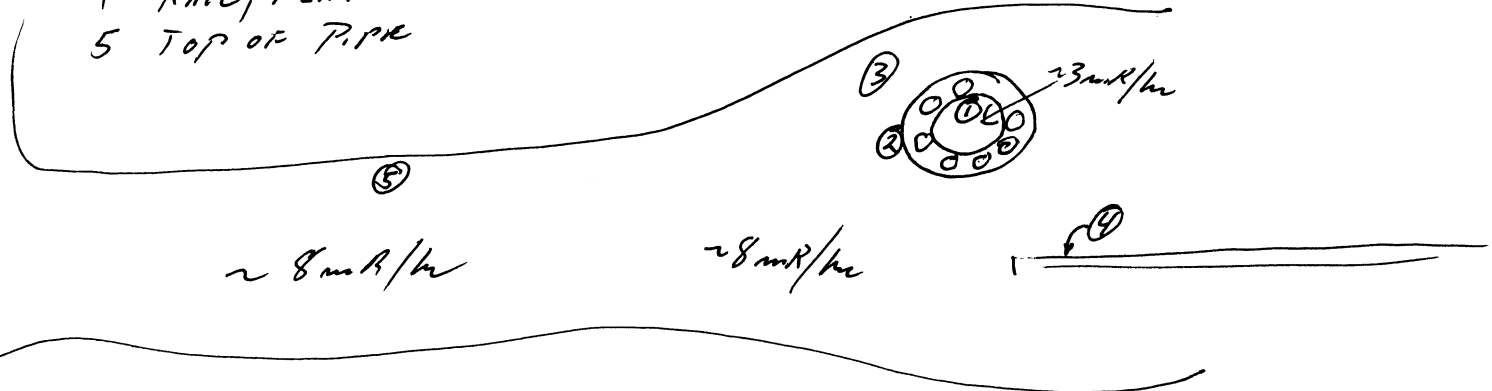
SURVEY NO. NSS-0095

Date <u>4-21-05</u> Time <u>1:00 PM</u>	DOSE RATE	CONTAMINATION	
Surveyor <u>Bob E. Primm</u>	Inst. Type <u>TELLECTOR</u>	Beta _____ Alpha _____	Beta _____ Alpha _____
Signature <u>Bob E. Primm</u>	Serial No. <u>28991</u>	Inst. Sn	
Reviewed <u>M. Donlon</u>	$\beta^-$ Factor	Eff.	
		Bkg. _____ cpm	_____ cpm

AREA Primary Contamination Pond UTIAR STRAIN GEN Access  
Course

COMPONENT \_\_\_\_\_

- 1- COURSE & NOTES
- 2- COURSE GAP
- 3- PLENUM OUTSIDE SURFACE
- 4- RAIL, FLAT
- 5- TOP OF PIPE



1. 67 dpm/100cm<sup>2</sup>
3. 356 dpm/100cm<sup>2</sup>

SMEAR RESULTS <del>IN</del> <u>dpm/100cm<sup>2</sup></u>		<del>B - BETA in mRAD/hr/100 CM<sup>2</sup></del>							
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	28								
2	< BKG								
3	58								
4	< BKG								
5	< BKG								

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ mR/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

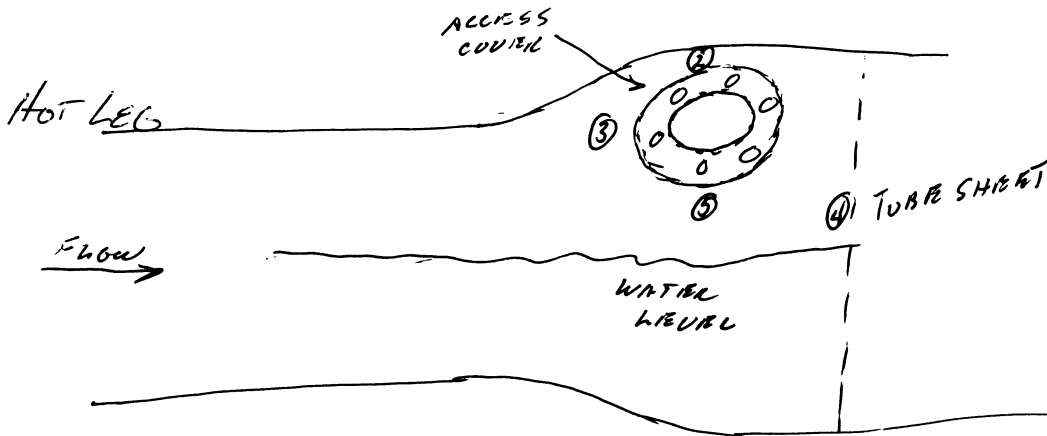
NSS-01

SURVEY NO. NSS-0096

Date <u>4-20-05</u> Time <u>1:30</u>	DOSE RATE		CONTAMINATION	
Surveyor <u>JOHN BOWEN</u>	Inst. Type <u>TELETECTOR</u>	Beta _____	Alpha _____	Beta _____ Alpha _____
Signature <u>[Signature]</u>	Serial No.	Inst. Sn		
Reviewed <u>[Signature]</u>	$\beta^-$ Factor	Eff.		
	<u>BKG .3 mR/hr</u>	Bkg.	cpm	cpm

AREA PRIMARY CONTAINMENT - STBD STEAM GEN. PRIMARY SYSTEM PLENUM

COMPONENT \_\_\_\_\_



32 mR/hr OUTSIDE INNER COUPLER SEAL  
45 mR/hr AT OPENING PLANA  
275 mR/hr 2 ft INSIDE OPENING  
525 mR/hr AT TUBE SHEET

DPM/100cm<sup>2</sup>

- 1 INNER LID-INSIDE
- 2 INSIDE PLNUMA TOP
- 3 " " SUCTION SIDE
- 4 TUBE SHEET
- 5 BOTTOM

1B - 10,271  
2B - 14,798  
3B - 13,183  
4B - 106,730  
5B - 51,682

SMEAR RESULTS IN-DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>					
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1B	1683								
2B	1560								
3B	1392								
4B	17,361								
5B	5396								

RA - RADIATION AREA      CA - CCNTAMINATION AREA      ALL DOSE RATES IN  $\mu$ rem/hr  
RCA - RADIATION CONTROL AREA      AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

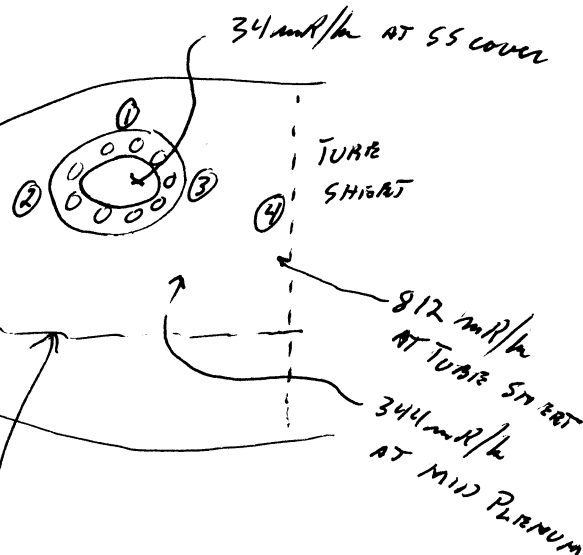
SURVEY NO. NSS-0097

Date <u>4-21-05</u> Time <u>1:45 PM</u>	DOSE RATE		CONTAMINATION	
Surveyor <u>JOHN BOWEN</u>	Inst. Type <u>TELETECTOR</u>	Beta _____	Alpha _____	Beta _____ Alpha _____
Signature <u>JWB</u>	Serial No. <u>28991</u>	Inst. Sn <u>N/A</u>		
Reviewed <u>Robert P. ...</u>	$\beta^-$ Factor	Eff.		
	<u>1-2 mR/hr BKG</u>	Bkg.	cpm	cpm

AREA \_\_\_\_\_

COMPONENT PORT SIDE MUD DRUM (HEAT EXCHANGER) HOT LEG PRIMARY SIDE

- 1- INSIDE TOP OF PLENUM
- 2- INSIDE ART OF ACCESS
- 3- " FWID OF "
- 4- PLENUM TUBE SHEET
- 5- INSIDE SURFACE OF SS COVER FOR ACCESS OPENING



dpm/100 cm<sup>2</sup>

- 1. 22000
- 2. 6096
- 3. 4144
- 4. 378,673
- 5. 7654

SMEAR RESULTS		<del>IN DPM/100 CM<sup>2</sup></del>		<del>BETA IN mR/HR/100 CM<sup>2</sup></del>					
NO.	RESULTS	N.O.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	2309								
2	655								
3	452								
4	39403								
5	817								

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ mR/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

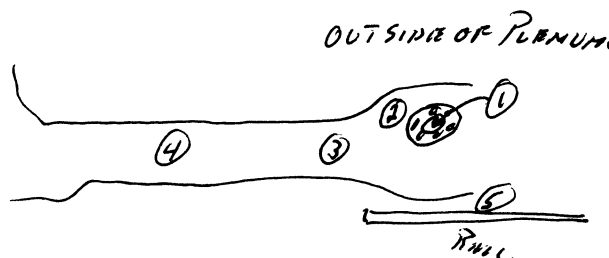
SURVEY NO. NSS-0098

Date <u>4-22-05</u> Time <u>9:00AM</u>	DOSE RATE		CONTAMINATION		
Surveyor <u>ROBERT E PENNICK</u>	Inst. Type <u>N/A</u>	Beta	Alpha	Beta	Alpha
Signature <u>Robert E Pennick</u>	Serial No.	Inst. Sn	<u>N/A</u>		
Reviewed	$\beta$ Factor	Eff.			
		Bkg.	cpm	cpm	

AREA PRIMARY CONTAINMENT PORT U TURN STEAM GRM ACCESS  
PORT, POST JOB SURVEY

COMPONENT \_\_\_\_\_

- 1B YELLOW HAMMER
- 2B SLUG WRANCH 2"
- 3B SLUG WRANCH 2 1/4"
- 4B SOCKET & WRANCH
- 5B PIPE WRANCH



dpm/100 cm<sup>2</sup>  
2. 231  
5. 135

\* SMEAR COUNTS CONTAMINATED / CLEANED

SMEAR RESULTS <del>dpm/100 cm<sup>2</sup></del>				<del>BETA IN RAD/100 CM<sup>2</sup></del>					
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	< BKG	1B	39 < BKG						
2	45	2B	25 < BKG						
3	< BKG	3B	36 < BKG						
4	< BKG	4B	2 < BKG						
5	35	5B	13 < BKG						
			* 81						

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0099

Date <u>4-25-85</u> Time <u>11:15 PM</u>	DOSE RATE		CONTAMINATION	
Surveyor <u>ROBT E PRINNOCH</u>	Inst. Type <u>N/A</u>	Beta _____	Alpha _____	Beta _____ Alpha _____
Signature <u>[Signature]</u>	Serial No.	Inst. Sn <u>N/A</u>		
Reviewed <u>[Signature]</u>	$\beta^-$ Factor	Eff.		
		Bkg. _____	cpm _____	cpm _____

AREA MICRO R METERS & FRISKERS

COMPONENT \_\_\_\_\_

MR METERS

FRISKERS

ALPHA METER

- 1 - 95499
- 2 - 42972
- 3 - 95469

- 4 - 75809
- 5 - 91037
- 12 - 97416
- 8 - 94954

- 6 - 197766
- 7 - 127385 PROBE

TELETRACTOR 28991

29295

- 13 - 102001 with PROBE
- 14 - 160019

- 9 - PROBE
- 10 - EXTENSION
- 11 - BODY

CM #2

SMEAR RESULTS <del>IN BPM/100 CM<sup>2</sup></del>				<del>B - BETA IN RADI/100 CM<sup>2</sup></del>					
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	< BKG	9	< BKG						
2	< BKG	10	< BKG						
3	< BKG	11	< BKG						
4	< BKG	12	< BKG						
5	< BKG	13	< BKG						
6	< BKG	14	< BKG						
7	< BKG								
8	< BKG								

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA



N.S. SAVANNAH  
RADIOLOGICAL SURVEY

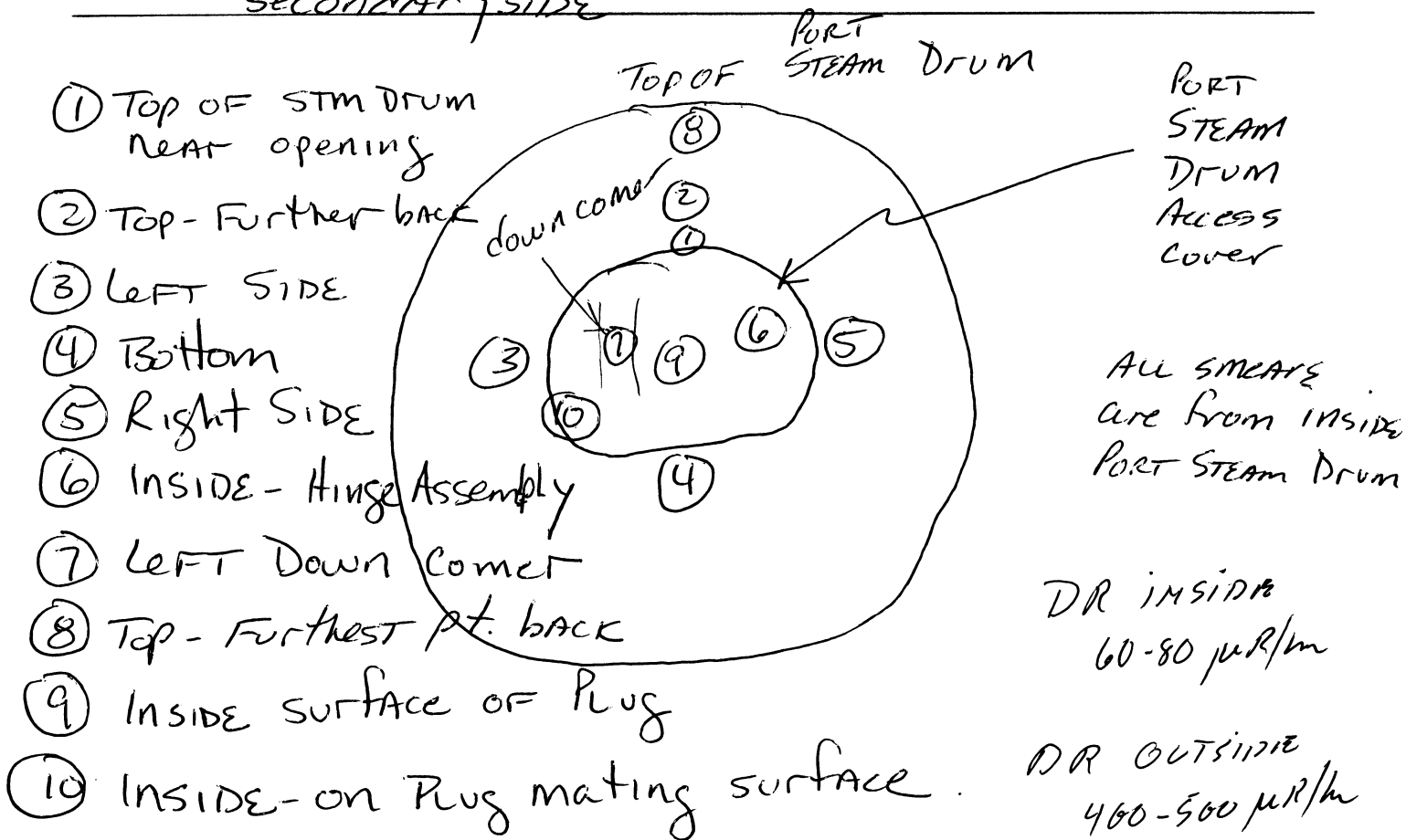
NSS-01

SURVEY NO. NSS-0100

Date <u>4/25/05</u> Time	DOSE RATE	CONTAMINATION			
Surveyor <u>J. Bowen</u>	Inst. Type <u>MR Meter</u>	Beta	Alpha	Beta	Alpha
Signature <u>JWB</u>	Serial No. <u>95469</u>	Inst. Sn	<u>N/A</u>		
Reviewed <u>Robert P. ...</u>	$\beta$ -Factor	Eff.			
	<u>Bkg 3 <math>\mu</math>R/hr</u>	Bkg.	cpm	cpm	

AREA PORT STEAM DRUM

COMPONENT PORT STEAM GENERATOR (STEAM DRUM)  
SECONDARY SIDE



SMEAR RESULTS <del>CPM/100 CM<sup>2</sup></del>		<del>BETA</del> <del>IN</del> <del>IN</del> <del>RADIATION/100 CM<sup>2</sup></del>							
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
1	< BKG	9	< BKG						
2	< BKG	10	< BKG						
3	< BKG								
4	< BKG								
5	< BKG								
6	< BKG								
7	< BKG								
8	< BKG								

RA - RADIATION AREA      CA - CONTAMINATION AREA      ALL DOSE RATES IN  $\mu$ rem/hr  
RCA - RADIATION CONTROL AREA      AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0101

Date <u>4-26-05</u> Time <u>8 AM</u>	DOSE RATE	CONTAMINATION	
Surveyor <u>ROBERT E. PAYMON</u>	Inst. Type <u>N/A</u>	Beta _____ Alpha _____	Beta _____ Alpha _____
Signature <u>[Signature]</u>	Serial No.	Inst. Sn <u>N/A</u>	
Reviewed <u>[Signature]</u>	$\beta^-$ Factor	Eff.	
		Bkg. _____ cpm	_____ cpm

AREA PIPE FROM NITROGEN LINE

COMPONENT \_\_\_\_\_

SMEAR RESULTS <small>IN DPM/100 CM<sup>2</sup></small>				B = BETA in mRAD/hr/100 CM <sup>2</sup>					
NO.	RESULTS	N O.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
<u>1</u>	<u>&lt; BKG</u>								
<u>2</u>	<u>&lt; BKG</u>								

RA - RADIATION AREA      CA - CONTAMINATION AREA      ALL DOSE RATES IN  $\mu$ rem/hr  
RCA - RADIATION CONTROL AREA      AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0111

Date <u>4-5-05</u> Time	<del>AIR SAMPLER</del> DOSE RATE	CONTAMINATION	
Surveyor <u>ROBT R PENNYCOCK</u>	Inst. Type <u>RN12C10</u>	Beta _____ Alpha _____	Beta _____ Alpha _____
Signature <u>Kali F. Kinnon</u>	Serial No. <u>08641</u>	Inst. Sn <u>X/A</u>	
Reviewed <u>Richard Ravello</u>	$\beta$ Factor <u>—</u>	Eff. <u>X/A</u>	
<u>M. M. M.</u>		Bkg. _____ cpm	_____ cpm

AREA COLD CHAMBER LAB

10 CFM SAMPLER

COMPONENT COUNTING ON 2929 SMITH COUNTING #2 30 MIN COUNT  
SN 160019

4-6-05  
10 MIN COUNT  $\beta$  1357 COUNTS 135.7 ~~45~~ cpm ~~BKE 45~~  
 $\alpha$  9 COUNTS 0.9 ~~0.3~~ cpm ~~BKE 0.3~~

4-6-05  
30 MIN COUNT  $\alpha$  6 (0.2 cpm)  
 $\beta$  1320 (44 cpm)  
M.M. 4/6/05

4-12-05 10 min count  
 $\alpha$  5 0.5 cpm < LLD (17 gross counts) (2 DAC)  
 $\beta$  398 40 cpm < LLD (506 gross counts) (< 25% DAC)

MDA for 10ft<sup>3</sup> sample

$$\alpha \frac{1.19 \text{ net cpm}}{0.312} = \frac{3.81 \text{ dpm}}{2.22 E^6} = 1.72 E^{-6} \text{ dCi}$$

$$\beta \frac{8.45 \text{ net cpm}}{1.208} = \frac{40.625 \text{ dpm}}{2.22 E^6} = 1.83 E^{-5} \text{ dCi}$$

$$\frac{1.72 E^{-6} \text{ dCi}}{10(28.32)1000} = 6.07 E^{-12} \text{ uCi/cc}$$

( $\approx$  2 DAC)

$$\frac{1.83 E^{-5} \text{ dCi}}{10(28.32)1000} = 6.46 E^{-11} \text{ uCi/cc}$$

( $\approx$  25% DAC)

Sample Repeated on larger Volume - See Sample # NSS-0117

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>			
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

AIR SAMPLE

SURVEY NO. NSS-0112

Date 4-6-05 Time 10:50	-DOSE RATE $\beta/\mu$	CONTAMINATION		
Surveyor ROBERT PENNOCIL	Inst. Type RADICO	Beta _____	Alpha _____	Beta _____ Alpha _____
Signature <i>Robert Pennocil</i>	Serial No. 0864	Inst. Sn NA		
Reviewed Richard Ranellone	$\beta$ Factor —	Eff.		
<i>M. J. Mandell</i>		Bkg.	cpm	cpm

AREA ACCESS TO SECONDARY CONTAINMENT

COMPONENT RADON EXPECTED, MULTIPLE COUNTS TO BE TAKEN  
COUNTED ON HURUM 2929 #2 SN 160019

VOLUME 100 FT<sup>3</sup>

TIME OF SAMPLE 1:04:27 MINUTES (64 MINUTES)

30 MIN OR MORE BETWEEN COUNTS

1<sup>st</sup> COUNT - 1min -  $\beta$  362  $\alpha$  141

2<sup>nd</sup> COUNT - 1min -  $\beta$  245  $\alpha$  80

3<sup>rd</sup> COUNT - 1min -  $\beta$  105  $\alpha$  30

4<sup>th</sup> COUNT - 1min -  $\beta$  62  $\alpha$  11

4/10/05 5<sup>th</sup> count - 30 min -  $\beta$  1429 (48cpm)  $\alpha$  33 (1cpm) < MDA ( $3.97E^{-13}$  uCi/cc)  $\alpha$

6<sup>th</sup> count - 60 min -  $\beta$  2748 (46cpm)  $\alpha$  63 (1cpm) (.525 net) < MDA  $\alpha$

4/18/05 7<sup>th</sup> count - 60 min -  $\beta$  2495 (42cpm)  $\alpha$  82 (1.4cpm) (Counter change) #1  
 $\beta$  Activity < MDA ( $3.4E^{-12}$  uCi/cc)

4-11-05 Recount (#2)

30 min  $\beta$  1311 (44cpm)  $\alpha$  3 (0.1cpm) < MDA ( $3.6E^{-13}$  uCi/cc)  $\alpha$

10 min  $\beta$  454 (45.4cpm)  $\alpha$  6 (0.6cpm)

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>					
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

Recounts of Air Sample for  $\alpha$  activity  
 Initial entry to Secondary Containment  
 Sample Taken 4-6-05/1050

$$100 \text{ ft}^3 = 2.832 \text{ E}^6 \text{ cc}$$

Initial One-minute Count ( $\alpha$ ) 141 cpm

6<sup>th</sup>  
Count

4-7-05 60 min 63 counts  $\rightarrow$  0.525 net cpm  
Counter #2  $<$  MDA ( $3.36 \text{ E}^{-13} \text{ uCi/ml}$ )

7<sup>th</sup>  
Count

4-8-05 60 min 82 counts  $\rightarrow$  1.04 net cpm  
Counter #1

$$\frac{1.04}{0.336} = 3.1 \text{ dpm} \times \frac{1 \text{ uCi}}{2.22 \text{ E}^6} = 1.397 \text{ E}^{-6} \text{ uCi}$$

$$\frac{1.397 \text{ E}^{-6}}{2.832 \text{ E}^6} = \underline{4.93 \text{ E}^{-13} \text{ uCi/cc}} \quad (< 25\% \text{ DAC})$$

### B<sup>-</sup> Activity

7<sup>th</sup>  
Count

4-8-05 60 min  $2495/60 = 41.58 \text{ cpm Gross}$   
 BKg = 42.15 cpm

Sample  $<$  MDA ( $3.4 \text{ E}^{-12} \text{ uCi/cc}$ )

LLD for 60 min count = 2673 gross counts =  $3.4 \text{ E}^{-12} \text{ uCi/cc}$   
 (for 100 ft<sup>3</sup> Sample)

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0113

Date <u>4-7-05</u> Time <u>12:45</u>	<del>DOSE RATE</del> <sup>AIR SAMPLE</sup> $\mu R/hr$	CONTAMINATION	
Surveyor <u>ROBERT PENNOCK</u>	Inst. Type <u>RADECO</u> <sup>AIR SAMPLE</sup>	Beta _____	Alpha _____
Signature <u>Robert Pennock</u>	Serial No. <u>864</u>	Inst. Sn	
Reviewed <u>1/4/05</u>	$\beta^-$ Factor	Eff.	
		Bkg. _____	cpm _____

AREA CHARGE Pump Room STAR BOARD

COMPONENT 60 CU FT COUNTER # 2 S/N 160019

		GROSS COUNTS	
1:30 10 MIN COUNT	$\alpha$	905	(905 cpm)
	$\beta$	2937	(284 cpm)
8:50 30 MIN COUNT	$\alpha$	81	(2.7 cpm)
	$\beta$	1496	(49.9 cpm)

Sample repeated with larger AIR volume - see Survey # NSS-0116

4-12-05 (ctr #1)

8:36 10 min count	$\alpha$	2ct	0.2 cpm	< LLD (13 gross counts)	0.26 DAC
	$\beta$	400	40 cpm	< LLD (474 gross counts)	< 25% DAC

MDA for 60 ft<sup>3</sup> sample

$$\alpha \frac{0.997 \text{ net cpm}}{.336} = \frac{2.967 \text{ dpm}}{2.22E^{-6}} = 1.336E^{-6} \text{ d/l}$$

$$\beta = \frac{8.2 \text{ net cpm}}{.252} = \frac{32.54 \text{ dpm}}{2.22E^{-6}} = 1.466E^{-5} \text{ d/l}$$

$$\frac{1.336E^{-6} \text{ d/l}}{60(28.32)/1000} = 7.87E^{-13} \text{ uCi/cc (26% DAC)}$$

$$\frac{1.466E^{-5} \text{ d/l}}{60(28.32)/1000} = 8.63E^{-12} \text{ uCi/cc (< 25% DAC)}$$

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>			
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/
/	/	/	/	/	/	/	/

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu R/hr$

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA



Initial Entry AIR Sample  
 Airlock for Primary Containment  
 $\alpha$ -Decay Analysis  
 Sample taken 4-8-05 @ 0830

Initial Count (#1)

10:31 30 min count  $\alpha$  4667 — 155.24 cpm net  
 14:06 10 min count  $\alpha$  78 — 7.48 cpm net

Recount

12:23 4-11-05 (count #1)  $\alpha$  20 — 0.34 cpm net  
 30 minute count

< MDA ( $2.99 E^{-13}$   $\mu\text{Ci}/\text{cc}$ )

Calculation:

$20 \text{ count} / 30 \text{ min} = 0.667$

Bkg = 0.325 cpm  $0.667 - 0.325 = 0.342 \text{ net cpm}$

$\frac{0.342}{\text{eff. } 0.336} = 1.017 \text{ dpm} \times \frac{1 \mu\text{Ci}}{2.22 E^6 \text{ dpm}} = 4.58 E^{-7} \text{ mCi}$

$100 \text{ cuft Sample} = 28.32 \frac{\text{L}}{\text{ft}^3} \times 100 \text{ ft}^3 \times \frac{1000 \text{ ml}}{\text{L}} = 2.832 E^6 \text{ cc}$

$\frac{4.58 E^{-7} \text{ mCi}}{2.832 E^6 \text{ cc}} = 1.62 E^{-13} \mu\text{Ci}/\text{cc} (< \text{MDA})$

$\beta^-$  Calculation

$1257 / 30 = 41.9 - 39.2 = 2.7 \text{ net cpm}$

MDA for 30 min Count = 1357 Gross Counts ( $3.8 E^{-12} \mu\text{Ci}/\text{cc}$ )

Count is < MDA



N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. ~~NSS-00115~~ <sup>0115</sup>

Date <u>4-8-05</u> Time <u>2:00 PM</u>	<del>DOSE RATE</del>	CONTAMINATION	
Surveyor <u>R E PENNOCK</u>	Inst. Type <u>RADICO</u>	Beta _____ Alpha _____	Beta _____ Alpha _____
Signature <u>R E Pennock</u>	Serial No. <u>865</u>	Inst. Sn	
Reviewed <u>14 [Signature]</u>	$\beta$ Factor	Eff.	
		Bkg. cpm	cpm

AREA PRIMARY CONTAMINATION 1ST LEVEL

COMPONENT 100 CU FT

COUNTER # 2

4/11/05 COUNTER #2  
 8:58 AM 10 MIN COUNT  $\alpha$  6 counts (.6 cpm)  $\beta$  436 cts (4.6 cpm)

4/12/05 Counter #2  
 8:54 AM 10 min count  
 $\alpha$  0 cts      0 cpm < MDA ( $6.07 \times 10^{-13}$  MBq/cc)  
 $\beta$  436      44 cpm < MDA ( $6.53 \times 10^{-12}$  MBq/cc)

L25/0 JAC

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>			
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
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RA - RADIATION AREA      CA - CONTAMINATION AREA      ALL DOSE RATES IN  $\mu$ rem/hr  
 RCA - RADIATION CONTROL AREA      AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0116

Date <u>4-8-05</u> Time	DOSE RATE <u>AIR SAMPLE</u> $\mu R/hr$	CONTAMINATION	
Surveyor <u>R E PENNOCK</u>	Inst. Type <u>RAD100</u>	Beta _____ Alpha _____	Beta _____ Alpha _____
Signature <u>R E Pennock</u>	Serial No. <u>804</u>	Inst. Sn	
Reviewed <u>R E Pennock</u>	$\beta$ Factor	Eff.	
		Bkg. cpm	cpm

AREA CHORRER Pump Room STN BOARD

COMPONENT 277 Cu FT 2h 59 min

4-8-05  
8:46 AM 30 MIN COUNT CTR #1 (SN102001)  
 $\alpha$  308 (10.3cpm)  $\beta$  1870 (62.3cpm)  
10:13 AM 2 hr Count  $\alpha$  1102 (9.2cpm)  $\beta$  7201 (60cpm)

4-11-05 10 min ct  $\alpha$  1 ct  $\beta$  436 ct

4-12-05 10 min ct counter #2  $\alpha$  3 ct (3cpm)  $\beta$  411 (41cpm) < LLD  $\alpha$  17 Gross  $\beta$  506 Gross

MDA for 277 Cu ft Sample

$$\alpha \frac{1.19 \text{ cpm net}}{0.312} = \frac{3.81 \text{ dpm}}{2.22E6} = 1.72E^{-6} \text{ dpm/l}$$

$$\beta \frac{8.45 \text{ net cpm}}{0.204} = \frac{40.625 \text{ dpm}}{2.22E6} = 1.83E^{-5} \text{ dpm/l}$$

$$\frac{1.72E^{-6}}{277(28.32)1000} = \boxed{2.19E^{-13} \text{ uCi/cc (< 0.10 DAC)}}$$

$$\frac{1.83E^{-5}}{277(28.32)1000} = \boxed{2.33E^{-12} \text{ uCi/cc (< 1.10 DAC)}}$$

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>					
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RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu\text{rem/hr}$

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

AIR SAMPLE SURVEY NO. NSS-0117

Date <u>4/11/05</u> Time _____	DOSE RATE <u>RAD/HR</u>		CONTAMINATION	
Surveyor <u>JAMES LOVEDAHL</u>	Inst. Type <u>AIR SAMPLER</u>	Beta _____	Alpha _____	Beta _____ Alpha _____
Signature <u>James Lovdahl</u>	Serial No. <u>864</u>	Inst. Sn _____		
Reviewed <u>14304</u>	$\beta^-$ Factor _____	Eff. _____		
	<u>100FT<sup>3</sup> - 1 HR</u>	Bkg. _____	cpm _____	cpm _____

AREA "C" DECK - COLD WATER CHEM LAB 1:10 PM

COMPONENT \_\_\_\_\_

<sup>9:10</sup>  
4-12-05 10 min count #1

$\alpha = 21$  cts 2.1 cpm

$\beta = 404$  40 cpm

9:35 10 min count #1

$\alpha = 12$  cts 1.2 cpm

$\beta = 412$  41 cpm

<sup>10:25</sup>  
11:19 ~~10~~ min count

$\alpha = 9$  0.9 cpm < LLD (13 counts) < MDA  $4.7E^{-13}$  mCi/cc

$\beta = 444$  44 cpm < LLD (474 counts) < MDA  $5.2E^{-12}$  mCi/cc

< 25% DAC

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>			
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS

RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu$ rem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0118

Date <u>4-11-05</u> Time <u>12:00 PM</u>	<sup>AIR SAMPLE</sup> DOSE RATE <u>µR/h</u>	CONTAMINATION	
Surveyor <u>ROBT PENNACIC</u>	Inst. Type <u>RN1140</u>	Beta _____ Alpha _____	Beta _____ Alpha _____
Signature <u>Robt Pennacic</u>	Serial No. <u>865</u>	Inst. Sn	
Reviewed <u>KB</u>	β Factor	Eff.	
		Bkg. _____ cpm	_____ cpm

AREA PRIMARY CONTAMINATION 2nd level

COMPONENT 100 CFT

4-11-05  
2:11:40 min count α 1120 cts (112 cpm) β 2345 (255 cpm)

4-12-05  
8:51 10 min count  
α 13 (1.3 cpm) β 393 (39 cpm)

10:03 30 min count  
#2  
A 36 (1.2 cpm) B 1192 (40 cpm)

30 min LLD α = 39 gross counts Act. < 3.97 E<sup>-13</sup> mR/cc  
30 min LLD β = 1452 gross counts Act. < 4.79 E<sup>-12</sup> mR/cc

( < 2590 DPM )

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>					
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
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RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN µrem/hr

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

SURVEY NO. NSS-0119

Date <u>4-11-05</u> Time <u>9:30 AM</u>	<sup>AIR Sampler</sup> DOSE RATE <u>16'</u>	CONTAMINATION	
Surveyor <u>ROBT PIEMOCK</u>	Inst. Type <u>RADPRO</u>	Beta _____ Alpha _____	Beta _____ Alpha _____
Signature <u>Robt Piemock</u>	Serial No. <u>864</u>	Inst. Sn	
Reviewed <u>LB</u>	$\beta^-$ Factor	Eff.	
		Bkg. cpm	cpm

AREA SECONDARY CONTAMINATED LOWER LEVEL

COMPONENT 100 CUFT

4-11-05 COUNTER #2  
12:16 10 MIN CT  $\alpha$  309 CTS (31cpm)  $\beta$  1153 CTS (115cpm)

4-12-05  
8:41 10 MIN CT  $\alpha$  9 CTS (.9cpm)  $\beta$  419 CTS (41.9cpm)

$\alpha$  10 min Count LLD =  $\frac{17}{15}$  counts gross =  $6.07 E^{-13}$  mCi/cc ( $< 25\% \text{ DAC}$ )

$\beta^-$  10 min Count LLD = 506 gross counts =  $6.53 E^{-12}$  mCi/cc

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>					
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
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RA - RADIATION AREA      CA - CONTAMINATION AREA      ALL DOSE RATES IN  $\mu\text{rem/hr}$   
RCA - RADIATION CONTROL AREA      AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

AIR SAMPLE

SURVEY NO. NSS-0120

Date <u>4-12-05</u> Time <u>9:10 AM</u>	<del>DOSE RATE</del>	CONTAMINATION			
Surveyor <u>R. ST. J. PENNINGTON</u>	Inst. Type <u>RADECO</u>	Beta <u>    </u> Alpha <u>    </u>	Beta <u>    </u> Alpha <u>    </u>		
Signature <u>R. St. J. Pennington</u>	Serial No. <u>864</u>	Inst. Sn			
Reviewed <u>15 [Signature]</u>	$\beta^-$ Factor	Eff.			
		Bkg.	cpm		cpm

AREA PRIMARY CONTAMINATION 4<sup>TH</sup> LEVEL (LOWEST LEVEL)

COMPONENT 100 FT<sup>3</sup>

COUNTER #1 SN 102001

4-12-05

11:03 1<sup>ST</sup> COUNT 10 min CT  $\alpha$  1393 (139 cpm)  $\beta$  3186 (319 cpm)  
 2<sup>ND</sup> COUNT 30 min CT  $\alpha$  70 (2.3 cpm)  $\beta$  256 (8.5 cpm)

4-13-05

9:13 30 MIN COUNT  $\alpha$  56 (1.9 cpm)  $\beta$  1308 (44 cpm)

12:08 60 MIN COUNT  $\alpha$  83 (1.4 cpm)  $\beta$  2540 (42 cpm)

4-14-05

9:21 30 min count  $\alpha$  27 (0.9 cpm)  $\beta$  1212 (40 cpm)

$< MDA (2.99E^{-13} \text{ MBq/l})$   $< MDA (38E^{-12} \text{ MCi/l})$

< 1 DAC

SMEAR RESULTS IN DPM/100 CM <sup>2</sup>				B = BETA in mRAD/hr/100 CM <sup>2</sup>					
NO.	RESULTS	N.O.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS
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RA - RADIATION AREA

CA - CONTAMINATION AREA

ALL DOSE RATES IN  $\mu\text{rem/hr}$

RCA - RADIATION CONTROL AREA

AA - AIRBORNE AREA

N.S. SAVANNAH  
RADIOLOGICAL SURVEY

NSS-01

Air Sampler

SURVEY NO. NSS 0121

Date	Time	DOSE RATE		CONTAMINATION	
4-21-05		Inst. Type	RADCO	Beta	Alpha
Surveyor	ROBERT E PENNICK	Serial No.	864	Inst. Sn	V/A
Signature	Robert Pennick	$\beta$ -Factor		Eff.	
Reviewed	[Signature]	Bkg.	cpm	cpm	cpm

AREA PRIMARY CONTAMINATION AT PORT V TUBE STREAM GEN. ACCESS COVER  
DURING REMOVAL OF COVER AND SAMPLING OF SYSTEM.

COMPONENT 100 CUFT

4-21-05 10 min ct Ctr # 1  
(2:21)

$\alpha = 3961$   $\beta - \gamma = 9643$   
(396 cpm) (964 cpm)

4-22-05 10 min ct Ctr # 1  
(8:42)

$\alpha = 29$  (2.9 cpm)  $\beta - \gamma = 495$  (49 cpm)

9:23 30 min ct Ctr # 1

$\alpha = 108$  (3.6 cpm)  $\beta - \gamma = 1372$  (46 cpm)

1:51 30 min ct Ctr # 1

$\alpha = 72$  (2.4 cpm)  $\beta - \gamma = 1286$  (42.9 cpm)

4-25-05 30 min ct 8:48 Ctr # 1

$\alpha = 9$  (0.3 cpm)  $\beta - \gamma = 1270$  (42.3 cpm)

SMEAR RESULTS <del>IN DPM/100 CM<sup>2</sup></del>		<del>BETA IN HR RAD/100 CM<sup>2</sup></del>							
NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS	NO.	RESULTS

RA - RADIATION AREA CA - CONTAMINATION AREA ALL DOSE RATES IN  $\mu$ rem/hr  
RCA - RADIATION CONTROL AREA AA - AIRBORNE AREA

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis Report for

WPIA001 WPI

Client SDG: 135938 GEL Work Order: 135938


### The Qualifiers in this report are defined as follows:

- \*\* Indicates the analyte is a surrogate compound.
- < Result is less than amount reported.
- > Result is greater than amount reported.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value.
- P The response between the confirmation and the primary columns is >40% Different.
- R Sample results are rejected.
- U Target analyte was analyzed for but not detected above the MDL or LOD.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- Y QC Samples were not spiked with this compound.
- Z Paint Filter qualifier: Particulates passed through the filter. No free liquids were observed.
- h Sample preparation or preservation holding time exceeded.

Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

\*\* Indicates the analyte is a surrogate compound.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.



Reviewed by \_\_\_\_\_



# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:	Metal Sample #6	Project:	WPIA00105
Sample ID:	135938001	Client ID:	WPIA001
Matrix:	Misc Solid		
Collect Date:	21-APR-05 09:10		
Receive Date:	05-MAY-05		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Actinium-228	U	-0.11	+/-2.32	3.83	0.800	pCi/g		AKB 05/18/05	1814	423794	1
Americium-241	U	-2.31	+/-2.86	3.80	0.200	pCi/g					
Antimony-124	U	0.424	+/-0.838	1.35	0.100	pCi/g					
Antimony-125	U	1.12	+/-1.60	2.59	0.200	pCi/g					
Barium-133	U	-0.333	+/-0.886	1.16	0.100	pCi/g					
Barium-140	U	2.94	+/-8.46	13.5	0.500	pCi/g					
Beryllium-7	U	1.15	+/-6.97	11.0	0.700	pCi/g					
Bismuth-212	U	0.351	+/-4.91	7.80	0.500	pCi/g					
Bismuth-214	U	1.06	+/-1.35	2.20	0.200	pCi/g					
Cerium-139	U	0.0914	+/-0.541	0.776	0.050	pCi/g					
Cerium-141	U	0.366	+/-1.30	1.87	0.100	pCi/g					
Cerium-144	U	-1.18	+/-3.31	4.63	0.500	pCi/g					
Cesium-134	U	0.524	+/-0.709	1.22	0.100	pCi/g					
Cesium-136	U	1.76	+/-3.15	5.35	0.300	pCi/g					
Cesium-137	U	0.199	+/-0.628	1.01	0.100	pCi/g					
Chromium-51	U	-3.09	+/-8.76	13.3	0.600	pCi/g					
Cobalt-56	U	-0.238	+/-0.744	1.21	0.100	pCi/g					
Cobalt-57	U	-0.0225	+/-0.429	0.605	0.050	pCi/g					
Cobalt-58	U	0.158	+/-0.745	1.25	0.100	pCi/g					
Cobalt-60	U	0.659	+/-1.18	1.41	0.100	pCi/g					
Europium-152	U	1.02	+/-1.61	2.56	0.200	pCi/g					
Europium-154	U	-1.41	+/-1.96	3.05	0.500	pCi/g					
Europium-155	U	-0.24	+/-1.70	2.38	0.500	pCi/g					
Iridium-192	U	0.050	+/-0.681	1.05	0.100	pCi/g					
Iron-59	U	1.54	+/-1.77	3.15	0.300	pCi/g					
Lead-210	U	101	+/-81.0	113	4.00	pCi/g					
Lead-212	UUI	0.00	+/-2.03	1.41	0.100	pCi/g					
Lead-214	U	1.71	+/-1.63	2.05	0.100	pCi/g					
Manganese-54	U	0.308	+/-0.631	1.08	0.100	pCi/g					
Mercury-203	U	0.549	+/-0.858	1.34	0.100	pCi/g					
Neodymium-147	U	5.35	+/-20.7	33.0	1000	pCi/g					
Neptunium-239	U	-2.36	+/-3.16	4.32	2.00	pCi/g					
Niobium-94	U	0.0352	+/-0.600	0.947	1.00	pCi/g					
Niobium-95	U	0.132	+/-0.921	1.54	0.050	pCi/g					
Potassium-40	U	6.62	+/-7.14	13.0	1.00	pCi/g					
Promethium-144	U	-0.236	+/-0.759	0.996	0.080	pCi/g					
Promethium-146	U	-0.0625	+/-0.773	1.20	1.00	pCi/g					
Radium-228	U	-0.11	+/-2.32	3.83	0.500	pCi/g					

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:      Metal Sample #6  
 Sample ID:              135938001  
 Project:                  WPIA00105  
 Client ID:                WPIA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>GammaSpec, Gamma, Solid (Long List)</i>											
Ruthenium-106	U	4.16	+/-9.19	9.00	0.800	pCi/g					
Silver-110m	U	-0.0321	+/-0.616	0.968	0.080	pCi/g					
Sodium-22	U	-0.502	+/-0.704	1.10	0.080	pCi/g					
Thallium-208	U	0.453	+/-1.02	1.16	0.080	pCi/g					
Thorium-230	U	1.06	+/-1.35	2.20	1.00	pCi/g					
Thorium-234	U	20.6	+/-36.0	33.3	5.00	pCi/g					
Tin-113	U	-0.452	+/-0.835	1.26	0.100	pCi/g					
Uranium-235	U	1.26	+/-3.34	4.80	0.500	pCi/g					
Uranium-238	U	20.6	+/-36.0	28.3	1.00	pCi/g					
Yttrium-88	U	0.743	+/-0.764	1.50	0.100	pCi/g					
Zinc-65	U	-1.14	+/-1.45	2.25	0.300	pCi/g					
Zirconium-95	U	0.223	+/-1.33	2.23	0.200	pCi/g					
<b>Rad Gas Flow Proportional Counting</b>											
<i>GFPC, Gross A/B, solid</i>											
Alpha	U	-0.0666	+/-0.961	1.82	4.00	pCi/g		SXE1 05/24/05	2034	423849	2
Beta	U	0.197	+/-1.52	2.63	10.0	pCi/g					

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

*Replacement  
Pages  
JWB 6/10/2005*

## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: June 6, 2005

Page 1 of 3

Client Sample ID: Metal Sample #11  
 Sample ID: 135938002  
 Matrix: Misc Solid  
 Collect Date: 22-APR-05 08:32  
 Receive Date: 05-MAY-05  
 Collector: Client

Project: WPIA00105  
 Client ID: WPIA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>Gammasec, Gamma, Solid (Long List)</i>											
Actinium-228	U	ND	+/-2.77	4.92	0.800	pCi/g		AKB 05/18/05	1814	423794	1
Americium-241	U	ND	+/-2.95	4.02	0.200	pCi/g					
Antimony-124	U	ND	+/-1.00	1.59	0.100	pCi/g					
Antimony-125	U	ND	+/-2.06	3.38	0.200	pCi/g					
Barium-133	U	ND	+/-1.07	1.38	0.100	pCi/g					
Barium-140	U	ND	+/-10.6	16.4	0.500	pCi/g					
Beryllium-7	U	ND	+/-8.21	12.6	0.700	pCi/g					
Bismuth-212	U	ND	+/-6.40	10.1	0.500	pCi/g					
Bismuth-214	U	ND	+/-3.06	2.41	0.200	pCi/g					
Cerium-139	U	ND	+/-0.784	0.972	0.050	pCi/g					
Cerium-141	U	ND	+/-1.78	2.50	0.100	pCi/g					
Cerium-144	U	ND	+/-4.55	6.33	0.500	pCi/g					
Cesium-134	U	ND	+/-0.818	1.41	0.100	pCi/g					
Cesium-136	U	ND	+/-3.70	6.16	0.300	pCi/g					
Cesium-137	U	ND	+/-0.754	1.19	0.100	pCi/g					
Chromium-51	U	ND	+/-12.1	16.5	0.600	pCi/g					
Cobalt-56	U	ND	+/-0.946	1.63	0.100	pCi/g					
Cobalt-57	U	ND	+/-0.555	0.782	0.050	pCi/g					
Cobalt-58	U	ND	+/-0.863	1.38	0.100	pCi/g					
Cobalt-60	U	ND	+/-0.788	1.36	0.100	pCi/g					
Europium-152	U	ND	+/-2.11	3.41	0.200	pCi/g					
Europium-154	U	ND	+/-2.19	3.72	0.500	pCi/g					
Europium-155	U	ND	+/-2.22	3.13	0.500	pCi/g					
Iridium-192	U	ND	+/-0.825	1.26	0.100	pCi/g					
Iron-59	U	ND	+/-1.90	3.37	0.300	pCi/g					
Lead-210	U	ND	+/-136	99.3	4.00	pCi/g					
Lead-212	UUI	ND	+/-2.94	2.29	0.100	pCi/g					
Lead-214	UUI	ND	+/-3.39	2.78	0.100	pCi/g					
Manganese-54	U	ND	+/-0.743	1.24	0.100	pCi/g					
Mercury-203	U	ND	+/-1.06	1.63	0.100	pCi/g					
Neodymium-147	U	ND	+/-23.3	38.3	1000	pCi/g					
Neptunium-239	U	ND	+/-3.89	5.50	2.00	pCi/g					
Niobium-94	U	ND	+/-0.723	1.15	1.00	pCi/g					
Niobium-95	U	ND	+/-1.24	2.02	0.050	pCi/g					
Potassium-40	U	ND	+/-16.8	13.4	1.00	pCi/g					
Promethium-144	U	ND	+/-0.766	1.22	0.080	pCi/g					
Promethium-146	U	ND	+/-0.975	1.59	1.00	pCi/g					
Radium-228	U	ND	+/-2.77	4.92	0.500	pCi/g					

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 - (843) 556-8171 - www.gel.com

## Certificate of Analysis

*Replacement  
Pages  
JWB 6/10/2005*

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: June 6, 2005

Page 2 of 3

Client Sample ID: Metal Sample #11  
 Sample ID: 135938002  
 Project: WPIA00105  
 Client ID: WPIA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>												
<i>Gammapec, Gamma, Solid (Long List)</i>												
Ruthenium-106	U	ND	+/-7.36	11.8	0.800	pCi/g						
Silver-110m	U	ND	+/-0.765	1.19	0.080	pCi/g						
Sodium-22	U	ND	+/-0.787	1.34	0.080	pCi/g						
Thallium-208	U	ND	+/-1.47	1.47	0.080	pCi/g						
Thorium-230	U	ND	+/-3.06	2.41	1.00	pCi/g						
Thorium-234	U	ND	+/-47.4	41.5	5.00	pCi/g						
Tin-113	U	ND	+/-1.06	1.62	0.100	pCi/g						
Uranium-235	U	ND	+/-4.63	6.65	0.500	pCi/g						
Uranium-238	U	ND	+/-47.4	34.4	1.00	pCi/g						
Yttrium-88	U	ND	+/-0.779	1.44	0.100	pCi/g						
Zinc-65	U	ND	+/-1.75	2.87	0.300	pCi/g						
Zirconium-95	UUI	ND	+/-2.58	2.70	0.200	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>												
<i>GFPC, Gross A/B, solid</i>												
Alpha	U	ND	+/-1.18	1.90	4.00	pCi/g		SXE1	05/24/05	2034	423849	2
Beta		3.40	+/-1.82	2.90	10.0	pCi/g						

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

**Notes:**

The Qualifiers in this report are defined as follows :

- \*\* Indicates the analyte is a surrogate compound.
- B Target analyte was detected in the sample as well as the associated blank.
- BD Results below the MDC or low tracer recovery.
- E Concentration of the target analyte exceeds the instrument calibration range.
- H Analytical holding time exceeded.
- J Indicates an estimated value.
- U Target analyte was analyzed for but not detected above the MDL or LOD.
- UI Uncertain identification for gamma spectroscopy.
- X Lab-specific qualifier-please see case narrative, data summary package or contact your project manager for details.
- h Sample preparation or preservation holding time exceeded.

The above sample is reported on a dry weight basis except where prohibited by the analytical procedure.

*192 continued on 192A*

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

*Replacement  
Pages  
JWB 6/10/2005*

Company : WPI  
Address : 11 S. 12th Street  
Suite 210  
Richmond, Virginia 23219  
Contact: Mr. John Bowen  
Project: **Radiochemistry Analytical**

Report Date: June 6, 2005

Page 3 of 3

Client Sample ID: Metal Sample #11  
Sample ID: 135938002

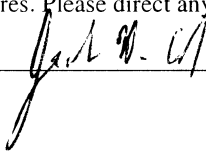
Project: WPIA00105  
Client ID: WPIA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
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Where the analytical method has been performed under NELAP certification, the analysis has met all of the requirements of the NELAC standard unless qualified on the Certificate of Analysis.

This data report has been prepared and reviewed in accordance with General Engineering Laboratories, LLC standard operating procedures. Please direct any questions to your Project Manager, Jake Crook.

Reviewed by



192A

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:	Metal Sample #13	Project:	WPIA00105
Sample ID:	135938003	Client ID:	WPIA001
Matrix:	Misc Solid		
Collect Date:	25-APR-05 11:18		
Receive Date:	05-MAY-05		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Actinium-228	UUI	0.00	+/-0.766	0.688	0.800	pCi/g		AKB 05/18/05	1815	423794	1
Americium-241	U	-0.0281	+/-0.294	0.425	0.200	pCi/g					
Antimony-124	U	0.137	+/-0.125	0.207	0.100	pCi/g					
Antimony-125	U	-0.118	+/-0.256	0.384	0.200	pCi/g					
Barium-133	U	-0.0266	+/-0.131	0.174	0.100	pCi/g					
Barium-140	U	1.40	+/-1.10	1.71	0.500	pCi/g					
Beryllium-7	U	0.223	+/-0.942	1.46	0.700	pCi/g					
Bismuth-212	U	0.0178	+/-0.711	1.14	0.500	pCi/g					
Bismuth-214	U	0.230	+/-0.204	0.338	0.200	pCi/g					
Cerium-139	UUI	0.00	+/-0.168	0.123	0.050	pCi/g					
Cerium-141	U	0.0681	+/-0.212	0.308	0.100	pCi/g					
Cerium-144	U	0.0462	+/-0.579	0.839	0.500	pCi/g					
Cesium-134	U	0.023	+/-0.107	0.172	0.100	pCi/g					
Cesium-136	U	0.327	+/-0.930	0.712	0.300	pCi/g					
Cesium-137	U	0.111	+/-0.124	0.133	0.100	pCi/g					
Chromium-51	U	-0.864	+/-1.27	1.91	0.600	pCi/g					
Cobalt-56	U	0.00107	+/-0.117	0.186	0.100	pCi/g					
Cobalt-57	U	0.00287	+/-0.0698	0.101	0.050	pCi/g					
Cobalt-58	U	-0.0358	+/-0.116	0.181	0.100	pCi/g					
Cobalt-60	UUI	0.00	+/-0.175	0.326	0.100	pCi/g					
Europium-152	U	0.0685	+/-0.257	0.398	0.200	pCi/g					
Europium-154	U	0.0749	+/-0.259	0.439	0.500	pCi/g					
Europium-155	U	0.336	+/-0.275	0.412	0.500	pCi/g					
Iridium-192	U	0.0706	+/-0.103	0.162	0.100	pCi/g					
Iron-59	U	0.0663	+/-0.257	0.431	0.300	pCi/g					
Lead-210	U	6.12	+/-11.9	8.19	4.00	pCi/g					
Lead-212	U	0.0252	+/-0.334	0.229	0.100	pCi/g					
Lead-214	U	0.122	+/-0.305	0.322	0.100	pCi/g					
Manganese-54	U	0.0141	+/-0.0958	0.154	0.100	pCi/g					
Mercury-203	U	0.143	+/-0.243	0.189	0.100	pCi/g					
Neodymium-147	U	2.14	+/-2.35	3.91	1000	pCi/g					
Neptunium-239	U	-0.136	+/-0.502	0.721	2.00	pCi/g					
Niobium-94	U	-0.0547	+/-0.109	0.145	1.00	pCi/g					
Niobium-95	U	0.0943	+/-0.143	0.235	0.050	pCi/g					
Potassium-40		2.97	+/-1.22	2.11	1.00	pCi/g					
Promethium-144	U	0.0712	+/-0.109	0.157	0.080	pCi/g					
Promethium-146	U	0.013	+/-0.117	0.180	1.00	pCi/g					
Radium-228	UUI	0.00	+/-0.766	0.688	0.500	pCi/g					

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID: Metal Sample #13 Project: WPJA00105  
 Sample ID: 135938003 Client ID: WPJA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Ruthenium-106	U	-0.773	+/-0.890	1.36	0.800	pCi/g					
Silver-110m	U	-0.0862	+/-0.0887	0.135	0.080	pCi/g					
Sodium-22	U	0.031	+/-0.0929	0.158	0.080	pCi/g					
Thallium-208	U	0.0396	+/-0.198	0.180	0.080	pCi/g					
Thorium-230	U	0.230	+/-0.204	0.338	1.00	pCi/g					
Thorium-234	U	1.23	+/-4.96	3.62	5.00	pCi/g					
Tin-113	U	0.0411	+/-0.123	0.191	0.100	pCi/g					
Uranium-235	U	0.656	+/-0.605	0.887	0.500	pCi/g					
Uranium-238	U	1.23	+/-4.96	3.62	1.00	pCi/g					
Yttrium-88	U	0.0335	+/-0.0965	0.172	0.100	pCi/g					
Zinc-65	U	0.00536	+/-0.213	0.353	0.300	pCi/g					
Zirconium-95	U	-0.0248	+/-0.196	0.311	0.200	pCi/g					

### Rad Gas Flow Proportional Counting

*GFPC, Gross A/B, solid*

Alpha	U	-1.02	+/-1.05	2.76	4.00	pCi/g		SXE1 05/24/05 1940 423849	2		
Beta	U	-0.385	+/-1.27	2.68	10.0	pCi/g					

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:	Metal Sample #12A	Project:	WPJA00105
Sample ID:	135938004	Client ID:	WPJA001
Matrix:	Misc Solid		
Collect Date:	25-APR-05 11:12		
Receive Date:	05-MAY-05		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Actinium-228	U	0.184	+/-0.0996	0.188	0.800	pCi/g		AKB 05/18/05	1815	423794	1
Americium-241	U	0.0141	+/-0.170	0.277	0.200	pCi/g					
Antimony-124	U	0.00315	+/-0.0325	0.0548	0.100	pCi/g					
Antimony-125	U	0.00982	+/-0.0661	0.113	0.200	pCi/g					
Barium-133	U	0.0246	+/-0.035	0.052	0.100	pCi/g					
Barium-140	U	0.178	+/-0.295	0.515	0.500	pCi/g					
Beryllium-7	U	0.0244	+/-0.261	0.444	0.700	pCi/g					
Bismuth-212	U	0.0865	+/-0.197	0.341	0.500	pCi/g					
Bismuth-214	U	0.0445	+/-0.119	0.112	0.200	pCi/g					
Cerium-139	U	-0.0074	+/-0.0217	0.0342	0.050	pCi/g					
Cerium-141	U	-0.0247	+/-0.0513	0.0807	0.100	pCi/g					
Cerium-144	U	0.0415	+/-0.143	0.233	0.500	pCi/g					
Cesium-134	U	0.00758	+/-0.0289	0.0494	0.100	pCi/g					
Cesium-136	U	0.00842	+/-0.108	0.183	0.300	pCi/g					
Cesium-137	UUI	0.00	+/-0.0304	0.0582	0.100	pCi/g					
Chromium-51	U	0.0269	+/-0.366	0.581	0.600	pCi/g					
Cobalt-56	U	-0.00736	+/-0.039	0.0557	0.100	pCi/g					
Cobalt-57	U	-0.00324	+/-0.0178	0.0285	0.050	pCi/g					
Cobalt-58	U	0.00275	+/-0.0291	0.0493	0.100	pCi/g					
Cobalt-60	U	0.0198	+/-0.046	0.0582	0.100	pCi/g					
Europium-152	U	-0.00816	+/-0.0725	0.114	0.200	pCi/g					
Europium-154	U	-0.00194	+/-0.069	0.122	0.500	pCi/g					
Europium-155	U	0.00157	+/-0.0742	0.120	0.500	pCi/g					
Iridium-192	U	-0.0101	+/-0.0299	0.0465	0.100	pCi/g					
Iron-59	U	0.0446	+/-0.0613	0.115	0.300	pCi/g					
Lead-210	U	5.94	+/-8.67	12.3	4.00	pCi/g					
Lead-212	U	0.0258	+/-0.0828	0.0645	0.100	pCi/g					
Lead-214	U	0.0494	+/-0.100	0.101	0.100	pCi/g					
Manganese-54	U	0.0124	+/-0.0269	0.0465	0.100	pCi/g					
Mercury-203	U	0.0192	+/-0.0347	0.0564	0.100	pCi/g					
Neodymium-147	U	-0.0276	+/-0.668	1.13	1000	pCi/g					
Neptunium-239	U	-0.00098	+/-0.136	0.219	2.00	pCi/g					
Niobium-94	U	0.00408	+/-0.0244	0.0413	1.00	pCi/g					
Niobium-95	U	-0.0127	+/-0.0367	0.060	0.050	pCi/g					
Potassium-40	U	0.364	+/-0.523	0.513	1.00	pCi/g					
Promethium-144	U	0.0158	+/-0.0268	0.0464	0.080	pCi/g					
Promethium-146	U	0.00377	+/-0.0321	0.0546	1.00	pCi/g					
Radium-228	U	0.184	+/-0.0996	0.188	0.500	pCi/g					



# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID: Metal Sample #12A Project: WPJA00105  
 Sample ID: 135938004 Client ID: WPJA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>												
<i>Gammascpec, Gamma, Solid (Long List)</i>												
Ruthenium-106	U	0.0796	+/-0.241	0.413	0.800	pCi/g						
Silver-110m	U	-0.0279	+/-0.0261	0.0406	0.080	pCi/g						
Sodium-22	U	-0.000697	+/-0.0248	0.044	0.080	pCi/g						
Thallium-208	U	0.0194	+/-0.0286	0.0498	0.080	pCi/g						
Thorium-230	U	0.0444	+/-0.119	0.0854	1.00	pCi/g						
Thorium-234	U	1.70	+/-1.31	2.22	5.00	pCi/g						
Tin-113	U	0.000478	+/-0.0371	0.0585	0.100	pCi/g						
Uranium-235	U	0.130	+/-0.146	0.242	0.500	pCi/g						
Uranium-238	U	1.70	+/-1.31	2.22	1.00	pCi/g						
Yttrium-88	U	0.0149	+/-0.0336	0.062	0.100	pCi/g						
Zinc-65	U	-0.0385	+/-0.0541	0.0897	0.300	pCi/g						
Zirconium-95	U	-0.00402	+/-0.0528	0.0883	0.200	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>												
<i>GFPC, Gross A/B, solid</i>												
Alpha	U	-0.424	+/-1.02	2.42	4.00	pCi/g		SXE1	05/24/05	1940	423849	2
Beta	U	-0.815	+/-1.02	2.27	10.0	pCi/g						

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:	Paint Sample #8	Project:	WPJA00105
Sample ID:	135938005	Client ID:	WPJA001
Matrix:	Misc Solid		
Collect Date:	22-APR-05 09:16		
Receive Date:	05-MAY-05		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>GammaSpec, Gamma, Solid (Long List)</i>											
Actinium-228	UUI	0.00	+/-1.59	2.86	0.800	pCi/g		AKB 05/18/05	1900	423794	1
Americium-241	U	-0.993	+/-2.25	2.66	0.200	pCi/g					
Antimony-124	U	0.473	+/-0.824	0.901	0.100	pCi/g					
Antimony-125	U	-1.27	+/-1.74	2.49	0.200	pCi/g					
Barium-133	U	-0.0767	+/-0.744	1.09	0.100	pCi/g					
Barium-140	U	-3.03	+/-6.86	10.6	0.500	pCi/g					
Beryllium-7	U	1.77	+/-6.68	10.7	0.700	pCi/g					
Bismuth-212	U	3.68	+/-3.06	5.27	0.500	pCi/g					
Bismuth-214	U	0.706	+/-1.84	1.41	0.200	pCi/g					
Cerium-139	U	-0.285	+/-0.425	0.615	0.050	pCi/g					
Cerium-141	U	0.604	+/-1.15	1.50	0.100	pCi/g					
Cerium-144	U	-0.452	+/-2.70	3.95	0.500	pCi/g					
Cesium-134	U	0.533	+/-0.410	0.720	0.100	pCi/g					
Cesium-136	U	-0.87	+/-1.89	2.93	0.300	pCi/g					
Cesium-137		164	+/-10.6	0.706	0.100	pCi/g					
Chromium-51	U	0.428	+/-8.02	11.9	0.600	pCi/g					
Cobalt-56	U	0.0301	+/-0.478	0.774	0.100	pCi/g					
Cobalt-57	U	-0.0183	+/-0.329	0.482	0.050	pCi/g					
Cobalt-58	U	-0.261	+/-0.455	0.704	0.100	pCi/g					
Cobalt-60		2.61	+/-0.856	0.628	0.100	pCi/g					
Europium-152	U	-0.654	+/-1.60	2.33	0.200	pCi/g					
Europium-154	U	0.215	+/-1.12	1.73	0.500	pCi/g					
Europium-155	U	-0.186	+/-1.28	1.87	0.500	pCi/g					
Iridium-192	U	-0.147	+/-0.622	0.913	0.100	pCi/g					
Iron-59	U	-0.506	+/-1.30	1.85	0.300	pCi/g					
Lead-210	U	58.2	+/-63.2	78.2	4.00	pCi/g					
Lead-212		1.81	+/-1.60	1.27	0.100	pCi/g					
Lead-214	U	1.04	+/-1.19	1.81	0.100	pCi/g					
Manganese-54	U	0.200	+/-0.422	0.595	0.100	pCi/g					
Mercury-203	U	0.806	+/-0.789	1.03	0.100	pCi/g					
Neodymium-147	U	9.65	+/-17.0	27.6	1000	pCi/g					
Neptunium-239	U	1.16	+/-2.35	3.49	2.00	pCi/g					
Niobium-94	U	0.143	+/-0.327	0.544	1.00	pCi/g					
Niobium-95	U	-0.0514	+/-0.593	0.953	0.050	pCi/g					
Potassium-40	UUI	0.00	+/-4.98	9.70	1.00	pCi/g					
Promethium-144	U	0.0638	+/-0.415	0.596	0.080	pCi/g					
Promethium-146	U	0.324	+/-0.951	1.34	1.00	pCi/g					
Radium-228	UUI	0.00	+/-1.59	2.86	0.500	pCi/g					

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Client Sample ID:		Paint Sample #8		Project:		WPIA00105					
Sample ID:		135938005		Client ID:		WPIA001					
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Ruthenium-106	U	1.24	+/-4.08	6.63	0.800	pCi/g					
Silver-110m	U	0.267	+/-0.561	0.810	0.080	pCi/g					
Sodium-22	U	0.0757	+/-0.401	0.621	0.080	pCi/g					
Thallium-208	U	0.459	+/-0.507	0.837	0.080	pCi/g					
Thorium-230	U	0.706	+/-1.84	1.69	1.00	pCi/g					
Thorium-234	UUI	0.00	+/-19.2	23.5	5.00	pCi/g					
Tin-113	U	-0.384	+/-0.825	1.20	0.100	pCi/g					
Uranium-235	U	1.58	+/-3.02	4.00	0.500	pCi/g					
Uranium-238	UUI	0.00	+/-19.2	23.5	1.00	pCi/g					
Yttrium-88	U	0.276	+/-0.435	0.821	0.100	pCi/g					
Zinc-65	U	-0.319	+/-0.793	1.32	0.300	pCi/g					
Zirconium-95	U	0.860	+/-0.778	1.35	0.200	pCi/g					
<b>Rad Gas Flow Proportional Counting</b>											
<i>GFPC, Gross A/B, solid</i>											
Alpha		4.23	+/-2.43	3.84	4.00	pCi/g		SXE1 05/24/05	1940	423849	2
Beta		160	+/-5.45	1.87	10.0	pCi/g					

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:	Paint Sample #14	Project:	WPIA00105
Sample ID:	135938006	Client ID:	WPIA001
Matrix:	Misc Solid		
Collect Date:	22-APR-05 09:48		
Receive Date:	05-MAY-05		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Actinium-228	U	0.197	+/-0.922	1.43	0.800	pCi/g		AKB 05/18/05	1902	423794	1
Americium-241	U	0.130	+/-0.685	0.918	0.200	pCi/g					
Antimony-124	U	-0.0715	+/-0.196	0.306	0.100	pCi/g					
Antimony-125	U	-0.173	+/-0.370	0.580	0.200	pCi/g					
Barium-133	U	-0.0401	+/-0.160	0.252	0.100	pCi/g					
Barium-140	U	1.92	+/-2.19	3.35	0.500	pCi/g					
Beryllium-7	U	-0.727	+/-1.55	2.43	0.700	pCi/g					
Bismuth-212	U	0.154	+/-1.58	2.29	0.500	pCi/g					
Bismuth-214	U	0.269	+/-0.305	0.485	0.200	pCi/g					
Cerium-139	U	0.0405	+/-0.0979	0.147	0.050	pCi/g					
Cerium-141	U	0.270	+/-0.240	0.362	0.100	pCi/g					
Cerium-144	U	0.349	+/-0.750	0.939	0.500	pCi/g					
Cesium-134	U	-0.0179	+/-0.232	0.359	0.100	pCi/g					
Cesium-136	U	0.0843	+/-1.23	2.01	0.300	pCi/g					
Cesium-137		2.58	+/-0.370	0.286	0.100	pCi/g					
Chromium-51	U	0.389	+/-1.96	2.90	0.600	pCi/g					
Cobalt-56	U	0.0497	+/-0.269	0.418	0.100	pCi/g					
Cobalt-57	U	-0.0208	+/-0.0899	0.119	0.050	pCi/g					
Cobalt-58	U	-0.0932	+/-0.260	0.400	0.100	pCi/g					
Cobalt-60		109	+/-6.61	0.195	0.100	pCi/g					
Europium-152	U	0.404	+/-0.546	0.570	0.200	pCi/g					
Europium-154	U	0.011	+/-0.340	0.559	0.500	pCi/g					
Europium-155	U	-0.144	+/-0.354	0.469	0.500	pCi/g					
Iridium-192	U	-0.0602	+/-0.153	0.225	0.100	pCi/g					
Iron-59	U	0.0374	+/-0.692	1.12	0.300	pCi/g					
Lead-210	U	28.5	+/-25.9	34.8	4.00	pCi/g					
Lead-212	U	0.0179	+/-0.284	0.312	0.100	pCi/g					
Lead-214	U	0.188	+/-0.260	0.415	0.100	pCi/g					
Manganese-54	U	0.0674	+/-0.225	0.351	0.100	pCi/g					
Mercury-203	U	0.177	+/-0.180	0.270	0.100	pCi/g					
Neodymium-147	U	2.11	+/-4.98	7.89	1000	pCi/g					
Neptunium-239	U	-0.299	+/-0.649	0.858	2.00	pCi/g					
Niobium-94	U	-0.107	+/-0.164	0.252	1.00	pCi/g					
Niobium-95	U	0.297	+/-0.311	0.491	0.050	pCi/g					
Potassium-40		2.76	+/-1.51	1.44	1.00	pCi/g					
Promethium-144	U	-0.0367	+/-0.171	0.265	0.080	pCi/g					
Promethium-146	U	-0.0595	+/-0.177	0.278	1.00	pCi/g					
Radium-228	U	0.197	+/-0.922	1.43	0.500	pCi/g					

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID: Paint Sample #14  
 Sample ID: 135938006  
 Project: WPIA00105  
 Client ID: WPIA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>												
<i>Gammascpec, Gamma, Solid (Long List)</i>												
Ruthenium-106	U	1.03	+/-1.52	2.40	0.800	pCi/g						
Silver-110m	U	0.0449	+/-0.197	0.271	0.080	pCi/g						
Sodium-22	U	0.00206	+/-0.122	0.201	0.080	pCi/g						
Thallium-208	U	0.0994	+/-0.161	0.256	0.080	pCi/g						
Thorium-230	U	0.269	+/-0.305	0.485	1.00	pCi/g						
Thorium-234	U	2.12	+/-5.19	6.97	5.00	pCi/g						
Tin-113	U	0.136	+/-0.183	0.293	0.100	pCi/g						
Uranium-235	U	0.270	+/-0.634	0.948	0.500	pCi/g						
Uranium-238	U	2.12	+/-5.19	6.97	1.00	pCi/g						
Yttrium-88	U	0.0483	+/-0.0995	0.179	0.100	pCi/g						
Zinc-65	U	0.400	+/-0.545	0.893	0.300	pCi/g						
Zirconium-95	U	-0.0509	+/-0.428	0.665	0.200	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>												
<i>GFPC, Gross A/B, solid</i>												
Alpha		11.9	+/-3.17	2.54	4.00	pCi/g		SXE1	05/24/05	1940	423849	2
Beta		135	+/-5.18	2.25	10.0	pCi/g						

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
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 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:	Paint Sample #19	Project:	WPIA00105
Sample ID:	135938007	Client ID:	WPIA001
Matrix:	Misc Solid		
Collect Date:	22-APR-05 10:07		
Receive Date:	05-MAY-05		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>												
<i>Gammascpec, Gamma, Solid (Long List)</i>												
Actinium-228	U	1.49	+/-2.01	3.08	0.800	pCi/g		AKB	05/18/05	1903	423794	1
Americium-241	U	-0.203	+/-0.538	0.718	0.200	pCi/g						
Antimony-124	U	-0.421	+/-0.602	0.876	0.100	pCi/g						
Antimony-125	U	0.116	+/-1.30	1.99	0.200	pCi/g						
Barium-133	U	0.854	+/-0.742	0.897	0.100	pCi/g						
Barium-140	U	1.25	+/-6.66	10.3	0.500	pCi/g						
Beryllium-7	U	-1.07	+/-5.69	8.58	0.700	pCi/g						
Bismuth-212	U	-1.14	+/-3.76	6.05	0.500	pCi/g						
Bismuth-214	U	0.584	+/-1.47	1.64	0.200	pCi/g						
Cerium-139	U	0.0314	+/-0.294	0.449	0.050	pCi/g						
Cerium-141	U	0.696	+/-0.844	1.19	0.100	pCi/g						
Cerium-144	U	1.17	+/-2.06	2.89	0.500	pCi/g						
Cesium-134	U	0.0305	+/-0.554	0.910	0.100	pCi/g						
Cesium-136	U	0.0629	+/-2.57	4.22	0.300	pCi/g						
Cesium-137		51.0	+/-1.98	0.807	0.100	pCi/g						
Chromium-51	U	1.85	+/-6.03	9.32	0.600	pCi/g						
Cobalt-56	U	-0.338	+/-0.585	0.923	0.100	pCi/g						
Cobalt-57	U	0.0908	+/-0.252	0.350	0.050	pCi/g						
Cobalt-58	U	0.296	+/-0.558	0.950	0.100	pCi/g						
Cobalt-60		11.6	+/-1.28	0.850	0.100	pCi/g						
Europium-152	U	0.0469	+/-1.34	1.83	0.200	pCi/g						
Europium-154	U	0.180	+/-1.34	2.24	0.500	pCi/g						
Europium-155	U	-0.565	+/-0.964	1.29	0.500	pCi/g						
Iridium-192	U	0.0807	+/-0.474	0.728	0.100	pCi/g						
Iron-59	U	0.497	+/-1.39	2.34	0.300	pCi/g						
Lead-210	U	2.46	+/-11.0	5.79	4.00	pCi/g						
Lead-212	U	0.140	+/-1.02	0.881	0.100	pCi/g						
Lead-214	U	0.870	+/-1.46	1.41	0.100	pCi/g						
Manganese-54	U	-0.0286	+/-0.506	0.825	0.100	pCi/g						
Mercury-203	U	0.618	+/-0.537	0.856	0.100	pCi/g						
Neodymium-147	U	13.4	+/-15.8	25.3	1000	pCi/g						
Neptunium-239	U	0.716	+/-1.83	2.55	2.00	pCi/g						
Niobium-94	U	-0.137	+/-0.429	0.691	1.00	pCi/g						
Niobium-95	U	0.323	+/-0.750	1.26	0.050	pCi/g						
Potassium-40	U	3.47	+/-8.76	6.87	1.00	pCi/g						
Promethium-144	U	0.192	+/-0.453	0.760	0.080	pCi/g						
Promethium-146	U	0.608	+/-0.690	1.09	1.00	pCi/g						
Radium-228	U	1.49	+/-2.01	3.08	0.500	pCi/g						

# GENERAL ENGINEERING LABORATORIES, LLC

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
Client Sample ID:		Paint Sample #19				Project:		WPIA00105				
Sample ID:		135938007				Client ID:		WPIA001				
<b>Rad Gamma Spec Analysis</b>												
<i>Gammascpec, Gamma, Solid (Long List)</i>												
Ruthenium-106	U	-1.25	+/-4.06	6.57	0.800	pCi/g						
Silver-110m	U	-3.98	+/-0.654	0.763	0.080	pCi/g						
Sodium-22	U	0.0694	+/-0.482	0.807	0.080	pCi/g						
Thallium-208	UUI	0.00	+/-1.04	0.932	0.080	pCi/g						
Thorium-230	U	0.584	+/-1.47	1.41	1.00	pCi/g						
Thorium-234	U	3.80	+/-12.1	11.7	5.00	pCi/g						
Tin-113	U	-0.0137	+/-0.621	0.947	0.100	pCi/g						
Uranium-235	UUI	0.00	+/-2.20	3.18	0.500	pCi/g						
Uranium-238	U	3.80	+/-12.1	7.00	1.00	pCi/g						
Yttrium-88	U	0.0243	+/-0.457	0.831	0.100	pCi/g						
Zinc-65	U	0.681	+/-1.13	1.93	0.300	pCi/g						
Zirconium-95	U	-0.529	+/-1.07	1.70	0.200	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>												
<i>GFPC, Gross A/B, solid</i>												
Alpha		3.25	+/-2.10	2.71	4.00	pCi/g		SXE1	05/24/05	1940	423849	2
Beta		69.1	+/-3.76	2.37	10.0	pCi/g						

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:	Paint Sample #27	Project:	WPJA00105
Sample ID:	135938008	Client ID:	WPJA001
Matrix:	Misc Solid		
Collect Date:	22-APR-05 10:28		
Receive Date:	05-MAY-05		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Actinium-228	U	2.16	+/-3.29	5.56	0.800	pCi/g		AKB 05/18/05	1906	423794	1
Americium-241	U	3.21	+/-3.52	4.69	0.200	pCi/g					
Antimony-124	U	0.302	+/-1.19	1.64	0.100	pCi/g					
Antimony-125	U	-2.6	+/-3.04	4.53	0.200	pCi/g					
Barium-133	U	-0.952	+/-1.26	1.88	0.100	pCi/g					
Barium-140	U	9.99	+/-14.5	20.3	0.500	pCi/g					
Beryllium-7	U	2.94	+/-12.8	19.7	0.700	pCi/g					
Bismuth-212	U	2.78	+/-6.27	10.0	0.500	pCi/g					
Bismuth-214	U	2.36	+/-3.52	2.83	0.200	pCi/g					
Cerium-139	U	-0.708	+/-0.787	1.07	0.050	pCi/g					
Cerium-141	U	0.0367	+/-1.87	2.59	0.100	pCi/g					
Cerium-144	U	-4.6	+/-4.90	6.60	0.500	pCi/g					
Cesium-134	U	0.0825	+/-0.928	1.45	0.100	pCi/g					
Cesium-136	U	0.864	+/-4.41	7.37	0.300	pCi/g					
Cesium-137		342	+/-5.67	1.38	0.100	pCi/g					
Chromium-51	U	1.73	+/-13.9	21.2	0.600	pCi/g					
Cobalt-56	U	0.399	+/-1.06	1.68	0.100	pCi/g					
Cobalt-57	U	0.824	+/-0.996	0.846	0.050	pCi/g					
Cobalt-58	U	0.429	+/-1.03	1.65	0.100	pCi/g					
Cobalt-60		84.6	+/-3.74	1.00	0.100	pCi/g					
Europium-152	U	-0.226	+/-2.81	4.26	0.200	pCi/g					
Europium-154	U	0.768	+/-1.78	2.81	0.500	pCi/g					
Europium-155	U	1.12	+/-2.36	3.28	0.500	pCi/g					
Iridium-192	U	0.0901	+/-1.08	1.64	0.100	pCi/g					
Iron-59	U	0.585	+/-2.37	3.97	0.300	pCi/g					
Lead-210	U	-49.9	+/-105	122	4.00	pCi/g					
Lead-212	U	1.54	+/-1.49	2.29	0.100	pCi/g					
Lead-214	U	1.17	+/-2.05	3.16	0.100	pCi/g					
Manganese-54	U	0.285	+/-0.848	1.35	0.100	pCi/g					
Mercury-203	U	1.11	+/-1.26	1.94	0.100	pCi/g					
Neodymium-147	U	-21.6	+/-31.7	47.6	1000	pCi/g					
Neptunium-239	U	0.740	+/-4.51	6.22	2.00	pCi/g					
Niobium-94	U	0.0713	+/-0.710	1.11	1.00	pCi/g					
Niobium-95	U	1.15	+/-1.19	1.97	0.050	pCi/g					
Potassium-40	UUI	0.00	+/-6.91	13.5	1.00	pCi/g					
Promethium-144	U	-0.0423	+/-0.735	1.14	0.080	pCi/g					
Promethium-146	U	-0.61	+/-1.56	2.36	1.00	pCi/g					
Radium-228	U	2.16	+/-3.29	5.56	0.500	pCi/g					



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 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Client Sample ID:		Paint Sample #27				Project: WPIA00105					
Sample ID:		135938008				Client ID: WPIA001					
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Ruthenium-106	U	-3.49	+/-8.16	12.4	0.800	pCi/g					
Silver-110m	UUI	0.00	+/-1.55	2.91	0.080	pCi/g					
Sodium-22	U	0.277	+/-0.641	1.01	0.080	pCi/g					
Thallium-208	U	1.35	+/-1.29	1.40	0.080	pCi/g					
Thorium-230	U	2.36	+/-3.52	2.83	1.00	pCi/g					
Thorium-234	U	22.2	+/-29.8	36.7	5.00	pCi/g					
Tin-113	U	-0.311	+/-1.45	2.20	0.100	pCi/g					
Uranium-235	U	3.27	+/-5.48	6.88	0.500	pCi/g					
Uranium-238	U	22.2	+/-29.8	36.7	1.00	pCi/g					
Yttrium-88	U	0.211	+/-0.658	1.20	0.100	pCi/g					
Zinc-65	U	-0.929	+/-1.93	3.10	0.300	pCi/g					
Zirconium-95	U	0.425	+/-1.74	2.76	0.200	pCi/g					
<b>Rad Gas Flow Proportional Counting</b>											
<i>GFPC, Gross A/B, solid</i>											
Alpha		3.71	+/-2.87	2.38	4.00	pCi/g		SXE1 05/24/05	1940	423849	2
Beta		480	+/-9.44	2.02	10.0	pCi/g					

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:	Paint Sample #2	Project:	WPIA00105
Sample ID:	135938009	Client ID:	WPIA001
Matrix:	Misc Solid		
Collect Date:	20-APR-05 08:27		
Receive Date:	05-MAY-05		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Actinium-228	U	5.02	+/-5.42	7.72	0.800	pCi/g		AKB 05/19/05	1224	423794	1
Americium-241	U	-5.89	+/-8.21	9.74	0.200	pCi/g					
Antimony-124	U	0.789	+/-1.31	2.29	0.100	pCi/g					
Antimony-125	U	-0.685	+/-2.58	3.94	0.200	pCi/g					
Barium-133	U	-0.776	+/-1.72	2.20	0.100	pCi/g					
Barium-140	U	6.18	+/-16.4	26.6	0.500	pCi/g					
Beryllium-7	U	-6.13	+/-11.4	17.0	0.700	pCi/g					
Bismuth-212	U	3.43	+/-6.88	12.4	0.500	pCi/g					
Bismuth-214	U	0.556	+/-3.00	3.92	0.200	pCi/g					
Cerium-139	U	0.193	+/-0.936	1.41	0.050	pCi/g					
Cerium-141	U	-0.062	+/-2.50	3.69	0.100	pCi/g					
Cerium-144	U	2.23	+/-6.73	8.93	0.500	pCi/g					
Cesium-134	U	0.0677	+/-1.03	1.78	0.100	pCi/g					
Cesium-136	U	0.0964	+/-5.53	9.68	0.300	pCi/g					
Cesium-137	U	1.16	+/-1.59	1.80	0.100	pCi/g					
Chromium-51	U	-5.59	+/-15.7	23.4	0.600	pCi/g					
Cobalt-56	U	-0.185	+/-1.22	2.05	0.100	pCi/g					
Cobalt-57	U	0.300	+/-0.773	1.16	0.050	pCi/g					
Cobalt-58	U	1.38	+/-1.00	1.93	0.100	pCi/g					
Cobalt-60	U	8.62	+/-2.13	1.71	0.100	pCi/g					
Europium-152	U	0.754	+/-3.40	4.68	0.200	pCi/g					
Europium-154	U	0.167	+/-2.50	4.55	0.500	pCi/g					
Europium-155	U	-1.66	+/-3.22	4.56	0.500	pCi/g					
Iridium-192	U	-0.0439	+/-1.16	1.78	0.100	pCi/g					
Iron-59	U	0.820	+/-2.69	4.90	0.300	pCi/g					
Lead-210	U	234	+/-308	400	4.00	pCi/g					
Lead-212	U	1.06	+/-1.89	2.92	0.100	pCi/g					
Lead-214	U	2.74	+/-2.44	3.99	0.100	pCi/g					
Manganese-54	U	0.161	+/-0.939	1.65	0.100	pCi/g					
Mercury-203	U	-0.52	+/-1.55	2.30	0.100	pCi/g					
Neodymium-147	U	-5.18	+/-44.4	68.9	1000	pCi/g					
Neptunium-239	U	-0.324	+/-5.89	8.59	2.00	pCi/g					
Niobium-94	U	-0.248	+/-0.960	1.57	1.00	pCi/g					
Niobium-95	U	0.322	+/-1.59	2.76	0.050	pCi/g					
Potassium-40	U	0.764	+/-16.8	17.5	1.00	pCi/g					
Promethium-144	U	-0.0639	+/-1.15	1.66	0.080	pCi/g					
Promethium-146	U	0.956	+/-1.25	2.10	1.00	pCi/g					
Radium-228	U	5.02	+/-5.42	7.72	0.500	pCi/g					

# GENERAL ENGINEERING LABORATORIES, LLC

2040 Savage Road Charleston SC 29407 – (843) 556-8171 – www.gel.com

## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
Client Sample ID:		Paint Sample #2				Project:		WPIA00105			
Sample ID:		135938009				Client ID:		WPIA001			
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Ruthenium-106	U	-0.617	+/-8.55	14.3	0.800	pCi/g					
Silver-110m	U	-0.0199	+/-1.09	1.60	0.080	pCi/g					
Sodium-22	U	0.0567	+/-0.901	1.64	0.080	pCi/g					
Thallium-208	U	1.49	+/-1.18	2.13	0.080	pCi/g					
Thorium-230	U	0.556	+/-3.00	3.92	1.00	pCi/g					
Thorium-234	U	56.5	+/-60.3	78.9	5.00	pCi/g					
Tin-113	U	-0.88	+/-1.43	2.10	0.100	pCi/g					
Uranium-235	U	4.13	+/-6.28	9.49	0.500	pCi/g					
Uranium-238	U	56.5	+/-60.3	78.9	1.00	pCi/g					
Yttrium-88	U	0.377	+/-0.979	2.08	0.100	pCi/g					
Zinc-65	U	0.0904	+/-2.17	3.80	0.300	pCi/g					
Zirconium-95	U	0.575	+/-2.14	3.75	0.200	pCi/g					
<b>Rad Gas Flow Proportional Counting</b>											
<i>GFPC, Gross A/B, solid</i>											
Alpha	U	0.293	+/-1.31	2.66	4.00	pCi/g		SXE1 05/24/05	1940	423849	2
Beta		11.0	+/-1.81	2.32	10.0	pCi/g					

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

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## Certificate of Analysis

Company : WPI  
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 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:	Paint Sample #1	Project:	WPJA00105
Sample ID:	135938010	Client ID:	WPJA001
Matrix:	Misc Solid		
Collect Date:	20-APR-05 10:00		
Receive Date:	05-MAY-05		
Collector:	Client		

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>											
<i>Gammascpec, Gamma, Solid (Long List)</i>											
Actinium-228	UUI	0.00	+/-2.31	2.47	0.800	pCi/g		AKB 05/19/05	1226	423794	1
Americium-241	U	-0.184	+/-1.15	1.11	0.200	pCi/g					
Antimony-124	U	0.177	+/-0.501	0.835	0.100	pCi/g					
Antimony-125	U	-0.451	+/-0.961	1.48	0.200	pCi/g					
Barium-133	U	0.108	+/-0.554	0.782	0.100	pCi/g					
Barium-140	U	-0.90	+/-6.55	10.4	0.500	pCi/g					
Beryllium-7	U	-0.856	+/-3.78	5.99	0.700	pCi/g					
Bismuth-212	U	3.32	+/-4.02	4.60	0.500	pCi/g					
Bismuth-214	U	1.36	+/-0.895	1.58	0.200	pCi/g					
Cerium-139	U	-0.12	+/-0.358	0.444	0.050	pCi/g					
Cerium-141	U	0.818	+/-0.861	1.29	0.100	pCi/g					
Cerium-144	U	-1.13	+/-2.15	2.96	0.500	pCi/g					
Cesium-134	U	0.113	+/-0.442	0.780	0.100	pCi/g					
Cesium-136	U	-2.03	+/-2.14	3.26	0.300	pCi/g					
Cesium-137	U	0.0559	+/-0.783	0.664	0.100	pCi/g					
Chromium-51	U	1.18	+/-5.70	9.10	0.600	pCi/g					
Cobalt-56	U	-0.0373	+/-0.474	0.813	0.100	pCi/g					
Cobalt-57	U	-0.184	+/-0.267	0.365	0.050	pCi/g					
Cobalt-58	U	0.225	+/-0.429	0.792	0.100	pCi/g					
Cobalt-60	U	0.108	+/-0.384	0.717	0.100	pCi/g					
Europium-152	U	0.461	+/-1.03	1.67	0.200	pCi/g					
Europium-154	U	0.495	+/-1.10	2.08	0.500	pCi/g					
Europium-155	U	0.199	+/-0.978	1.40	0.500	pCi/g					
Iridium-192	U	-0.168	+/-0.437	0.670	0.100	pCi/g					
Iron-59	U	-0.152	+/-1.04	1.79	0.300	pCi/g					
Lead-210	U	13.7	+/-10.6	14.1	4.00	pCi/g					
Lead-212	UUI	0.00	+/-1.38	0.874	0.100	pCi/g					
Lead-214	U	0.251	+/-1.32	1.37	0.100	pCi/g					
Manganese-54	U	-0.138	+/-0.361	0.602	0.100	pCi/g					
Mercury-203	U	0.530	+/-1.21	0.762	0.100	pCi/g					
Neodymium-147	U	-1.4	+/-15.2	24.3	1000	pCi/g					
Neptunium-239	U	-0.951	+/-1.82	2.52	2.00	pCi/g					
Niobium-94	U	0.143	+/-0.394	0.658	1.00	pCi/g					
Niobium-95	U	0.655	+/-1.34	1.13	0.050	pCi/g					
Potassium-40	U	8.18	+/-4.14	9.21	1.00	pCi/g					
Promethium-144	U	0.496	+/-0.418	0.747	0.080	pCi/g					
Promethium-146	U	-0.0315	+/-0.456	0.728	1.00	pCi/g					
Radium-228	UUI	0.00	+/-2.31	2.47	0.500	pCi/g					

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## Certificate of Analysis

Company : WPI  
 Address : 11 S. 12th Street  
 Suite 210  
 Richmond, Virginia 23219  
 Contact: Mr. John Bowen  
 Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID:      Paint Sample #1  
 Sample ID:              135938010  
 Project:                  WPIA00105  
 Client ID:                WPIA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	Analyst	Date	Time	Batch	Method
<b>Rad Gamma Spec Analysis</b>												
<i>Gammascpec, Gamma, Solid (Long List)</i>												
Ruthenium-106	U	0.0973	+/-3.61	5.87	0.800	pCi/g						
Silver-110m	U	0.235	+/-0.436	0.668	0.080	pCi/g						
Sodium-22	U	0.177	+/-0.395	0.748	0.080	pCi/g						
Thallium-208	U	0.069	+/-0.593	0.697	0.080	pCi/g						
Thorium-230	U	1.36	+/-0.895	1.58	1.00	pCi/g						
Thorium-234	U	1.84	+/-13.9	9.25	5.00	pCi/g						
Tin-113	U	0.063	+/-0.491	0.791	0.100	pCi/g						
Uranium-235	U	0.323	+/-2.19	3.14	0.500	pCi/g						
Uranium-238	U	1.84	+/-13.9	9.25	1.00	pCi/g						
Yttrium-88	U	0.159	+/-0.469	0.954	0.100	pCi/g						
Zinc-65	U	-0.093	+/-0.913	1.37	0.300	pCi/g						
Zirconium-95	U	-0.166	+/-0.785	1.33	0.200	pCi/g						
<b>Rad Gas Flow Proportional Counting</b>												
<i>GFPC, Gross A/B, solid</i>												
Alpha	U	0.588	+/-1.37	2.56	4.00	pCi/g		SXE1	05/24/05	1941	423849	2
Beta	U	2.86	+/-1.58	2.90	10.0	pCi/g						

**The following Analytical Methods were performed**

Method	Description	Analyst Comments
1	EML HASL 300, 4.5.2.3	
2	EPA 900.0 Modified	

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Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID: Core bore Sample #5  
Sample ID: 135938011  
Matrix: Misc Solid  
Collect Date: 21-APR-05 11:00  
Receive Date: 05-MAY-05  
Collector: Client

Project: WPIA00105  
Client ID: WPIA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Liquid Scintillation Analysis</b>											
<i>LSC, Tritium Dist, Solid</i>											
Tritium	U	-2.06	+/-2.84	5.12	6.00	pCi/g		ATH1 05/18/05 0700	425676	1	

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 906.0 Modified	

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## Certificate of Analysis

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Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

Client Sample ID: Core bore Sample #6  
Sample ID: 135938012  
Matrix: Misc Solid  
Collect Date: 21-APR-05 11:48  
Receive Date: 05-MAY-05  
Collector: Client

Project: WPIA00105  
Client ID: WPIA001

Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Liquid Scintillation Analysis</b>											
<i>LSC, Tritium Dist, Solid</i>											
Tritium	U	0.683	+/-2.90	4.99	6.00	pCi/g		ATHI 05/18/05 0732	425676	1	

### The following Analytical Methods were performed

Method	Description	Analyst Comments
1	EPA 906.0 Modified	

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## Certificate of Analysis

Company : WPI  
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Contact: Mr. John Bowen  
Project: **Radiochemistry Analytical**

Report Date: May 25, 2005

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Client Sample ID: Core bore Sample #5 Outside      Project: WPIA00105  
Sample ID: 135938013      Client ID: WPIA001  
Matrix: Misc Solid  
Collect Date: 21-APR-05 11:00  
Receive Date: 05-MAY-05  
Collector: Client

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Parameter	Qualifier	Result	Uncertainty	DL	RL	Units	DF	AnalystDate	Time	Batch	Method
<b>Rad Liquid Scintillation Analysis</b>											
<i>LSC, Tritium Dist, Solid</i>											
Tritium	U	0.628	+/-2.92	5.05	6.00	pCi/g		ATH1 05/18/05 0803	425676	1	

**The following Analytical Methods were performed**

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Method	Description	Analyst Comments
1	EPA 906.0 Modified	

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