MAINE YANKEE
FINAL STATUS SURVEY RELEASE RECORD
FC-2000 CONTAINMENT BUILDING FOUNDATION DRAIN SYSTEM
SURVEY UNIT 1

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SURVEY UNIT 1

A. SURVEY UNIT DESCRIPTION

Survey Unit FC-2000-01 consisted of the Containment Building Foundation Drain Pumpwell and associated piping, located adjacent to the west wall of the Containment Building at site coordinates 407,597N and 623,721E using the Maine State Coordinates (West Zone) NAD 1927, as shown on Map FC 2000-SITE, Attachment 1. The main portion of the system was composed of a 6-ft. diameter concrete cylinder that extended from just above ground level (approximately 24 ft. El.) to the –52 ft. 3 in. elevation.

The sump system drained groundwater from the perimeter of the Containment Building to lower hydrostatic pressure exerted on the building's foundation. Auxiliary piping associated with the pumpwell included four 2-inch horizontal plastic transfer pipes that ran radially from underneath the ICI pit to the drain sump pumpwell but stopped short of penetrating the sump wall at the – 46 ft. 3 in. El. (behind the lower perforated wall section). A 6-inch horizontal open joint clay pipe at the -18 ft. 6 in. El. ran 90 degrees around the southwest perimeter of the containment foundation from the Spray Building to the pumpwell.

Horizontal transfer pipes drained to the common sump pumpwell causing interior surfaces of the sump to remain continuously damp due to constant groundwater drainage. All commodities (pumps and piping) were removed prior to final surveys within the area. Portions of the drain system piping were not accessible due to the influx of groundwater and the precipitation of calcium on interior surfaces. Interior concrete sump surfaces from the 17 ft. El. to the –52 ft. 3 in. El., as well as accessible clay piping within the 6-inch drain line, comprised the 124.77 m^2 survey unit.[1] The Containment Building foundation sump and associated piping were located inside the Restricted Area.

[1] Concrete surfaces above the 17-ft. El. were demolished to an elevation three feet below grade following satisfactory completion of final status surveys per Section 3 of the LTP.

B. SURVEY UNIT DESIGN INFORMATION

The Containment Building foundation drain system was originally designated as a Class 1 survey unit due to its potential for residual contamination based on the system location within the Restricted Area and known instances of contaminated liquid spills around the Containment Building. In a letter to the NRC dated 5/13/04[2], Maine Yankee elected to reduce the area classification for the containment foundation drain system to Class 2 based on the following information:

1. Historical findings of the Radiological Environmental Monitoring Program (REMP) included monthly water samples collected from the Containment Foundation Drain Sump from 1992 to 2002. Analyses of the water samples collected at the outlet of the sump piping identified tritium as the only consistently detected plant related radionuclide. Reported tritium levels were below the groundwater tritium DCGL of 6,812 pCi/L.

2. A summary of monthly radioactivity measurements of water samples taken from the sump from 2002 through 2004 identified Cs-137 at 1.40E-09 μCi/mL in one sample in May 2002. Tritium was identified in 24 of the 33 samples at levels well below the groundwater DCGL of 6,812 pCi/L.

3. A March 2004 entry was made into the Containment Building foundation sump to collect a concrete sample from the vertical wall and pipe residue in the accessible portion of the 6-inch drainpipe. Sample analyses did not identify Co-60 or Cs-137 activity above the MDA levels of 0.12 pCi/g and 0.14 pCi/g respectively. Gross beta measurements collected on accessible portions of the 6-inch pipe and the pumpwell wall below the pipe opening were less than 1,000 dpm/100 cm^2.

Based on the above data, Maine Yankee believed there was sufficient knowledge to support the conclusion that the Containment Building foundation sump and associated piping were not likely to contain residual radioactivity in excess of the DCGL.

The survey unit design parameters for FC-2000 as a Class 2 survey are shown in Table 1. Given a relative shift of 1.3, it was determined that 21 direct measurements were required for the Sign Test. Measurement locations were based on a systematic square grid with a random start point and are illustrated on Map FC 2000-DIRECTS (Attachment 1).

In accordance with the LTP, scans covering 10% of the 124.77 m^2 area were required for the Class 2 survey unit. This was accomplished by scanning 13 grids of approximately 1.0 m^2 area each.[3] Due to damp concrete surfaces within the majority of the survey unit, a reduced efficiency was applied to the 43-68 alarm setpoint as a conservative measure.[4] Locations of scan measurements are shown on survey map FC 2000-SCANS (Attachment 1). The survey instruments used, their MDCs and alarm setpoints are provided in Attachment 2. As shown in Table 2-2 (Attachment 2), the scan MDC is less than the scan investigation level in all cases, thereby providing high confidence (95% or higher) that an elevated area would be detected in the scan process.

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2 MN 04-035 (Reference 4).

3 Refer to Section C for a discussion of the actual scans performed.

4 Efficiency methodology as determined in Calc. No. 033-01 (Reference 7).

Per special provisions for this survey unit (Reference 4), a volumetric sediment sample was to be obtained at the bottom of the sump pumpwell for comparison against the surface soil DCGL, as applicable. In addition, a sufficient volume of water was sampled for the determination of current tritium levels, based on the previous identification of tritium as the only consistently detected plant related radionuclide in containment sump samples. The volumetric sampling locations are illustrated on survey map FC 2000-SEDIMENT (Attachment 1).

To accommodate measurement geometry requirements for surfaces of non-uniform smoothness, the SHP-360 probe was initially used to augment the 43-68 scan survey in the 6-inch clay drainpipe.

Background values were based on previously established ambient values for clean concrete[5], a March 2004 survey performed within the sump and the material background for concrete surfaces[6]. These background values were used to establish scan alarm setpoints and to confirm the scan MDCs used were appropriate.

TABLE 1
SURVEY UNIT DESIGN PARAMETERS

Survey Unit	Design Criteria	Basis
Area	124.77 m^2	Per LTP, limited to 2000 m^2 for Class 2 Area (Table 5-2)
Number of Direct Measurements Required	21	Based on an LBGR of 9,000 dpm/100 cm^2, sigma[7] of 6,853 dpm/100 cm^2, and a relative shift of 1.3. Type I = Type II = 0.05
Sample Area	5.94 m^2	124.77 m^2 / 21 samples[8]
Sample Grid Spacing	2.4 m	$(5.94)^{1/2}$
Scan Grid Area	1 m^2	Class 2 Area
Area Factor	N/A	Class 2 Area
Scan Survey Area	13 m^2 (10%)	Class 2 Area – 10% to 100% (LTP Table 5-3)
Background		
43-68 Direct and Scan (flat surfaces)	5,815 dpm/100 cm^2 (damp concrete surfaces)	Ambient and Material
43-68 Direct and Scan (6-inch clay pipe)	9,581 dpm/100 cm^2 (damp clay surfaces)	Ambient and Material
Scan Investigation Level	DCGL + Background	See Table 2-2 (Attachment 2)
DCGL	18,000 dpm/100 cm^2	LTP, Revision 3, Table 6-11
Design $DCGL_{EMC}$	N/A	Class 2 Area

[5] Shielded 43-68 Background from FB-9810 (Reference 8).
[6] Reference 5.
[7] Design sigma is based on characterization data, listed in LTP Table 5-1A, Containment El. –2 ft., A0100 (LTP, Revision 3)
[8] This survey unit was initially designed for N=21 samples. The N-21 design led to a survey unit map with 27 locations on the systematic grid.

C. SURVEY RESULTS

Twenty-four direct measurements were made in the pumpwell of Survey Unit 1. All direct measurements were well below the DCGL. The resulting data are presented in Table 2.

The initial survey design required the collection of 21 direct beta measurements on the vertical concrete surfaces of the sump. Basing the locations on a systematic grid led to a survey map with 27 direct measurements, but only 24 direct measurements were performed. Due to the physical configuration of the survey unit, the Containment Sump was treated as a confined space. Technicians were lowered into the sump via a manbasket to access the bottom elevations. With the continuous influx of groundwater, water collected in the sump bottom and covered the lowest band of measurements. When the manbasket was lowered to a level just above the standing water, the size of the basket prohibited the collection of measurements on the sump walls below the basket rim. Moving the lowest band of measurement locations up one meter, as allowed by procedure, transferred the locations to surfaces that were still inaccessible due to the basket walls. As a result, the three bottom measurements could not be collected. However, a sufficient number of samples were obtained to meet the Sign Test design requirements.

No verified alarms were received during the surface scans performed on the vertical concrete sump walls. Surface scans were performed on the lowest portions of the vertical pumpwell to bias measurements to the perforated wall sections as the most probable locations of residual radioactivity. Due to the standing water, scan grid locations were moved vertically up, while still maintaining the original design configuration. One of the original scan grids (C002) could not be scanned due to running water. Additional scans were performed in the rings along the water level mark line (-33 ft. El.) and directly below the 6-inch drainpipe penetration (-19 ft. El.) The supplementary scans added 8 m^2 of additional scan area to the original survey design, thereby maintaining a minimum scan survey of 10%. Locations of additional scan readings are shown on survey map FC 2000-SCANDATA (Attachment 1).

Standing water in the bottom of the sump pumpwell appeared clear at the time of the final status survey and loose sediment did not appear to be present. As a substitution for the sediment sample from the sump bottom, calcium scale was removed from the former sump pumps. The pumps had been disconnected and previously removed from the pumpwell during final survey preparation activities. Analysis of the pump scale sample identified Co-60 at 0.28 $\pm$ 0.05 pCi/g and Cs-137 at 0.28 $\pm$ 0.07 pCi/g.

Collection of a water sample for tritium analysis was performed and results reported at 1,610 pCi/L, well below the groundwater tritium DCGL of 6,812 pCi/L.

The initial survey design for FC-2000 required scans and direct measurements on the vertical walls of the sump interior. It was believed that most of the 6-inch clay drainpipe would be inaccessible due to the precipitation of calcium scale on interior surfaces. As a result, the survey design required only a scan to be performed on the accessible surfaces. The technician performing the survey opted to use an SHP-360 detector due to the smaller detector size and physical constraints offered by the drainpipe. The alarm setpoint for the SHP-360 was mistakenly based on the $DCGL_{EMC}$ for a 1 m^2 area of elevated activity (900,000 dpm/100 cm^2). When the pipe scan was performed, a scan reading of 465 cpm was logged and later determined to exceed the 18,000 dpm/100 cm^2 DCGL required for Containment sump surfaces. As a result of the high scan reading, an investigation was initiated via survey investigation package XC2000 to perform additional direct measurements and scans in the accessible portions of the 6-inch drainpipe. The investigation results are discussed in Section D.

TABLE 2

DIRECT MEASUREMENTS

Sample Number	Gross Activity (dpm/100 cm^2)	Net Activity (dpm/100 cm^2)
FC2000-1-C001	6,544	729
FC2000-1-C002	6,349	534
FC2000-1-C003	6,511	696
FC2000-1-C004	6,608	793
FC2000-1-C005	7,110	1,295
FC2000-1-C006	6,738	923
FC2000-1-C007	6,932	1,117
FC2000-1-C008	6,819	1,004
FC2000-1-C009	6,819	1,004
FC2000-1-C010	7,353	1,538
FC2000-1-C011	9,524	3,709
FC2000-1-C012	8,066	2,251
FC2000-1-C013	6,803	988
FC2000-1-C014	7,742	1,927
FC2000-1-C015	7,580	1,765
FC2000-1-C016	8,179	2,364
FC2000-1-C017	7,661	1,846
FC2000-1-C018	8,390	2,575
FC2000-1-C019	8,260	2,445
FC2000-1-C020	9,167	3,352
FC2000-1-C021	9,443	3,628
FC2000-1-C022	8,779	2,964
FC2000-1-C023	9,362	3,547
FC2000-1-C024	8,957	3,142
Mean	**7,737**	**1,922**
Median	**7,621**	**1,806**
Standard Deviation	**1,048**	**1,048**
Range	**6,349 – 9,524**	**534 – 3,709**

D. SURVEY UNIT INVESTIGATIONS PERFORMED AND RESULTS

A surface scan of the 6-inch clay line was initially performed with an SHP-360. Because direct measurements were not collected on any accessible surfaces within the pipe, an investigation package was written to perform direct beta measurements with a 43-68 detector at approximately 1-foot intervals starting from the opening and ending at the 90° elbow of the pipe (approximately 7 feet of which the last 2 feet were inaccessible). A surface scan was performed to identify the area of highest activity within each 1-ft. interval, followed by the collection of a direct measurement at that location. In addition, a second direct measurement was performed within the same 1-ft. interval as close to the bottom portion of the pipe as possible. A total of 10 direct measurements were collected before the groundwater influx and calcium precipitation prohibited the collection of further measurements. Locations of the direct measurements are shown on survey map XC 2000-PIPE (Attachment 1). Of the ten direct beta measurements performed, none exceeded the DCGL with background subtracted as illustrated in the Table 3-1 values (Attachment 3). A reduced efficiency was also applied to the surfaces within the drainpipe due to the dampness.

A sediment sample was collected from the interior of the 6-inch drainpipe and analyzed by gamma spectroscopy. The sample analysis did not identify any plant derived radionuclides.

The investigation was conducted via survey investigation package XC2000.

E. SURVEY UNIT DATA ASSESSMENT

An analysis of the direct sample measurement results, including the mean, median, standard deviation, and sample result range, are provided in Table 2. Without subtracting background all direct measurements were below the DCGL. The maximum direct measurement with background subtracted was equivalent to 3,709 dpm/100 cm^2.

When background (5,815 dpm/100 cm^2) is subtracted from the survey unit's sample mean, the result is a net value of 1,922 dpm/100 cm^2 or 10.7% of the DCGL. This would be equivalent to a dose rate of 0.032 mrem/y.[9]

Contamination levels in the 6-inch drainpipe were investigated by a series of surface scans and direct measurements. As shown in Attachment 3, all results were less than DCGL with background subtracted.

[9] Based on LTP Table 6-11 (Rev 3). Residual contamination at the level of the DCGL for basement contaminated concrete is equivalent to an annual dose of 0.301 mrem/y.

F. ADDITIONAL DATA EVALUATION

Attachment 4 provides additional data evaluation associated with Survey Unit 1, including relevant statistical information. Based on survey unit direct measurement data, this attachment provides the Sign Test Summary, Quantile Plot, Histogram, and Retrospective Power Curve.

1. The Sign Test Summary provides an overall summary of design input (Table 1) and resulting calculated values used to determine the required number (N) of direct measurements (per LTP Section 5.4.2). The Sign Test Summary is a separate statistical analysis that also calculates the mean, median, and standard deviation of the direct measurements.

   The critical value and the result of the Sign Test are provided in the Sign Test Summary table, as well as a listing of the key release criteria. As is shown in the table, all of the key release criteria were clearly satisfied for the FSS of this survey unit.

2. The Quantile Plot was generated from direct measurement data listed in Table 2 and indicates general symmetry about the median. The data set and plot are consistent with expectations for a Class 2 survey unit. It should be noted that the maximum net activity for the direct measurements is well below the DCGL of 18,000 dpm/100 cm^2.

3. A Histogram Plot was also developed based on the direct measurement values. This plot shows that the direct data were likely a normal distribution.

4. A Retrospective Power Curve was constructed, based on FSS results. The curve shows that this survey unit having a mean residual activity at a small fraction of the DCGL has a high probability ("power") of meeting the release criteria. Thus, it can be concluded that the direct measurement data support rejection of the null hypothesis, providing high confidence that the survey unit satisfied the release criteria and that the data quality objectives were met.

G. CHANGES IN INITIAL SURVEY UNIT ASSUMPTIONS ON EXTENT OF RESIDUAL ACTIVITY

The survey was designed as a Class 2 area; the FSS results were consistent with that classification. The direct measurement sample standard deviation was less than the design sigma. Thus, a sufficient number of sample measurements were taken and no additional measurements are required.

H. LTP CHANGES SUBSEQUENT TO SURVEY UNIT FSS

The FSS of Survey Unit 1 was designed and performed per the criteria of the approved LTP (Revision 3 Addenda). The only subsequent LTP changes (with potential impact to this FSS) included:

1. The proposed license amendment related to modifications of the activated concrete remediation plan submitted September 11, 2003 (Reference 3) and approved by the NRC (letter dated 2/18/2004). The license amendment lowered the surface soil DCGL to 2.39 pCi/g for areas inside the Restricted Area. However, the changes do not apply to this survey unit as the basement contaminated concrete DCGL remained unchanged.

2. Reduction of the area classification of the containment foundation drains from Class 1 to Class 2 and revision of the FSS requirements as provided in MY Letter to NRC dated 5/13/04. The LTP changes contained in the area reclassification were applied during the design and performance of this survey.

I. CONCLUSION

The FSS of this survey unit was designed based on the LTP designation as a Class 2 area. The survey design parameters are presented in Table 1. The required number of direct measurements was determined for the Sign Test in accordance with the LTP. As presented in Table 2, all beta direct measurements were less than the DCGL of 18,000 dpm/100 cm^2.

A Sign Test Summary analysis demonstrated that the Sign Test criteria were satisfied. The direct measurement sigma was determined to be less than that used for design, thus indicating that a sufficient number of samples was taken.

The Retrospective Power Curve shown in Attachment 4 confirmed that sufficient samples were taken to support rejection of the null hypothesis, providing high confidence that the survey unit satisfied the release criteria and the data quality objectives were met. Attachment 4 also revealed that direct measurement data represented essentially a normal distribution.

The scan survey design for this survey unit was developed in accordance with the LTP with significant aspects of the design discussed in Section B and Table 1. Surface scans should have resulted in one verified alarm (Section C) for evaluation. Attachment 3 shows the area identified for investigation and provides the results of the investigative actions.

It is concluded that FC2000 Survey Unit 1 meets the release criteria of 10CFR20.1402 and the State of Maine enhanced criteria.

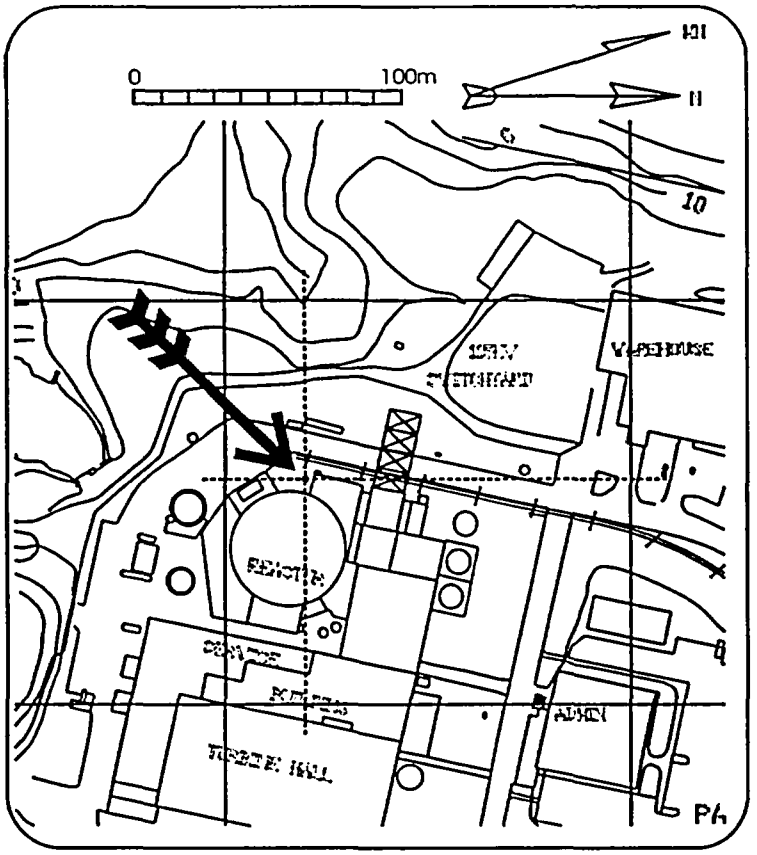
J. REFERENCES

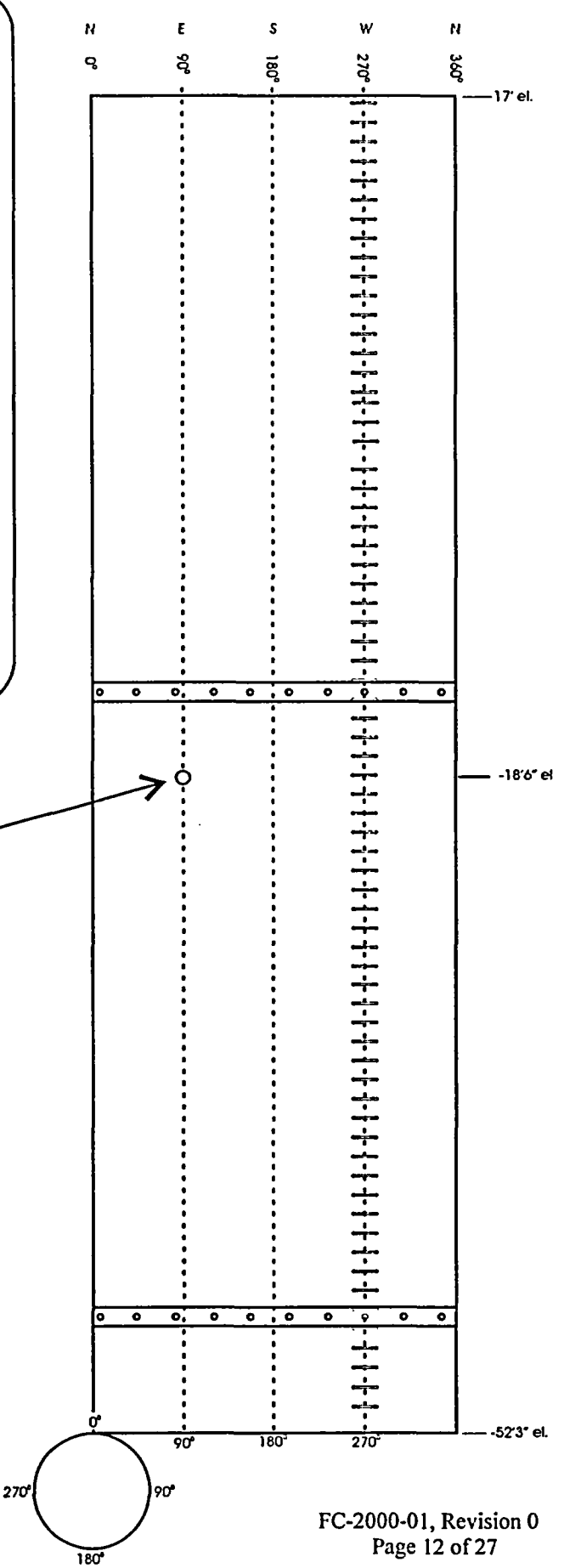
1. Maine Yankee License Termination Plan, Revision 3, October 15, 2002
2. NRC letter to Maine Yankee, dated February 28, 2003
3. Maine Yankee letter to the NRC, MN-03-049, dated September 11, 2003
4. Maine Yankee letter to the NRC, MN-04-035, dated May 13, 2004
5. Maine Yankee PMP 6.7.8, FSS Data Processing and Reporting, Attachment E, Approach for Dealing With Background Radioactivity for Maine Yankee Final Status Surveys
6. EC-010-01, Revision 5, dated March 11, 2004
7. Calculation No. 033-01, Rev.0, dated June 4, 2001
8. MY FSS Survey Package FB-9810, FSS Background Reference Materials

Attachment 1

Survey Unit Maps

Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID # FC 2000-PIPE
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Sump Survey Uint 1	





Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FC 2000-DIRECTS
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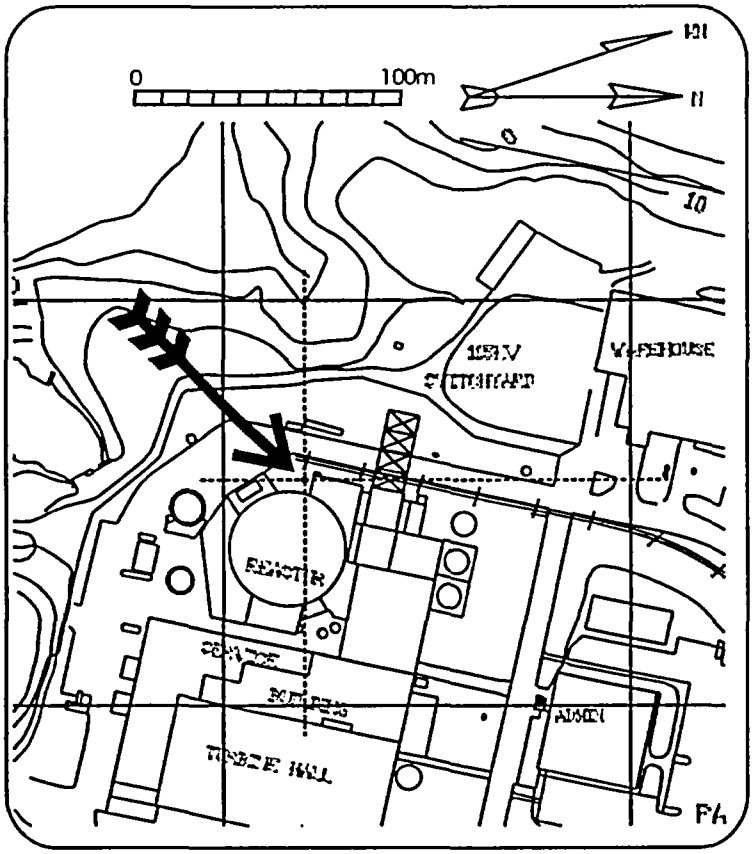

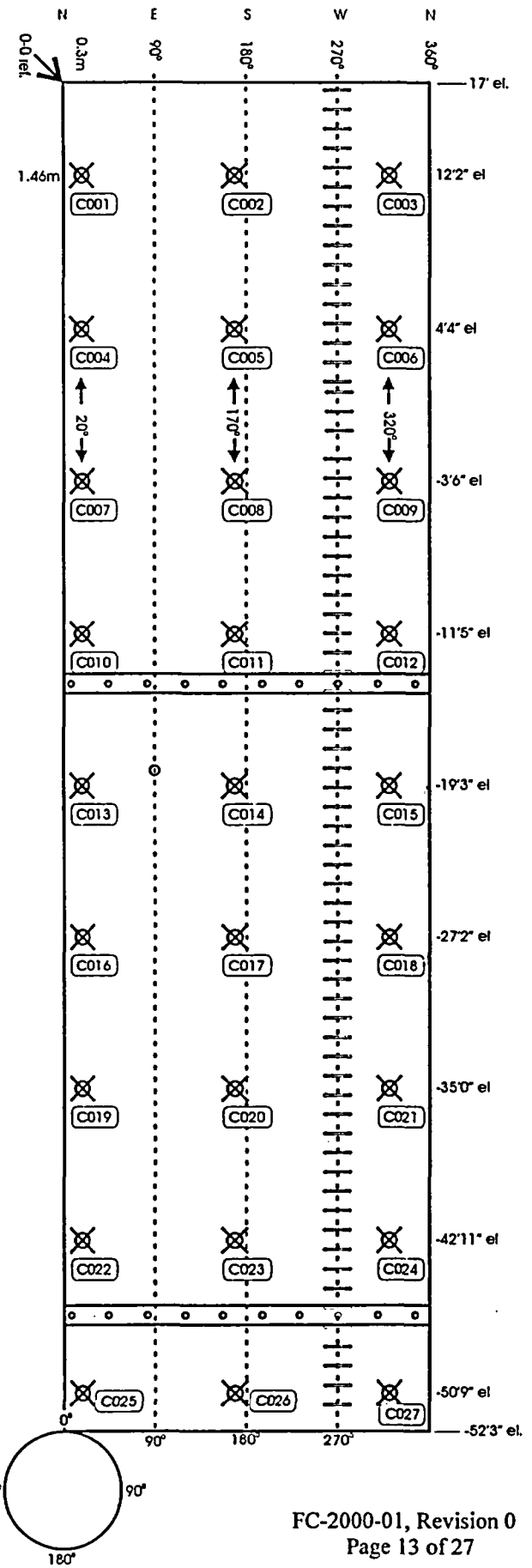

Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FC 2000-SCANS
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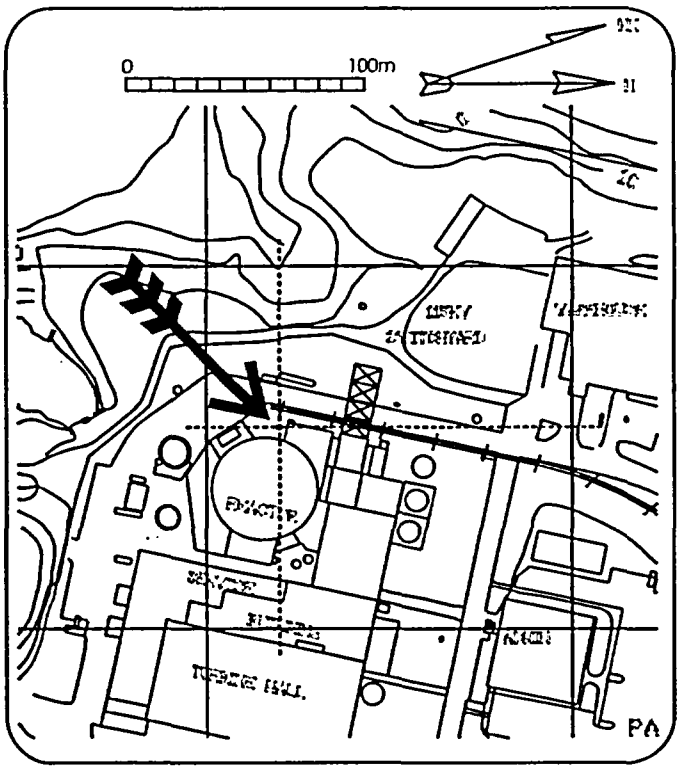

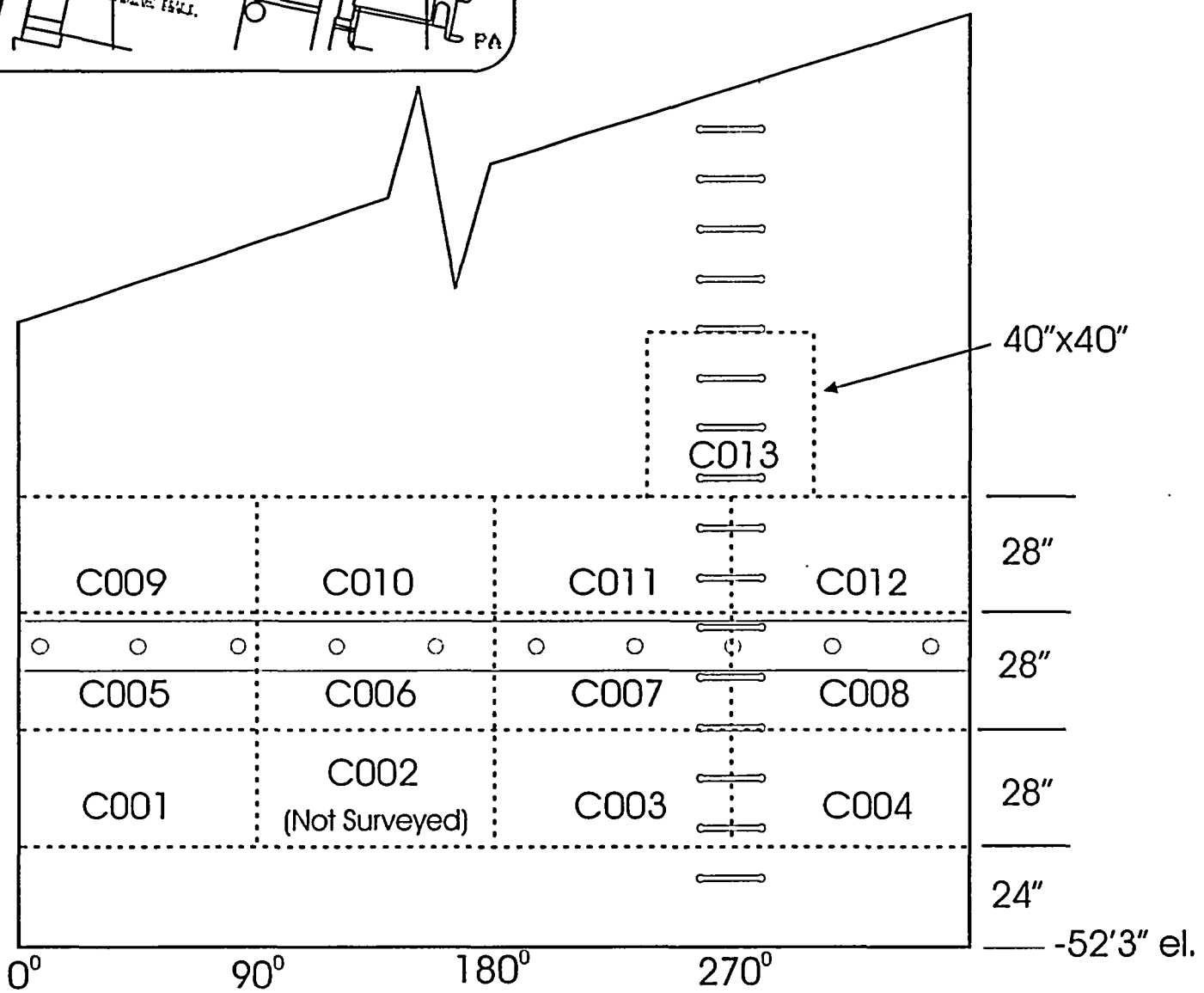

Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FC 2000-SEDIMENT
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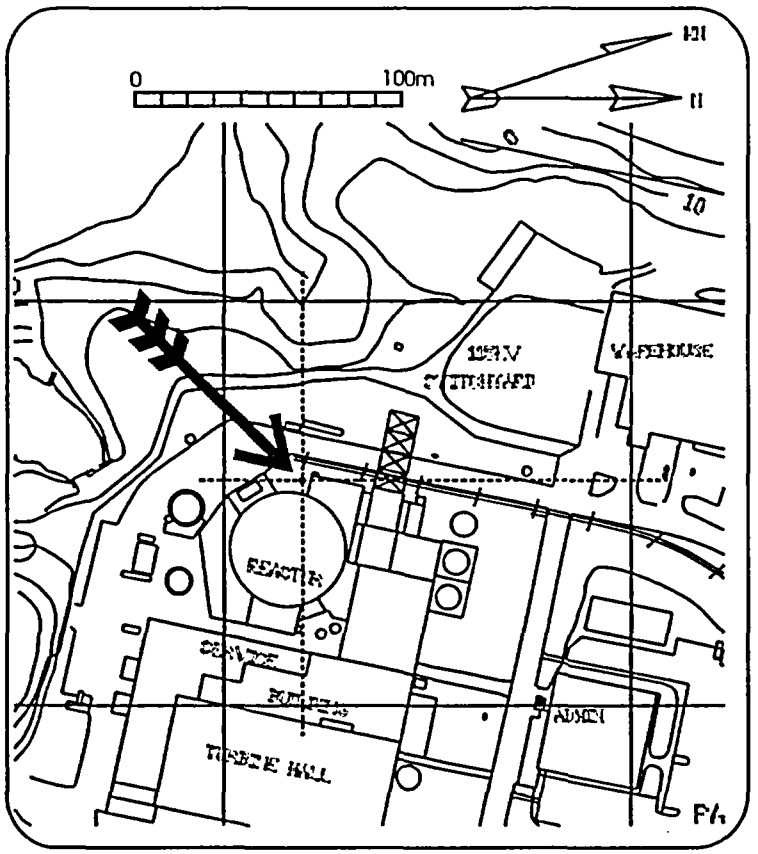

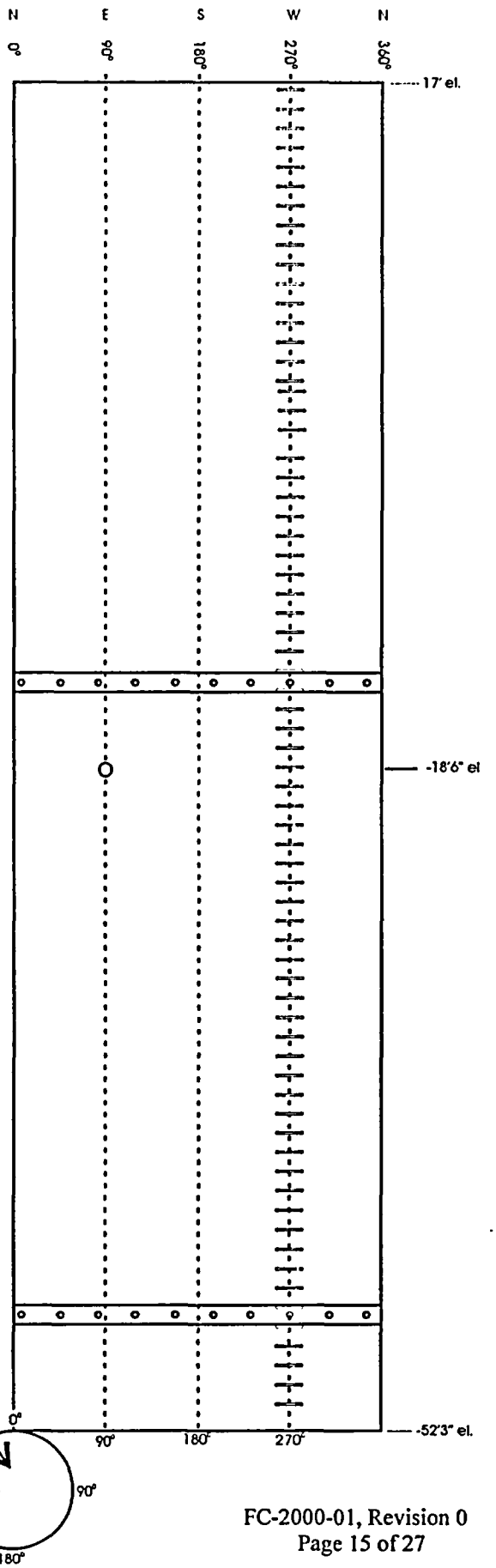

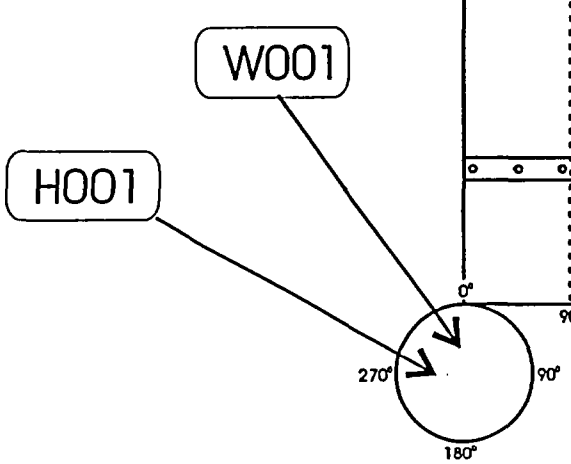

Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Model No. FC 2000-SCANDATA
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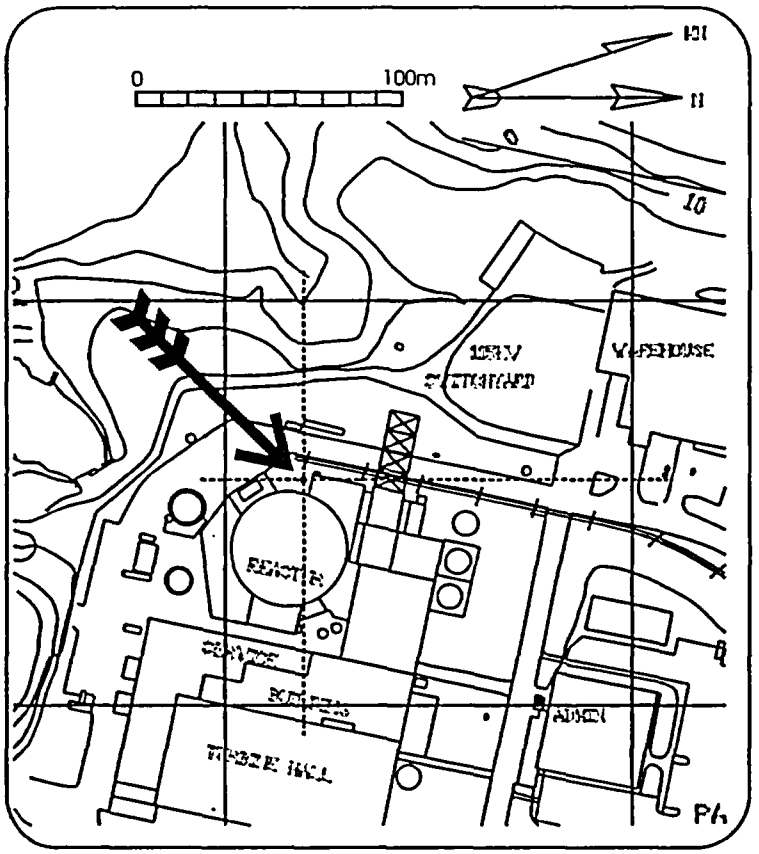
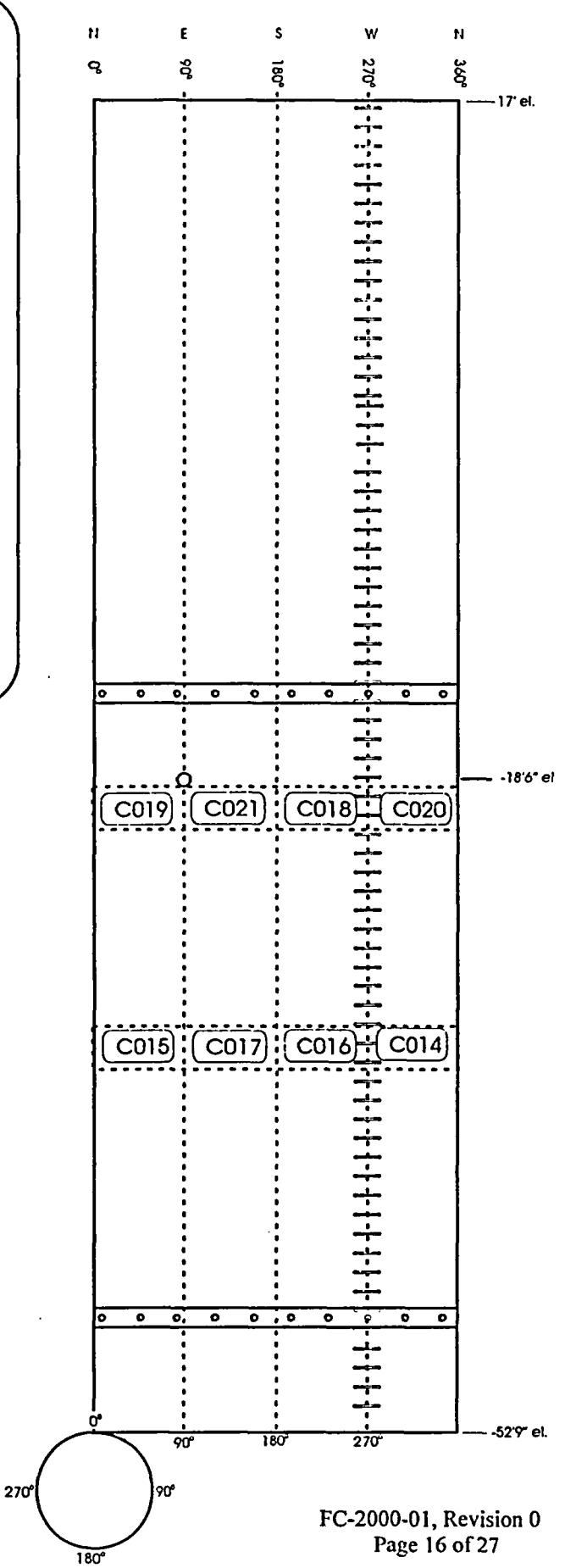
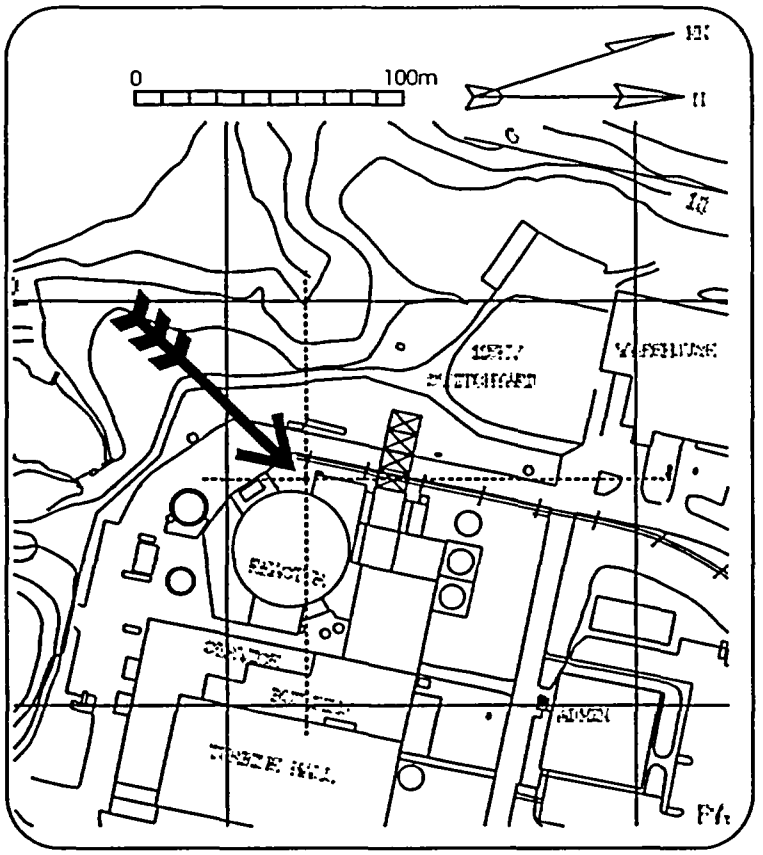
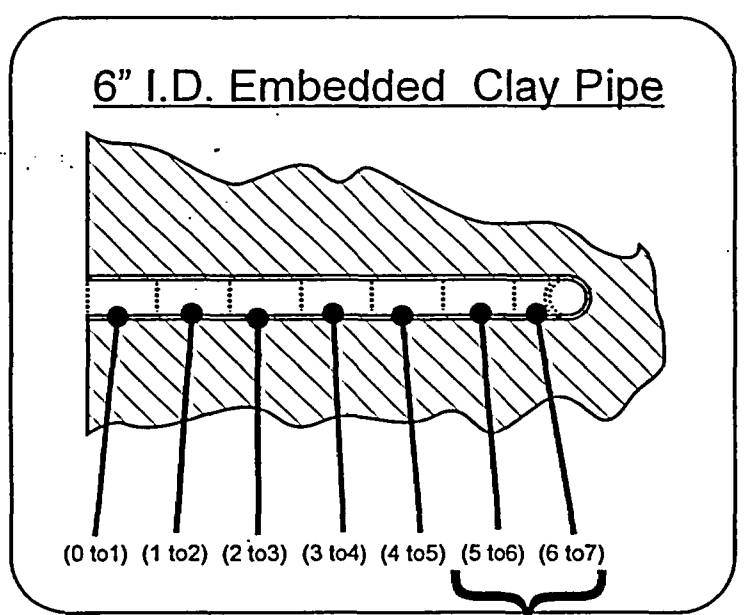
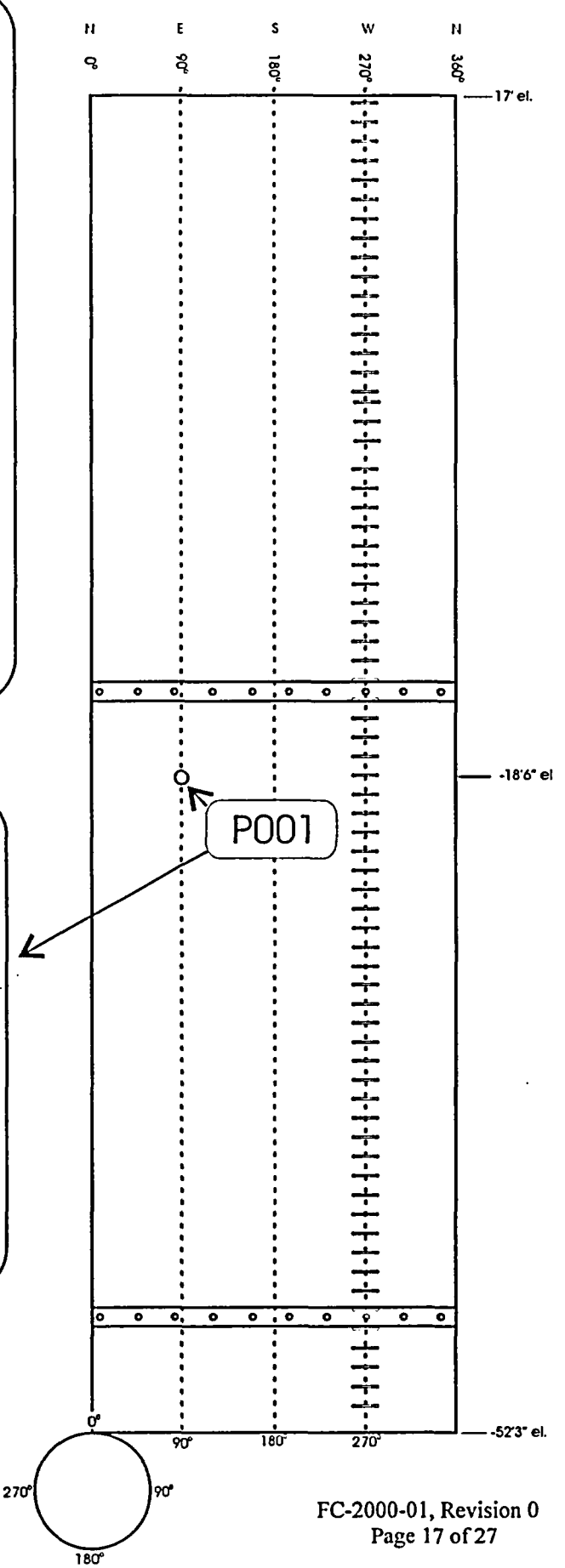




Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# XC 2000-PIPE
Survey Type: ☐ Verification ☐ Turnover ☒ Final Status Survey	Survey Area Name: Containment Sump Survey Uint 1	







Maine Yankee Decommissioning Team	*Maine Yankee Decommissioning Project Survey Map*	Map ID# FC 2000-SITE
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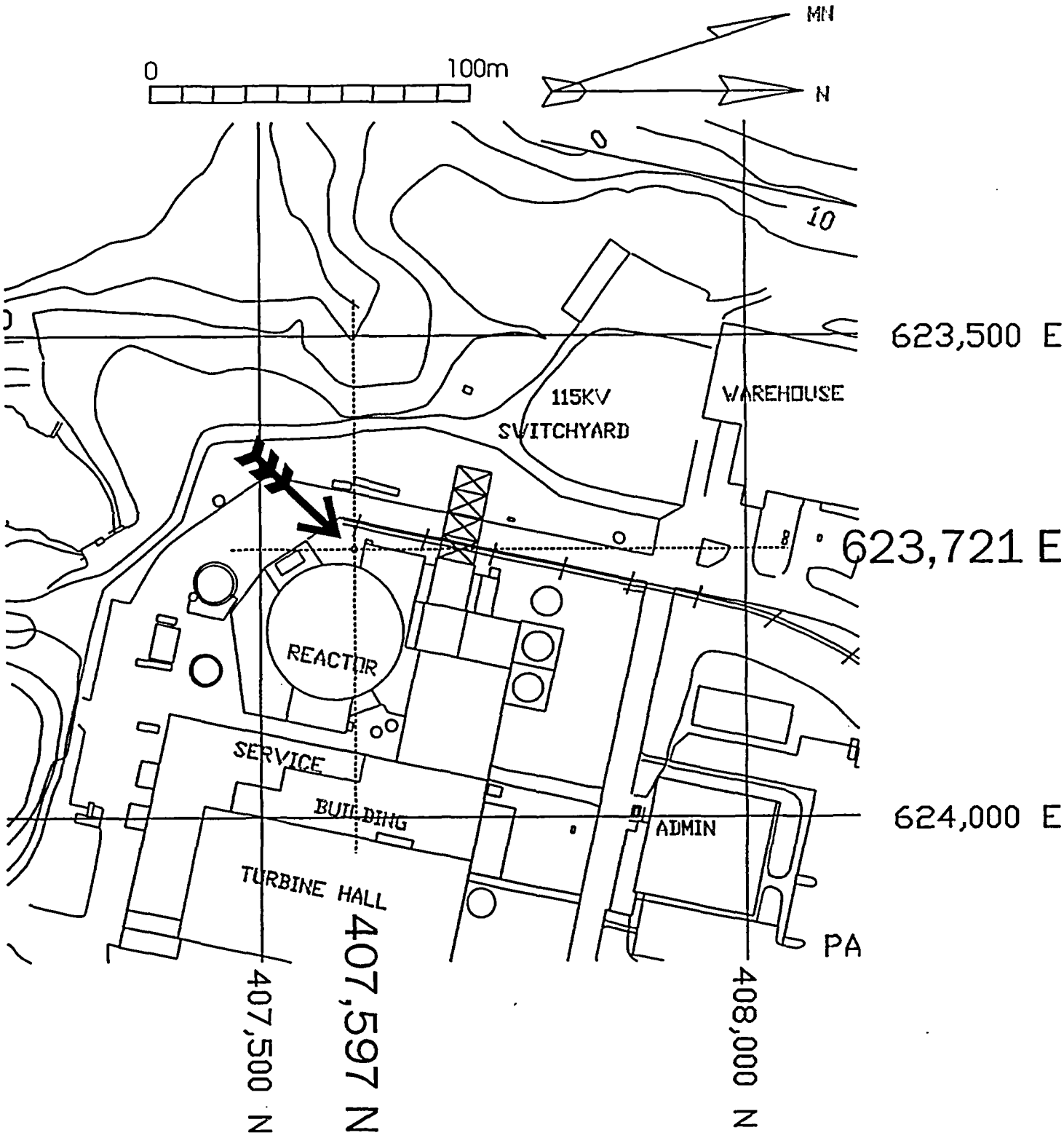


Attachment 2

Survey Unit Instrumentation

TABLE 2-1
INSTRUMENT INFORMATION

E-600 S/N	Probe S/N (type)
2488	149075 (43-68)
1933	177992 (43-68)
1933	464 (SHP-360)

HPGe Detectors (Laboratory Analysis)

Detector Number	MDC (pCi/g)
DET 2	0.07 to 0.14

Packard Liquid Scintillation Counter

Detector Number	MDC (pCi/L)
Tri-Carb 4430, S/N 035693	4.15E+02

TABLE 2-2
INSTRUMENT SCAN MDC AND COMPARISION WITH DCGL AND INVESTIGATION LEVEL

Detector	43-68 Flat (Damp Concrete)	43-68 6-inch Pipe (Damp)
Scan MDC (dpm/100 cm^2)	4,860 Note 1	8,506 Note 2
DCGL (dpm/100 cm^2)	18,000	18,000
Investigation Level (Alarm Setpoint) (dpm/100 cm^2)	23,810 (~ DCGL + background)	27,494 (~ DCGL + background)

NOTES:

1. Based on ratio of E_t for dry concrete surfaces (0.13) to E_t for wet concrete surfaces (0.049 as documented in Calculation No. 033-01, Revision 0) and value of 1,832 dpm/100 cm^2 scan MDC from LTP Revision 3, Table 5-6.
2. Based on ratio of E_t for dry concrete surfaces (0.13) to E_t for wet concrete surfaces (0.049 as documented in Calculation No. 033-01, Revision 0) and applying reduction of efficiency ratio to dry 6-inch concrete pipe E_t (0.073 as documented in EC-010-01, Revision 5) to derive E_t of 0.028 for wet 6-inch concrete pipe. Used in conjunction with value of 1,832 dpm/100 cm^2 scan MDC from LTP Revision 3, Table 5-6.

Attachment 3

Investigation Table

TABLE 3-1

INVESTIGATION RESULTS

Sample Location in 6-inch drainpipe	Alarm Setpoint (cpm)	Peak Scan Value (cpm)	Scaler (cpm)	Gross Activity (dpm/100 cm^2)	Net Activity (Table 1 Background Subtracted) (dpm/100 cm^2)	$DCGL_{EMC}$ Unity
FC2000-1-P001-0T01[H]	970	896	650	18,424	8,843	< DCGL
FC2000-1-P001-0T01[B]			538	15,249	5,668	< DCGL
FC2000-1-P001-1T02[H]	970	956	606	17,177	7,596	< DCGL
FC2000-1-P001-1T02[B]			511	14,484	4,903	< DCGL
FC2000-1-P001-2T03[H]	970	892	595	16,865	7,284	< DCGL
FC2000-1-P001-2T03[B]			516	14,626	5,045	< DCGL
FC2000-1-P001-3T04[H]	970	1,049	744	21,088	11,507	< DCGL
FC2000-1-P001-3T04[B]			517	14,654	5,073	< DCGL
FC2000-1-P001-4T05[H]	970	1,067	649	18,396	8,815	< DCGL
FC2000-1-P001-4T05[B]			529	14,994	5,413	< DCGL
Mean			586	16,596	7,015	
Median			567	16,057	6,476	
Standard Deviation			78	2,203	2,203	
Range			511 to 744	14,484 to 21,088	4,903 to 11,507	

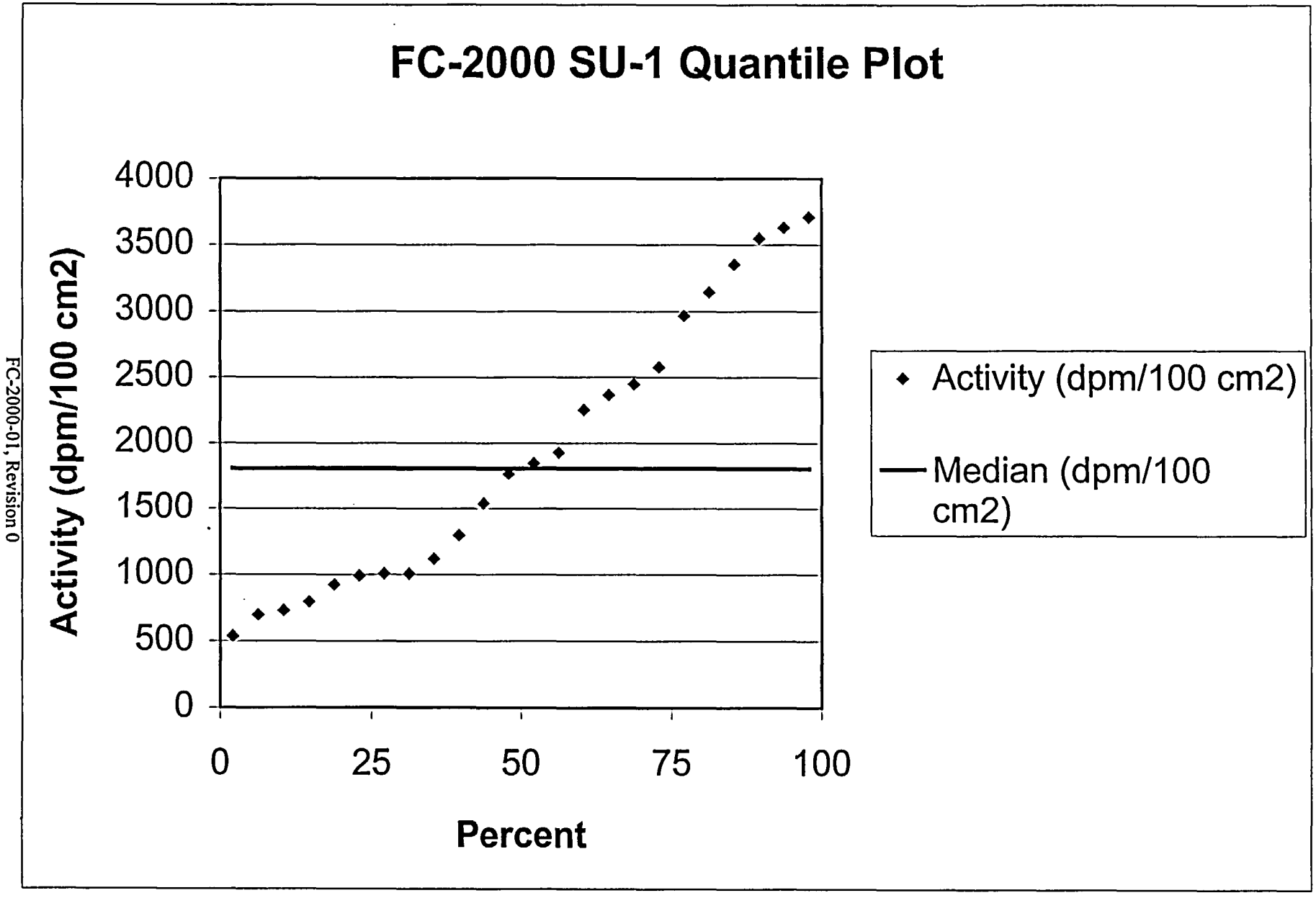
[H] Measurement taken at location of highest activity in applicable 1-ft. interval.
[B] Measurement taken at most accessible bottom surface of drain line in applicable 1-ft. interval.

Attachment 4

Statistical Data

Survey Package FC 2000 Unit 1 Surface Sign Test Summary

Evaluation Input Values		Comments
Survey Package:	FC 2000	
Survey Unit:	01	
Evaluator:	DA	
$DCGL_w$:	18,000	NOTE:
$DCGL_{emc}$:	18,000	Background value of 359 cpm (310
LBGR:	9,000	cpm ambient from FB-9810 for 43-68
Sigma:	6,853	and 49 cpm reduced material bkg.
Type I error:	0.05	from PMP 6.7.8, Attachment E, for
Type II error:	0.05	for concrete surfaces) applied.
Total Instrument Efficiency:	4.9%	
Detector Area (cm^2):	126	
Material Type:	Concrete Unpainted	Choosing 'N/A' sets material background to "0"
Calculated Values		**Comments**
$Z_{1-\alpha}$:	1.645	
$Z_{1-\beta}$:	1.645	
Sign p:	0.903199	
Calculated Relative Shift:	1.3	
Relative Shift Used:	1.3	Uses 3.0 if Relative Shift >3
N-Value:	17	
N-Value+20%:	21	
Static Data Values		**Comments**
Number of Samples:	24	
Median:	1,807	
Mean:	1,924	
Net Static Data Standard Deviation:	1,048	
Total Standard Deviation:	1,063	Sum of samples and all background
Maximum:	3,710	
Sign Test Results		**Comments**
Adjusted N Value:	24	
S+ Value:	24	
Critical Value:	16	
Criteria Satisfaction		**Comments**
Sufficient samples collected:	Pass	
Maximum value <$DCGL_w$:	Pass	
Median value <$DCGL_w$:	Pass	
Mean value <$DCGL_w$:	Pass	
Maximum value <$DCGL_{emc}$:	Pass	
Total Standard Deviation <=Sigma:	Pass	
Sign test results:	Pass	
Final Status		**Comments**
The survey unit passes all conditions:	Pass	


FC-2000 SU-1 Quantile Plot
Activity (dpm/100 cm2)
4000
3500
3000
2500
2000
1500
1000
500
0
0
25
50
75
100
Percent
Activity (dpm/100 cm2)
Median (dpm/100 cm2)

Page/Date/Time 2 11/2/04 9:27:35 AM
Database C:\Program Files\NCSS97\FC2000 SU-1.S0
Variable C2

Plots Section

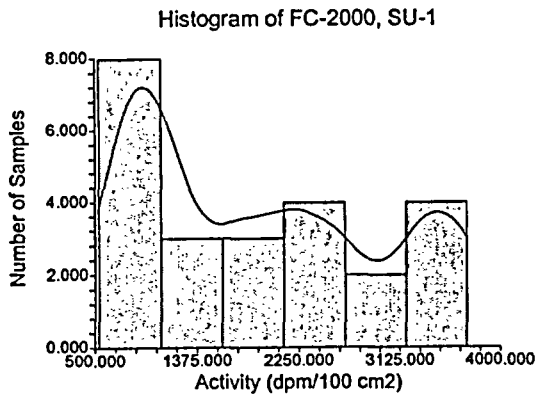


Chart Section