Survey Unit Release Record				
Design #	EP-Rx 124	**Revision #**	Original	**Page 1 of 3**
Survey Unit #(s)	Rx 124			
Description	1) Embedded Pipe (EP) Survey Unit Rx 124 meets the definition of embedded pipe for Plum Brook Reactor Facility (PBRF). 2) EP Rx 124 is a Class 1, Group 1 survey unit as per the PBRF Final Status Survey Plan (FSSP) and Technical Basis Document (TBD)-06-004. 3) Surveys in EP Rx 124 were performed using a scintillation detector optimized to measure gamma energies representative of Co-60. Sample #EP 3-9 from Survey Request (SR)-13 was referenced for this decision. 4) Survey Instructions for this survey unit are incorporated into and performed in accordance with (IAW) the Babcock Services Incorporated (BSI)/LVS-002, Work Execution Package (WEP) 05-006. Survey instructions described in this document constitute "Special Methods" and the survey design used in the acquisition of survey measurements. 5) Instrument efficiency determinations are developed in accordance with the BSI/LVS-002, WEP 05-006, these determinations are appropriate for the types of radiation involved and the media being surveyed.			

Approval Signatures		**Date:**
FSS/Characterization Engineer	Carl Rudall	12-26-07
Technical Reviewer (FSS/Characterization Engineer)	G Ward	01-14-08
FSS/Characterization Manager	R. Case	3/3/08

1.0 History/Description

1.1 The subject pipe system is a 4” and 6” diameter drain line section that is part of the drain system for the -15’ elevation of the Reactor Building.

1.2 EP Rx 124 is approximately 215 feet in length.

2.0 Survey Design Information

2.1 EP Rx 124 was surveyed IAW Procedure #BSI/LVS-002.

2.2 100% of the 4” and 6” ID pipe was accessible for survey. The accessible pipe was surveyed by static measurement at one foot increments. This yielded for a total of 200 measurements of 4” ID piping and 15 measurements of 6” ID piping for an overall total of 215 survey measurements.

2.3 The surface area for the 4” and 6” ID piping are 973 cm^2 and 1,459 cm^2 respectively, for each foot of piping, corresponding to a total piping surface area of 216,465 cm^2 (21.6 m^2) for the entire accessible length of (215’) of piping.

3.0 Survey Unit Measurement Locations/Data

3.1 Pipe interior radiological survey forms are provided in Attachment 2 of this release record.

4.0 Survey Unit Investigations/Results

4.1 None

5.0 Data Assessment Results

5.1 Data assessment results are provided in the EP/Buried Pipe (BP) Survey Report provided in Attachment 1.

5.2 All measurement results are less than the Derived Concentration Guideline Level (DCGL) for radionuclide specific EP that corresponds to the 1 mrem/yr dose goal established in Table 3-3 of the FSSP.

5.3 When implementing the Unity Rule, provided in Section 3.6.3 of the FSSP, and applying the Nuclide Fraction (NF), provided in TBD-06-004, the survey unit that is constituted by EP Rx 124 passes FSS.

5.4 Background was not subtracted from the survey measurements and the Elevated Measurement Comparison (EMC) was not employed for the accessible portion of this survey unit.

Statistical Summary Table

Statistical Parameter	4", 6" Pipe
Total Number of Survey Measurements	215
Number of Measurements >MDC	208
Number of Measurements Above 50% of DCGL	0
Number of Measurements Above DCGL	0
Mean	0.0200
Median	0.0189
Standard Deviation	0.0123
Maximum	0.1757
Minimum	0.0071

6.0 Documentation of evaluations pertaining to compliance with the unrestricted use limit of 25 mrem/yr and dose contributions from Embedded Pipe and radionuclides contributing 10% in aggregate of the total dose for both structural scenarios and soils.

6.1 A review of the survey results has shown that the dose contribution for the accessible portion of EP Rx 124 to be less than 1 mrem/yr. The dose contribution is estimated to be 0.020 mrem/yr based on the average of the actual gross counts.

7.0 Attachments

Attachment 1 – BSI EP/BP Survey Report
Attachment 2 -Pipe Interior Radiological Survey Form
Attachment 3 – DQA Worksheet
Attachment 4 –Disc containing RR for EP Rx 124 & Spreadsheet

SECTION 7
ATTACHMENT 1
__8__ PAGE(S)

BSI EP/BP SURVEY REPORT

Pipe ID	**EP Rx 124**	**Survey Location**	Floor Drain -15 el.
Survey Date	1-16-06, 2-17-06, 2-23-06, 3-08-06, 2-28-06, 2-27-06	**2350-1 #**	134738, 203488
Survey Time	12:45,11:00,8:30, 8:00,10:20, 8:00, 13:10	**Detector-Sled #**	LVS-1/107, LVS-1/101
Pipe Size	6", 4"	**Detector Efficiency**	0.0002, 0.00052
DCGL (dpm/100cm2)	2.41E+05	Pipe Area Incorporated by Detector Efficiency (in cm2)	973, 1459
Pipe Area Incorporated by Survey Data (m^2)	21.6	**Field BKG** (cpm)	18.4,19.4,18.7, 18.9
Routine Survey	X	**Field MDCR** (cpm)	17.7, 18.1, 17.8, 17.9
QA Survey		**Nominal MDC** (dpm/100cm2)	3393, 1557

Survey Measurement Results	
Total Number of Survey Measurements	215
Number of Measurements >MDC	208
Number of Measurements Above 50% DCGL	0
Number of Measurements Above DCGL	0
Mean	0.0200
Median	0.0189
Standard Deviation	0.0123
Maximum	0.1757
Minimum	0.0071

Survey Technician(s)	ROSENHAGEN

Survey Unit Classification	1
TBD 06-004 Piping Group	1
SR-13 Radionuclide Distribution Sample	EP 3-9
Measured Nuclide	Co-60
Area Factor/EMC Used	No
Pass/Fail FSS	Pass
MREM/YR Contribution	<1

COMMENTS:
ACTIVITY VALUES NOT BACKGROUND CORRECTED

RP Engineer | Date	Ord Rankell 12-26-07

EP Rx 124
4", 6" Pipe
TBD 06-004 Group 1

Measurement #	gcpm	ncpm	Co-60 activity (total dpm)	Co-60 activity (dpm/100cm2)	Cs-137 activity (dpm/100cm2)	Eu-152 activity (dpm/100cm2)	Eu-154 activity (dpm/100cm2)	Nb-94 activity (dpm/100cm2)	Ag-108m activity (dpm/100cm2)	Unity
1	11	11	55,000	3,769	149	3,575	950	110	26	0.022
2	10	10	50,000	3,426	136	3,250	864	100	24	0.020
3	16	16	80,000	5,482	217	5,200	1,382	160	38	0.033
4	7	7	35,000	2,398	95	2,275	605	70	17	0.014
5	13	13	65,000	4,454	177	4,225	1,123	130	31	0.027
6	6	6	30,000	2,056	81	1,950	518	60	14	0.012
7	14	14	70,000	4,797	190	4,550	1,210	140	33	0.029
8	11	11	55,000	3,769	149	3,575	950	110	26	0.022
9	14	14	70,000	4,797	190	4,550	1,210	140	33	0.029
10	13	13	65,000	4,454	177	4,225	1,123	130	31	0.027
11	13	13	65,000	4,454	177	4,225	1,123	130	31	0.027
12	6	6	30,000	2,056	81	1,950	518	60	14	0.012
13	7	7	35,000	2,398	95	2,275	605	70	17	0.014
14	10	10	50,000	3,426	136	3,250	864	100	24	0.020
15	10	10	50,000	3,426	136	3,250	864	100	24	0.020
1	12	12	23,077	2,372	94	2,250	598	69	17	0.014
2	13	13	25,000	2,570	102	2,438	648	75	18	0.015
3	13	13	25,000	2,570	102	2,438	648	75	18	0.015
4	14	14	26,923	2,767	110	2,625	698	81	19	0.017
5	12	12	23,077	2,372	94	2,250	598	69	17	0.014
6	15	15	28,846	2,965	118	2,813	748	87	21	0.018
7	13	13	25,000	2,570	102	2,438	648	75	18	0.015
8	15	15	28,846	2,965	118	2,813	748	87	21	0.018
9	11	11	21,154	2,174	86	2,063	548	63	15	0.013
10	20	20	38,462	3,953	157	3,750	997	115	28	0.024
11	16	16	30,769	3,163	125	3,000	798	92	22	0.019
12	16	16	30,769	3,163	125	3,000	798	92	22	0.019
13	15	15	28,846	2,965	118	2,813	748	87	21	0.018
14	11	11	21,154	2,174	86	2,063	548	63	15	0.013
15	16	16	30,769	3,163	125	3,000	798	92	22	0.019
16	14	14	26,923	2,767	110	2,625	698	81	19	0.017
17	13	13	25,000	2,570	102	2,438	648	75	18	0.015

EP Rx 124
4", 6" Pipe
TBD 06-004 Group 1

Measurement #	gcpm	ncpm	Co-60 activity (total dpm)	Co-60 activity (dpm/100cm2)	Cs-137 activity (dpm/100cm2)	Eu-152 activity (dpm/100cm2)	Eu-154 activity (dpm/100cm2)	Nb-94 activity (dpm/100cm2)	Ag-108m activity (dpm/100cm2)	Unity
18	13	13	25,000	2,570	102	2,438	648	75	18	0.015
19	15	15	28,846	2,965	118	2,813	748	87	21	0.018
20	17	17	32,692	3,360	133	3,188	847	98	23	0.020
21	12	12	23,077	2,372	94	2,250	598	69	17	0.014
22	14	14	26,923	2,767	110	2,625	698	81	19	0.017
23	8	8	15,385	1,581	63	1,500	399	46	11	0.009
24	11	11	21,154	2,174	86	2,063	548	63	15	0.013
25	17	17	32,692	3,360	133	3,188	847	98	23	0.020
26	18	18	34,615	3,558	141	3,375	897	104	25	0.021
27	17	17	32,692	3,360	133	3,188	847	98	23	0.020
28	18	18	34,615	3,558	141	3,375	897	104	25	0.021
29	14	14	26,923	2,767	110	2,625	698	81	19	0.017
30	6	6	11,538	1,186	47	1,125	299	35	8	0.007
31	8	8	15,385	1,581	63	1,500	399	46	11	0.009
32	7	7	13,462	1,384	55	1,313	349	40	10	0.008
33	15	15	28,846	2,965	118	2,813	748	87	21	0.018
34	14	14	26,923	2,767	110	2,625	698	81	19	0.017
35	14	14	26,923	2,767	110	2,625	698	81	19	0.017
36	15	15	28,846	2,965	118	2,813	748	87	21	0.018
37	10	10	19,231	1,977	78	1,875	498	58	14	0.012
38	18	18	34,615	3,558	141	3,375	897	104	25	0.021
39	23	23	44,231	4,546	180	4,313	1,146	133	32	0.027
40	17	17	32,692	3,360	133	3,188	847	98	23	0.020
41	26	26	50,000	5,139	204	4,875	1,296	150	36	0.031
42	30	30	57,692	5,930	235	5,625	1,495	173	41	0.035
43	20	20	38,462	3,953	157	3,750	997	115	28	0.024
44	23	23	44,231	4,546	180	4,313	1,146	133	32	0.027
45	15	15	28,846	2,965	118	2,813	748	87	21	0.018
46	14	14	26,923	2,767	110	2,625	698	81	19	0.017
47	12	12	23,077	2,372	94	2,250	598	69	17	0.014
48	16	16	30,769	3,163	125	3,000	798	92	22	0.019
49	18	18	34,615	3,558	141	3,375	897	104	25	0.021

EP Rx 124
4", 6" Pipe
TBD 06-004 Group 1

Measurement #	gcpm	ncpm	Co-60 activity (total dpm)	Co-60 activity (dpm/100cm2)	Cs-137 activity (dpm/100cm2)	Eu-152 activity (dpm/100cm2)	Eu-154 activity (dpm/100cm2)	Nb-94 activity (dpm/100cm2)	Ag-108m activity (dpm/100cm2)	Unity
50	22	22	42,308	4,349	172	4,125	1,097	127	30	0.026
51	19	19	36,538	3,756	149	3,563	947	110	26	0.022
52	15	15	28,846	2,965	118	2,813	748	87	21	0.018
53	25	25	48,077	4,942	196	4,688	1,246	144	34	0.029
54	9	9	17,308	1,779	71	1,688	449	52	12	0.011
55	22	22	42,308	4,349	172	4,125	1,097	127	30	0.026
56	19	19	36,538	3,756	149	3,563	947	110	26	0.022
57	18	18	34,615	3,558	141	3,375	897	104	25	0.021
58	22	22	42,308	4,349	172	4,125	1,097	127	30	0.026
59	19	19	36,538	3,756	149	3,563	947	110	26	0.022
60	17	17	32,692	3,360	133	3,188	847	98	23	0.020
61	24	24	46,154	4,744	188	4,500	1,196	138	33	0.028
1	16	16	30,769	3,163	125	3,000	798	92	22	0.019
2	15	15	28,846	2,965	118	2,813	748	87	21	0.018
3	19	19	36,538	3,756	149	3,563	947	110	26	0.022
4	20	20	38,462	3,953	157	3,750	997	115	28	0.024
5	20	20	38,462	3,953	157	3,750	997	115	28	0.024
6	13	13	25,000	2,570	102	2,438	648	75	18	0.015
7	17	17	32,692	3,360	133	3,188	847	98	23	0.020
8	16	16	30,769	3,163	125	3,000	798	92	22	0.019
9	14	14	26,923	2,767	110	2,625	698	81	19	0.017
10	19	19	36,538	3,756	149	3,563	947	110	26	0.022
11	16	16	30,769	3,163	125	3,000	798	92	22	0.019
12	10	10	19,231	1,977	78	1,875	498	58	14	0.012
13	23	23	44,231	4,546	180	4,313	1,146	133	32	0.027
14	9	9	17,308	1,779	71	1,688	449	52	12	0.011
15	17	17	32,692	3,360	133	3,188	847	98	23	0.020
16	16	16	30,769	3,163	125	3,000	798	92	22	0.019
17	22	22	42,308	4,349	172	4,125	1,097	127	30	0.026
18	14	14	26,923	2,767	110	2,625	698	81	19	0.017
19	26	26	50,000	5,139	204	4,875	1,296	150	36	0.031
20	10	10	19,231	1,977	78	1,875	498	58	14	0.012

EP Rx 124
4", 6" Pipe
TBD 06-004 Group 1

Measurement #	gcpm	ncpm	Co-60 activity (total dpm)	Co-60 activity (dpm/100cm2)	Cs-137 activity (dpm/100cm2)	Eu-152 activity (dpm/100cm2)	Eu-154 activity (dpm/100cm2)	Nb-94 activity (dpm/100cm2)	Ag-108m activity (dpm/100cm2)	Unity
21	18	18	34,615	3,558	141	3,375	897	104	25	0.021
22	16	16	30,769	3,163	125	3,000	798	92	22	0.019
23	15	15	28,846	2,965	118	2,813	748	87	21	0.018
24	17	17	32,692	3,360	133	3,188	847	98	23	0.020
25	12	12	23,077	2,372	94	2,250	598	69	17	0.014
26	18	18	34,615	3,558	141	3,375	897	104	25	0.021
27	19	19	36,538	3,756	149	3,563	947	110	26	0.022
28	21	21	40,385	4,151	165	3,938	1,047	121	29	0.025
29	22	22	42,308	4,349	172	4,125	1,097	127	30	0.026
30	26	26	50,000	5,139	204	4,875	1,296	150	36	0.031
31	13	13	25,000	2,570	102	2,438	648	75	18	0.015
32	26	26	50,000	5,139	204	4,875	1,296	150	36	0.031
33	18	18	34,615	3,558	141	3,375	897	104	25	0.021
34	17	17	32,692	3,360	133	3,188	847	98	23	0.020
35	18	18	34,615	3,558	141	3,375	897	104	25	0.021
36	13	13	25,000	2,570	102	2,438	648	75	18	0.015
37	15	15	28,846	2,965	118	2,813	748	87	21	0.018
38	23	23	44,231	4,546	180	4,313	1,146	133	32	0.027
39	18	18	34,615	3,558	141	3,375	897	104	25	0.021
40	16	16	30,769	3,163	125	3,000	798	92	22	0.019
41	23	23	44,231	4,546	180	4,313	1,146	133	32	0.027
42	22	22	42,308	4,349	172	4,125	1,097	127	30	0.026
43	23	23	44,231	4,546	180	4,313	1,146	133	32	0.027
44	19	19	36,538	3,756	149	3,563	947	110	26	0.022
45	26	26	50,000	5,139	204	4,875	1,296	150	36	0.031
46	17	17	32,692	3,360	133	3,188	847	98	23	0.020
47	19	19	36,538	3,756	149	3,563	947	110	26	0.022
48	17	17	32,692	3,360	133	3,188	847	98	23	0.020
49	16	16	30,769	3,163	125	3,000	798	92	22	0.019
1	15	15	28,846	2,965	118	2,813	748	87	21	0.018
2	19	19	36,538	3,756	149	3,563	947	110	26	0.022
3	13	13	25,000	2,570	102	2,438	648	75	18	0.015

EP Rx 124
4", 6" Pipe
TBD 06-004 Group 1

Measurement #	gcpm	ncpm	Co-60 activity (total dpm)	Co-60 activity (dpm/100cm2)	Cs-137 activity (dpm/100cm2)	Eu-152 activity (dpm/100cm2)	Eu-154 activity (dpm/100cm2)	Nb-94 activity (dpm/100cm2)	Ag-108m activity (dpm/100cm2)	Unity
4	16	16	30,769	3,163	125	3,000	798	92	22	0.019
5	12	12	23,077	2,372	94	2,250	598	69	17	0.014
6	19	19	36,538	3,756	149	3,563	947	110	26	0.022
7	13	13	25,000	2,570	102	2,438	648	75	18	0.015
8	18	18	34,615	3,558	141	3,375	897	104	25	0.021
9	17	17	32,692	3,360	133	3,188	847	98	23	0.020
10	11	11	21,154	2,174	86	2,063	548	63	15	0.013
11	22	22	42,308	4,349	172	4,125	1,097	127	30	0.026
12	18	18	34,615	3,558	141	3,375	897	104	25	0.021
13	13	13	25,000	2,570	102	2,438	648	75	18	0.015
14	10	10	19,231	1,977	78	1,875	498	58	14	0.012
15	18	18	34,615	3,558	141	3,375	897	104	25	0.021
16	14	14	26,923	2,767	110	2,625	698	81	19	0.017
17	10	10	19,231	1,977	78	1,875	498	58	14	0.012
18	16	16	30,769	3,163	125	3,000	798	92	22	0.019
19	17	17	32,692	3,360	133	3,188	847	98	23	0.020
20	18	18	34,615	3,558	141	3,375	897	104	25	0.021
21	20	20	38,462	3,953	157	3,750	997	115	28	0.024
22	14	14	26,923	2,767	110	2,625	698	81	19	0.017
23	18	18	34,615	3,558	141	3,375	897	104	25	0.021
24	18	18	34,615	3,558	141	3,375	897	104	25	0.021
25	24	24	46,154	4,744	188	4,500	1,196	138	33	0.028
26	20	20	38,462	3,953	157	3,750	997	115	28	0.024
1	22	22	42,308	4,349	172	4,125	1,097	127	30	0.026
2	8	8	15,385	1,581	63	1,500	399	46	11	0.009
3	10	10	19,231	1,977	78	1,875	498	58	14	0.012
4	17	17	32,692	3,360	133	3,188	847	98	23	0.020
5	12	12	23,077	2,372	94	2,250	598	69	17	0.014
6	19	19	36,538	3,756	149	3,563	947	110	26	0.022
7	12	12	23,077	2,372	94	2,250	598	69	17	0.014
8	14	14	26,923	2,767	110	2,625	698	81	19	0.017
9	16	16	30,769	3,163	125	3,000	798	92	22	0.019

EP Rx 124
4", 6" Pipe
TBD 06-004 Group 1

Measurement #	gcpm	ncpm	Co-60 activity (total dpm)	Co-60 activity (dpm/100cm2)	Cs-137 activity (dpm/100cm2)	Eu-152 activity (dpm/100cm2)	Eu-154 activity (dpm/100cm2)	Nb-94 activity (dpm/100cm2)	Ag-108m activity (dpm/100cm2)	Unity
10	12	12	23,077	2,372	94	2,250	598	69	17	0.014
11	8	8	15,385	1,581	63	1,500	399	46	11	0.009
12	11	11	21,154	2,174	86	2,063	548	63	15	0.013
13	10	10	19,231	1,977	78	1,875	498	58	14	0.012
14	12	12	23,077	2,372	94	2,250	598	69	17	0.014
15	14	14	26,923	2,767	110	2,625	698	81	19	0.017
16	149	149	286,538	29,453	1,167	27,939	7,427	859	205	0.176
17	10	10	19,231	1,977	78	1,875	498	58	14	0.012
18	14	14	26,923	2,767	110	2,625	698	81	19	0.017
19	14	14	26,923	2,767	110	2,625	698	81	19	0.017
1	13	13	25,000	2,570	102	2,438	648	75	18	0.015
2	24	24	46,154	4,744	188	4,500	1,196	138	33	0.028
3	25	25	48,077	4,942	196	4,688	1,246	144	34	0.029
4	12	12	23,077	2,372	94	2,250	598	69	17	0.014
5	15	15	28,846	2,965	118	2,813	748	87	21	0.018
6	15	15	28,846	2,965	118	2,813	748	87	21	0.018
7	13	13	25,000	2,570	102	2,438	648	75	18	0.015
8	14	14	26,923	2,767	110	2,625	698	81	19	0.017
9	14	14	26,923	2,767	110	2,625	698	81	19	0.017
10	51	51	98,077	10,081	400	9,563	2,542	294	70	0.060
11	33	33	63,462	6,523	259	6,188	1,645	190	45	0.039
12	14	14	26,923	2,767	110	2,625	698	81	19	0.017
13	19	19	36,538	3,756	149	3,563	947	110	26	0.022
14	18	18	34,615	3,558	141	3,375	897	104	25	0.021
15	28	28	53,846	5,535	219	5,250	1,396	162	39	0.033
16	13	13	25,000	2,570	102	2,438	648	75	18	0.015
17	17	17	32,692	3,360	133	3,188	847	98	23	0.020
18	21	21	40,385	4,151	165	3,938	1,047	121	29	0.025
19	14	14	26,923	2,767	110	2,625	698	81	19	0.017
20	8	8	15,385	1,581	63	1,500	399	46	11	0.009
21	14	14	26,923	2,767	110	2,625	698	81	19	0.017
22	25	25	48,077	4,942	196	4,688	1,246	144	34	0.029

EP Rx 124
4", 6" Pipe
TBD 06-004 Group 1

Measurement #	gcpm	ncpm	Co-60 activity (total dpm)	Co-60 activity (dpm/100cm2)	Cs-137 activity (dpm/100cm2)	Eu-152 activity (dpm/100cm2)	Eu-154 activity (dpm/100cm2)	Nb-94 activity (dpm/100cm2)	Ag-108m activity (dpm/100cm2)	Unity
23	12	12	23,077	2,372	94	2,250	598	69	17	0.014
24	7	7	13,462	1,384	55	1,313	349	40	10	0.008
25	12	12	23,077	2,372	94	2,250	598	69	17	0.014
26	15	15	28,846	2,965	118	2,813	748	87	21	0.018
27	13	13	25,000	2,570	102	2,438	648	75	18	0.015
28	16	16	30,769	3,163	125	3,000	798	92	22	0.019
29	11	11	21,154	2,174	86	2,063	548	63	15	0.013
30	13	13	25,000	2,570	102	2,438	648	75	18	0.015
31	9	9	17,308	1,779	71	1,688	449	52	12	0.011
32	17	17	32,692	3,360	133	3,188	847	98	23	0.020
33	20	20	38,462	3,953	157	3,750	997	115	28	0.024
34	13	13	25,000	2,570	102	2,438	648	75	18	0.015
35	13	13	25,000	2,570	102	2,438	648	75	18	0.015
36	14	14	26,923	2,767	110	2,625	698	81	19	0.017
37	15	15	28,846	2,965	118	2,813	748	87	21	0.018
38	12	12	23,077	2,372	94	2,250	598	69	17	0.014
39	18	18	34,615	3,558	141	3,375	897	104	25	0.021
40	14	14	26,923	2,767	110	2,625	698	81	19	0.017
41	12	12	23,077	2,372	94	2,250	598	69	17	0.014
42	19	19	36,538	3,756	149	3,563	947	110	26	0.022
43	11	11	21,154	2,174	86	2,063	548	63	15	0.013
44	12	12	23,077	2,372	94	2,250	598	69	17	0.014
45	12	12	23,077	2,372	94	2,250	598	69	17	0.014
									MEAN	0.020
									MEDIAN	0.019
									STD DEV	0.012
									MAX	0.176
									MIN	0.007

SECTION 7
ATTACHMENT 2
23 PAGE(S)

Pipe Interior Radiological Survey Form

Date: 1-16-06 Time: 1245

Building: Reactor Elevation -15 Access Point -15 Drain

System: -15 Hot/Cold Drain Pipe Diameter: 6" Area: Pipe ID Rx 124

Type of Survey Investigation Characterization Final Survey # ✓ Other ✓

Sled Size 6" inch

Detector: Bicron/1 MGI Detector ID #: LVS 1 / S/N 107

Cal Date: 20-Dec-05 Cal Due Date: 20-Dec-06

Instrument: 2350-1 Instrument ID #: 134738

Cal Date: 20-Dec-05 Cal Due Date: 20-Dec-06

From the Daily Pipe Survey Detector Control Form for the Selected Detector

Background Value 18.4 cpm

$MDCR_{static}$ 17.7 cpm

Efficiency Factor for Pipe Diameter 0.0002 (taken from detector calibration certificate)

MDC_{static} 3393 dpm/100cm^2

Is the MDC_{static} acceptable? (Yes) No (if no, adjust sample count time and recalculate $MDCR_{static}$)

Comments: Continuation Survey

SSP / Complete

Pipe Interior Radiological Survey

Radiological Survey Commenced: Date: 1/16/06 Time: 1241

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
1	1	1	11	11	n/a	n/a
2	2	1	10	10		
3	3	1	16	16		
4	4	1	7	7		
5	5	1	13	13		
6	6	1	6	6		
7	7	1	14	14		
8	8	1	11	11		
9	9	1	14	14		
10	10	1	13	13		

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Pipe Interior Radiological Survey Form (Continuation Form) ~~[illegible]~~ gw 2.16.06 Rx 124

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
11	11	1	13	13	n/a	n/a
12	12	1	6	6	↓	↓
13	13	1	7	7		

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Package Page 2 of 2

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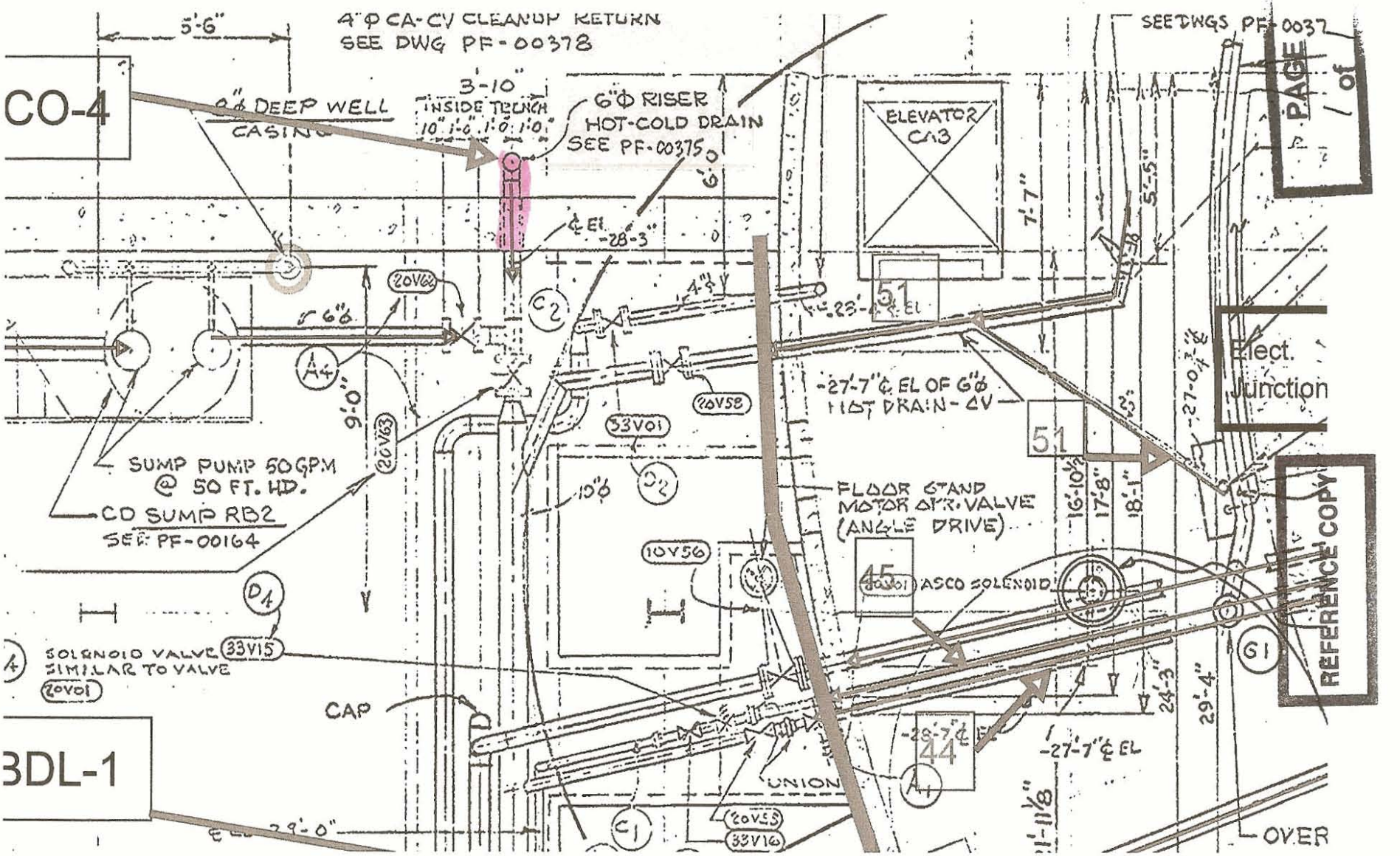
= PIPE SURVEYED

13'
ID RX 124 1-16-06



Pipe Interior Radiological Survey Form

Date: 1-16-06 Time: 1100

Building: Reactor Elevation -25 Access Point -32 Trench

System: -15 Hot/Cold Drain Pipe Diameter: 6" Area: Pipe ID Rx 12.4

Type of Survey Investigation Characterization Final Survey # ✓ Other ✓

Sled Size 6" inch

Detector: Bicron / 1M61 Detector ID #: CVS 1 - SIN 107

Cal Date: 20-DEC-05 Cal Due Date: 20-DEC-06

Instrument: 2350-1 Instrument ID #: 134738

Cal Date: 20-DEC-05 Cal Due Date: 20-DEC-06

From the Daily Pipe Survey Detector Control Form for the Selected Detector

Background Value 18.4 cpm

$MDCR_{static}$ 17.7 cpm

Efficiency Factor for Pipe Diameter 0.0002 (taken from detector calibration certificate)

MDC_{static} 3393 dpm/100cm^2

Is the MDC_{static} acceptable? (Yes) No (if no, adjust sample count time and recalculate $MDCR_{static}$)

Comments: Initial

SSP

Pipe Interior Radiological Survey

Radiological Survey Commenced: Date: 1-16-06 Time: 1100

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
1	1	1	10	10	n/a	n/a
2	2	1	10	10		
3						
4						
5						
6			a			
7		n				
8						
9						
10						

Package Page 1 of 2

Babcock Services Inc.

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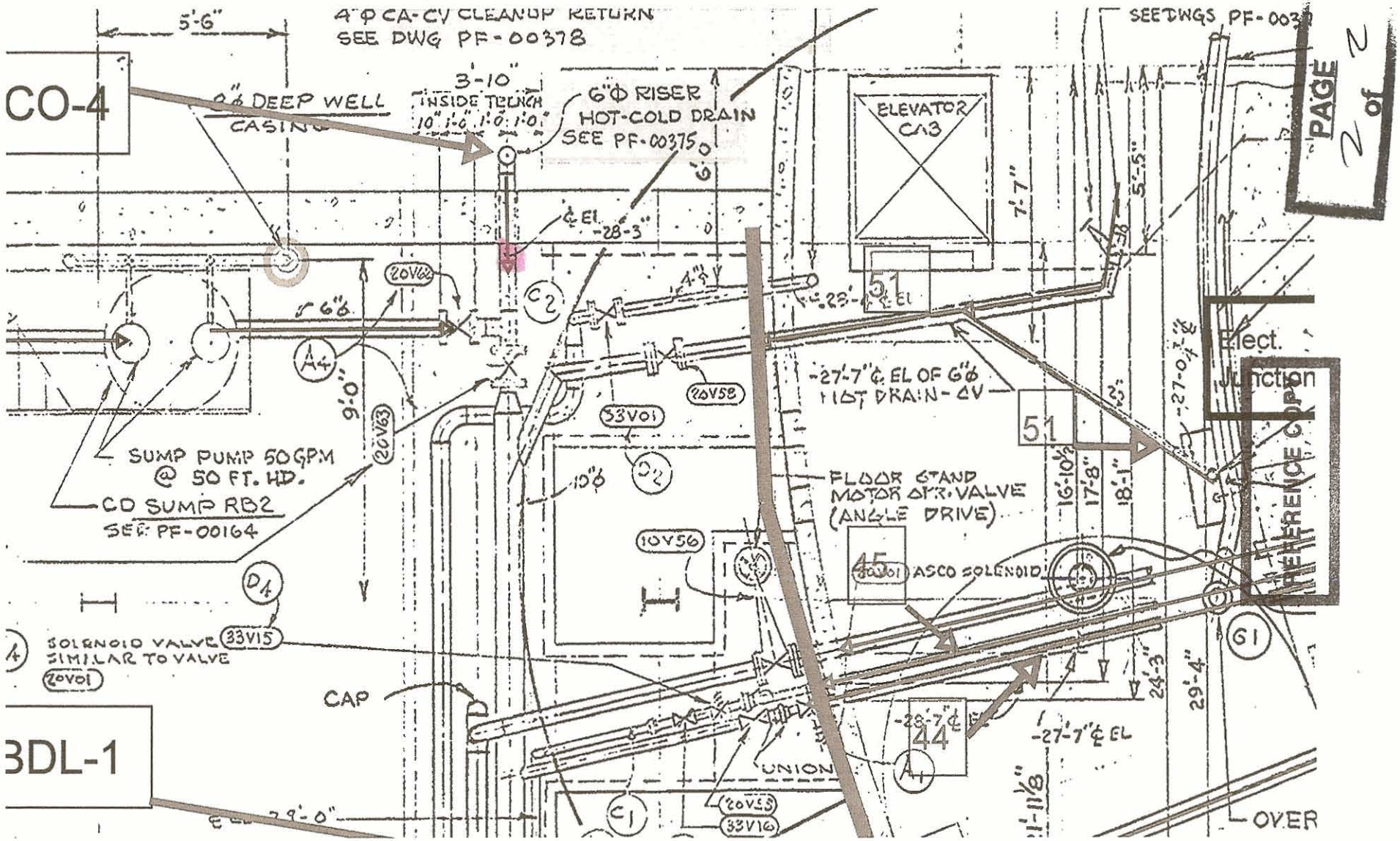
Attachment 3, Page 1

= PIPE SURVEYED

2'

~~ID 1-16-06~~ ID RX 12Y

1-16-06



Pipe Interior Radiological Survey Form

Date: 2·17·06 Time: 0830

Pipe ID#: Rx 124 Pipe Diameter: 4" Access Point Area: -15 Floor Drain

Building: Reactor Elevation: -15 System: 6' Elev Equip Drain

Type of Survey Investigation _____ Characterization _____ Final Survey X Other ✓

Gross _____ Co60 ✓ Cs _____

Detector ID# / Sled ID# Bicron/MG1 / LVS-1 / 101

Detector Cal Date: 20-DEC-05 Detector Cal Due Date: 20-DEC-06

Instrument: 2350-1 Instrument ID #: 203488

Instrument Cal Date: 17-NOV-05 Instrument Cal Due Date: 17-NOV-06

From the Daily Pipe Survey Detector Control Form for the Selected Detector

Background Value 19.4 cpm

$MDCR_{static}$ 18.1 cpm

Efficiency Factor for Pipe Diameter 0.00052 (from detector efficiency determination)

MDC_{static} 1557 dpm/ 100 cm^2

Is the MDC_{static} acceptable? Yes No (if no, adjust sample count time and recalculate $MDCR_{static}$)

Comments: INITIAL ~~NOTE: POSITION AND READINGS 23'~~
~~FROM -15 RBCO3 TO -15 RB~~

Technician Signature [signature]

Pipe Interior Radiological Survey

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm²
1	1	1	12	12	n/a	n/a
2	2		13	13		
3	3		13	13		
4	4		14	14		
5	5		12	12		
6	6		15	15		
7	7		13	13		
8	8		15	15		
9	9		11	11		
10	10		20	20		

Package Page 1 of 4

REFERENCE COPY

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Pipe Interior Radiological Survey Form (Continuation Form)

Date: 2-17-06
Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: -15 ft. Drain
Building: REACTOR Elevation: -15 System:

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
11	11	1	16	16	n/a	n/a
12	12		16	16		
13	13		15	15		
14	14		11	11		
15	15		16	16		
16	16		14	14		
17	17		13	13		
18	18		13	13		
19	19		15	15		
20	20		17	17		
21	21		12	12		
22	22		14	14		
23	23		8	8		
24	24		11	11		
25	25		17	17		
26	26		18	18		
27	27		17	17		
28	28		18	18		
29	29		14	14		
30	30		6	6		
31	31		8	8		
32	32		7	7		
33	33		15	15		
34	34		14	14		
35	35		14	14		
36	36		15	15		
37	37		10	10		
38	38		18	18		
39	39		23	23		
40	40		17	17		
41	41		26	26		
42	42		30	30		
43	43		20	20		
44	44		23	23		
45	45		15	15		

Package Page 2 of 4

REFERENCE COPY

Pipe Interior Radiological Survey Form (Continuation Form)

Date: 2.17.06
Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: -15 FL. DRAIN
Building: REACTOR Elevation: -15 System:

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
46	46	1	14	14	n/a	n/a
47	47		12	12		
48	48		16	16		
49	49		18	18		
50	50		22	22		
51	51		19	19		
52	52		15	15		
53	53		25	25		
54	54		9	9		
55	55		22	22		
56	56		19	19		
57	57		18	18		
58	58		22	22		
59	59		19	19		
60	60		17	17		
61	61	1	24	24		
62m						
63m						
64m						
65m						
66m						
n/a						

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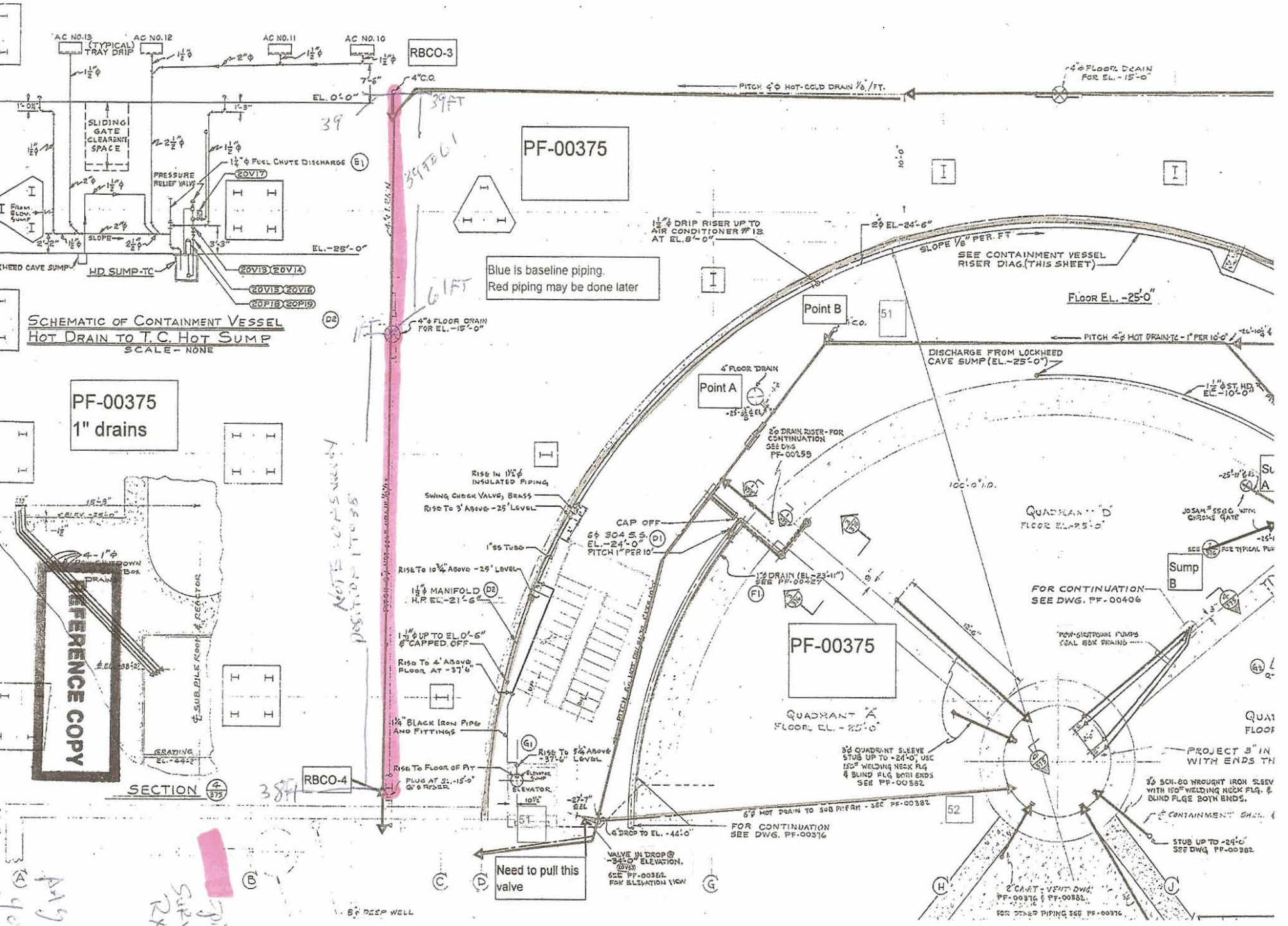
Package Page 3 of 4

REFERENCE COPY



RBCO-3
PF-00375
Blue is baseline piping.
Red piping may be done later
PF-00375
1" drains
PF-00375
Point A
Point B
Sump B
RBCO-4
Need to pull this valve
SCHEMATIC OF CONTAINMENT VESSEL
HOT DRAIN TO T.C. HOT SUMP
SCALE - NONE
SECTION
REFERENCE COPY

Pipe Interior Radiological Survey Form

Date: 2-23-06 Time: 0800

Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: -15 FLOOR DRAIN

Building: RX Elevation: -15 System: FLOOR DRAIN

Type of Survey Investigation ____ Characterization ____ Final Survey ✓ Other ✓

Gross ____ Co60 ✓ Cs ____

Detector ID# / Sled ID# BICRON IMG1 / LVS-1 / 101

Detector Cal Date: 20-Dec-05 Detector Cal Due Date: 20-Dec-06

Instrument: 2350-1 Instrument ID #: 203488

Instrument Cal Date: 17-Nov-05 Instrument Cal Due Date: 17-Nov-06

From the Daily Pipe Survey Detector Control Form for the Selected Detector

Background Value 19.4 cpm

$MDCR_{static}$ 18.1 cpm

Efficiency Factor for Pipe Diameter 0.00052 (from detector efficiency determination)

MDC_{static} 1567 dpm/ 100 cm^2

Is the MDC_{static} acceptable? (Yes) No (if no, adjust sample count time and recalculate $MDCR_{static}$)

Comments: CONTINUATION SURVEY

Technician Signature [signature]

Pipe Interior Radiological Survey

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm²
1	1	1	16	16	n/a	n/a
2	2	↓	15	15	↓	↓
3	3	↓	19	19	↓	↓
4	4	↓	20	20	↓	↓
5	5	↓	20	20	↓	↓
6	6	↓	13	13	↓	↓
7	7	↓	17	17	↓	↓
8	8	↓	16	16	↓	↓
9	9	↓	14	14	↓	↓
10	10	↓	19	19	↓	↓

REFERENCE COPY

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Pipe Interior Radiological Survey Form (Continuation Form)

Date: 2-23-06
Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: -15 Floor Drain
Building: RX Elevation: -15 System:

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
11	11	1	16	16	n/a	n/a
12	12		10	10		
13	13		23	23		
14	14		9	9		
15	15		17	17		
16	16		16	16		
17	17		22	22		
18	18		14	14		
19	19		26	26		
20	20		10	10		
21	21		18	18		
22	22		16	16		
23	23		15	15		
24	24		17	17		
25	25		12	12		
26	26		18	18		
27	27		19	19		
28	28		21	21		
29	29		22	22		
30	30		26	26		
31	31		13	13		
32	32		26	26		
33	33		18	18		
34	34		17	17		
35	35		18	18		
36	36		13	13		
37	37		15	15		
38	38		23	23		
39	39		18	18		
40	40		16	16		
41	41		23	23		
42	42		22	22		
43	43		23	23		
44	44		19	19		
45	45	1	26	26		

Package Page 2 of 4

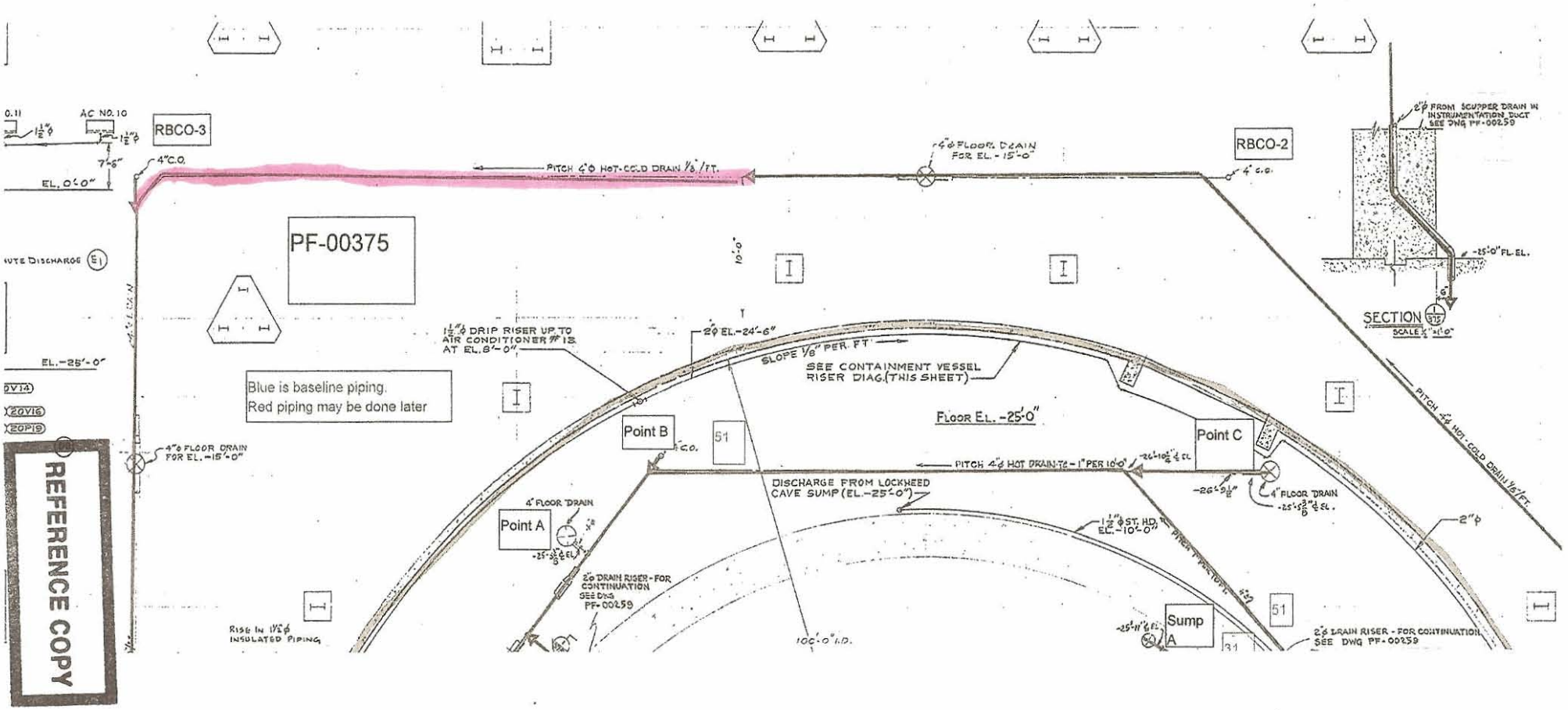
REFERENCE COPY

Pipe Interior Radiological Survey Form (Continuation Form)

Date: 2-23-06
Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: -15 FLOOR DRAIN
Building: RX Elevation: -15 System: Drains

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
46	46	1	17	17	n/a	n/a
47	47	↓	19	19	↓	↓
48	48	↓	17	17	↓	↓
49	49	1	16	16	↓	↓
~~50~~	~~50~~				↓	↓
					↓	↓
					↓	↓

= pipe surveyed
Rx 124



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Pages 4 of 4

Pipe Interior Radiological Survey Form

Date: 3-8-06 Time: 1020

Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: 30°-FLOOR

Building: RX Elevation: -15 System: FLOOR DRAIN

Type of Survey Investigation _____ Characterization _____ Final Survey ✓ Other ✓

Gross _____ Co60 ✓ Cs _____

Detector ID# / Sled ID# LVS-1 / 101

Detector Cal Date: 12-20-05 Detector Cal Due Date: 12-20-06

Instrument: 2350-1 Instrument ID #: 203488

Instrument Cal Date: 11-17-05 Instrument Cal Due Date: 11-17-06

From the Daily Pipe Survey Detector Control Form for the Selected Detector

Background Value 18.7 cpm

$MDCR_{static}$ 17.8 cpm

Efficiency Factor for Pipe Diameter 0.00052 (from detector efficiency determination)

MDC_{static} 1557 dpm/ 100 cm^2

Is the MDC_{static} acceptable? Yes No (if no, adjust sample count time and recalculate $MDCR_{static}$)

Comments: CONTINUATION SURVEY

Complete

Technician Signature C. DEBRAUX/[illegible]

Pipe Interior Radiological Survey

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm²
1	1	1	15	15	n/a	n/a
2	2	1	19	19		
3	3	1	13	13		
4	4	1	16	16		
5	5	1	12	12		
6	6	1	19	19		
7	7	1	13	13		
8	8	1	18	18		
9	9	1	17	17		
10	10	1	11	11		

Package Page 1 of 3

REFERENCE COPY

Babcock SERVICES INC.

Pipe Interior Radiological Survey Form (Continuation Form)

Date: 3-8-06
Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: 80° FLOOR
Building: RX Elevation: -15 System: FLOOR DRAIN

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
11	11	1	22	22	n/a	n/a
12	12	1	18	18		
13	13	1	13	13		
14	14	1	10	10		
15	15	1	18	18		
16	16	1	14	14		
17	17	1	10	10		
18	18	1	16	16		
19	19	1	17	17		
20	20	1	18	18		
21	21	1	20	20		
22	22	1	14	14		
23	23	1	18	18		
24	24	1	18	18		
25	25	1	24	24		
26	26	1	20	20		

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Package Page 2 of 3

REFERENCE COPY

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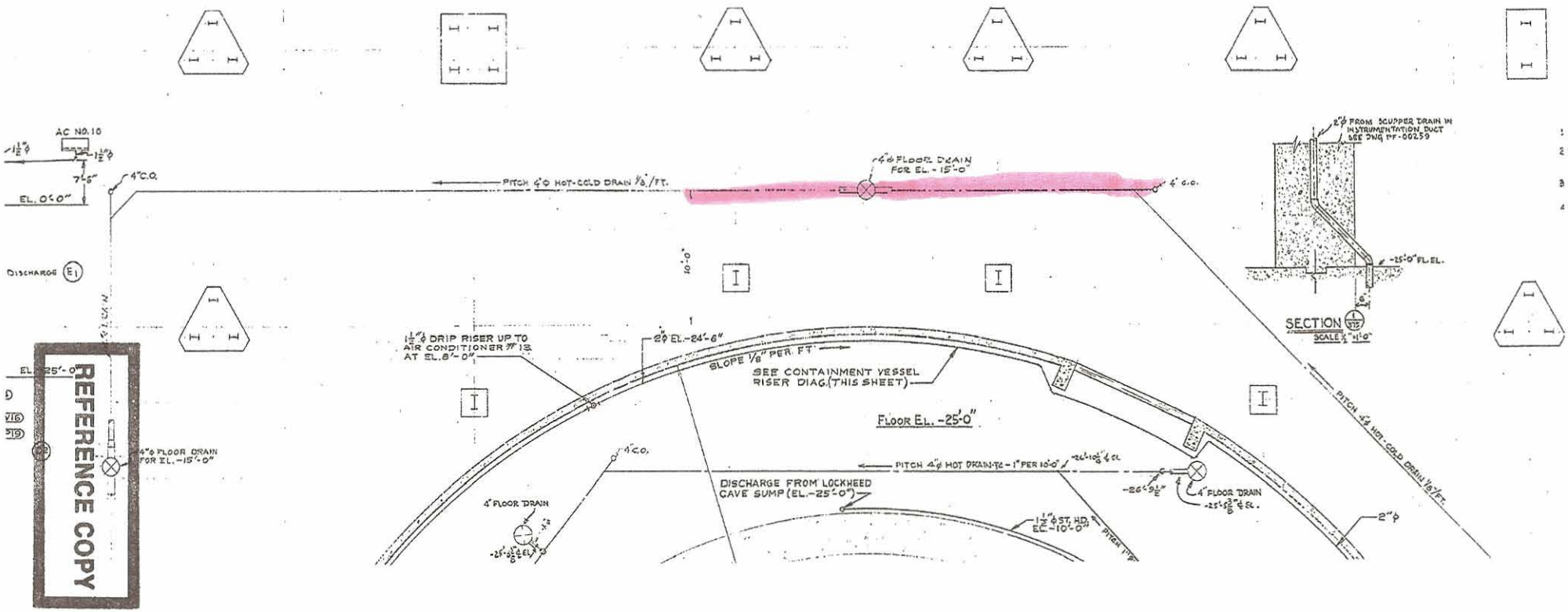

= pipe surveyed

RX 124

Pages 3 of 3

Pipe Interior Radiological Survey Form

Date: 9-28-06 Time: 0800

Pipe ID#: Rx 124 Pipe Diameter: 4" Access Point Area: -15 floor Drain

Building: RX Elevation: -15 System: floor Drain

Type of Survey Investigation _____ Characterization _____ Final Survey ✓ Other ✓

Gross _____ Co60 ✓ Cs _____

Detector ID# / Sled ID# Bicron / M61 / LVS-1 / 101

Detector Cal Date: 20-Dec-05 Detector Cal Due Date: 20-Dec-06

Instrument: 2350-1 Instrument ID #: 203488

Instrument Cal Date: 17-Nov-05 Instrument Cal Due Date: 17-Nov-06

From the Daily Pipe Survey Detector Control Form for the Selected Detector

Background Value 18.7 cpm

$MDCR_{static}$ 17.8 cpm

Efficiency Factor for Pipe Diameter 0.00052 (from detector efficiency determination)

MDC_{static} 1557 dpm/ 100 cm^2

Is the MDC_{static} acceptable? (Yes) No (if no, adjust sample count time and recalculate $MDCR_{static}$)

Comments: CONTINUATION SURVEY
Note: position # 16 & 17 see page 4
position # 18 & 19 see page 5

Technician Signature [signature]

Pipe Interior Radiological Survey

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm²
1	46	1	22	22	n/a	n/a
2	47	↓	8	8	↓	↓
3	48	↓	10	10	↓	↓
4	49	↓	17	17	↓	↓
5	50	↓	12	12	↓	↓
6	51	↓	19	19	↓	↓
7	52	↓	12	12	↓	↓
8	53	↓	14	14	↓	↓
9	54	↓	16	16	↓	↓
10	55	↓	12	12	↓	↓

REFERENCE COPY

Babcock Services Inc.

Pipe Interior Radiological Survey Form (Continuation Form)

Date: 2-28-06
Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: -15 floor DRAIN
Building: RX Elevation: -15 System: floor DRAIN

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
11	56	1	8	8	n/a	n/a
12	57		11	11		
13	58		10	10		
14	59		12	12		
15	60	1	14	14		
n/a						
16	1	1	149	149.		
n/a						
17	1	1	10	10.		
n/a						
18	1	1	14	14		
19	2	1	14	14		
n/a						

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Package Page 2 of 4 ~~5~~

REFERENCE COPY

Babcock SERVICES INC.

position # 18 & 19

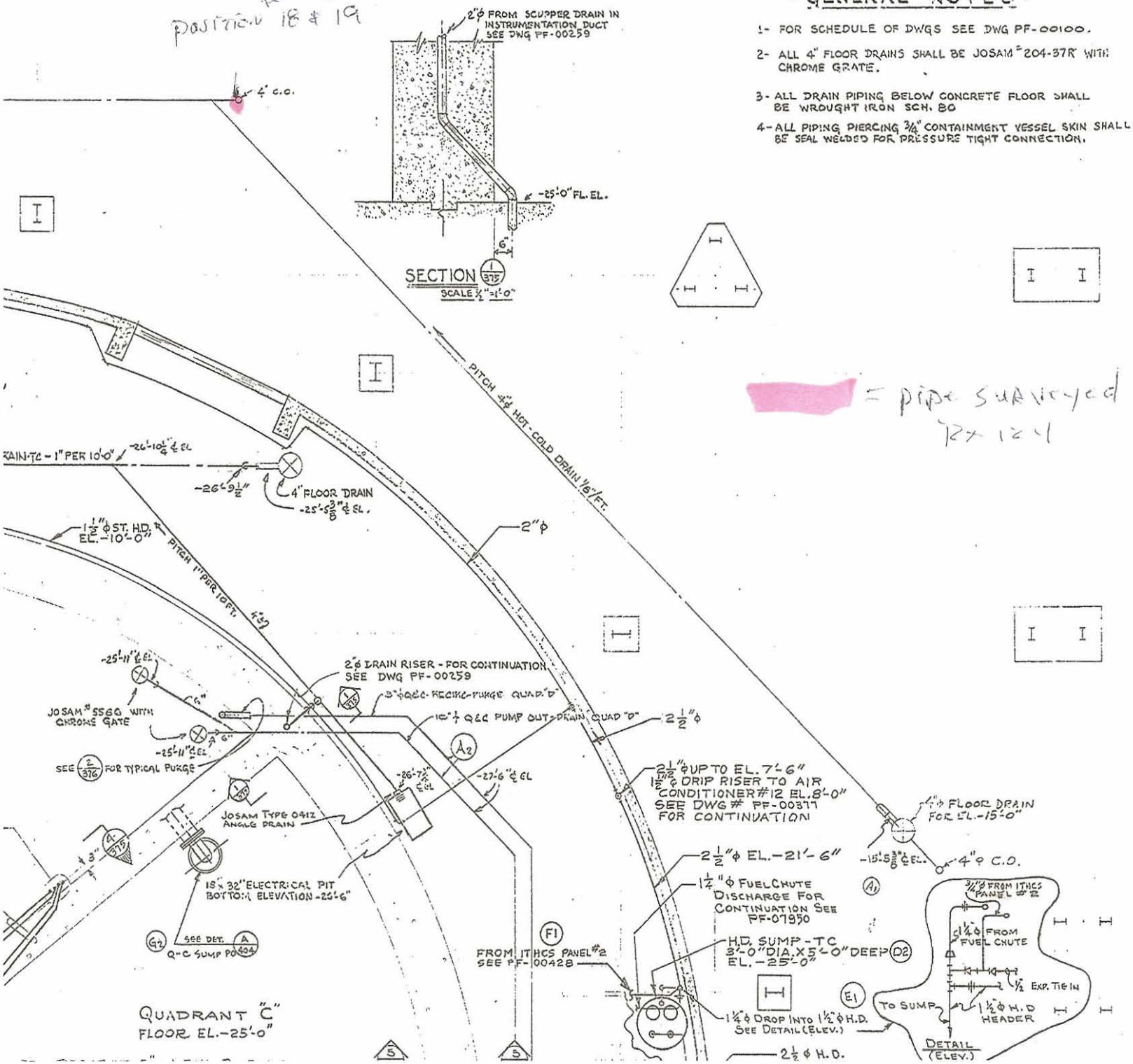
GENERAL NOTES

1- FOR SCHEDULE OF DWGS SEE DWG PF-00100.

2- ALL 4" FLOOR DRAINS SHALL BE JOSAM #204-37R WITH CHROME GRATE.

3- ALL DRAIN PIPING BELOW CONCRETE FLOOR SHALL BE WROUGHT IRON SCH. 80

4- ALL PIPING PIERCING 3/4" CONTAINMENT VESSEL SKIN SHALL BE SEAL WELDED FOR PRESSURE TIGHT CONNECTION.



= pipe surveyed 12x 12 4

PAGE 3 of 4

REFERENCE COPY

page 5 of 5

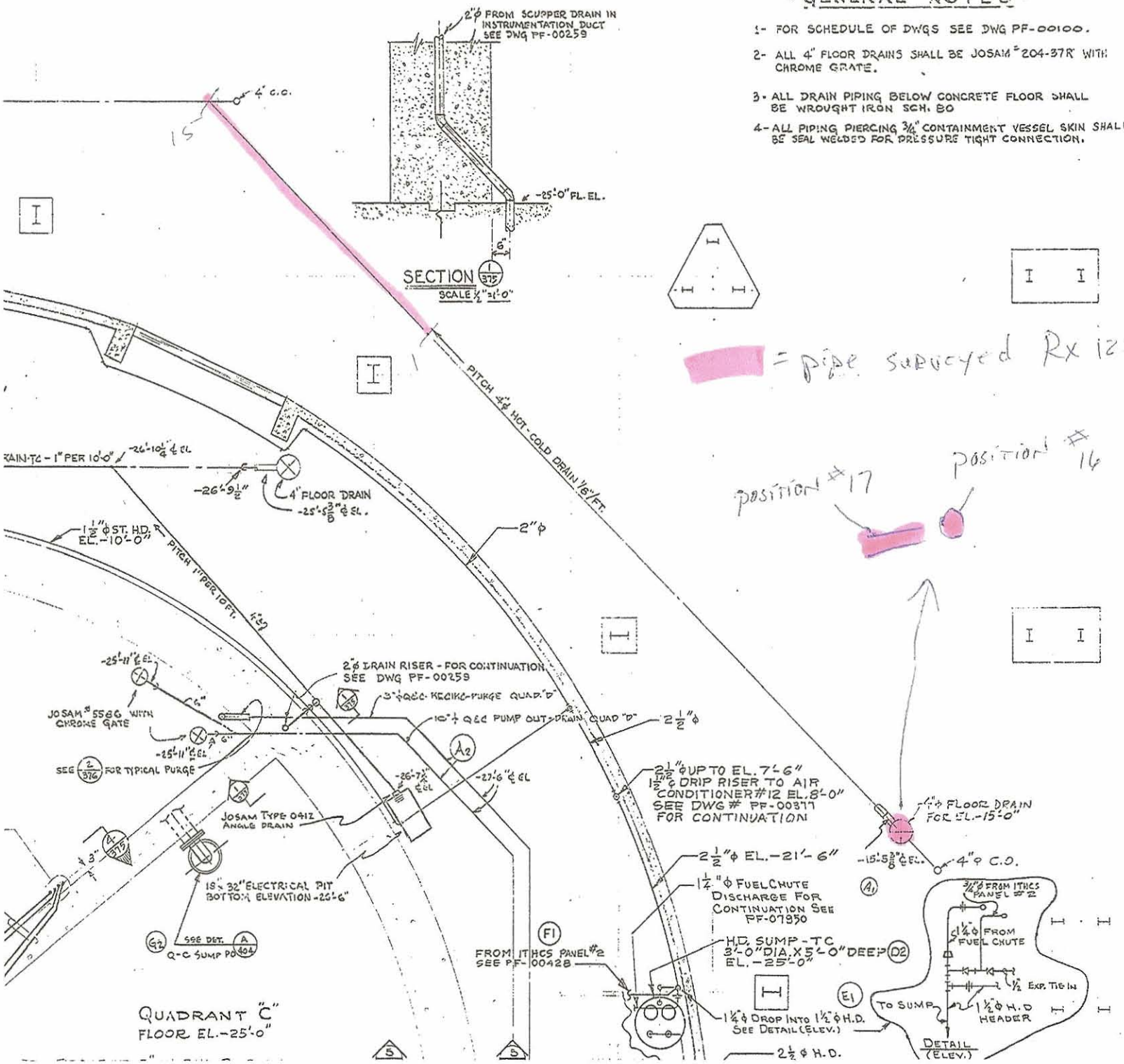
GENERAL NOTES

1- FOR SCHEDULE OF DWGS SEE DWG PF-00100.

2- ALL 4" FLOOR DRAINS SHALL BE JOSAM #204-37R WITH CHROME GRATE.

3- ALL DRAIN PIPING BELOW CONCRETE FLOOR SHALL BE WROUGHT IRON SCH. 80

4- ALL PIPING PIERCING 3/4" CONTAINMENT VESSEL SKIN SHALL BE SEAL WELDED FOR PRESSURE TIGHT CONNECTION.



REFERENCE COPY

PAGE 4 of 42

Pipe Interior Radiological Survey Form

Date: 2-27-06 Time: 1310

Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: -15 Floor Drain

Building: RX Elevation: -15 System: Floor Drain

Type of Survey Investigation _____ Characterization _____ Final Survey ✓ Other ✓

Gross _____ Co60 ✓ Cs _____

Detector ID# / Sled ID# Bicron/MG1/LVS-1 / 101

Detector Cal Date: 20-Dec-05 Detector Cal Due Date: 20-Dec-06

Instrument: 2350-1 Instrument ID #: 203488

Instrument Cal Date: 17-Nov-05 Instrument Cal Due Date: 17-Nov-06

From the Daily Pipe Survey Detector Control Form for the Selected Detector

Background Value 18.9 cpm

$MDCR_{static}$ 17.9 cpm

Efficiency Factor for Pipe Diameter 0.00052 (from detector efficiency determination)

MDC_{static} 1557 dpm/ 100 cm^2

Is the MDC_{static} acceptable? Yes No (if no, adjust sample count time and recalculate $MDCR_{static}$)

Comments: Continuation Survey

Technician Signature [signature]

Pipe Interior Radiological Survey

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm²
1	1	1	13	13	n/a	n/a
2	2		24	24		
3	3		25	25		
4	4		12	12		
5	5		15	15		
6	6		15	15		
7	7		13	13		
8	8		14	14		
9	9		14	14		
10	10		51	51		

Package Page 1 of 3

REFERENCE COPY

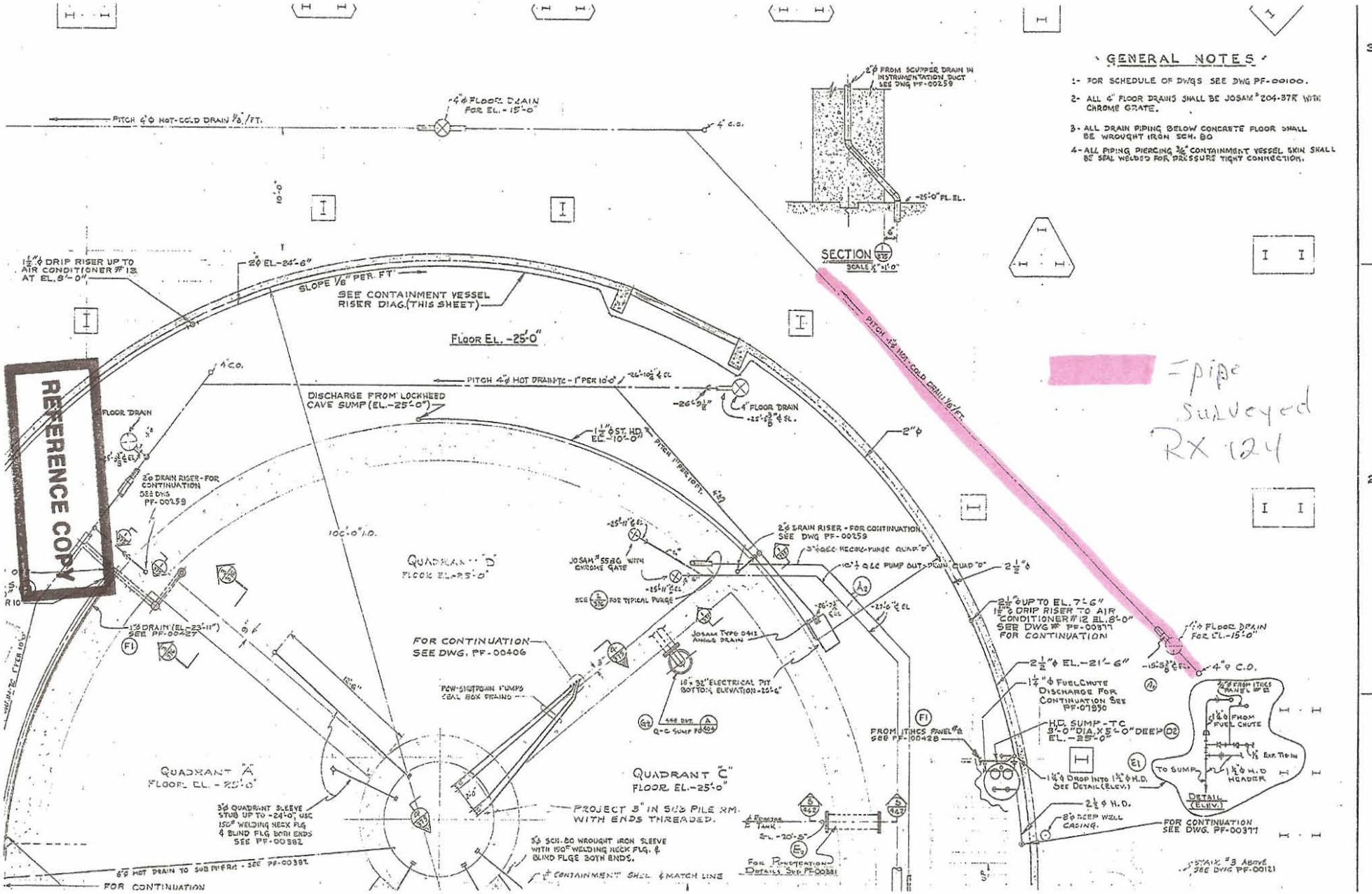
Pipe Interior Radiological Survey Form (Continuation Form)

Date: 2-27-06
Pipe ID#: RX 124 Pipe Diameter: 4" Access Point Area: -15 floor Drain
Building: RX Elevation: -15 System: Drains

Position #	Feet into Pipe from Opening	Count Time (min)	Gross Counts	Gross cpm	Net cpm	dpm/100cm^2
11	11	1	33	33	N/a	N/a
12	12		14	14		
13	13		19	19		
14	14		18	18		
15	15		28	28		
16	16		13	13		
17	17		17	17		
18	18		21	21		
19	19		14	14		
20	20		8	8		
21	21		14	14		
22	22		25	25		
23	23		12	12		
24	24		7	7		
25	25		12	12		
26	26		15	15		
27	27		13	13		
28	28		16	16		
29	29		11	11		
30	30		13	13		
31	31		9	9		
32	32		17	17		
33	33		20	20		
34	34		13	13		
35	35		13	13		
36	36		14	14		
37	37		15	15		
38	38		12	12		
39	39		18	18		
40	40		14	14		
41	41		12	12		
42	42		19	19		
43	43		11	11		
44	44		12	12		
45	45		12	12		

Package Page 2 of 3

REFERENCE COPY


GENERAL NOTES
1- FOR SCHEDULE OF DWGS SEE DWG PF-00100.
2- ALL 4" FLOOR DRAINS SHALL BE JOSAM # 204-37R WITH CHROME GRATE.
3- ALL DRAIN PIPING BELOW CONCRETE FLOOR SHALL BE WROUGHT IRON SCH. 80
4- ALL PIPING PIERCING 3/4" CONTAINMENT VESSEL SKIN SHALL BE SEAL WELDED FOR PRESSURE TIGHT CONNECTION.
SECTION
SCALE 1/2" = 1'-0"
PITCH 4"Ø HOT-COLD DRAIN 1/8"/FT.
4"Ø FLOOR DRAIN FOR EL. -15'-0"
4" C.O.
2"Ø FROM SCUPPER DRAIN IN INSTRUMENTATION DUCT SEE DWG PF-00259
-25'-0" FL. EL.
1 1/2"Ø DRIP RISER UP TO AIR CONDITIONER # 13 AT EL. 8'-0"
2"Ø EL. -24'-6"
SLOPE 1/8" PER FT
SEE CONTAINMENT VESSEL RISER DIAG. (THIS SHEET)
FLOOR EL. -25'-0"
PITCH 4"Ø HOT DRAIN TO - 1" PER 10'-0"
DISCHARGE FROM LOCKHEED CAVE SUMP (EL. -25'-0")
4" FLOOR DRAIN
1 1/2"Ø ST. HD. EL. -10'-0"
PITCH 1" PER 10 FT.
2"Ø
FLOOR DRAIN
2"Ø DRAIN RISER - FOR CONTINUATION SEE DWG PF-00259
100'-0" I.D.
QUADRANT "D" FLOOR EL. -25'-0"
JOSAM # 55BG WITH CHROME GATE
SEE 2/376 FOR TYPICAL PURGE
2"Ø DRAIN RISER - FOR CONTINUATION SEE DWG PF-00259
3"Ø Q&C RECIRC-PURGE QUAD "D"
10"Ø Q&C PUMP OUT-DRAIN QUAD "D"
2 1/2"Ø
2 1/2"Ø UP TO EL. 7'-6"
1 1/2"Ø DRIP RISER TO AIR CONDITIONER # 12 EL. 8'-0" SEE DWG # PF-00377 FOR CONTINUATION
1"Ø DRAIN (EL. -23'-11") SEE PF-00427
FOR CONTINUATION SEE DWG. PF-00406
JOSAM TYPE 0412 ANGLE DRAIN
18" x 32" ELECTRICAL PIT BOTTOM ELEVATION -25'-6"
PCW-SHUTDOWN PUMPS SEAL BOX DRAINS
SEE DWG. A 404
Q-C SUMP PD
QUADRANT "A" FLOOR EL. -25'-0"
QUADRANT "C" FLOOR EL. -25'-0"
3"Ø QUADRANT SLEEVE STUB UP TO -24'-0", USE 150# WELDING NECK FLG & BLIND FLG BOTH ENDS SEE PF-00382
PROJECT 3" IN SUB PILE RM. WITH ENDS THREADED.
3"Ø SCH. 80 WROUGHT IRON SLEEVE WITH 150# WELDING NECK FLG. & BLIND FLGE BOTH ENDS.
℄ CONTAINMENT SHELL & MATCH LINE
6"Ø HOT DRAIN TO SUB PIPE RM. - SEE PF-00382
FOR CONTINUATION
FROM ITHCS PANEL # 2 SEE PF-00428
2 1/2"Ø EL. -21'-6"
1 1/4"Ø FUEL CHUTE DISCHARGE FOR CONTINUATION SEE PF-07930
H.D. SUMP - TC 3'-0" DIA. X 5'-0" DEEP EL. -25'-0"
1 1/4"Ø DROP INTO 1 1/2"Ø H.D. SEE DETAIL (ELEV.)
2 1/2"Ø H.D.
8"Ø DEEP WELL CASING.
FOR CONTINUATION SEE DWG. PF-00377
STAIR # 3 ABOVE SEE DWG PF-00121
1"Ø FLOOR DRAIN FOR EL. -15'-0"
4"Ø C.O.
3/4"Ø FROM ITHCS PANEL # 2
1 1/4"Ø FROM FUEL CHUTE
1/2" EXP. TIE-IN
TO SUMP
1 1/2"Ø H.D. HEADER
DETAIL (ELEV.)
FOR PENETRATION DETAILS SEE PF-00381
REFERENCE COPY
Pipe Surveyed RX 124

Pg 5 of 3

SECTION 7
ATTACHMENT 3
___1___ PAGE(S)

DQA Check Sheet				
Design #	EP Rx 124	Revision #	Original	
Survey Unit #	EP Rx 124			

Preliminary Data Review`			
Answers to the following questions should be fully documented in the Survey Unit Release Record	Yes	No	N/A
1. Have surveys been performed in accordance with survey instructions in the Survey Design?	X		
2. Is the instrumentation MDC for structure static measurements below the $DCGL_W$ for Class 1 and 2 survey units, or below 0.5 $DCGL_W$ for Class 3 survey units?			X
3. Is the instrumentation MDC for embedded/buried piping static measurements below the $DCGL_W$?	X		
4. Was the instrumentation MDC for structure scan measurements, soil scan measurements, and embedded/buried piping scan measurements below the $DCGL_W$, or, if not, was the need for additional static measurements or soil samples addressed in the survey design?			X
5. Was the instrumentation MDC for volumetric measurements and smear analysis < 10% $DCGL_W$?			X
6. Were the MDCs and assumptions used to develop them appropriate for the instruments and techniques used to perform the survey?	X		
7. Were the survey methods used to collect data proper for the types of radiation involved and for the media being surveyed?	X		
8. Were "Special Methods" for data collection properly applied for the survey unit under review?	X		
9. Is the data set comprised of qualified measurement results collected in accordance with the survey design, which accurately reflects the radiological status of the facility?	x		
Graphical Data Review			
1. Has a posting plot been created?			X
2. Has a histogram (or other frequency plot) been created?			X
3. Have other graphical data tools been created to assist in analyzing the data?			X
Data Analysis			
1. Are all sample measurements below the $DCGL_W$ (Class 1 & 2), or 0.5 $DCGL_W$ (Class 3)?	X		
2. Is the mean of the sample data < $DCGL_W$?	X		
3. If elevated areas have been identified by scans and/or sampling, is the average activity in each elevated area < $DCGL_{EMC}$ (Class 1), < $DCGL_W$ (Class 2), or <0.5 $DCGL_W$ (Class 3)?			X
4. Is the result of the Elevated Measurements Test < 1.0?			X
5. Is the result of the statistical test (***S+*** for Sign Test or W_r for WRS Test) $\geq$ the critical value?			X

Comments:

FSS/Characterization Engineer (print/sign)	Dale Randall / Dale Randall	Date	12-26-07
FSS/ Characterization Manager (print/sign)	R. Case	Date	3/3/08

Form CS-09/2 Rev 0

SECTION 7
ATTACHMENT 4
1 DISC