

**FINAL STATUS SURVEY REPORT
IN SUPPORT OF THE
TERMINATION OF THE
PATHFINDER BYPRODUCT MATERIAL
LICENSE**

**Appendix 1
Final Status Survey Packages**

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 1	Prepared by: Doug Schult
Location: Effluent Discharge Pathway To Big Sioux River	Date prepared: 9/3/06
Area Classification: Impacted – Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes effluent discharge pathway beginning at the edge of the asphalt behind the Boiler Building and ending at the Big Sioux River.</p> <p>The effluent discharge pathway is approximately 600 m long and varies in width from approximately 2 meters to 5 meters.</p> <p>See attached drawing</p> <p>Class 2 survey areas are limited in size to less than 10,000 m²</p>

General Survey Instructions
<ol style="list-style-type: none">1) Starting at the edge of the asphalt behind the Boiler Building mark a soil sampling location using a surveyor's stake or equivalent approximately every 20 meters along the effluent pathway to the Big Sioux River.2) Number the soil sampling locations beginning at the asphalt behind the Boiler Building using a sequential numbering system that includes the survey package number, i.e. 1-1, 1-2, 1-3, etc. Mark the soil sampling location number on the surveyor's stake and on the enclosed map.3) At each soil sampling location collect a surface (0 to 6 inches) soil sample. Place each soil sample in a plastic container labeled with the soil sampling location, the date the sample was taken, and the name of the individual collecting the sample.4) At soil sampling locations 1-1 and 1-20 collect an additional soil sample and label the samples 1-1QC and 1-20QC respectively.5) Upon returning the soil samples to the office fill out the appropriate chain of custody forms, affix a security seal across the top of the sample container and apply a label to the sample container indicating the soil sampling location, the date the sample was taken, and the name of the individual collecting the sample.6) Using the GPS system record the coordinates of each of the soil sampling locations.7) Using the GPS system coupled to the exposure rate meter scan 50% of the effluent discharge pathway

Special Instructions

- For exposure rate measurements, source check all instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Gamma scans should be performed by moving the detector in a serpentine pattern at a speed of approximately 1 meter per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK001	OPLND				Open Land Areas	NA	NA	50%	NA	NA

Package Review

Date Package Completed

10/13/06 J. M. K. D.

Package Reviewed by and Date

J. M. K. D. 1/25/07

Survey Comments

- 29 total systematic samples collected.

- elevated area noted near the head of the discharge. Samples collected at the highest observed location.

- 1 0-6" sample & 6"-12" sample collected.

Survey Package: PK001
Description: Effluent Discharge Pathway
Class: 2
Survey Type: Exposure Rate, Soil Sampling

Summary

The effluent discharge pathway begins at the discharge pipe off the southwest corner of the plant, continues north to the railroad tracks where it veers to the east, finally discharging to the river. The effluent discharge pathway is approximately eight meters wide at the beginning and 2-3 meters wide at the end. The portion of the pathway from the pipe discharge to the road leading the intake pump station was wet as water still discharges to this area. There appeared to be no lining along the bottom of the pathway. The portion of the discharge pathway from the road to the river was lined with rock and mortar. Organic matter covered the lining to a depth of 4-6 inches.

Approximately 75% of all accessible areas were surveyed using a Ludlum 2350-1 coupled with a 2x2 sodium iodide detector. Exposure rate measurements and corresponding GPS data were collected on a nominal two-second frequency using a handheld computer. Surveys were performed with the detector held no greater than 6 inches from the surface. The detector was moved side to side, covering approximately one meter on each pass. Survey technicians observed both the digital and audible output of the instrument to identify any areas of concern.

Soil sample locations were selected in a systematic fashion. A sample was collected on approximately 20 meter intervals for a total of 29 locations. Samples were collected in the top six inches of soil in each of the survey grids. Samples were labeled with the corresponding grid identifier (1-1, 1-2, 1-3, etc.). QC samples were collected at locations 1-1 and 1-20.

Results

Elevated areas were identified along the bank near the discharge pipe. Investigation of the area showed rocks similar to those found in other areas of elevated exposure rates. Additional elevated areas were noted between the road and the river where the rock lining was present. All other observed radiation levels were consistent with typical background levels.

Data summary	
Number of data points	2,116
Maximum	19.4 μ R/hr
Average	9.3 μ R/hr
Standard Deviation	1.4 μ R/hr

Associated Files and Survey Information

File Names, Technicians, Instrument Information						
File Name	Survey Date	Technician	2350-1 SN	Cal Due	44-10 SN	Cal Due
PK01	10/10/06	Byron Bland	95361	8-3-07 CL 1-25-07	59228	8-3-07 CL 1-25-07

Survey Package 001 - Effluent Discharge Pathway
Exposure Rate
(R/hr)



- ◆ 5E-006 to 9E-006
- ◆ 9E-006 to 1.1E-005
- ◆ 1.1E-005 to 2E-005

Sample GPS Coordinates

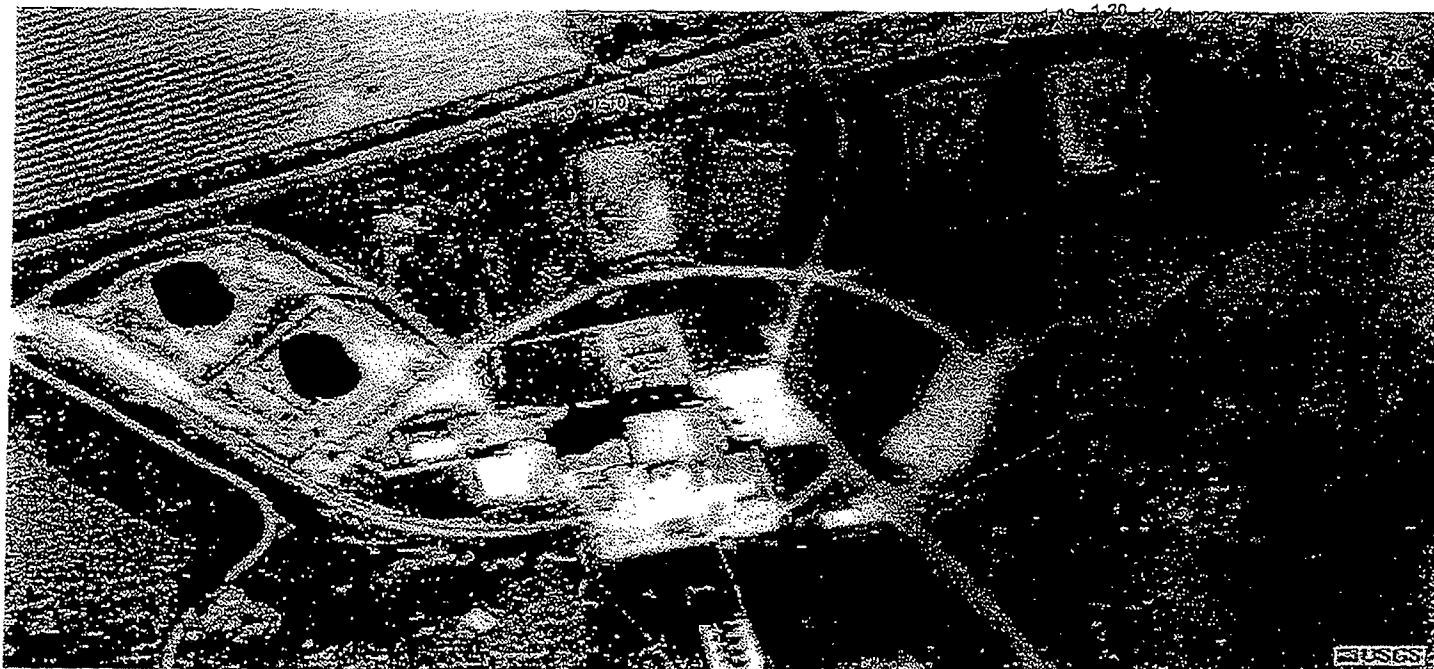
The following table shows the GPS coordinates of each sample location in this survey area.

Sample Identification	Latitude	Longitude
1-1	43.603752	-96.638318
1-2	43.603974	-96.638353
1-3	43.604127	-96.638416
1-4	43.604321	-96.638429
1-5	43.604499	-96.638450
1-6	43.604678	-96.638439
1-7	43.604844	-96.638327
1-8	43.604983	-96.638171
1-9	43.605119	-96.637981
1-10	43.605182	-96.637740
1-11	43.605245	-96.637477
1-12	43.605300	-96.637241
1-13	43.605309	-96.636996
1-14	43.605336	-96.636771
1-15	43.605439	-96.636423
1-16	43.605498	-96.636181
1-17	43.605566	-96.635913
1-18	43.605611	-96.635683
1-19	43.605633	-96.635452
1-20	43.605656	-96.635192
1-21	43.605635	-96.634959
1-22	43.605625	-96.634723
1-23	43.605592	-96.634479
1-24	43.605546	-96.634253
1-25	43.605480	-96.634008
1-26	43.605405	-96.633781
1-27	43.605319	-96.633575
1-28	43.605256	-96.633345
1-29	43.605228	-96.633078

Exposure Rate and Sample Aerial Plots

The following figures show plots of the exposure rate measurements and the sample locations for the survey area. The aerial map/photo on which the data is overlaid is dated 10/12/1991. While the map/photo does not reflect present day conditions it can be used to adequately identify the areas surveyed and the locations of the samples. The plots show the approximate location of the data in relationship to the site.

Survey Package 001 - Effluent Discharge Pathway
Sample Locations



Survey Package: N/A

Description: Open Area Surrounding the Intake/Pump Building

Class: 3

Survey Type: Exposure Rate, Soil Sampling

Summary

The Intake/Pump Building is located on the north side of the railroad tracks to the north of the plant. The area surveyed is primarily a road and turn-around area.

The survey area was limited to the road from the railroad to the intake structure and an approximate 30 x 30 meter area just south of the structure. The survey material was primarily road bed material (i.e., stone and rock material) seen at other locations throughout the site.

Approximately 75% of all accessible areas were surveyed using a Ludlum 2350-1 coupled with a 2x2 sodium iodide detector. Exposure rate measurements and corresponding GPS data were collected on a nominal two-second frequency using a handheld computer. Surveys were performed with the detector held no greater than 6 inches from the surface. The detector was moved side to side, covering approximately one meter on each pass. Survey technicians observed both the digital and audible output of the instrument to identify any areas of concern.

The two soil sample locations shown below were selected by Nuclear Regulatory Commission inspectors. GPS positions were taken at the sample stakes and labeled with the sample ID identified on the survey stake at the sample location.

Results

Elevated areas were identified throughout the survey area. Elevated areas were primarily observed where rocks and road material were located. All other observed radiation levels were consistent with typical background levels.

Data summary	
Number of data points	976
Maximum	21.6 μ R/hr
Average	10.6 μ R/hr
Standard Deviation	2.3 μ R/hr

Associated Files and Survey Information

File Names, Technicians, Instrument Information						
File Name	Survey Date	Technician	2350-1 SN	Cal Due	44-10 SN	Cal Due
Intake	10/12/06	Byron Bland	95361	8/3/07 CS-1-26-07	59228	8/3/07 CS-1-26-07

Sample GPS Coordinates

The following table shows the GPS coordinates of each sample location in this survey area.

Sample Identification	Latitude	Longitude
NRC-5	43.606194	-96.636877
NRC-6	43.606302	-96.636937

Exposure Rate and Sample Aerial Plots

The following figures show plots of the exposure rate measurements and the sample locations for the survey area. The aerial map/photo on which the data is overlaid is dated 10/12/1991. While the map/photo does not reflect present day conditions it can be used to adequately identify the areas surveyed and the locations of the samples. The plots show the approximate location of the data in relationship to the site.

Intake/Pump Building
Exposure Rate
(R/hr)



- ◆ 6.5E-006 to 9E-006
- ◆ 9E-006 to 1.1E-005
- ◆ 1.1E-005 to 2.2E-005

Intake/Pump Building
Sample Locations



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 2	Prepared by: Doug Schult
Location: Open Land Areas Surrounding Plant	Date prepared: 9/13/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the open land areas surrounding the Plant.

The open areas surrounding the facility include all accessible areas inside the perimeter , excluding the construction lay-down area , effluent discharge pathway , and the retention ponds.

See attached drawing

Class 3 survey areas have no size limits

General Survey Instructions

- 1) Using the GPS system coupled to the exposure rate meter scan at least 10% of the open land areas surrounding the plant.
- 2) Mark any areas of elevated activities using a surveyor's stake or equivalent for further evaluation
- 3) Identify 25 random soil sampling locations in the open land areas surrounding the plant using a surveyor's stake or equivalent. Number the soil sampling locations using a sequential numbering system that includes the survey package number, i.e , 2-1, 2-2, 2-3, 2-4, etc. Mark the soil sampling location number on the surveyor's stake and on the enclosed map.
- 4) At each soil sampling location collect a surface (0 to 6 inches) soil sample. Place each soil sample in a plastic container labeled with the soil sampling location, the date the sample was taken, and the name of the individual collecting the sample.
- 5) At soil sampling locations 2-1 and 2-20 collect an additional soil sample and label the samples 2-1QC and 2-20QC respectively.
- 6) Upon returning the soil samples to the office fill out the appropriate chain of custody forms, affix a security seal across the top of the sample container and apply a label to the sample container indicating the soil sampling location, the date the sample was taken, and the name of the individual collecting the sample.

Special Instructions

- For exposure rate measurements, source check all instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Gamma scans should be performed by moving the detector in a serpentine pattern at a speed of approximately 1 meter per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK002	OPLND				Open Land Areas	NA	NA	10%	NA	NA

Survey Package 2

Package Review

Date Package Completed

10/13/06

Ami Ma

Package Reviewed by and Date

C. J. 11/25/07

Survey Comments

- Elevated levels reaching ~30 ug/lb noted at various places in the open land area. Primarily on road areas, likely due to material in the road bed.
- 25 total sample locations.
- Samples collected at the following locations are biased samples at elevated locations
 - 2-4, 2-5, 2-6, 2-11, 2-12, 2-13, 2-16, 2-24, 2-25
 - 6-12" samples collected at locations 2-24 & 2-4
- Survey coverage ~50-75%
- Survey breakdown by S. Name is shown in the attached.

Survey Package: PK002
Description: Open Areas Surrounding Facility
Class: 3
Survey Type: Exposure Rate, Soil Sampling

Summary

The open areas surrounding the facility include all accessible areas inside the perimeter, excluding the construction lay-down area, effluent discharge pathway, and the retention ponds.

The survey area was broken into 11 subsections to better manage the data. The open areas were primarily grass-covered soils. Other areas, primarily along the south fence line, were a soil and rock mixture. The roads traversing the open areas consisted of various types of road bed material.

Approximately 50% of all accessible areas were surveyed using a Ludlum 2350-1 coupled with a 2x2 sodium iodide detector. Exposure rate measurements and corresponding GPS data were collected on a nominal two-second frequency using a handheld computer. Surveys were performed with the detector held no greater than 6 inches from the surface. The detector was moved side to side, covering approximately one meter on each pass. Survey technicians observed both the digital and audible output of the instrument to identify any areas of concern.

Soil sample locations were selected by the field supervisor. All locations where elevated levels were observed were sampled. Remaining samples were spread out throughout the survey area to ensure samples were collected in all portions of the property. Samples were collected in the top six inches of soil in each of the survey grids. For two sample locations, 2-4 and 2-24, a second sample was collected from 6-12 inches. Exposure rates at these areas were elevated. Samples were labeled with the corresponding grid identifier (3-1, 3-2, 3-3, etc.). QC samples were collected at locations 2-1 and 2-20.

Results

Elevated areas were identified at several areas throughout the survey area. Elevated areas were primarily noted in locations where rocks and road material was located. Samples were collected in each area where elevated exposure rates were observed. All other observed radiation levels were consistent with typical background levels.

Data summary	
Number of data points	28,473
Maximum	26.8 μ R/hr
Average	8.57 μ R/hr
Standard Deviation	2.12 μ R/hr

Associated Files and Survey Information

File Names, Technicians, Instrument Information						
File Name	Survey Date	Technician	2350-1 SN	Cal Due	44-10 SN	Cal Due
PK02-1	10/10/06	Jamie Doan	98638	5/2/07	230157	8/15/07
PK02-2	9/14/06 10/10/06	Tina Robertson Jamie Doan	98638	5/2/07	230157	8/15/07
PK02-5	9/14/06	Byron Bland	98648		211667	
PK02-6	9/14/06 10/11/06 -- 10/12/06	Tina Robertson Jamie Doan	98638	5/2/07	230157	8/15/07
PK02-7	9/14/06	Byron Bland	98648		211667	
PK02-8	10/10/06	Jamie Doan	98638	5/2/07	230157	8/15/07
PK02-9	10/10/06	Jamie Doan	98638	5/2/07	230157	8/15/07
PK02-10	10/10/06	Byron Bland	95361		59228	
PK02-11	10/10/06	Jamie Doan	98638	5/2/07	230157	8/15/07
PK02-12	10/10/06 -- 10/12/06	Byron Bland	95361		59228	
PK02-13	10/12/06	Byron Bland	95361	8/3/07	59228	9/3/07

*Note, PK02-3 and PK02-4 were combined with other areas. 1-25-07

CL 1-25-07

Sample GPS Coordinates

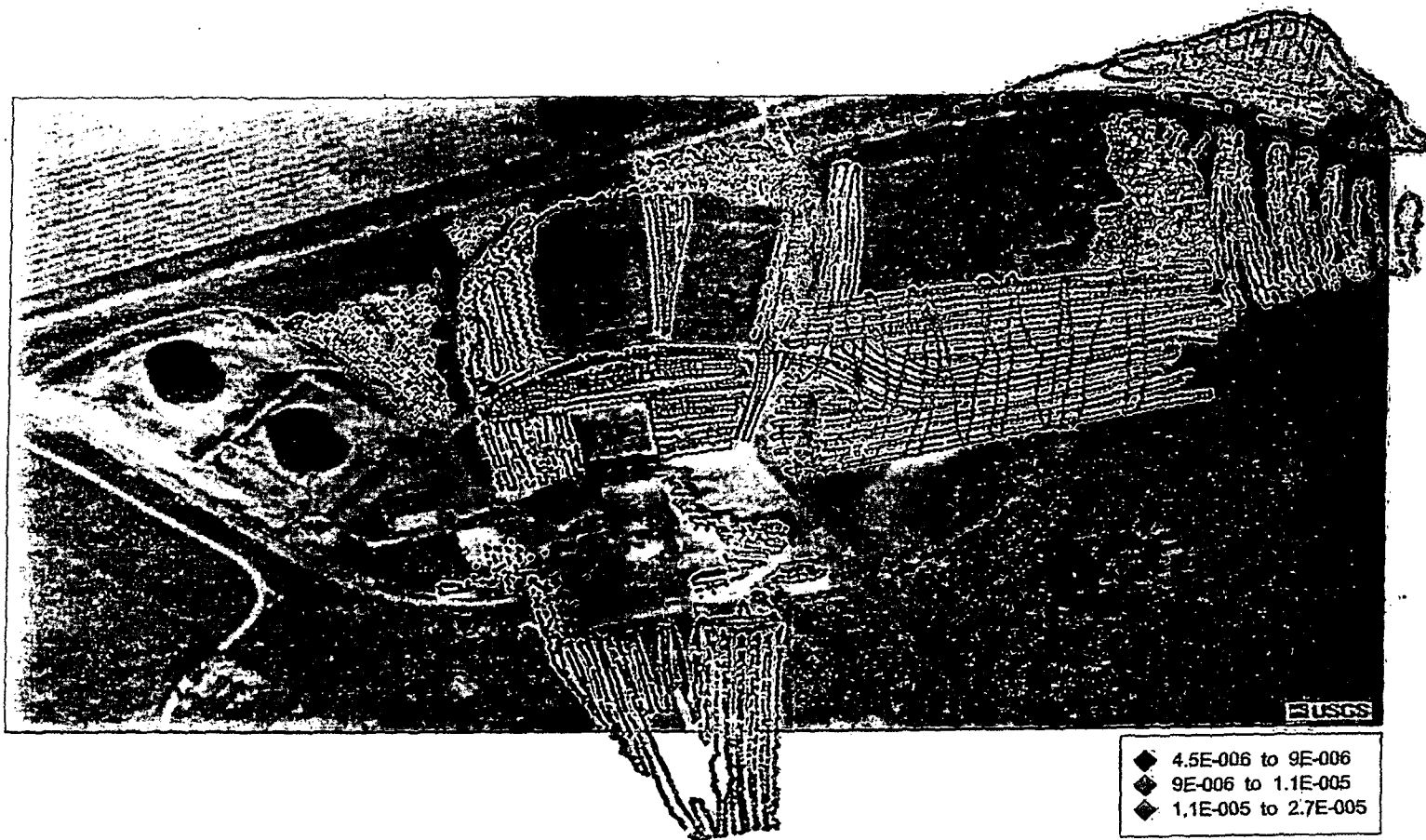
The following table shows the GPS coordinates of each sample location in this survey area.

Sample Identification	Latitude	Longitude
2-1	43.60289	-96.63680
2-2	43.60191	-96.63699
2-3	43.60280	-96.63767
2-4	43.60304	-96.63790
2-5	43.60411	-96.63873
2-6	43.60440	-96.63914
2-7	43.60431	-96.63873
2-8	43.60477	-96.63819
2-9	43.60523	-96.63715
2-10	43.60433	-96.63715
2-11	43.60492	-96.63651
2-12	43.60449	-96.63671
2-13	43.60572	-96.63552
2-14	43.60605	-96.63422
2-15	43.60562	-96.63355
2-16	43.60557	-96.63481
2-17	43.60530	-96.63472
2-18	43.60507	-96.63399
2-19	43.60487	-96.63351
2-20	43.60457	-96.63447
2-21	43.60468	-96.63522
2-22	43.60388	-96.63572
2-23	43.60457	-96.63623
2-24	43.60399	-96.63651
2-25	43.60379	-96.63648

Exposure Rate and Sample Aerial Plots

The following figures show plots of the exposure rate measurements and the sample locations for the survey area. The aerial map/photo on which the data is overlaid is dated 10/12/1991. While the map/photo does not reflect present day conditions it can be used to adequately identify the areas surveyed and the locations of the samples. The plots show the approximate location of the data in relationship to the site.

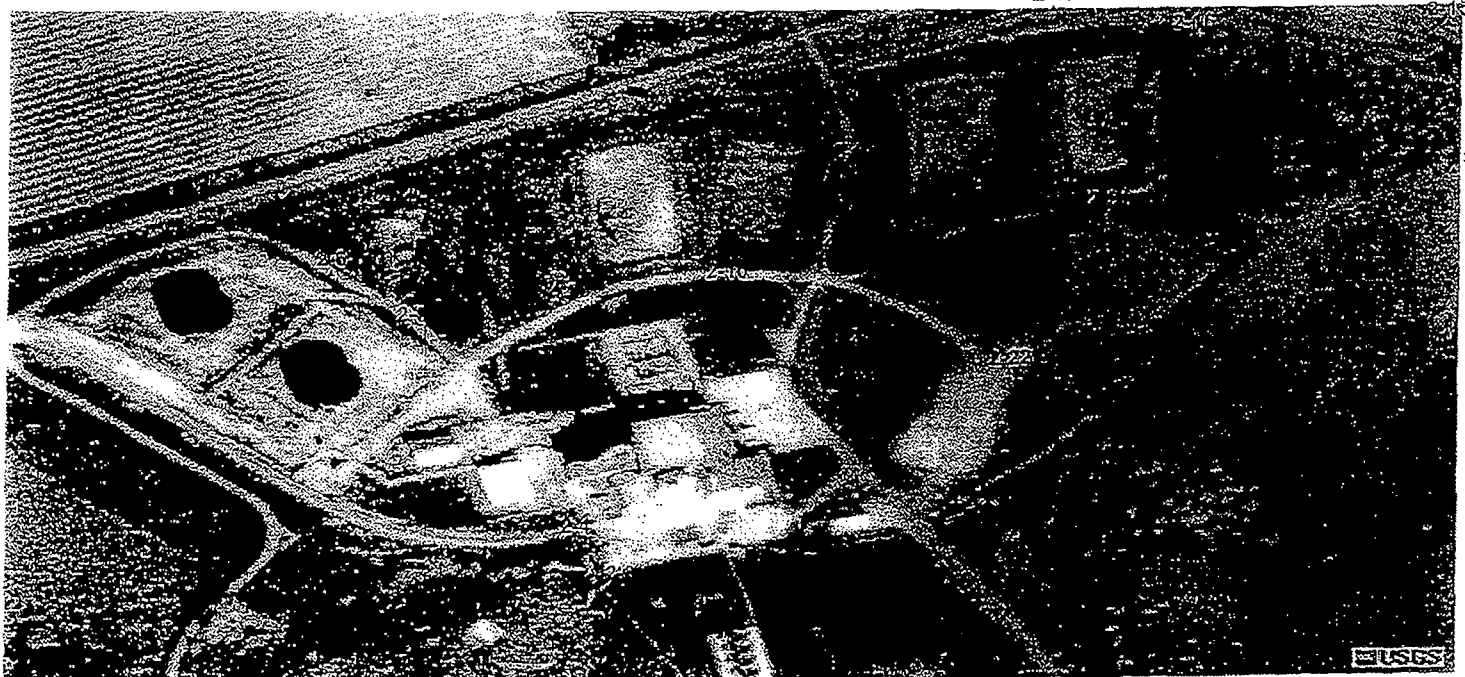
Survey Package 002 - Class 3 Open Areas
Exposure Rate
(R/hr)



Survey Package 002 - Class 3 Open Areas
Sample Locations

2-14

2-13



2-2

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 3	Prepared by: Doug Schult
Location: Four Settling Basins	Date prepared: 9/6/06
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description
The survey area includes the four settling basins. See attached drawing Class 3 survey areas have no size limits

General Survey Instructions	
1)	Four surface (0 to 6 inches) soil samples will be taken adjacent to or within each settling pond as conditions allow. If conditions allow 1 sample should be taken in each quadrant of the settling pond. If not take a sample along each side of the settling pond as close as possible to the settling pond.
2)	Mark each sampling location with a surveyor's stake or equivalent using a sequential numbering system that includes the survey package number and a letter designation for each of the settling ponds, i.e. 3-A-1, 3-A-2, ... 3-B-1, etc.
3)	Mark the soil sampling location number on the surveyor's stake and on the enclosed map.
4)	At each soil sampling location collect a surface (0 to 6 inches) soil sample. Place each soil sample in a plastic container labeled with the soil sampling location, the date the sample was taken, and the name of the individual collecting the sample.
5)	At soil sampling locations 3-A-1 collect an additional soil sample and label the samples 3-A-1-QC
6)	Upon returning the soil samples to the office fill out the appropriate chain of custody forms, affix a security seal across the top of the sample container and apply a label to the sample container indicating the soil sampling location, the date the sample was taken, and the name of the individual collecting the sample.
7)	Using the GPS system record the coordinates of each of the soil sampling locations.
8)	If conditions allow, use the GPS system coupled to the exposure rate meter scan approximately 20% of each of the settling basins.

Special Instructions

- For exposure rate measurements, source check all instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Gamma scans should be performed by moving the detector in a serpentine pattern at a speed of approximately 1 meter per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK003	OPLND				Open Land Areas	NA	NA	20%	NA	NA

Package Review

Date Package Completed

10/13/06

James M. Doe

Package Reviewed by and Date

E. Doe 1/25/07

Survey Comments

- 16 samples collected within the four retention ponds
- Elevated levels (max ~35 uR/hr) near pipe discharge. 100% characterization walkover performed along South end of retention pond.
- 3 samples collected at four locations in the elevated area. 0-6 inch, 6-12 inch, 12-20 inch comp.

Survey Package: PK003
Description: Retention Ponds
Class: 3
Survey Type: Exposure Rate, Soil Sampling

Summary

There are four retention ponds located on the north side of the property. The ponds have varying levels of water, from both run-off and discharge from the plant. For reference purposes, the retention ponds were labeled A through D from west to east.

Due to the steep banks of the retention basins and water, accessibility for exposure rate surveys was limited. The westernmost retention pond was the only accessible area where surveys could be performed on approximately 75% of the area. Remaining surveys were performed around the upper perimeter of the ponds.

Approximately 50% of all accessible areas were surveyed using a Ludlum 2350-1 coupled with a 2x2 sodium iodide detector. Exposure rate measurements and corresponding GPS data were collected on a nominal two-second frequency using a handheld computer. Surveys were performed with the detector held no greater than 6 inches from the surface. The detector was moved side to side, covering approximately one meter on each pass. Survey technicians observed both the digital and audible output of the instrument to identify any areas of concern.

One soil sample was collected within each quadrant of each retention basin. Samples were collected at the bottom of the sidewalls at the waters edge for the three eastern ponds. Samples were collected near the center of each quadrant for the westernmost basin. Samples were labeled with the work package number, followed by the corresponding retention pond identifier (A, B, C, or D), and the sample number within each area (1-4, starting in the southwest corner). A QC sample was collected at location 3-A-1.

Results

Elevated areas were identified in retention pond A (westernmost pond) along the south end of the retention basin surrounding the discharge pipe. A 100% survey was performed on the southern portion of the retention basin to characterize the elevated levels. An investigation of the area was performed by removing layers of the soil with a post hole digger and measuring the exposure rate at various levels. The investigation showed a layer of elevated material ranging from 6"-15". Characterization samples were collected at four (4) locations in the investigation area. A sample was taken in the first 6 inches, one from 6 - 12 inches, and a composite sample from 12-18 inches at each location for a total of 12 samples. Outside of this specific area, all other observed radiation levels were consistent with typical background levels.

Data summary	
Number of data points	4625
Maximum	36.8 μ R/hr
Average	10.2 μ R/hr
Standard Deviation	4.8 μ R/hr

Associated Files and Survey Information

File Names, Technicians, Instrument Information						
File Name	Survey Date	Technician	2350-1 SN	Cal Due	44-10 SN	Cal Due
PK03	9/14/06	Byron Bland	98648	5/1/07	211667	8/15/07
RPAC	9/8/06	Byron Bland	98648	5/1/07	211667	8/15/07

CL 1-25-07 CL 1-25-07

Sample GPS Coordinates

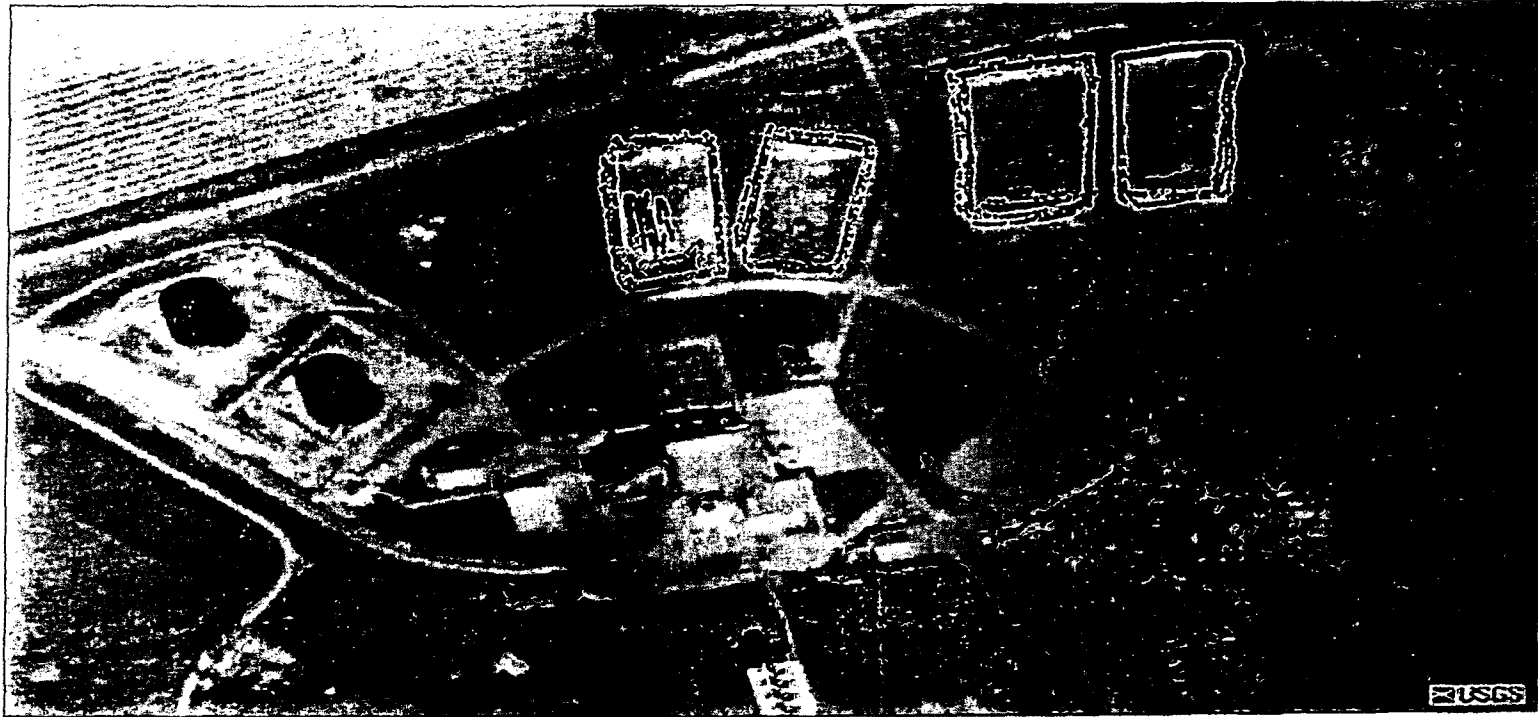
The following table shows the GPS coordinates of each sample location in this survey area.

Sample Identification	Latitude	Longitude
3A-1	43.604612	-96.637720
3A-2	43.604813	-96.637788
3A-3	43.604793	-96.637652
3A-4	43.604617	-96.637441
3B-1	43.604546	-96.637208
3B-2	43.604871	-96.637179
3B-3	43.605051	-96.636790
3B-4	43.604541	-96.636827
3C-1	43.604778	-96.636129
3C-2	43.605217	-96.636158
3C-3	43.605366	-96.635783
3C-4	43.604984	-96.635708
3D-1	43.604924	-96.635368
3D-2	43.605335	-96.635392
3D-3	43.605232	-96.635172
3D-4	43.604993	-96.635106
C4	43.604501	-96.637552
C3	43.604467	-96.637551
C2	43.604465	-96.637581
C1	43.604459	-96.637648

Exposure Rate and Sample Aerial Plots

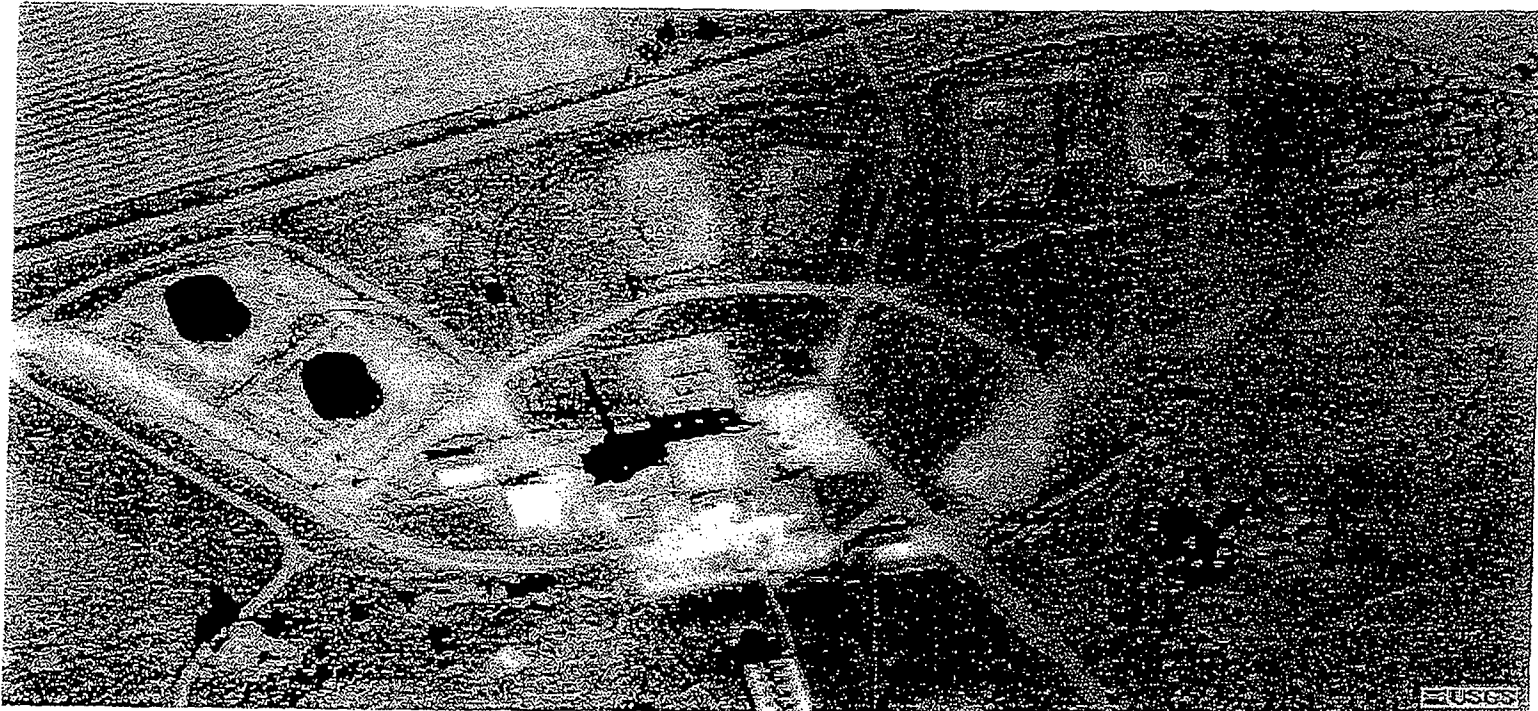
The following figures show plots of the exposure rate measurements and the sample locations for the survey area. The aerial map/photo on which the data is overlaid is dated 10/12/1991. While the map/photo does not reflect present day conditions it can be used to adequately identify the areas surveyed and the locations of the samples. The plots show the approximate location of the data in relationship to the site.

Survey Package 003 - Retention Basins
Exposure Rate
(R/hr)



- ◆ 5E-006 to 9E-006
- ◆ 9E-006 to 1.1E-005
- ◆ 1.1E-005 to 3.7E-005

Survey Package 003 - Retention Basins
Sample Locations



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 4	Prepared by: Doug Schult
Location: Construction Lay Down Area	Date prepared: 9/14/06
Area Classification: Impacted – Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the open land areas surrounding the construction lay down area</p> <p>The open land area surrounding the construction lay down area included in this survey area is approximately 3,380 m².</p> <p>See attached drawing</p> <p>Class 2 survey areas are limited in size to less than 10,000 m².</p>

General Survey Instructions

- 1) Grid the open land areas surrounding the construction lay down area in 13 meter grids in accordance with the attached drawing.
- 2) Using the GPS system coupled to the exposure rate meter scan at least 50% of each grid.
- 3) Mark any areas of elevated activity using a surveyor's stake or equivalent for further evaluation
- 4) Mark the systematic soil sampling locations within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 13 to give the X coordinate and the second random number is multiplied by 13 to give the Y coordinate

R=0.858, X=11.2 m R=0.225, Y= 2.9 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

R=0.777, X=10.1 m R=0.605, Y= 7.90 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.
- 5) Number the soil sampling locations using a sequential numbering system that includes the survey package number and the grid ID, i.e , 4-A1, 4-A2, 4-A3, etc. Mark the soil sampling location number on the surveyor's stake and on the enclosed map.
- 6) At each soil sampling location collect a surface (0 to 6 inches) soil sample. Place each soil sample in a plastic container labeled with the soil sampling location, the date the sample was taken, and the name of the individual collecting the sample.
- 7) At soil sampling location 4-C3 collect an additional soil sample and label the sample 4-C3QC.
- 8) Upon returning the soil samples to the office fill out the appropriate chain of custody forms, affix a security seal across the top of the sample container and apply a label to the sample container indicating the soil sampling location, the date the sample was taken, and the name of the individual collecting the sample.

Special Instructions

- For exposure rate measurements, source check all instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Gamma scans should be performed by moving the detector in a serpentine pattern at a speed of approximately 1 meter per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK004	OPLND				Open Land Areas	NA	NA	50%	NA	NA

Package Review

Date Package Completed

10/13/06 *John McDon*

Package Reviewed by and Date

E. J. [unclear] 1/25/07

Survey Comments

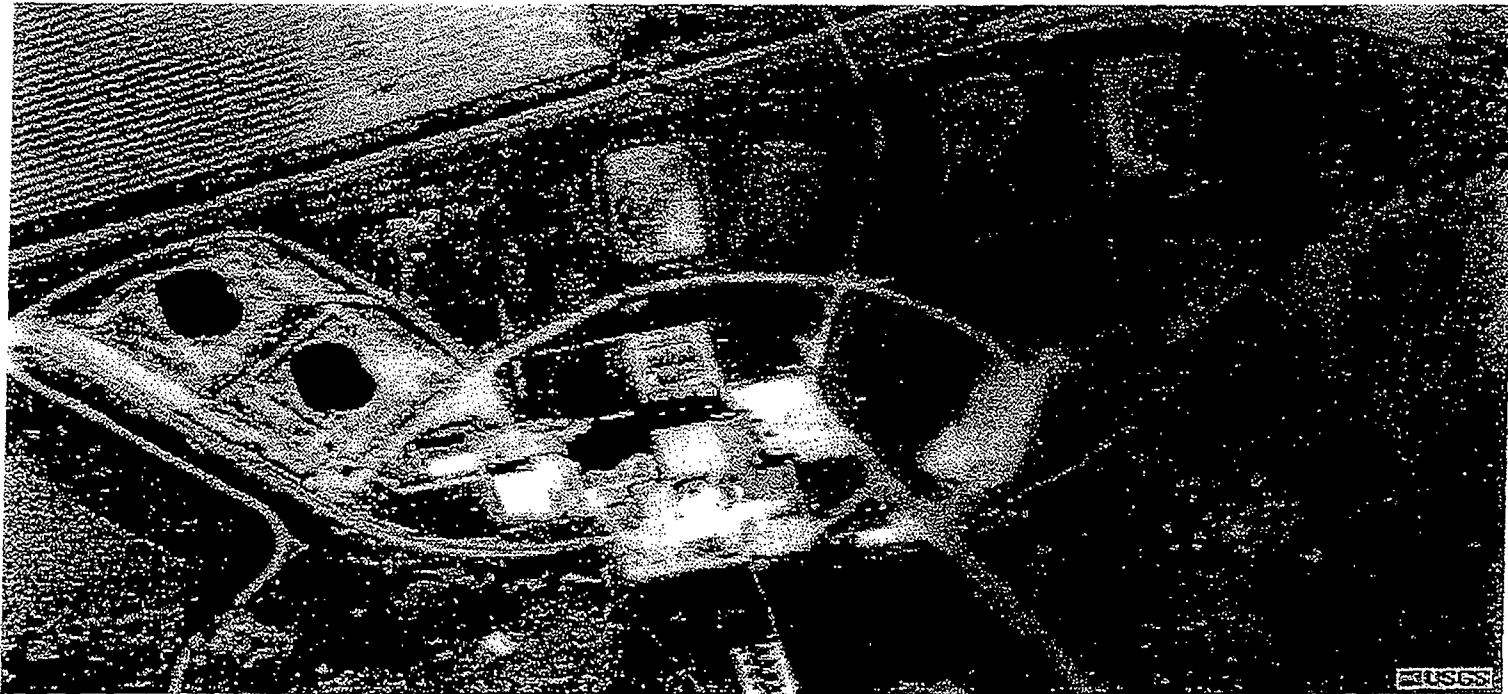
- Elevated levels (~15µg/L) noted in road material in SW corner of unit
- 20 samples taken at randomly selected systematic coordinates
- Large debris piles prohibited surveying all portions of survey grids

Survey Package 004 - Construction Laydown Area
Exposure Rate
(R/hr)



◆ 3.5E-006 to 9E-006
◆ 9E-006 to 1.1E-005
◆ 1.1E-005 to 1.3E-005

Survey Package 004 - Construction Laydown Area
Sample Locations



Survey Package: PK004
Description: Construction Lay-down Area
Class: 2
Survey Type: Exposure Rate, Soil Sampling

Summary

The construction lay-down area is located in the northwest corner of the property and contains debris such as concrete slabs, metal piping, wooden skids, wooden spools, wooden beams, metal grating, corrugated aluminum and other miscellaneous material. The survey area includes all the debris piles and a minimum of a five meter buffer surrounding the perimeter of the debris.

The survey area was broken down into 20 grids, consisting of one row of 6 grids and two rows of 7 grids. The last grid in the first row overlapped with a separate survey unit (effluent discharge pathway). Grid sizes in rows A and B are 13x13m, while row C is 13x8 meters. The north edge of row C runs along a barbed wire fence, limiting the size of the survey grid. The total area surveyed is approximately 2,925 m².

Approximately 75% of all accessible areas were surveyed using a Ludlum 2350-1 coupled with a 2x2 sodium iodide detector. Exposure rate measurements and corresponding GPS data were collected on a nominal two-second frequency using a handheld computer. Surveys were performed with the detector held no greater than 6 inches from the surface. The detector was moved side to side, covering approximately one meter on each pass. Survey technicians observed both the digital and audible output of the instrument to identify any areas of concern.

Soil sample locations were determined using a randomly selected set of coordinates. All sample locations were accessible at the primary sample location. Samples were collected in the top six inches of soil in each of the survey grids. Samples were labeled with the corresponding grid identifier (4-A1, 4-A2, 4-B2, etc.). A QC sample was collected at location 4-C3.

Results

Elevated areas were identified in the road material in the southwest corner of the survey area. All other observed radiation levels were consistent with typical background levels.

Data summary	
Number of data points	3338
Maximum	12.28 μ R/hr
Average	7.70 μ R/hr
Standard Deviation	0.91 μ R/hr

Associated Files and Survey Information

File Names, Technicians, Instrument Information						
File Name	Survey Date	Technician	2350-1 SN	Cal Due	44-10 SN	Cal Due
PK04	10/11/06	Jamie Doan	98638	5/2/07	230157	8/15/07

Sample GPS Coordinates

The following table shows the GPS coordinates of each sample location in this survey area.

Sample Identification	Latitude	Longitude
4-1	43.604501	-96.639240
4-2	43.604548	-96.639075
4-3	43.604581	-96.638932
4-4	43.604616	-96.638781
4-5	43.604660	-96.638630
4-6	43.604706	-96.638478
4-7	43.604614	-96.639298
4-8	43.604668	-96.639156
4-9	43.604697	-96.638992
4-10	43.604736	-96.638837
4-11	43.604770	-96.638699
4-12	43.604807	-96.638545
4-13	43.604839	-96.638411
4-14	43.604705	-96.639370
4-15	43.604757	-96.639207
4-16	43.604798	-96.639057
4-17	43.604836	-96.638912
4-18	43.604877	-96.638754
4-19	43.604910	-96.638611
4-20	43.604959	-96.638460

Exposure Rate and Sample Aerial Plots

The following figures show plots of the exposure rate measurements and the sample locations for the survey area. The aerial map/photo on which the data is overlaid is dated 10/12/1991. While the map/photo does not reflect present day conditions it can be used to adequately identify the areas surveyed and the locations of the samples. The plots show the approximate location of the data in relationship to the site.

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 5	Prepared by: Doug Schult
Location: Paved Area Surrounding The Pathfinder Plant	Date prepared: 10/10/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the paved areas (walkways, parking areas, roadways, loading dock, etc) surrounding the Pathfinder Plant.</p> <p>See attached drawing</p> <p>Class 3 survey areas have no size limits</p>

General Survey Instructions
<ol style="list-style-type: none"> 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Each scan should be performed for a minimum of 5 minutes and be centered around the fixed point measurement locations. Mark any areas of elevated activity using a permanent marker such as spray paint for a follow-up evaluation. 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process. 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager. 5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Sinears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK005	PVARE				Paved Areas	10%	50	NA	NA	50

Package Review

Date Package Completed

10-25-04

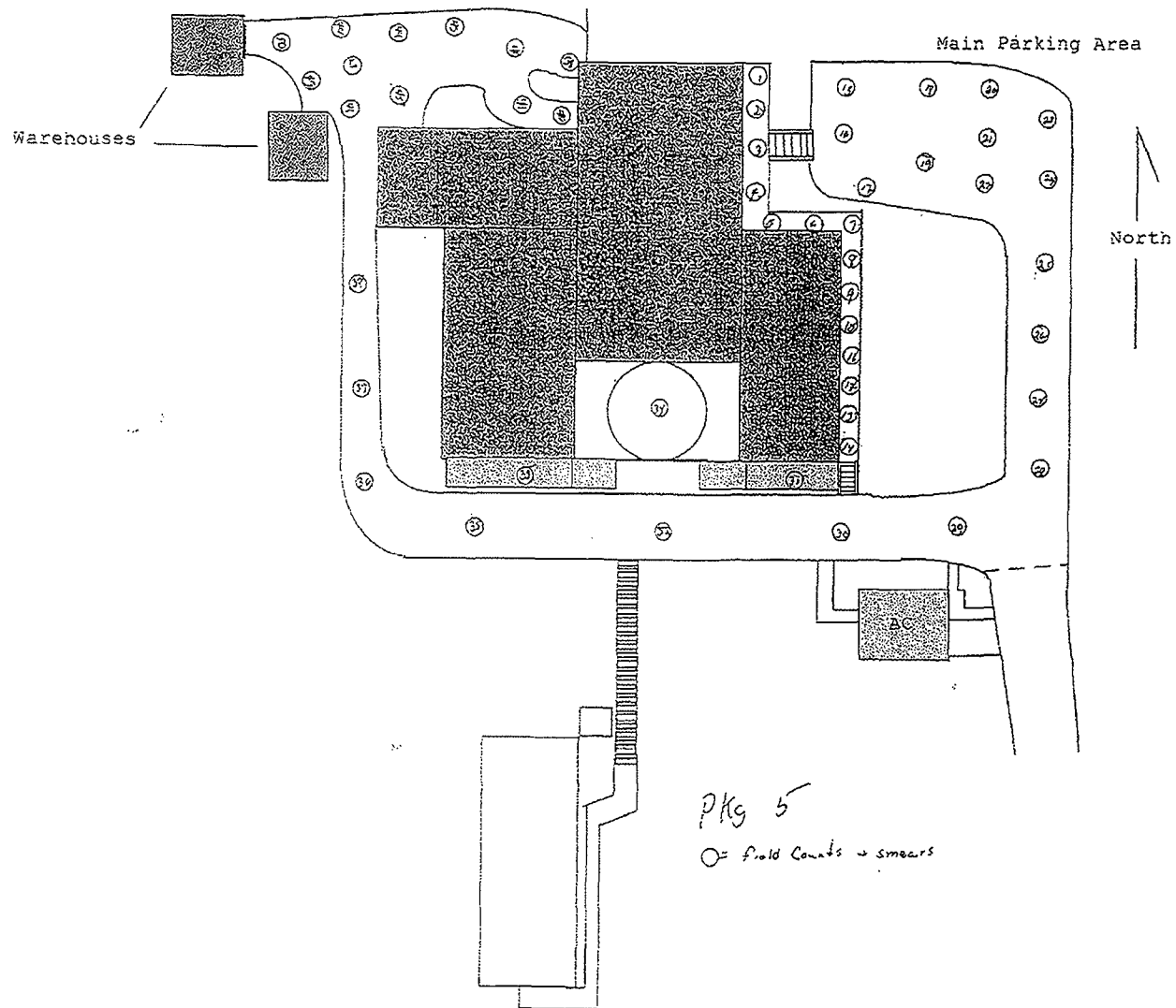
Package Reviewed by and Date

Carl Hall

1-19-07

[Signature] 1/25/07

Survey Comments



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 6	Prepared by: Doug Schult
Location: Floor and Walls of Cooling Tower Basins	Date prepared: 9/13/06
Area Classification: Impacted – Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls of the cooling tower basin</p> <p>The cooling tower basin is approximately 816 m².</p> <p>See attached drawing</p> <p>Class 2 survey areas are limited in size to less than 1000 m²</p>

General Survey Instructions

- 1) Grid the floor using **5 meter grids** beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every **5 meters** beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using a non permanent marker such as pieces of tape or stickers. Label the grids using a numeric numbering system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 50% of the accessible surfaces within each grid holding the detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm^2 detector. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Collect a total beta activity measurement at locations identified during the scan as having residual activity. If activity in excess of the criteria for release for unrestricted use ($5000 \text{ dpm}/100 \text{ cm}^2$) is identified mark the area and notify the Project Manager.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 5 to give the X coordinate and the second random number is multiplied by 5 (2 for walls) to give the Y coordinate

Floors: R=0.232, X=1.16 m R=0.653, Y= 3.26 m
Walls: R=0.232, X=1.16 m R=0.653, Y= 1.31 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.885, X=4.42 m R=0.553, Y= 2.77 m
Walls: R=0.885, X=4.42 m R=0.553, Y= 1.11 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.
- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than $1,000 \text{ dpm}/100 \text{ cm}^2$. Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number
- 9) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

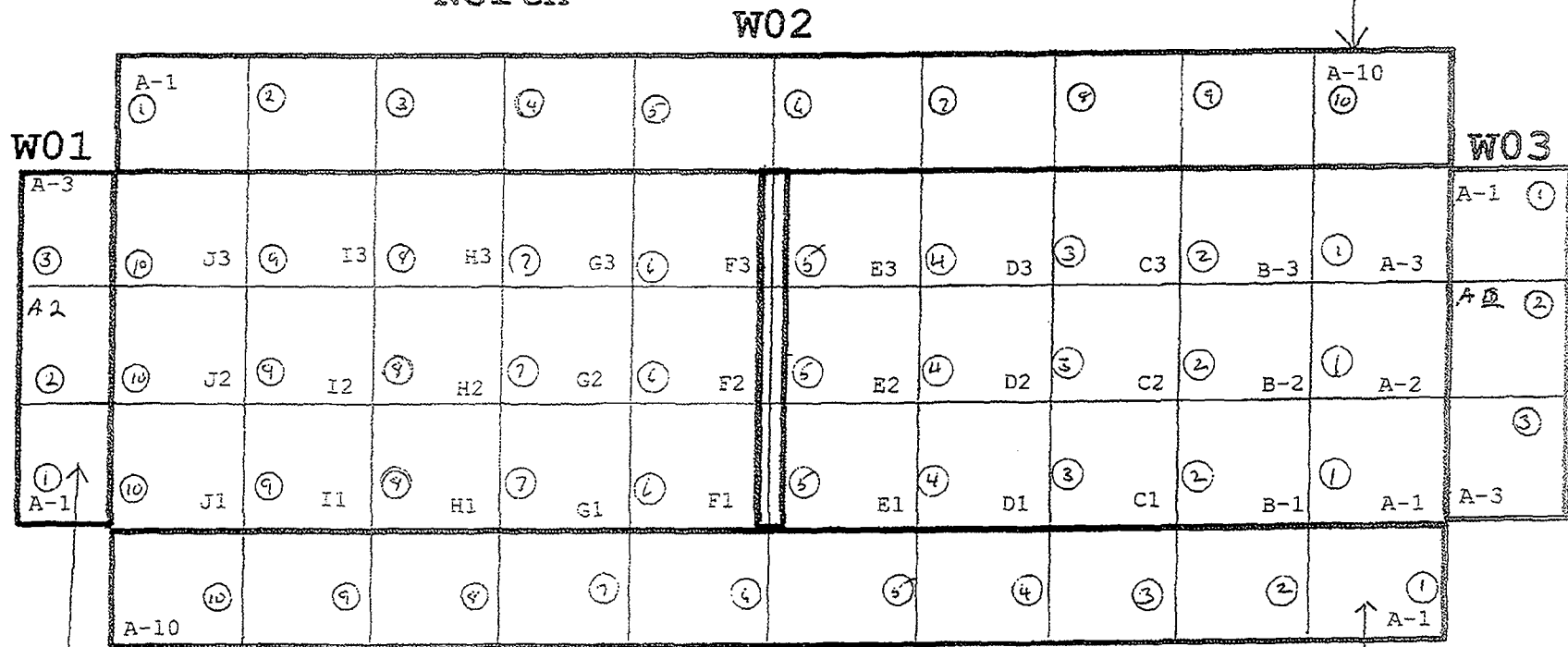
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK006	FL001				Floor	50%	Each Grid	NA	NA	Each Grid
PK006	W0001				Walls	50%	Each Grid	NA	NA	Each Grid
PK006	ST001				Center Divider	50%	10	NA	NA	10
PK006	ST002				Spillway	50%	10		NA	10

Package Review	
Date Package Completed	9-22-06 Carl [Signature]
Package Reviewed by and Date	[Signature] 1/25/07

Survey Comments
The horizontal structures in the overhead spaces and the ceiling of the Cooling Tower Basin are considered non impacted and will not be surveyed. These structures were added following the collapse of the Cooling Towers.

North

L2= W02
L7= A
L8= 10



L2=W01
L7= A
L8= 1

W04

O = Smears + Points
Floors + Walls

L2= W04
L7= A
L8= 1

Time (h)	Control (n)	Treated (n)
0	100	100
20	85	115
40	70	130
60	55	145
80	45	155
100	40	160



Cooling Tower Basin

Oz Smears + Points

Structure - I

Structure - 2

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 7	Prepared by: Doug Schult
Location: Temporary Loading And Storage Building	Date prepared: 10/9/06
Area Classification: Impacted – Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor and walls below 2 meters in the Loading and Storage Building</p> <p>The Loading and Storage Building is approximately 400 m².</p> <p>See attached drawing</p> <p>Class 2 survey areas are limited in size to less than 1000 m²</p>

General Survey Instructions

- 1) Grid the floor using 3 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 3 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using a non permanent marker such as pieces of tape or stickers. Label the grids using an numeric numbering system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 50% of the accessible surfaces within each grid holding the detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm² detector. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) For the floor grids perform a 5 minute scan per grid.
For the wall grids perform a 4 minute scan per grid.
For the non permanent items perform a 1 minute scan for each total beta activity measurement.
- 6) Collect a total beta activity measurement at locations identified during the scan as having residual activity. If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.
- 7) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 3 to give the X coordinate and the second random number is multiplied by 3 (2 for walls) to give the Y coordinate

Floors: R=0.943, X=2.83 m R=0.447, Y= 1.34 m
Walls: R=0.943, X=2.83 m R=0.447, Y= 0.89 m

 In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.794, X=4.42 m R=0.664, Y= 1.99 m
Walls: R=0.794, X=4.42 m R=0.664, Y= 1.33 m

 In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.
- 8) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number
- 10) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

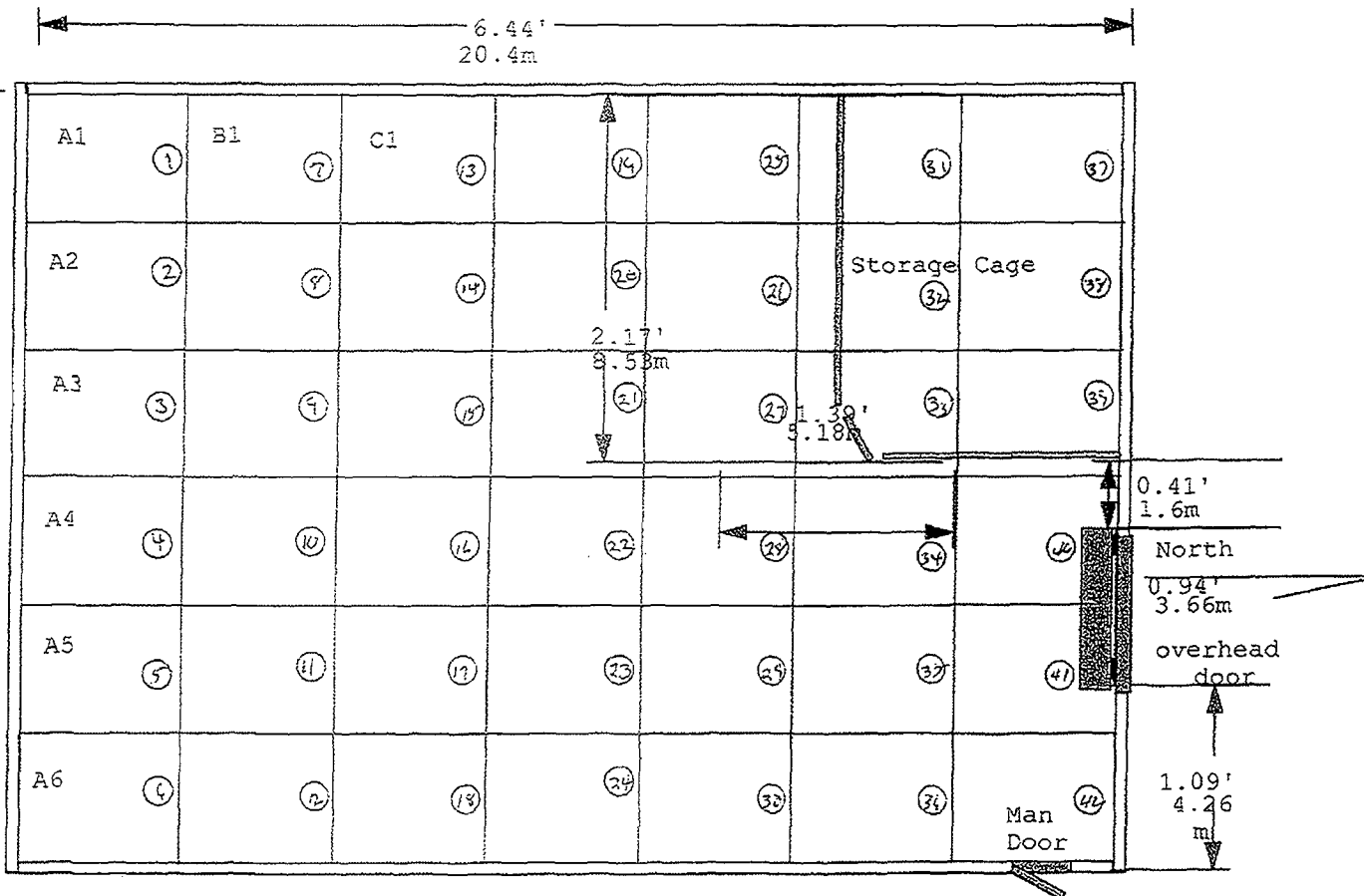
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

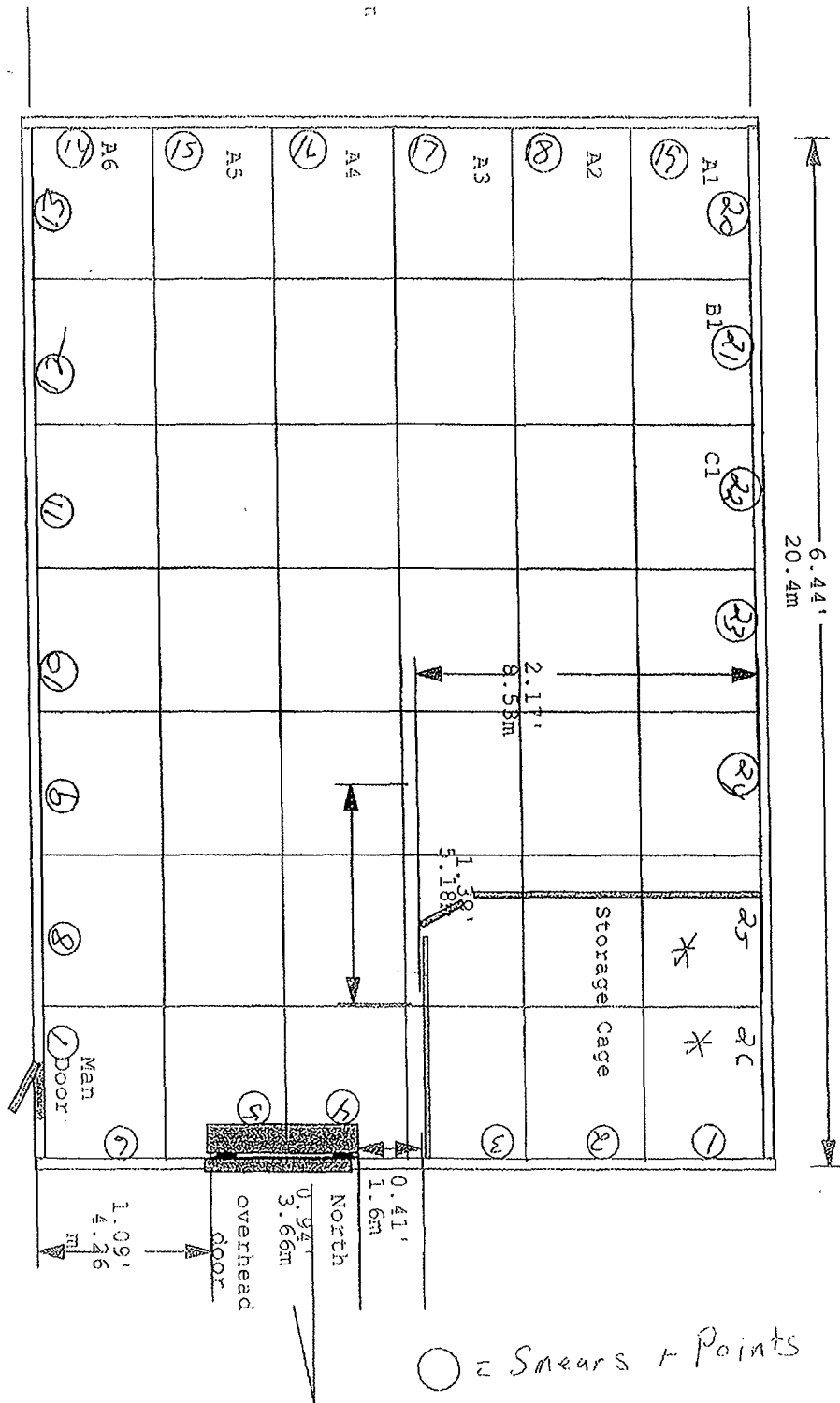
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK007	FL001				Floor	50%	Each Grid	NA	NA	Each Grid
PK007	W0001				Walls Below 2 Meters	50%	Each Grid	NA	NA	Each Grid
PK007	ST001				Non Permanent Items	50%	50	NA	NA	50

Package Review	
Date Package Completed	10-14-06
Package Reviewed by and Date	Paul J. 1-14-07 D. J. 1/25/07

Survey Comments



○ = Smears Location
 PKg 7 10/11/06
 Floor



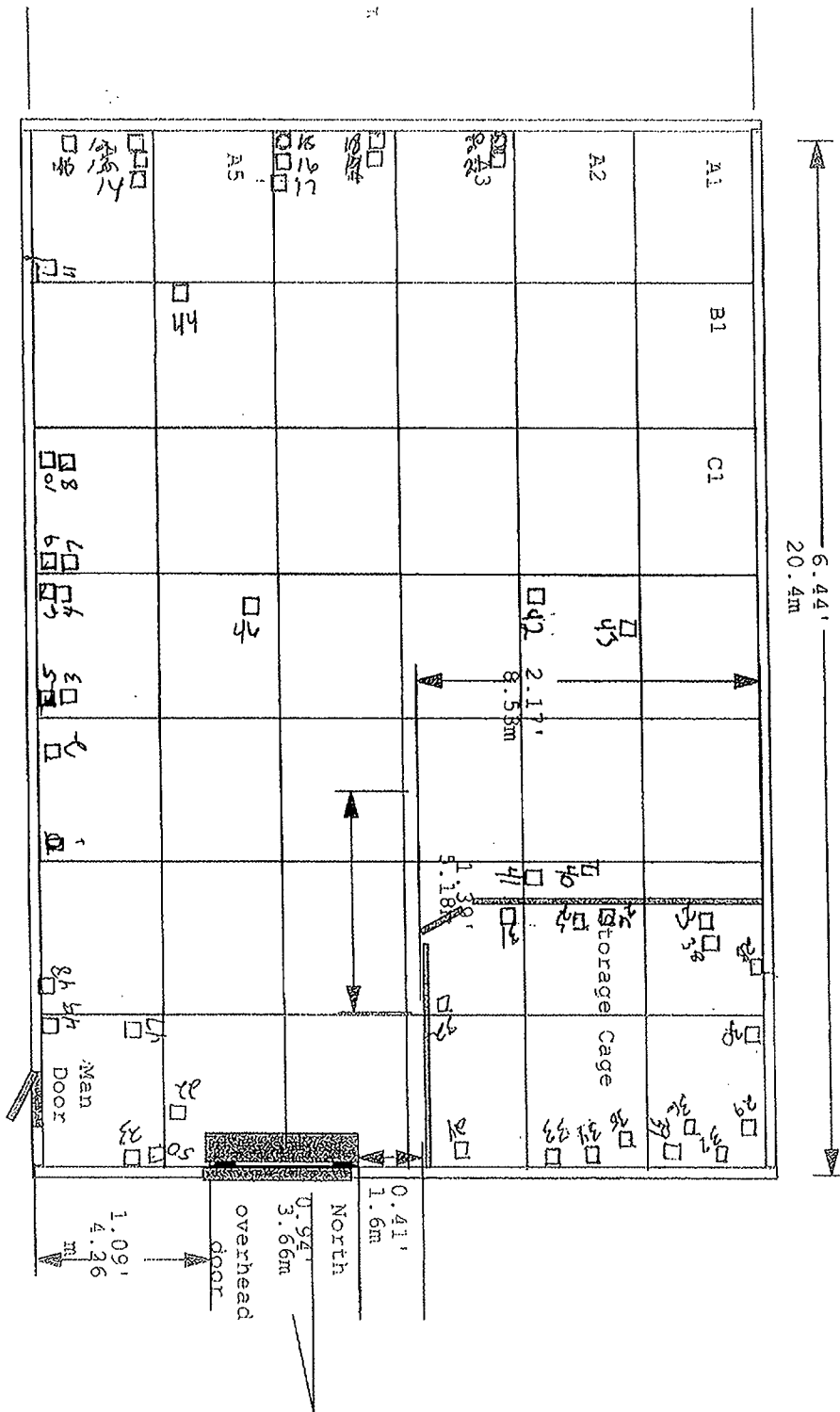
10/11/06

PROOF
WOOL

WALLS SCANS AND POINTS
Below 2 meters

* = #25, #26 ARE UNASSIBLE due to
shelving. the shelving WAS scanned
AS NON PERMANENT ITEMS. TR

10/11/06 Page 7 of 8



PK007

10/10/06

1-50

Non Permanent Items

□ = Smears + Points

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 8	Prepared by: Doug Schult
Location: Temporary Loading and Storage Building, Walls Above 2 Meters And Ceiling	Date prepared: 10/13/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the walls above 2 meters and the ceiling in the Temporary Loading and Storage Building..

The Temporary Loading and Storage Building is approximately 400 m².

See attached drawings

Class 3 survey areas are not limited in size

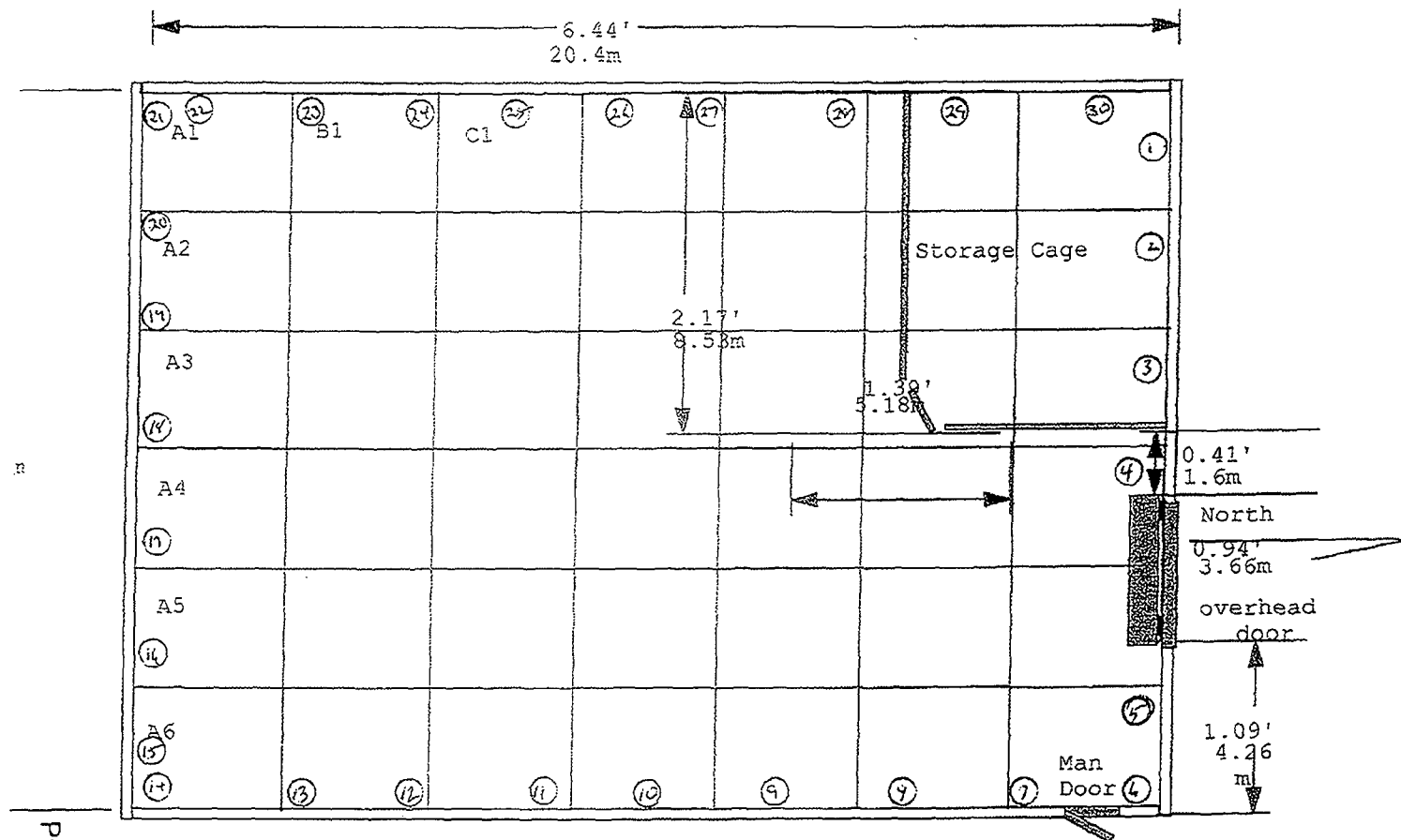
General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Perform a 2 minute scan centered on each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

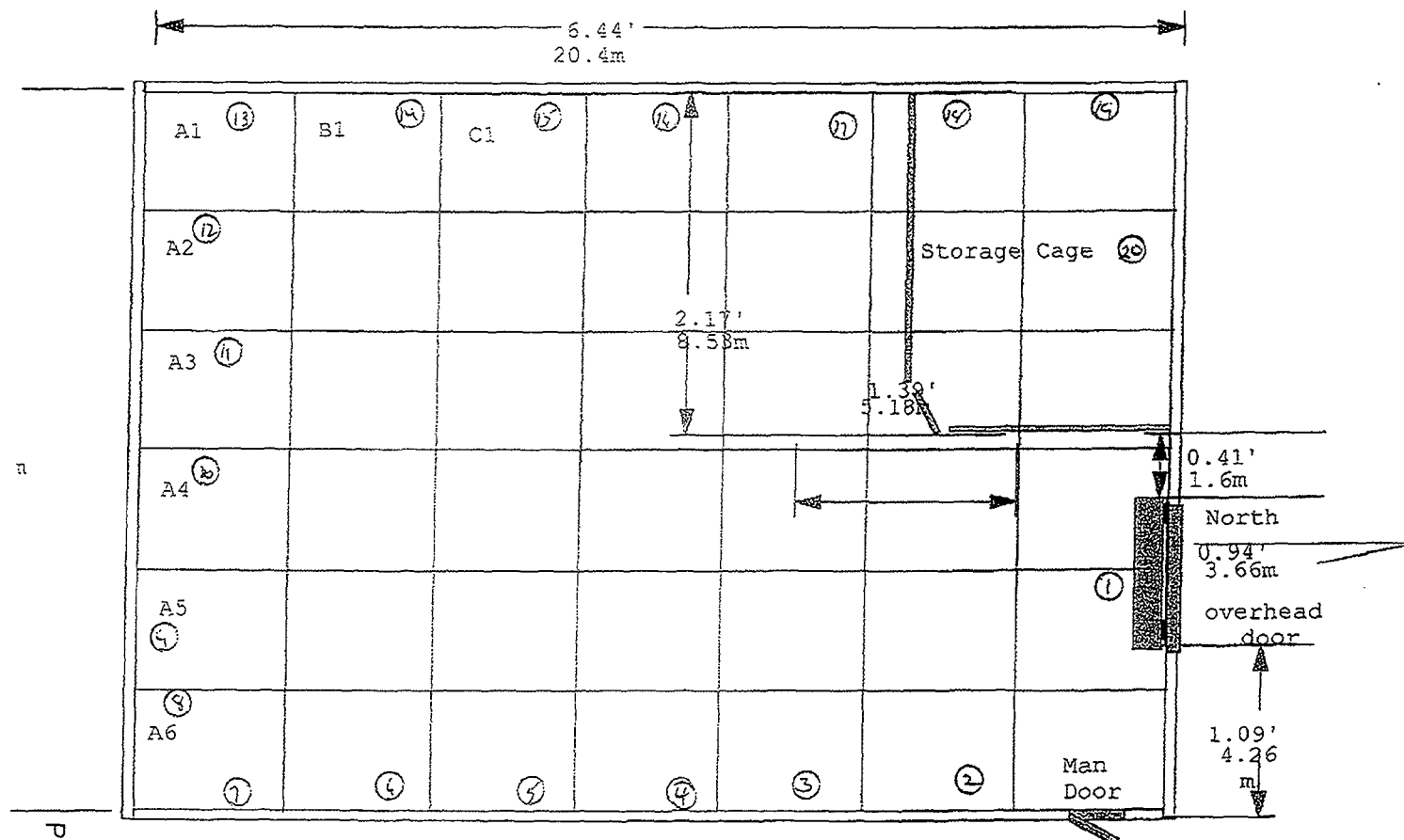
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK008	W0001				Walls Above 2 Meters	10%	30	NA	NA	30
PK008	C0001				Ceiling	10%	30	NA	NA	30
PK008	ST001				Non Permanent Items Above 2 Meters	10%	20	NA	NA	20



○ = Smev + Points Locations
 PKs # 008
 Wells Above 2 meters



○ = Smears + Points Location

PKG 008

Non-Permanent Items
Above 2 Meters

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 9	Prepared by: Doug Schult
Location: Warehouse	Date prepared: 10/12/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floors, walls, ceiling, and non permanent items in the Warehouse.</p> <p>The first floor of the Warehouse is approximately 277 m².</p> <p>The second floor of the Warehouse is approximately 144 m².</p> <p>See attached drawings</p> <p>Class 3 survey areas are not limited in size</p>

General Survey Instructions
<ol style="list-style-type: none">1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Perform a 2 minute scan centered on each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the 1.7 code to record the measurement number4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

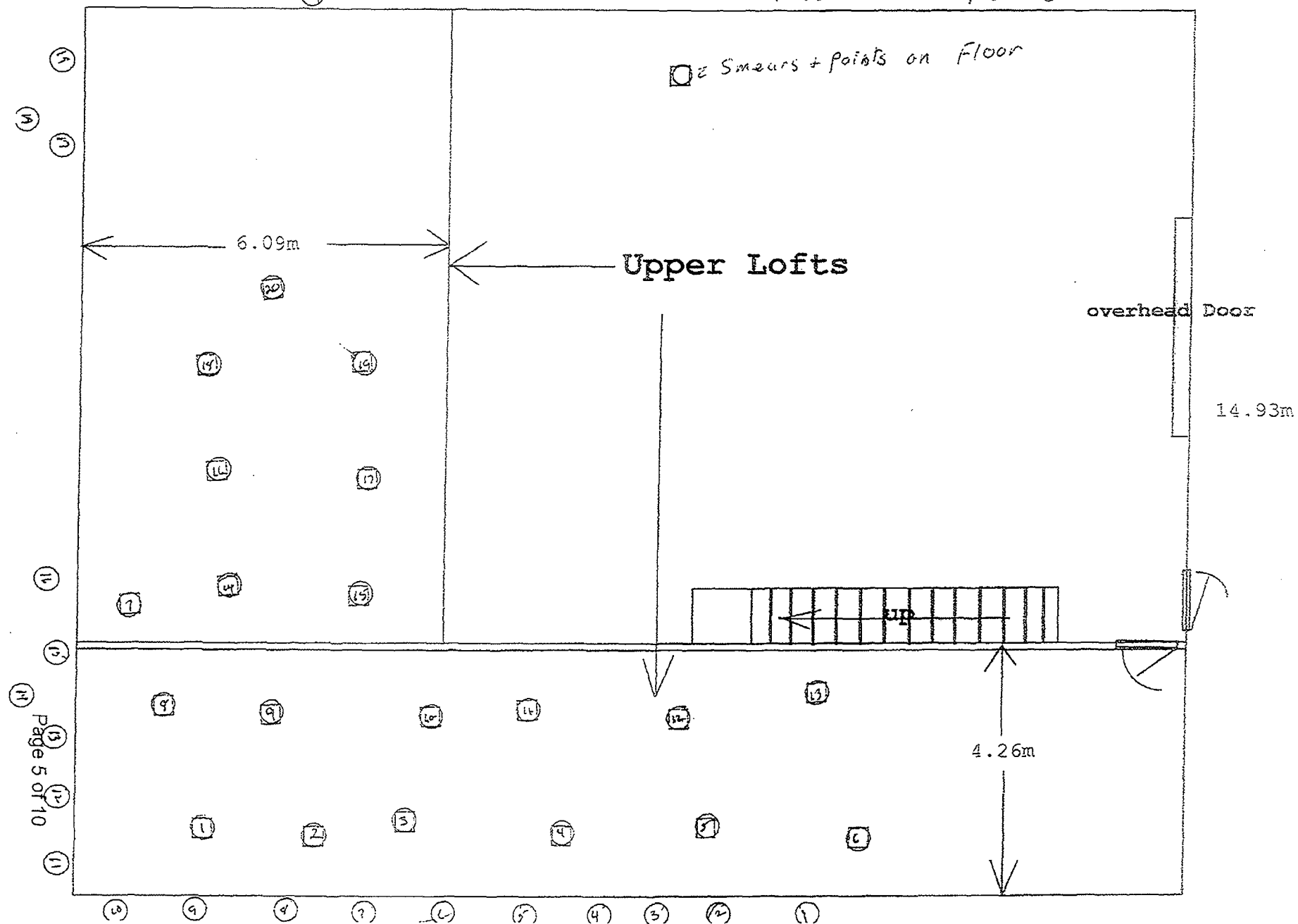
- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK009	FL001				First Floor	10%	30	NA	NA	30
PK009	W0001				First Floor Walls	10%	20	NA	NA	20
PK009	C0001				First Floor Ceiling	10%	10	NA	NA	10
PK009	ST001				Stairs	10%	10	NA	NA	10
PK009	FL002				Second Floor	10%	20	NA	NA	20
PK009	W0002				Second Floor Walls	10%	20	NA	NA	20
PK009	C0002				Second Floor Ceiling	10%	10	NA	NA	10
PK009	ST002				Non Permanent Items	10%	30	NA	NA	30

○ 2 Smears + Points on walls

PK-009 Floor + Walls
18.44m Second Floor Walls + Floors

□ 2 Smears + points on Floor

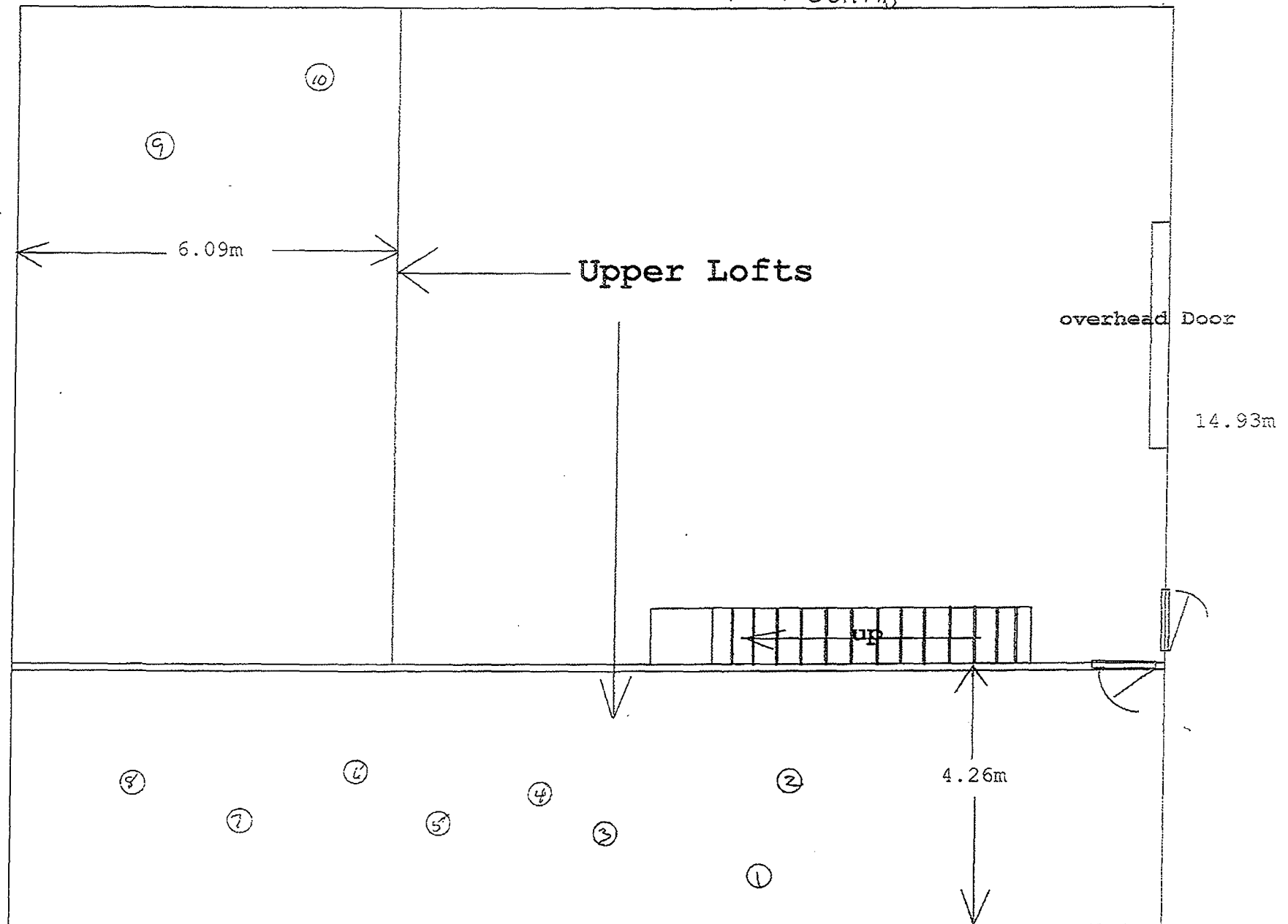


○ z Smears + Point for Ceiling

18.44m

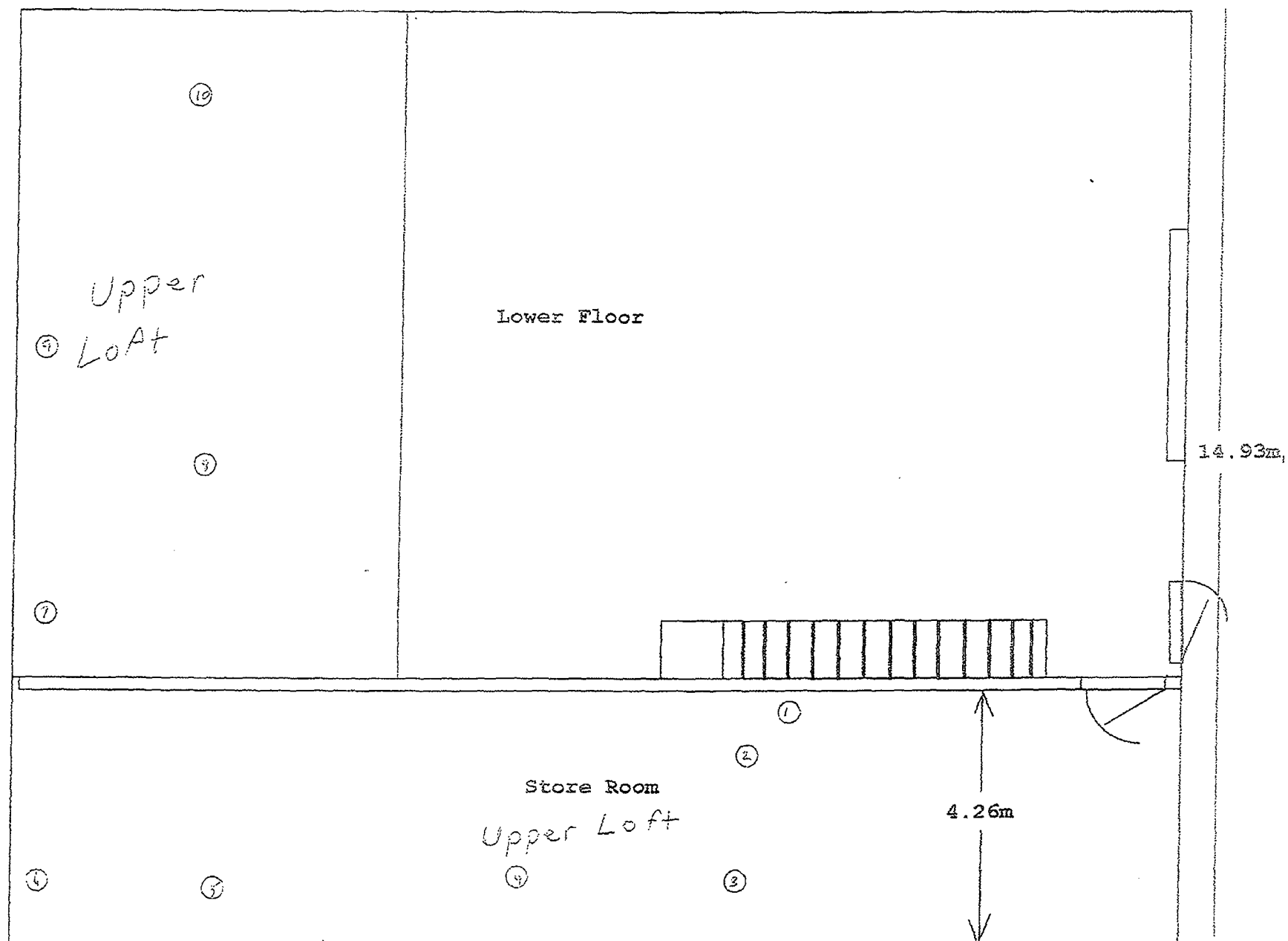
Second Floor Ceiling

PK 009



○ = Smears + Points of Non-Permanent Items LoAt Pkg 009 / ST002

18.44m



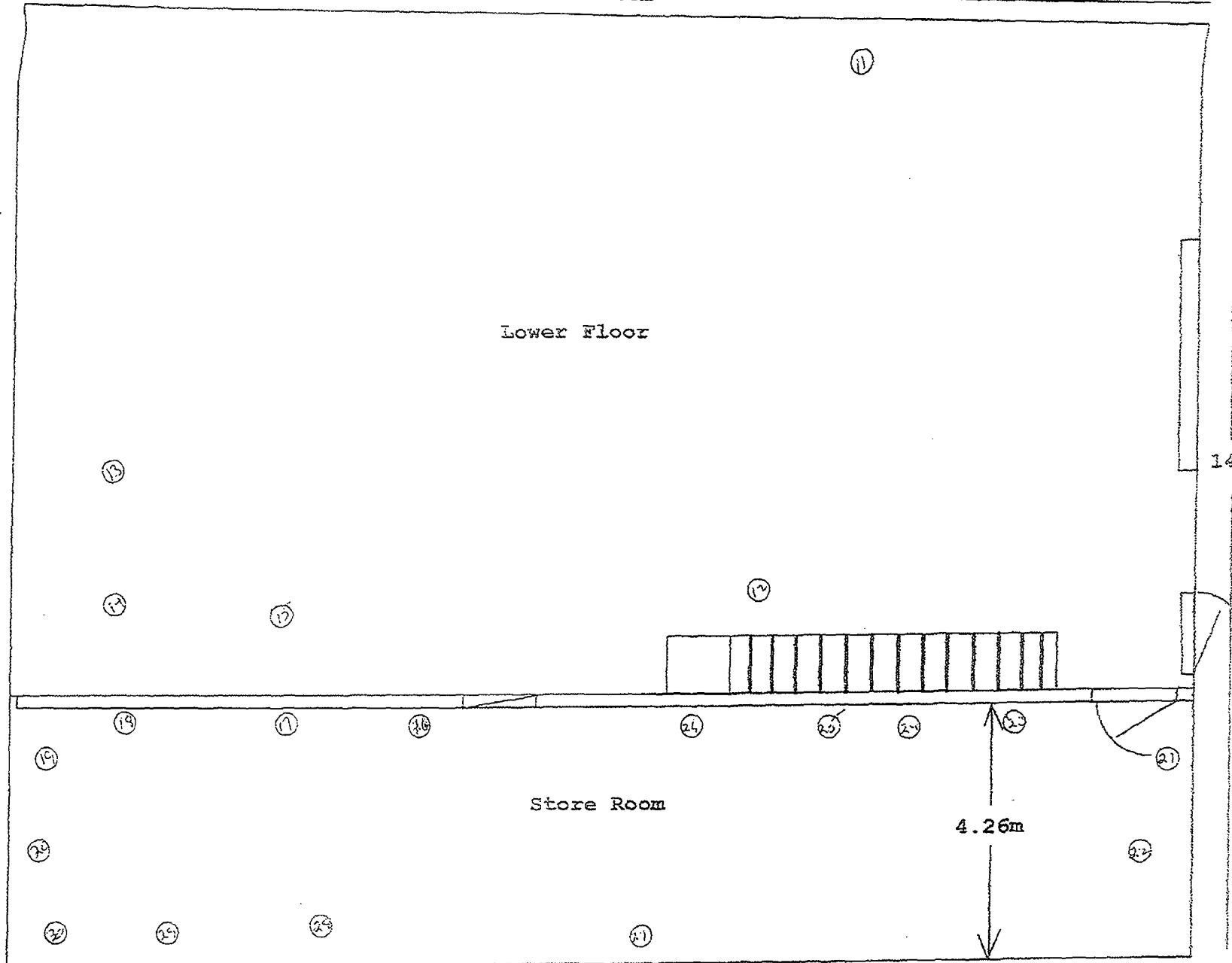
18.44m

Lower Floor

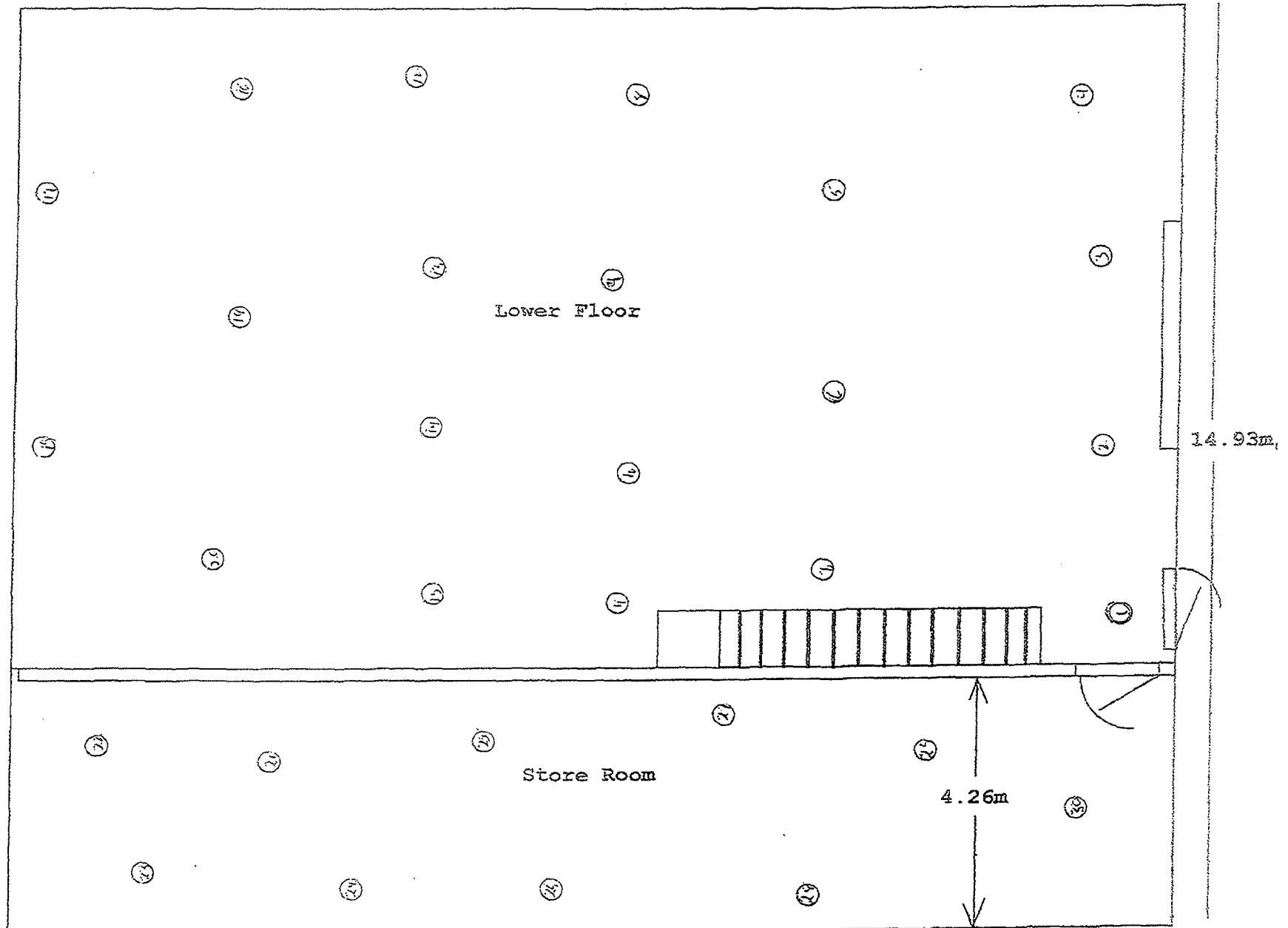
14.93m

Store Room

4.26m



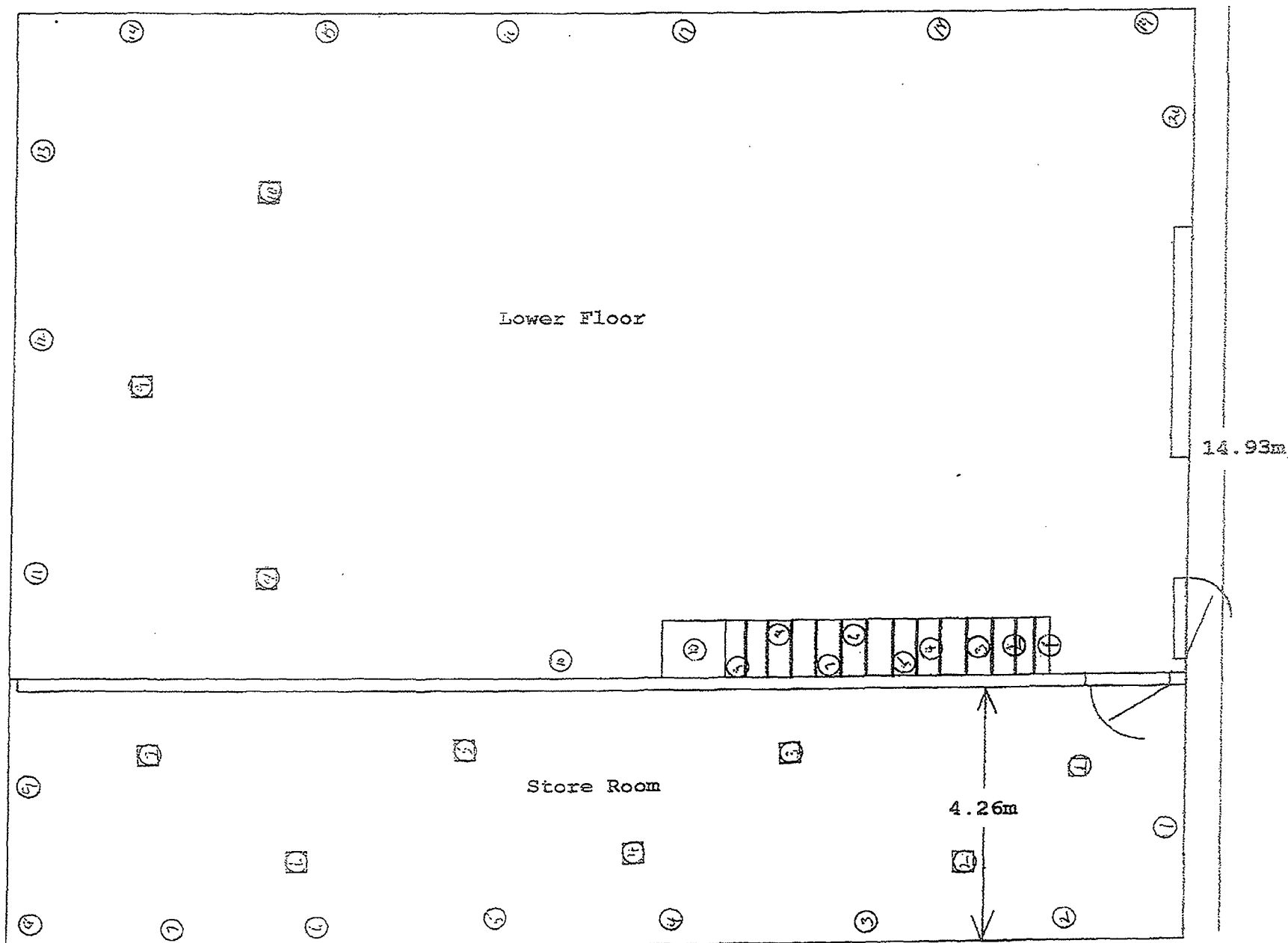
18.44m



PMS 007 walls, ceilings, etc.
 ○ = Smears + Points on walls □ = Smears + Points on Ceilings

○ = Smears + Points on Stairs

18.44m



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 10	Prepared by: Doug Schult
Location: Bottom 2 Floors Of The Fuel Storage Building	Date prepared: 9/28/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the floors, walls and ceiling on the bottom 2 floors of the Fuel Storage Building.

The upper floor of the bottom 2 floors is approximately 300 m².

The lower floor of the bottom 2 floors is approximately 370 m².

See attached drawing

Class 3 survey areas are not limited in size

General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm² detector. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK010	FL001				Upper Floor Of The Bottom 2 Floors	10%	20	NA	NA	20
PK010	W0001				Upper Level Walls	10%	30	NA	NA	30
PK010	C0001				Upper Level Ceiling	10%	30	NA	NA	30
PK010	FL002				Lower Level Floor Of The Bottom 2 Floors	10%	30	NA	NA	30
PK010	W0002				Lower Level Walls	10%	30	NA	NA	30
PK010	C0002				Lower Level Ceiling	10%	20	NA	NA	20
PK010	ST001				Stairs Between Upper Floor And Lower Floor	10%	10	NA	NA	10

Package Review

Date Package Completed

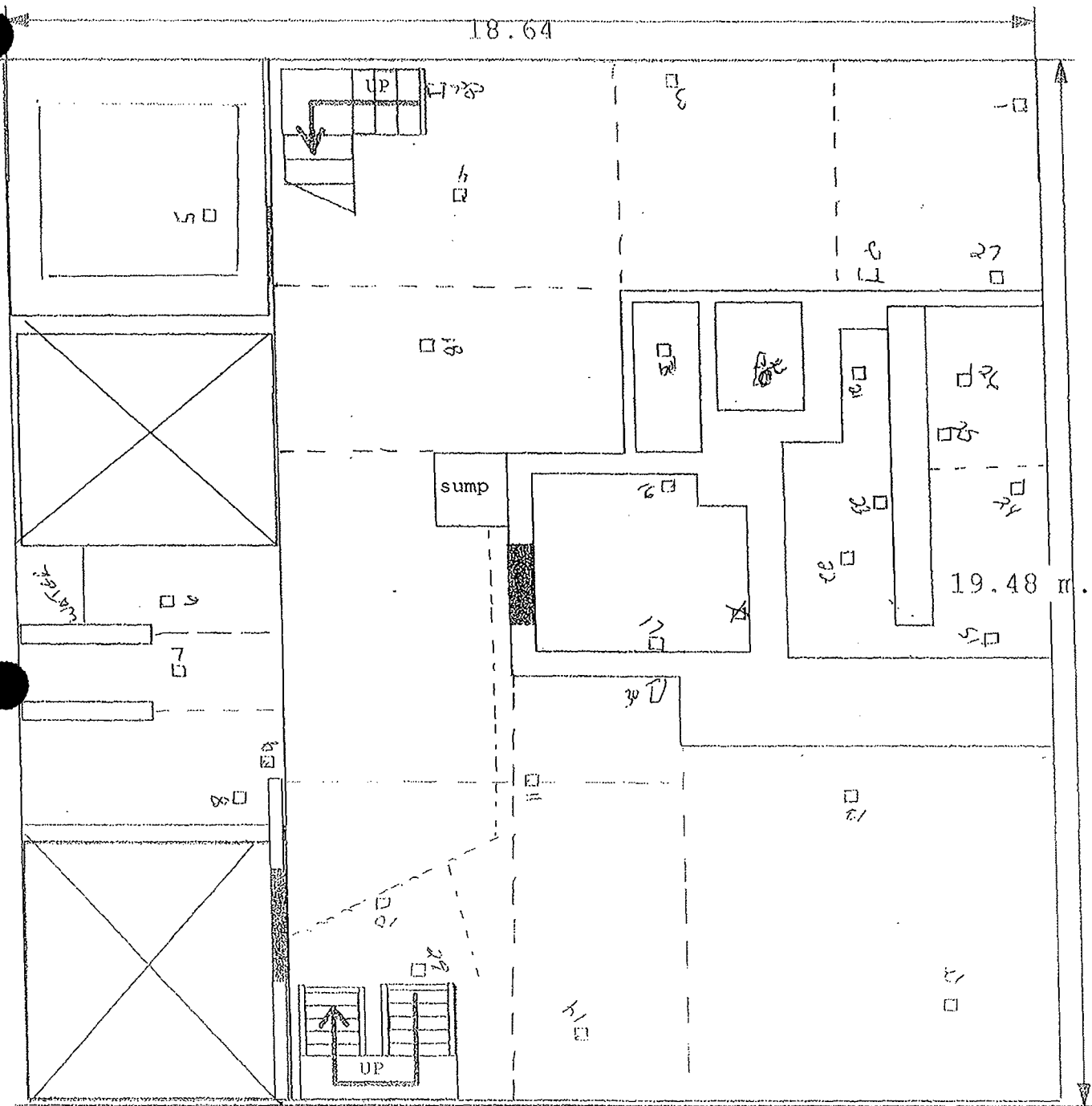
10-5-06

Package Reviewed by and Date

Carol J. [Signature] 1-19-07 [Signature] [Signature]

Survey Comments

Fuel Handling Building Basement Elev. 1297' 0"



Not to Scale

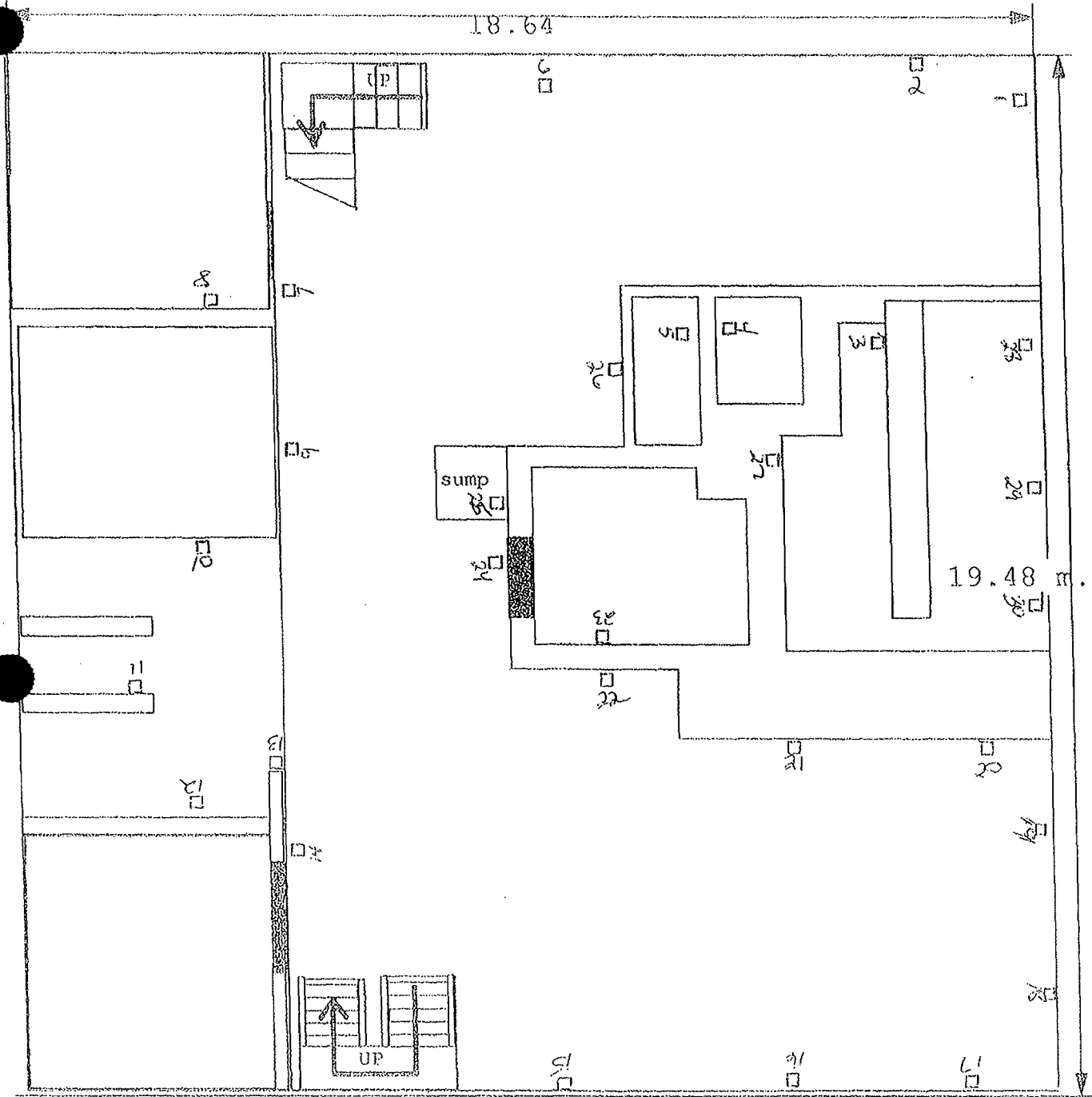
PK010

SCAN AND POINTS OF LOWER LEVEL FLOOR
OF THE BOTTOM 2 FLOORS

1-30

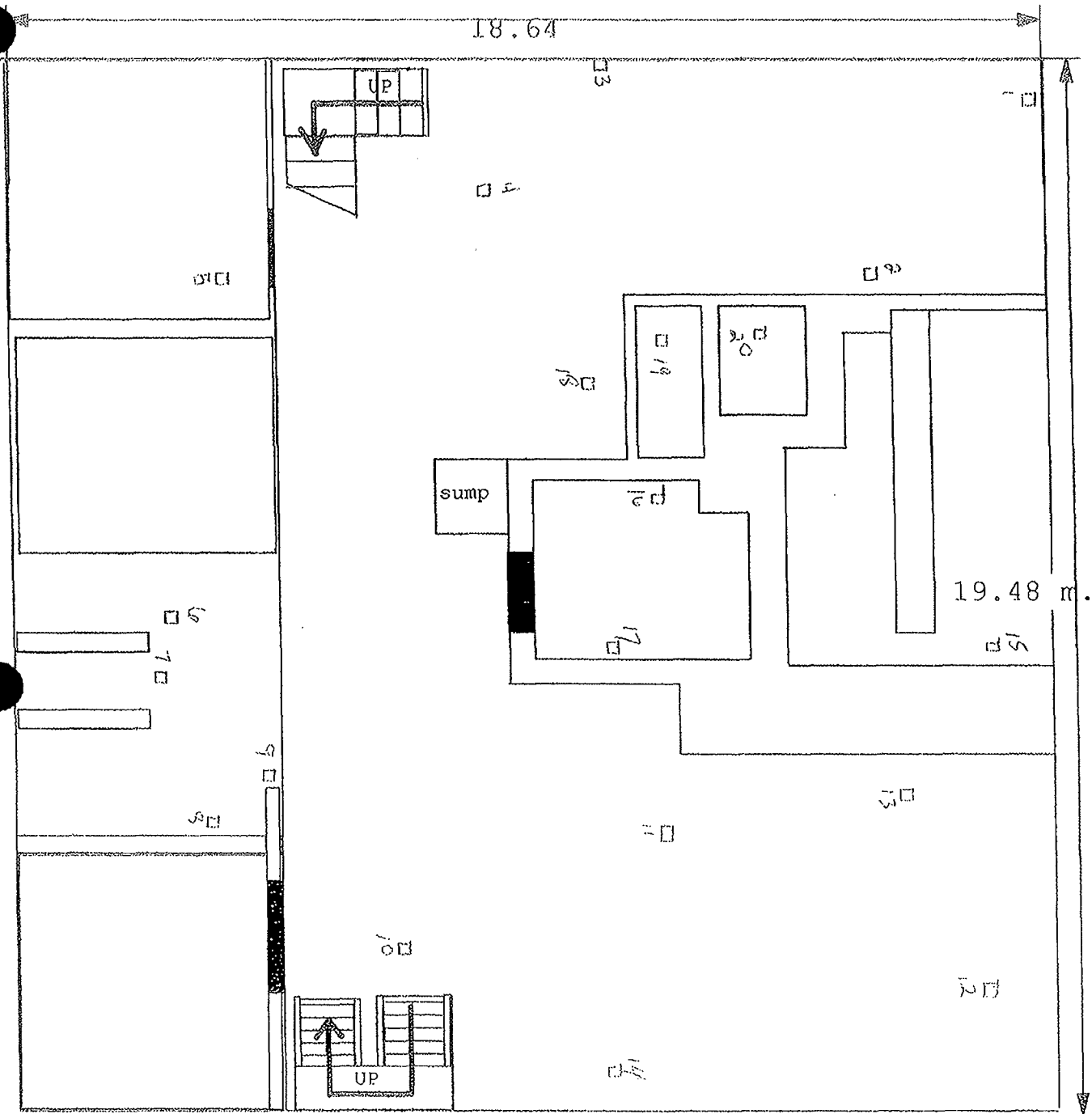
7/29/06

Fuel Handling Building Basement Elev. 1297'0"



PK010
 LOWER LEVEL WALLS
 1-30 10/2/06
 SCANS AND POINTS

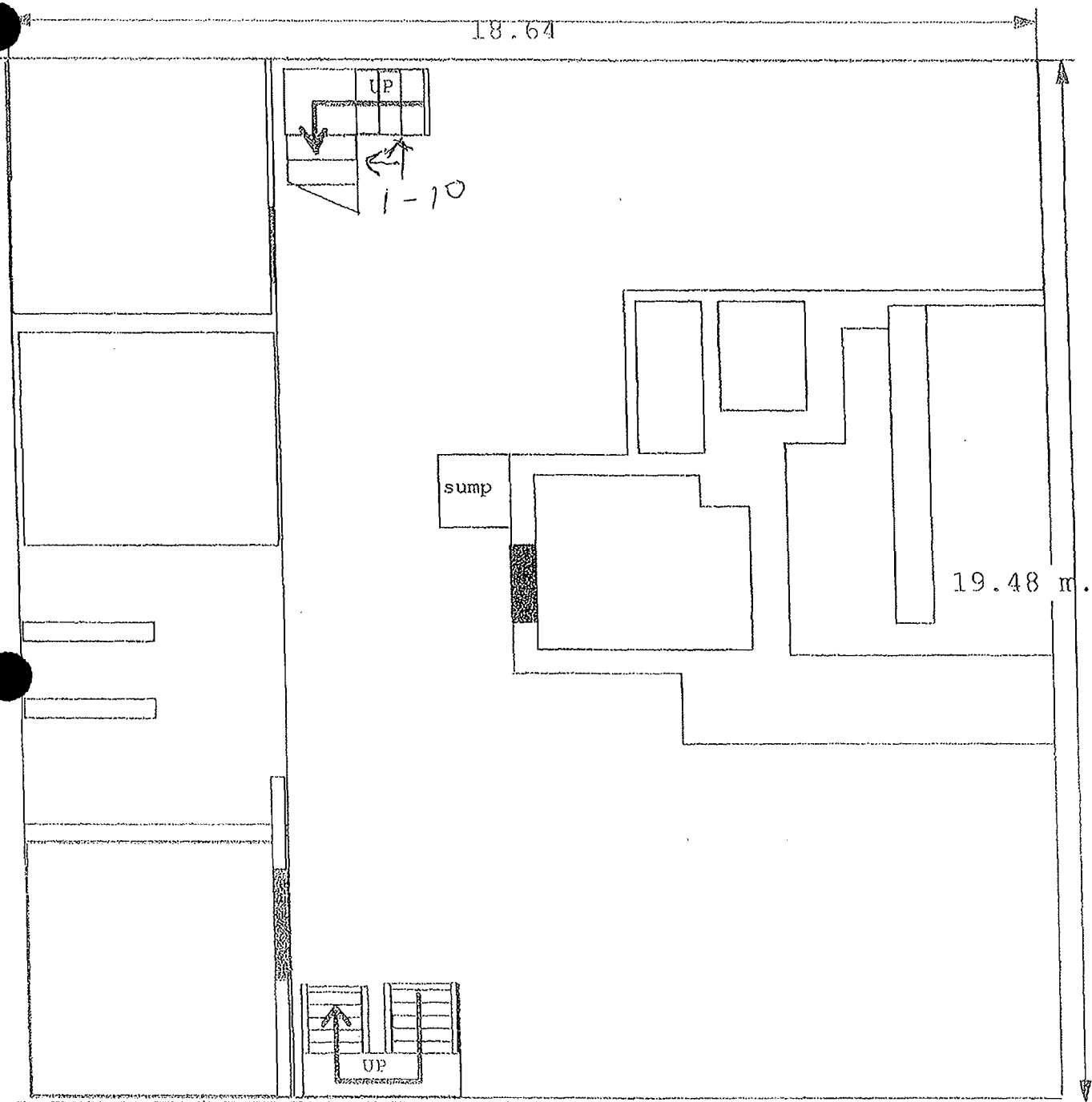
Fuel Handling Building Basement Elev. 1297'0"



Not to Scale

PK : SCANS AND Points of
Lower Level Ceiling
1-20 10/2/06

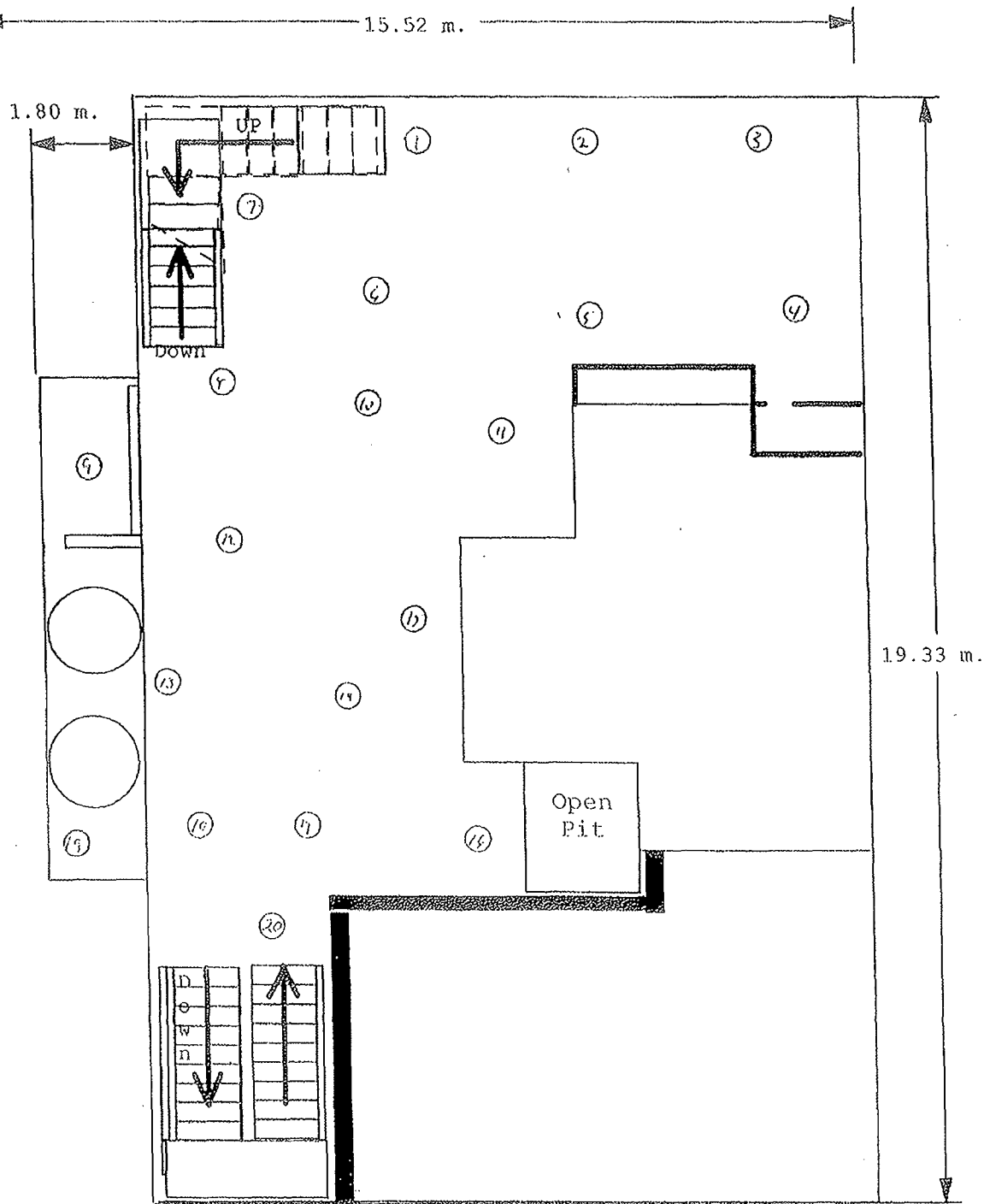
Fuel Handling Building Basement Elev. 1297'0"



Not to Scale

PK010 SCANS AND POINTS
OF STAIRS BETWEEN UPPER FLOOR
AND LOWER FLOOR
10/2/06 1-10

Fuel Handling Building Elev. 1310' 0"

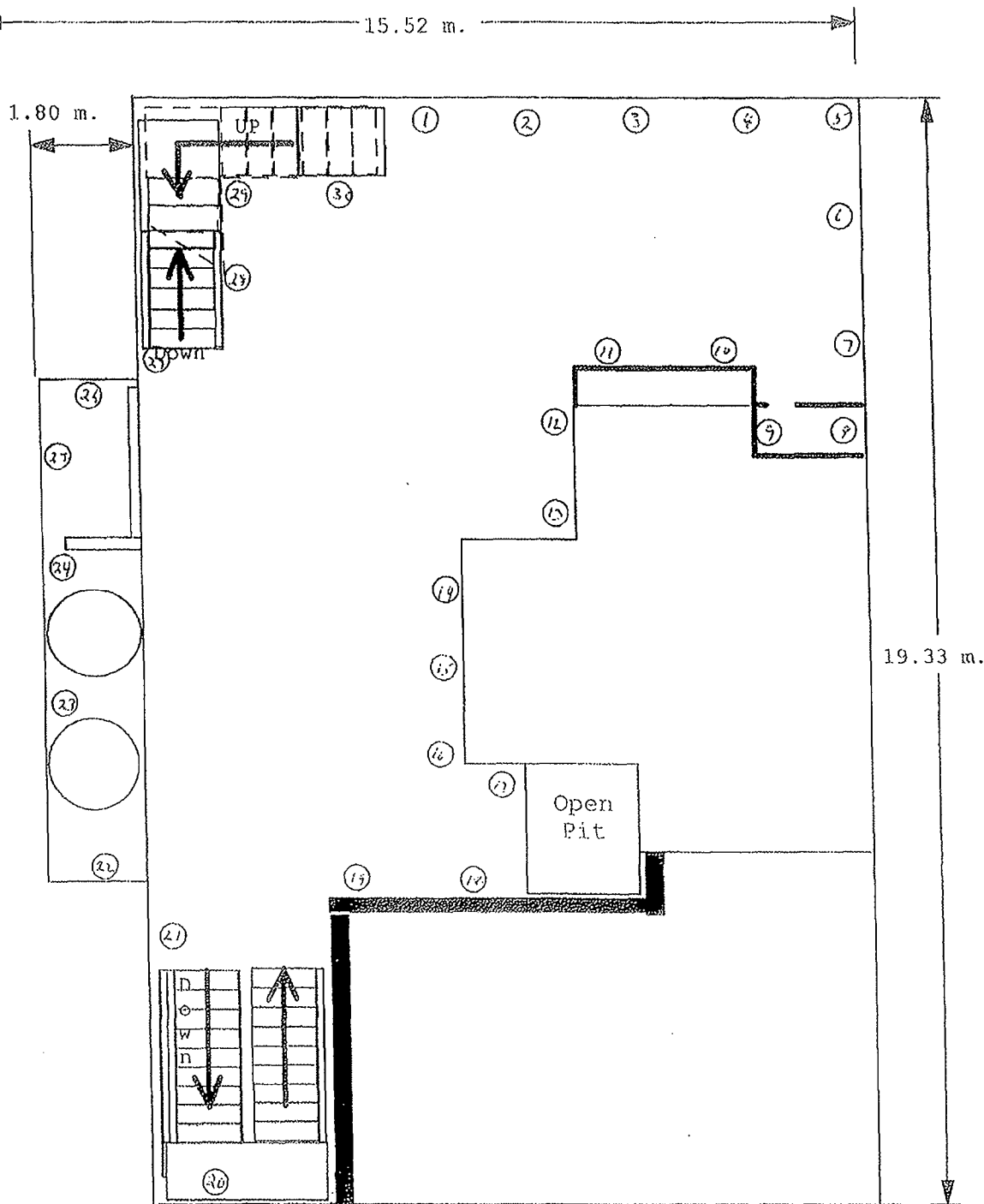


Not to Scale

○ = Sprinklers + Points Locations

PKg 10 ~~UP~~ upper Floor of the Bottom 2 Floor

Fuel Handling Building Elev. 1310' 0"

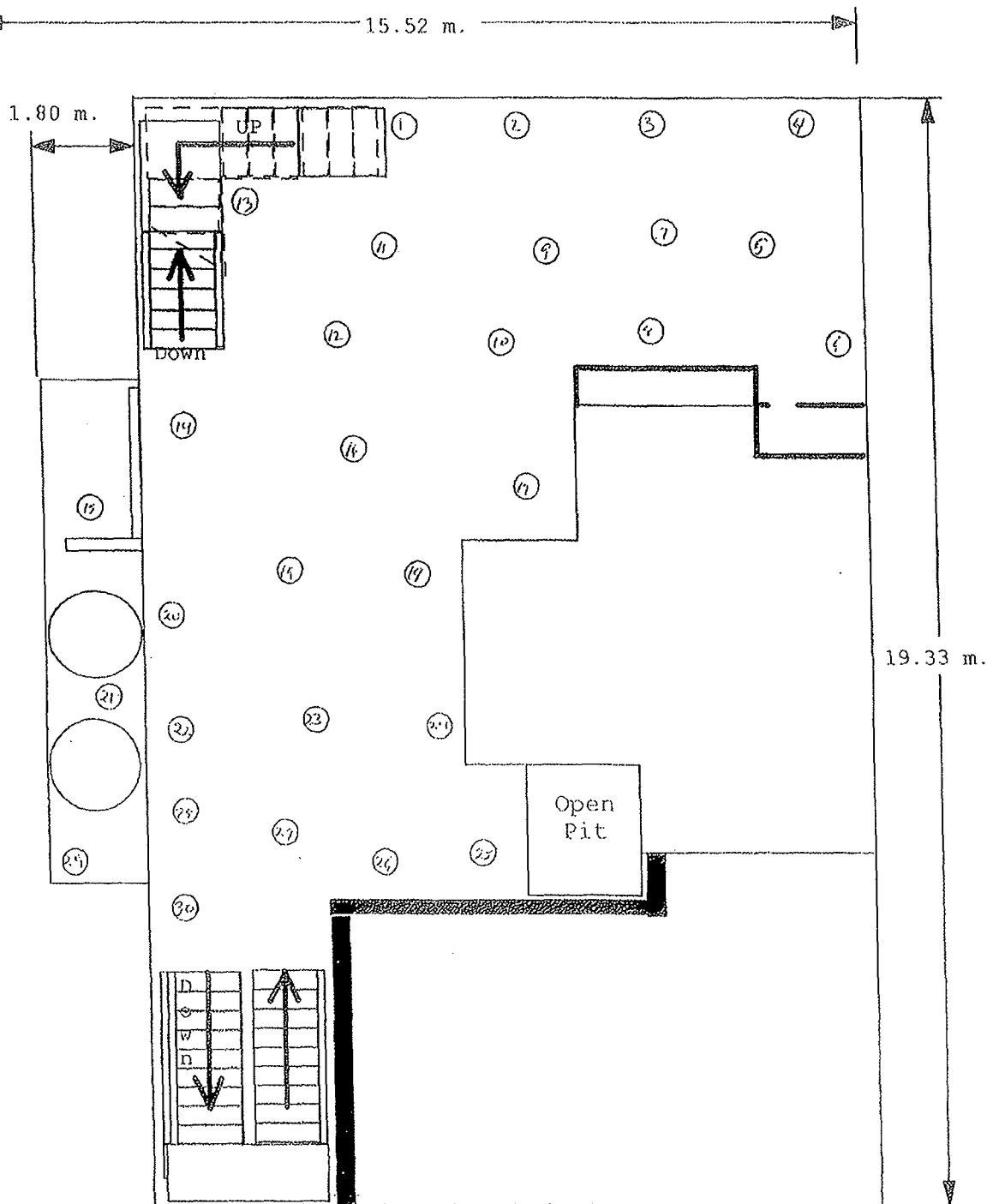


Not to Scale

○ = Smears + Points Locations

Pkg 10 Upper Walls

Fuel Handling Building Elev. 1310'0"



Not to Scale

○ = Smears & Points Locations

Pkg 10 Upper Level Ceiling

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 11	Prepared by: Doug Schult
Location: Ground Level Floor Of The Fuel Storage Building	Date prepared: 10/03/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floors, walls and ceiling on the ground level floor of the Fuel Storage Building.</p> <p>The ground level floor is approximately 278 m².</p> <p>See attached drawing</p> <p>Class 3 survey areas are not limited in size</p>

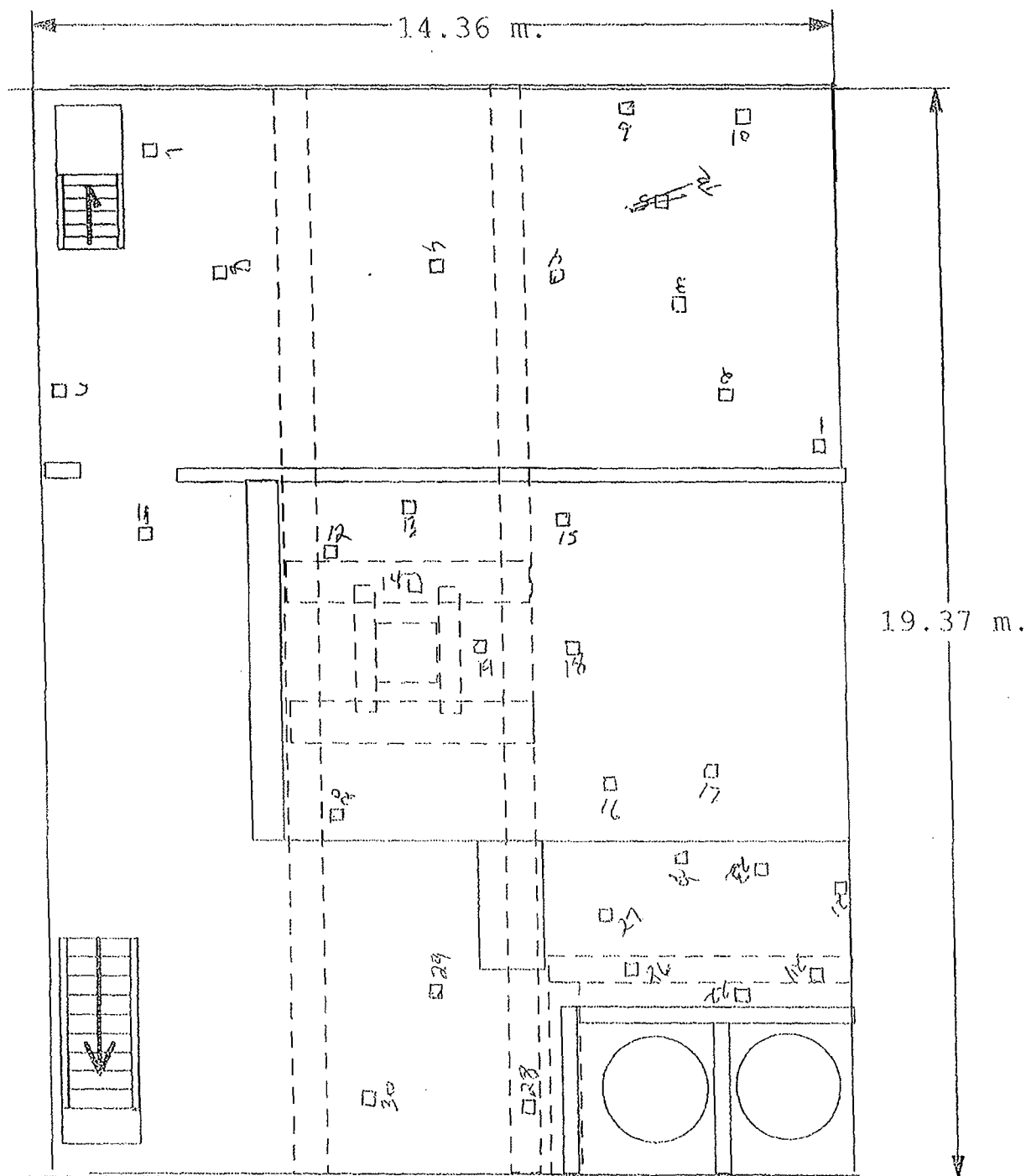
General Survey Instructions
<ol style="list-style-type: none">1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm² detector. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK011	FL001				Ground Level Floor	10%	30	NA	NA	30
PK011	W0001				Ground Level Walls	10%	30	NA	NA	30
PK011	C0001				Ground Level Ceiling	10%	30	NA	NA	30
PK011	ST001				Non Permanent Items On Ground Level	10%	50	NA	NA	50

Fuel Handling Building Elev. 1327' 0"

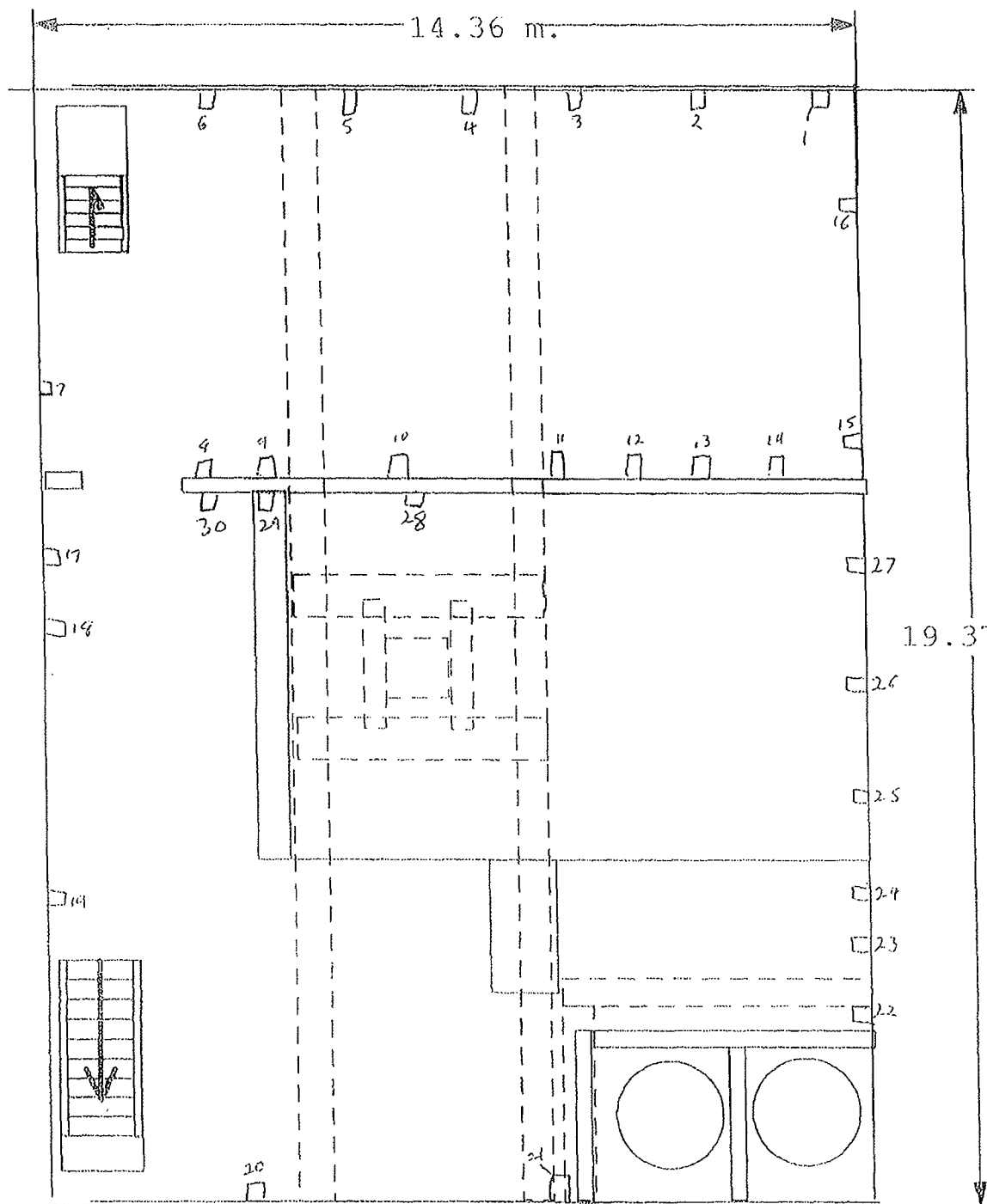


Not to Scale

PROJ
POINTS AND SCANS ON
GROUND LEVEL FLOORS 1-30

Ops/ 10/3/06

Fuel Handling Building Elev. 1327'0"

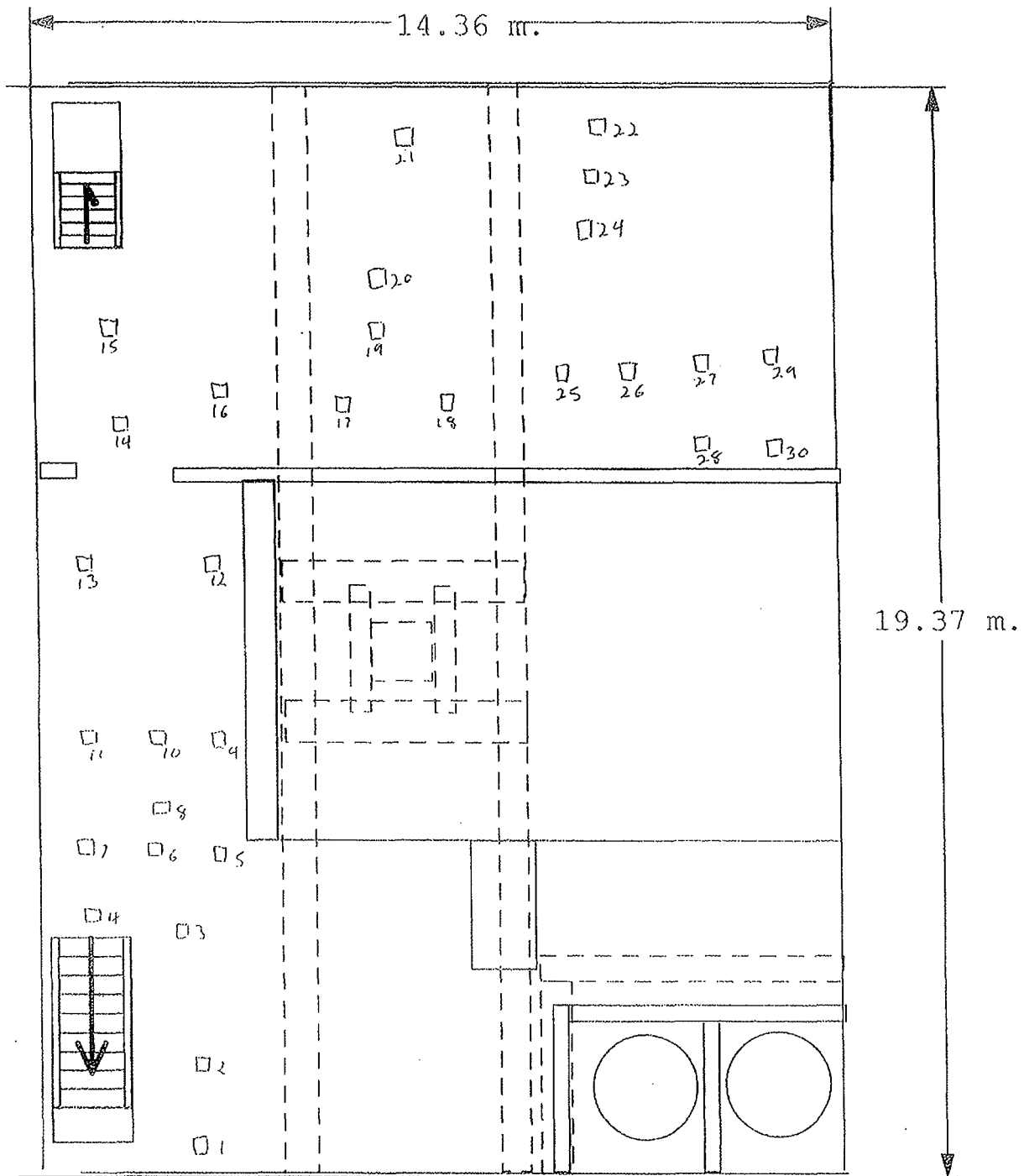


Not to Scale

Open

Walls

Fuel Handling Building Elev. 1327' 0"

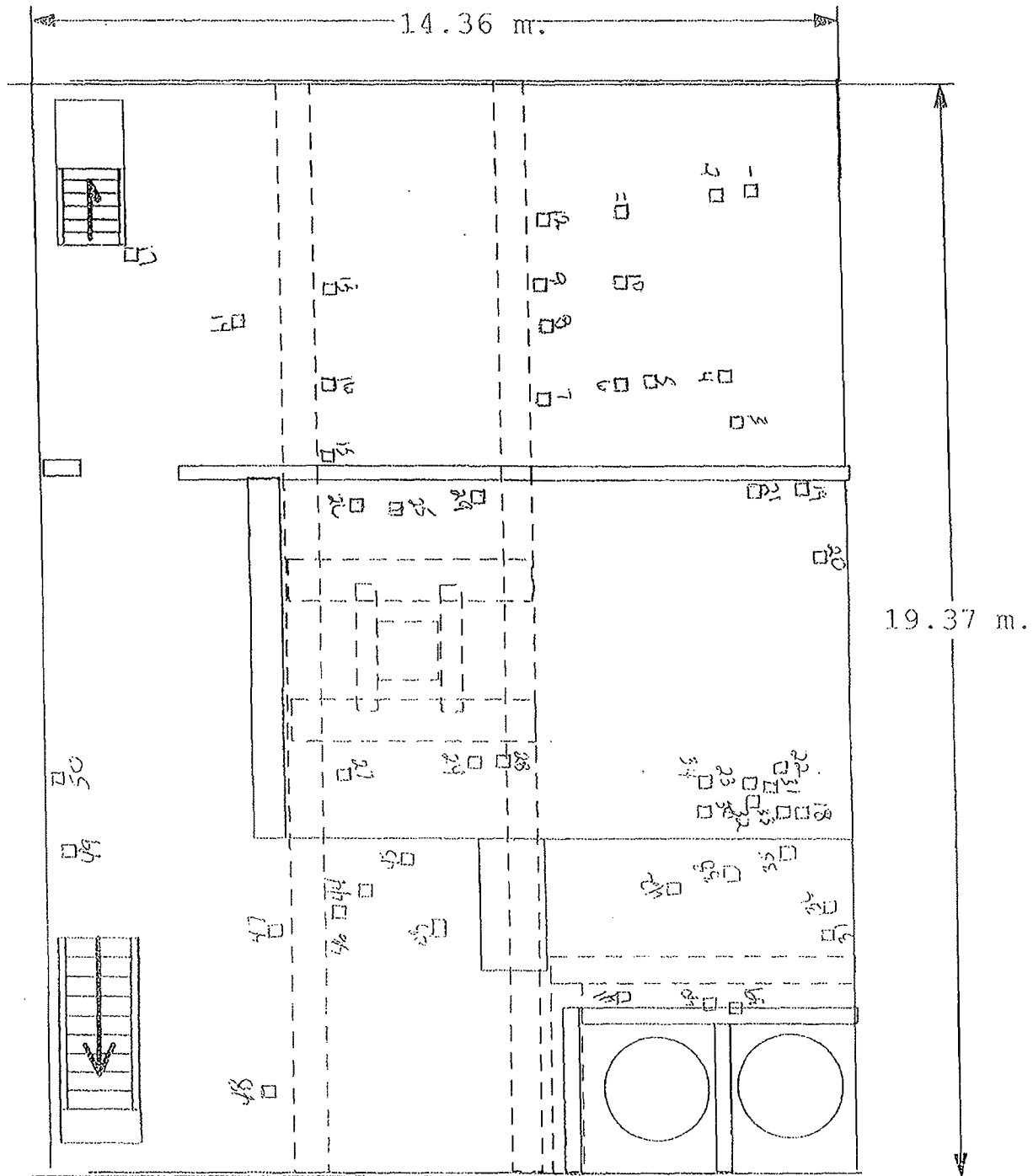


Not to Scale

Ops/

Ceiling

Fuel Handling Building Elev. 1327' 0"



PR011 ST001

Not to Scale

NON PERMANENT ITEMS
ON GROUND LEVEL
SCANS AND POINTS

Ops 1

1-50
10/10/06

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 12	Prepared by: Doug Schult
Location: Top 2 Floors Of The Fuel Storage Building	Date prepared: 9/24/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the floors, walls and ceiling on the top 2 floors of the Fuel Storage Building.

The upper floor of the top 2 floors is approximately 130 m².

The lower floor of the top 2 floors is approximately 130 m².

See attached drawing

Class 3 survey areas are not limited in size

General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm² detector. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the 1.7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

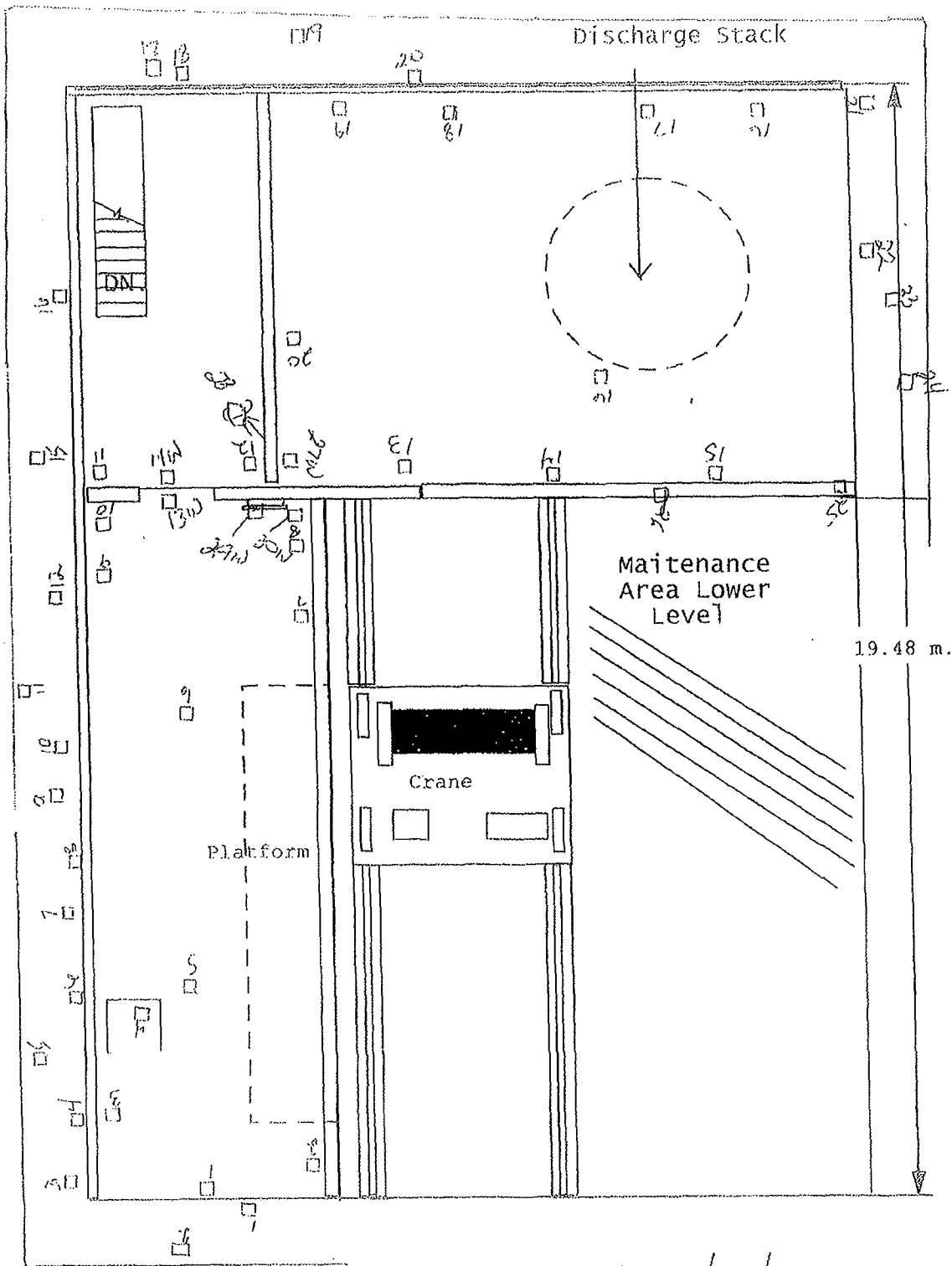
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

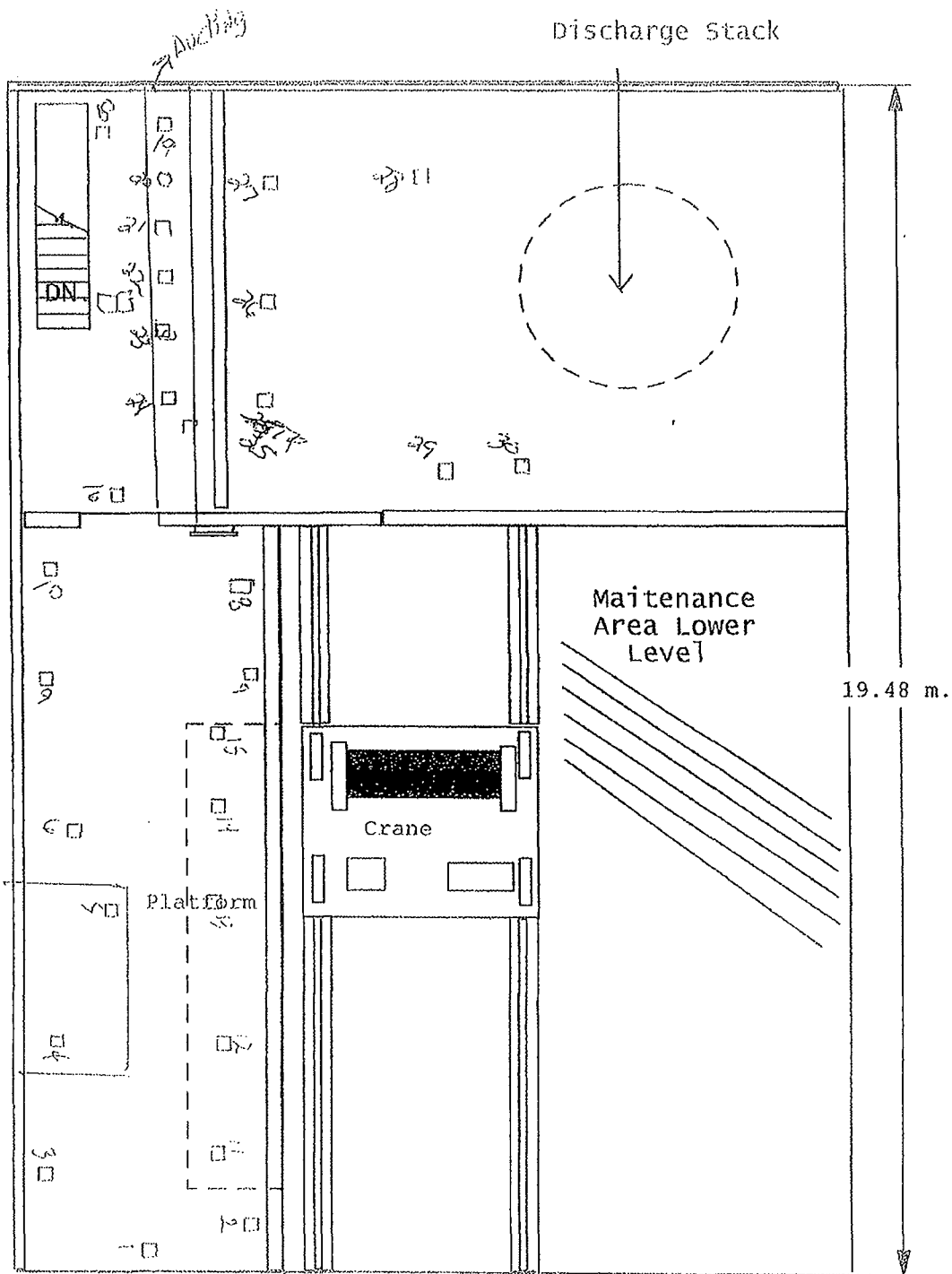
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK012	FL001				Upper Floor	10%	20	NA	NA	20
PK012	W0001				Upper Walls	10%	30	NA	NA	30
PK012	C0001				Upper Ceiling	10%	30	NA	NA	30
PK012	FL002				Lower Floor	10%	30	NA	NA	30
PK012	W0002				Lower Walls	10%	30	NA	NA	30
PK012	C0002				Lower Ceiling	10%	20	NA	NA	20
PK012	ST001				Stairs Between Upper Floor And Lower Floor	10%	10	NA	NA	10

Package Review	
Date Package Completed	10-3-06
Package Reviewed by and Date	Paul J. 1-19-07 [Signature]

Survey Comments
A section of the upper and lower floors is open to the ground level floor of the Fuel Storage Building. The ceiling and walls associated with this opening as well as the overhead crain will not be surveyed due to safety concerns unless the activity in excess of 25% of the criteria for release for unrestricted use (1,250 dpm/100 cm ²) is identified in adjacent areas.



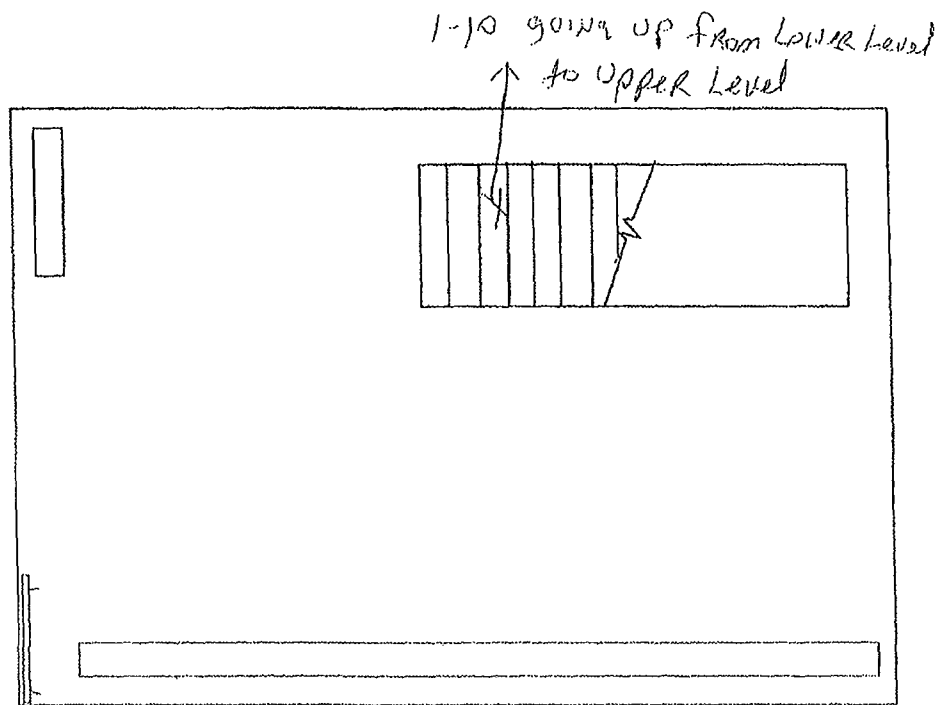
Upper level
 FLOORS AND WALLS SEAMS AND POINTS
 PK 012
 9/26/06



PKC12
 Ceiling SCAN AND POINTS
 9/27/06

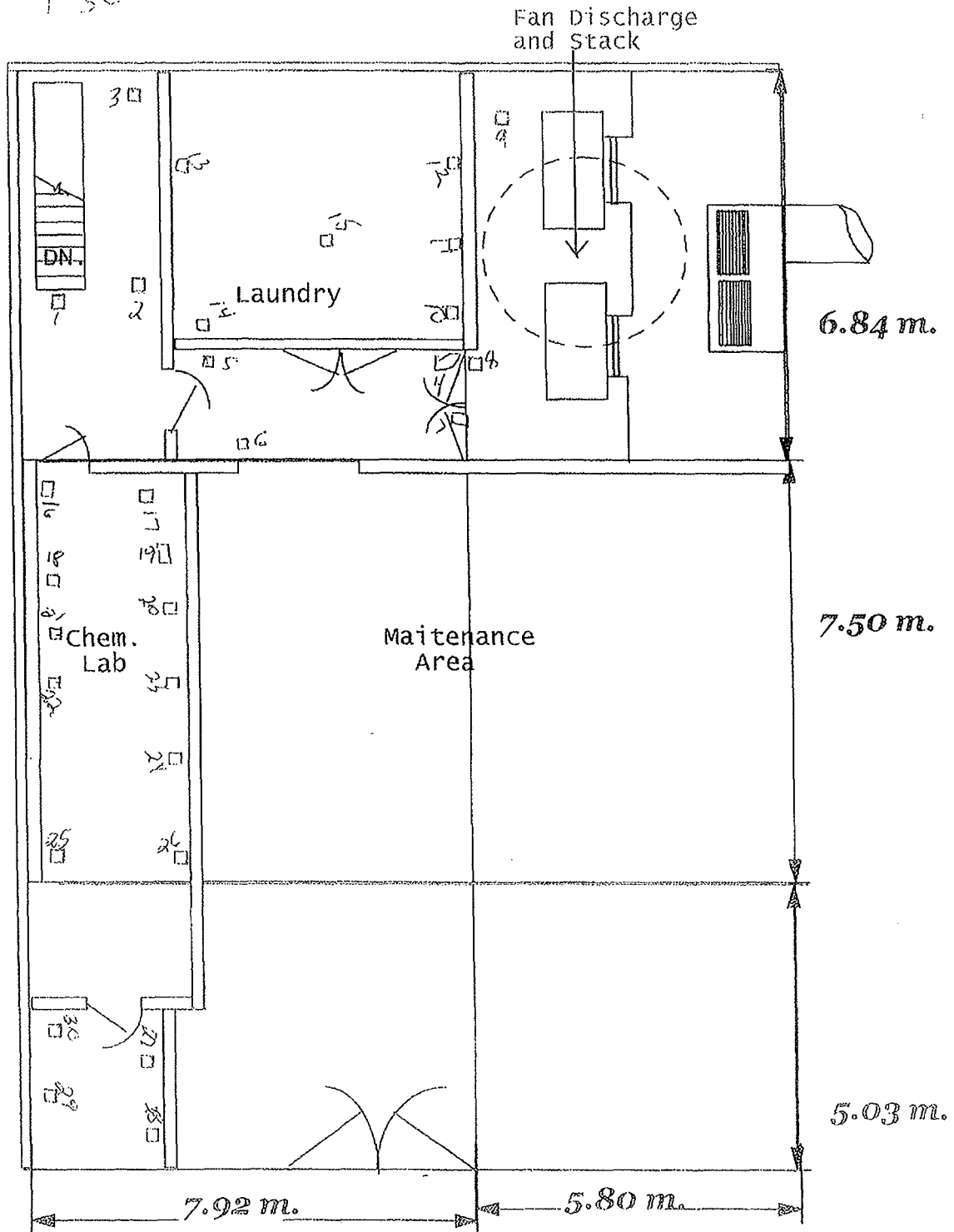
Upper level

KC12
9/27/06
STAIRS Between Upper Floor and Lower Floor.
1-10 SEAS AND POINTS



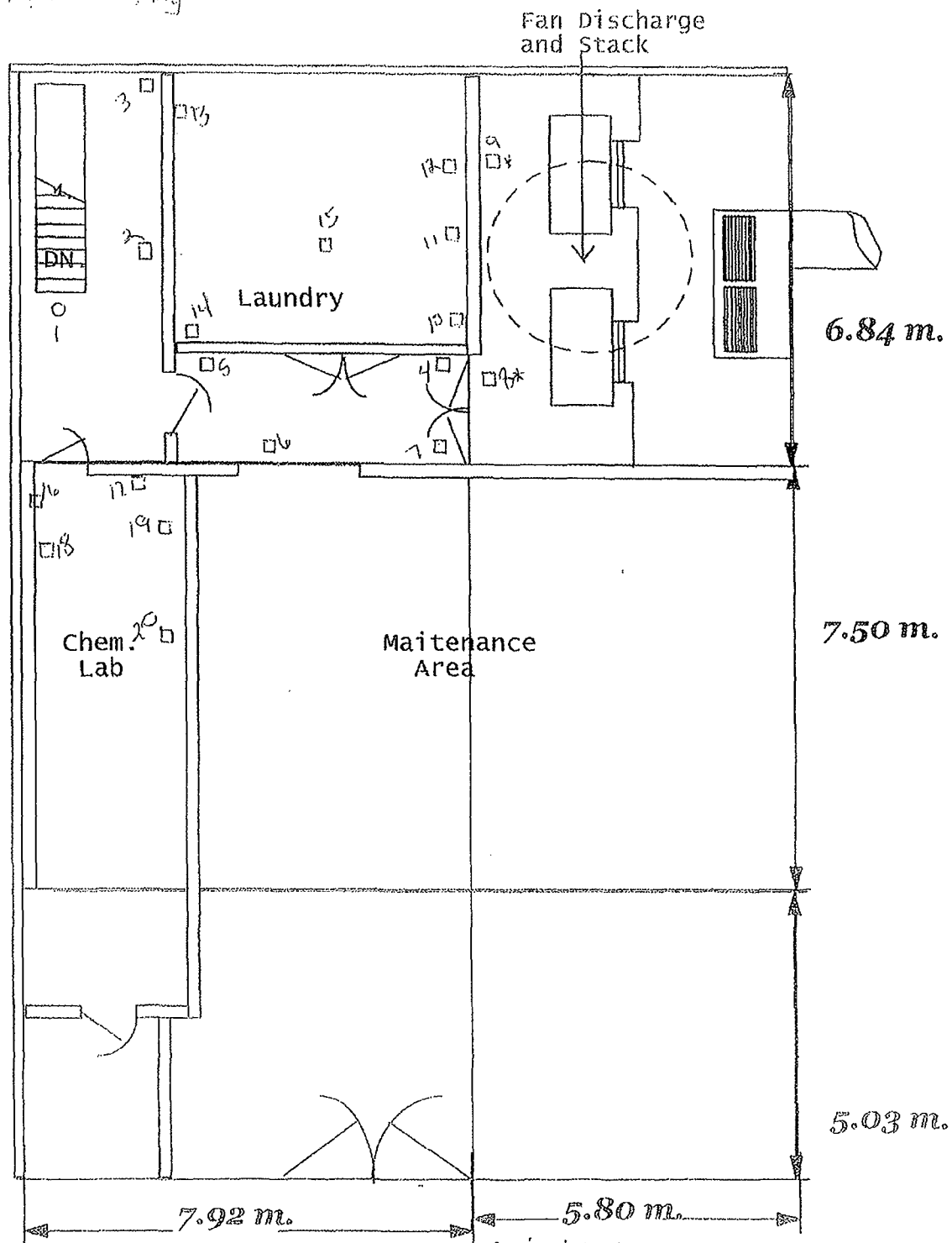
PK012
9/28/06

Lower Level Floor
Sens and Points
1-30

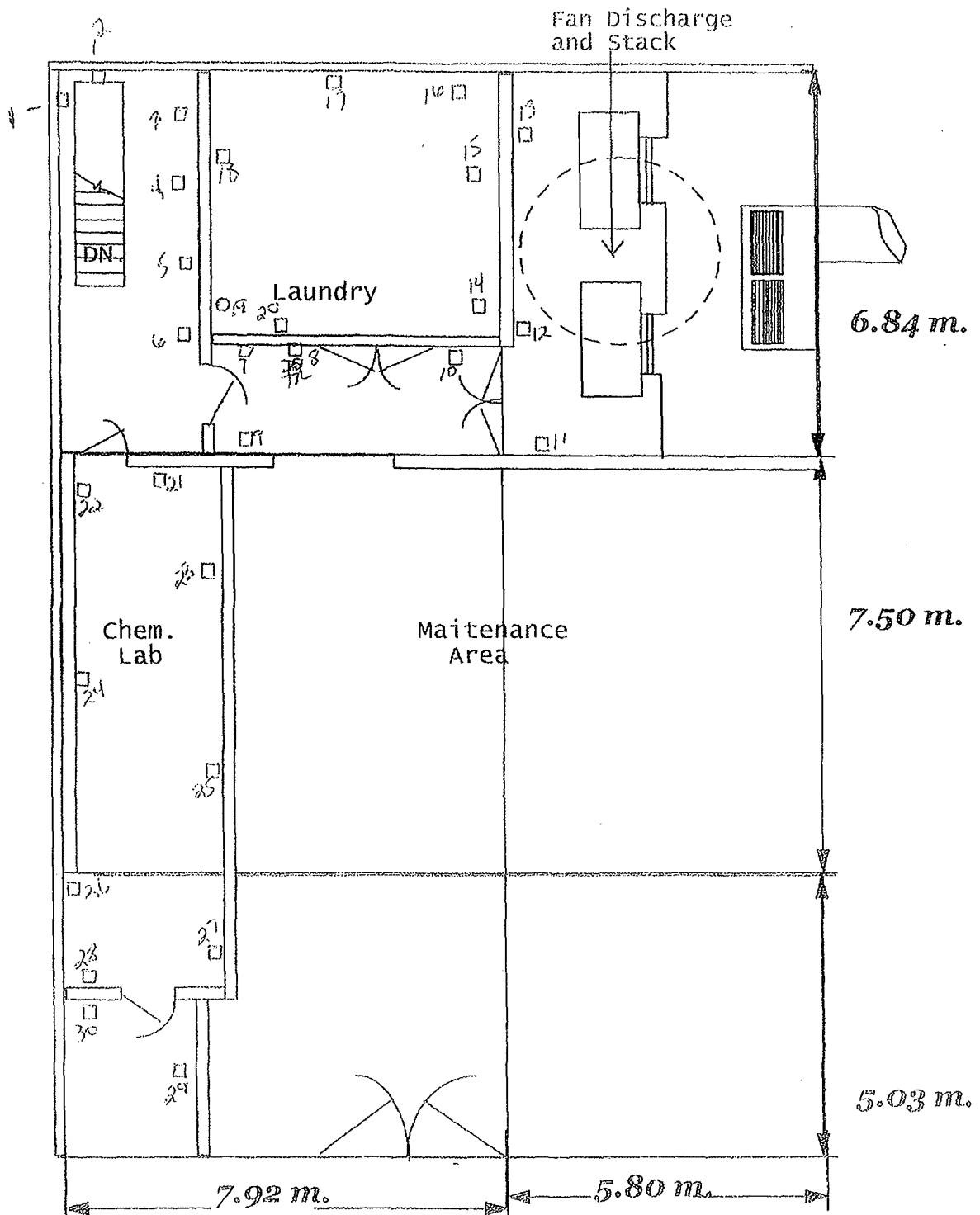


lower level

* 334 ARE Piping



PK012 Lower Level Ceilings
 SCAN AND Points lower level
 1-20



P/KO 12 LOWER LEVEL WALLS
 9/28/02 SCANS AND POINTS
 1-30

lower level

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 13	Prepared by: Doug Schult
Location: Turbine	Date prepared: 10/7/06
Area Classification: Impacted -- Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the remaining sections of the turbine, exposed structures surrounding the turbine, the concrete floor beneath the removable decking surrounding the turbine and the horizontal structures (1 beams) used to support the removable decking. The survey of the removable decking will be included in Package 14.</p> <p>The remaining sections of the turbine and the concrete floor beneath the removable decking surrounding the turbine are approximately 145 m².</p> <p>See attached drawing</p> <p>Class 2 survey areas are limited in size to less than 1000 m²</p>

General Survey Instructions

- 1) Grid the floor using 1.5 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1.5 to give the X coordinate and the second random number is multiplied by 1.5 to give the Y coordinate

Floors: R=0.498, X=0.747 m R=0.296, Y= 0.444 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.923, X=1.38 m R=0.288, Y= 0.432 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid
- 3) Perform a beta scan of 50% of the accessible surfaces within each grid (3 min scan) holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. For non gridded surfaces perform a scan (3 min scan) of approximately 50% of the accessible surfaces surrounding each of the total beta activity measurement locations. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 4) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 5) Collect a total beta activity measurement at each fixed point measurement location. Use the L7 code to record the measurement location number in which the measurement is being obtained.
- 6) In areas inaccessible using the gas flow proportional detectors use the GM detectors to collect total beta activity measurements. When using the GM detectors set the count time for 4 minutes.
- 7) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.
- 8) Obtain a smear at approximately each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny

Special Instructions

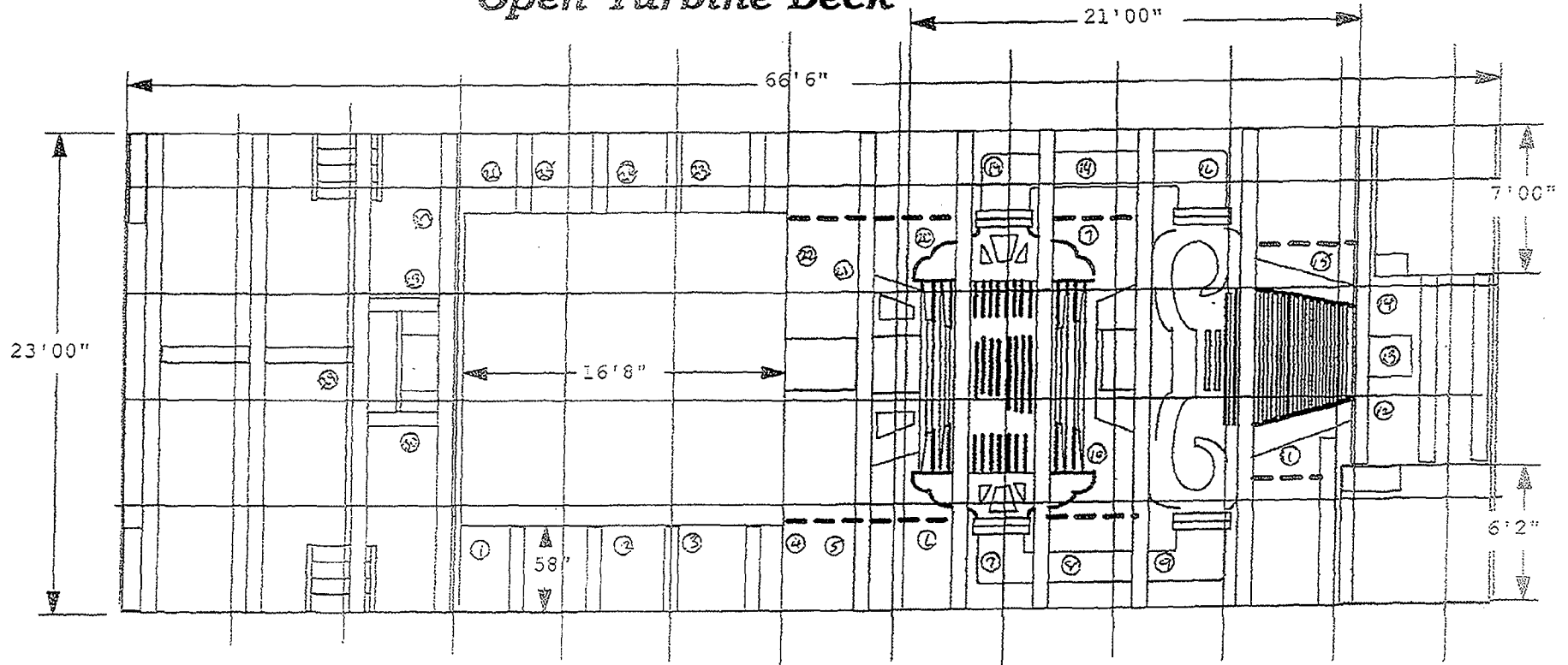
- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK013	FL001				Concrete Floor	50%	Each Grid	NA	NA	Each Grid
PK013	ST001				I Beams	50%	30	NA	NA	30
PK013	ST002				Turbine Internals	50%	30	NA	NA	30
PK013	ST003				External Surfaces Of Exposed Structures	50%	30	NA	NA	30
PK013	ST004				Inaccessible Surfaces	NA	20	NA	NA	20

Package Review	
Date Package Completed	10-13-06
Package Reviewed by and Date	Paul J. 1-19-07

Survey Comments
Due to safety concerns, safety harnesses will be worn when surveying the remaining sections of the turbine and the exposed structures surrounding the turbine

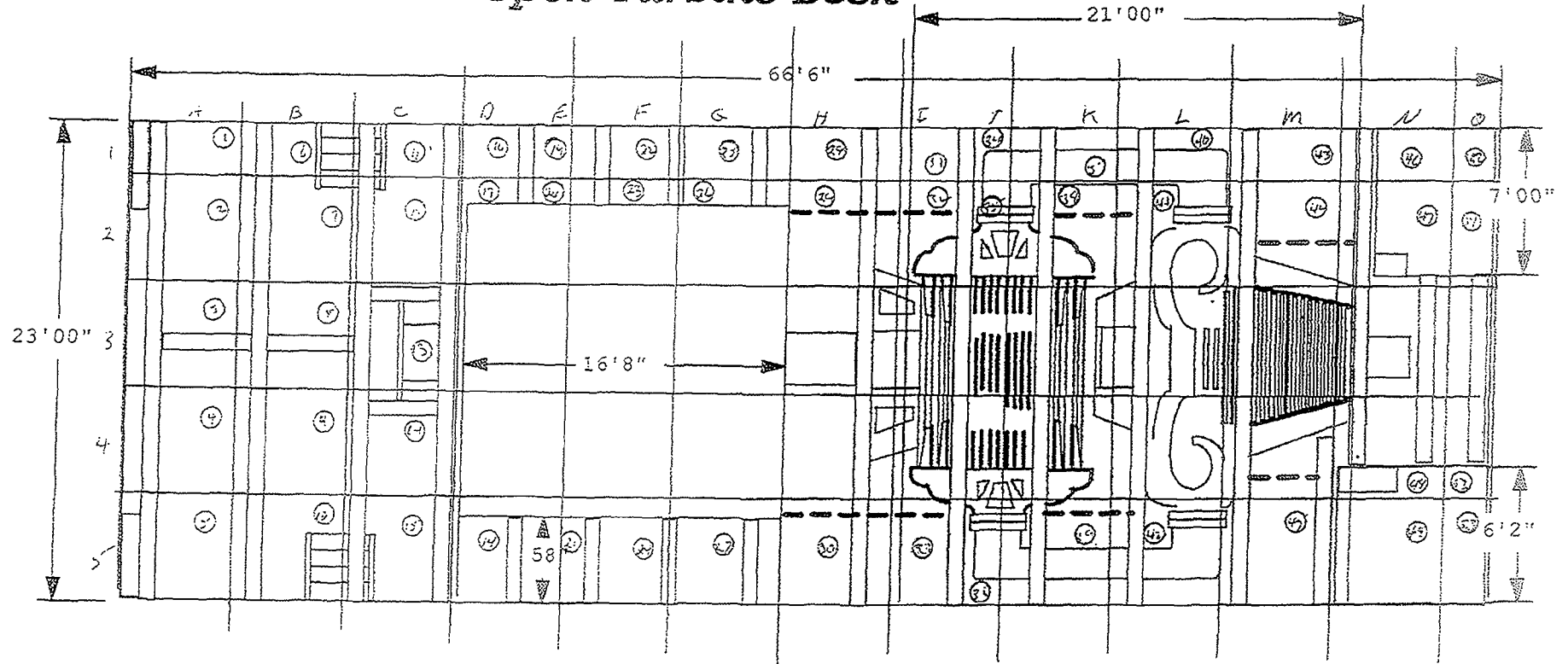
Open Turbine Deck



External Surfaces of Exposed Structures

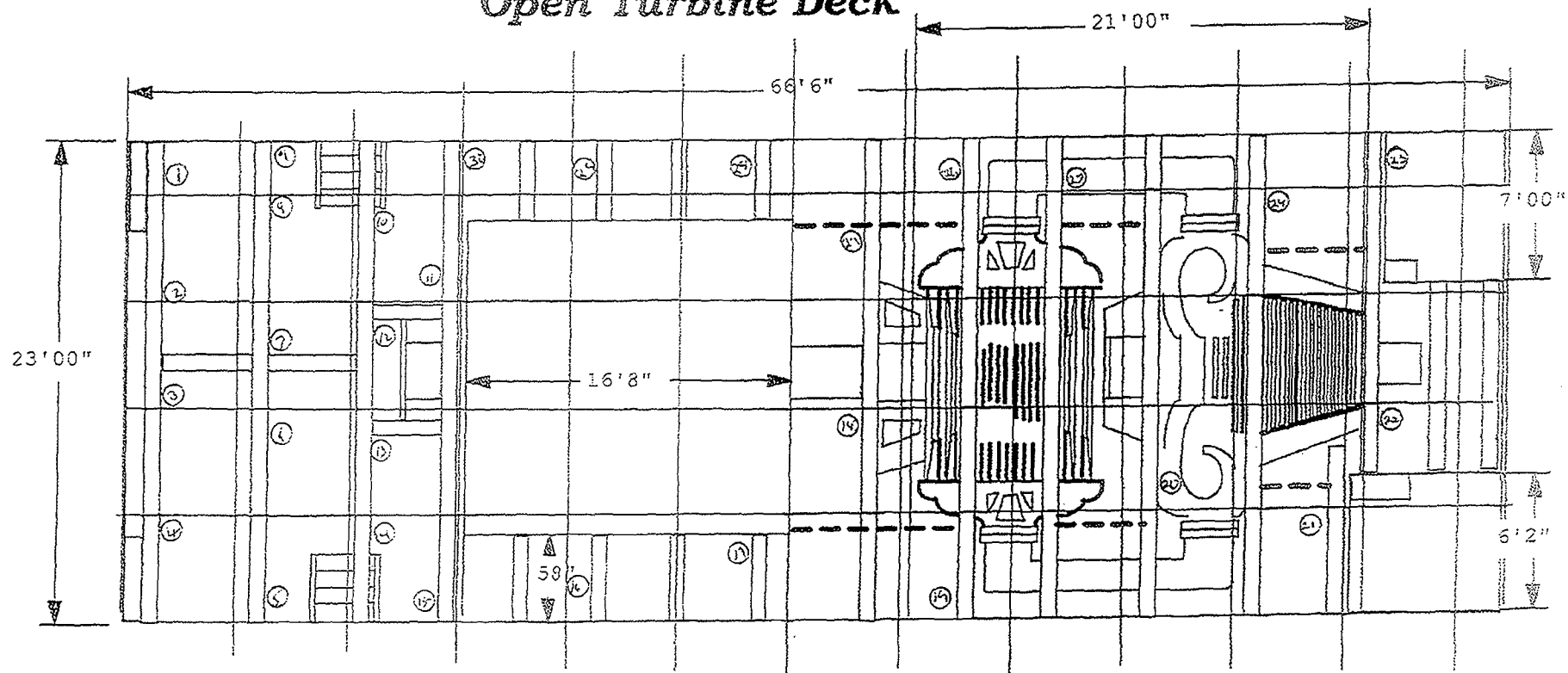
Pkg -13

Open Turbine Deck



Phg 13 Concrete Floor

Open Turbine Deck



\bigcirc = Smeirs + Points Location

PKs 13 ST001 I-Beams

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 14	Prepared by: Doug Schult
Location: Turbine Deck	Date prepared: 10/13/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floors, walls, ceiling, and non permanent items on the Turbine Deck.</p> <p>The Turbine Deck is approximately 690 m².</p> <p>See attached drawings</p> <p>Class 3 survey areas are not limited in size</p>

General Survey Instructions
<ol style="list-style-type: none">1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Perform a 2 minute scan centered on each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK014	FL001				Floor	10%	30	NA	NA	30
PK014	W0001				Walls	10%	30	NA	NA	30
PK014	C0001				Ceiling	10%	20	NA	NA	20
PK014	ST001				Crane and Crane Rails	10%	20	NA	NA	20
PK014	ST002				Floor Plugs	10%	20	NA	NA	20
PK014	ST003				Non Permanent Items	10%	50	NA	NA	50

	Package Review
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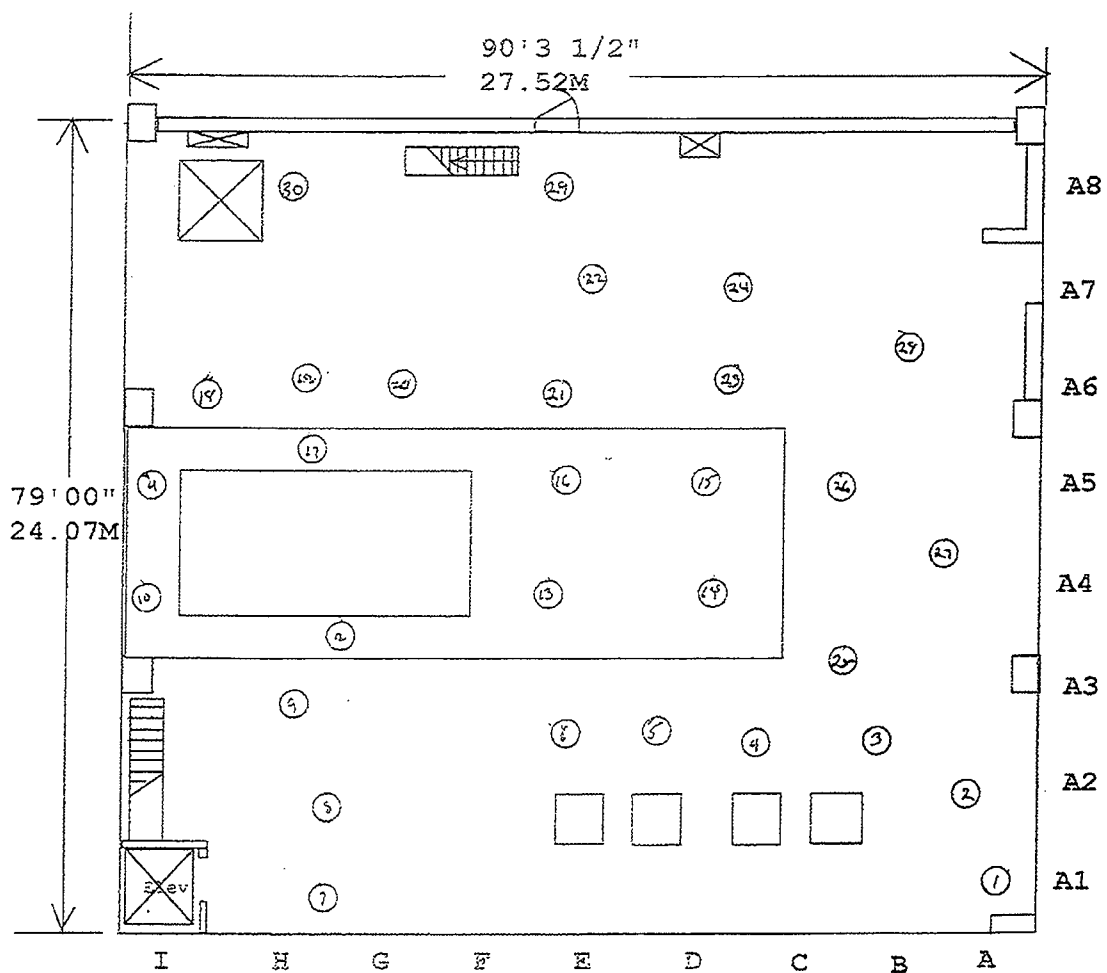
Date Package Completed 10-19-06

Package Reviewed by and Date Carl Holt 1-19-07 Only 1

11/25/05

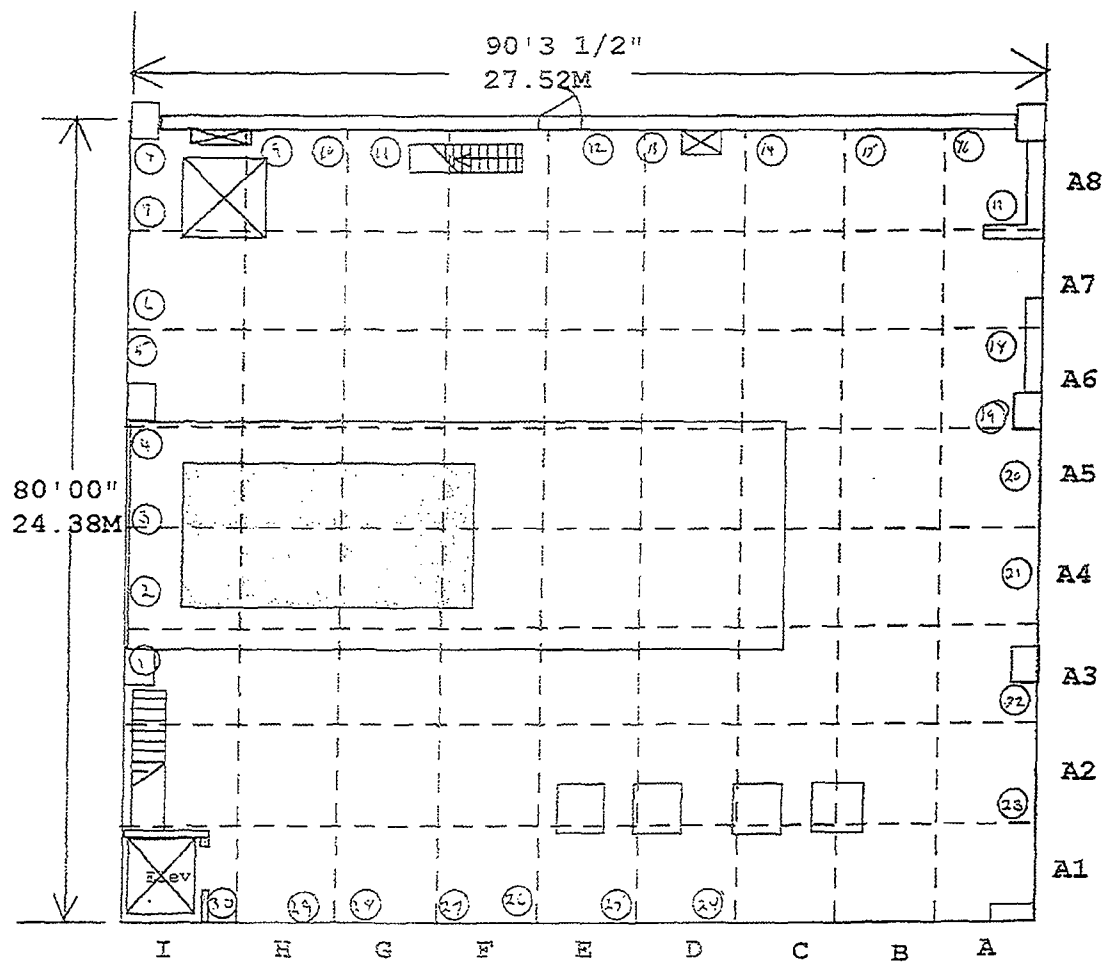
Survey ID	Survey Date	Survey Comments
10/1/10		

Page 4 of 10

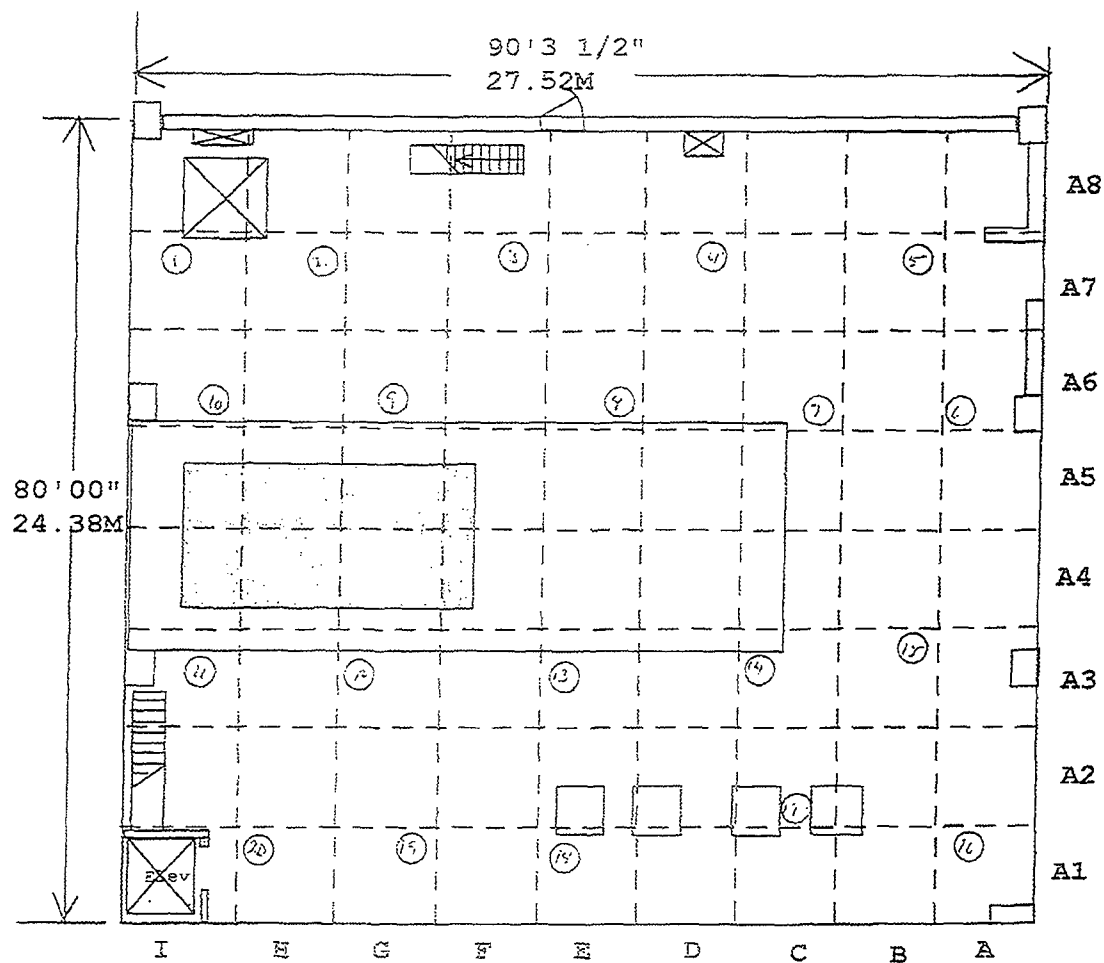


○ = Smears + Points

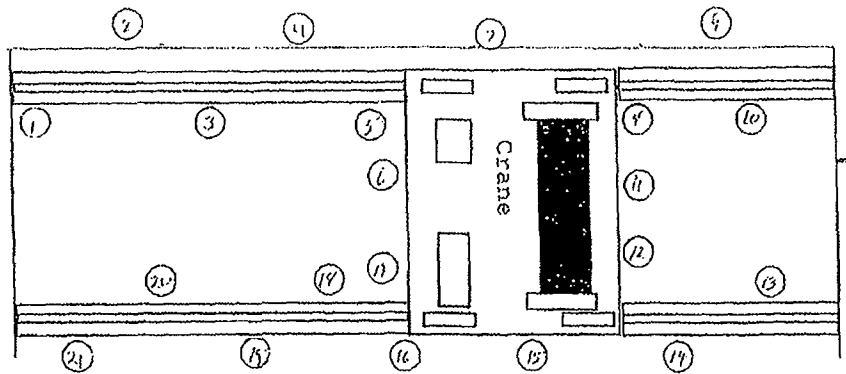
Pkg 014 Turbine Deck



Pkg 14 Walls



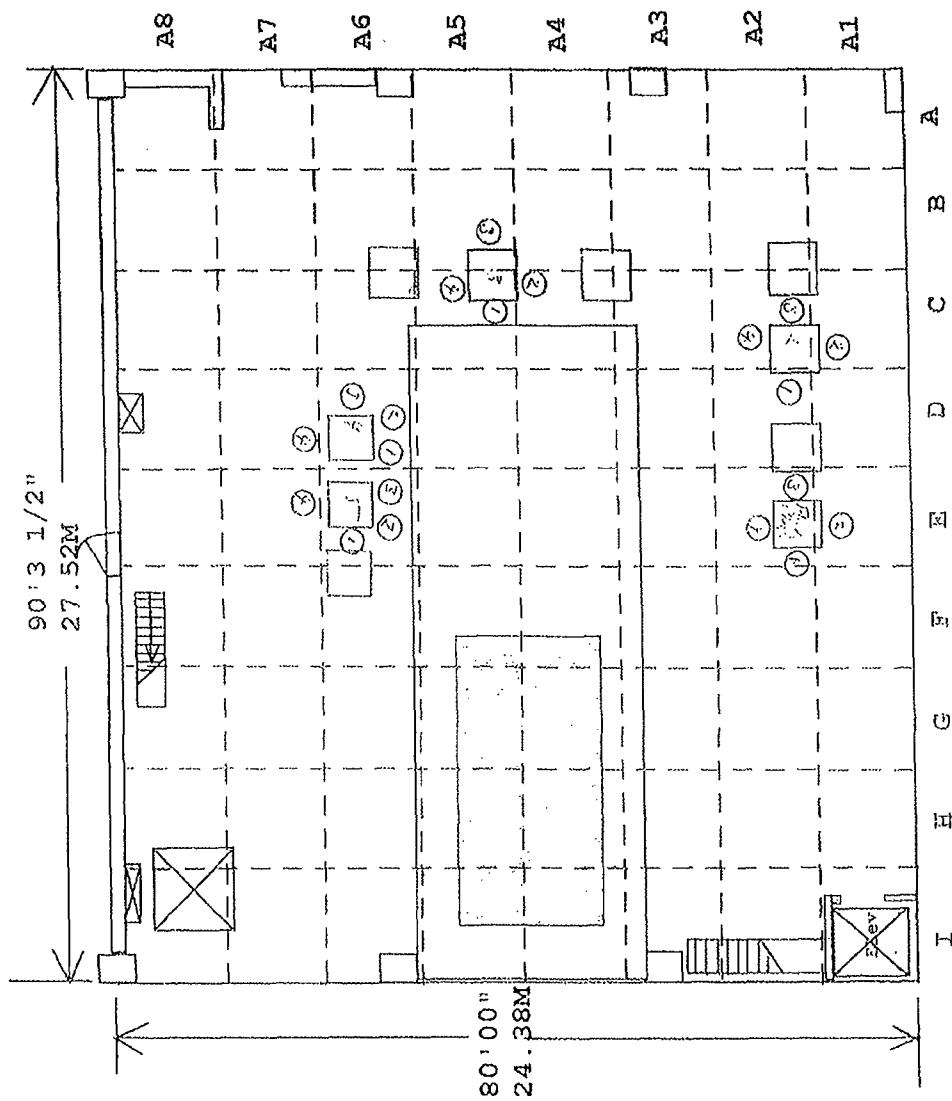
PKG 14 Ceilins



○ = Smeets Points Location

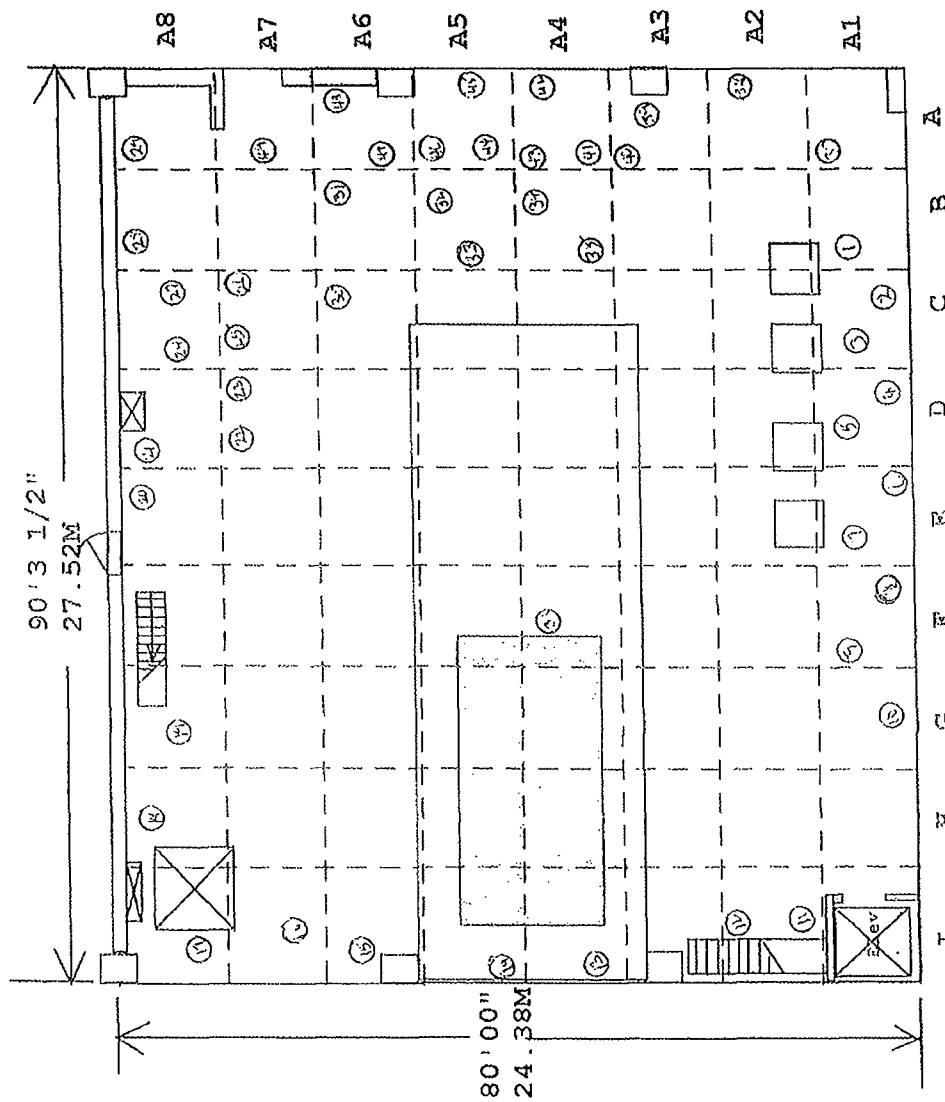
Pkg 14 Crane and Crane Rail

Turbine Deck



O :: Smears + Points Locations

Pkg 14 Floor Plans



O = Smeers & Points Locations
 Pkg 14 Non-Permanent Items
 Turbine Deck

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 15	Prepared by: Doug Schult
Location: Control Room	Date prepared: 10/11/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description
The survey area includes the floors, walls, ceiling, and non permanent structures in the Control Room
The first floor of the Administrative Building is approximately 100 m ² .
See attached drawing
Class 3 survey areas are not limited in size

General Survey Instructions
1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Perform a 2 minute scan centered around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm ² . Use the L7 code to record the measurement number
4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm ²) is identified mark the area and notify the Project Manager.
5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

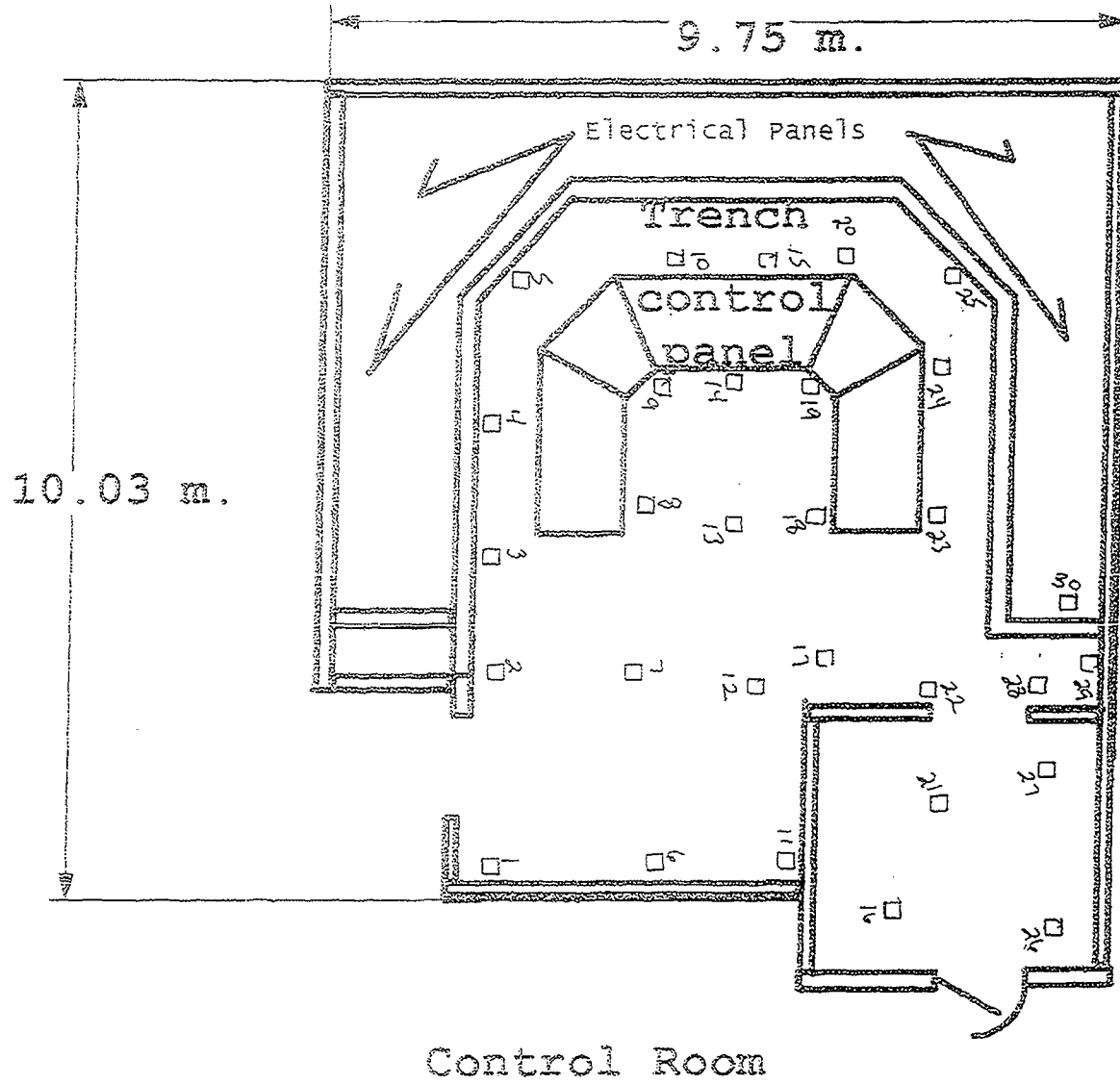
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK015	FL0001				Floors	10%	30	NA	NA	30
PK015	W0001				Walls	10%	30	NA	NA	30
PK015	Ceiling				Ceiling	10%	30	NA	NA	30
PK015	ST001				Miscellaneous Non Permanent Items	10%	20	NA	NA	20

Package Review

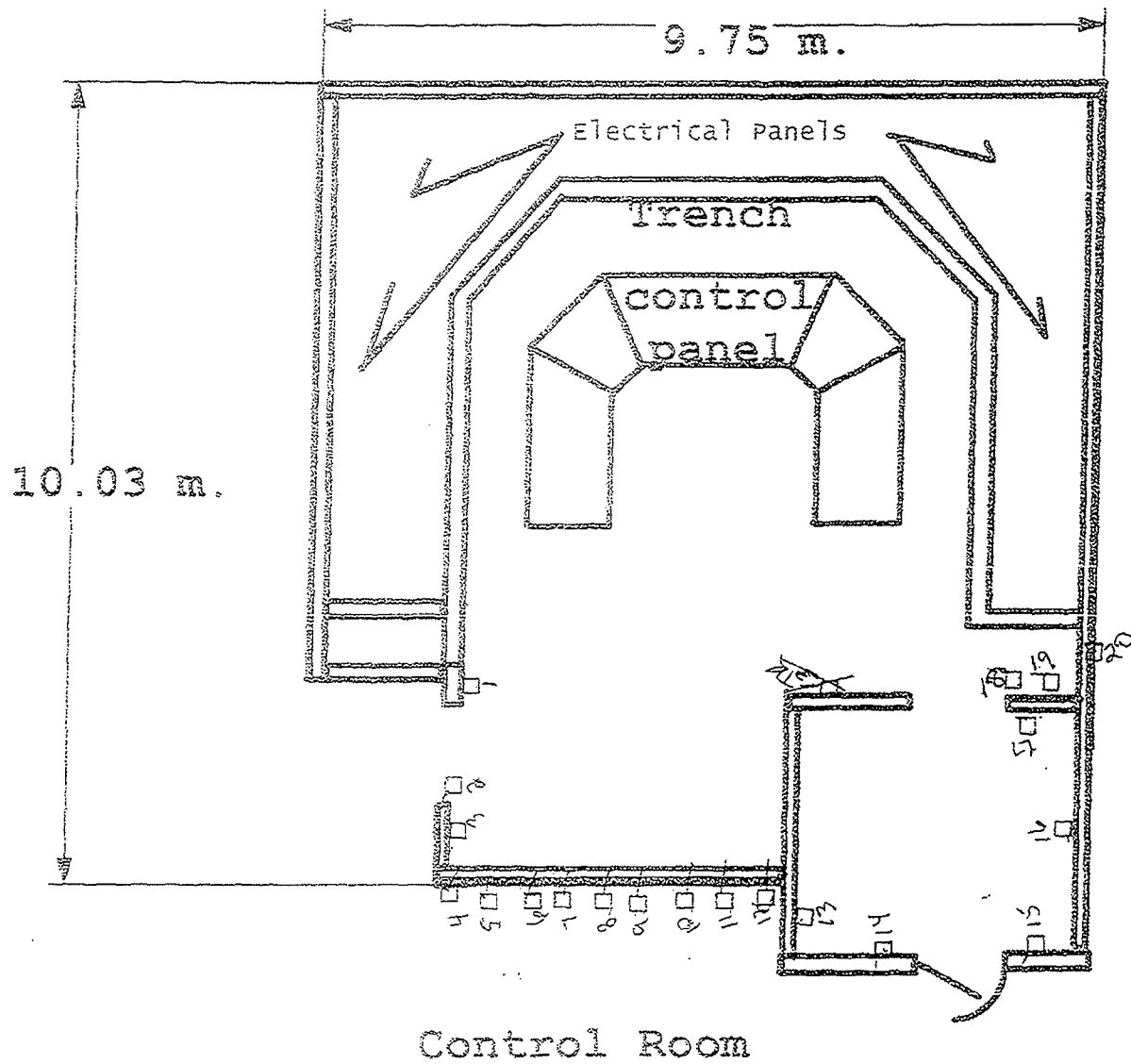
Date Package Completed 10-17-06

Package Reviewed by and Date Paul Smith 1-18-07 1700 1-18-07

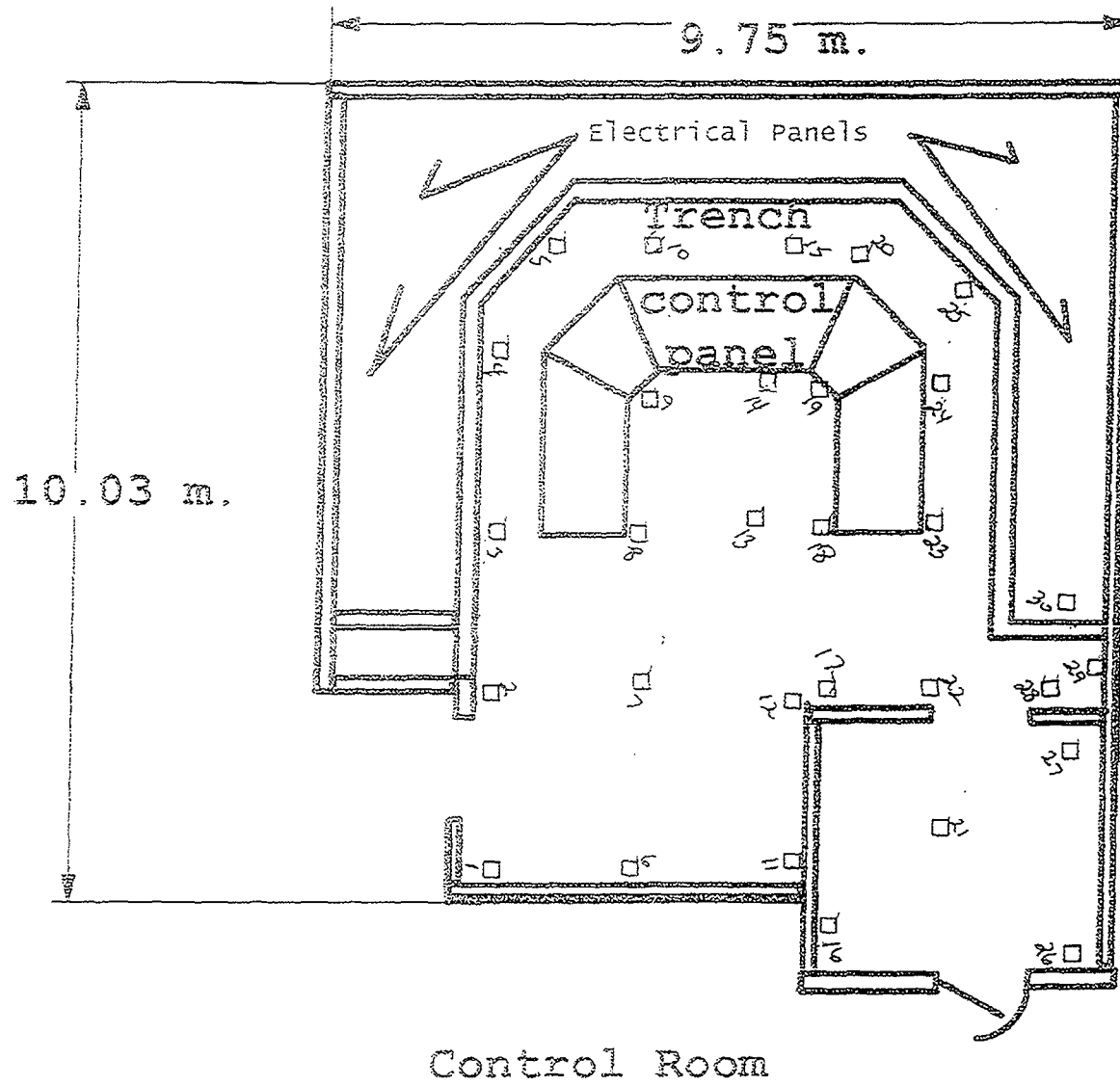
Survey ID	Survey Date	Survey Location	Survey Comments
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3	10/10/2018	100m	
4	10/10/2018	100m	
5	10/10/2018	100m	
6	10/10/2018	100m	
7	10/10/2018	100m	
8	10/10/2018	100m	
9	10/10/2018	100m	
10	10/10/2018	100m	
11	10/10/2018	100m	
12	10/10/2018	100m	
13	10/10/2018	100m	
14	10/10/2018	100m	
15	10/10/2018	100m	
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88	10/10/2018	100m	



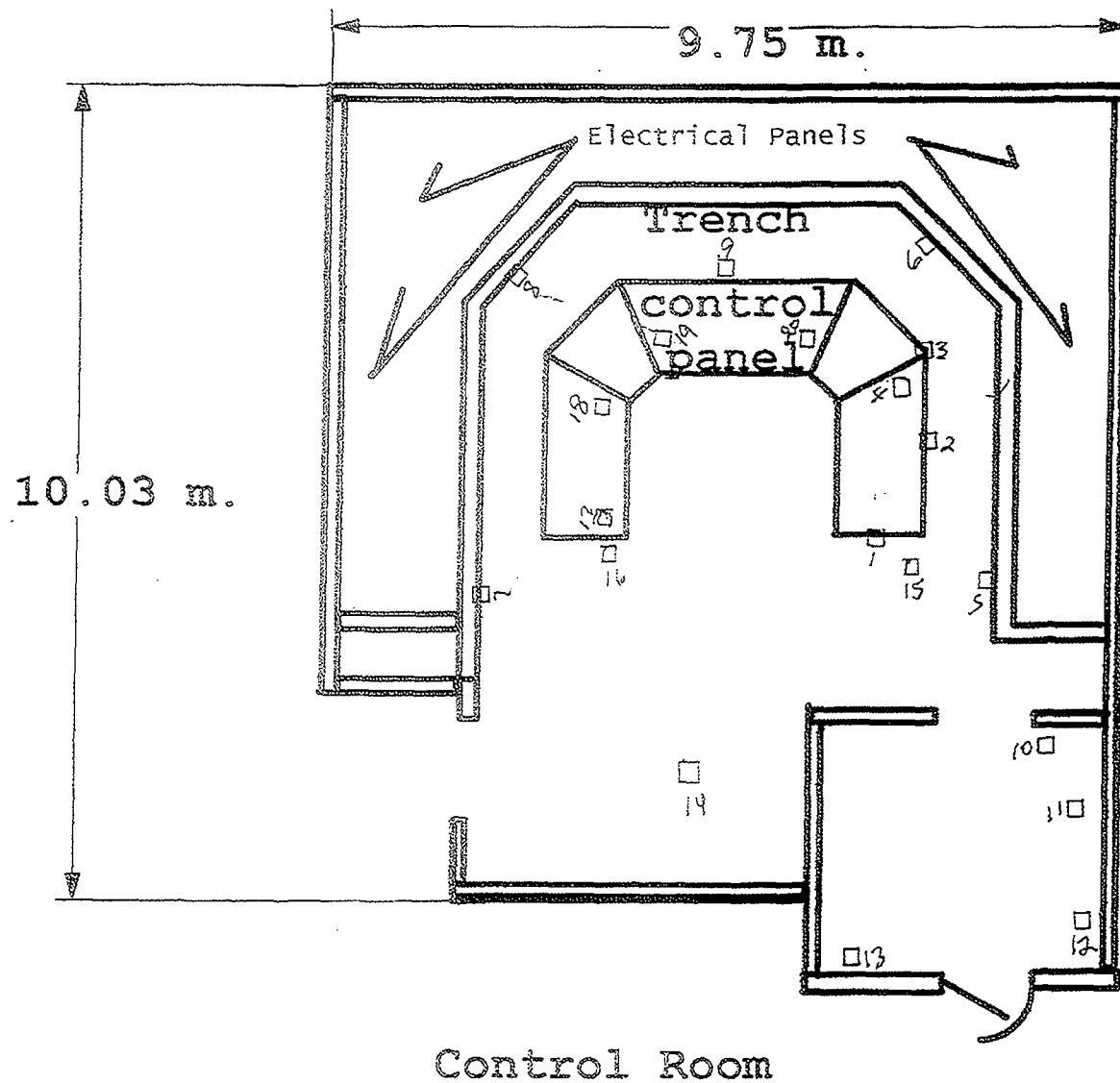
PROIS Floors in Control Room
Floor 1 Scans And Points
1-30



PROIS WALLS SCANS AND POINTS IN
1-20 CONTROL ROOM



PK01S
1-30
Ceiling in Control Room
Seams and Points



PK015 Misc Non Permanent Items
ST001 points and scans
1-20

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 16	Prepared by: Doug Schult
Location: First Floor Of Administrative Building	Date prepared: 9/19/06
Area Classification: Impacted -- Class 3	Pathfinder Final Status Survey

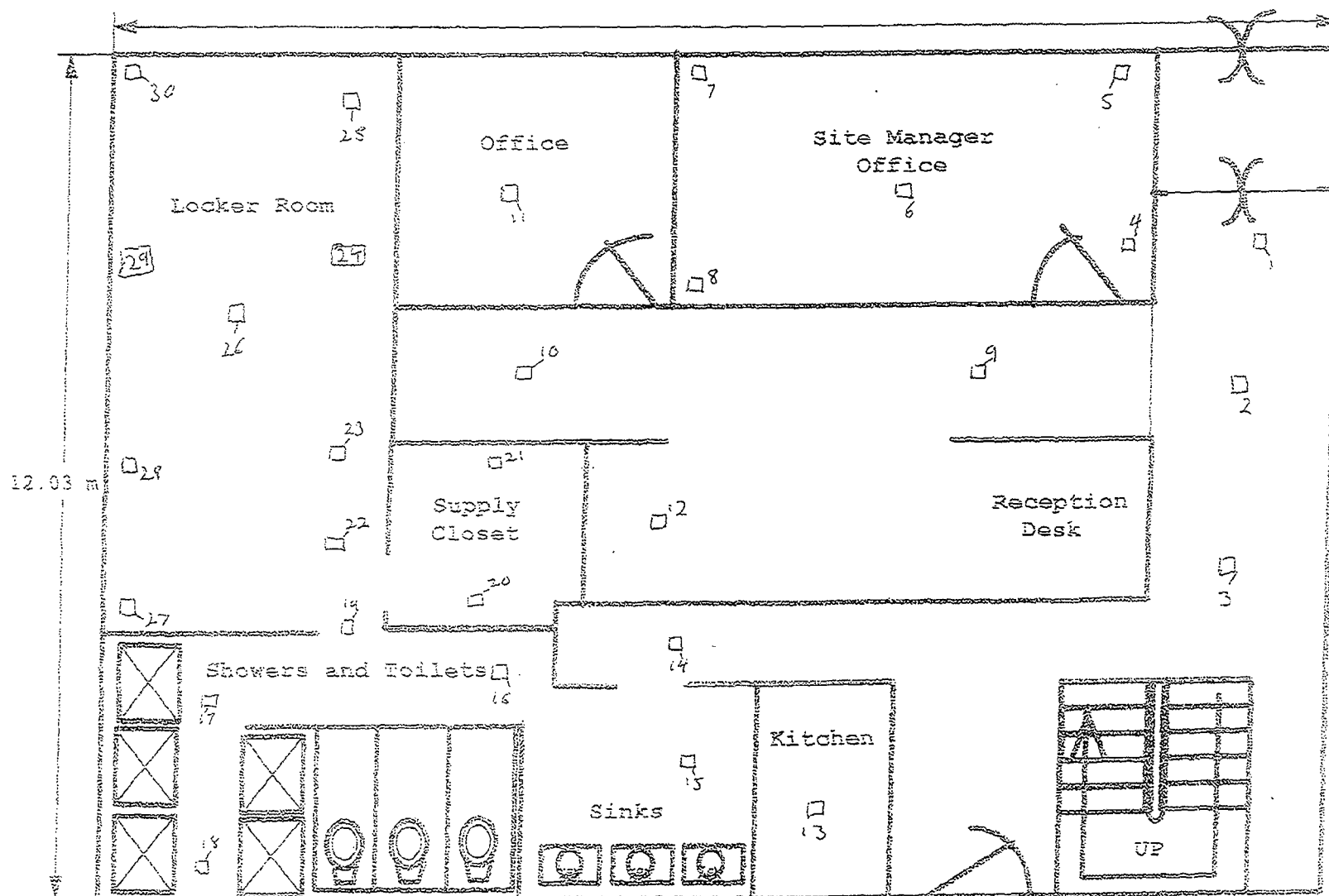
Area Description
<p>The survey area includes the floors, walls and ceiling on the first floor of the Administrative Building.</p> <p>This survey area does not include the Control Room</p> <p>The first floor of the Administrative Building is approximately 210 m².</p> <p>See attached drawing</p> <p>Class 3 survey areas are not limited in size</p>

General Survey Instructions
<ol style="list-style-type: none">1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm² detector. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

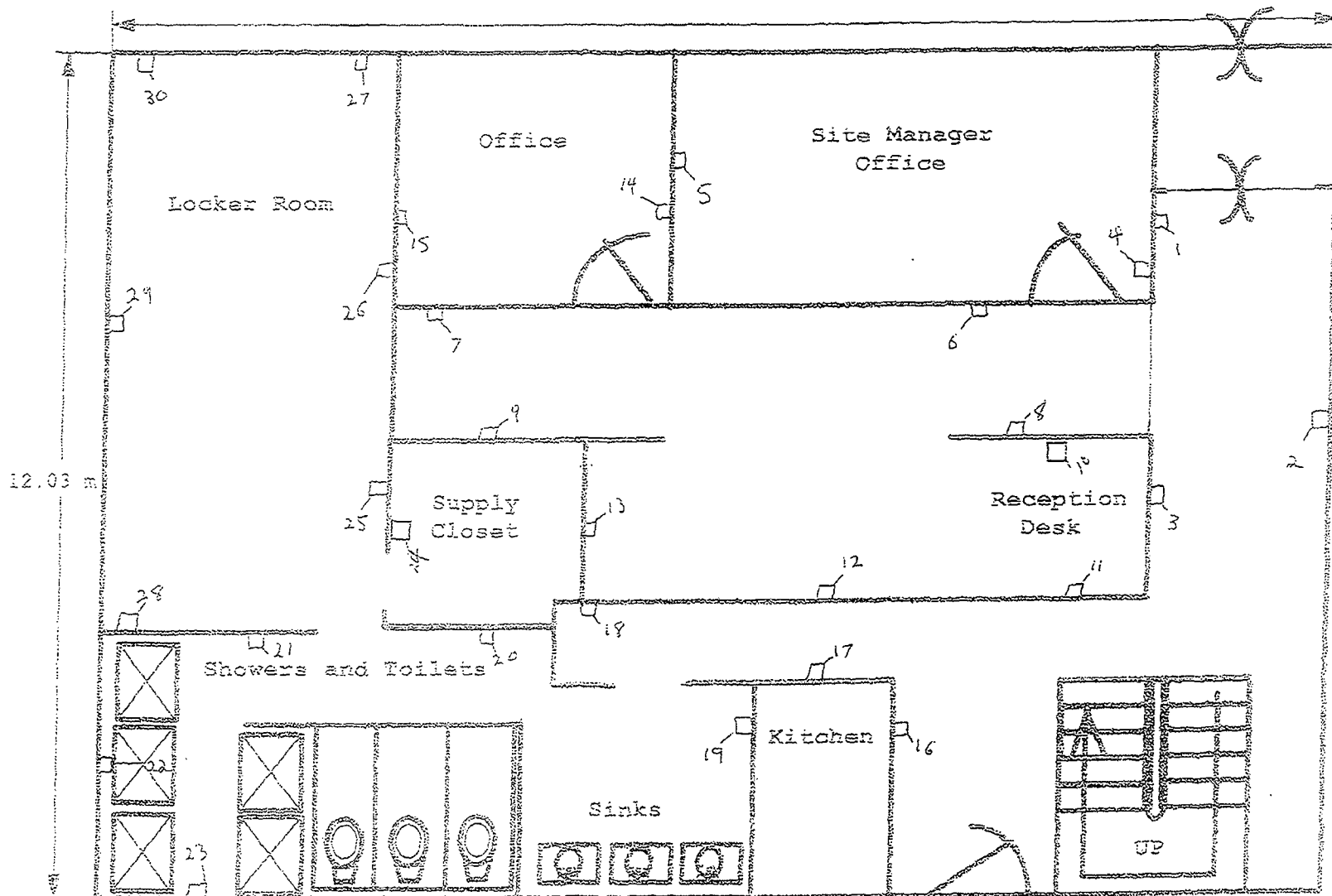
- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK016	FL0001				Floors	10%	30	NA	NA	30
PK016	W0001				Walls	10%	30	NA	NA	30
PK016	Ceiling				Ceiling	10%	30	NA	NA	30
PK016	ST001				Miscellaneous Non Permanent Items	10%	50	NA	NA	50



□ = Smears + Points Location
 PKg 16 First Floor of Admin. Bldg's, Floors

FLOOR
 Floors



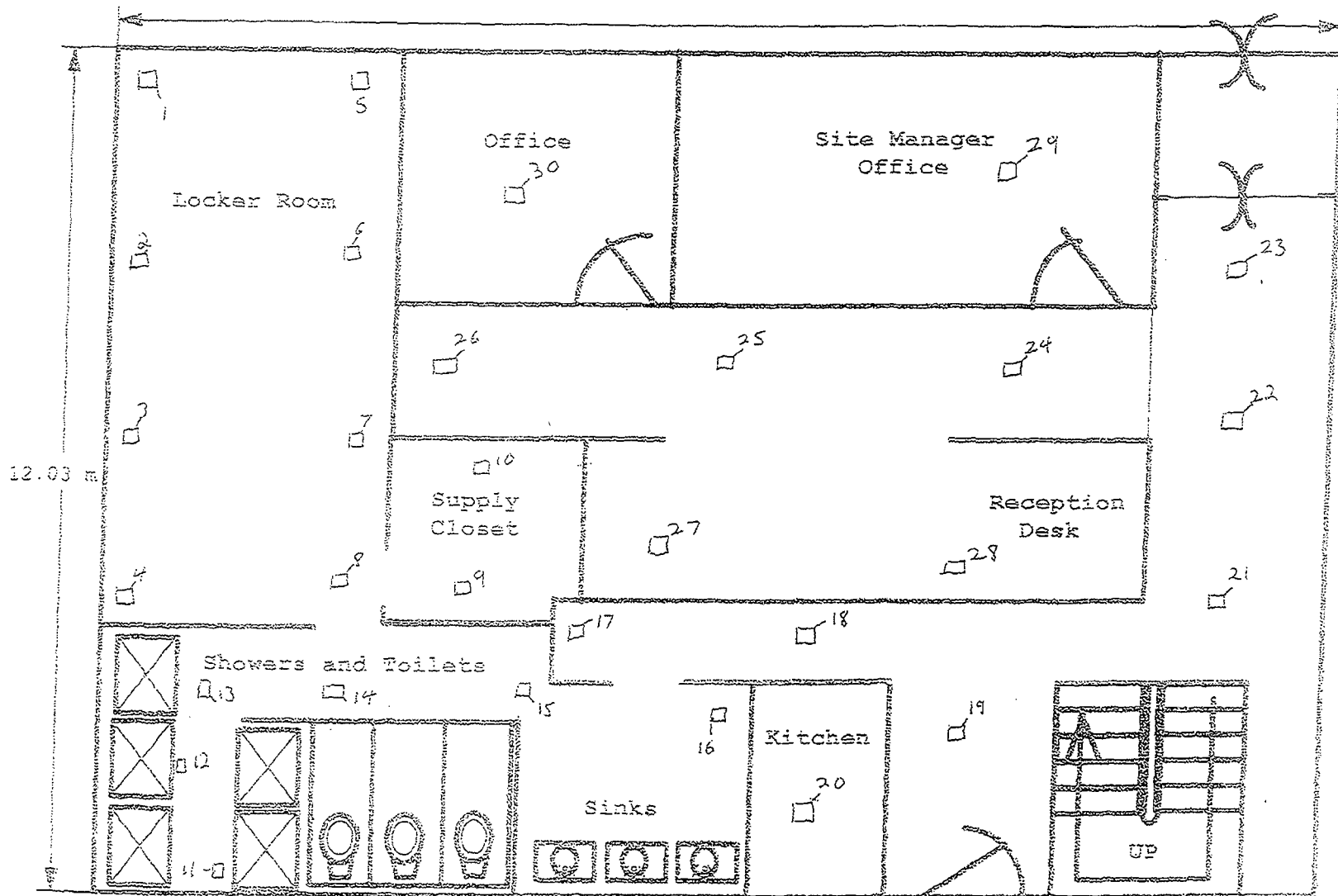
Office, Kitchen and Change Area

□ = Smears + Points Locations

PKS 16 First Floor of Admin. Building, walls

W0001

insalls

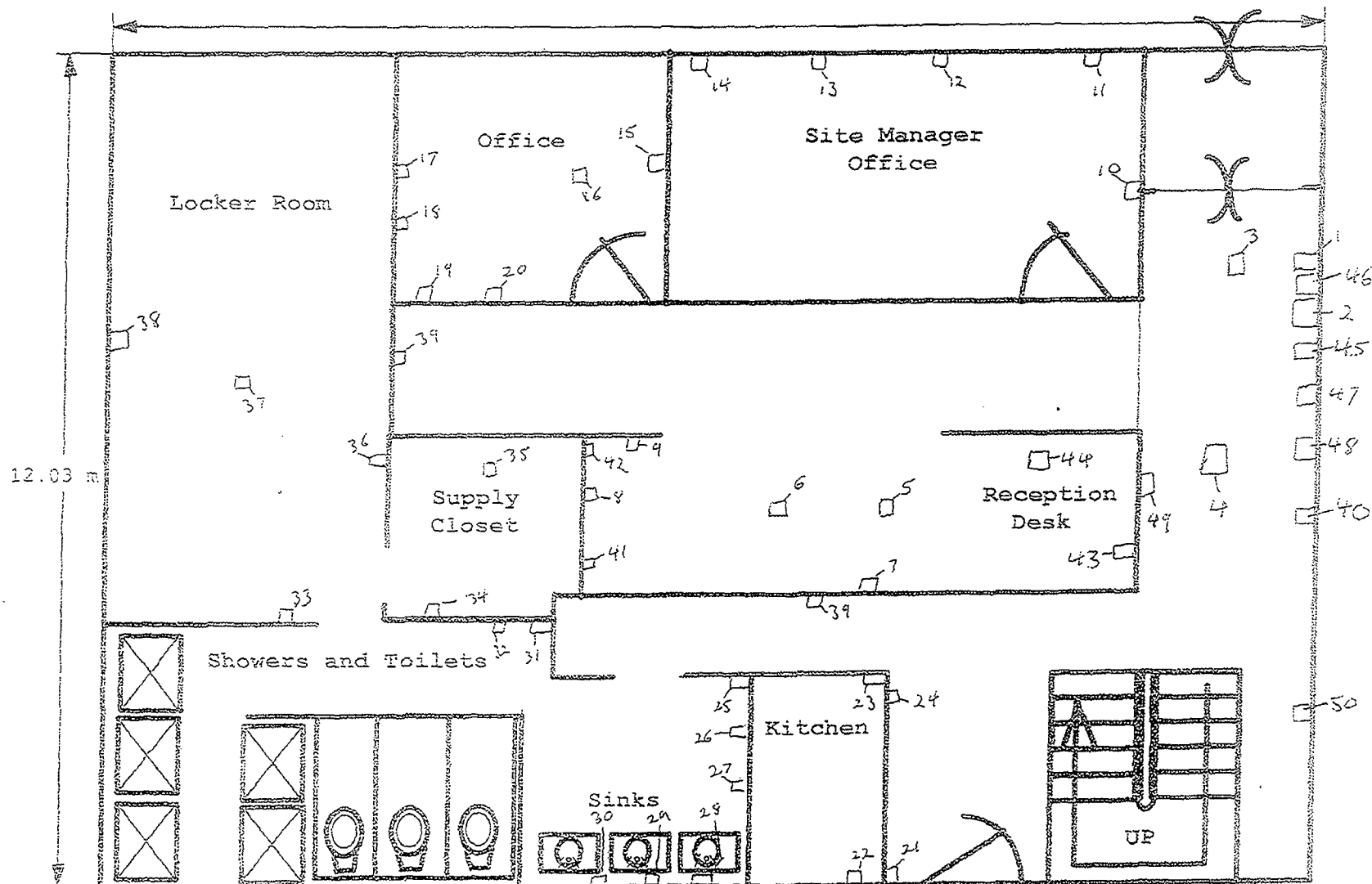


Office, Kitchen and Change Area

□ = Sinks + Points Locations

Pkg 16 First Floor of Admin. Building, Ceiling

ceiling



Office, Kitchen and Change Area

□ = Smears + Points Locations

Pkg 16 Non-Permanent Items on First Floor of Admin. Building

54001
Misc Items

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 17	Prepared by: Doug Schult
Location: Second Floor Of Administrative Building	Date prepared: 9/19/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floors, walls and ceiling on the second floor of the Administrative Building.</p> <p>The second floor of the Administrative Building is approximately 336 m².</p> <p>See attached drawing</p> <p>Class 3 survey areas are not limited in size</p>

General Survey Instructions
<ol style="list-style-type: none">1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm² detector. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK017	FL0001				Floors	10%	30	NA	NA	30
PK017	W0001				Walls	10%	30	NA	NA	30
PK017	Ceiling				Ceiling	10%	30	NA	NA	30
PK017	ST001				Miscellaneous Non Permanent Items	10%	50	NA	NA	50
PK017	ST002				Stairs To First Floor	10%	10	NA	NA	10
PK017	ST003				Stairs to Elevation 1353	10%	10	NA	NA	10
PK017	ST004				Ventilation Ducting Exterior	10%	20	NA	NA	20
PK017	ST005				Ventilation Ducting Interior	10%	20	NA	NA	20

Package Review

Date Package Completed

9-25-06

Package Reviewed by and Date

Carl Inel 1-14-07 *[Signature]* 1/25/07

Survey Comments

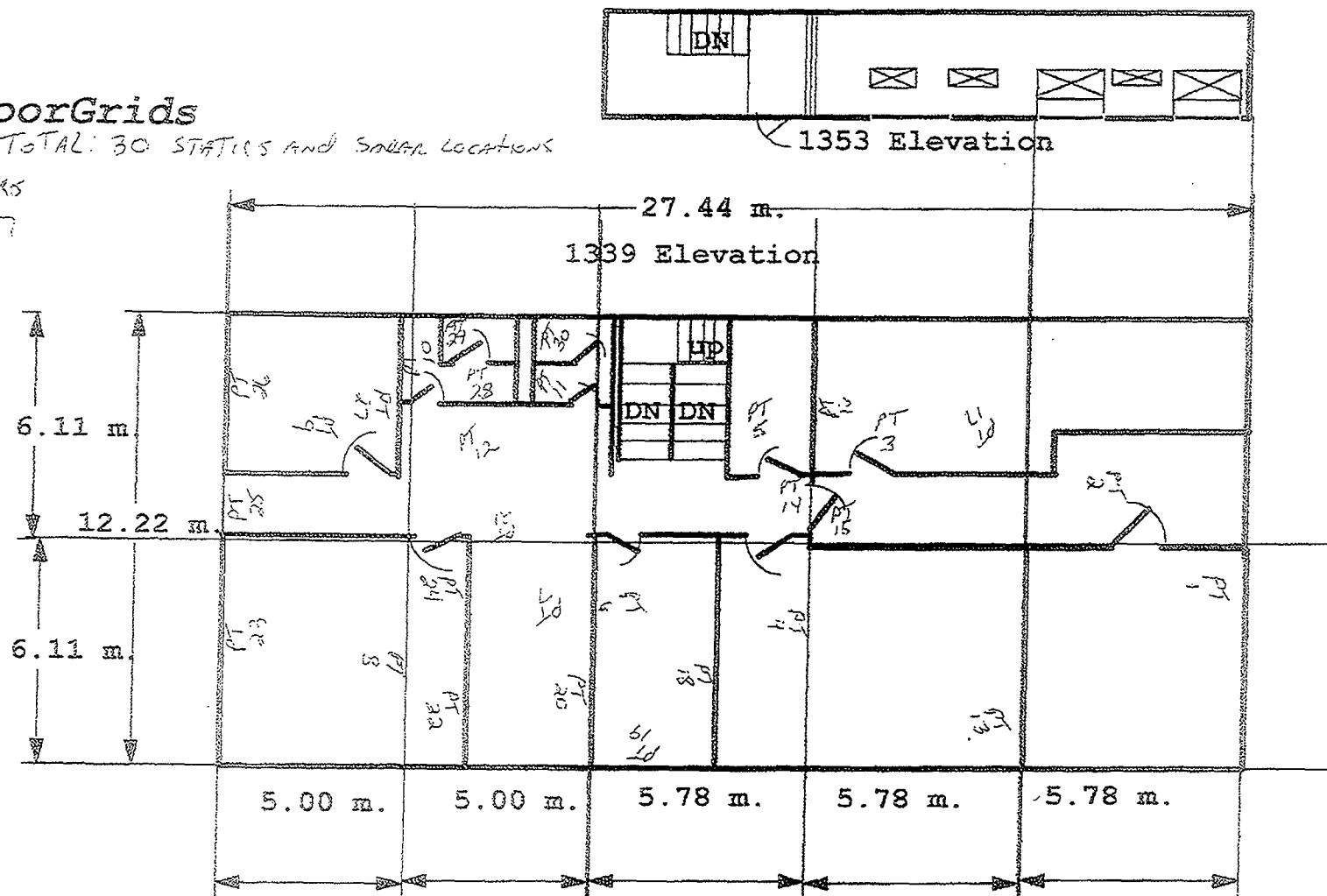
PK017 FLOOR FLOCT 13 through 30 with Field BKG ARE ON FILE NAME 00000035
 SURVEY DESCRIPTION: PK017 SCANS AND POINTS ON LOWER WALLS AND FLOOR

PK017 FLOOR FLOCT 1 through 12 with Field BKG ARE ON FILE NAME 00000020
 SURVEY DESCRIPTION: PK017 SCANS AND POINTS OF 2ND FLOOR AREAS.

FloorGrids

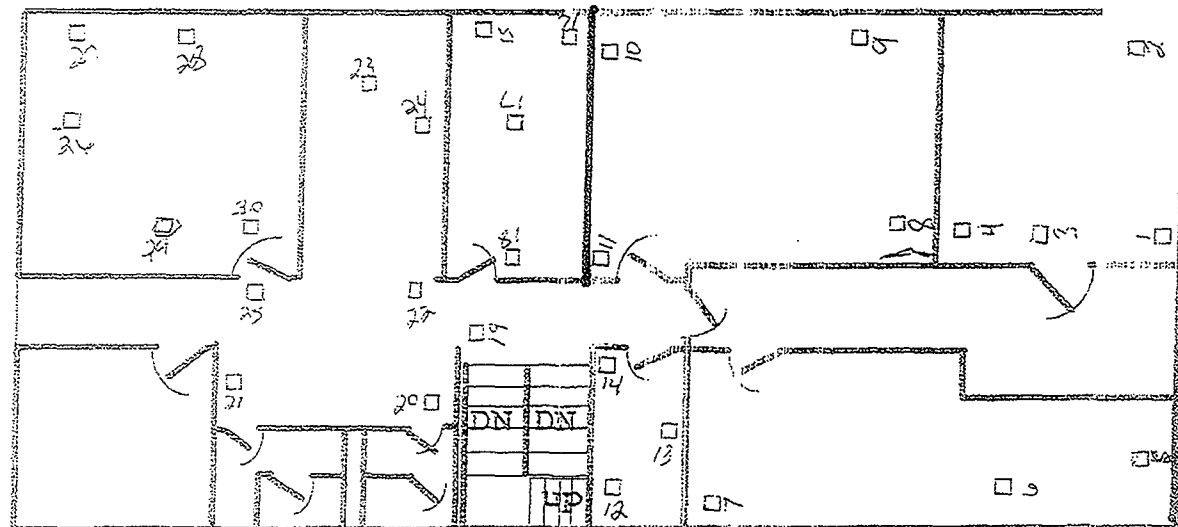
PTS TOTAL: 30 STATICS AND SIGNAL LOCATIONS

FLOORS
PROIT

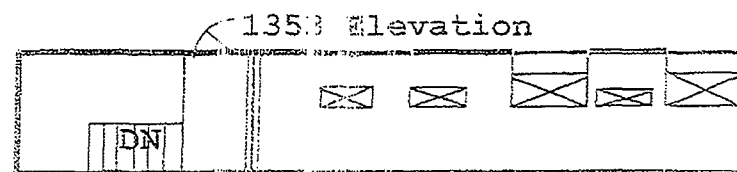


2nd Floor over Offices

Mirror of Floor for Ceiling Survey



1339 Elevation



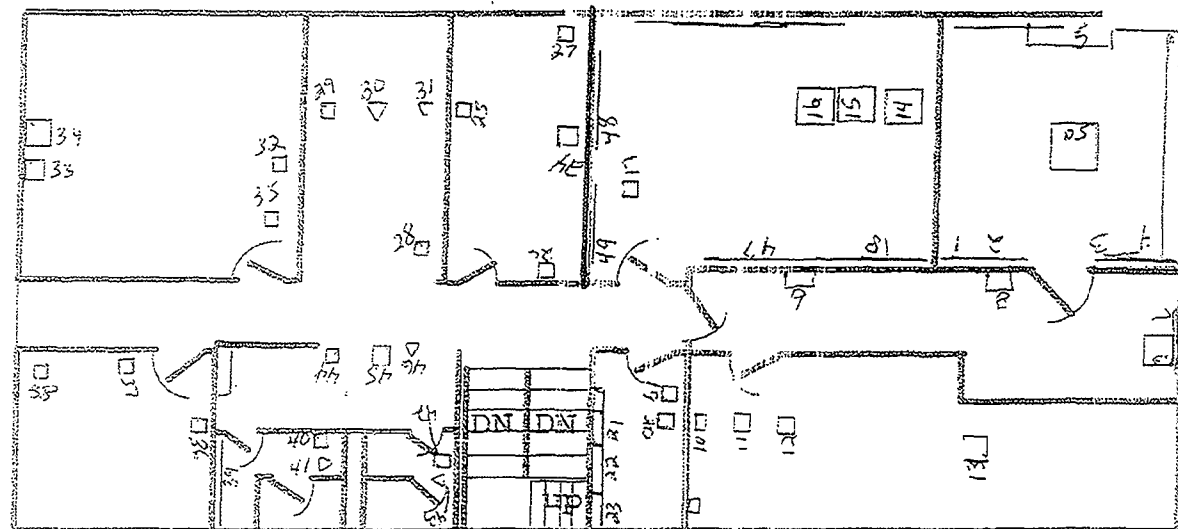
1353 Elevation

2nd Floor over Offices

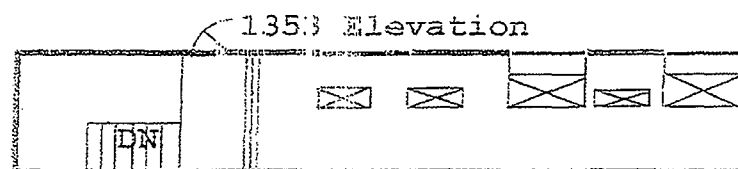
□ = Smears + Points Locations

Phg 17 Ceiling

Mirror of Floor for
Ceiling Survey TR 9/21/06



1339 Elevation



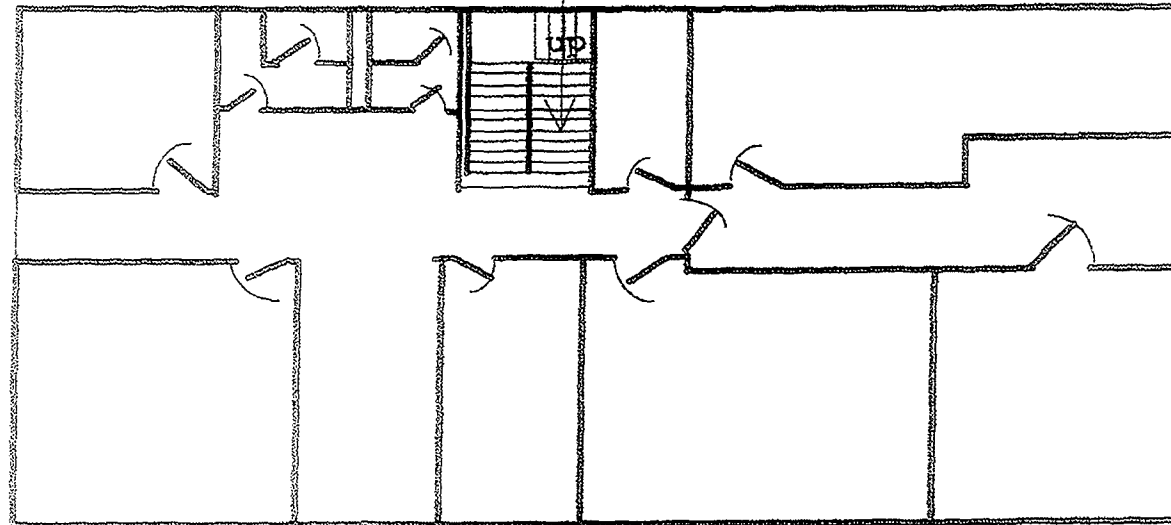
2nd Floor over Offices

Page 8 of 12
MISC NON PERMANENT ITEMS
TOTAL: 50 STATIC AND SOME LOCATIONS
PK017

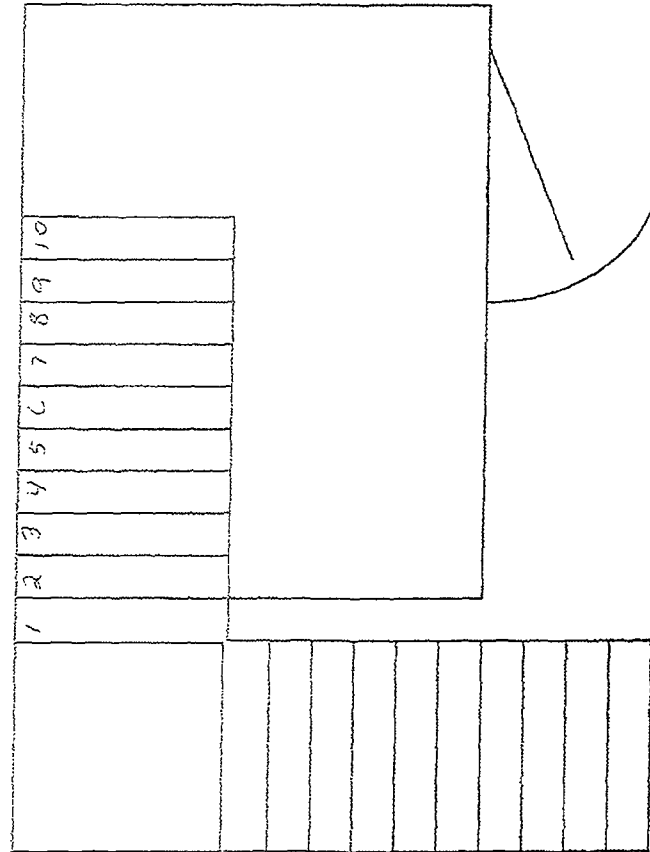


1353 Elevation

PK-017
Smears 1-10 and Points 1-10
STAIRS to First Floor



2nd Floor over Offices



Stairs to Elevation 1353'

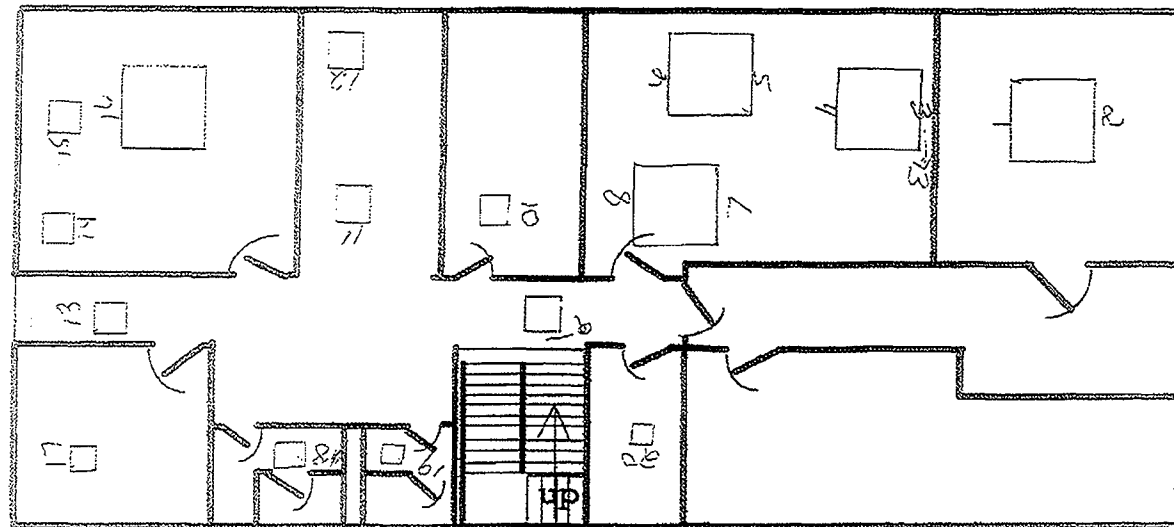
Scans and points 1-10

2nd Floor over Offices

PK-017

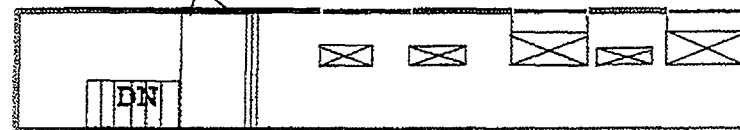
Exterior of Ventilation Ducting

total 1-20

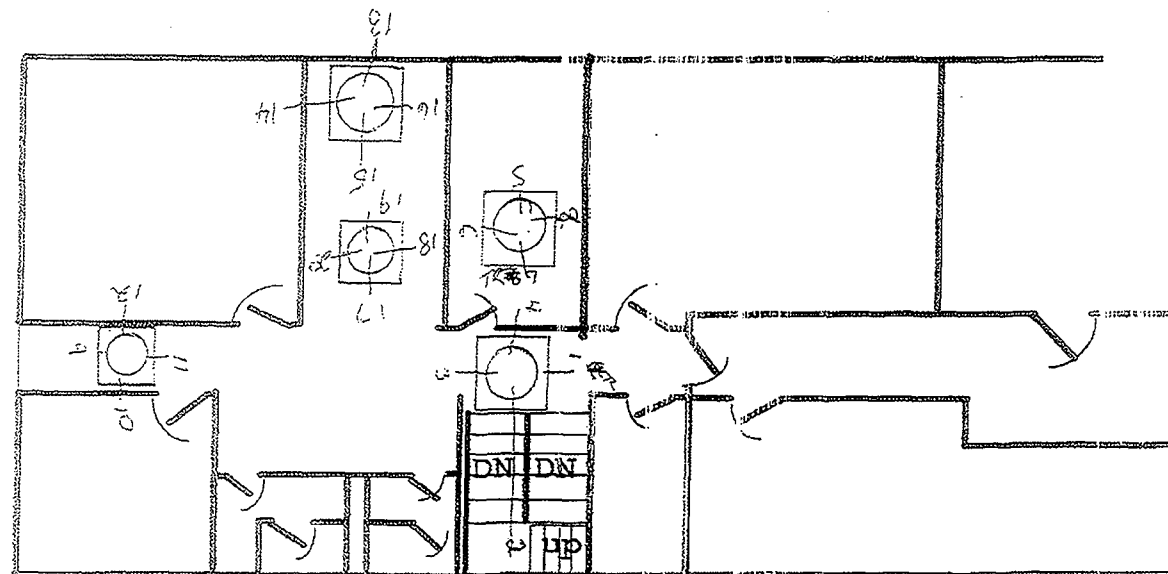


Smears 1-10 YR
9/22/66

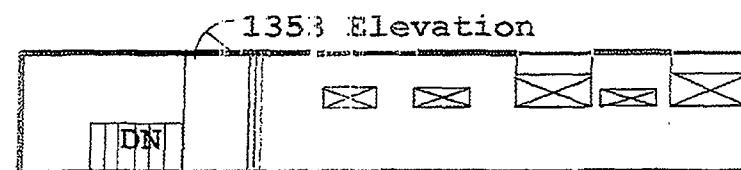
1353 Elevation



TK
9/23/00
Mirrow of Floor for PKO17 Interior Ventilation Ducting
Points AND Smears through 20
Ceiling Survey



1339 Elevation



2nd Floor over Offices

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 18	Prepared by: Doug Schult
Location: First Floor Of Boiler Building, Floors and Walls Below 2 Meters	Date prepared: 8/28/06
Area Classification: Impacted -- Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floors, walls and horizontal surfaces below 2 meters on the first floor of the Boiler Building. Also included are the mud drums, various trenches, and a sump in the south west corner of the building</p> <p>The first floor of the Boiler Building is approximately 594 m².</p> <p>See attached drawing</p> <p>Class 2 survey areas are limited in size to less than 1000 m²</p>

General Survey Instructions

- 1) Grid the floor using 3 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 3 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using a non permanent marker such as pieces of tape or stickers. Label the grids using an numeric numbering system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 50% of the accessible surfaces within each grid holding the detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm² detector. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Collect a total beta activity measurements at locations identified during the scan as having residual activity. If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 3 to give the X coordinate and the second random number is multiplied by 3 (2 for walls) to give the Y coordinate

Floors: R=0.635, X=1.90 m R=0.734, Y= 2.20 m

Walls: R=0.635, X=1.90 m R=0.734, Y= 1.47 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.273, X=0.82 m R=0.737, Y= 2.21 m

Walls: R=0.273, X=0.82 m R=0.737, Y= 1.47 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number
- 9) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK018	FL001				Floor	50%	Each Grid	NA	NA	Each Grid
PK018	W0001				Walls below 2 meters	50%	Each Grid	NA	NA	Each Grid
PK018	ST001				Mud Drums A1 and A2	50%	20	NA	NA	20
PK018	ST002				Mud Drums B1 and B2	50%	20	NA	NA	20
PK018	ST003				Mud Drums C1 and C2	50%	20	NA	NA	20
PK018	ST004				Trenches	50%	30	NA	NA	30
PK018	ST005				Sump	50%	20	NA	NA	20
PK018	ST006				Outside of Boilers	50%	30	NA	NA	30

Package Review

Date Package Completed 9:32 AM

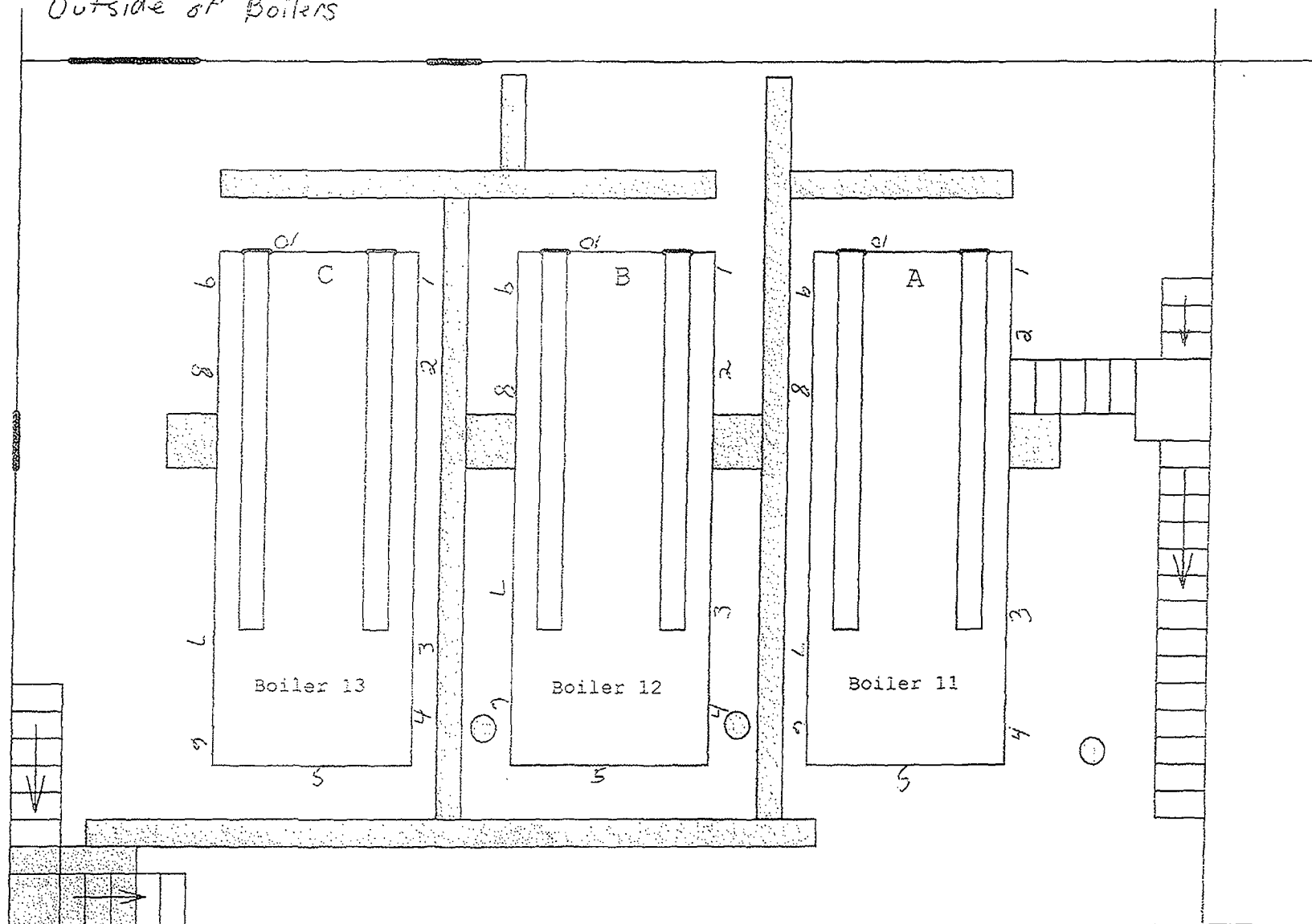
Package Reviewed by and Date Paul L. 1-18-97 22-1-1

Survey Comments	

17518

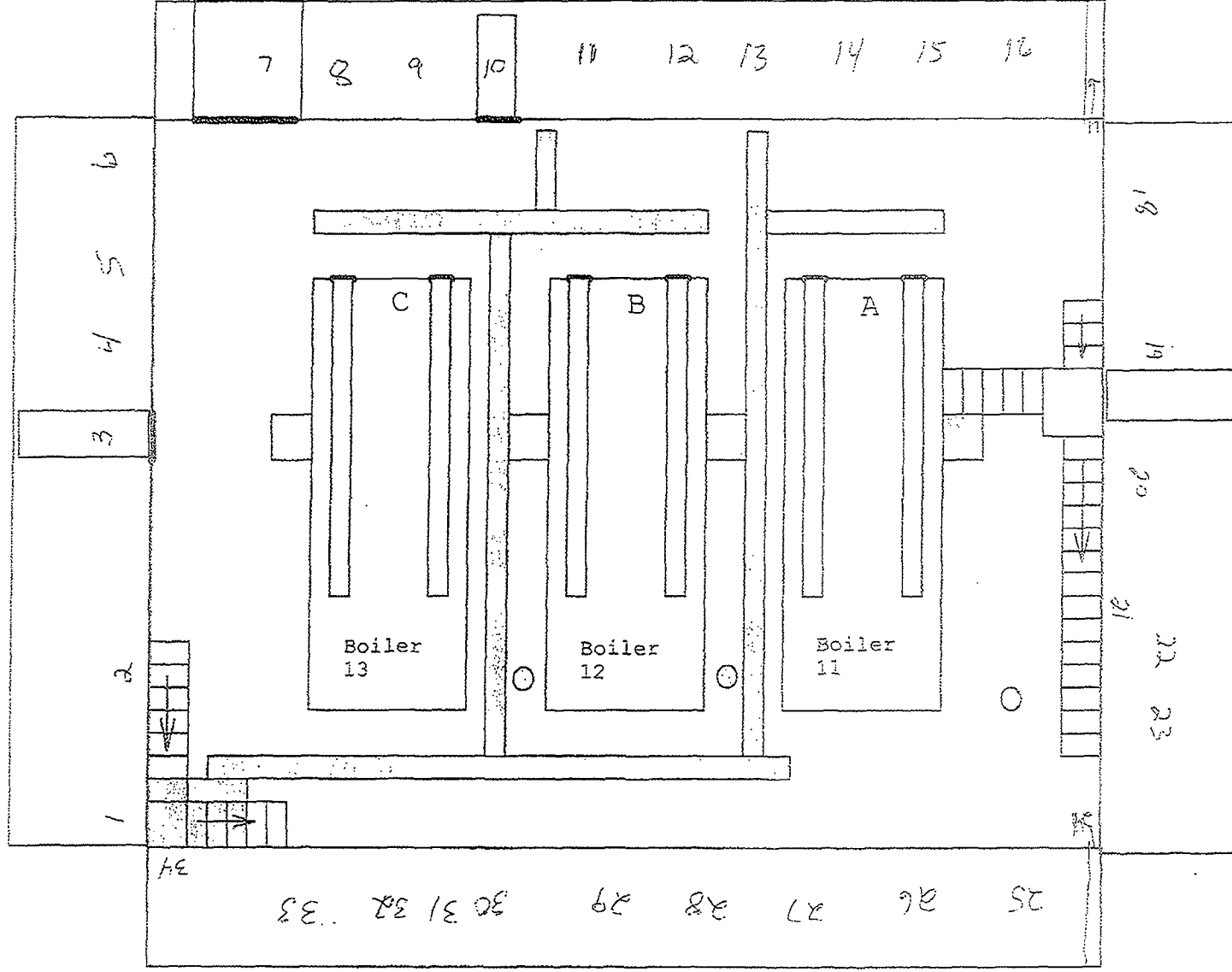
TOTAL 30 STATICS AND 30 SHEAR LOCATIONS

Outside of Boilers

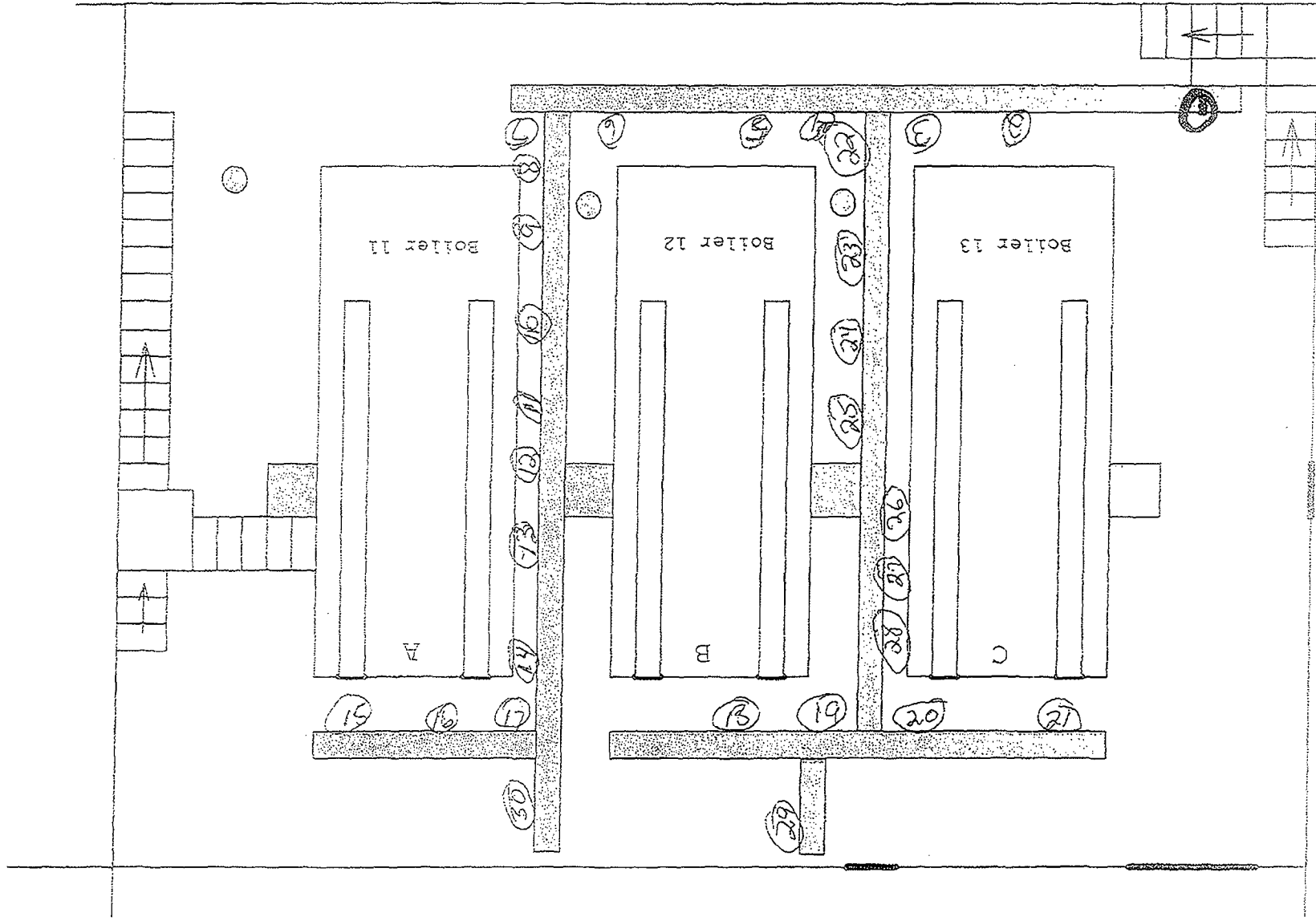


11018

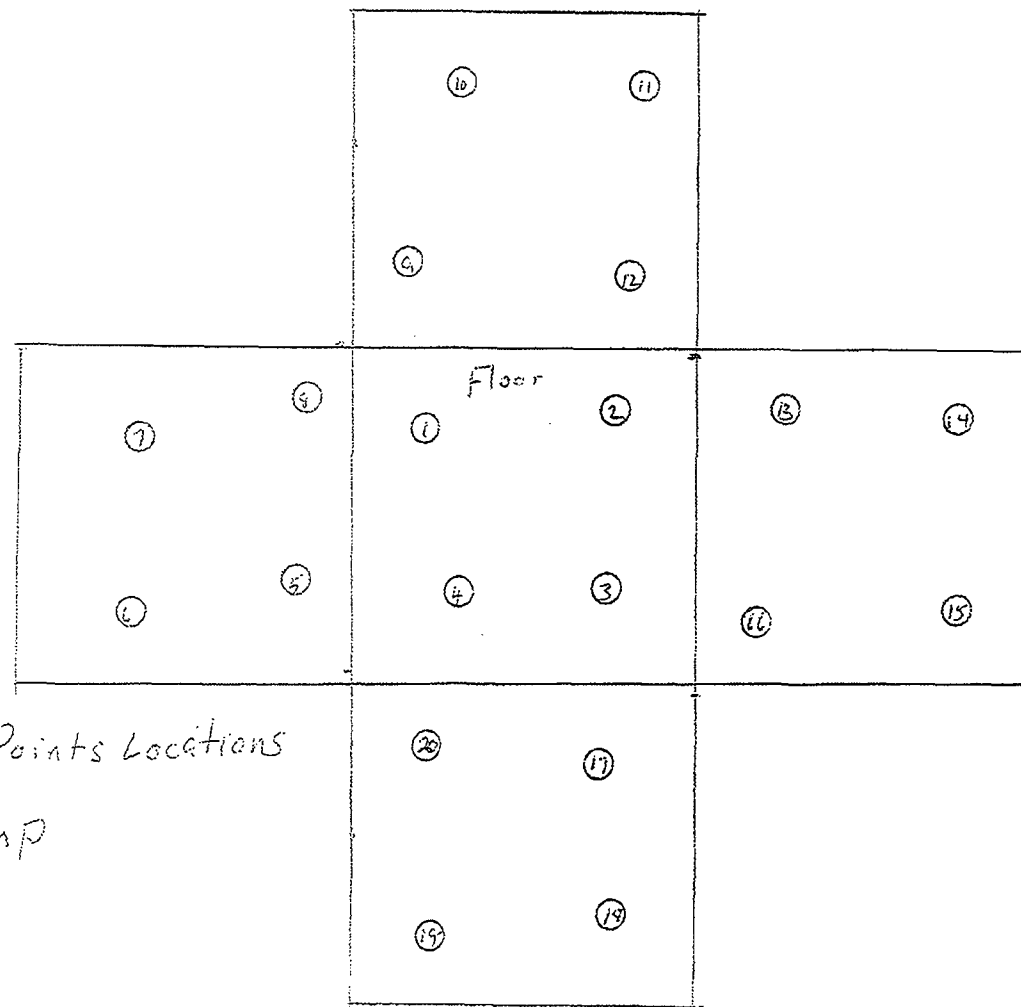
Water Pumps and Steam Locators



10018
 TOTAL 30 STATICS AND 30 SIMILAR LOCATIONS
 Trench

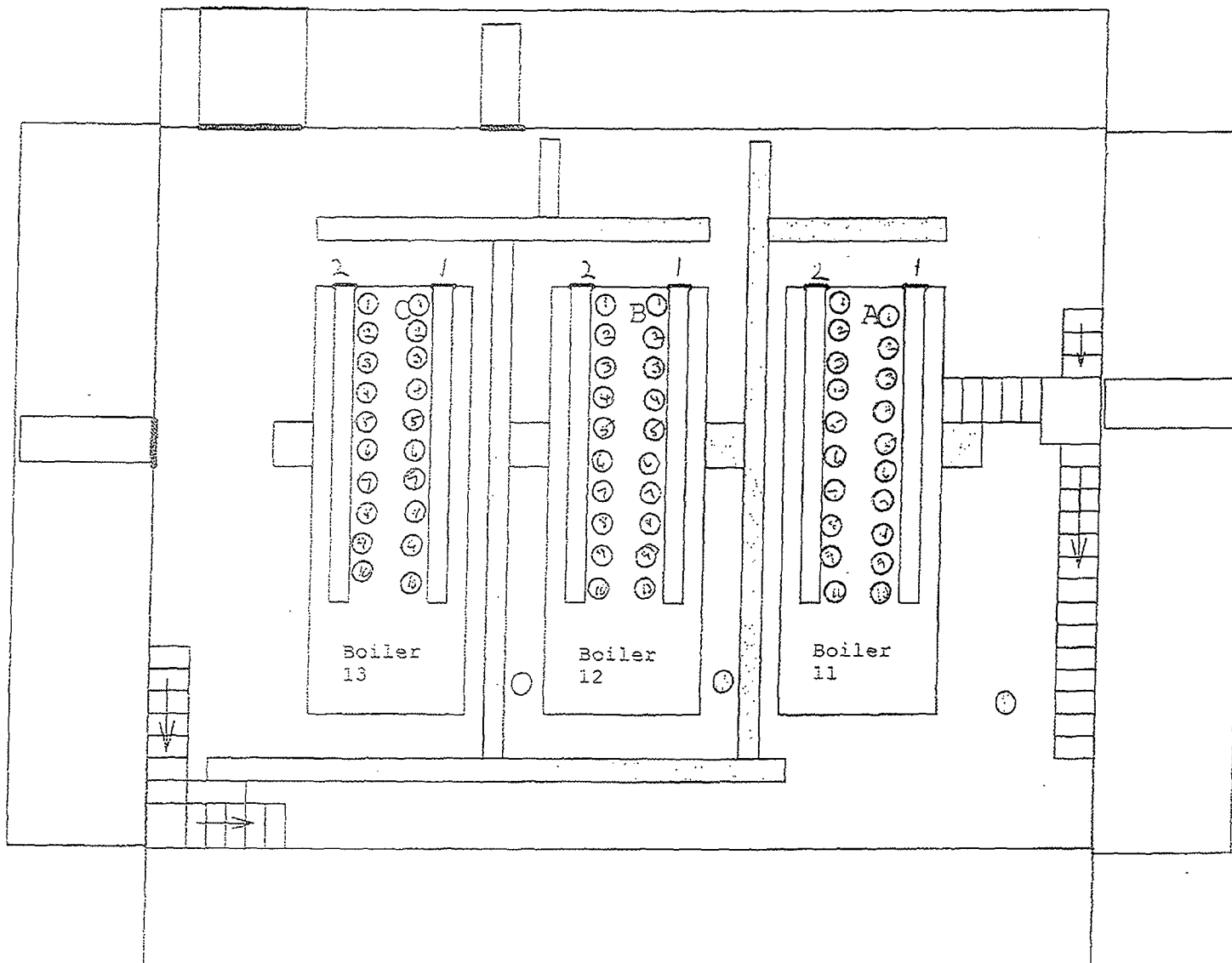


Boiler Room Sump



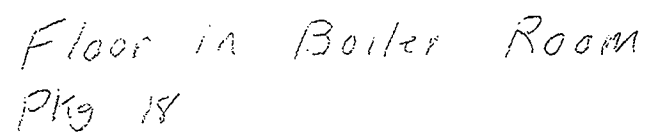
○ = Smears + Points Locations

Pkg 18 Sump



○ = Sensors + Points Locations

PK 18 Interior of Mud Drums



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 19	Prepared by: Doug Schult
Location: First Floor Of Boiler Building, Walls Above 2 Meters and Ceiling	Date prepared: 9/19/06
Area Classification: Impacted -- Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the walls and horizontal surfaces above 2 meters and the ceiling on the first floor of the Boiler Building.</p> <p>The first floor of the Boiler Building is approximately 594 m².</p> <p>See attached drawing</p> <p>Class 3 survey areas are not limited in size</p>

General Survey Instructions
<ol style="list-style-type: none">1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm² detector. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

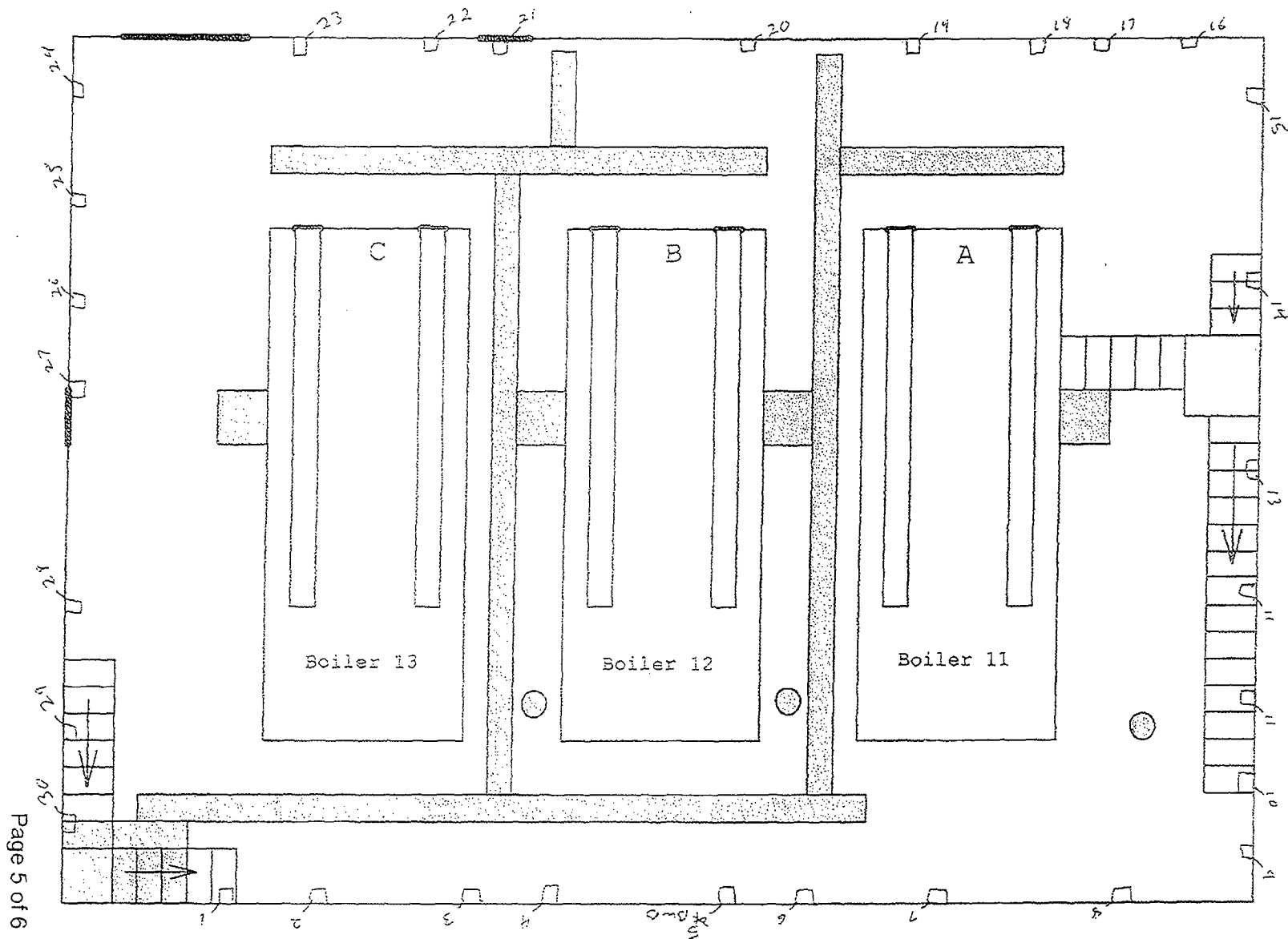
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK019	W0001				Walls above 2 meters	10%	30	NA	NA	30
PK019	C0001				Ceiling and horizontal surfaces above 2 meters	10%	30	NA	NA	30

Package Review	
Date Package Completed	10-3-06
Package Reviewed by and Date	Carl [Signature] 1-18-07 [Signature] 1/25/07

Survey Comments

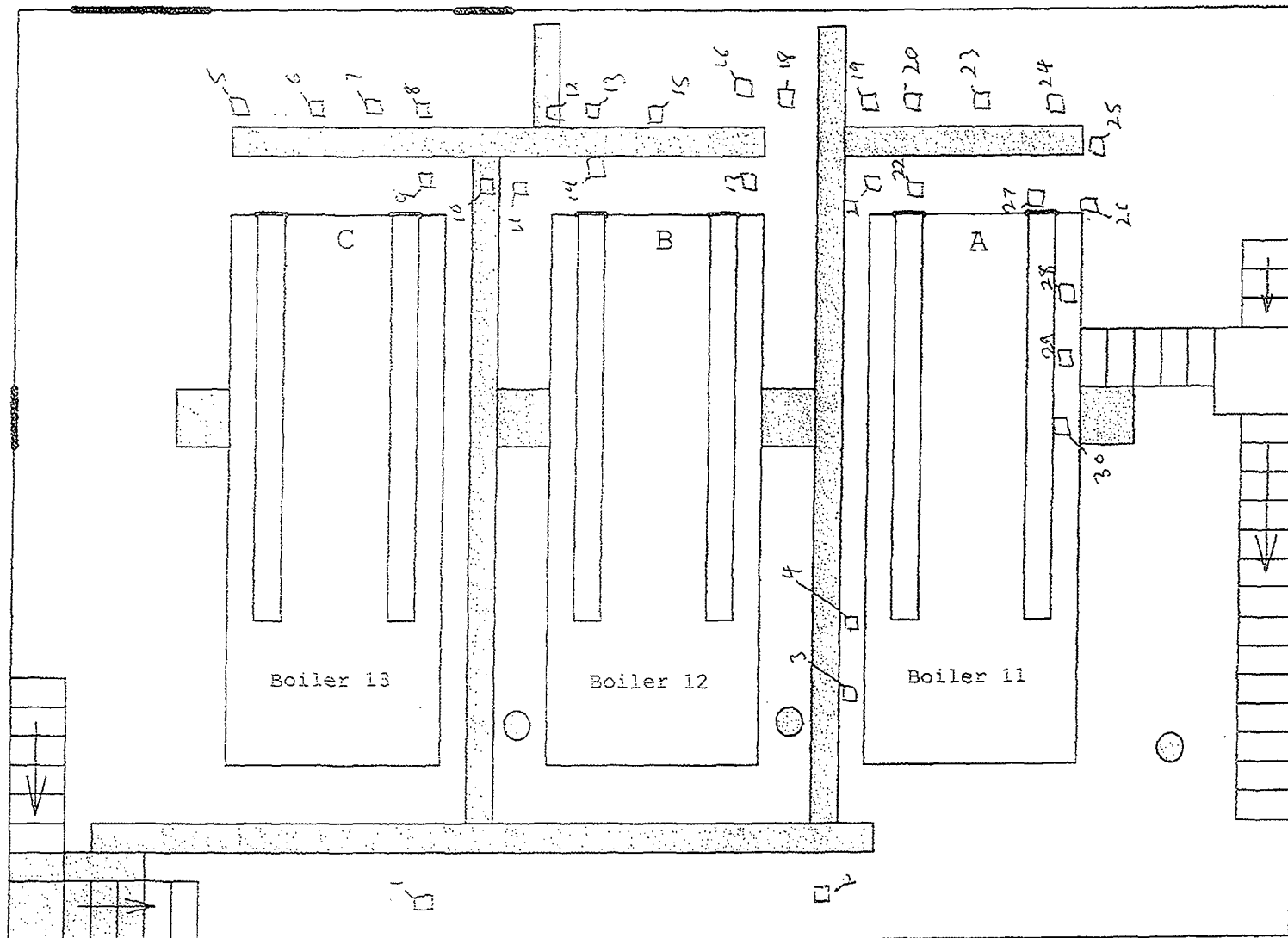


Page 5 of 6

□ = Smears + Points Locations

Pkg 19 Boiler Buildings Walls Above 2 meters

upper walls



□ = Smears + Points Locations

Pkg 19 Ceiling

ceiling

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 20	Prepared by: Doug Schult
Location: Second Floor Of The Boiler Building	Date prepared: 10/04/06
Area Classification: Impacted – Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the floors, walls and ceiling on the second floor of the Boiler Building.

The second floor of the Boiler Building is approximately 890 m².

See attached drawing

Class 3 survey areas are not limited in size

General Survey Instructions

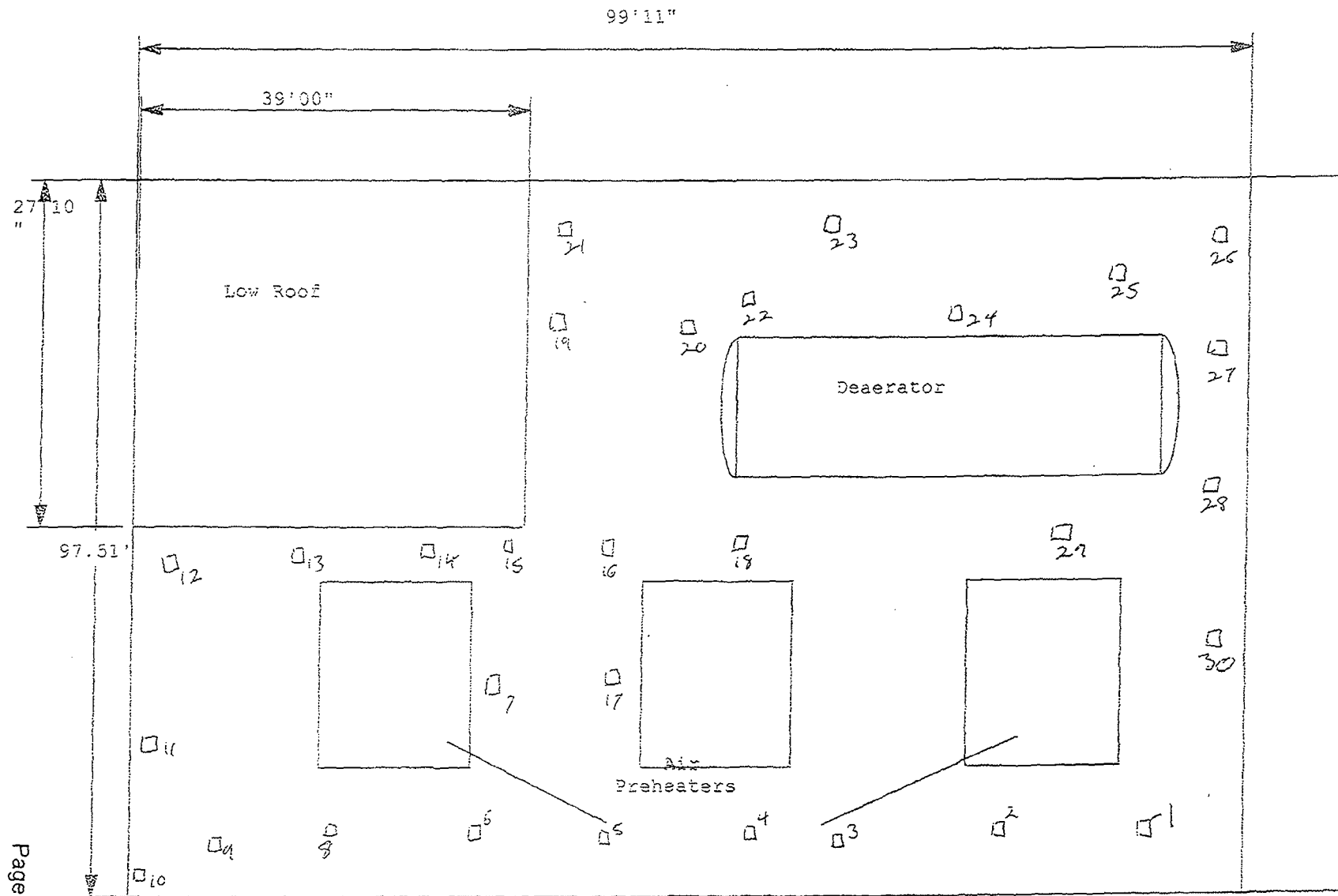
- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm² detector. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 or 43-106 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK020	FL001				Floor	10%	30	NA	NA	30
PK020	W0001				Walls (below 3 meters)	10%	30	NA	NA	30
PK020	ST001				Inside Stacks 1,2 and 3	10%	15	NA	NA	15
PK020	ST002				Outside Stacks 1, 2, and 3	10%	30	NA	NA	30
PK020	ST003				Entrance to Deairator	10%	3	NA	NA	3
PK020	ST004				Outside of Deairator	10%	20	NA	NA	20
PK020	ST005				Non Permanent Items	10%	20	NA	NA	20

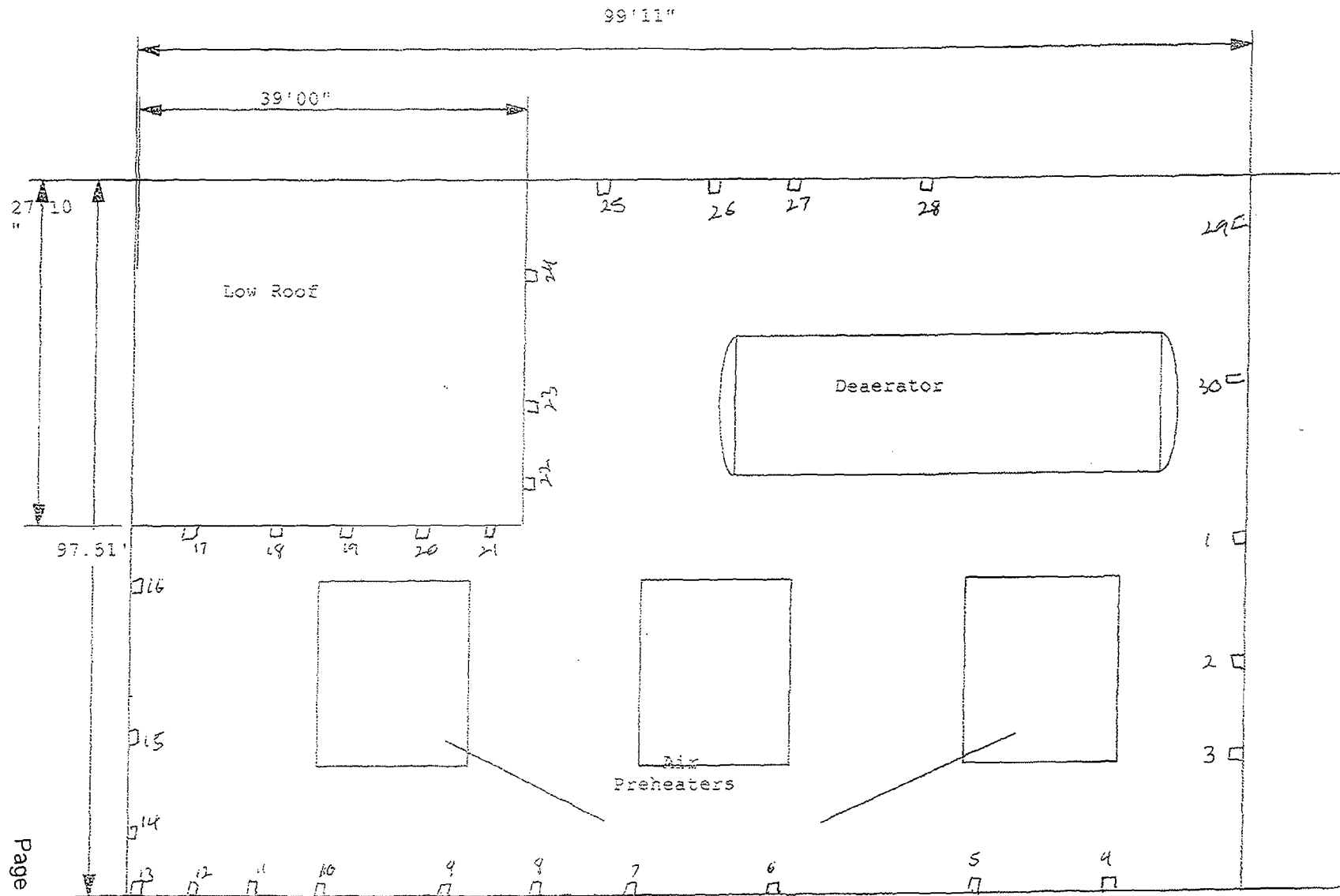
Package Review	
Date Package Completed	
Package Reviewed by and Date	
JDL 1/24/07	
Survey Comments	



Floors

□ = Sensors + Points Locations

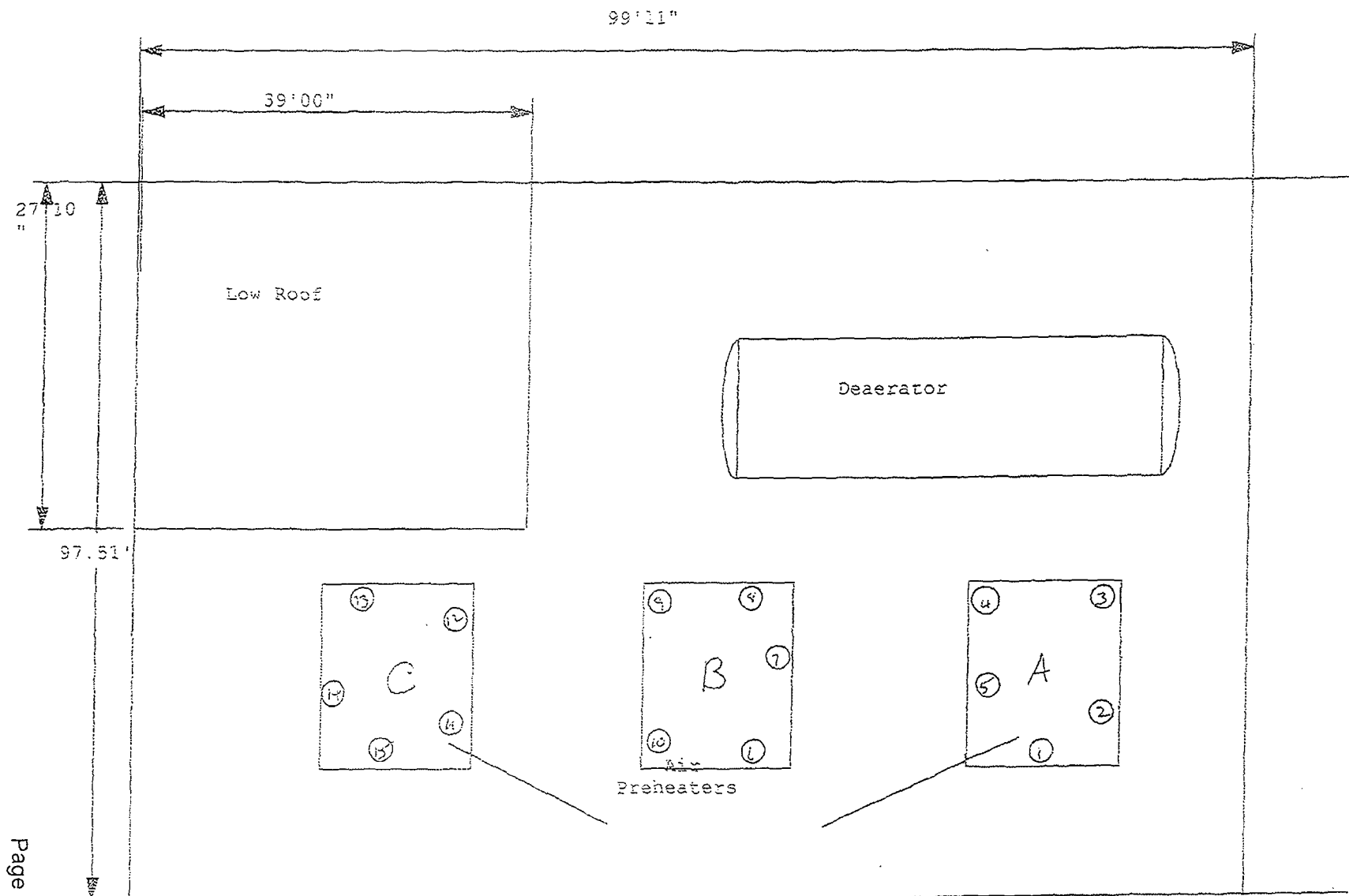
PKG 20 Floor



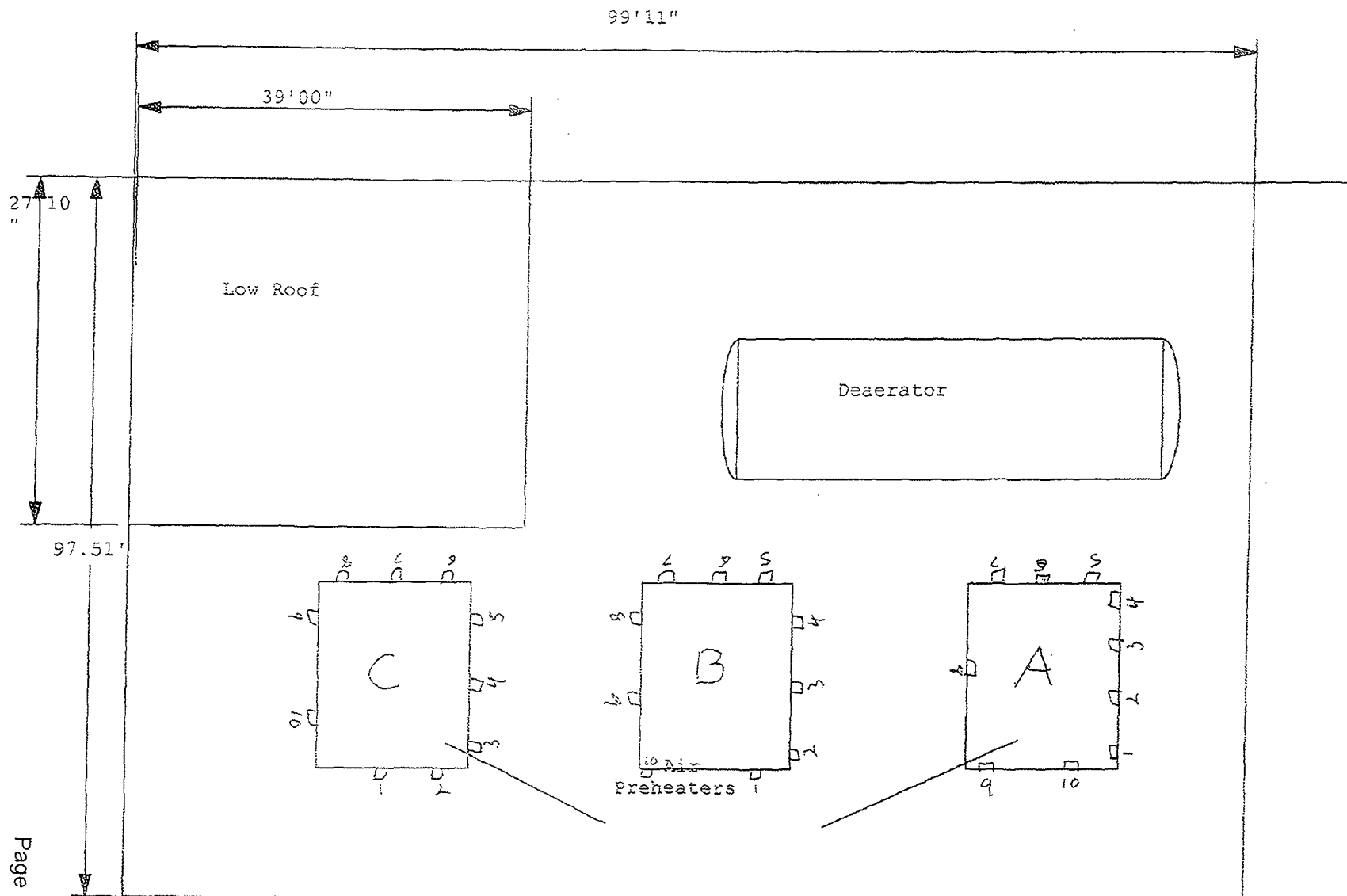
Walls

□ = Smears + Points Locations

Pkg 20 Walls

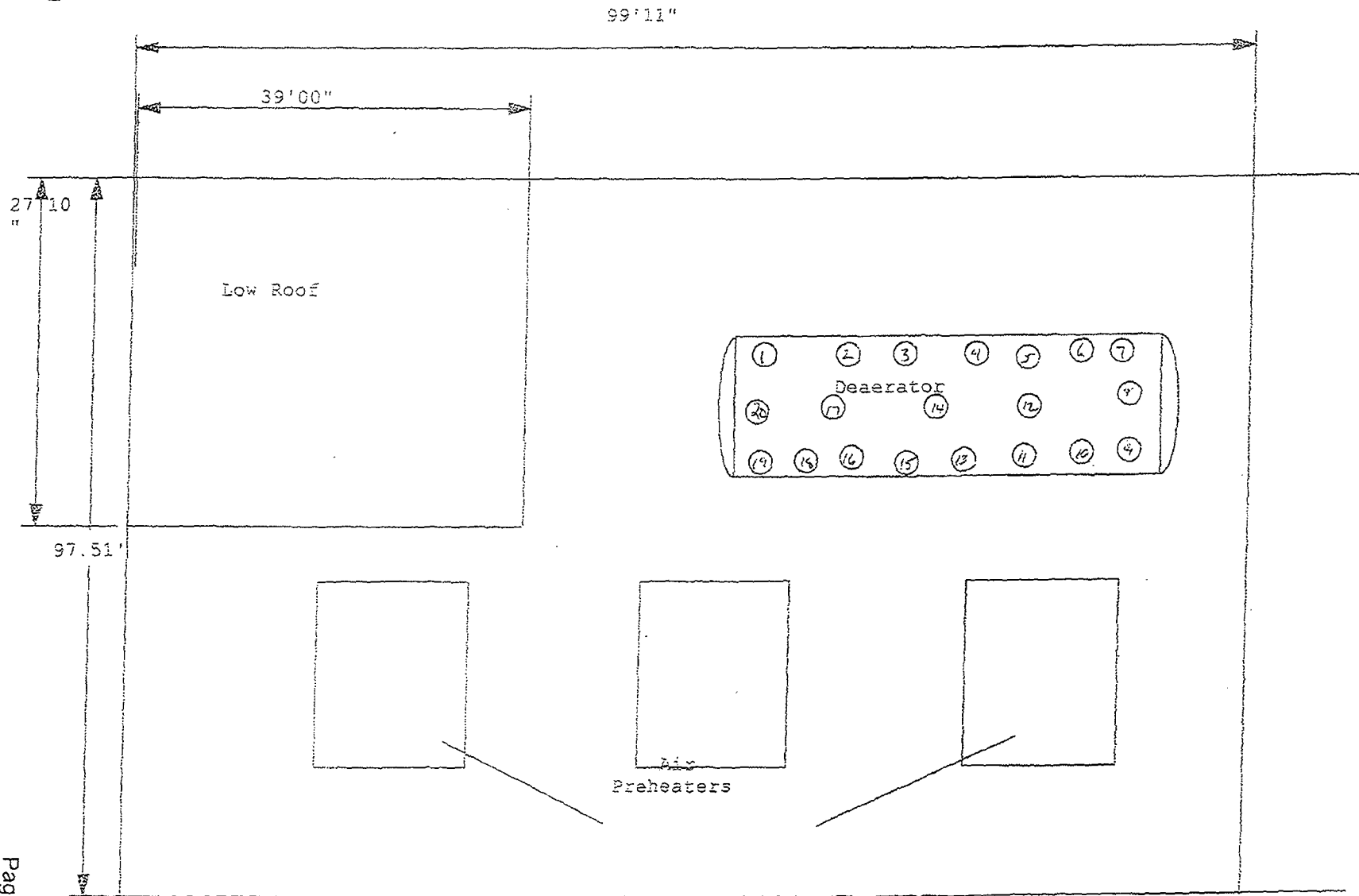


○ = Smeers + Points Locations
 Pkg 20 Inside Stacks 1, 2 and 3

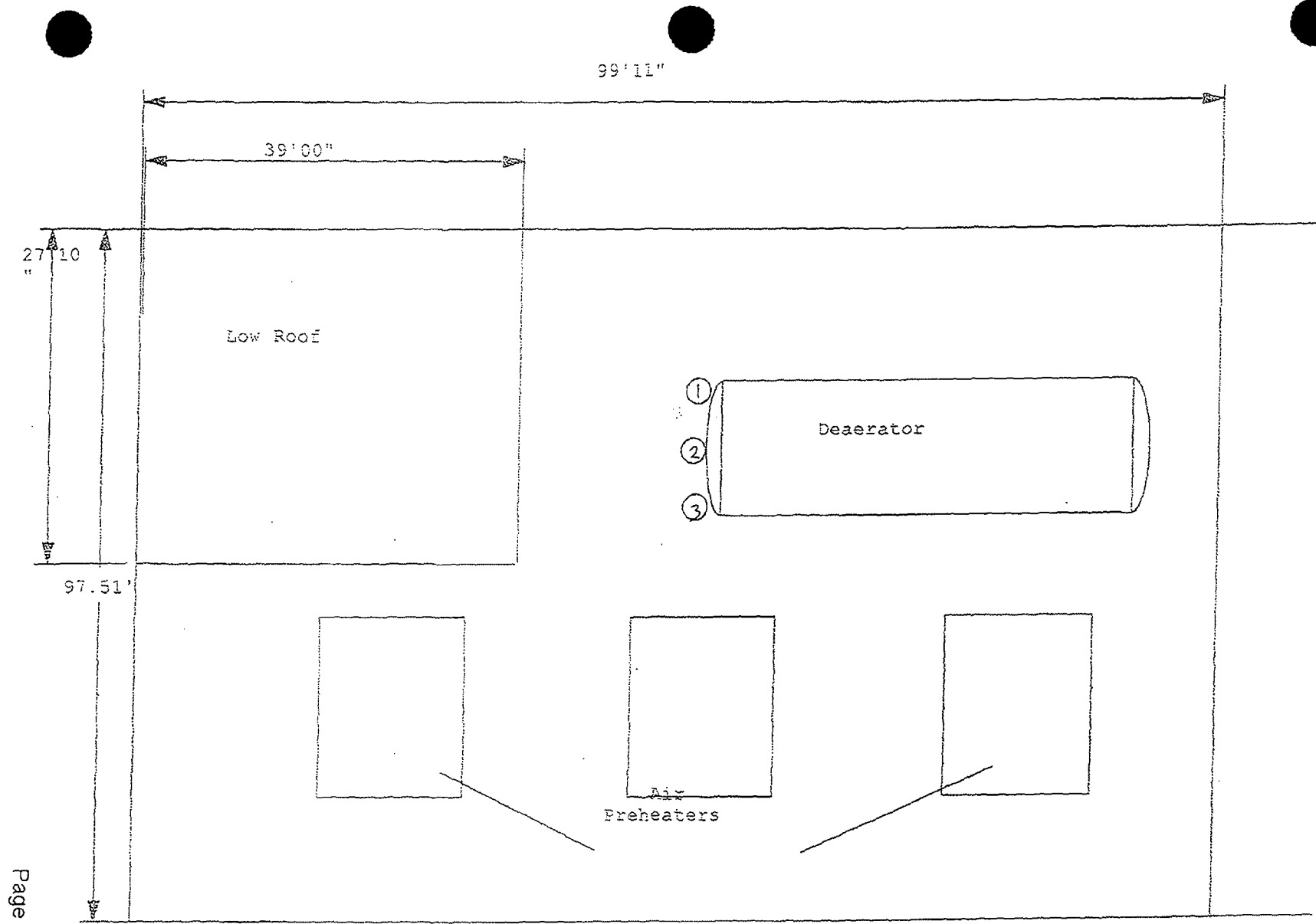


□ = Smears + Points Locations

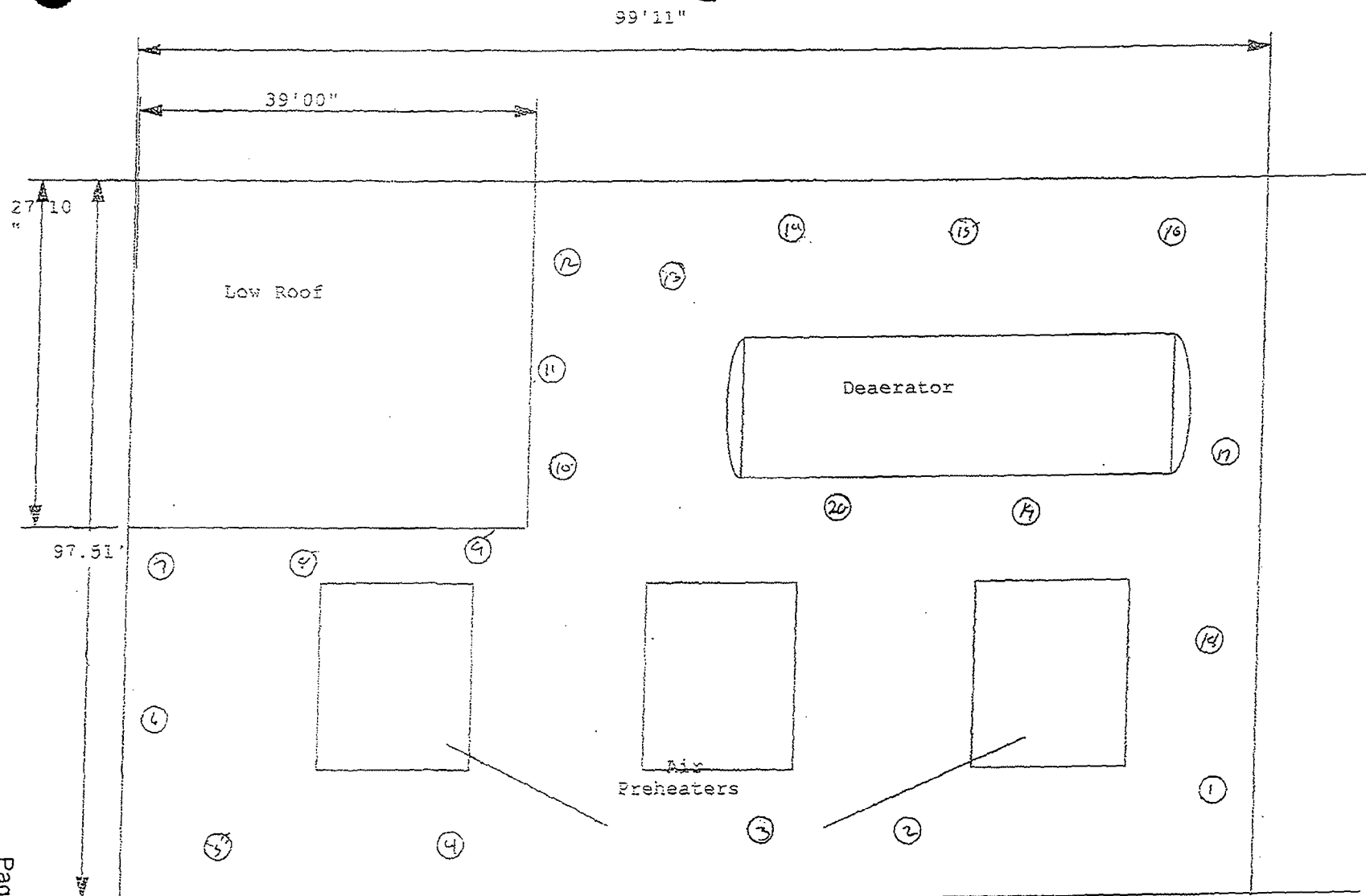
Pkg 20 Outside Stacks 1, 2 and 3



O z Smears + Points Locations
 Pkg 20 Outside of Deaerator



○ = Smeans + Points
 PK 20 Entrance to Deaerator



○ = Smeggs + Points
 Pks 20
 Non-permanent Items

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 21	Prepared by: Doug Schult
Location: Floors and Walls Below 2 Meters On Hot Side Of Turbine Building Basement	Date prepared: 9/26/06
Area Classification: Impacted – Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor and walls below 2 meters on the hot side of the Turbine Building basement.</p> <p>The floor on the hot side of the Turbine Building Basement is approximately 330 m². Due to the size of this survey area, the floors in this survey area will be grid using 1 meter grids to ensure an adequate survey frequency. If necessary the survey area can be split into 3 separate survey units. This survey area does not include trenches, sumps, the floor under the condenser or the inside of the condenser as these areas are included on other survey packages.</p> <p>See attached drawings</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using **1 meter grids** beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every **1 meters** beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. When appropriate (cracks, irregular surfaces, etc.) ensure that the scans are performed with a 15 cm^2 detector. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Collect a total beta activity measurement at locations identified during the scan as having residual activity. If activity in excess of the criteria for release for unrestricted use ($5000 \text{ dpm}/100 \text{ cm}^2$) is identified mark the area and notify the Project Manager.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 (2 for walls) to give the Y coordinate

Floors: R=0.337, X=0.337 m R=0.563, Y= 0.563 m

Walls: R=0.337, X=0.337 m R=0.563, Y= 1.126 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.837, X=0.837m R=0.765, Y= 0.765 m

Walls: R=0.837, X=0.837 m R=0.765, Y= 1.530 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than $1,000 \text{ dpm}/100 \text{ cm}^2$. Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number
- 9) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

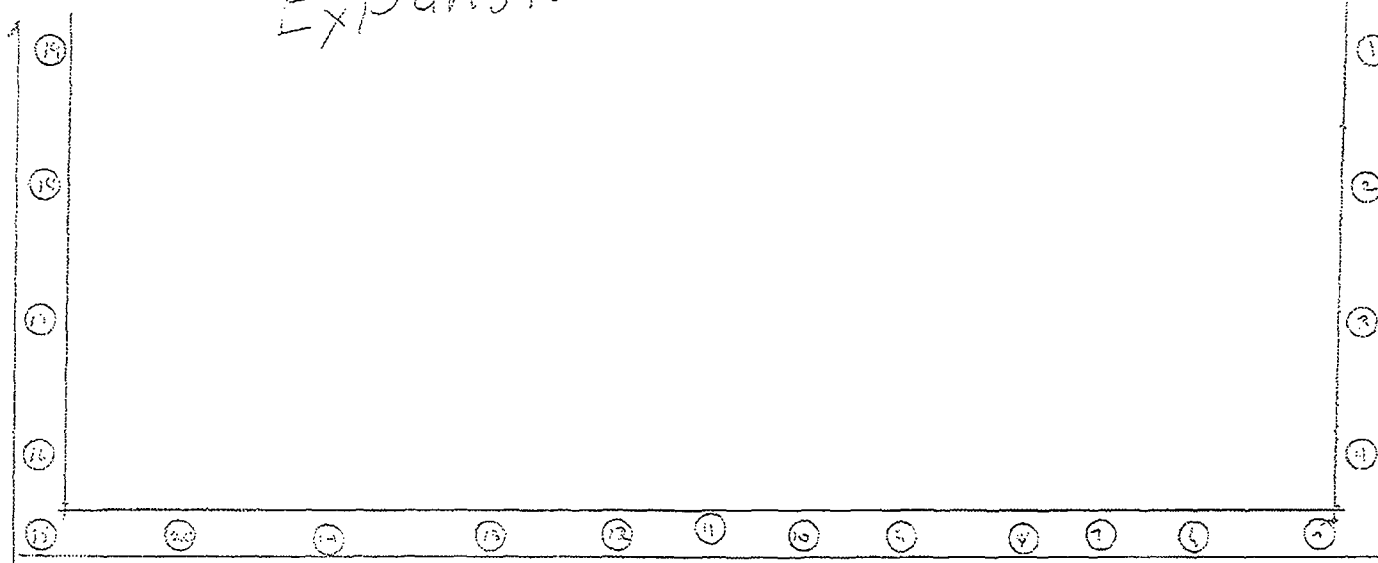
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK021	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK021	W0001				Walls below 2 meters	100%	Each Grid	NA	NA	Each Grid
PK021	ST001				Expansion Joint	100%	20	NA	NA	20
PK021	ST002				Exterior Surface of Condenser including underside	100%	30	NA	NA	30
PK021	ST003				Miscellaneous non permanent structures	100%	30	NA	NA	30

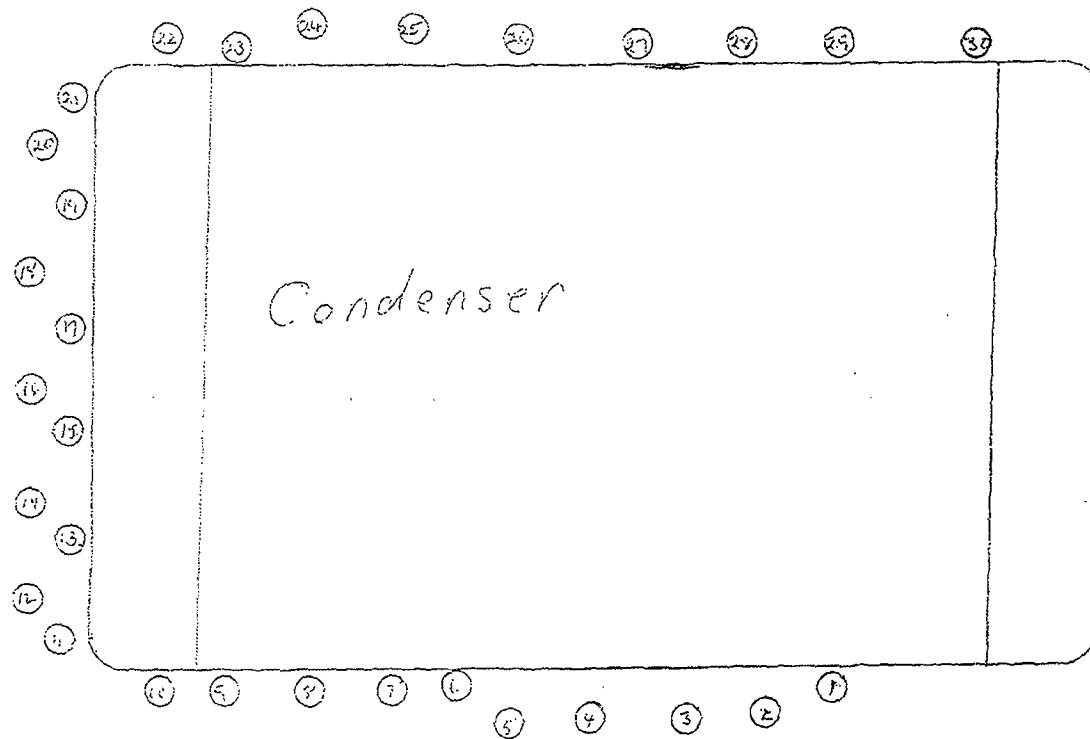
Package Review	
Date Package Completed	10-27-06
Package Reviewed by and Date	Carl Engle 1-17-07 E. J. Hoston
Survey Comments	
Due to safety concerns, safety harnesses will be worn when surveying the remaining sections of the turbine and the exposed structures surrounding the turbine	

Expansion Joint



○ = Survey Point Location

Pkg ~~2~~ 2



○ = Smears + Points Locations

Pkg 21 Exterior Surface of Condenser

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 22	Prepared by: Doug Schult
Location: Walls Above 2 Meters And Overhead Structures On The Hot Side Of The Turbine Building Basement	Date prepared: 10/25/06
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the walls above 2 meters and horizontal structures in the overhead on the hold side of the Turbine Building basement.

The hold side of the Turbine Building Basement is approximately 240 m².

See attached drawing

Class 3 survey areas are not limited in size.

General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 1.5 minutes around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

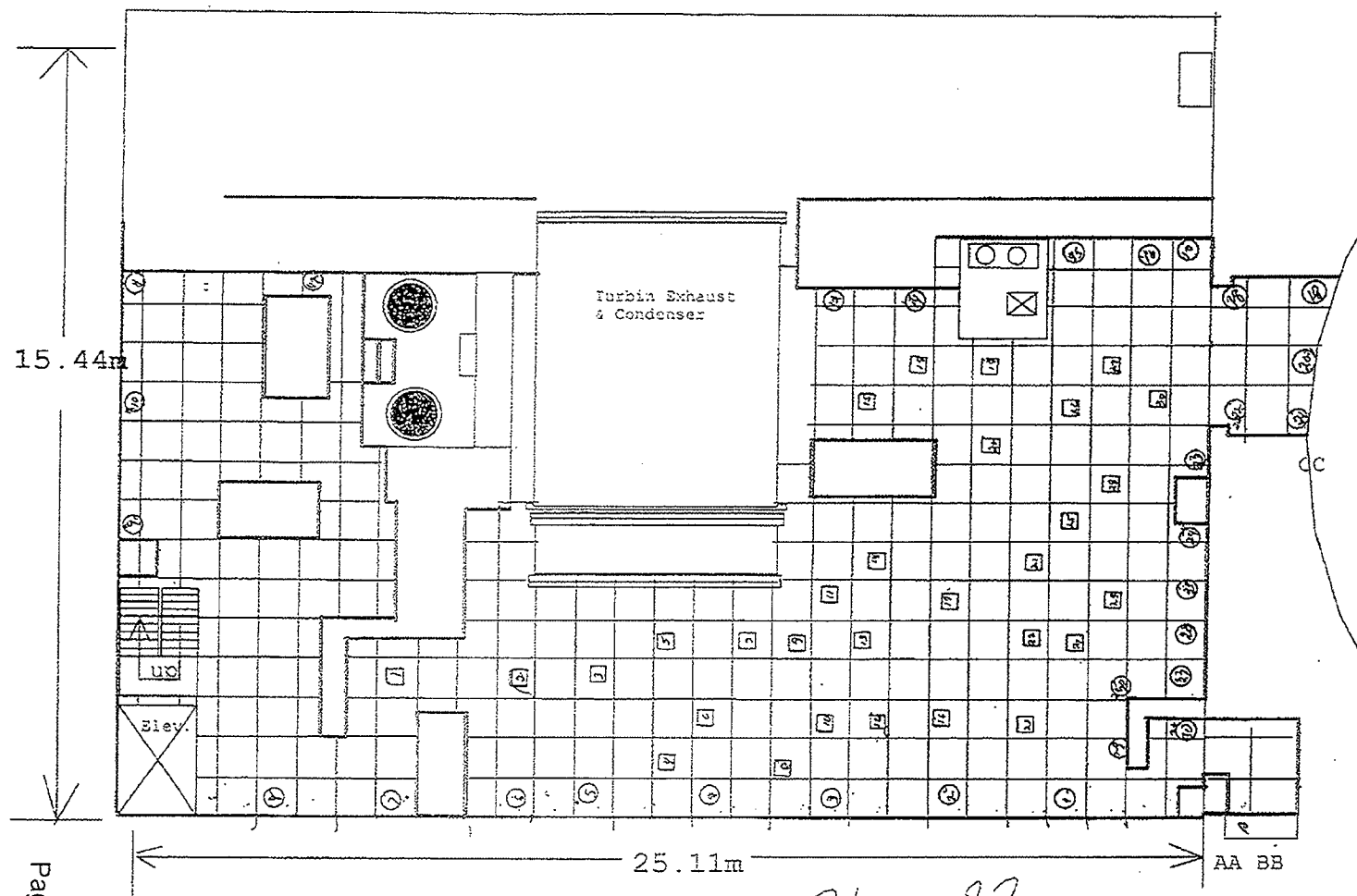
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK022	W0001				Walls Above 2 Meters	10%	30	NA	NA	30
PK022	ST001				Overhead Structures	10%	30	NA	NA	30

Package Review	
Date Package Completed	10-5-06
Package Reviewed by and Date	Carl Smith 1-17-07 J. D. 1/25/07
Survey Comments	
Due to the configuration of the Condenser Hotwell this survey area will not be gridded.	

Condenser Hot Side



○ = wall - points - smears

□ = Overhead structures - points - smears

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 23	Prepared by: Doug Schult
Location: Inside of Condenser Hotwell	Date prepared: 9/19/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls, and overhead tube assemblies within the Condenser Hotwell</p> <p>The inside of the Condenser Hotwell is approximately 35 m².</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions	
1)	Perform a beta scan of 100% of the accessible surfaces within each grid holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
2)	Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
3)	Collect a total beta activity measurement at each fixed point measurement location. Use the L7 code to record the measurement location number in which the measurement is being obtained.
4)	If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm ²) is identified, mark the area and notify the Project Manager.
5)	Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK023	FL001				Floor	100%	30	NA	NA	30
PK023	W0001				Walls	100%	30	NA	NA	30
PK023	ST001				Overhead Structures	100%	30	NA	NA	30
PK006	ST002				Large Diameter Pipe	100%	10	NA	NA	10

		Package Review
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Date Package Completed	10-14-06
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Package Reviewed by and Date Carl Smith 1-17-07

Survey ID	Survey Date	Survey Location	Survey Comments
1	1/1/2020	1000	
2	1/1/2020	1000	
3	1/1/2020	1000	
4	1/1/2020	1000	
5	1/1/2020	1000	
6	1/1/2020	1000	
7	1/1/2020	1000	
8	1/1/2020	1000	
9	1/1/2020	1000	
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92	1/1/2020	1000	

W01

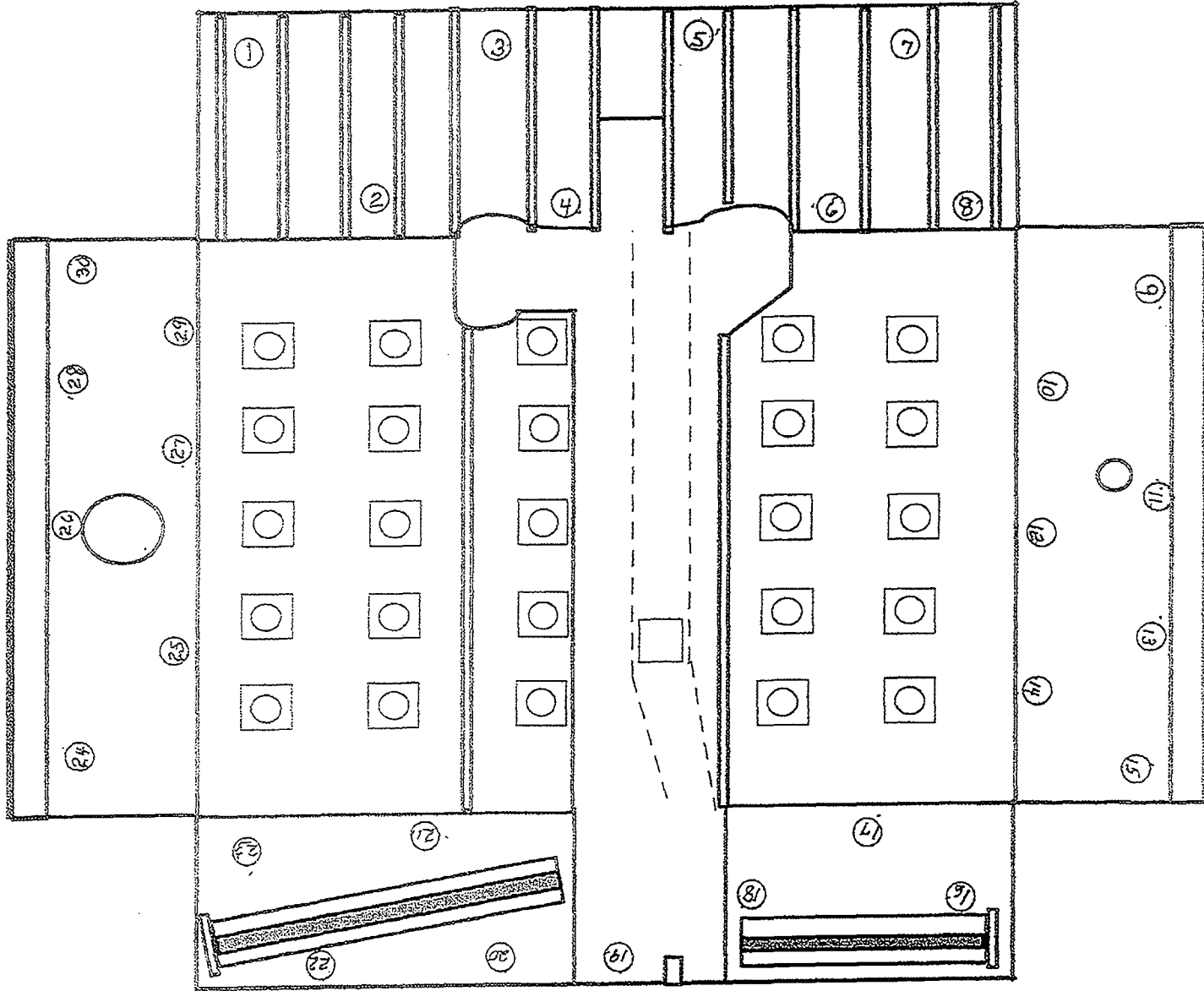
W04

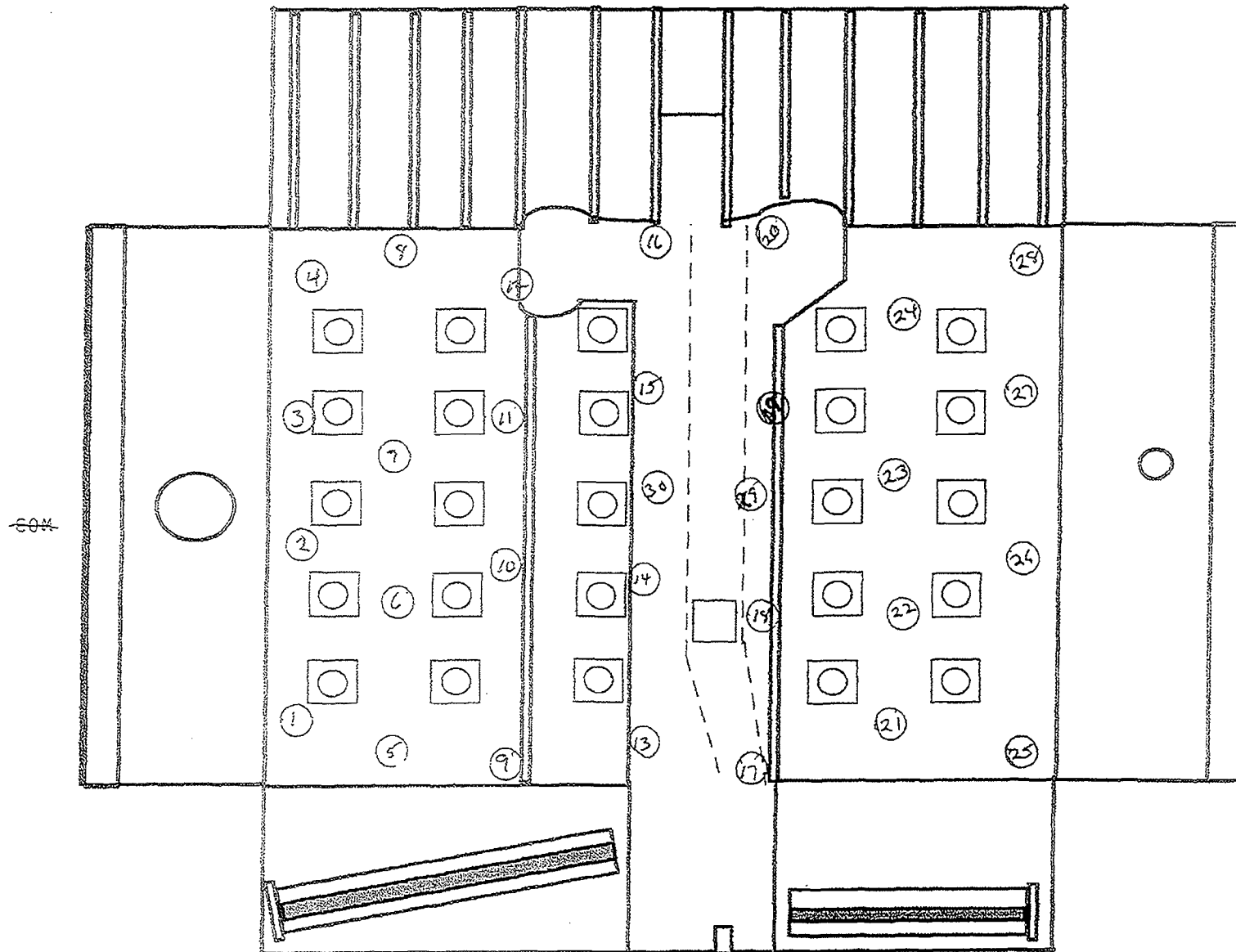
W02

W03

Pkg 23 Walls

○ = smear & direct reading locations





○ = Smears + Points

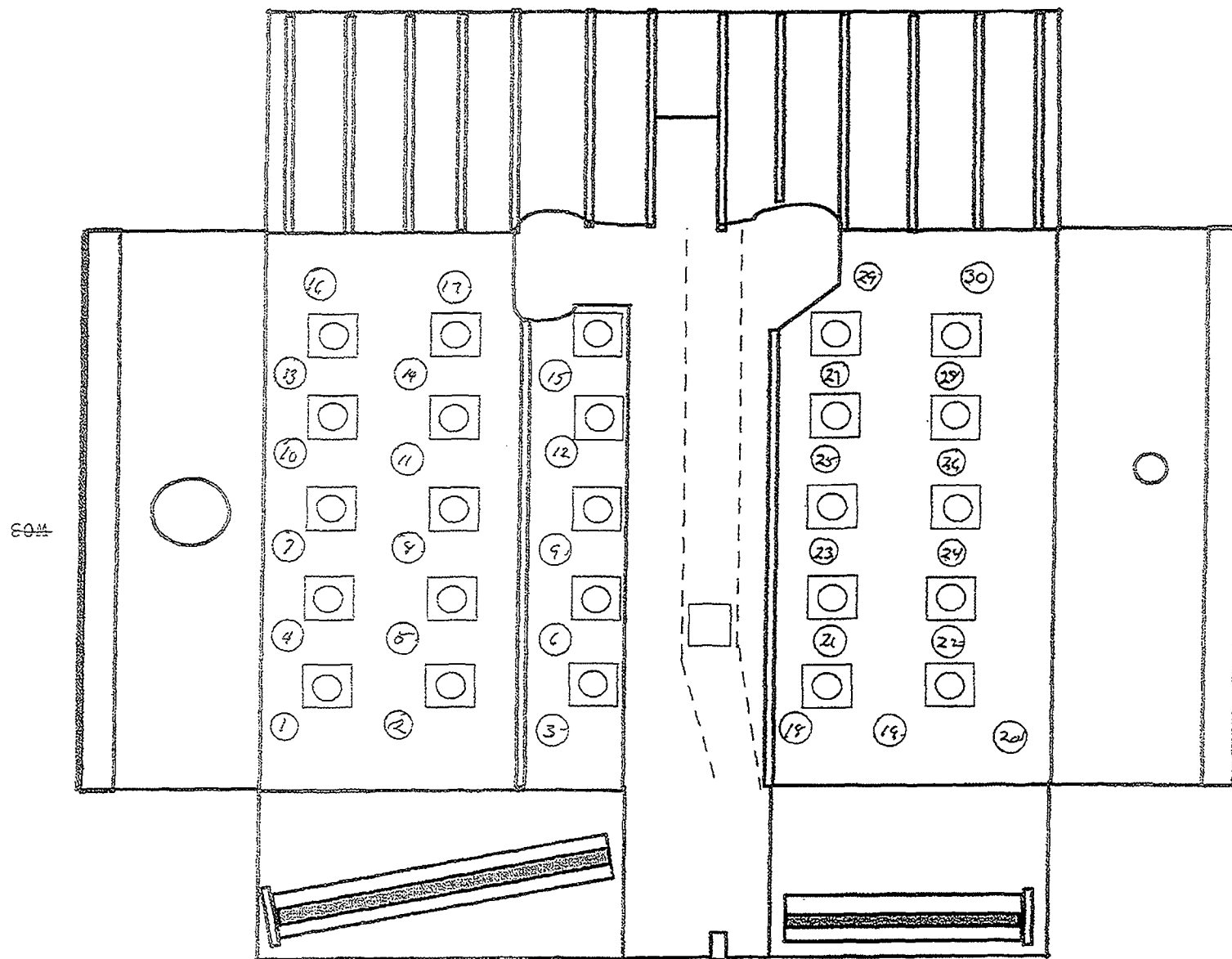
ST-001 overhead

PK 23

room

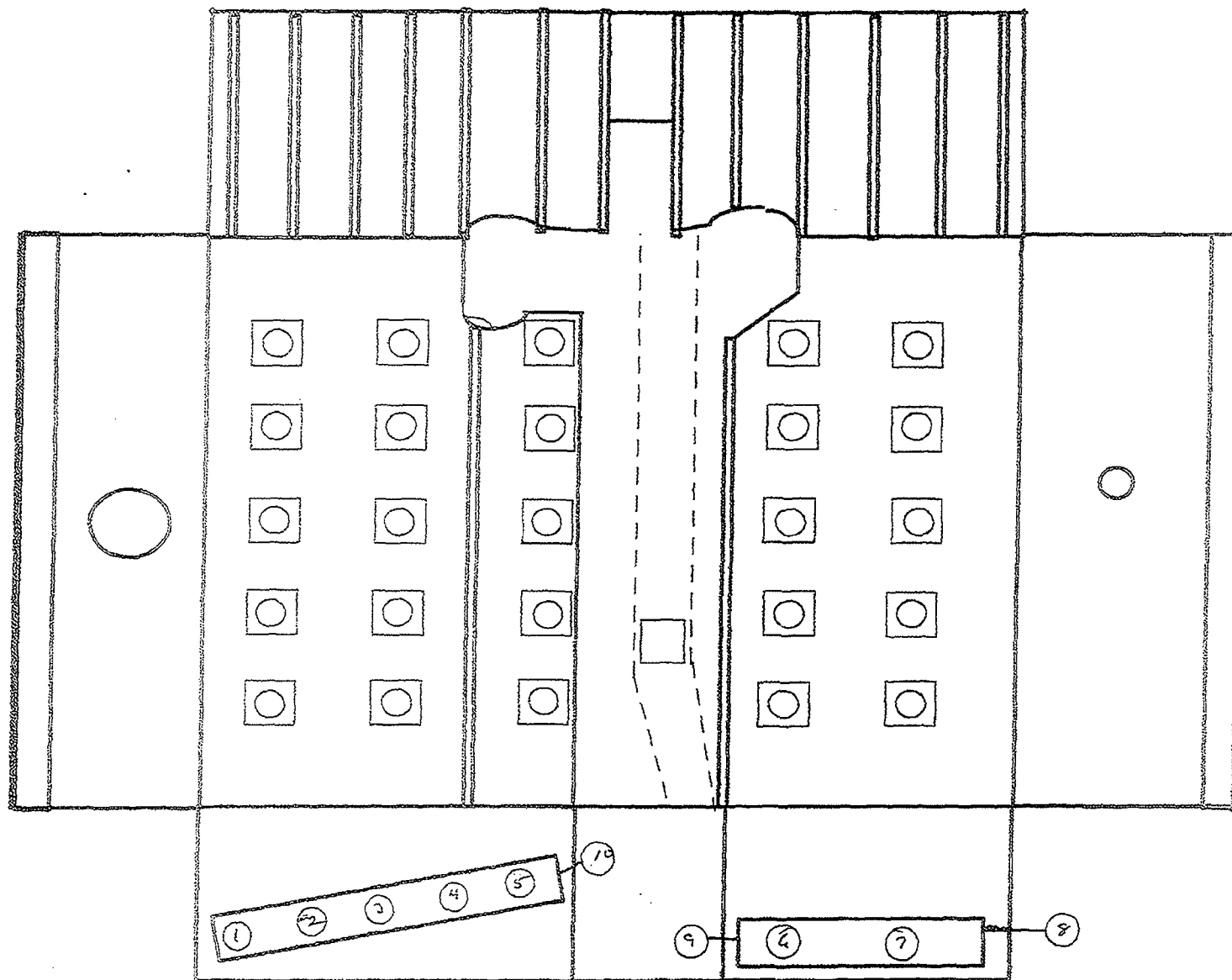
29 Z

30 Z



○ = Smears + Points
Floor Inside Condenser

SOM Pkg 23
Floor



○ = Smears
Points
PK-0023

Smears 8, 9, 10 Inside pipe

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 24	Prepared by: Doug Schult
Location: Turbine Building Hot Side Sump	Date prepared: 9/25/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description

The survey area includes the sump on the hot side of the Turbine Building.

The hot side sump is approximately 2 meters deep.

The hot side sump covers an area of approximately 4 m².

Class 1 survey areas are limited in size to less than 100 m².

General Survey Instructions

- 1) Attempt to dry the sump prior initiating the survey. If the sump contains water do not survey its floor.
- 2) Perform a beta scan of 100% of the accessible surfaces within each grid holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 3) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 4) Collect a total beta activity measurement at each fixed point measurement location. Use the L7 code to record the measurement location number in which the measurement is being obtained.
- 5) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 6) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK024	FL001				Floor	100%	10	NA	NA	10
PK024	W001				Walls	100%	20	NA	NA	20

Package Review

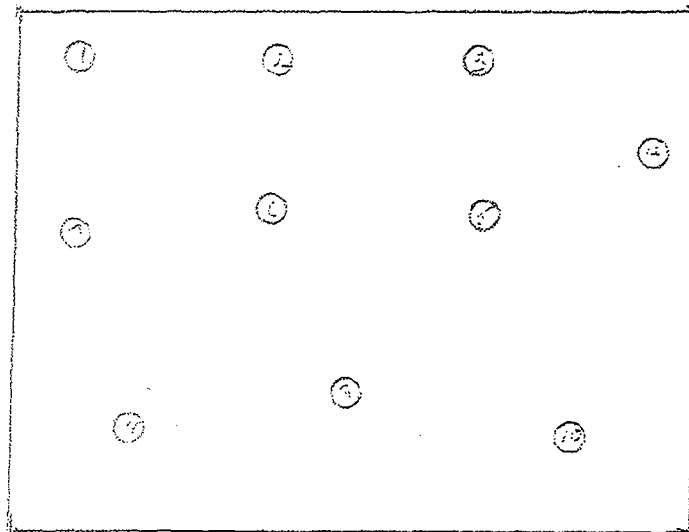
Date Package Completed 10-14-06

Package Reviewed by and Date Carl Amos 1-17-07 15.1-1-1

Carl Amick 1-17-07 *[Signature]* 1/25/08

Survey ID	Survey Date	Survey Comments
1	2023-01-15	Initial survey, no issues.
2	2023-02-01	Minor issues with data collection.
3	2023-02-15	Issues resolved, data collection successful.
4	2023-03-01	Survey completed successfully.
5	2023-03-15	Survey completed successfully.
6	2023-03-30	Survey completed successfully.
7	2023-04-15	Survey completed successfully.
8	2023-04-30	Survey completed successfully.
9	2023-05-15	Survey completed successfully.
10	2023-05-30	Survey completed successfully.
11	2023-06-15	Survey completed successfully.
12	2023-06-30	Survey completed successfully.
13	2023-07-15	Survey completed successfully.
14	2023-07-30	Survey completed successfully.
15	2023-08-15	Survey completed successfully.
16	2023-08-30	Survey completed successfully.
17	2023-09-15	Survey completed successfully.
18	2023-09-30	Survey completed successfully.
19	2023-10-15	Survey completed successfully.
20	2023-10-30	Survey completed successfully.
21	2023-11-15	Survey completed successfully.
22	2023-11-30	Survey completed successfully.
23	2023-12-15	Survey completed successfully.
24	2023-12-30	Survey completed successfully.
25	2024-01-15	Survey completed successfully.
26	2024-01-30	Survey completed successfully.
27	2024-02-15	Survey completed successfully.
28	2024-02-28	Survey completed successfully.
29	2024-03-15	Survey completed successfully.
30	2024-03-30	Survey completed successfully.
31	2024-04-15	Survey completed successfully.
32	2024-04-30	Survey completed successfully.
33	2024-05-15	Survey completed successfully.
34	2024-05-30	Survey completed successfully.
35	2024-06-15	Survey completed successfully.
36	2024-06-30	Survey completed successfully.
37	2024-07-15	Survey completed successfully.
38	2024-07-30	Survey completed successfully.
39	2024-08-15	Survey completed successfully.
40	2024-08-30	Survey completed successfully.
41	2024-09-15	Survey completed successfully.
42	2024-09-30	Survey completed successfully.
43	2024-10-15	Survey completed successfully.
44	2024-10-30	Survey completed successfully.
45	2024-11-15	Survey completed successfully.
46	2024-11-30	Survey completed successfully.
47	2024-12-15	Survey completed successfully.
48	2024-12-30	Survey completed successfully.
49	2025-01-15	Survey completed successfully.
50	2025-01-30	Survey completed successfully.
51	2025-02-15	Survey completed successfully.
52	2025-02-28	Survey completed successfully.
53	2025-03-15	Survey completed successfully.
54	2025-03-30	Survey completed successfully.
55	2025-04-15	Survey completed successfully.
56	2025-04-30	Survey completed successfully.
57	2025-05-15	Survey completed successfully.
58	2025-05-30	Survey completed successfully.
59	2025-06-15	Survey completed successfully.
60	2025-06-30	Survey completed successfully.
61	2025-07-15	Survey completed successfully.
62	2025-07-30	Survey completed successfully.
63	2025-08-15	Survey completed successfully.
64	2025-08-30	Survey completed successfully.
65	2025-09-15	Survey completed successfully.
66	2025-09-30	Survey completed successfully.
67	2025-10-15	Survey completed successfully.
68	2025-10-30	Survey completed successfully.
69	2025-11-15	Survey completed successfully.
70	2025-11-30	Survey completed successfully.
71	2025-12-15	Survey completed successfully.
72	2025-12-30	Survey completed successfully.
73	2026-01-15	Survey completed successfully.
74	2026-01-30	Survey completed successfully.
75	2026-02-15	Survey completed successfully.
76	2026-02-28	Survey completed successfully.
77	2026-03-15	Survey completed successfully.
78	2026-03-30	Survey completed successfully.
79	2026-04-15	Survey completed successfully.
80	2026-04-30	Survey completed successfully.
81	2026-05-15	Survey completed successfully.
82	2026-05-30	Survey completed successfully.
83	2026-06-15	Survey completed successfully.
84	2026-06-30	Survey completed successfully.
85	2026-07-15	Survey completed successfully.
86	2026-07-30	Survey completed successfully.
87	2026-08-15	Survey completed successfully.
88	2026-08-30	Survey completed successfully.
89	2026-09-15	Survey completed successfully.
90	2026-09-30	Survey completed successfully.
91	2026-10-15	Survey completed successfully.
92	2026-10-30	Survey completed successfully.
93	2026-11-15	Survey completed successfully.
94	2026-11-30	Survey completed successfully.
95	2026-12-15	Survey completed successfully.
96	2026-12-30	Survey completed successfully.
97	2027-01-15	Survey completed successfully.
98	2027-01-30	Survey completed successfully.
99	2027-02-15	Survey completed successfully.
100	2027-02-28	Survey completed successfully.

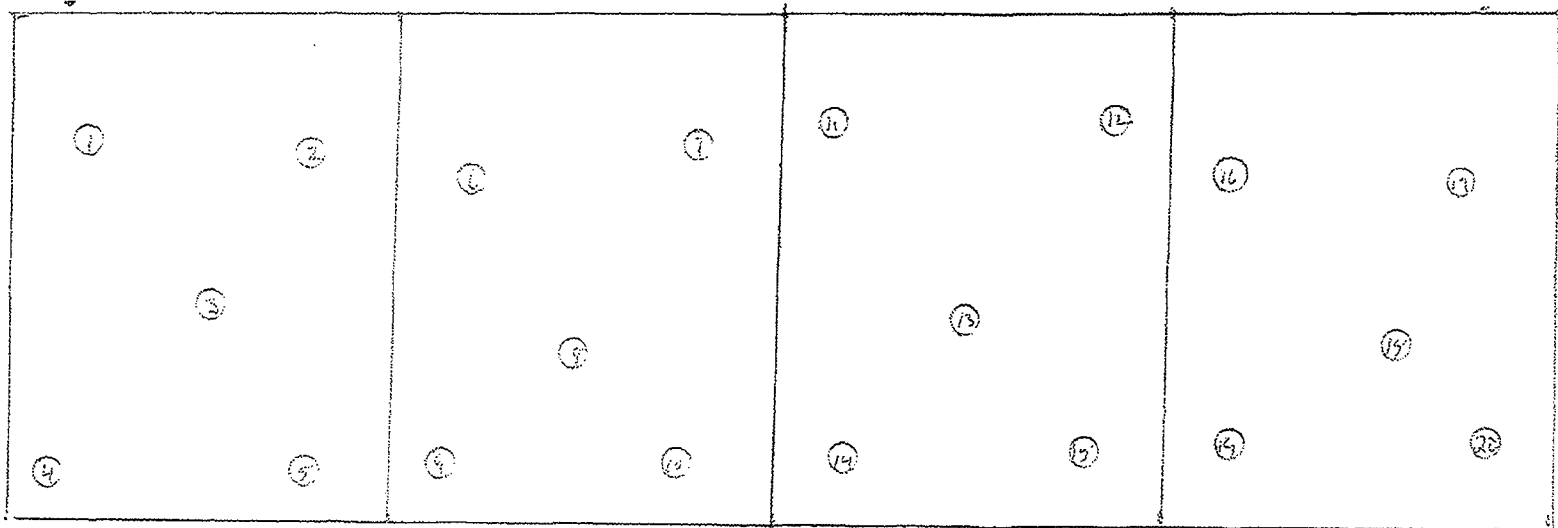
Hot Side Sump Floor



O = Smears + Points

Pkg 24 Sump Floor

Hot Side Sump Walls



○ = Smears + Points Locations

Pkg 24 Sump Walls

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 25	Prepared by: Doug Schult
Location: Floor Beneath Condenser	Date prepared: 9/19/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description

The survey area includes the floor beneath the condenser

The floor beneath the Condenser is approximately 63 m².

See attached drawing

Class 1 survey areas are limited in size to less than 100 m²

General Survey Instructions

- 1) Perform a beta scan of 100% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 3) Collect a total beta activity measurement at each fixed point measurement location. Use the L7 code to record the measurement location number in which the measurement is being obtained.
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny

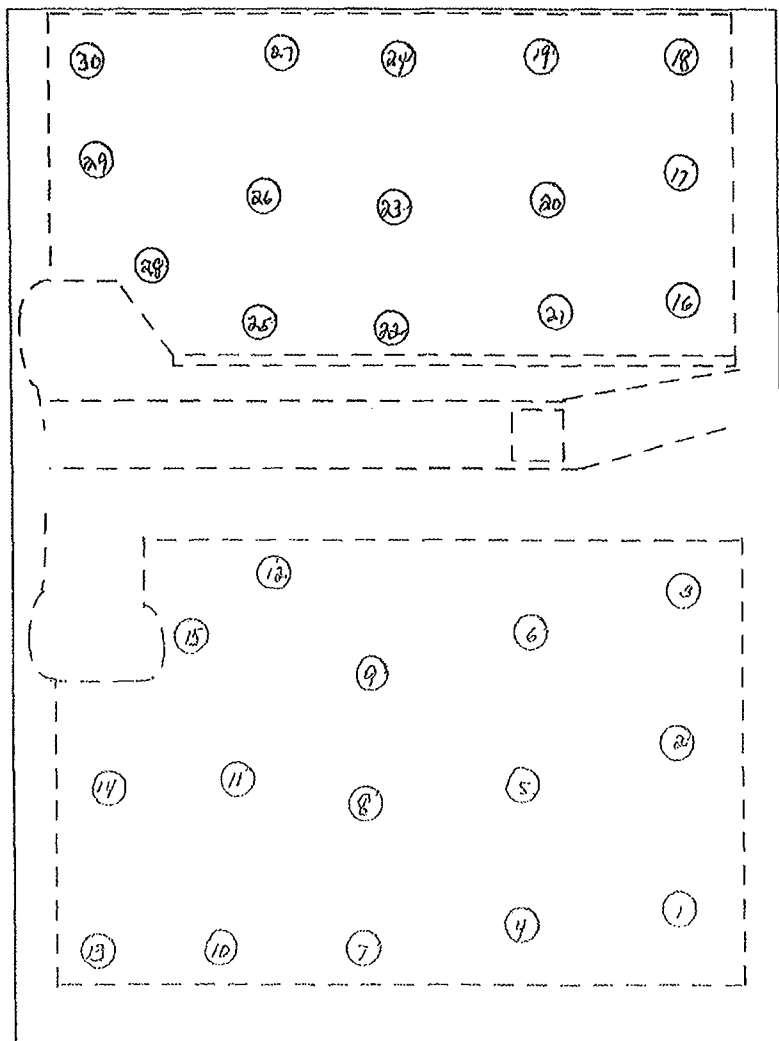
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK025	FL001				Floor	100%	30	NA	NA	30

Package Review	
Date Package Completed	10-3-06
Package Reviewed by and Date	Carol Lynch 1-17-07

Survey Comments
Due to space limitation beneath the Condenser this survey area will not be gridded.



Floor beneath Condensor
 PKg 025

○ = Smears & direct reading locations

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 26	Prepared by: Doug Schult
Location: Condensate Pits and Sump	Date prepared: 10/13/06
Area Classification: Impacted -- Class 1	Pathfinder Final Status Survey

Area Description

The survey area includes the 2 condensate pits where the condensate pumps sit and the surrounding floor. Also included is the excavation remaining following the removal of the condensate sump.

The 2 condensate pits are each approximately 0.5 meters in diameter and 2 meters deep.

The surrounding floor area is approximately 10 m².

The excavation remaining following the removal of the condensate sump is approximately 0.5 m².

Class 1 survey areas are limited in size to less than 100 m².

General Survey Instructions

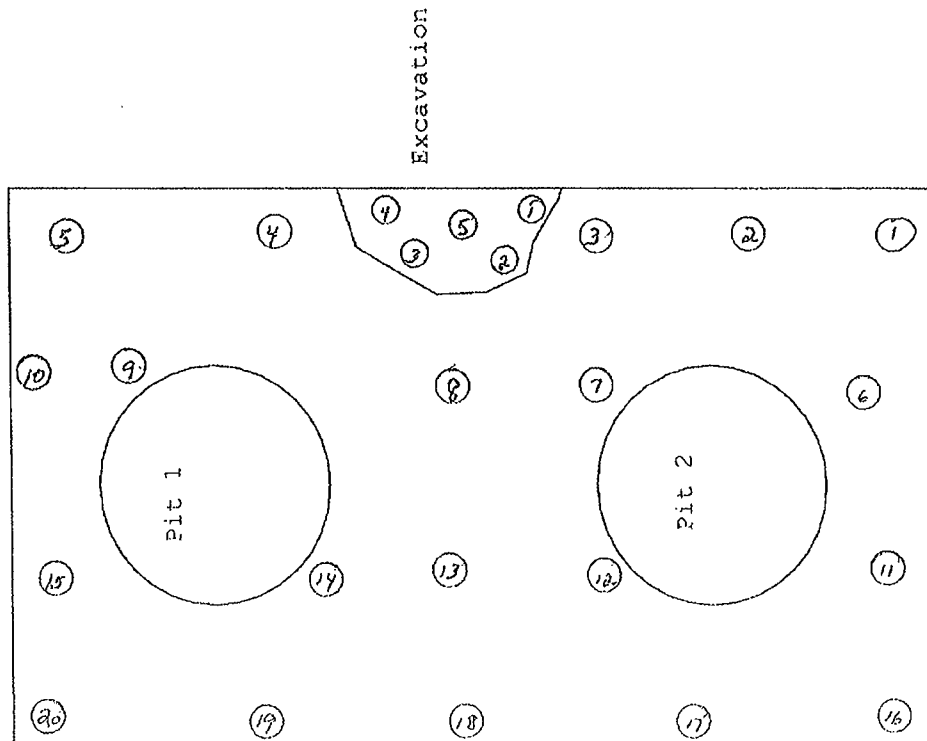
- 1) Perform a beta scan of 100% of the accessible surfaces within each grid holding the detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 1 minute around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location collected on the floor.
- 3) Collect a total beta activity measurement at each fixed point measurement location. Use the L7 code to record the measurement location number in which the measurement is being obtained.
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK026	FL001				Floor	100%	20	NA	NA	20
PK026	ST001				Pit # 1	100%	10	NA	NA	10
PK026	ST002				Pit #2	100%	10	NA	NA	10
PK026	ST003				Excavation	100%	5	NA	NA	5

Package Review	
Date Package Completed	10-17-06
Package Reviewed by and Date	Paul Lough 1-17-07 <i>[Signature]</i> 11/25/07
Survey Comments	



PKg 26

○ = Location of smears & field counts

Sheet 1-10 smears & field counts taken on inside of tube Pit 1

Sheet 1-10 smears & field counts taken on inside of tube Pit 2

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 27	Prepared by: Doug Schult
Location: Floor And Walls Below 2 Meters On The Cold Side Of The Turbine Building Basement	Date prepared: 10/22/06
Area Classification: Impacted - Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, trenches, sump, and non permanent structures on the cold side of the Turbine Building basement. This survey package does not include maintenance shops in the Turbine Building basement.</p> <p>The cold side of the Turbine Building Basement is approximately 400 m².</p> <p>See attached drawing</p> <p>Class 2 survey areas are limited in size to less than 1000 m²</p>

General Survey Instructions

- 1) Grid the floor using 2 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 3 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using a non permanent marker such as pieces of tape or stickers. Label the grids using a numeric numbering system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 50% of the accessible surfaces within each grid holding the detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) For the floor grids perform a 3 minute scan per grid.
For the wall grids perform a 3 minute scan per grid.
For the non permanent items perform a 1 minute scan for each total beta activity measurement.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1.5 to give the X coordinate and the second random number is multiplied by 1.5 to give the Y coordinate

Floors: R=0.478, X=0.956 m R=0.943, Y= 1.89 m

Walls: R=0.478, X=0.956 m R=0.943, Y= 1.89 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.647, X=1.29 m R=0.985, Y= 1.97 m

Walls: R=0.647, X=1.29 m R=0.985, Y= 1.97 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid

- 7) Collect a total beta activity measurement at each fixed point measurement location. Use the L7 code to record the measurement location number in which the measurement is being obtained.
- 8) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 9) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

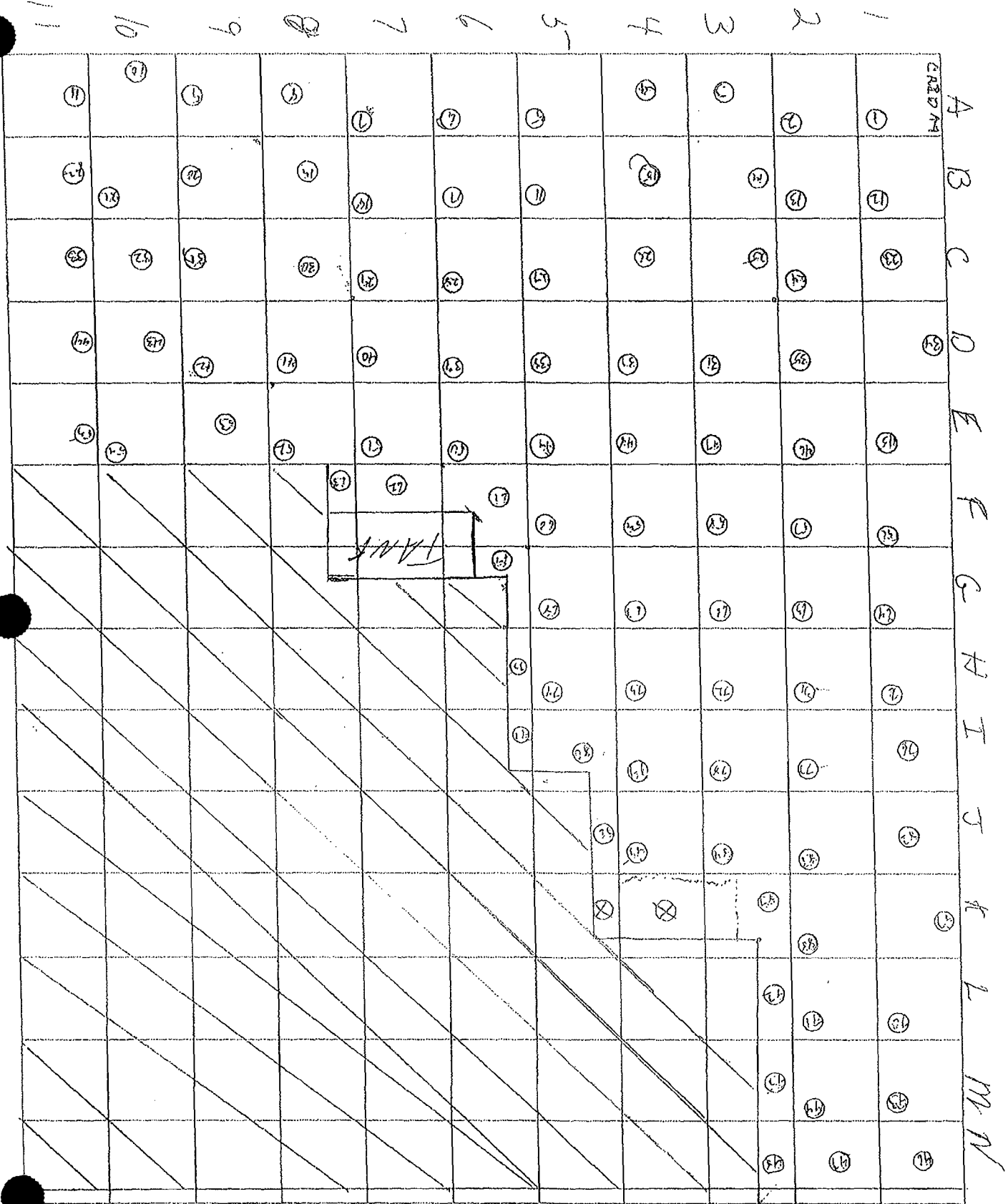
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK027	FL001				Floor	50%	Each Grid	NA	NA	Each Grid
PK027	W0001				Walls	50%	Each Grid	NA	NA	Each Grid
PK027	ST001				Trenches	50%	30	NA	NA	30
PK027	ST002				Sump	50%	20	NA	NA	20
PK027	ST003				Non Permanent Structures	NA	30	NA	NA	30

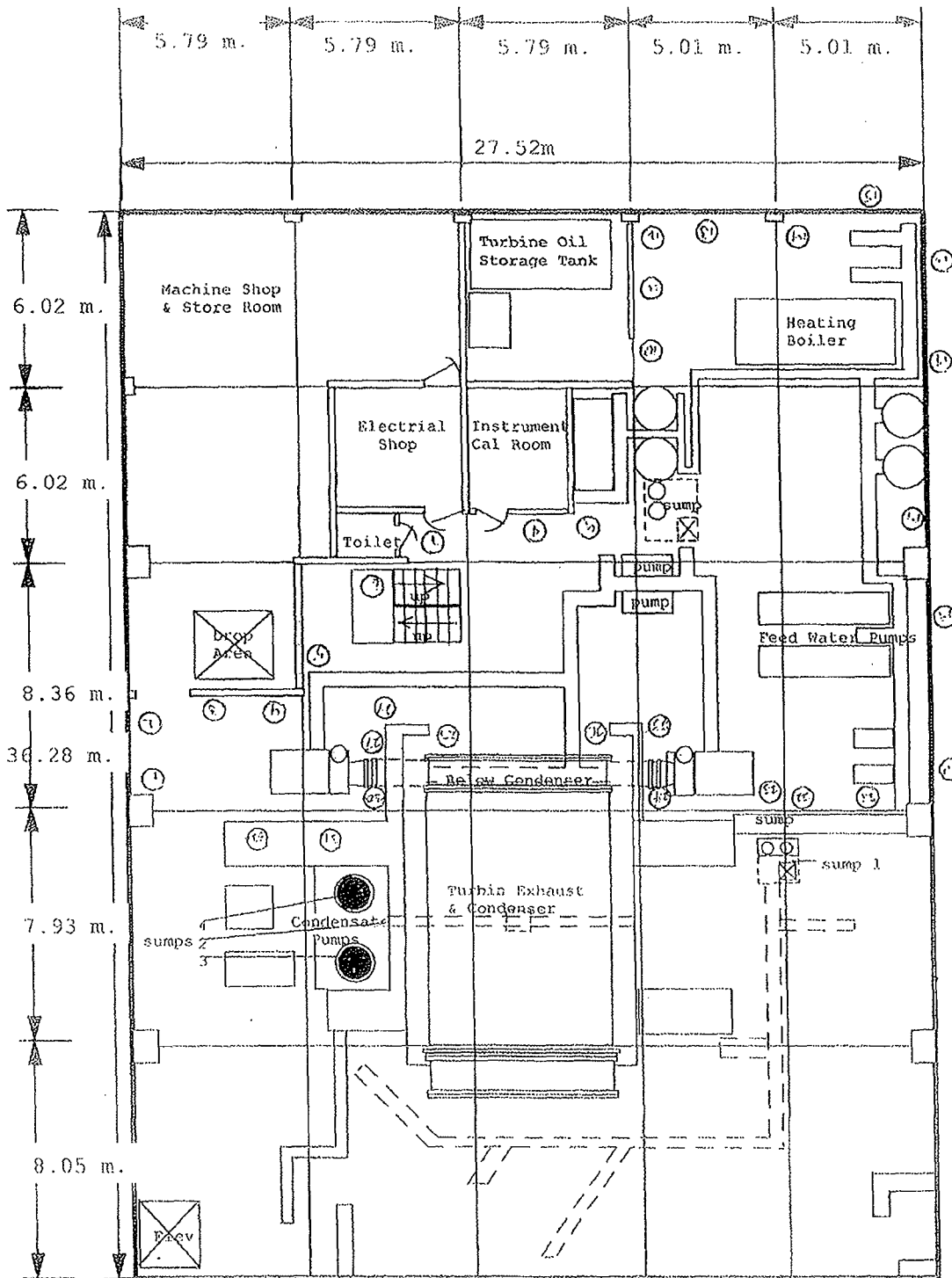
Package Review	
Date Package Completed	11-6-06
Package Reviewed by and Date	Carl G. 1-17-07 [Signature] 1/25/07

Survey Comments
Due to safety concerns, safety harnesses will be worn when surveying the remaining sections of the turbine and the exposed structures surrounding the turbine

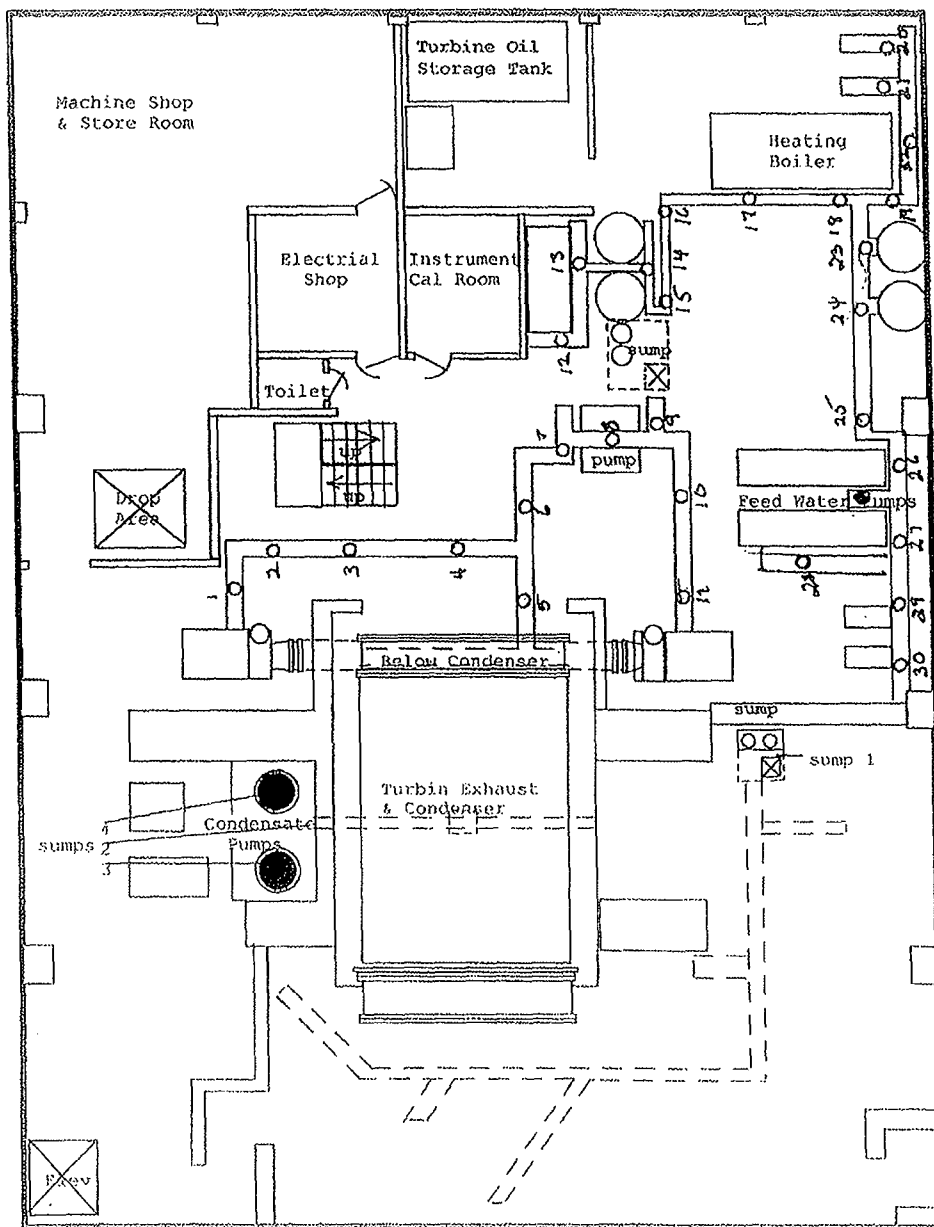
Floor on Cold Side of The Turbine Building Basement

PKS 27 Floor





O = Sumps + Points Location
 pkg 27 walls Below 2 Meters



Trenches PRO27

ATTACHMENT 6.1
RADIATION PROTECTION SURVEY FORM
(example)

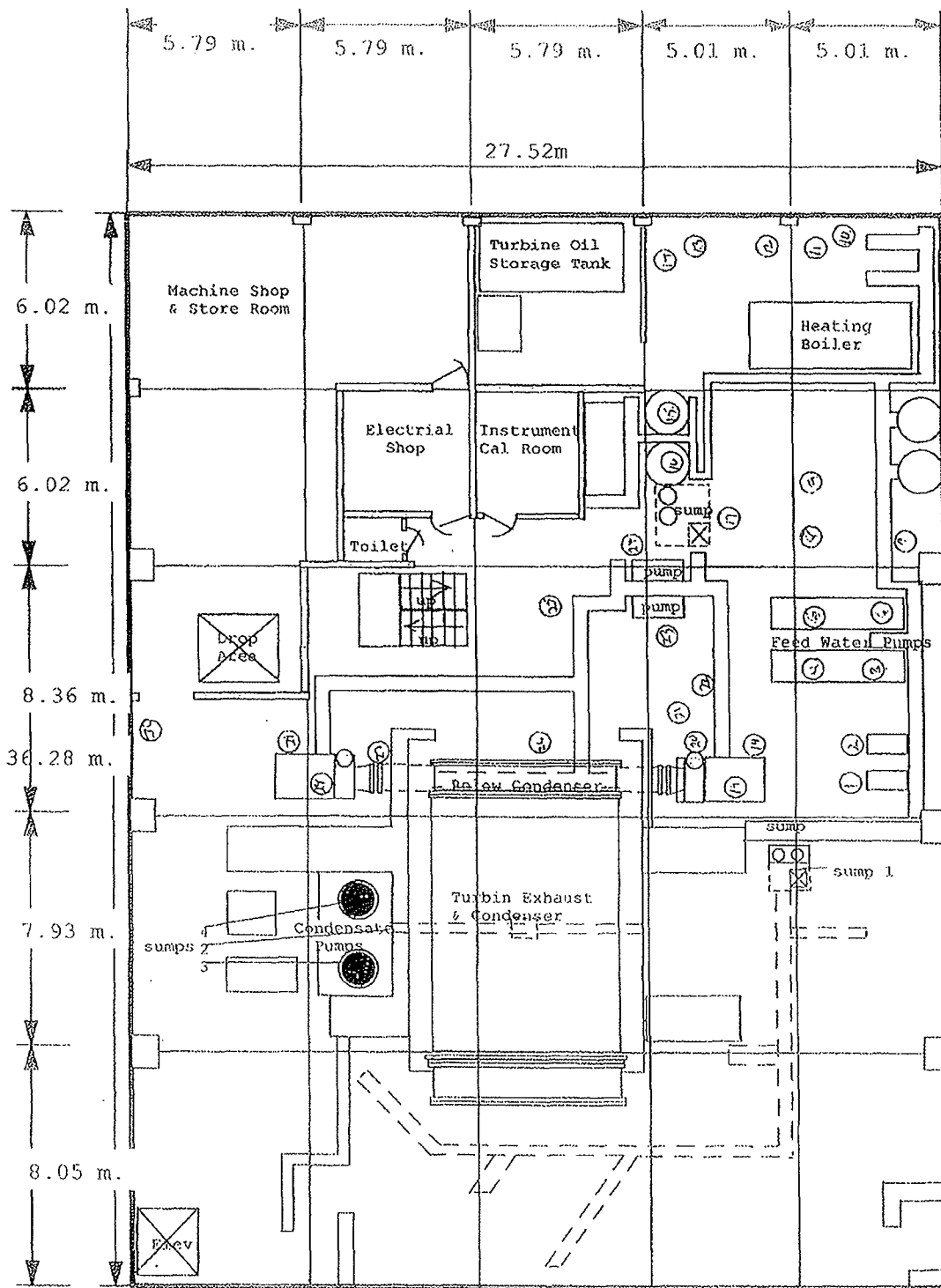
Project ID:

Survey Log #:

Tech (print):			Location: <i>Sump</i>		RHWP # <i>N/A</i>	
Instrument(s) Used			Comments / Purpose of Survey		Date:	
Model	S/N	Cal. Due			Time:	
					Sample #:	
					Sample #:	
					Air Sample #:	
					A/S Results (DAC) :	
			All dose rates in $\mu\text{rem/hr}$ unless otherwise noted.		Smear #	Contamination (dpm/100 cm ²) alpha / beta
					1	
					2	
					3	
					4	
					5	
					6	
					7	
					8	
					9	
					10	
					11	
					12	
					13	
					14	
					15	
					16	
					17	
					18	
					19	
					20	
					LAW - Large Area Wipe O - α/β Smear \square - Tritium Smear Δ - Air Sample # - Direct frisk * - contact/18 inch xx - RCA Boundary H - Head Level F - Foot level K = 1000	

Performed By / Date:	Reviewed by / Date:
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Page ____ of ____



*Oc Smevst Points Locations
Phy 27 Non-Permanent Structures*

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 28	Prepared by: Doug Schult
Location: Walls Above 2 Meters And Overhead Structures On The Cold Side Of The Turbine Building Basement	Date prepared: 10/24/06
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the walls above 2 meters and horizontal structures in the overhead on the cold side of the Turbine Building basement. This survey package does not include maintenance shops in the Turbine Building basement.

The cold side of the Turbine Building Basement is approximately 320 m².

See attached drawing

Class 3 survey areas are not limited in size.

General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 1.5 minutes around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

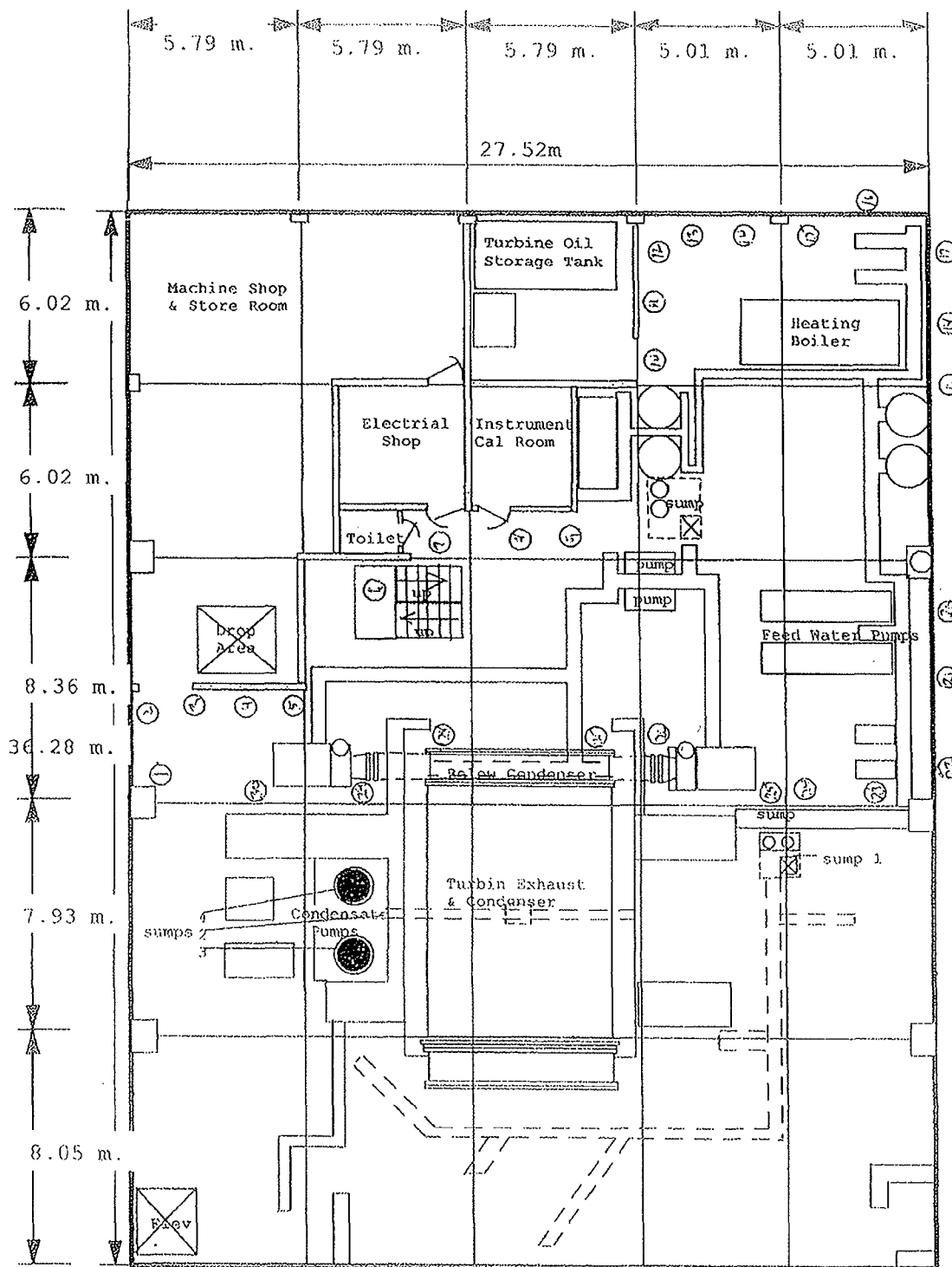
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

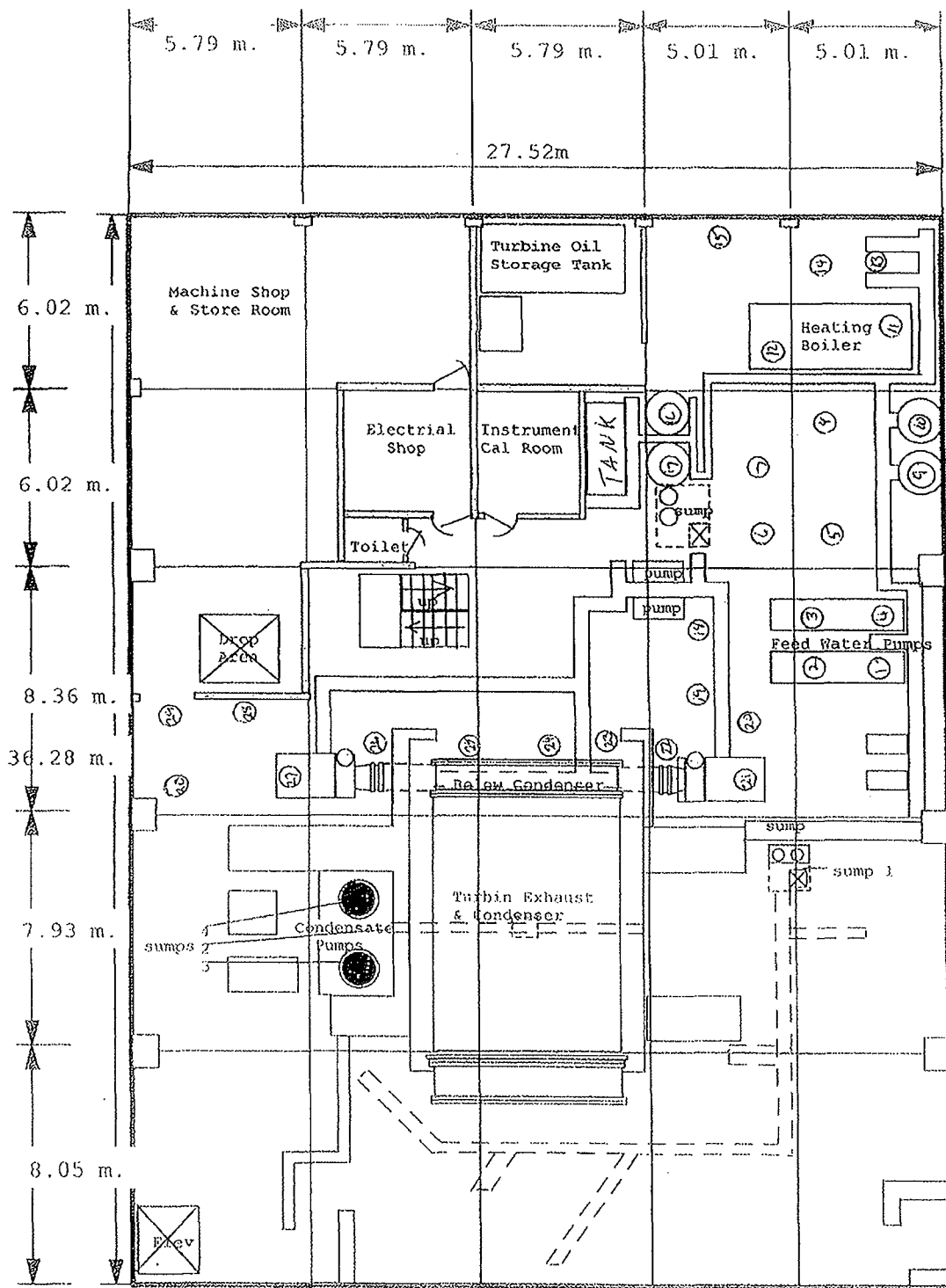
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK028	W0001				Walls Above 2 Meters	10%	30	NA	NA	30
PK028	ST001				Overhead Structures	10%	30	NA	NA	30

Package Review	
Date Package Completed	10-27-06 Terry Thewitt
Package Reviewed by and Date	Paul J. [Signature] 1-17-07 [Signature] 1/25/07

Survey Comments
Due to safety concerns, safety harnesses will be worn when surveying the remaining sections of the turbine and the exposed structures surrounding the turbine



O = Smeare r Points Locations
 PKG 28 Walls Above 2 Meters



Pkg 28 Overhead Structure

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 29	Prepared by: Doug Schult
Location: Floor And Walls Below 2 Meters On The Turbine Building Mezzanine	Date prepared: 10/27/06
Area Classification: Impacted - Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, internal surface of service water pipes, and non permanent structures on the Turbine Building Mezzanine.</p> <p>The cold side of the Turbine Building Basement is approximately 694 m².</p> <p>See attached drawing</p> <p>Class 2 survey areas are limited in size to less than 1000 m²</p>

General Survey Instructions

- 1) Grid the floor using 2 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 2 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using a non permanent marker such as pieces of tape or stickers. Label the grids using a numeric numbering system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 50% of the accessible surfaces within each grid holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) For the floor grids perform a 3 minute scan per grid.
For the wall grids perform a 3 minute scan per grid.
For the internal surface of service water pipes and the non permanent items perform a 1 minute scan for each total beta activity measurement.
- 6) Mark the systematic measurement locations within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 2 to give the X coordinate and the second random number is multiplied by 2 to give the Y coordinate

Floors: R=0.388, X=0.776 m R=0.938, Y= 1.88 m

Walls: R=0.338, X=0.776 m R=0.938, Y= 1.88 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.837, X=1.67 m R=0.565, Y= 1.13 m

Walls: R=0.837, X=1.67 m R=0.565, Y= 1.13 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid

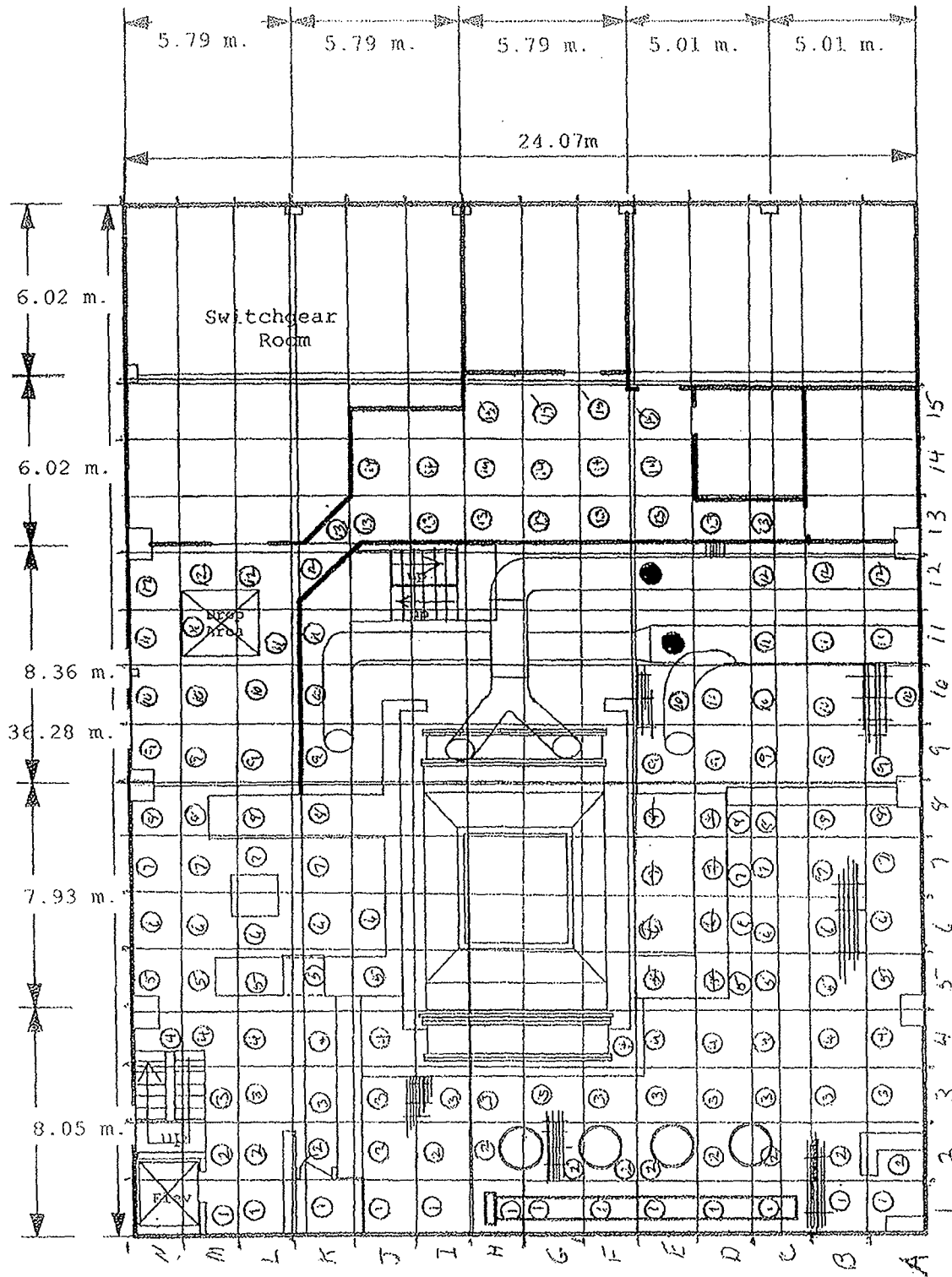
- 7) Collect a total beta activity measurement at each fixed point measurement location. Use the L7 code to record the measurement location number in which the measurement is being obtained.
- 8) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 9) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

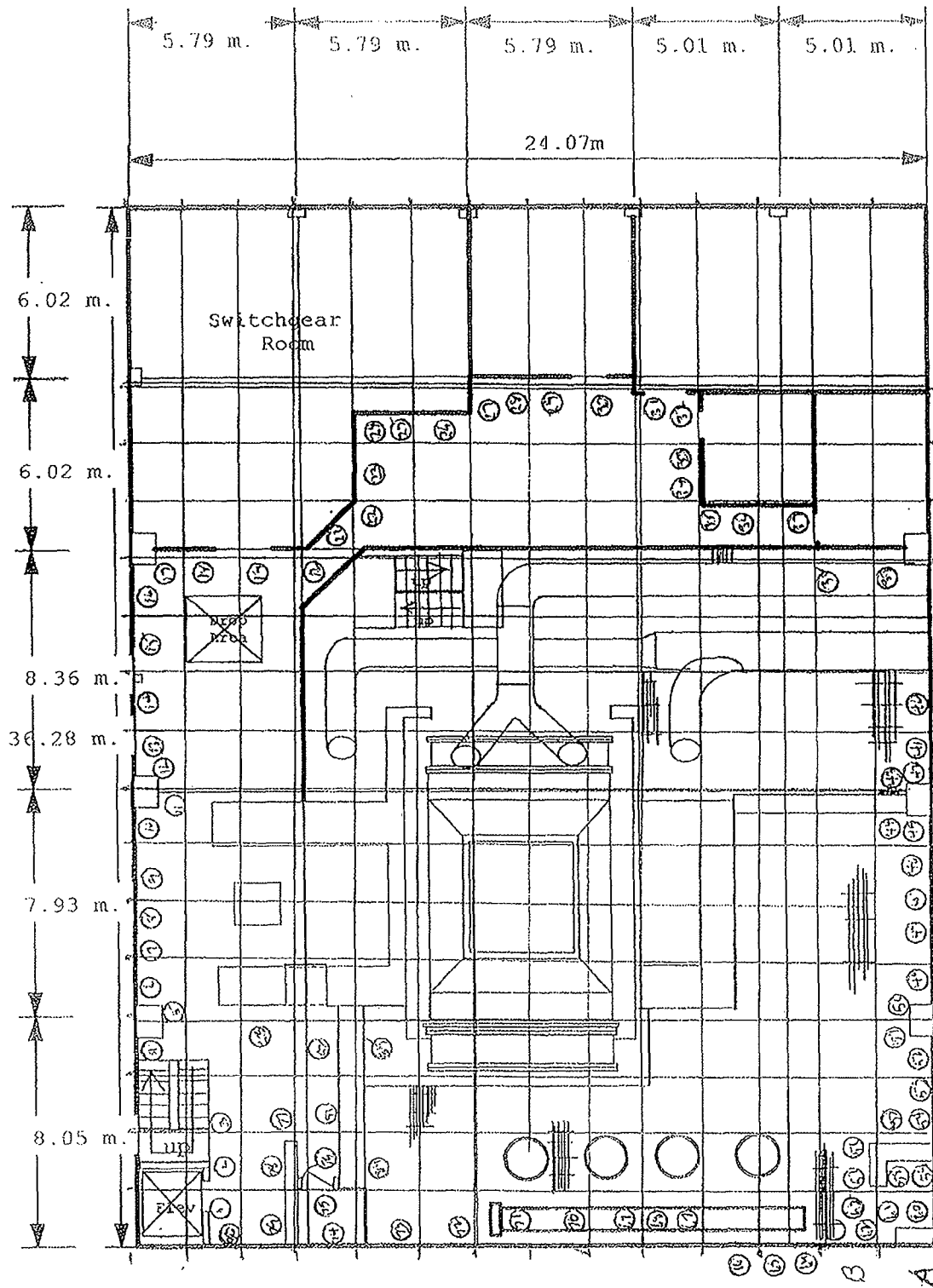
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK029	FL001				Floor	50%	Each Grid	NA	NA	Each Grid
PK029	W0001				Walls Below 2 Meters	50%	Each Grid	NA	NA	Each Grid
PK029	ST001				Internal Surfaces Of Service Water Piping	50%	20	NA	NA	20
PK029	ST002				Non Permanent Items	50%	30	NA	NA	30
PK029	ST003				Electrical Penetration Room	50%	30	NA	NA	30

Package Review	
Date Package Completed	11-6-06
Package Reviewed by and Date	Carol Joseph 1-17-07
Survey Comments	
The service water piping is considered a non permitted confined space. Air monitoring and safety harnesses are required for entree	



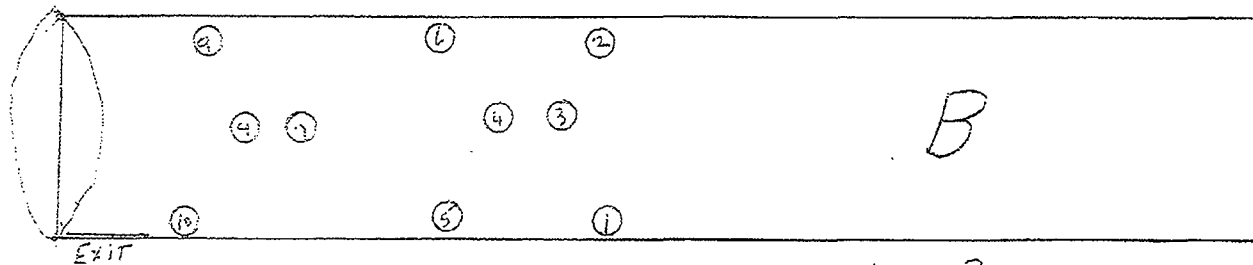
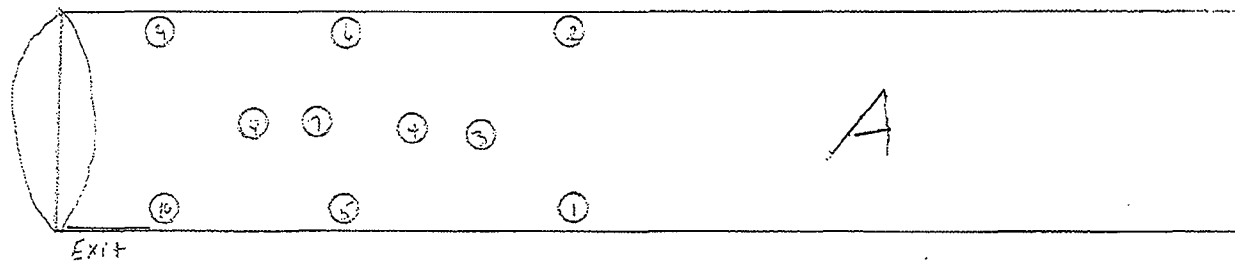
O = Smears - Points Locations

PKg 29 Floor



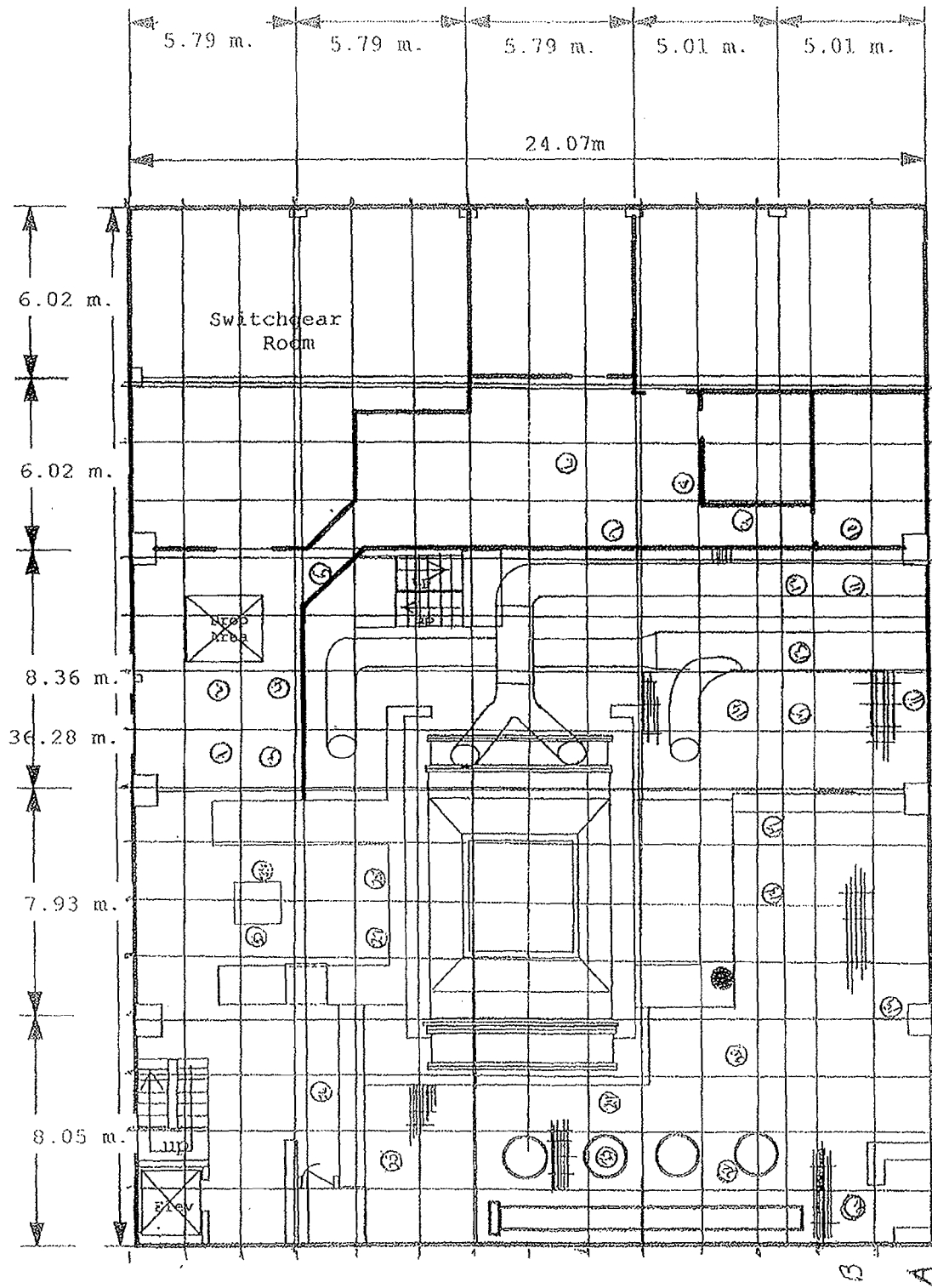
1 2
 Oe Sensors - Points Locations
 PKG 29 Walls Below 2 Meters

Service Water Piping



○ = Internal Surfaces of Service Water Piping
Smears + Points Locations

PKg 29

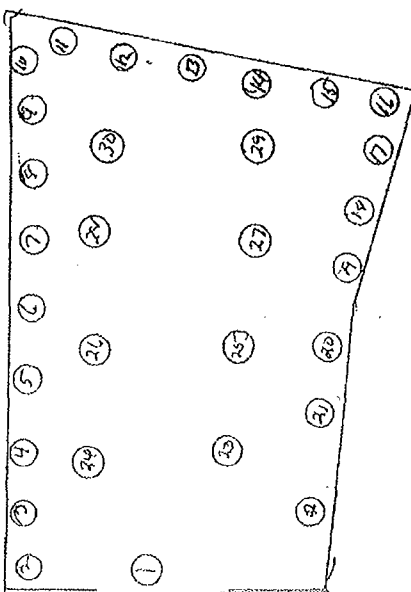
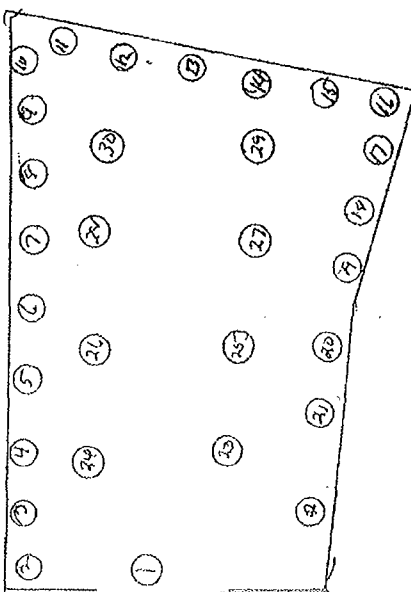


1 & 2 = Sensor Points Locations
 PKG 29 Non-Permanent Items

ATTACHMENT 6.1
RADIATION PROTECTION SURVEY FORM
(example)

Project ID: *Path Finder*

Survey Log #: *PK029*

Tech (print):			Location:		RHWP # <i>NA</i>	
Instrument(s) Used			Comments / Purpose of Survey		Date:	
Model	S/N	Cal. Due	<div style="position: relative; height: 200px;">  </div> <p align="center">○ 2 Smears & Points Locations</p>		Time:	
<i>See Attachment</i>					Sample #:	
					Sample #:	
					Air Sample #:	
					A/S Results (DAC):	
<div style="position: relative; height: 300px;">  </div> <p align="center">○ 2 Smears & Points Locations</p>			All dose rates in $\mu\text{rem/hr}$ unless otherwise noted.		Smear #	Contamination (dpm/100 cm ²) alpha / beta
			1			
			2			
			3			
			4			
			5			
			6			
			7			
			8			
			9	<i>See Attachments</i>		
			10			
			11			
			12			
			13			
			14			
			15			
			16			
			17			
			18			
			19			
			20			

LAW - Large " - contact/18 inch
 Area Wipe xx - RCA Boundary
 O - α/β H - Head Level
 Smear F - Foot level
 □ - Tritium K = 1000
 Smear
 Δ - Air
 Sample
 # - Direct frisk

Performed By / Date:	Reviewed by / Date:
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Page ____ of ____

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 30	Prepared by: Doug Schult
Location: Rad Waste Storage Room	Date prepared: 10/11/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls, and ceiling in the Rad Waste Storage Room</p> <p>The Rad Waste Storage Room is approximately 13 m².</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls using 1 meter grids beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a numeric numbering system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100 % of the accessible surfaces within each grid holding the detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for a minimum of 1 minute. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Collect a total beta activity measurement at locations identified during the scan as having residual activity. If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate

Floors: R=0.449, X=0.45 m R=0.832, Y= 0.83 m

Walls: R=0.449, X=0.45 m R=0.832, Y= 0.83 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.216, X=0.22 m R=0.837, Y= .84 m

Walls: R=0.216, X=0.22 m R=0.837, Y= .84 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK030	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK030	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK030	C0001				Ceiling	100%	Each Grid	NA	NA	Each Grid

Package Review

Date Package Completed

10-18-06

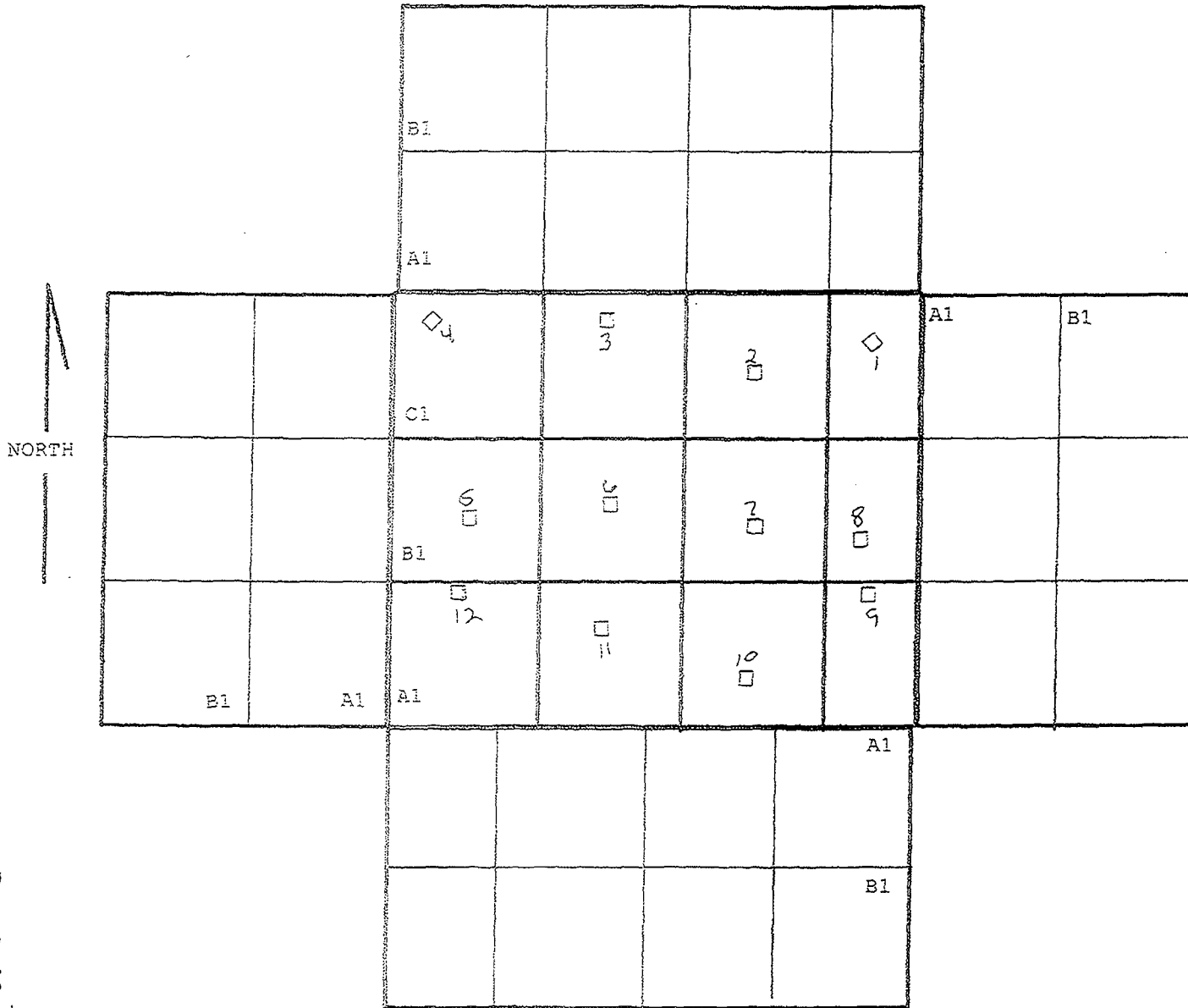
Package Reviewed by and Date

Carl Long 1-17-07 *[Signature]* 1/25/07

Survey Comments

The horizontal structures in the overhead spaces and the ceiling of the Cooling Tower Basin are considered non impacted and will not be surveyed. These structures were added following the collapse of the Cooling Towers.

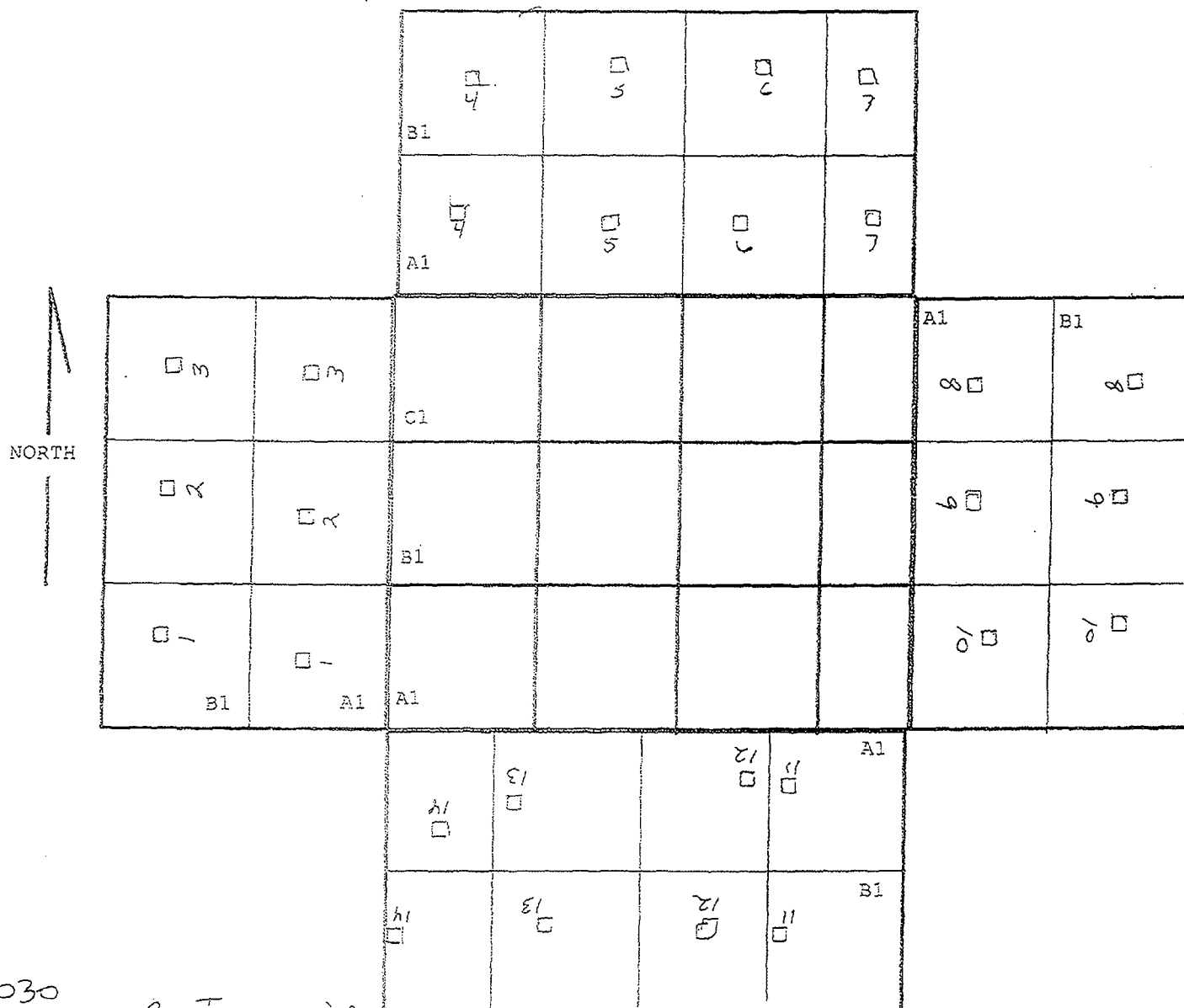
Old Rad Storage Room Mezz Level of Turbine Building



PK030

SCANS AND POINTS ON FLOOR

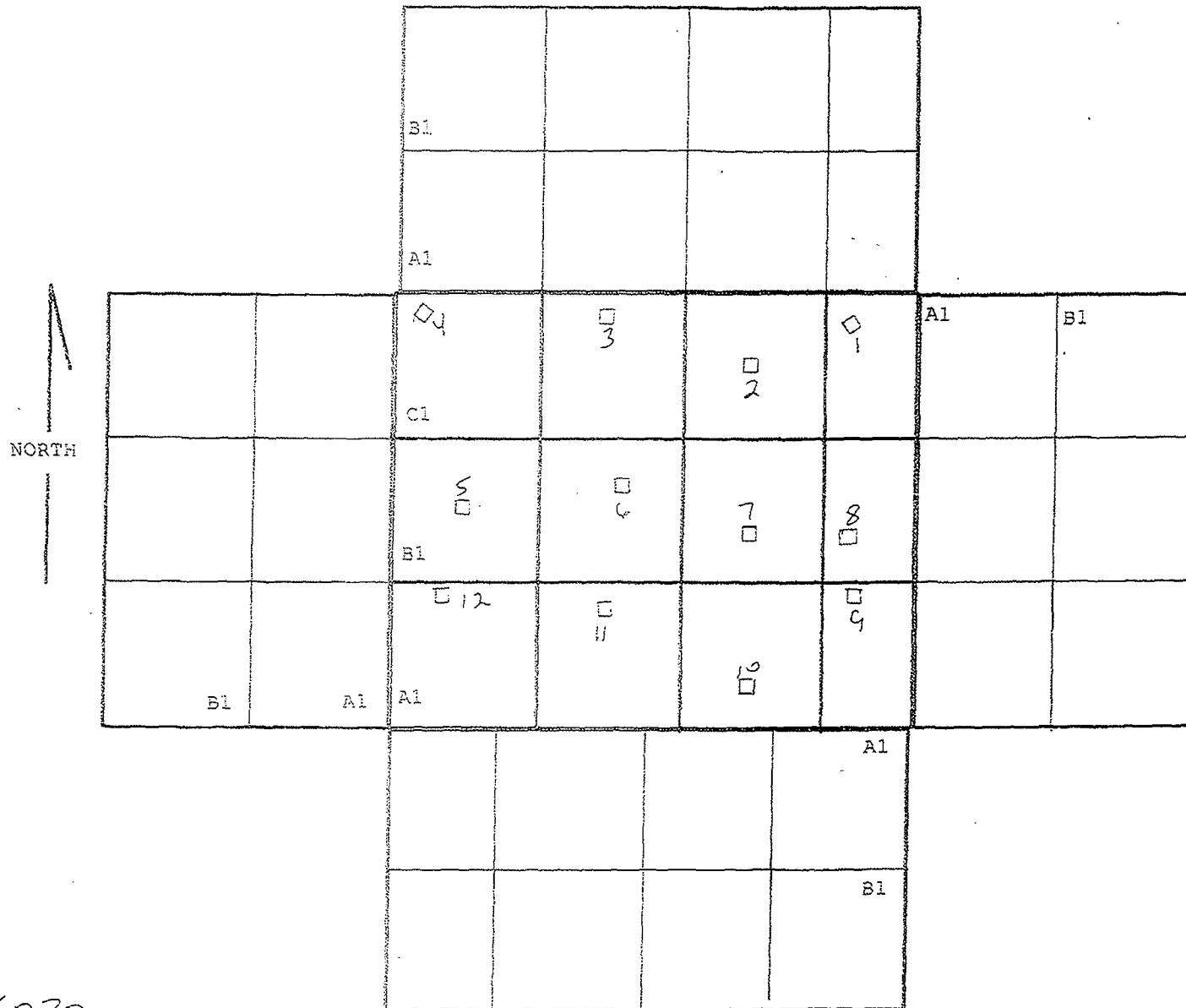
Old Rad Storage Room Mezz Level of Turbine Building



Page 7 of 8
PR030

SCANS AND POINTS ON WALL
A 1-14
B 1-14

Old Rad Storage Room Mezz Level of Turbine Building



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 31	Prepared by: Doug Schult
Location: Roofs Of The Boiler Building, Fuel Handling Building And The Turbine Building	Date prepared: 9/14/06
Area Classification: Impacted -- Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the roofs of the Boiler Building, Fuel Handling Building, and the Turbine Building.

The roofs of the Boiler Building, Fuel Handling Building, and the Turbine Building are approximately 1455 m².

See attached drawing

Class 3 survey areas are not limited in size

General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces on each of the 3 roofs, holding the detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

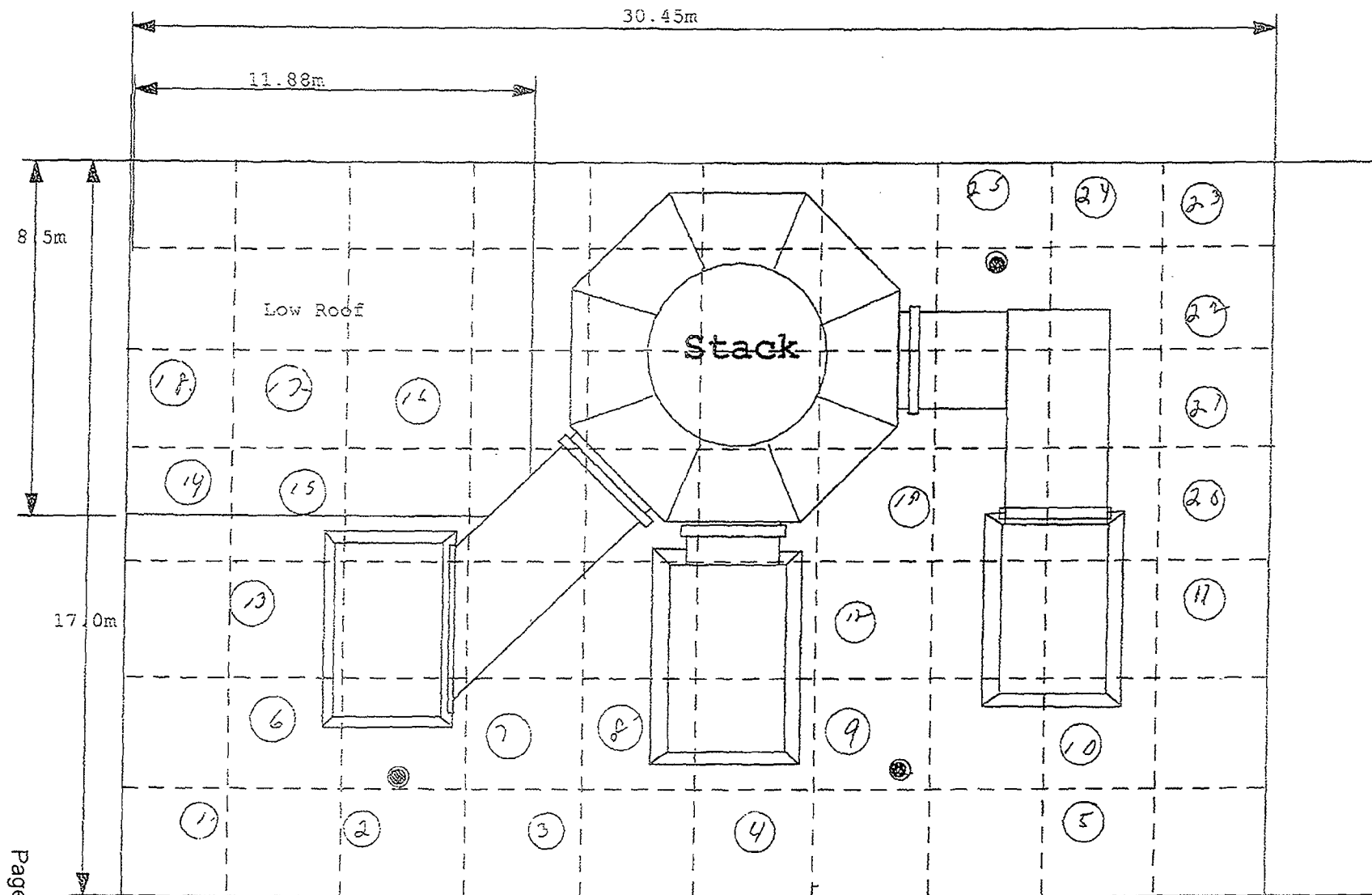
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK031	R0001				Boiler Building Roof	10%	25	NA	NA	25
PK031	R0002				Fuel Handling Building Roof	10%	25	NA	NA	25
PK031	R0003				Turbine Building Roof	10%	25	NA	NA	25

Package Review	
Date Package Completed	9-28-06
Package Reviewed by and Date	Carl Gough 1-17-07 <i>[Signature]</i> 1/28/07

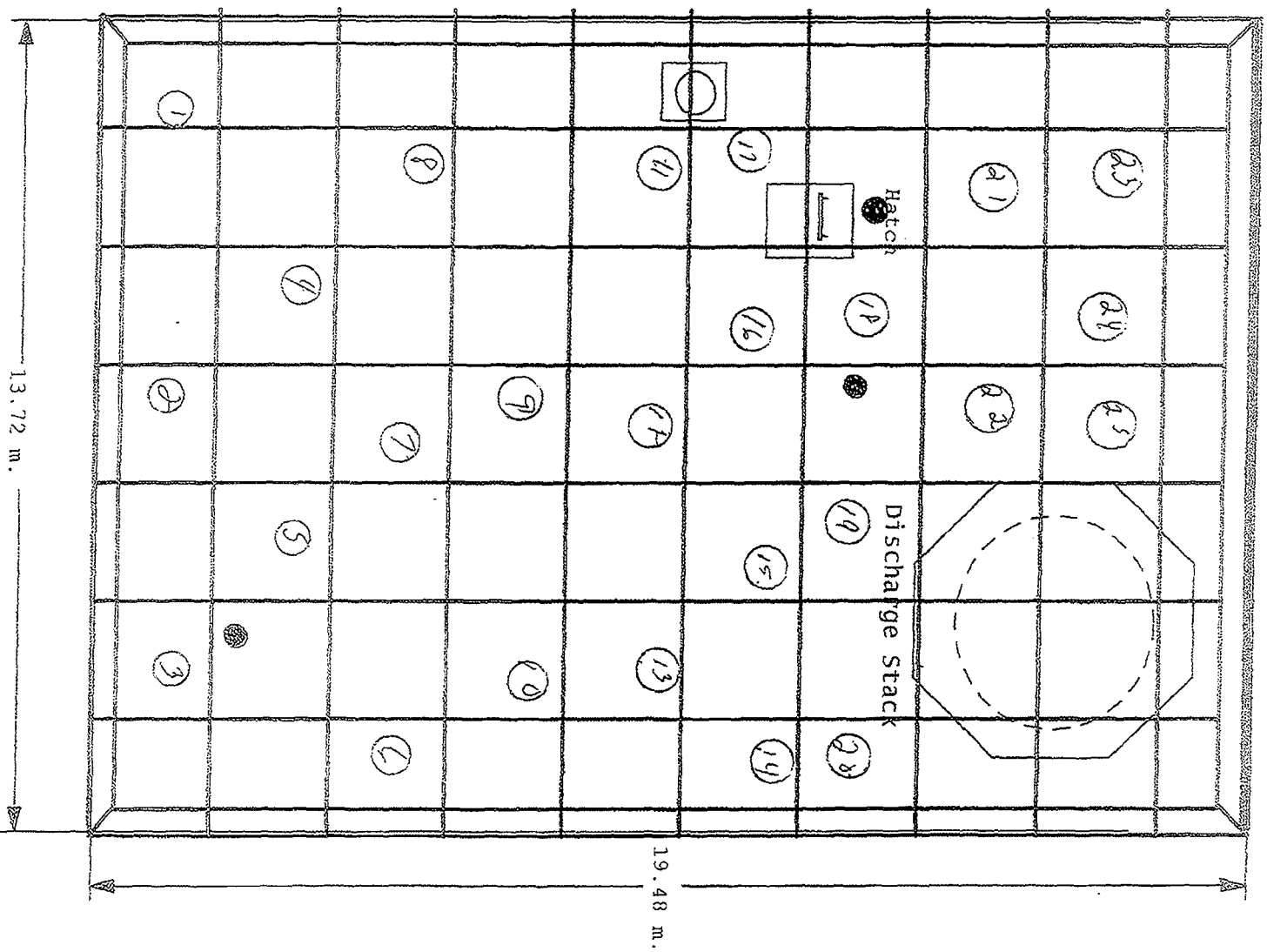
Survey Comments



Page 5 of 7

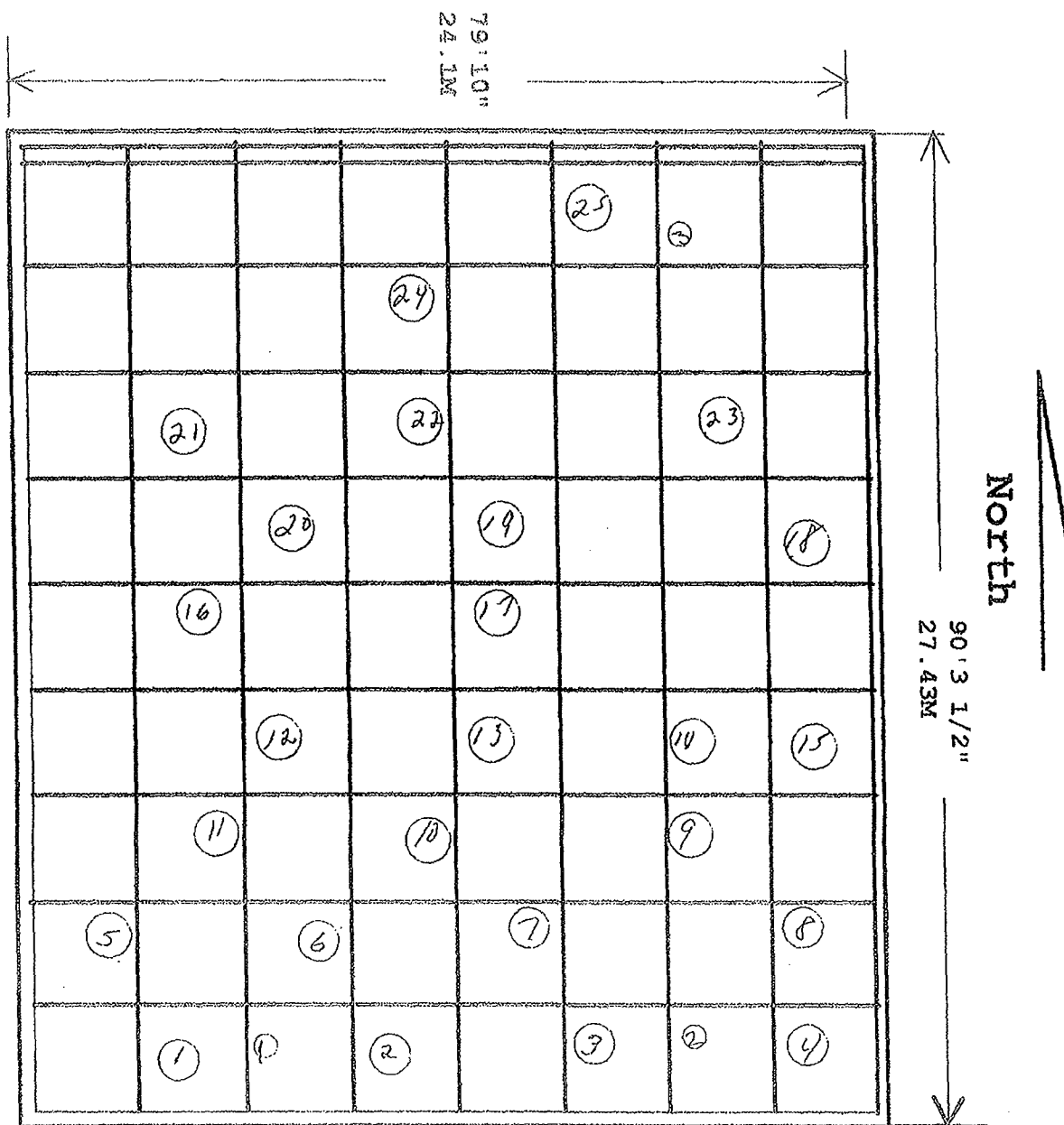
Boiler Room Roof
20001
Pkg 31 Boiler Room Roof

K0002
Fuel Building Roof



O = Smears + Points locations
Phg 31 Fuel Building Roof
— of —

20053
Turbine Roof



OZ Smeers & Points Locations

Pkg 31 Turbine Roof

- 8 -

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 32	Prepared by: Doug Schult
Location: Security and Construction Offices	Date prepared: 10/07/06
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floors, walls, ceiling, and non permanent items within the Security and Construction Offices.</p> <p>The Security and Construction Offices are approximately 235 m².</p> <p>See attached drawing</p> <p>Class 3 survey areas are not limited in size</p>

General Survey Instructions
<ol style="list-style-type: none">1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

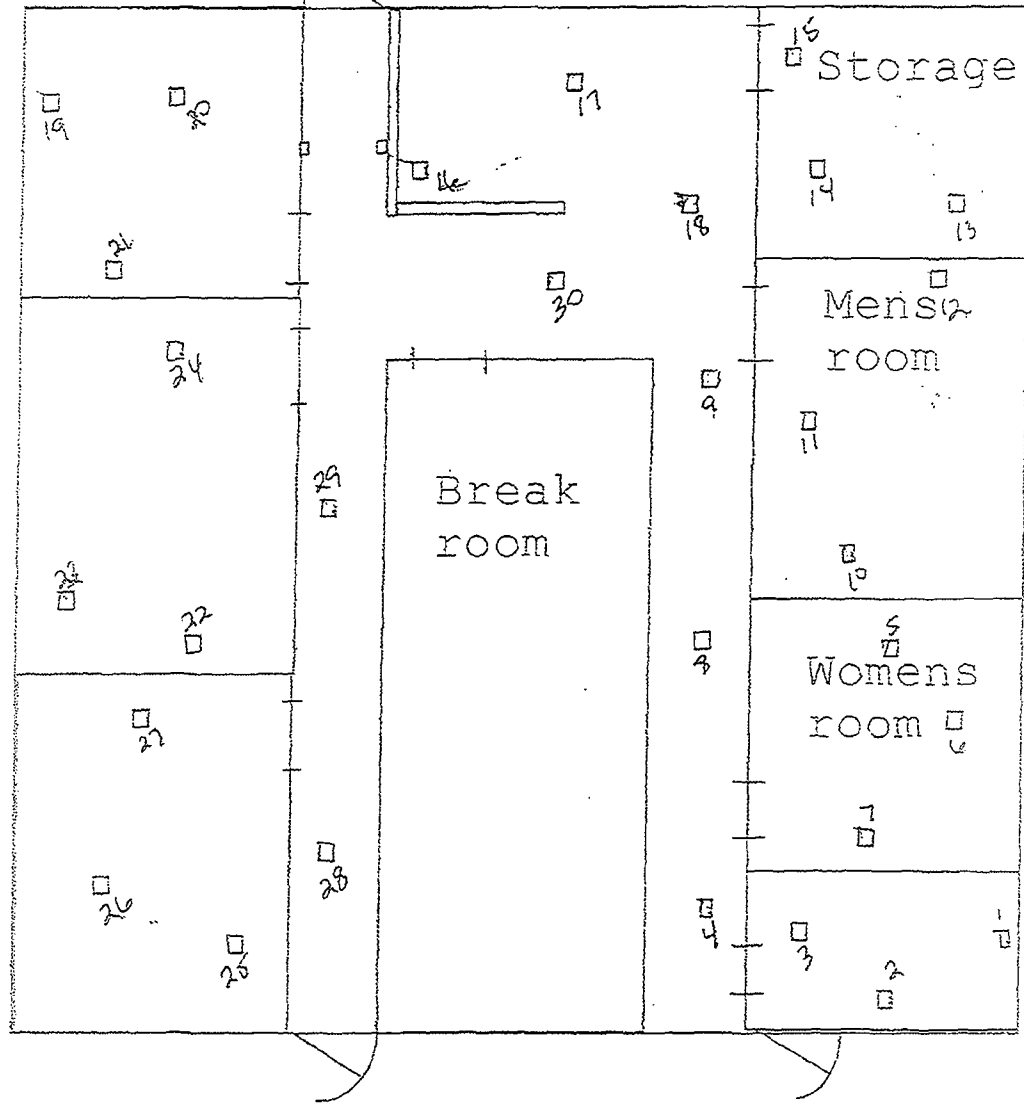
- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK032	FL001				Floor	10%	30	NA	NA	30
PK032	W0001				Walls	10%	30	NA	NA	30
PK032	C0001				Ceiling	10%	30	NA	NA	30
PK032	ST001				Non Permanent Structures	10%	30	NA	NA	30

Package Review	
Date Package Completed	10-11-01
Package Reviewed by and Date	Carl Gough 1-17-07

Survey Comments

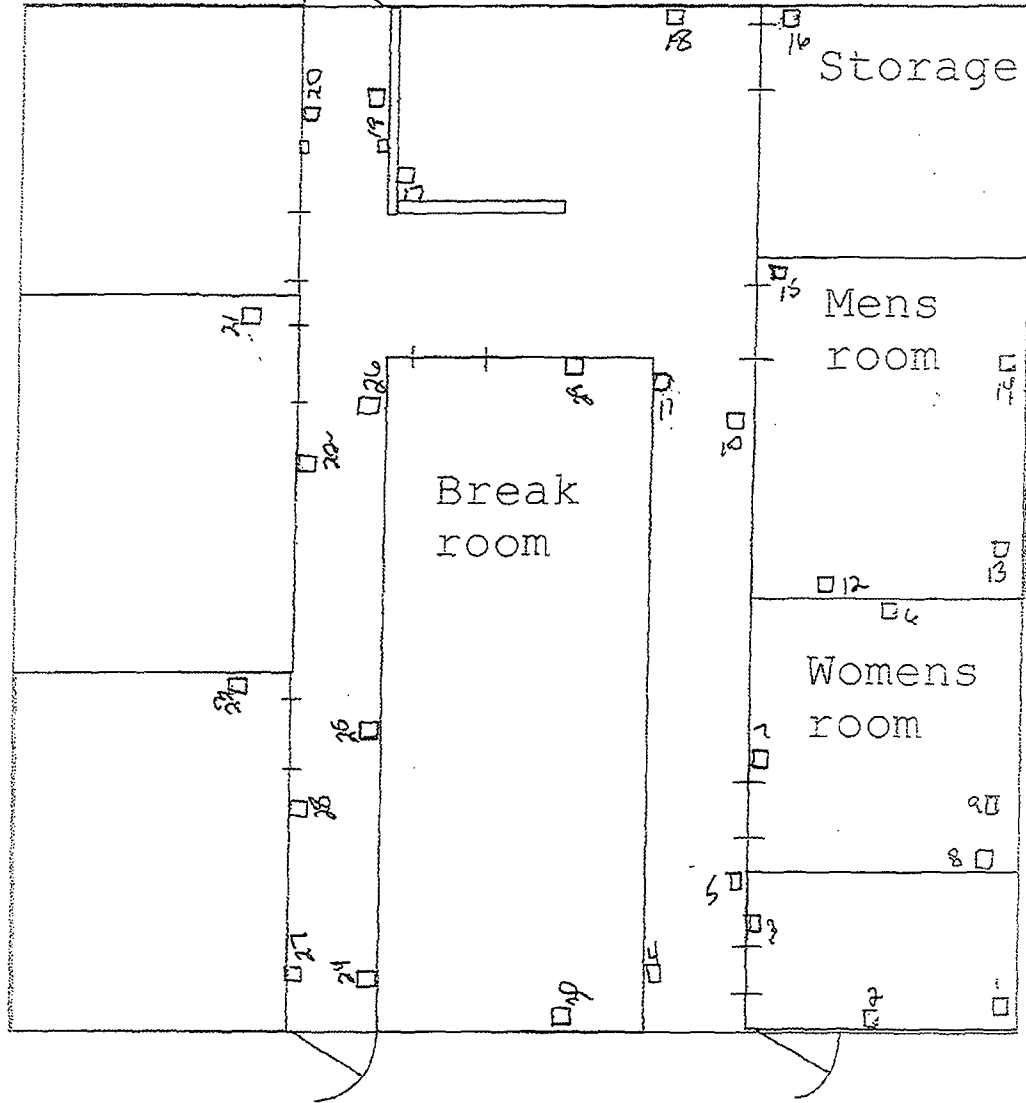
Access Control Building



PK032
10/7/06
FLOORS SCANS AND POINTS
1-30

50X50

Access Control Building

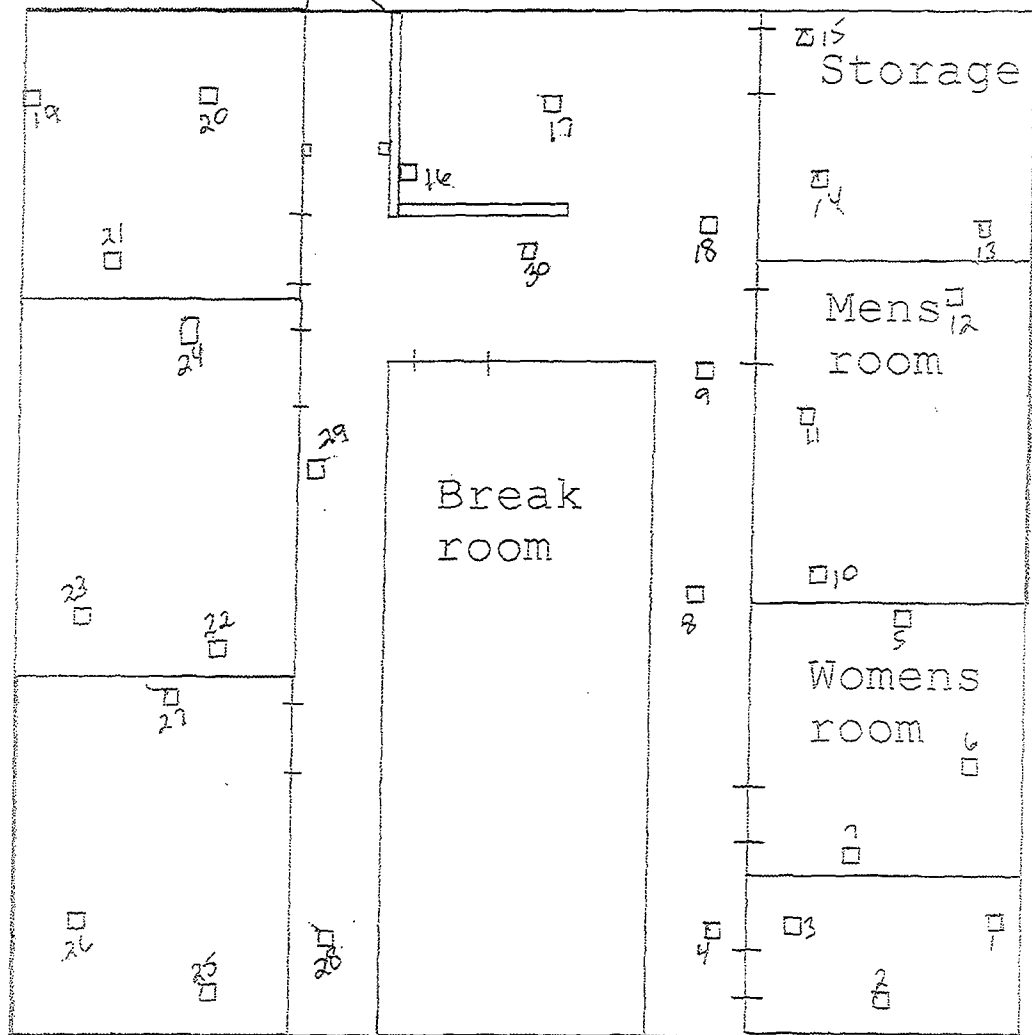


WALLS IN Access Bldg

50X50

PK032
10/17/06
1-30

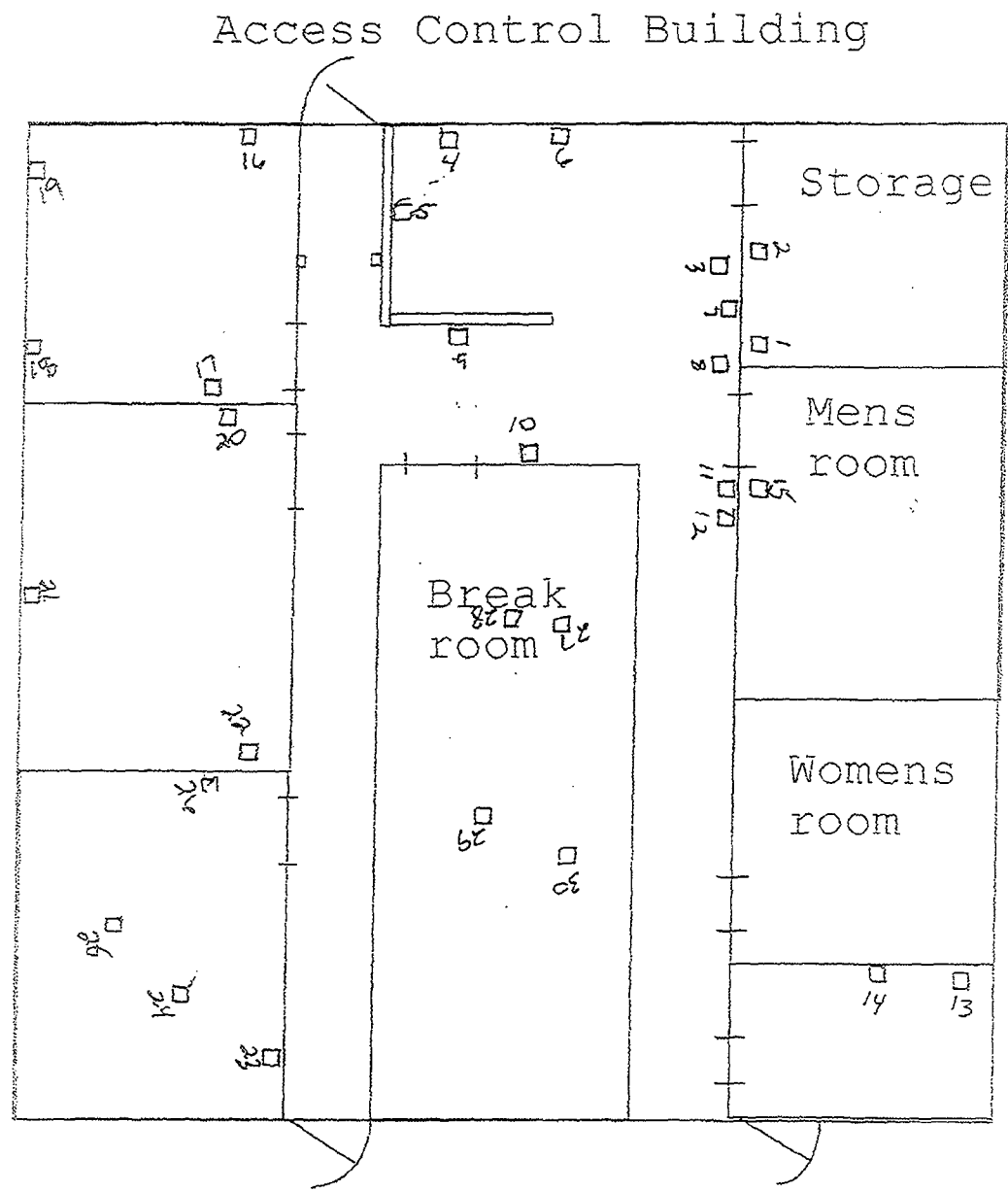
Access Control Building



PRO32 Ceiling Sights and Points

60001 1-30 10/9/04

50x50



PR032
10/9/06
ST001

Non Permanent Structures
Scans And Points
50x50

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 33	Prepared by: Doug Schult
Location: Fire Pump House	Date prepared: 10/12/06
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls, ceiling, and non permanent items in the Fire Pump House Warehouse.</p> <p>The Fire Pump House is approximately 24 m².</p> <p>See attached drawing</p> <p>Class 3 survey areas are not limited in size</p>

General Survey Instructions	
1)	Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Perform a 1 minute scan centered on each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
2)	Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
3)	Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm ² . Use the L7 code to record the measurement number.
4)	If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm ²) is identified, mark the area and notify the Project Manager.
5)	Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smeears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK033	FL001				Floor	10%	15	NA	NA	15
PK033	W0001				Walls	10%	20	NA	NA	20
PK033	C0001				Ceiling	10%	10	NA	NA	10
PK033	ST001				Non Permanent Items	10%	10	NA	NA	10

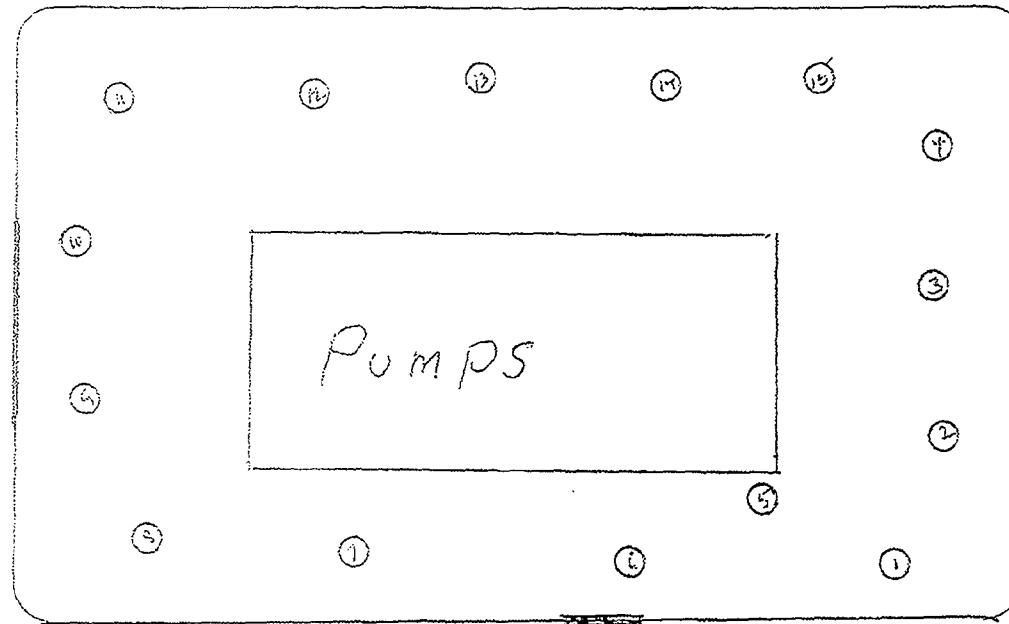
Package Review

Date Package Completed 10-19-06

Package Reviewed by and Date *Carl Beck 1-17-07*

Survey ID	Survey Date	Survey Comments
1	1/1/2020	
2	1/1/2020	
3	1/1/2020	
4	1/1/2020	
5	1/1/2020	
6	1/1/2020	
7	1/1/2020	
8	1/1/2020	
9	1/1/2020	
10	1/1/2020	
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99	1/1/2020	
100	1/1/2020	

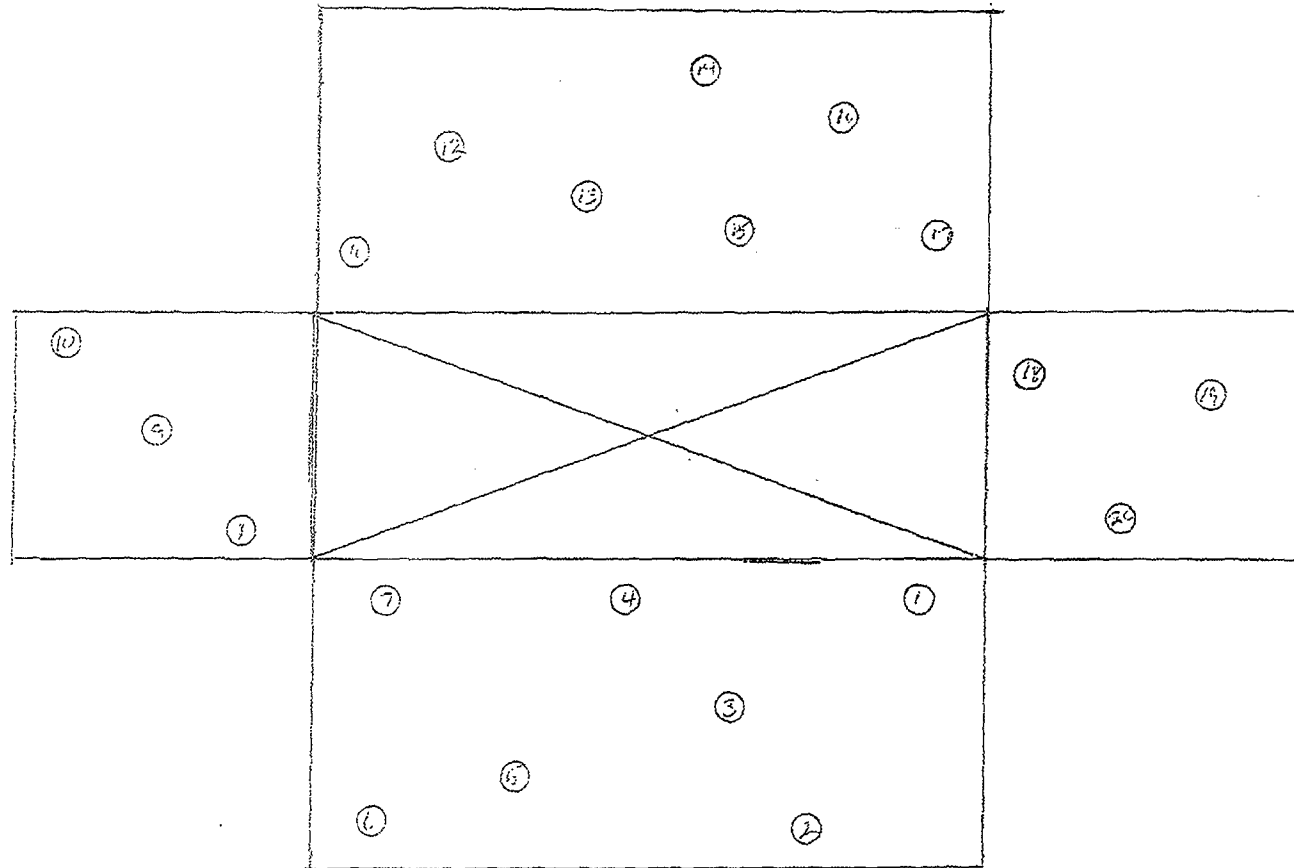
Fire Pump House



○ = Smears + Points Locations

Pkg 33 Floor

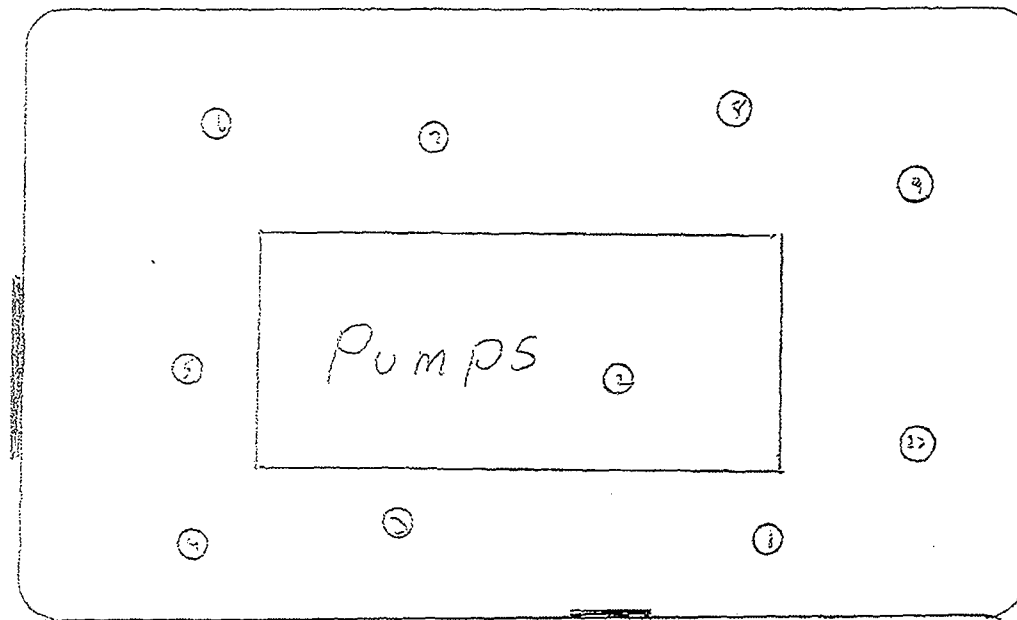
Fire Pump House



○ = Smears + Points Locations

PKg. 33 Walls

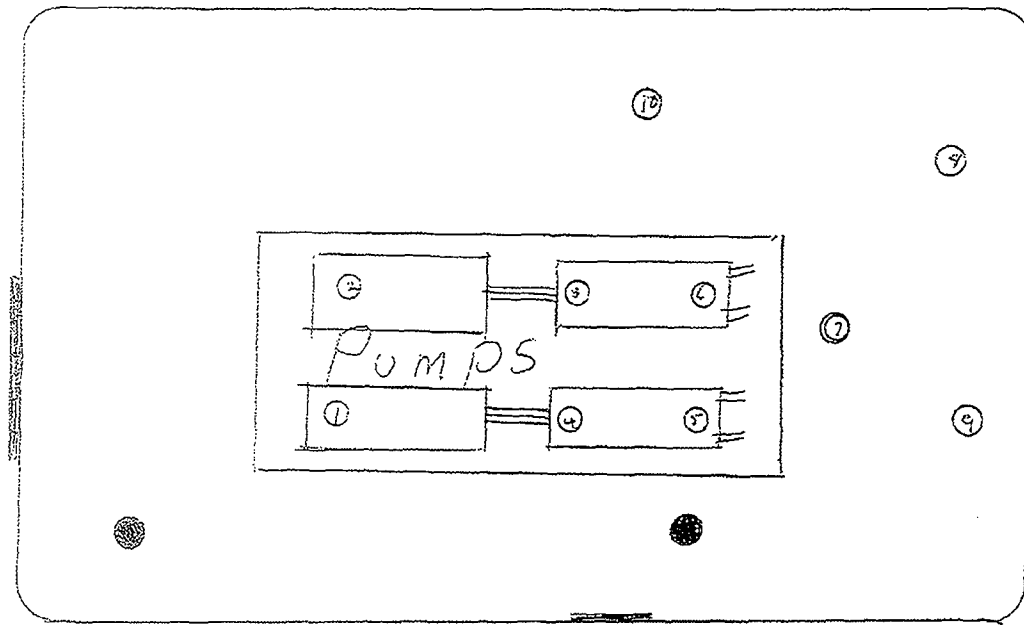
Fire Pump House



○ = Sensors & Points Locations

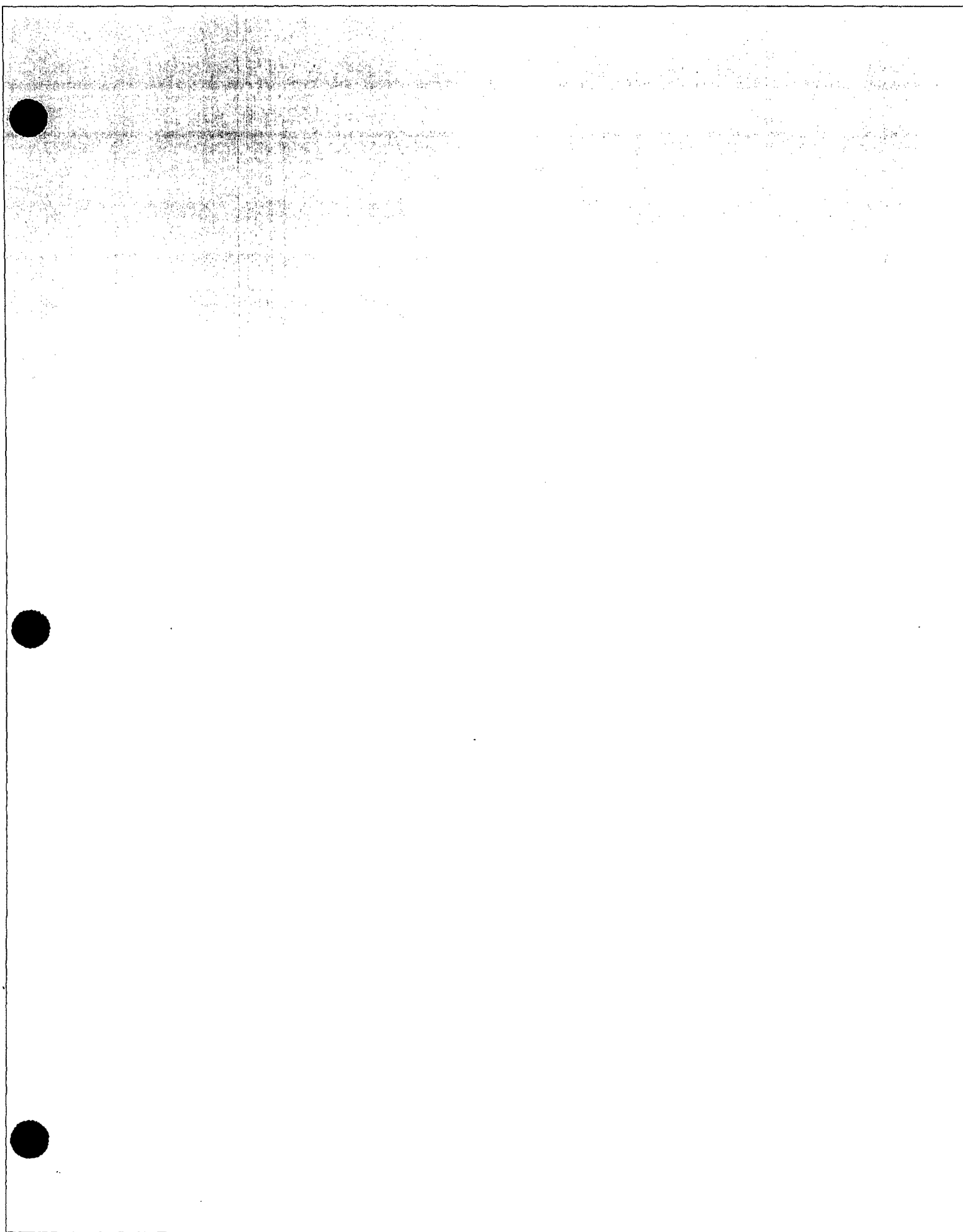
Pkg 33 Ceiling

Fire Pump House



O = Sensors + Points Locations

Plg 33 Non-Permanent Items



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 34	Prepared by: Doug Schult
Location: Turbine Building Stairwells	Date prepared: 10/26/06
Area Classification: Impacted - Class 2	Pathfinder Final Status Survey

Area Description

The survey area includes the 2 stairwells within the Turbine Building. Stairwell Number 1 is located closest to the Admin Building and Stairwell Number 2 is located closest to the Turbine Building elevator.

Although this is a Class 2 Survey Unit the Stairwells will not be gridded

See attached drawing

Class 2 survey areas are limited in size to less than 1000 m²

General Survey Instructions

- 1) Perform a beta scan of at least 50% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for approximately 30 seconds around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

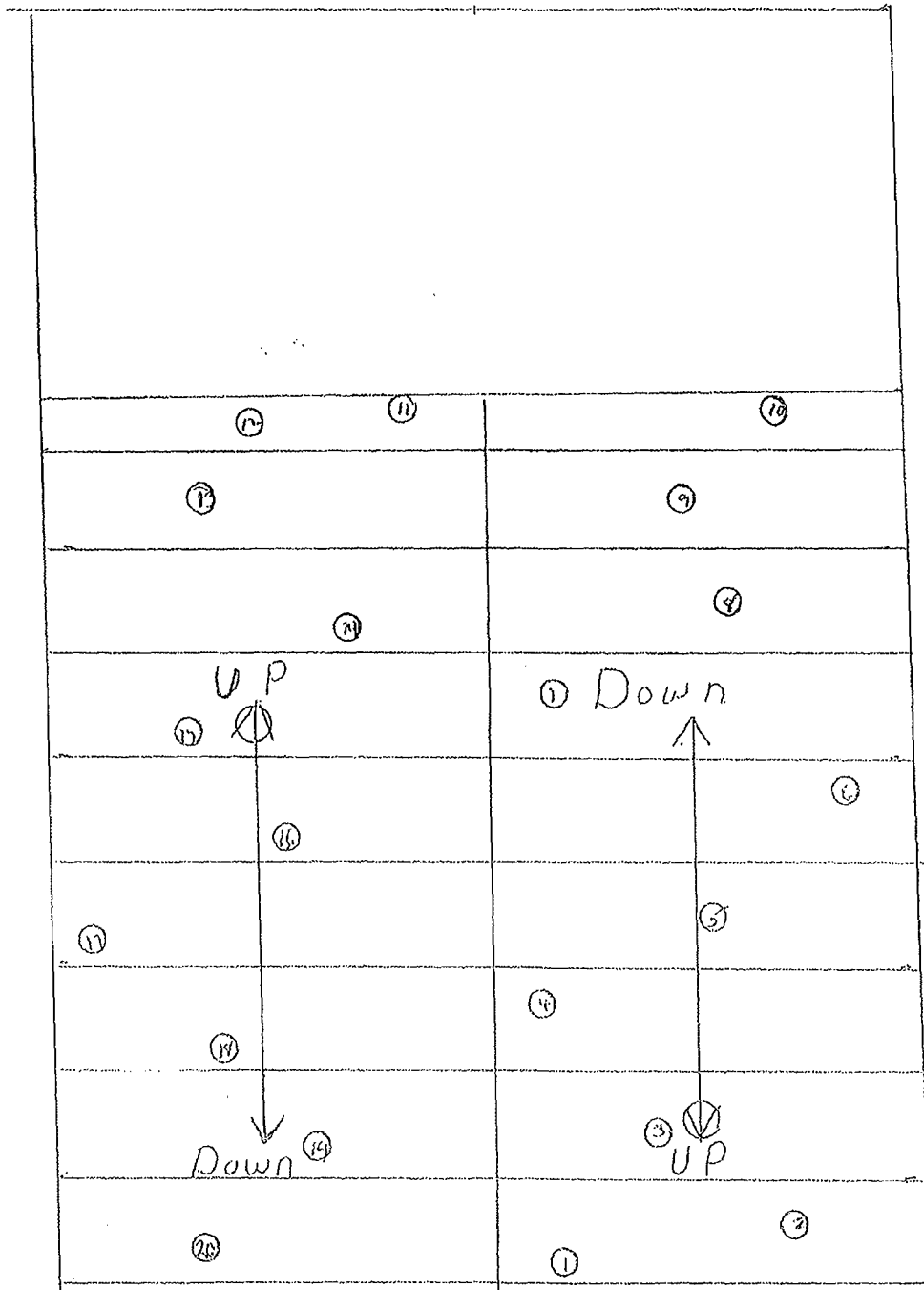
- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK034	ST001				Stairwell Number 1 Between The Turbine Deck And The Mezzanine	50%	20	NA	NA	20
PK034	ST002				Stairwell Number 1 Mezzanine Landing	50%	10	NA	NA	10
PK034	ST003				Stairwell Number 1 Between The Mezzanine And The Basement	50%	20	NA	NA	20
PK034	ST004				Stairwell Number 2 Between The Turbine Deck And The Mezzanine	50%	20	NA	NA	20
PK034	ST005				Stairwell Number 2 Mezzanine Landing	50%	10	NA	NA	10
PK034	ST006				Stairwell Number 2 Between The Mezzanine And The Basement	50%	20	NA	NA	20

Package Review	
Date Package Completed	10-28-06
Package Reviewed by and Date	Carl Smith 1-17-07 J.A. 1/25/07

Survey Comments

Stairs



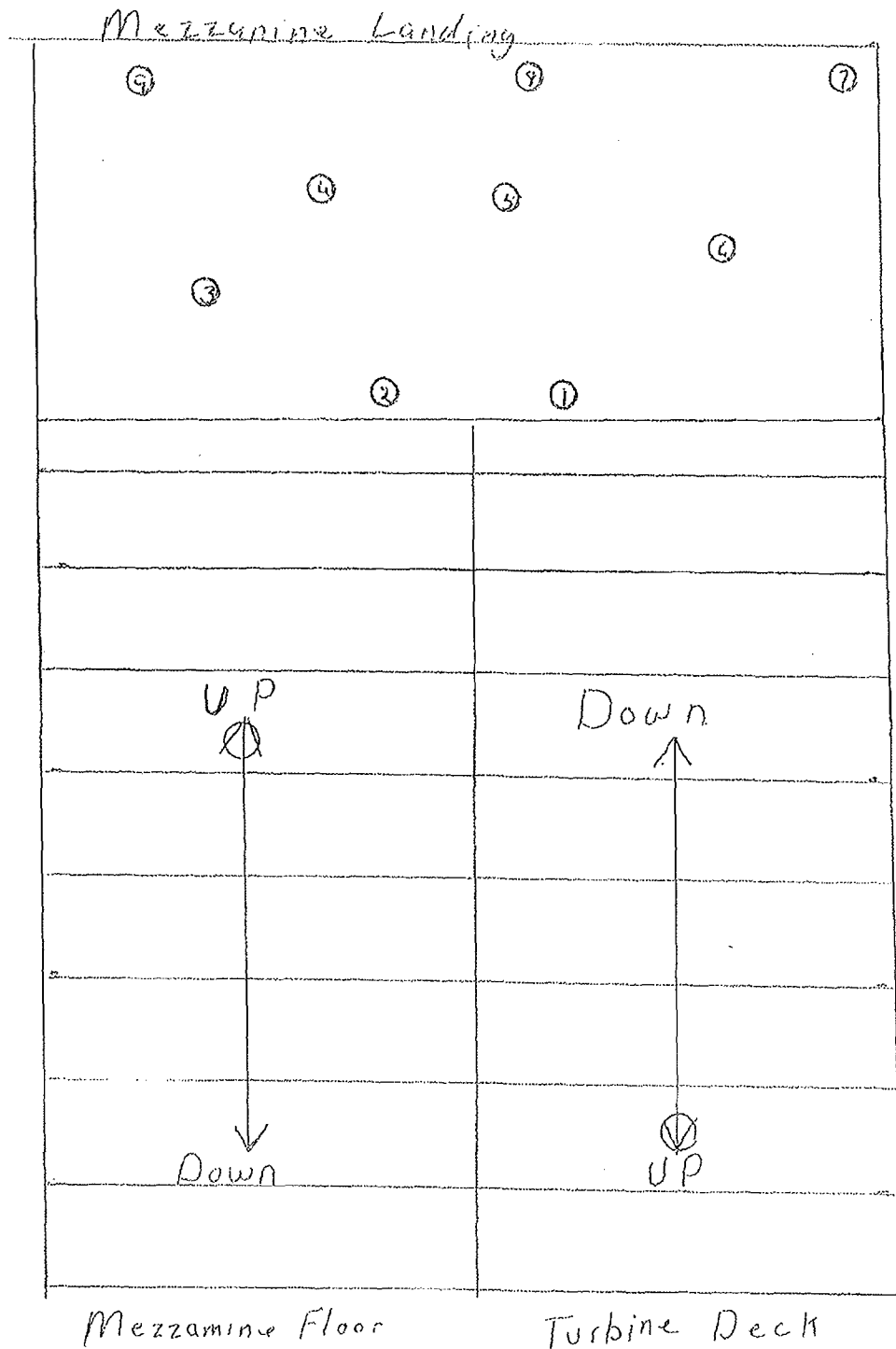
Mezzanine Deck

Turbine Deck

O = Smears + Poats

Pkg. 34 Stairwell Number / Between Turbine Deck
And Mezzanine

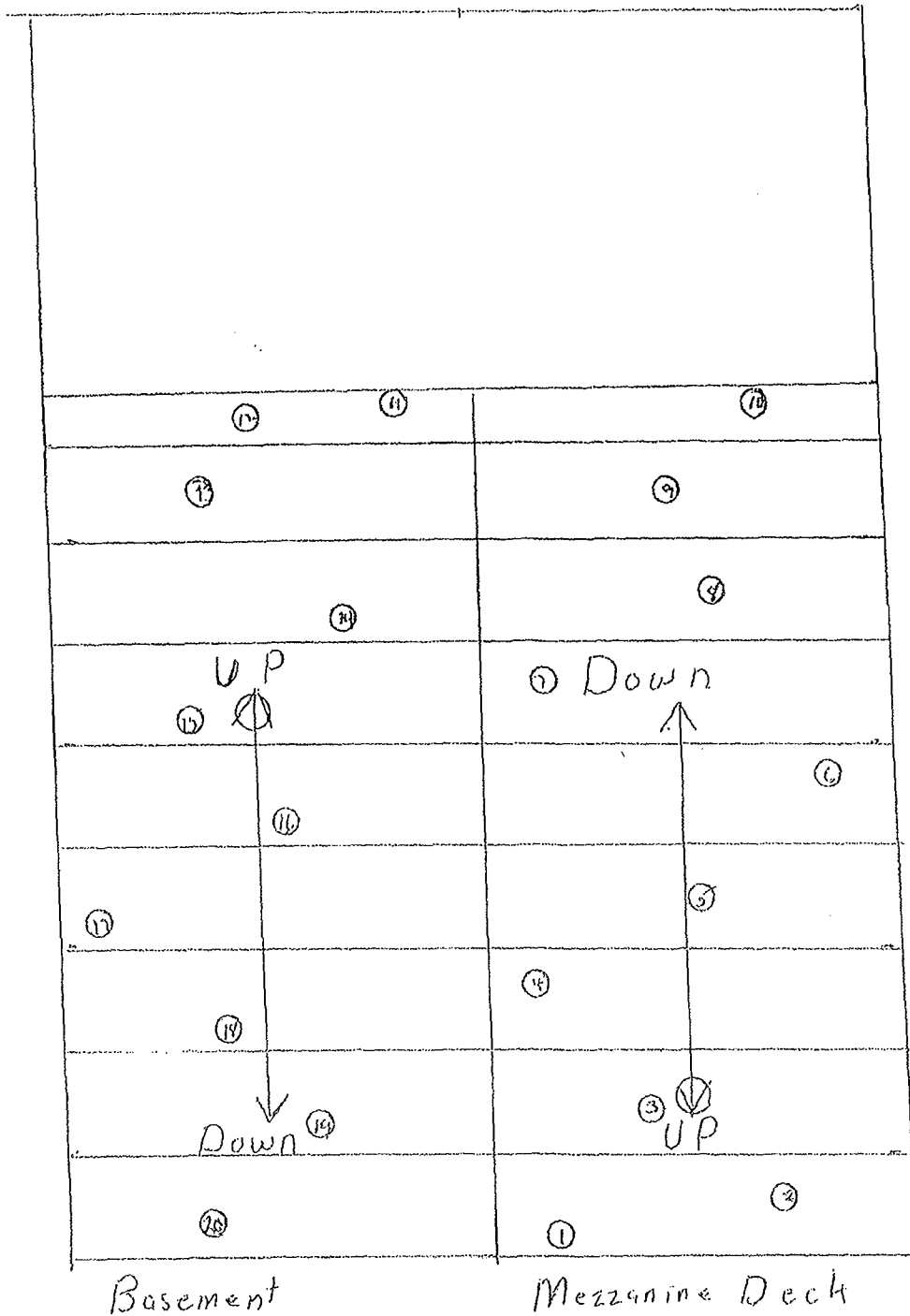
Stairs



O 2 Smeers + Points

Pkg-34 Stairwell Number 1 Mezzanine Landings

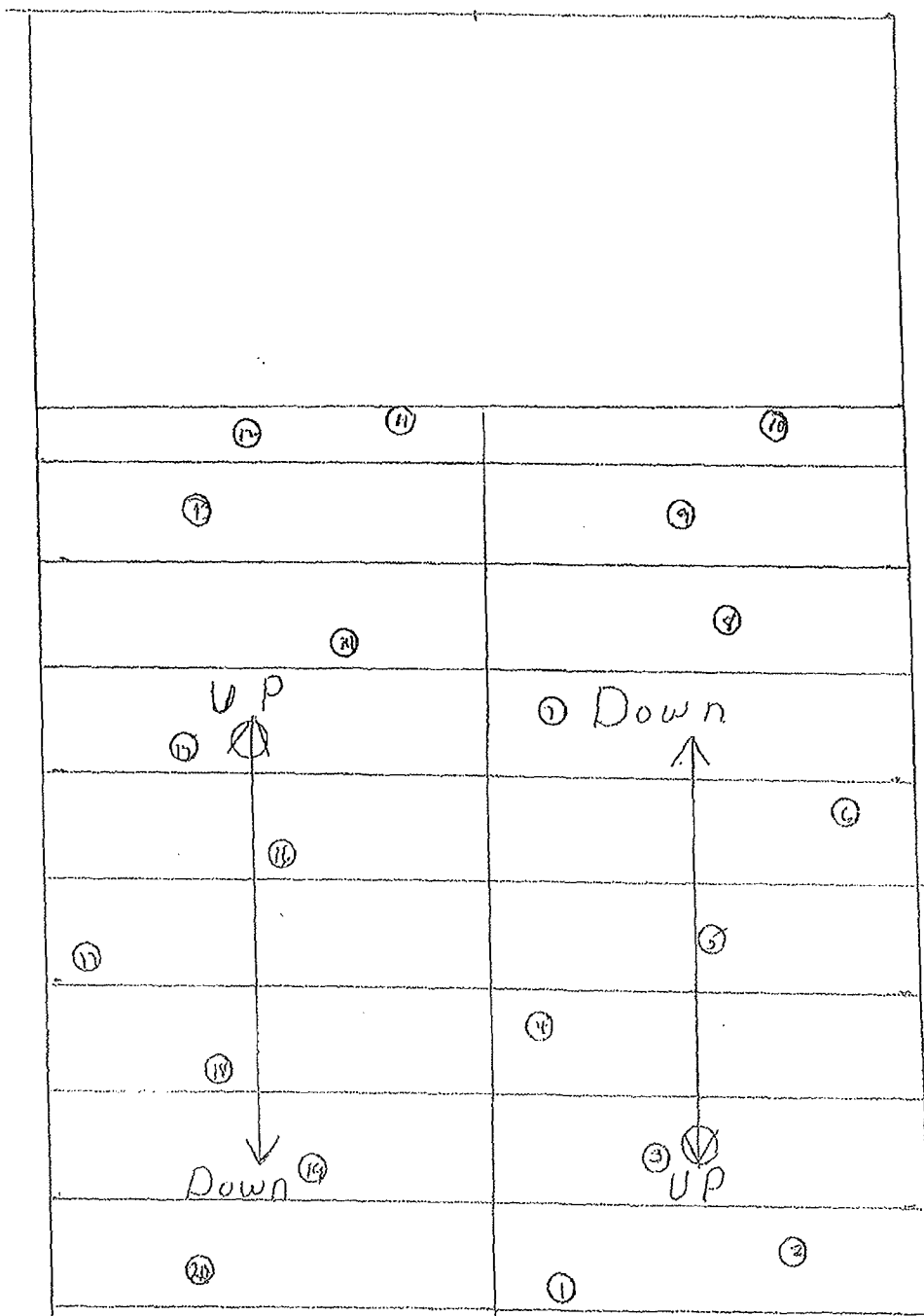
Stairs



O = Smeers + Points

Pkg. 34 Stairwell Number 1 Between The Mezzanine
And The Basement

Stairs



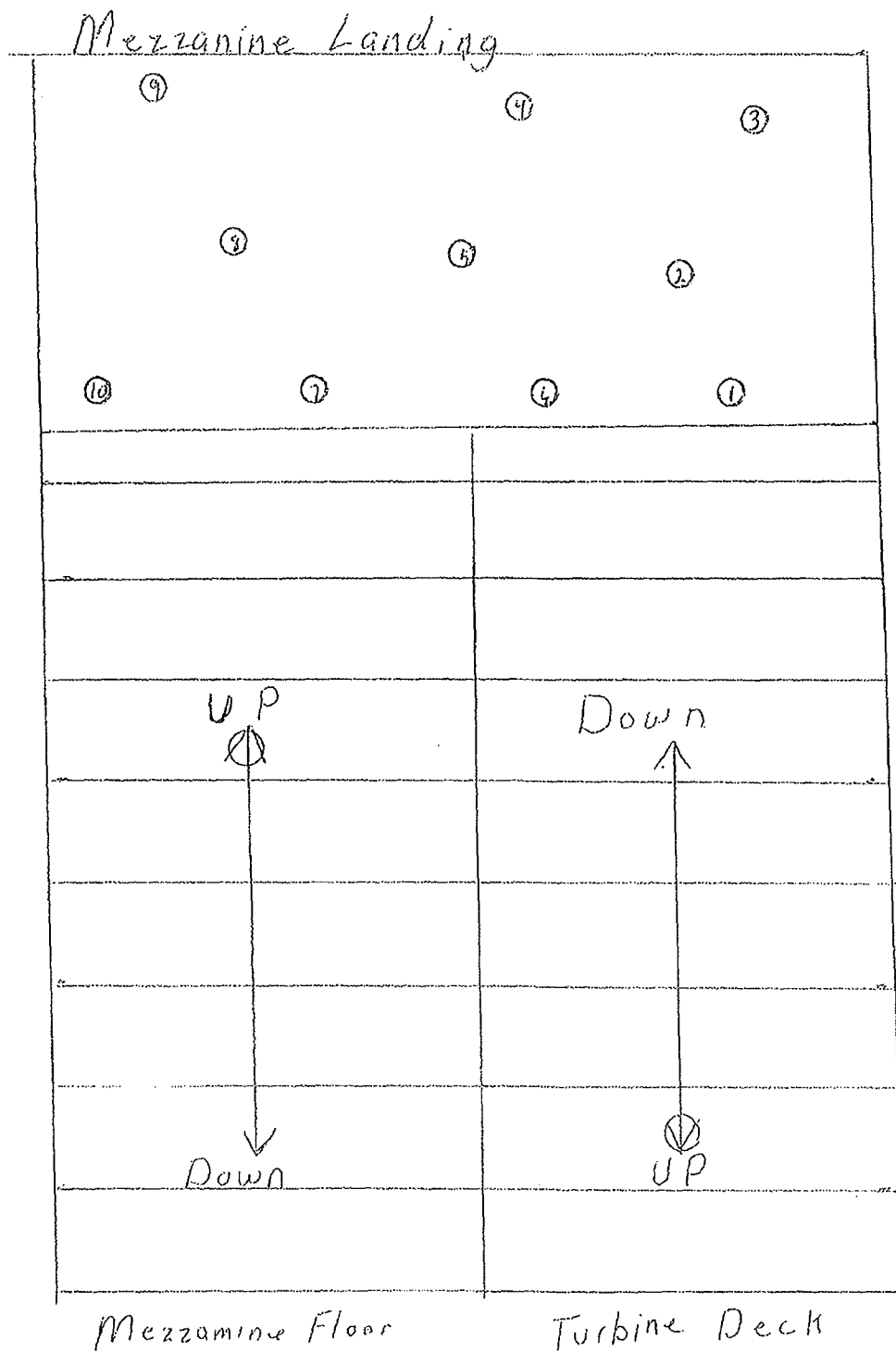
Mezzanine Floor

Turbine Deck

O = Smears + Points

Pkg. 34 Stairwell Number 2 Between The Turbine Deck
AND The Mezzanine
And

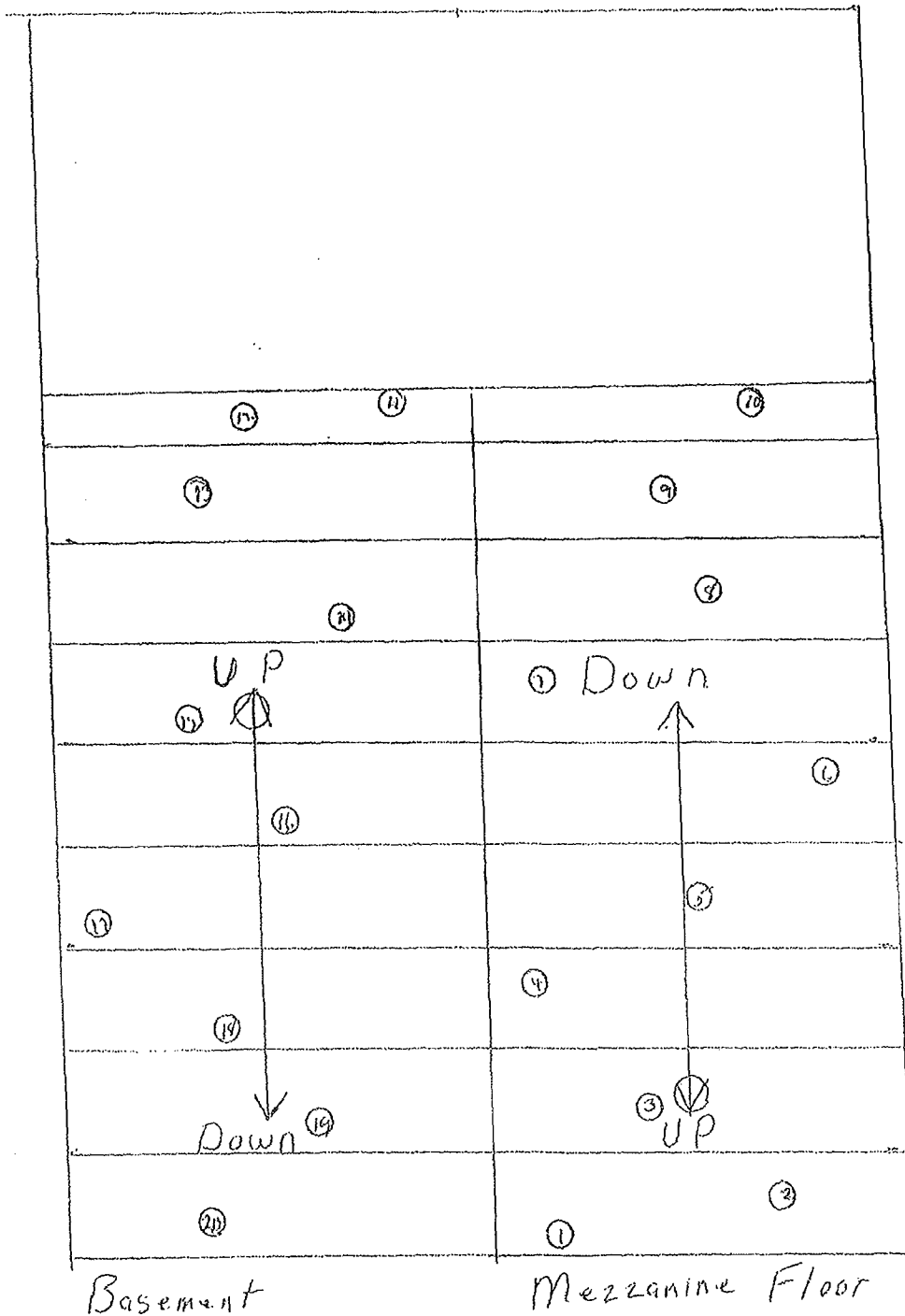
Stairs



O = Smears + Points

Pkg-34 Stairwell Number 2 Mezzanine Landing

Stairs



O = Smeers + Points

PKg-34 Stairwell Number 2, Between The Mezzanine
And The Basement

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 35	Prepared by: Doug Schult
Location: Floor And Walls Below 2 Meters In the Maintenance Shops On The Cold Side Of The Turbine Building Basement	Date prepared: 10/30/06
Area Classification: Impacted - Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, and non permanent structures in the maintenance shops on the cold side of the Turbine Building basement. The maintenance shops in the Turbine Building basement include the Machine Shop, Electrical Shop, Instrument Calibration Room and Toilet.</p> <p>The Machine Shop is approximately 132 m².</p> <p>The Electrical Shop is approximately 25 m².</p> <p>The Instrument Calibration Room (Laundry Room) is approximately 20 m².</p> <p>The Toilet is approximately 4 m².</p> <p>See attached drawing.</p> <p>Class 2 survey areas are limited in size to less than 1000 m²</p>

General Survey Instructions

- 1) Grid the floor using 2 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 2 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using a non permanent marker such as pieces of tape or stickers. Label the grids using a numeric numbering system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 50% of the accessible surfaces within each grid holding the detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) For the floor grids perform a 3 minute scan per grid.
For the wall grids perform a 3 minute scan per grid.
For the non permanent items perform a 1 minute scan for each total beta activity measurement.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 2 to give the X coordinate and the second random number is multiplied by 2 to give the Y coordinate

Floors: R=0.847, X=1.70 m R=0.766, Y= 1.53 m

Walls: R=0.846, X=1.70 m R=0.766, Y= 1.53 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.554, X=1.11 m R=0.349, Y= 0.70 m

Walls: R=0.554, X=1.11 m R=0.349, Y= 0.70 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid

- 7) Collect a total beta activity measurement at each fixed point measurement location. Use the L7 code to record the measurement location number in which the measurement is being obtained.
- 8) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 9) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK035	FL001				Floor in Machine Shop	50%	Each Grid	NA	NA	Each Grid
PK035	W0001				Walls in Machine Shop	50%	Each Grid	NA	NA	Each Grid
PK035	ST001				Non Permanent Structures in Machine Shop	50%	30	NA	NA	30
PK035	FL002				Floor Electrical Shop	50%	Each Grid	NA	NA	Each Grid
PK035	W0002				Walls in Electrical Shop	50%	Each Grid	NA	NA	Each Grid
PK035	ST002				Non Permanent Structures in Electrical Shop	50%	20	NA	NA	20
PK035	FL003				Floor in Instrument Calibration Room	50%	Each Grid	NA	NA	Each Grid
PK035	W0003				Walls in Instrument Calibration Room	50%	Each Grid	NA	NA	Each Grid
PK035	ST003				Non Permanent Structures in Instrument Calibration Room	50%	20	NA	NA	20
PK035	FL004				Floor in Toilet	50%	Each Grid	NA	NA	Each Grid
PK035	W0004				Walls in Toilet	50%	Each Grid	NA	NA	Each Grid
PK035	ST004				Non Permanent Structures in Toilet	50%	5	NA	NA	5
PK035	ST005				Oil Storage Room	50%	30	NA	NA	30

N →

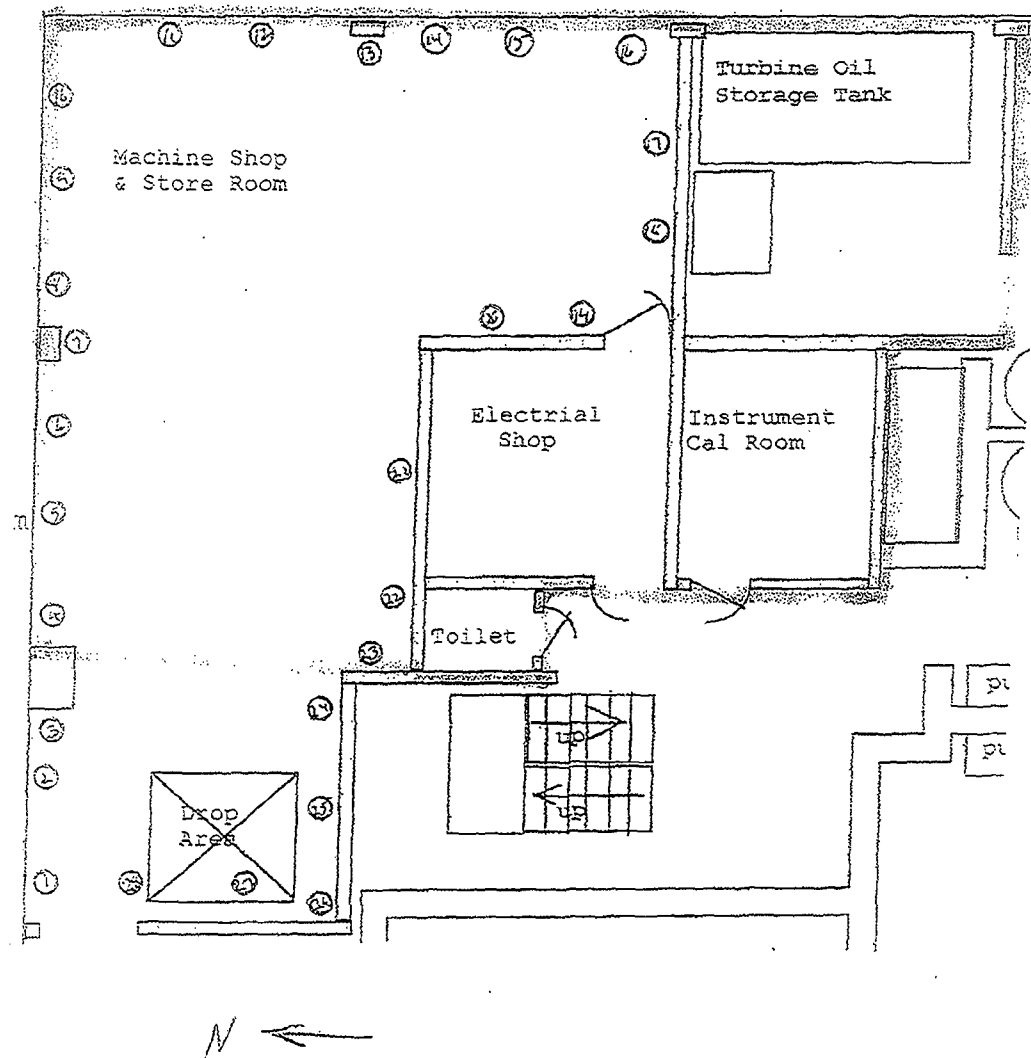
				D	E	F
	C			①	①	①
				②	②	②
			①	③	③	③
			②	④	④	④
			③	⑤	⑤	⑤
1	A	B				
			④	④	④	④
			⑤	⑦	⑦	⑦
2			⑥	⑧	⑧	⑧
3			⑦	⑨	⑨	⑨

Machine Shop Floor

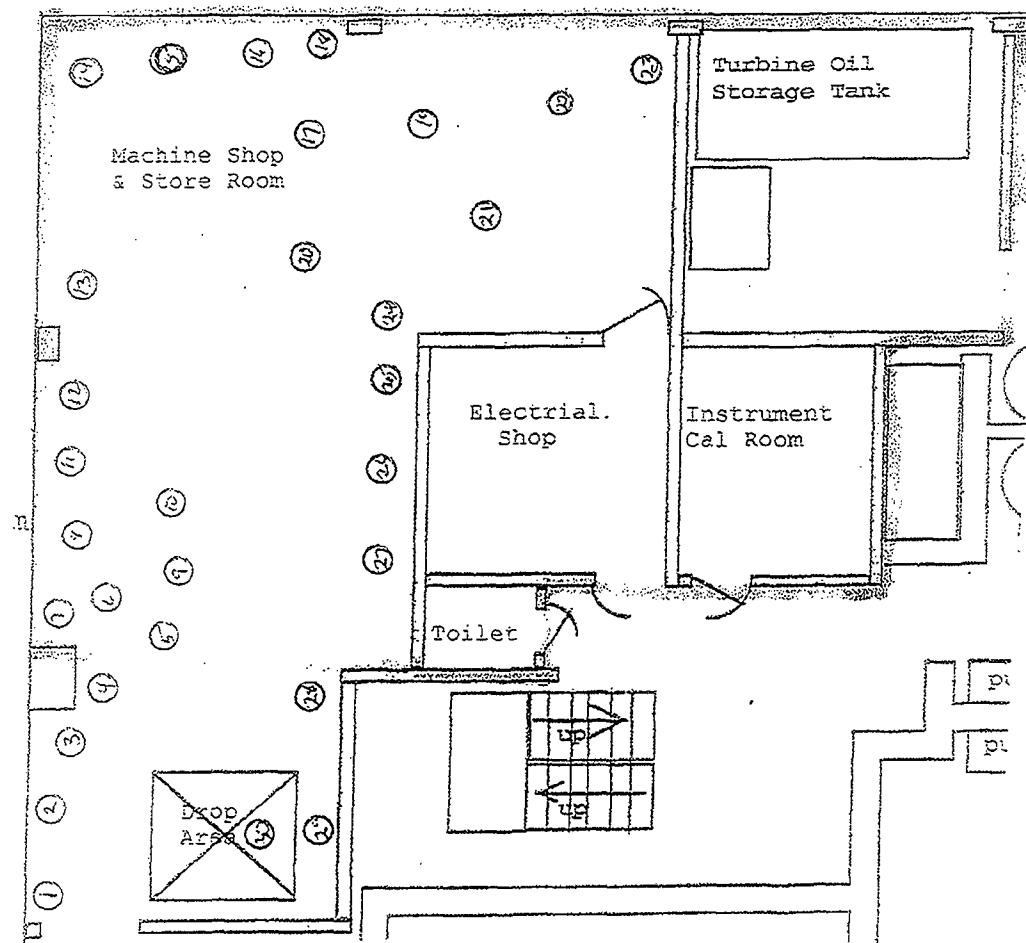
Pkg 35

Floor-1

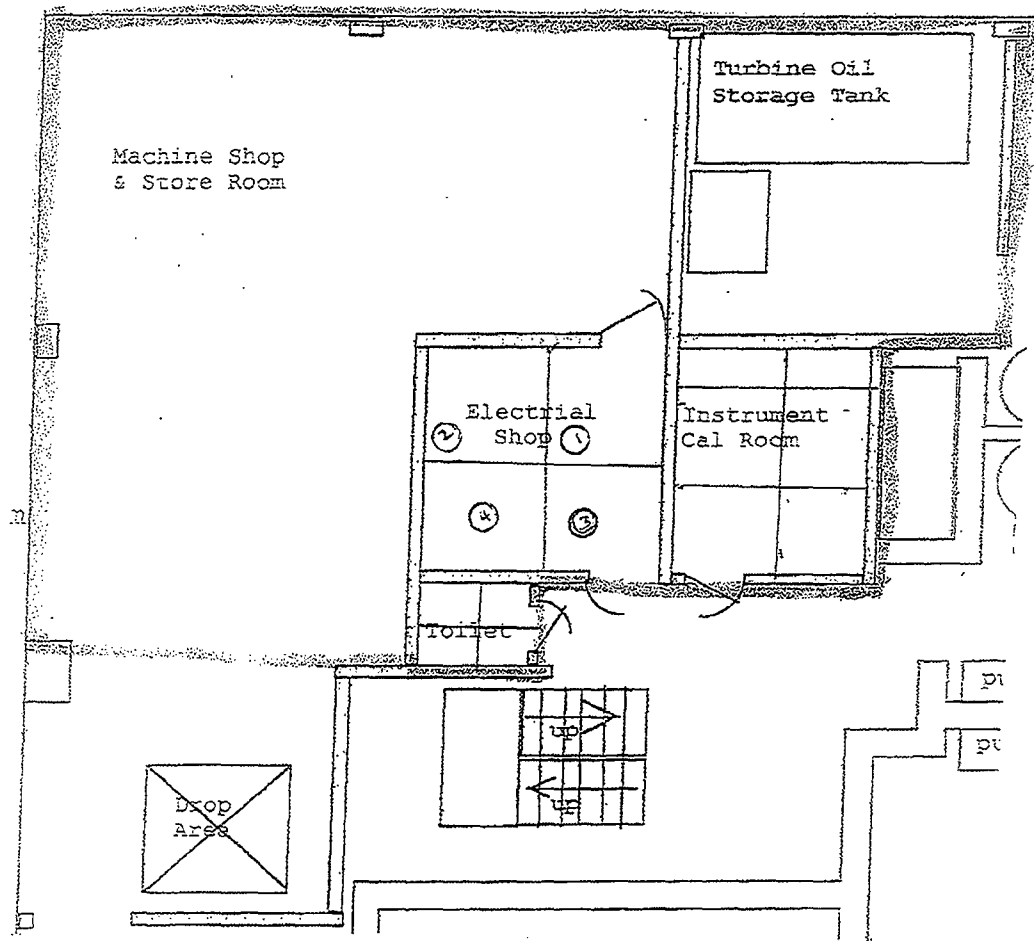
○ = Smeers + Points
 PKs. 35
 Walls in Machine Shop
 Walls - 1



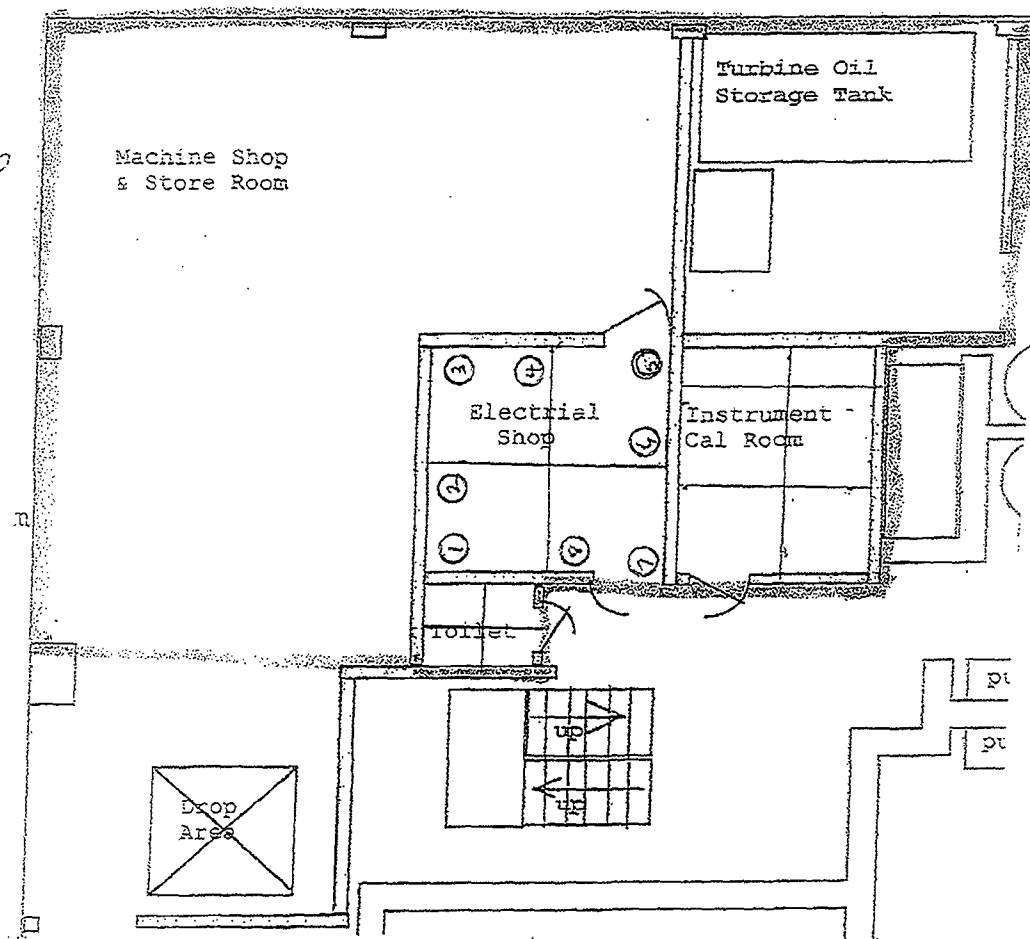
○ = Smears + Points
 Pkg. 35
 Non-permanent Structures
 in Machine Shop
 Structure - 1



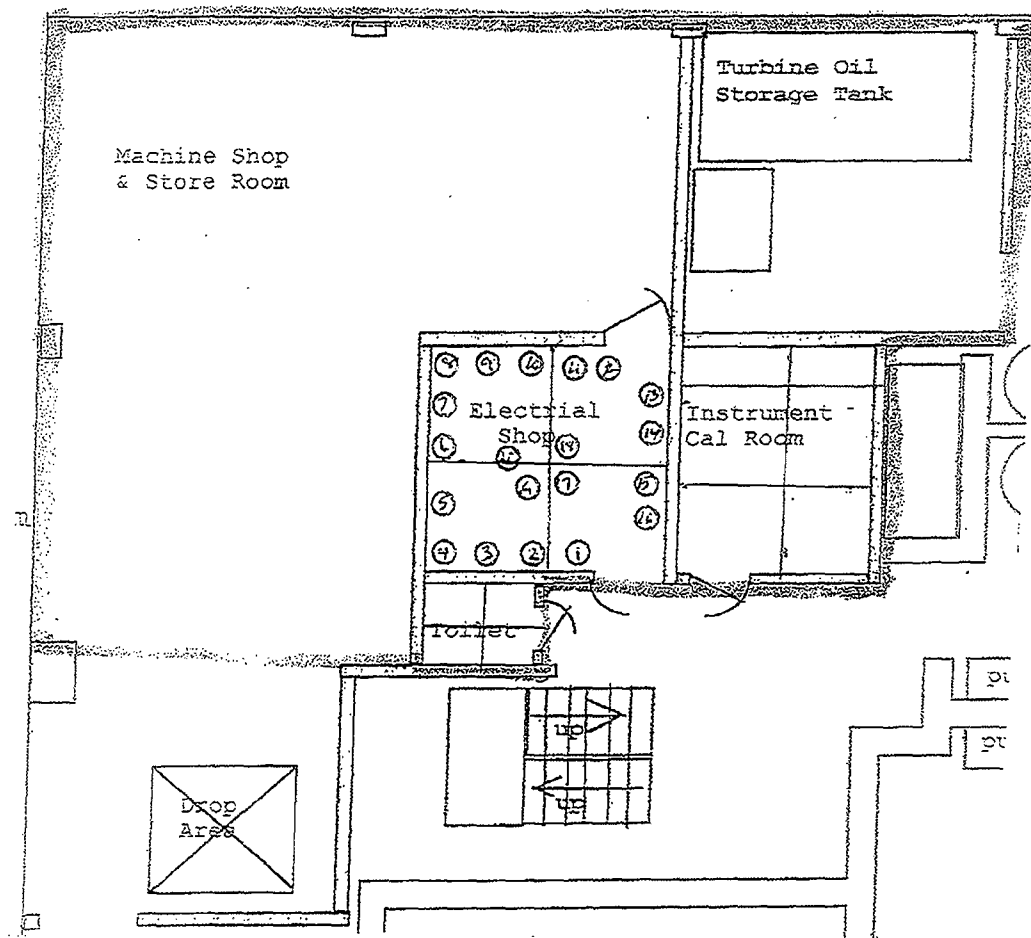
○ = Smears + Points
 PKg-35
 Floor Electrical Shop
 Floor 2



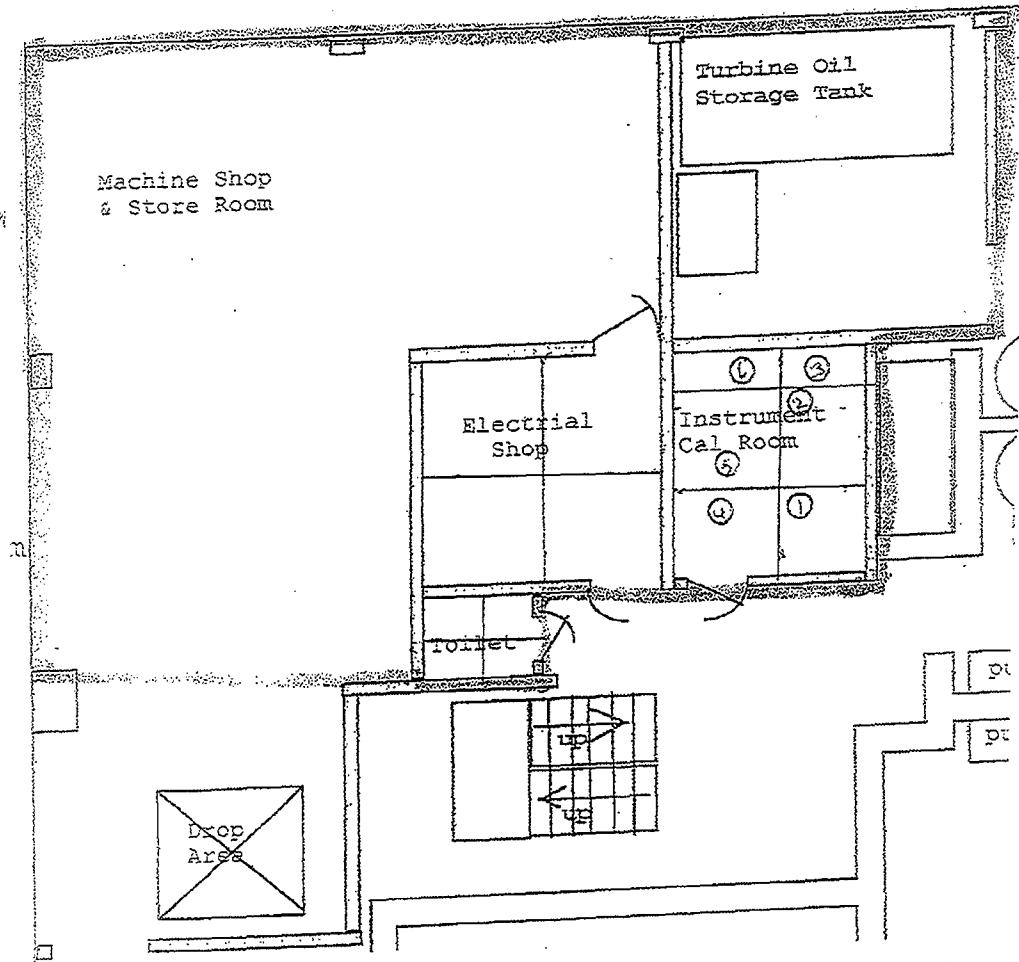
O = Smears + Points
Pkg 35
Walls Electrical Shop
Walls 2



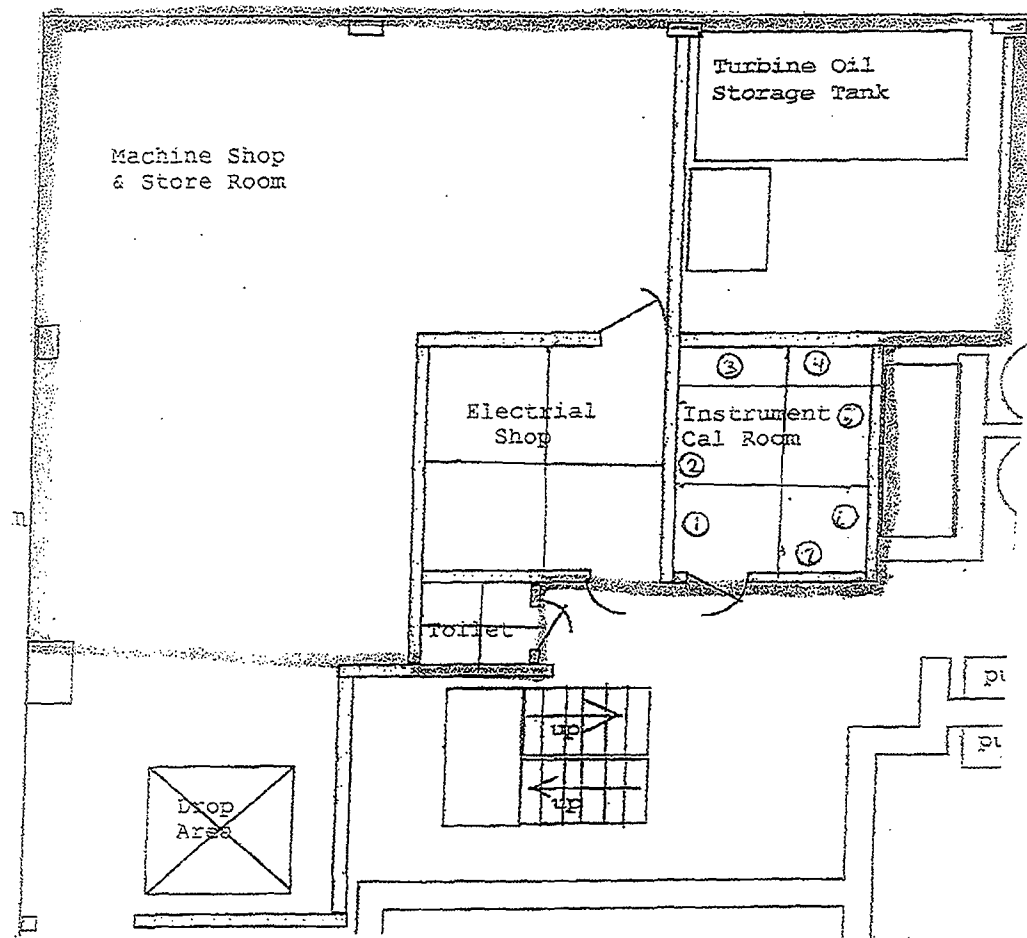
O = Smears + Points
 PKg-35
 Non-Permanent Items
 in Electrical Shop
Structure 02



O = Smears + Points
 PKg. 35
 Floor in Calibration Room
 Floor -3



O = Smears + Points
 Pkg. 35
 Walls in Calibration Room
 Walls - 3

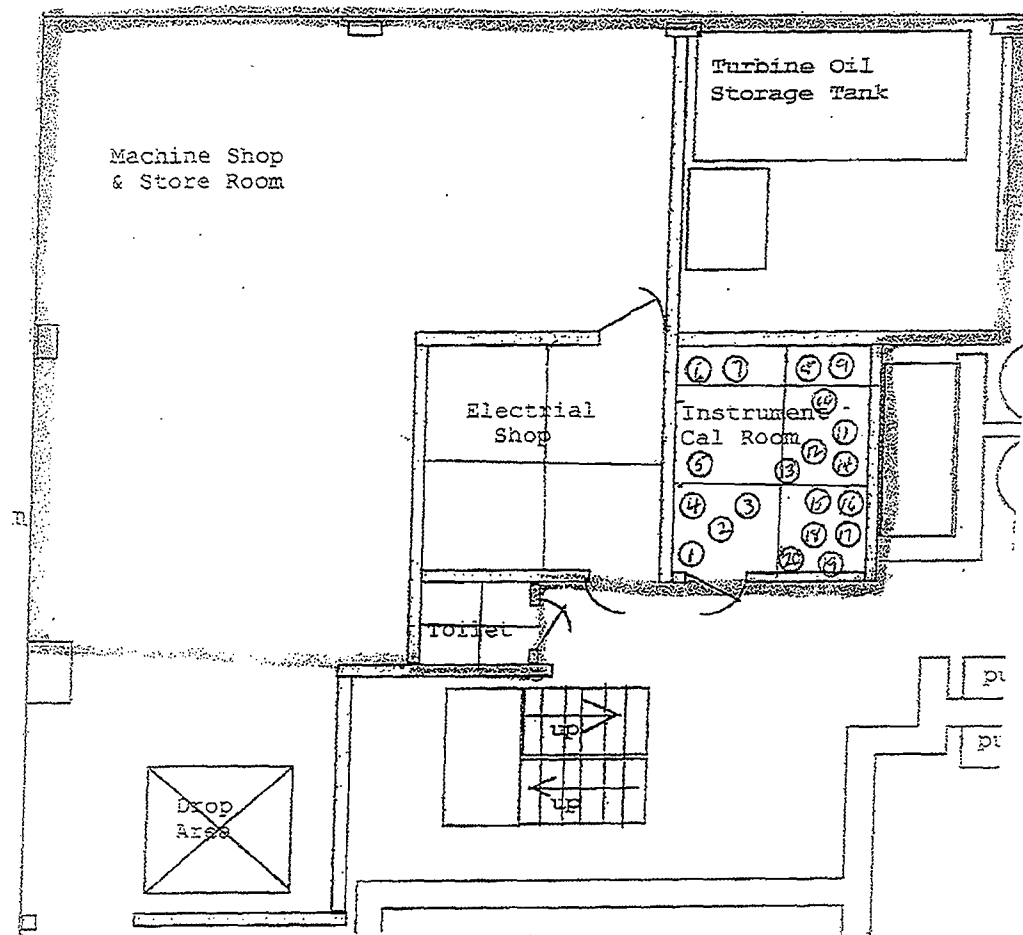


○ = Smears + Points

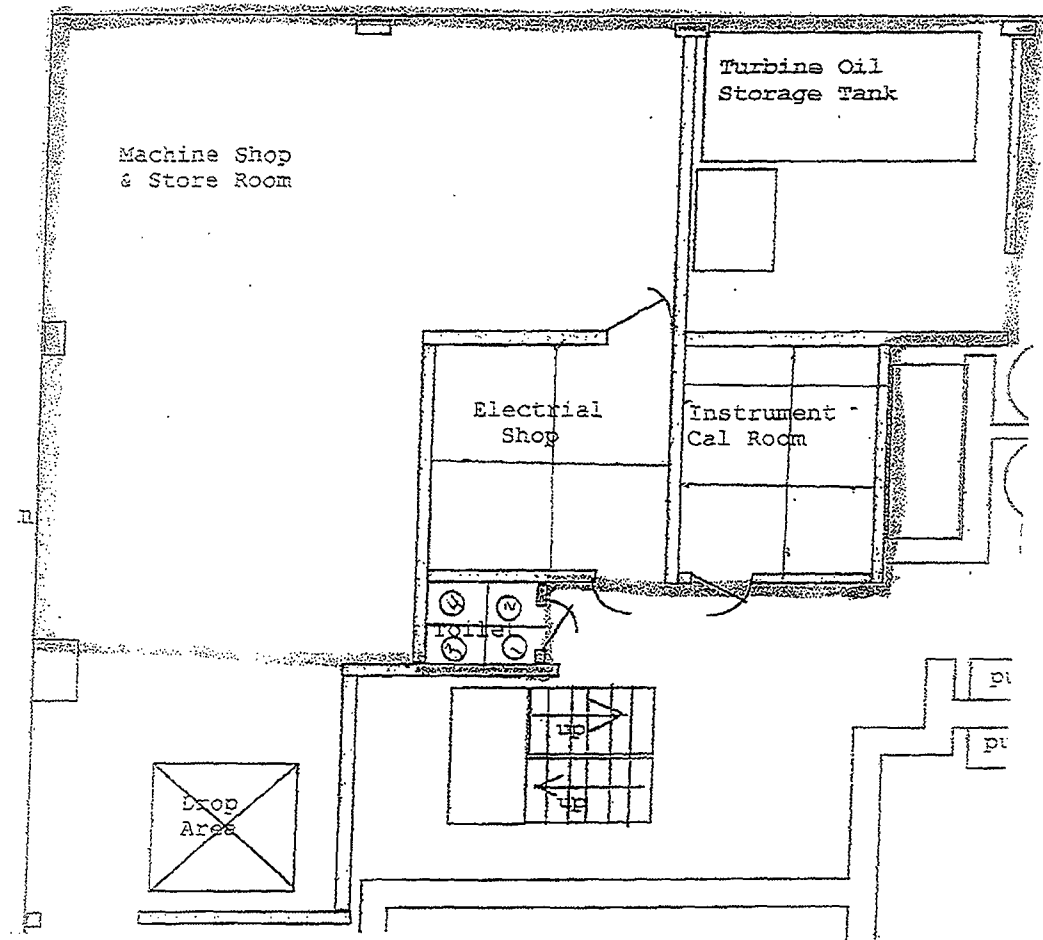
Pkg-35

Non-permanent structure in
Collaboration Room.

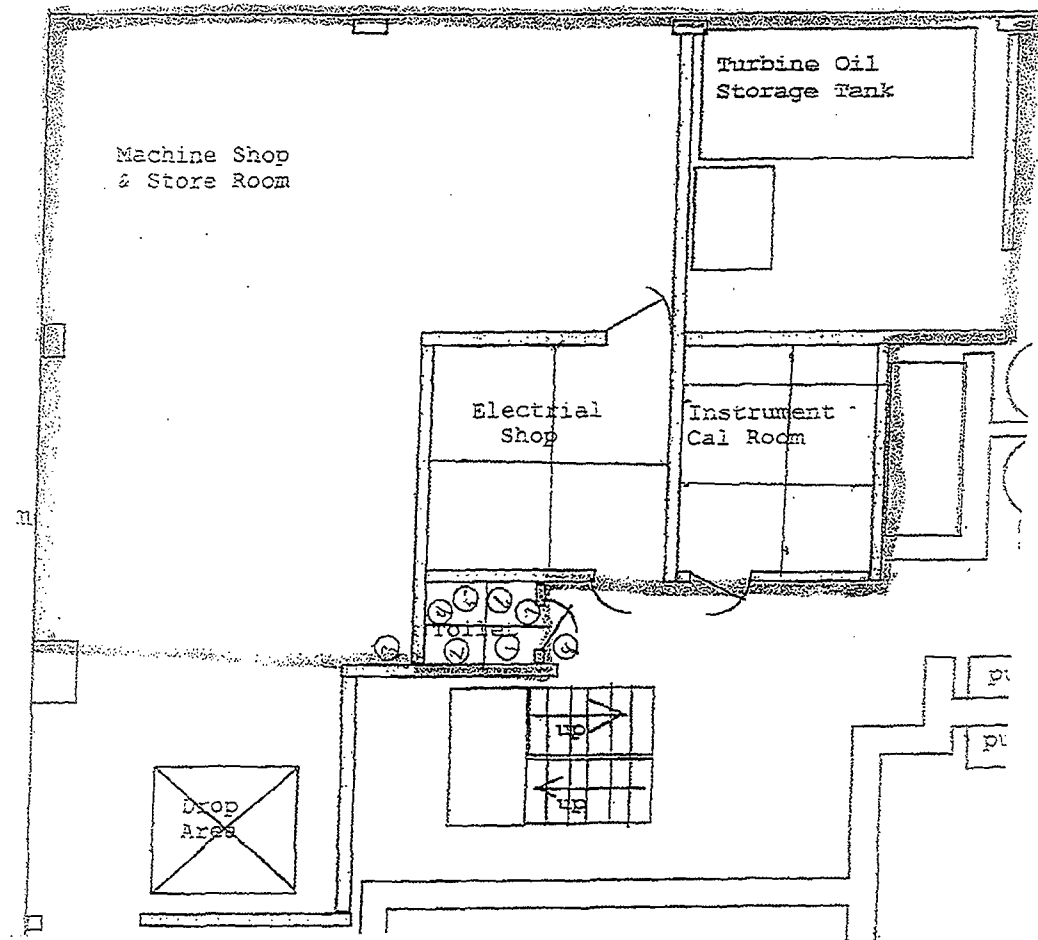
Structure-3



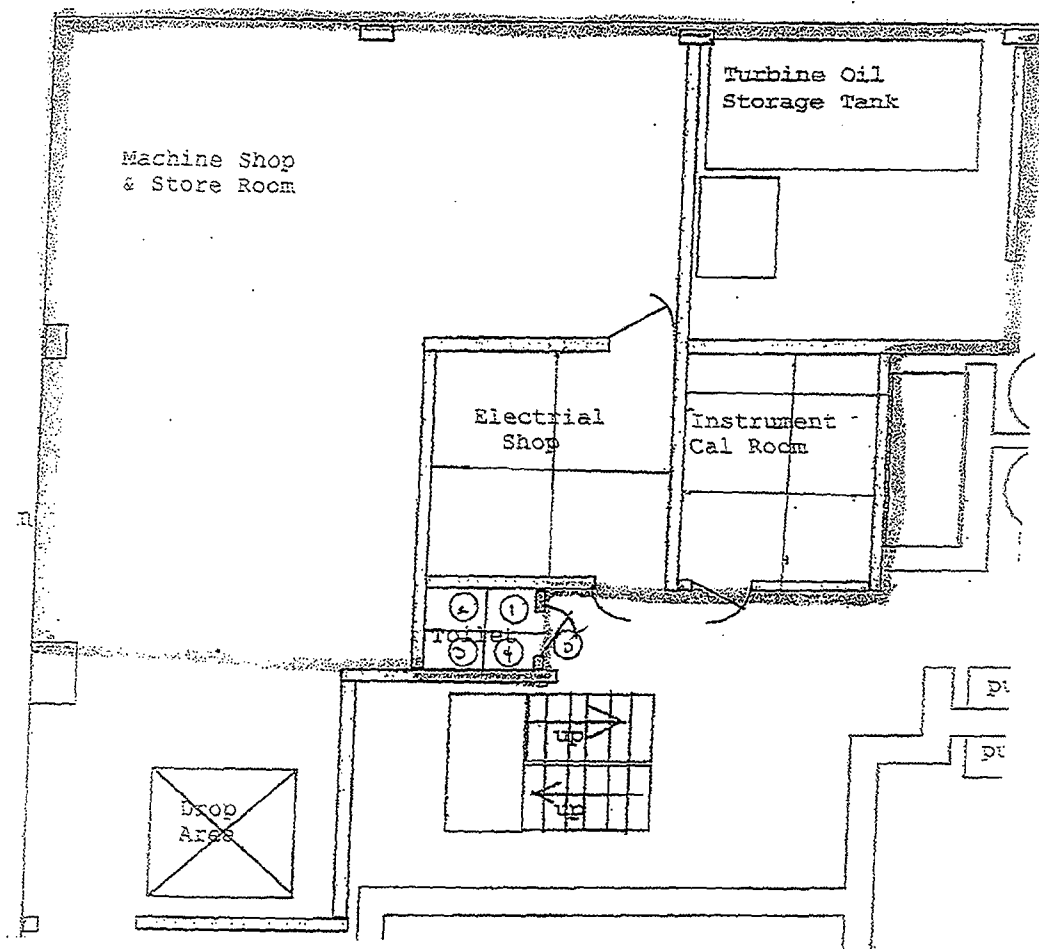
O = Smears + Points
PK5-35
Floor in Toilet
Floor-4



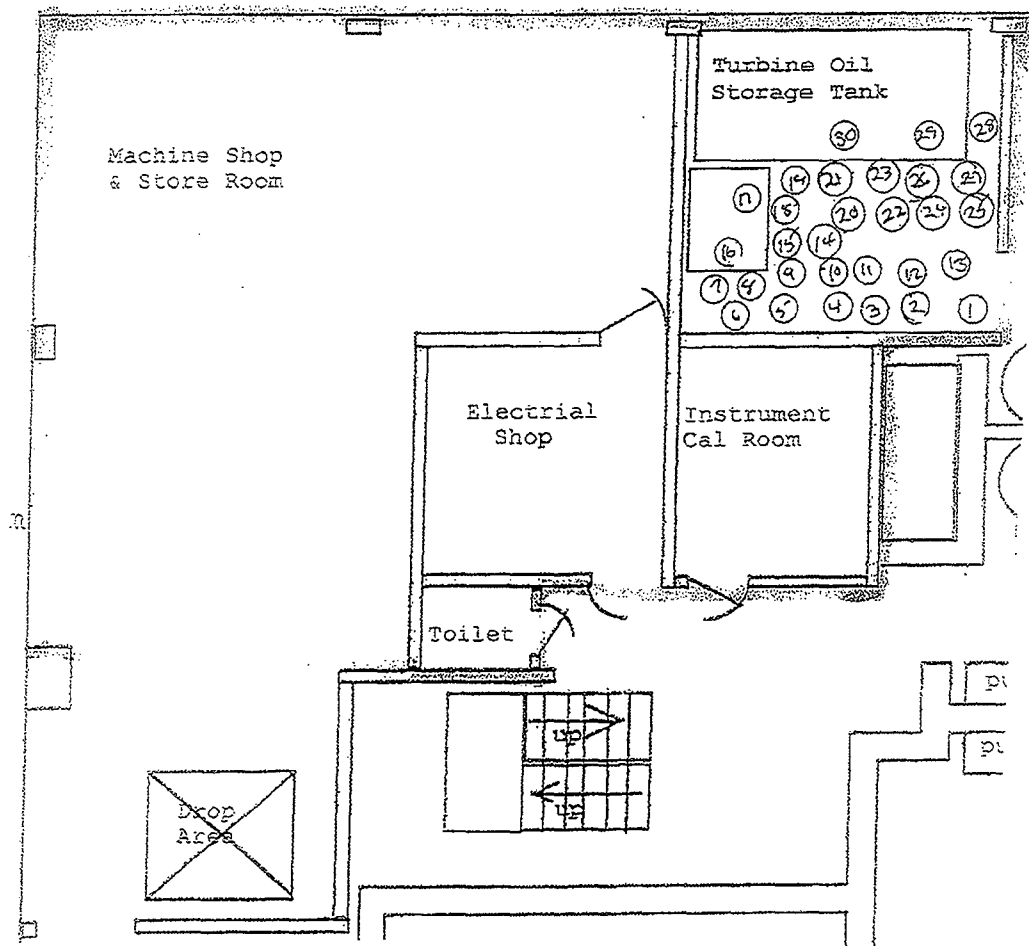
O = Smeers + Points
Plg-35
Walls in Toilet
Wall-4



○ = Smears + Points
 Pkg 35
 Non-permanent Item
 in Toilet
 Structure - 4



○ = Smears + Points
 Pkg 35
 Oil Storage Room
 structure



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 36	Prepared by: Doug Schult
Location: Walls Above 2 Meters And Overhead Structures In the Maintenance Shops On The Cold Side Of The Turbine Building Basement	Date prepared: 10/30/2006
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the walls above 2 meters and horizontal structures in the overhead in the maintenance shops on the cold side of the Turbine Building Basement. The maintenance shops in the Turbine Building basement include the Machine Shop, Electrical Shop, Instrument Calibration Room and Toilet.</p> <p>The Machine Shop is approximately 132 m².</p> <p>The Electrical Shop is approximately 25 m².</p> <p>The Instrument Calibration Room (Laundry Room) is approximately 20 m².</p> <p>The Toilet is approximately 4 m².</p> <p>See attached drawings</p> <p>Class 3 survey areas are not limited in size.</p>

General Survey Instructions
<ol style="list-style-type: none"> 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 2 minutes around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation. 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process. 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager. 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

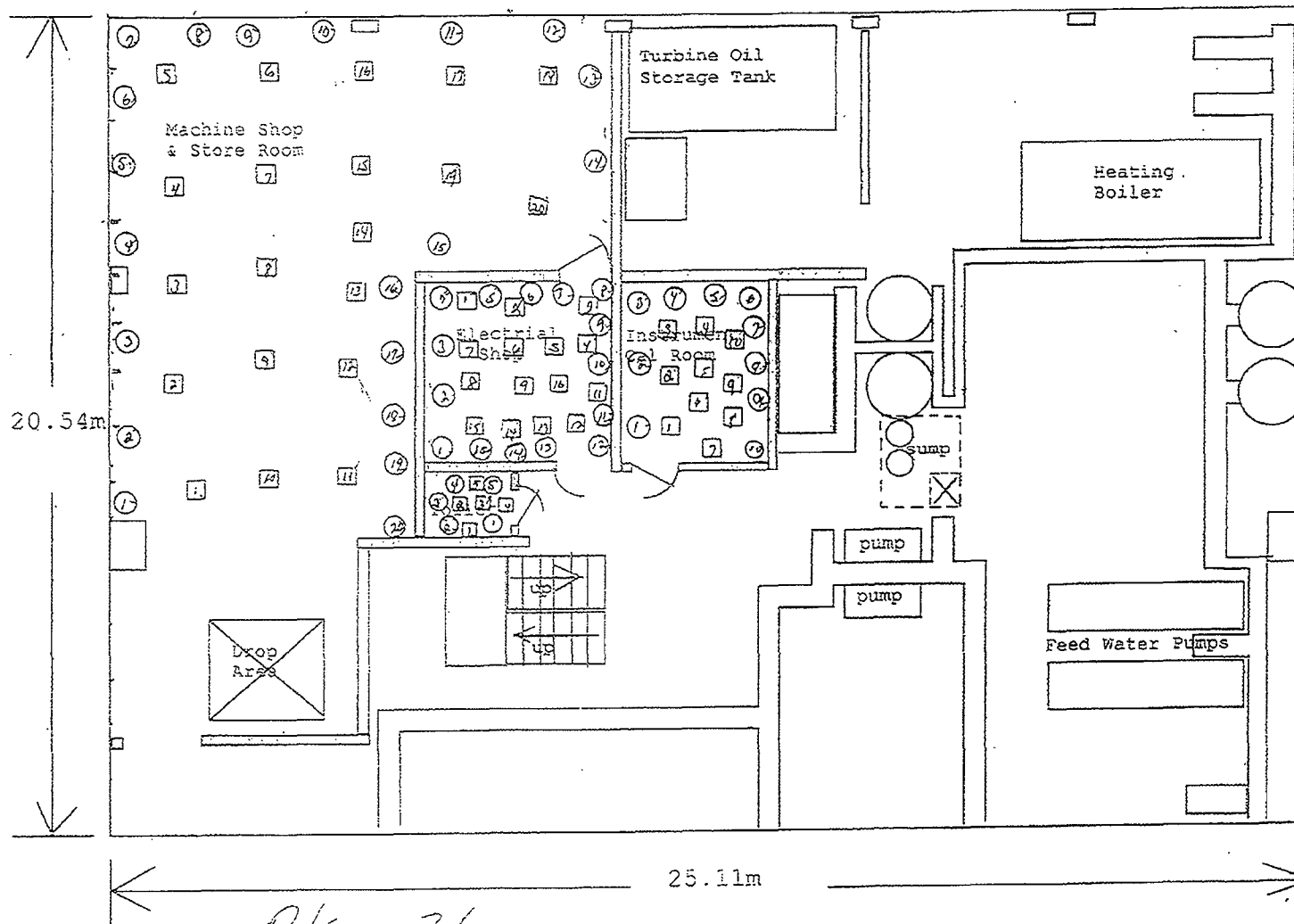
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK036	W0001				Walls Above 2 Meters In Machine Shop	10%	20	NA	NA	20
PK036	ST001				Overhead Structures In Machine Shop	10%	20	NA	NA	20
PK036	W0002				Walls Above 2 Meters In Electrical Shop	10%	15	NA	NA	15
PK036	ST002				Overhead Structures In Electrical Shop	10%	15	NA	NA	15
PK036	W0003				Walls Above 2 Meters In Instrument Calibration Room	10%	10	NA	NA	10
PK036	ST003				Overhead Structures In Instrument Calibration Room	10%	10	NA	NA	10
PK036	W0004				Walls Above 2 Meters In Toilet	10%	5	NA	NA	5
PK036	ST004				Overhead Structures In Toilet	10%	5	NA	NA	5

Package Review	
Date Package Completed	11-3-06
Package Reviewed by and Date	Paul Long 1-17-07
Survey Comments	
Due to safety concerns, safety harnesses will be worn when surveying the remaining sections of the turbine and the exposed structures surrounding the turbine	

Turbine bldg Cold Side



PKg 36

○ wall - points & means

□ overhead structures - point & means



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 37	Prepared by: Doug Schult
Location: Floor And Walls Below 2 Meters In The Water Treatment Building	Date prepared: 10/26/06
Area Classification: Impacted - Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, and non permanent structures in the Water Treatment Building.</p> <p>The bottom floor of the Water Treatment Building is approximately 190 m².</p> <p>The middle floor of the Water Treatment Building is approximately 250 m²</p> <p>The top floor of the Water Treatment Building is approximately 220 m²</p> <p>See attached drawings</p> <p>Class 2 survey areas are limited in size to less than 1000 m²</p>

General Survey Instructions

- 1) Grid the floor using 2 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 2 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using a non permanent marker such as pieces of tape or stickers. Label the grids using an numeric numbering system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 50% of the accessible surfaces within each grid holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) For the floor grids perform a 3 minute scan per grid.
For the wall grids perform a 3 minute scan per grid.
For the non permanent items perform a 1 minute scan for each total beta activity measurement.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 2 to give the X coordinate and the second random number is multiplied by 2 to give the Y coordinate

Floors: R=0.387, X=0.774 m R=0.657, Y= 1.31 m

Walls: R=0.387, X=0.774 m R=0.657, Y= 1.31 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.453, X=0.906 m R=0.887, Y= 1.77 m

Walls: R=0.453, X=0.906 m R=0.887, Y= 1.77 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid

- 7) Collect a total beta activity measurement at each fixed point measurement location. Use the L7 code to record the measurement location number in which the measurement is being obtained.
- 8) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 9) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

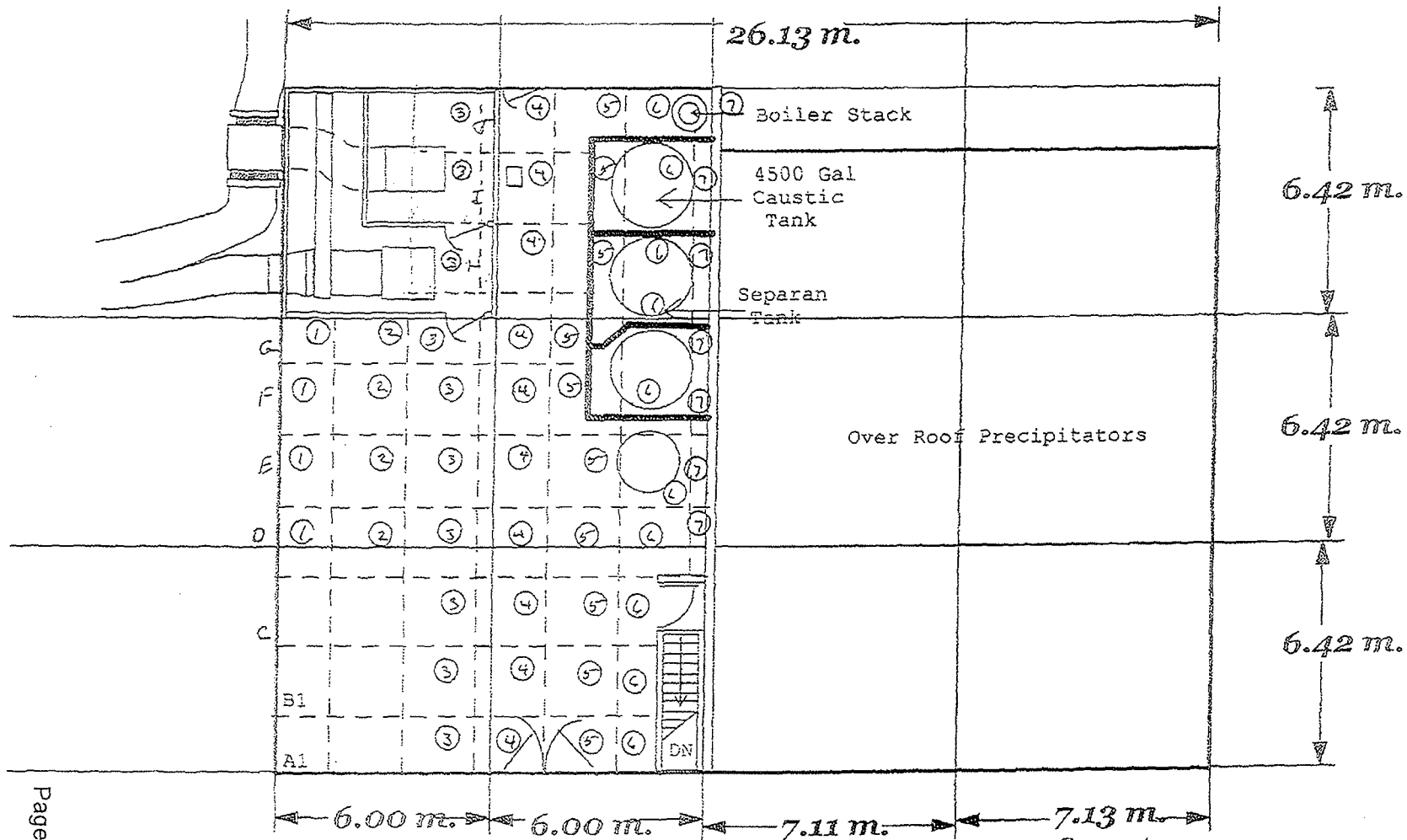
Special Instructions

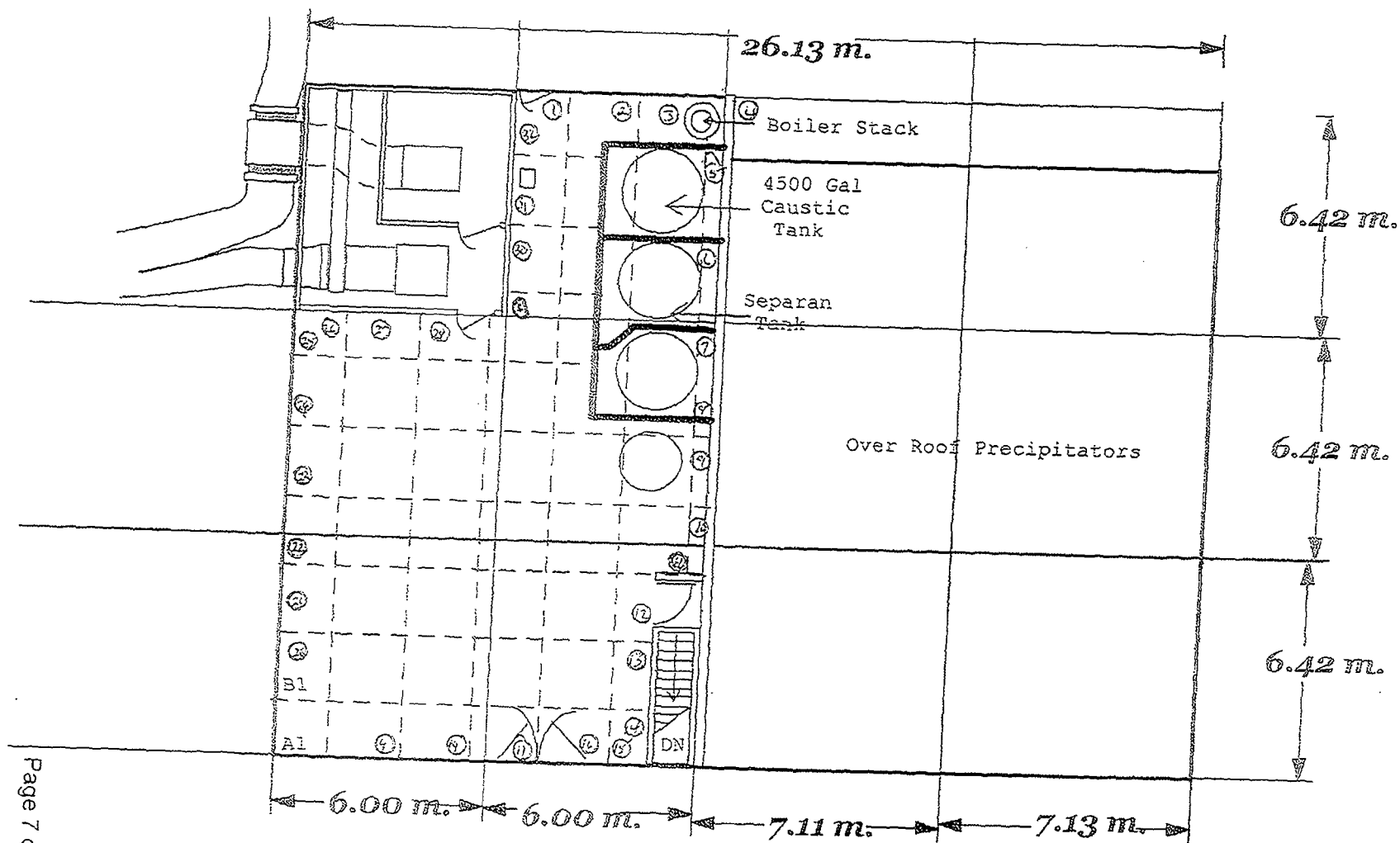
- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK037	FL01A				Floor In Smaller Room On Bottom Floor	50%	Each Grid	NA	NA	Each Grid
PK037	W001A				Walls Below 2 Meters In Smaller Room On Bottom Floor	50%	Each Grid	NA	NA	Each Grid
PK037	ST01A				Non Permanent Structures In Smaller Room On Bottom Floor	50%	10	NA	NA	10
PK037	FL01B				Floor In Larger Room On Bottom Floor	50%	Each Grid	NA	NA	Each Grid
PK037	W001B				Walls Below 2 Meters In Larger Room On Bottom Floor	50%	Each Grid	NA	NA	Each Grid
PK037	ST01B				Non Permanent Structures In Larger Room On Bottom Floor	50%	10	NA	NA	10
PK037	FL002				Floor On Middle Floor	50%	Each Grid	NA	NA	Each Grid
PK037	W0002				Walls On Middle Floor	50%	Each Grid	NA	NA	Each Grid
PK037	ST002				Non Permanent Structures On Middle Floor	50%	10	NA	NA	10
PK037	FL003				Floor On Top Floor	50%	Each Grid	NA	NA	Each Grid
PK037	W0003				Walls On Top Floor	50%	Each Grid	NA	NA	Each Grid
PK037	ST003				Non Permanent Structures On Top Floor	50%	10	NA	NA	10

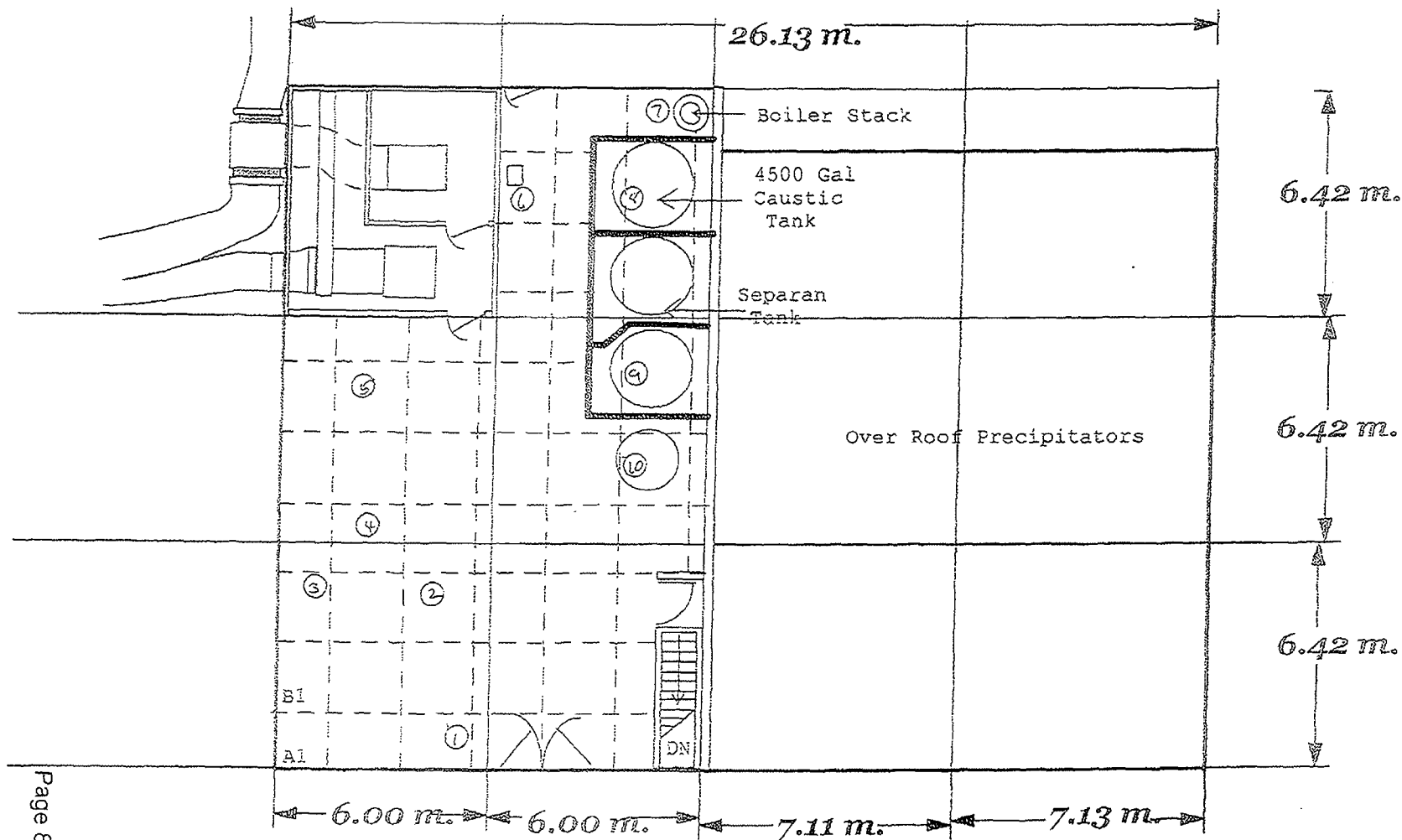
Package Review	
Date Package Completed	11-2-06
Package Reviewed by and Date	Carl [Signature] 1-17-07 [Signature] 1/25/07

Survey Comments
Due to safety concerns, safety harnesses will be worn when surveying the remaining sections of the turbine and the exposed structures surrounding the turbine





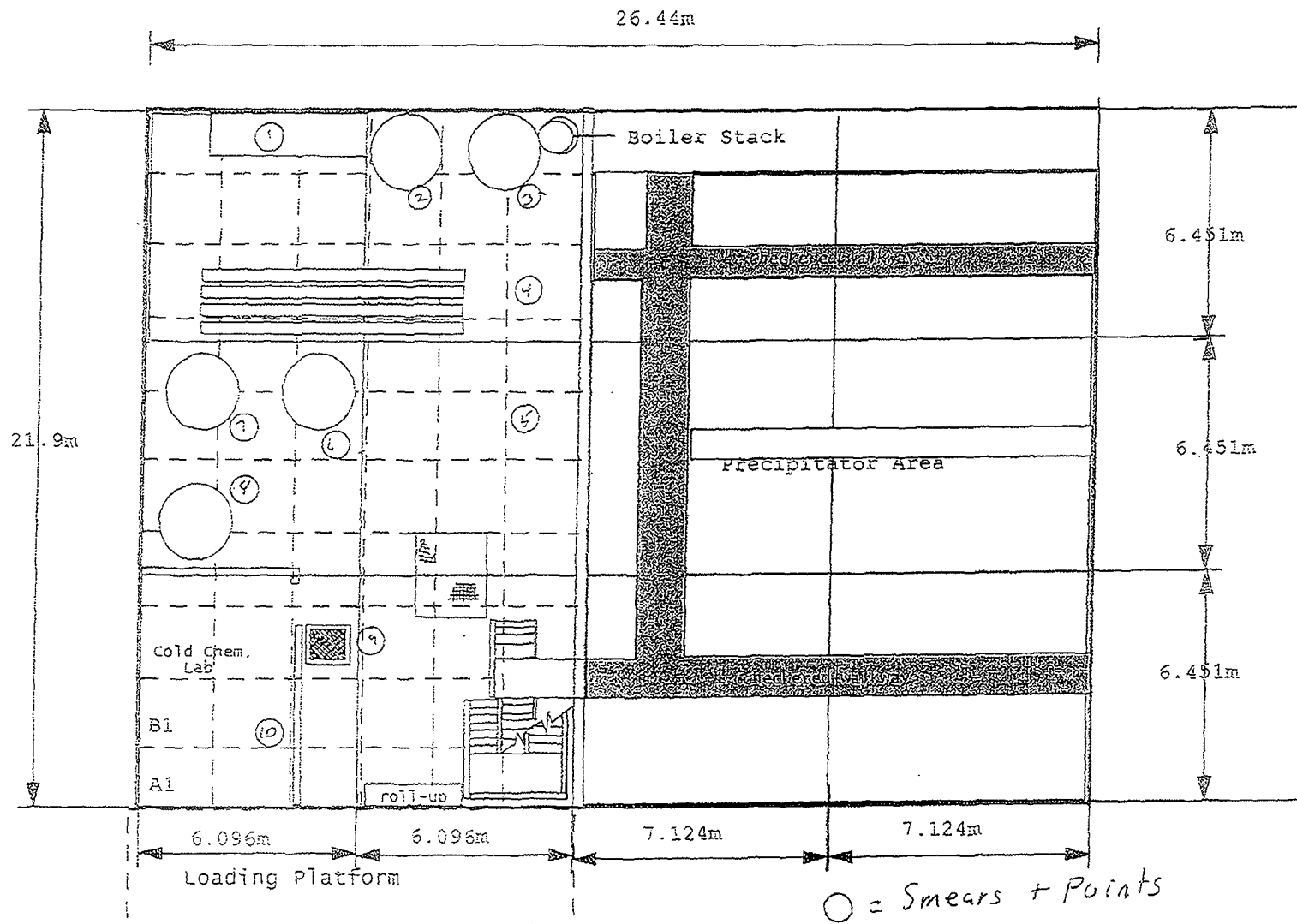
O = Smeurs + Points
 Demin Room PKg 37
 walls on top Floor
 wall-3



Page 8 of 17

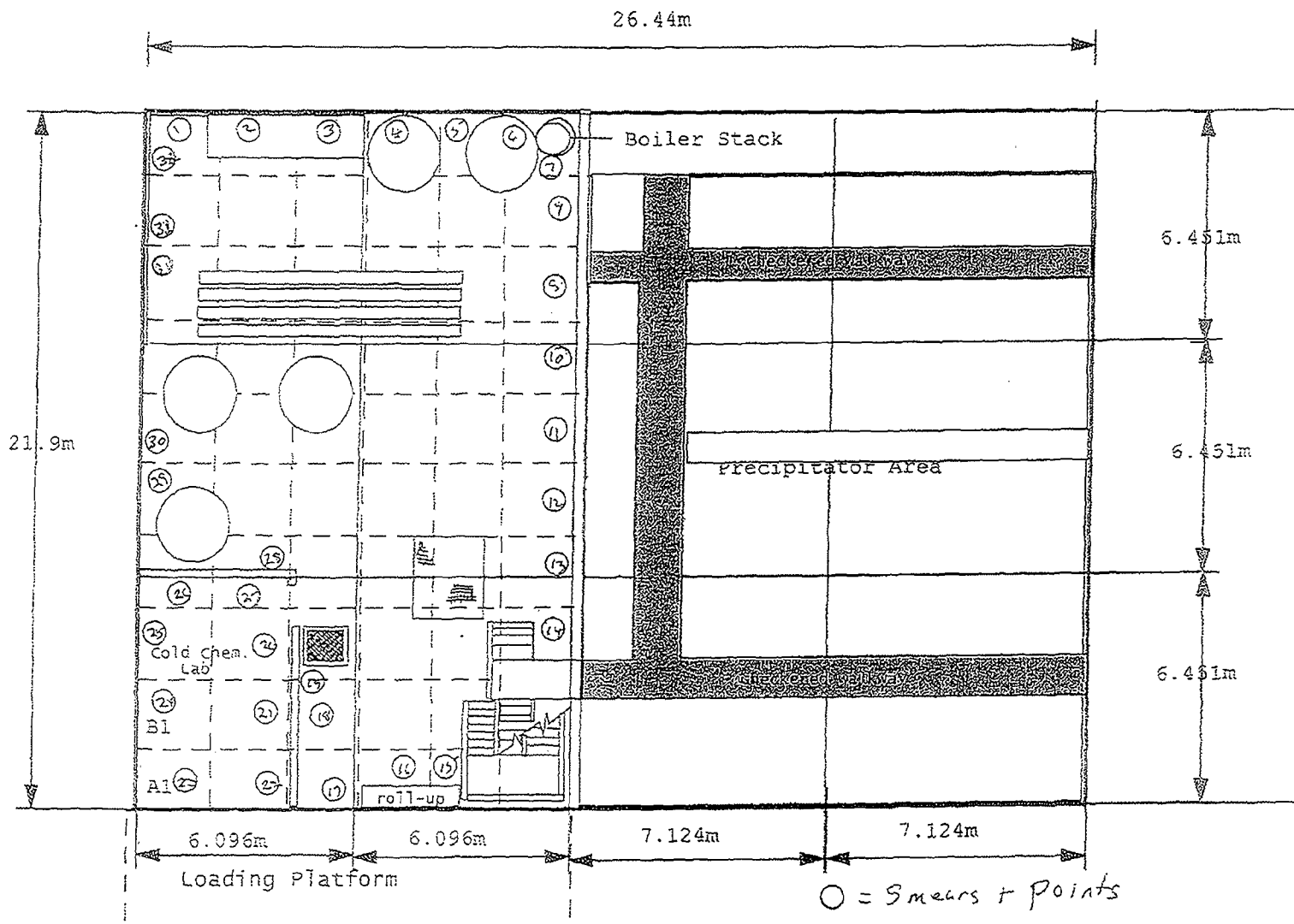
Oz Smears + Points
Demin Room Pkg 37

Non-Permanent Structures on Top Floor
structure - 3



Water Treatment Plant

○ = Smears + Points
 PKs 37
 Non-permanent Structure on
 Middle Floor
 Structure Floor 2



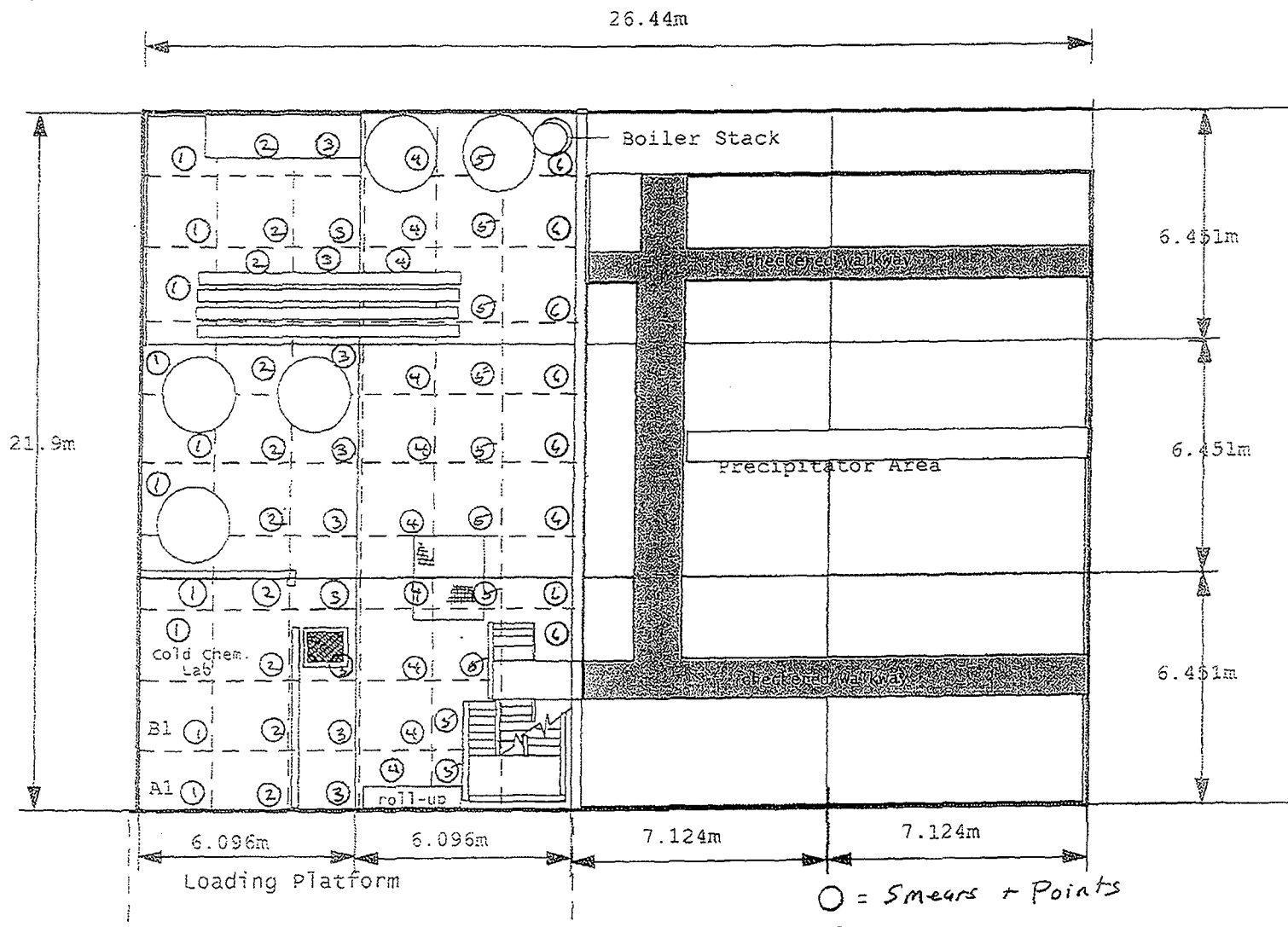
Water Treatment Plant

○ = Smears + Points

PKg- 37

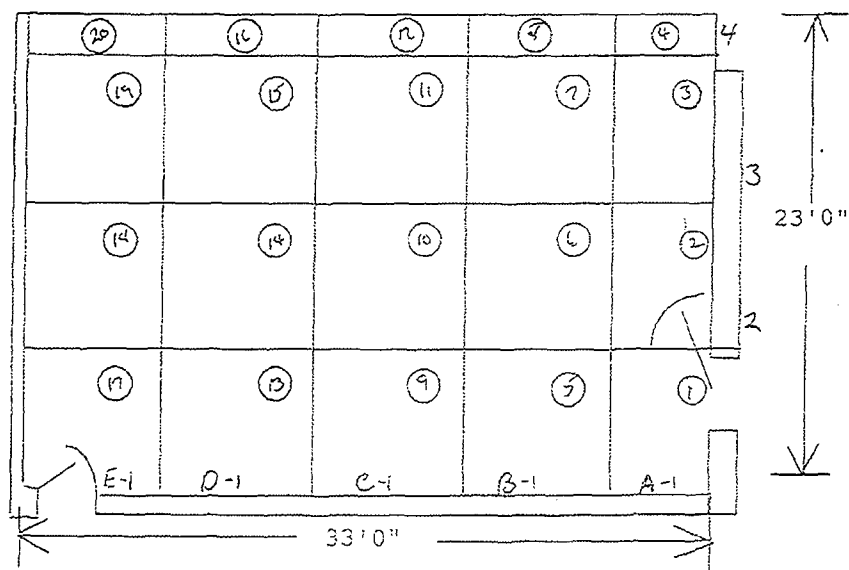
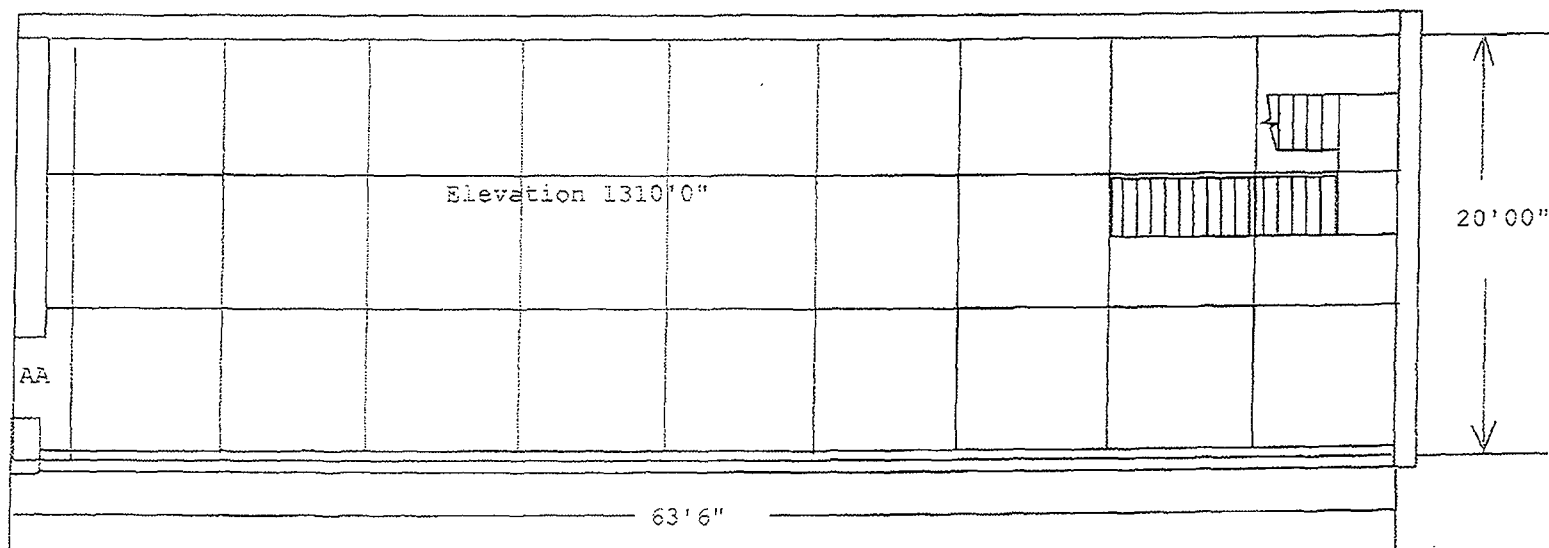
Walls on middle Floor

Walls - 2



Water Treatment Plant PKg 37
 Floor on middle Floor
 Floor 2

○ = Smears + Points



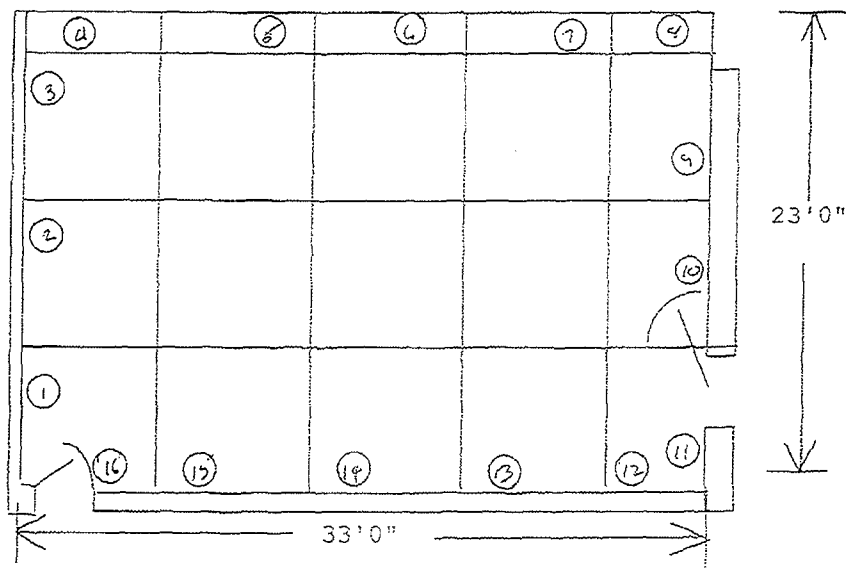
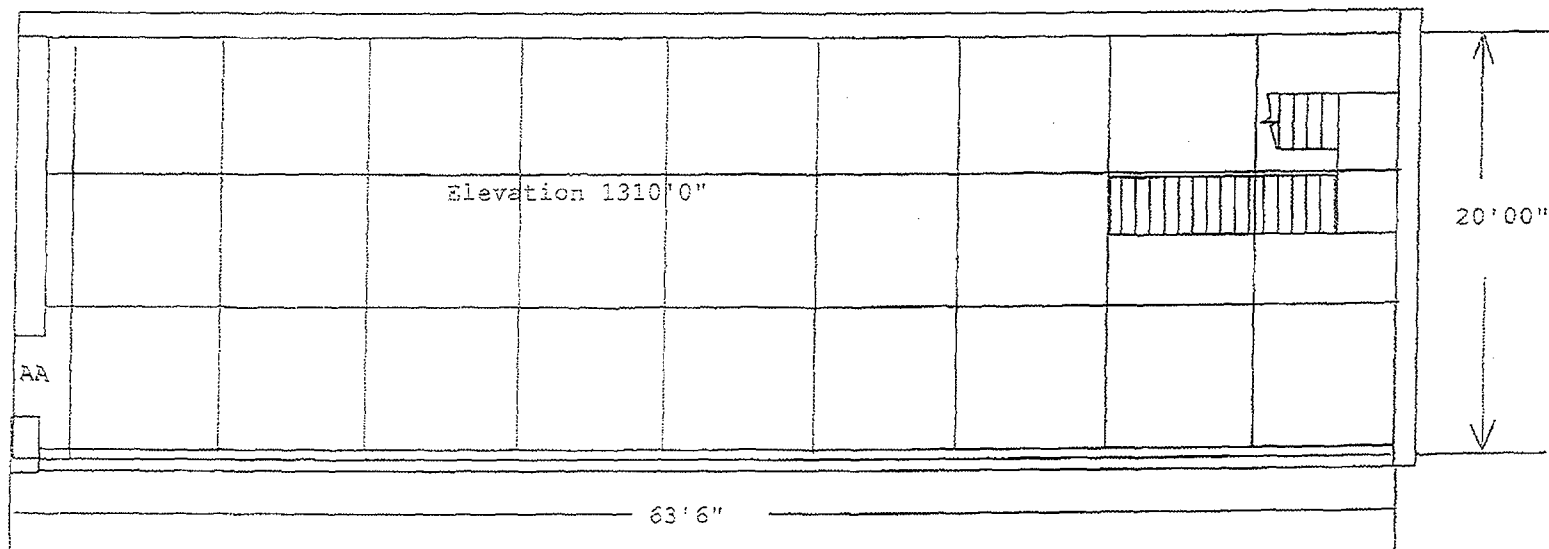
Room join at AA

○ = Smears + Points

PKg 37

Floor In Smaller Room
On Bottom Floor

FLO-1A



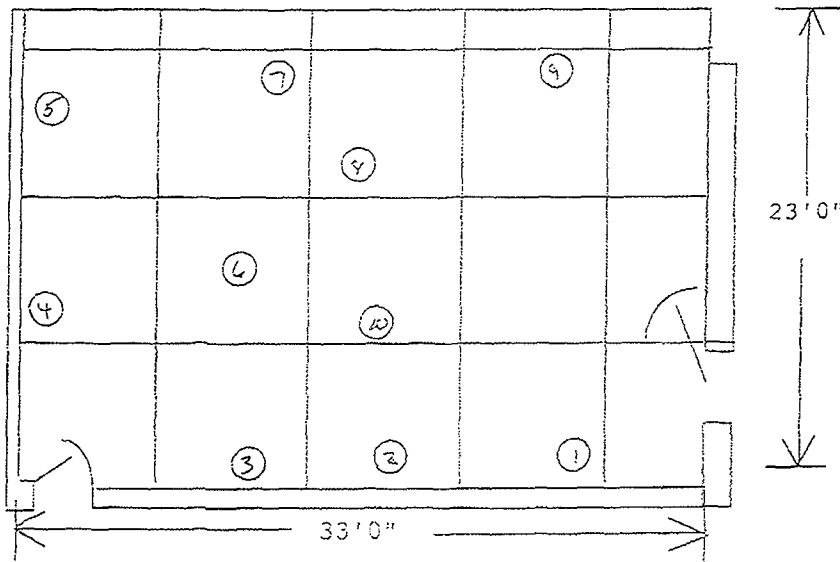
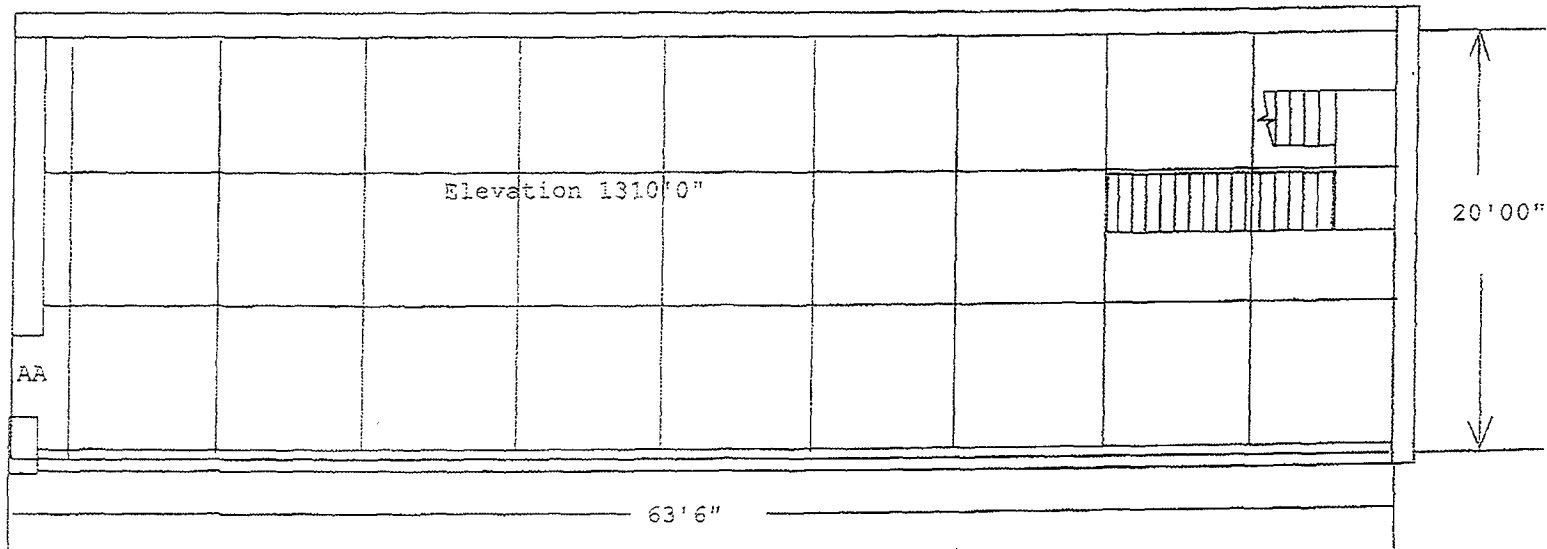
Room join at AA

○ c Smears + Points

Pkg 37

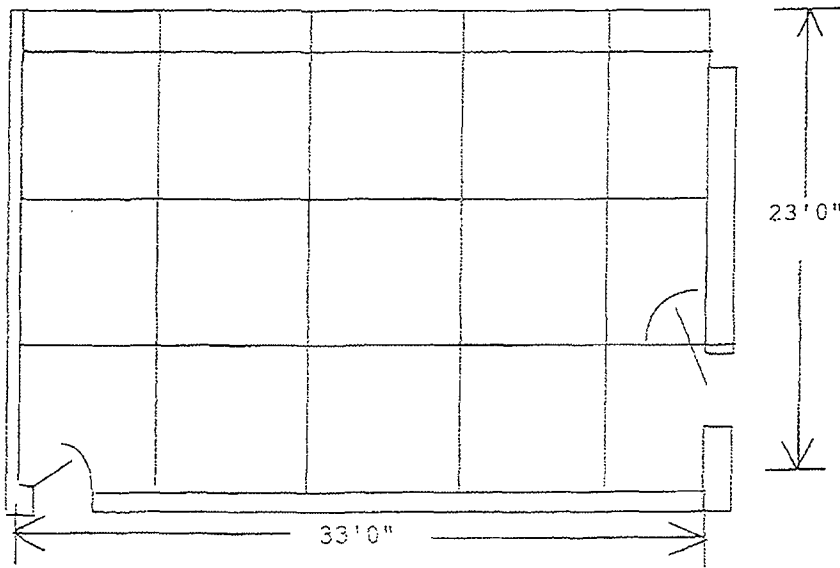
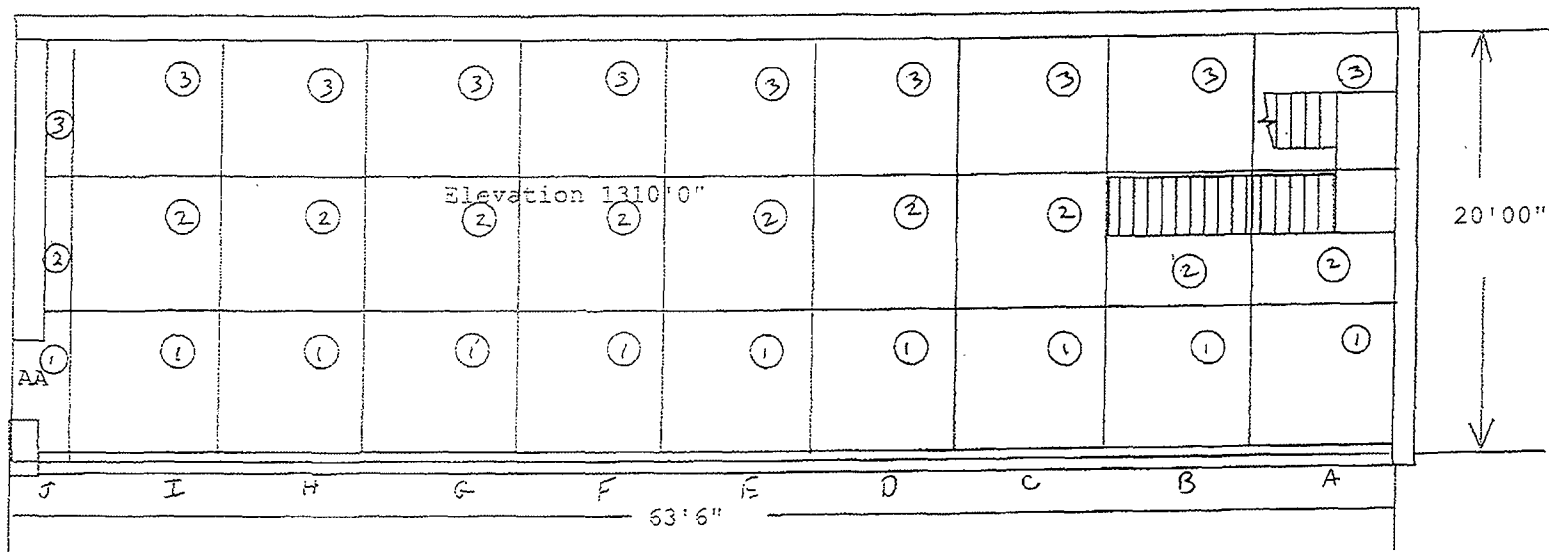
Walls Below 2 Meters In
Smaller Room on Bottom Floor

Walls - 1A



Room join at AA
 ○ = Smears + Points

Pkg 37
 Non-permanent Structure In Smaller
 Room on Bottom Floor
 Structures - 1A

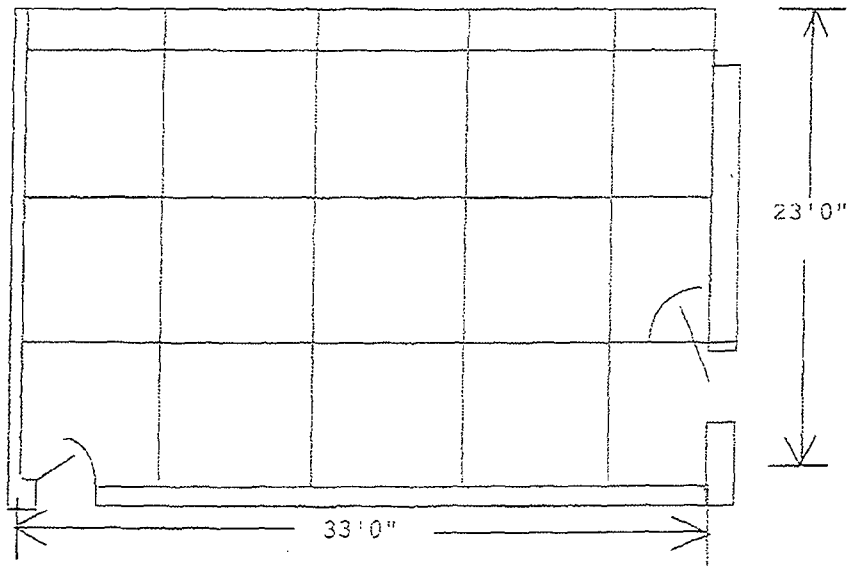
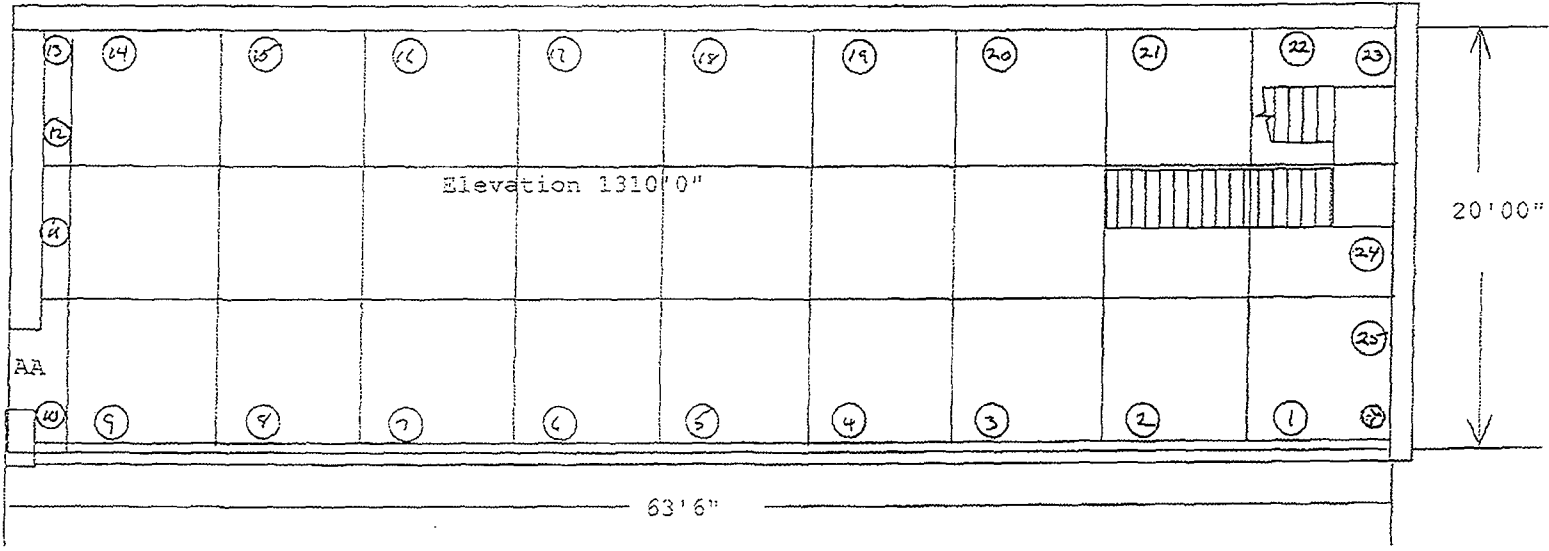


Room join at AA
 ○ = Smears + Points

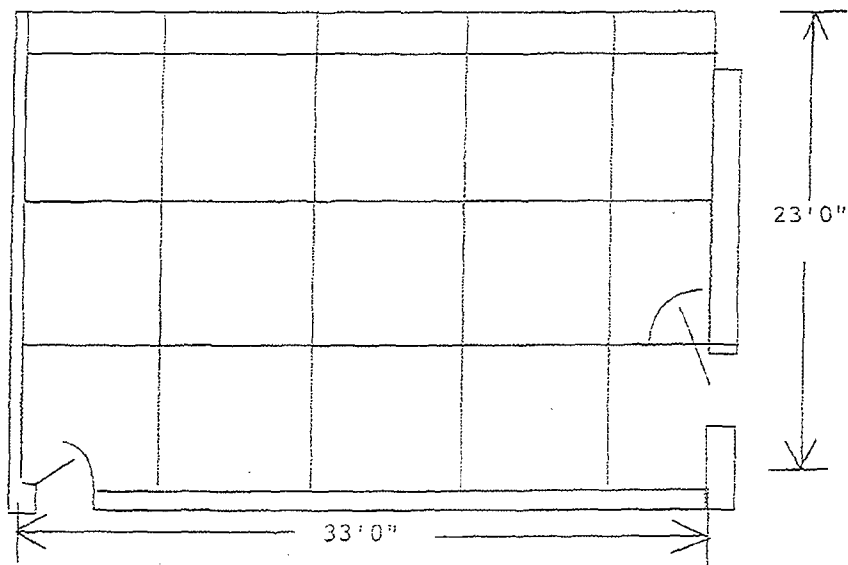
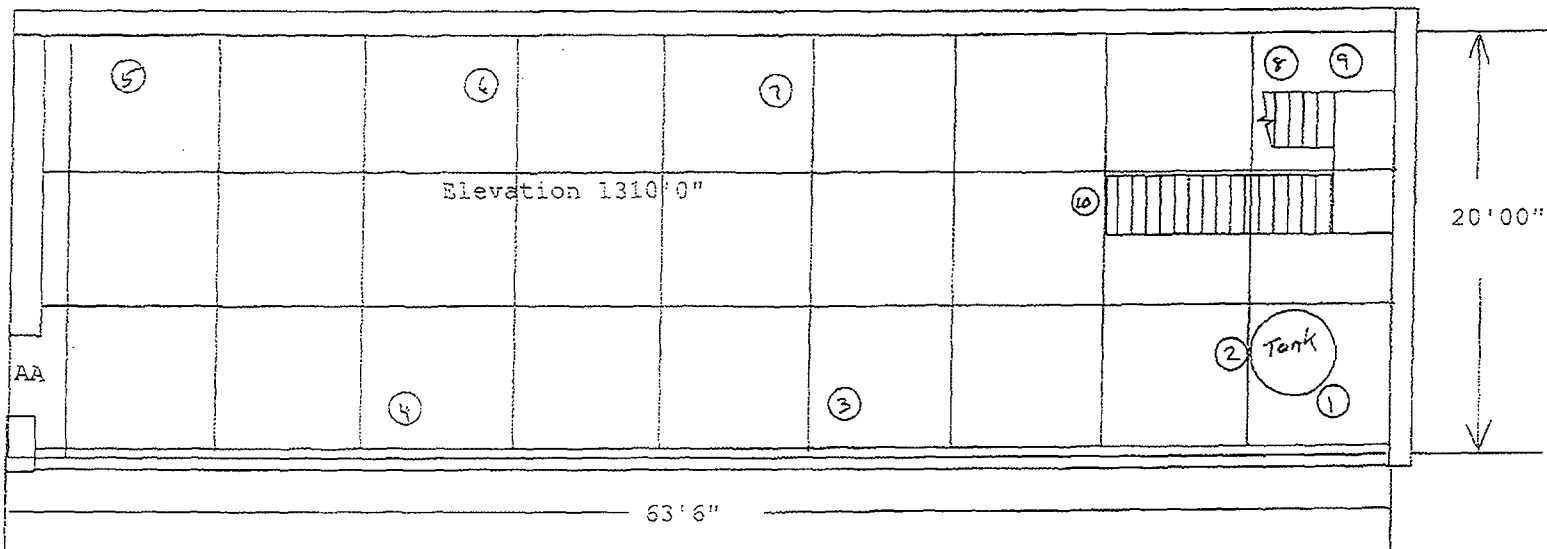
Pkg 37

Floor In Larger Room On Bottom Floor

Floor - 1B



Room join at AA
 ○ 2 Smears + Points
 Pkg 37
 Walls Below 2 Meters In Larger Room
 on Bottom Floor
 Walls - 1B



Room join at AA

○ = Smears + Points

Pkg 37

~~Non-permanent~~
25-12-07

Non-permanent Structure I Larger

Room on Bottom Floor

Structures - 1B



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 38	Prepared by: Doug Schult
Location: Walls Above 2 Meters And Overhead Structures In The Water Treatment Building	Date prepared: 10/26/2006
Area Classification: Impacted -- Class 3	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the walls above 2 meters and horizontal structures in the overhead in the Water Treatment Building</p> <p>The bottom floor of the Water Treatment Building is approximately 190 m².</p> <p>The middle floor of the Water Treatment Building is approximately 250 m²</p> <p>The top floor of the Water Treatment Building is approximately 220 m²</p> <p>See attached drawings</p> <p>Class 3 survey areas are not limited in size.</p>

General Survey Instructions
<ol style="list-style-type: none">1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 2 minutes around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK038	W0001				Walls Above 2 Meters In Smaller Room On Bottom Floor	10%	20	NA	NA	20
PK038	ST001				Overhead Structures In Smaller Room On Bottom Floor	10%	20	NA	NA	20
PK038	W0002				Walls Above 2 Meters In Larger Room On Bottom Floor	10%	20	NA	NA	20
PK038	ST002				Overhead Structures In Larger Room On Bottom Floor	10%	20	NA	NA	20
PK038	W0003				Walls Above 2 Meters On Middle Floor	10%	20	NA	NA	20
PK038	ST003				Overhead Structures On Middle Floor	10%	20	NA	NA	20
PK038	W0004				Walls Above 2 Meters On Top Floor	10%	20	NA	NA	20
PK038	ST004				Overhead Structures On Top Floor	10%	20	NA	NA	20
PK038	ST005				Small Rooms On Top Floor	10%	20	NA	NA	20

Package Review

Date Package Completed 11-2-06 Jerry Theriot / Carl Truitt By Carl Truitt 1-17-07

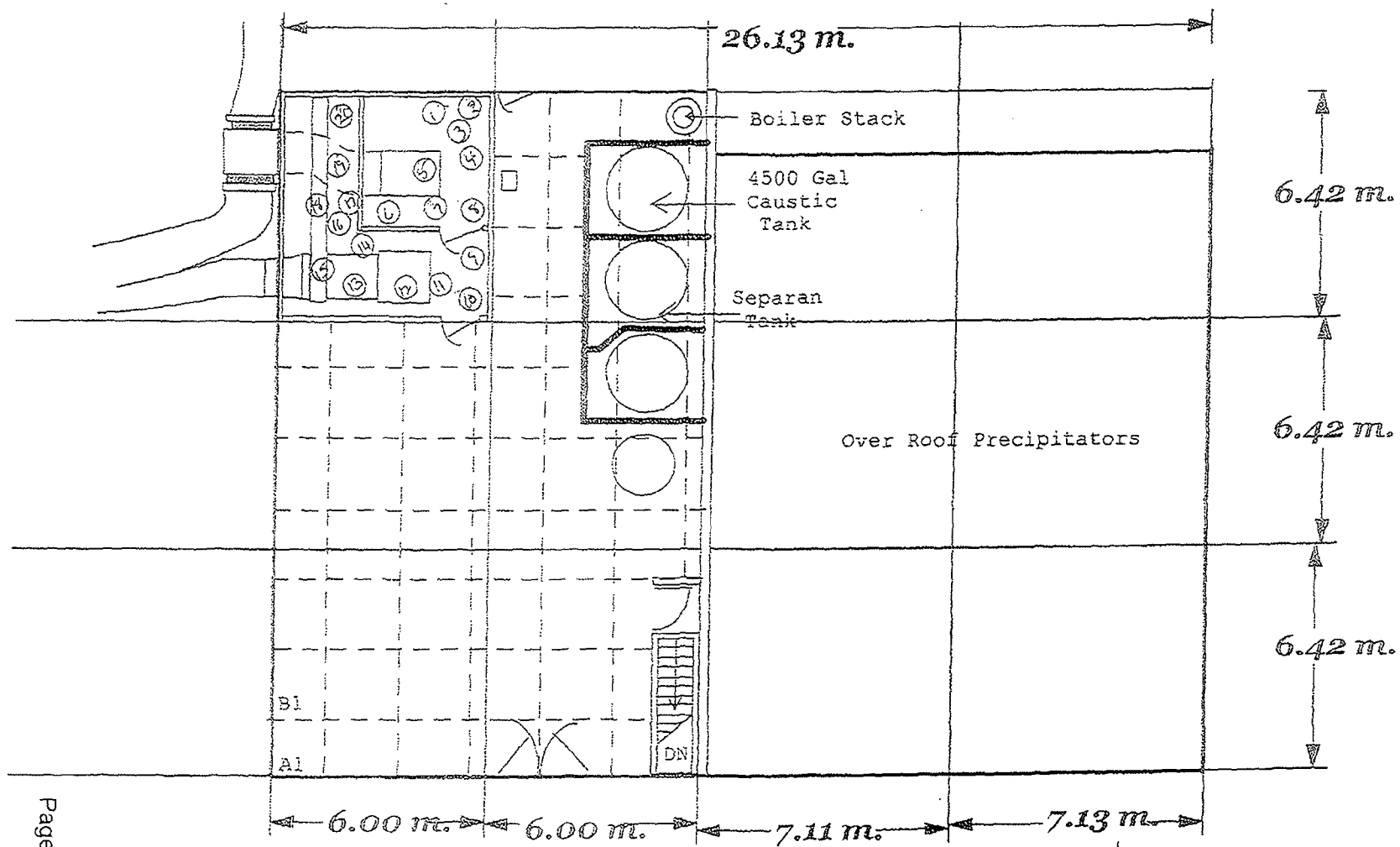
Package Reviewed by and Date _____

D. J. C. 1/25/01

Survey ID	Survey Date	Survey Comments
030 - 1105107		

Due to safety concerns, safety harnesses will be worn when surveying the remaining sections of the turbine and the exposed structures surrounding the turbine

[illegible]

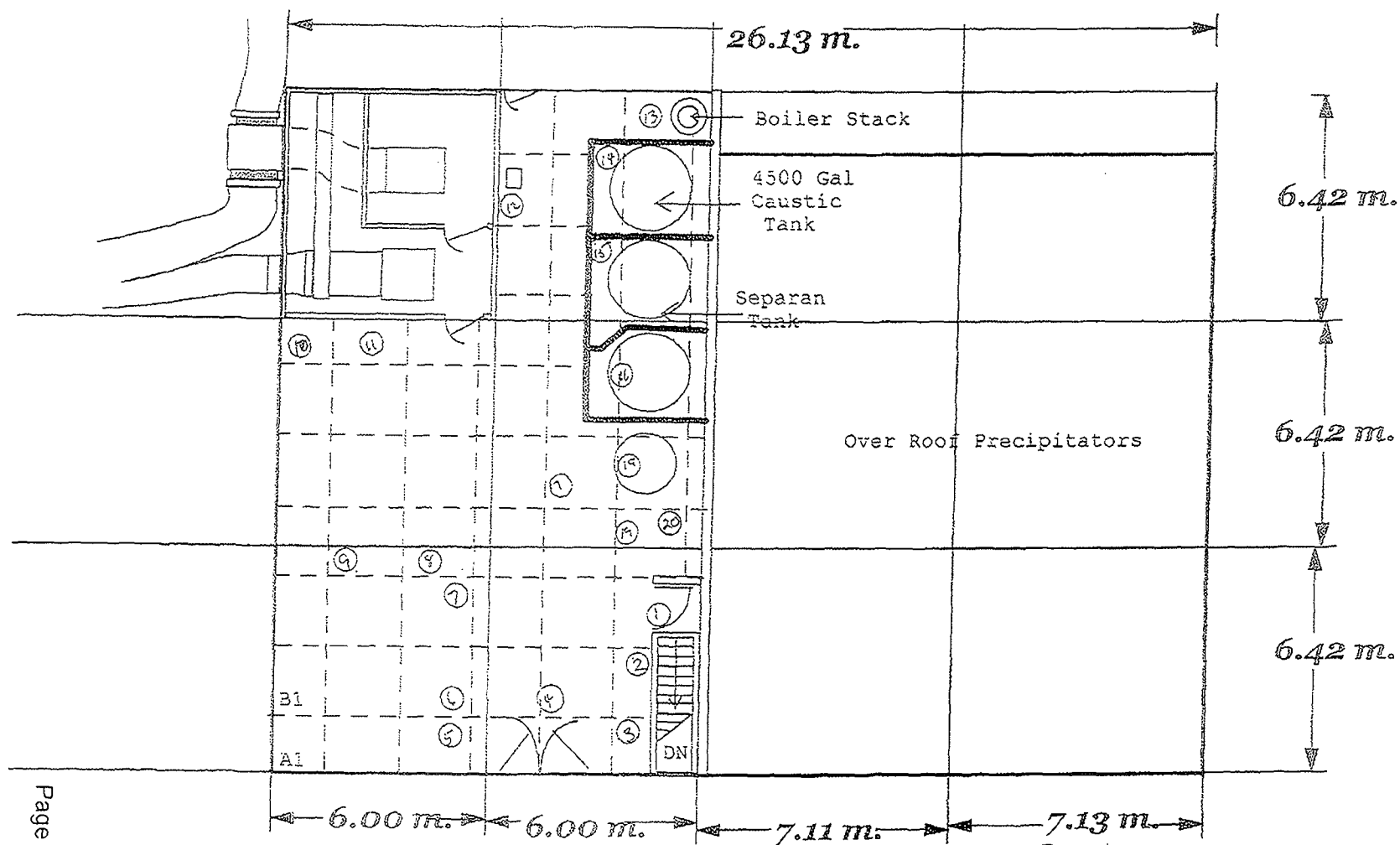


○ = Smears + Points

Demin Room

Pkg 38

Small Room on top Floor
Structure -5

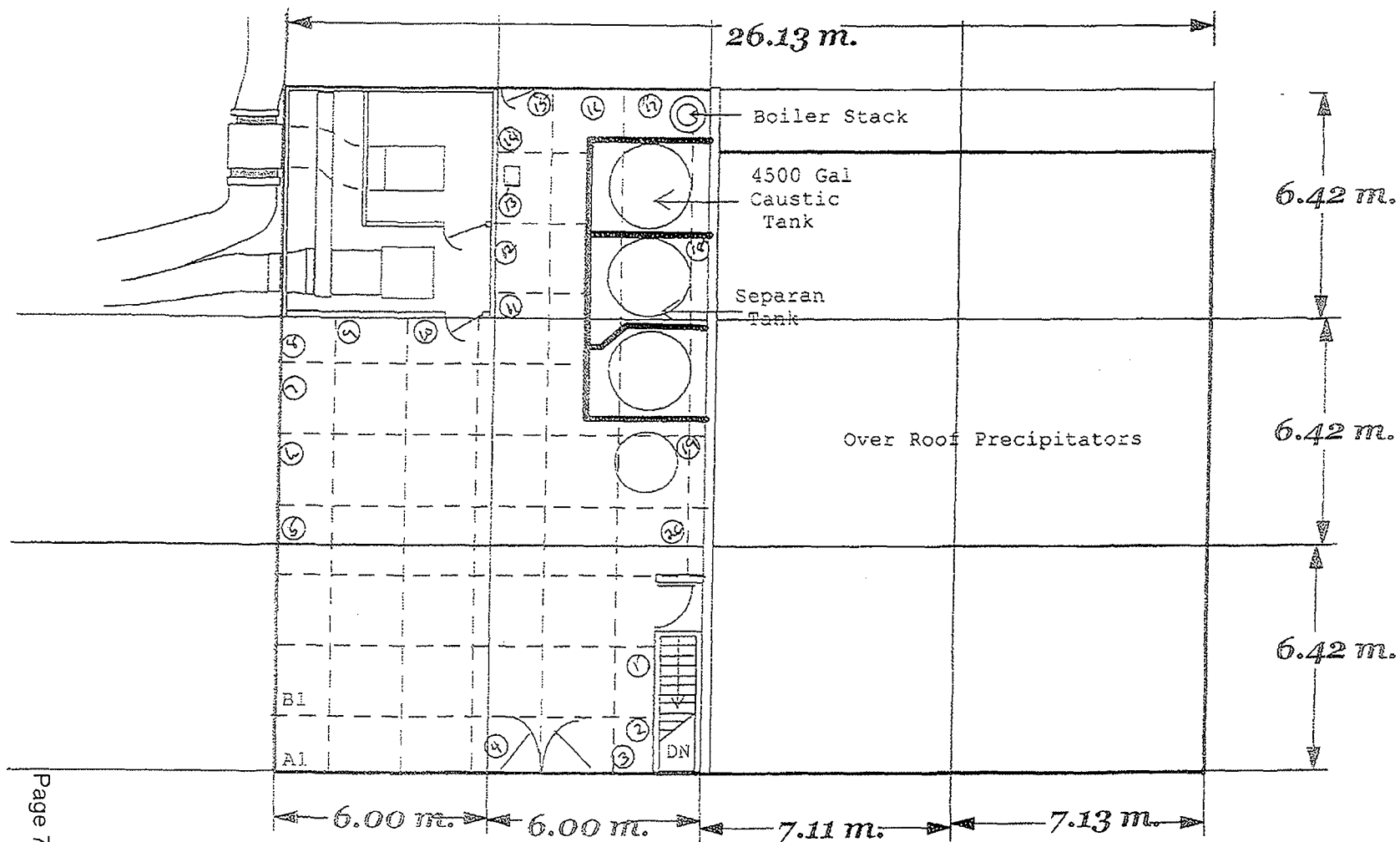


○ = Smears + Points

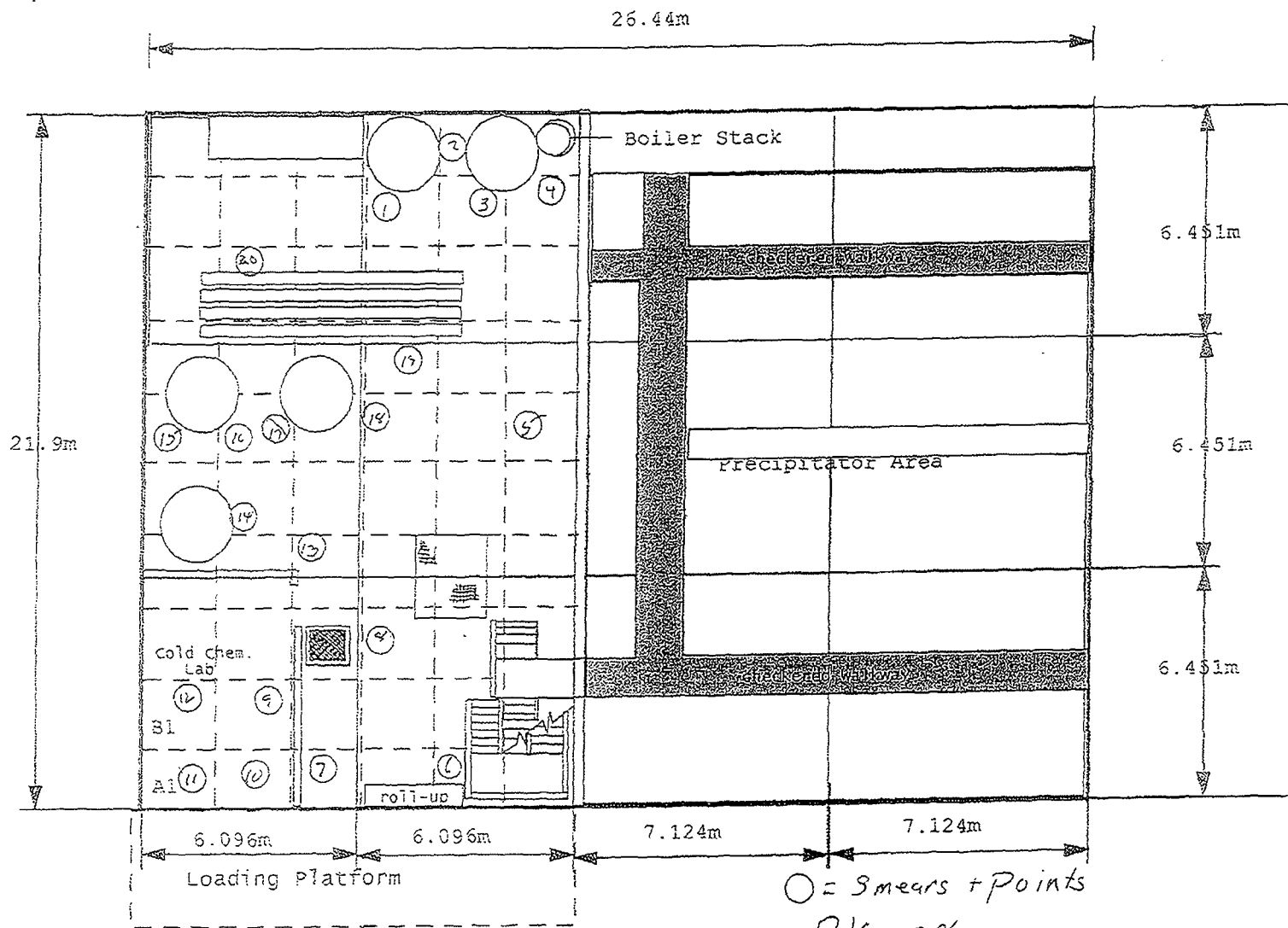
Demin Room PKg 38

Overhead Structures on Top Floor

Structures - 4

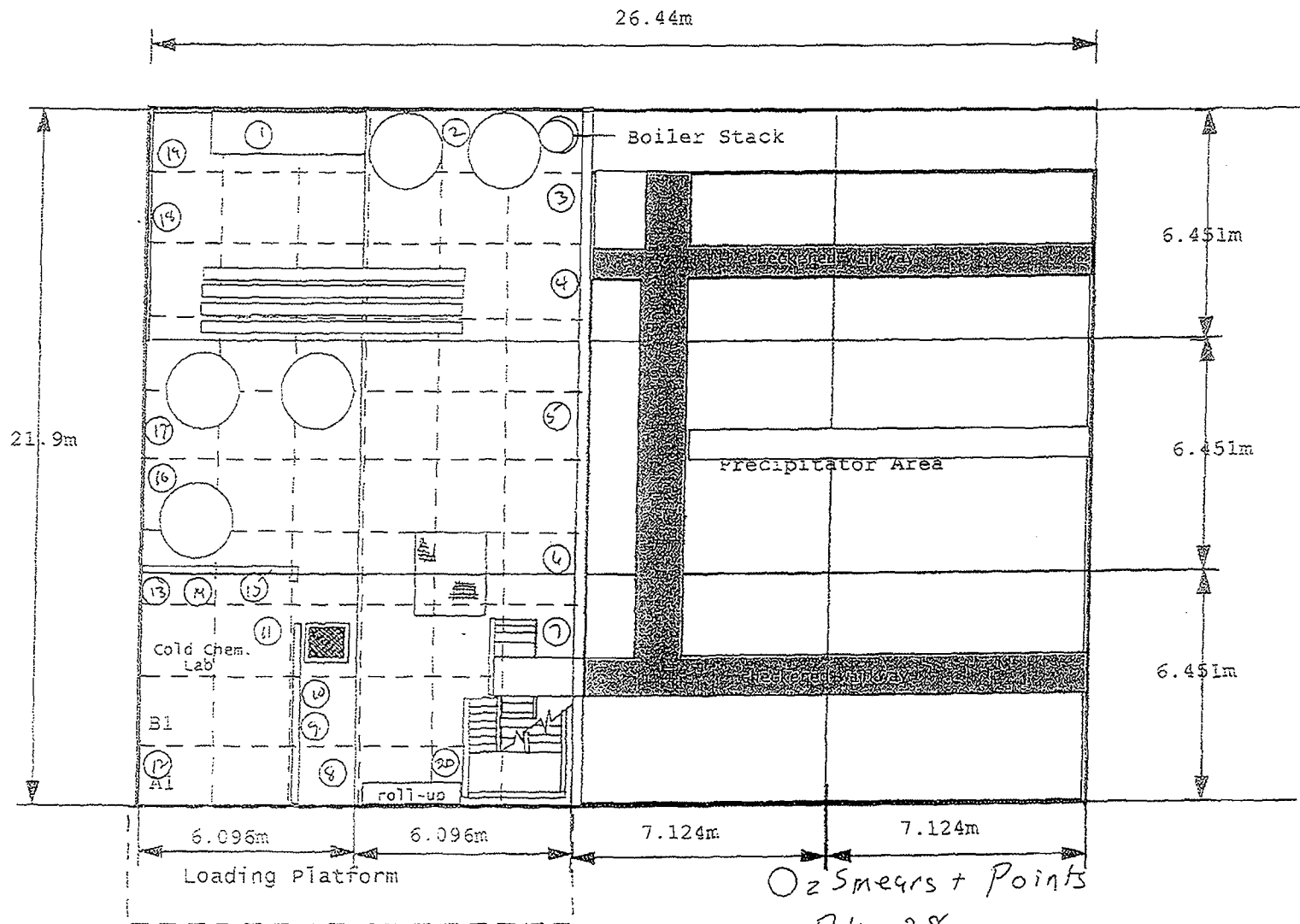


Demin Room
 Oz Smears + Points
 PKg 38
 Walls Above 2 meters on Top Floor
 Walls 4



○ = 3 means + points

Water Treatment Plant Pkg 38
Overhead Structures on middle floor
Structure - 3

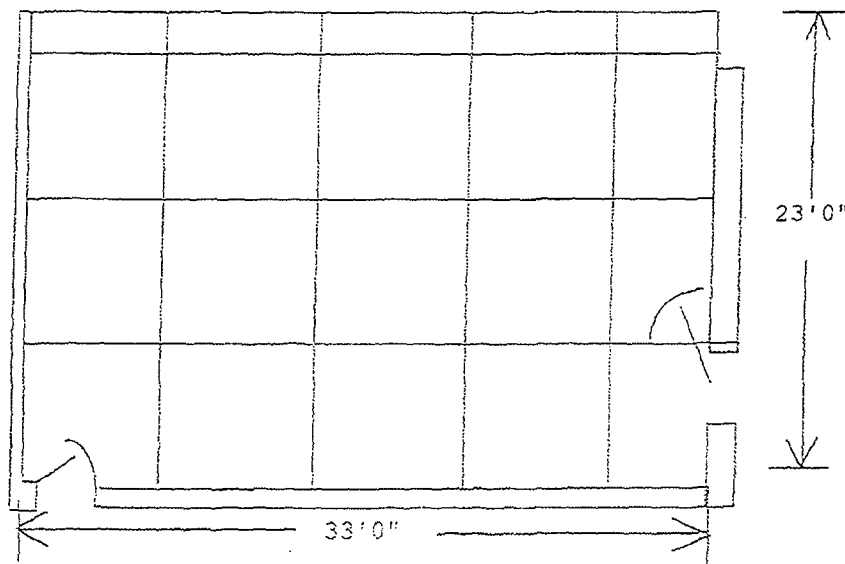
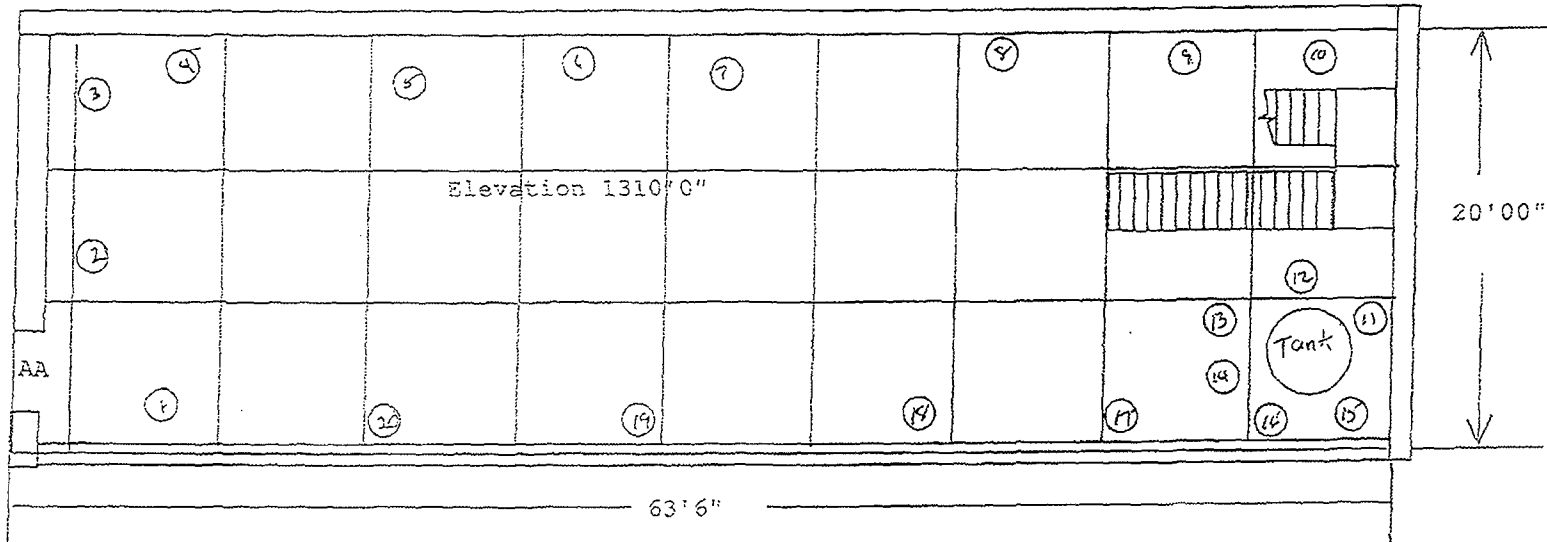


Water Treatment Plant

○ 2 Smears + Points

Pkg 38
Walls Above 2 Meters on Middle Floor

Wall - 3



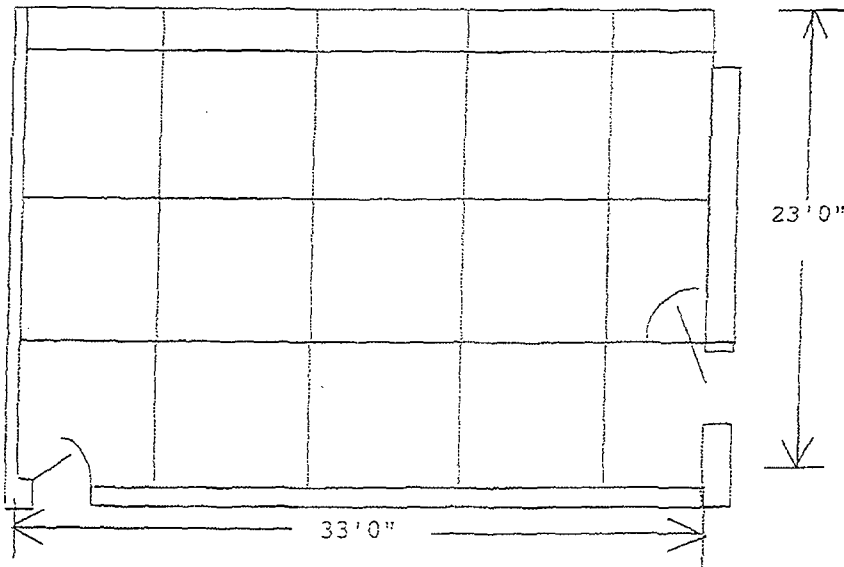
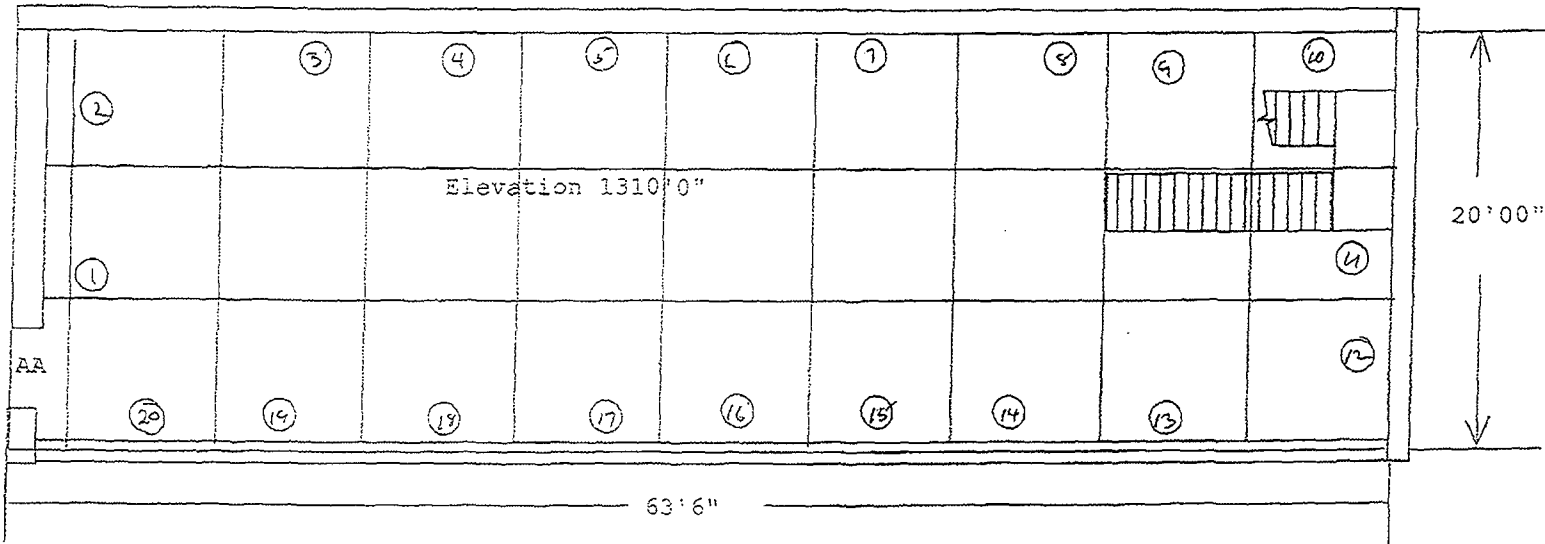
Room join at AA

○ = Smears + Points

Pkg 38

Overhead Structures In Larger Room
On Bottom Floor

Structure - 2



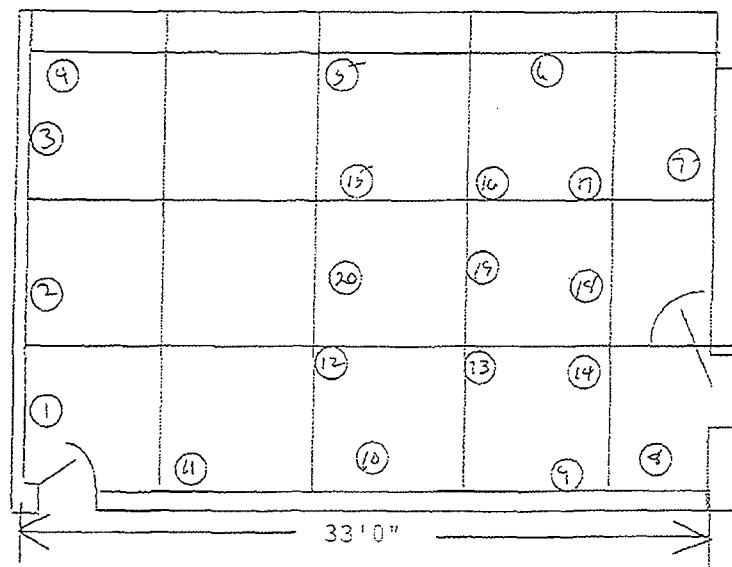
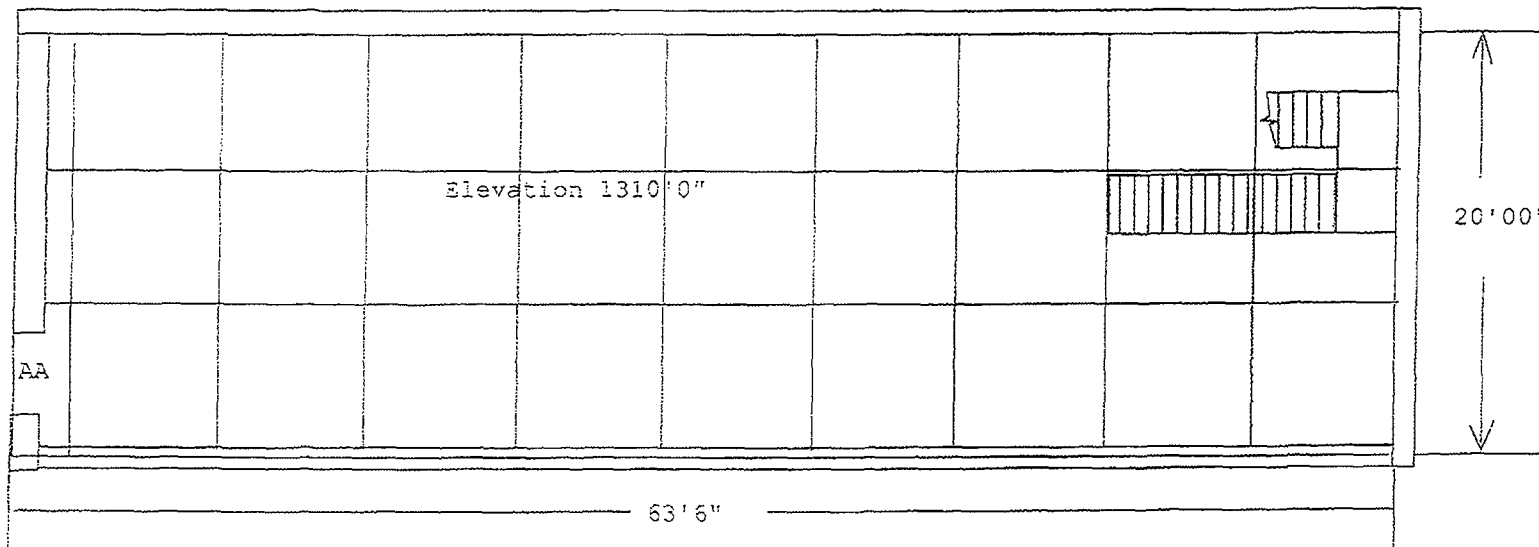
Room join at AA

○ = Smears + Points

Pkg 38

Walls Above 2 meters In Larger Room
On Bottom Floor

Wall - 2



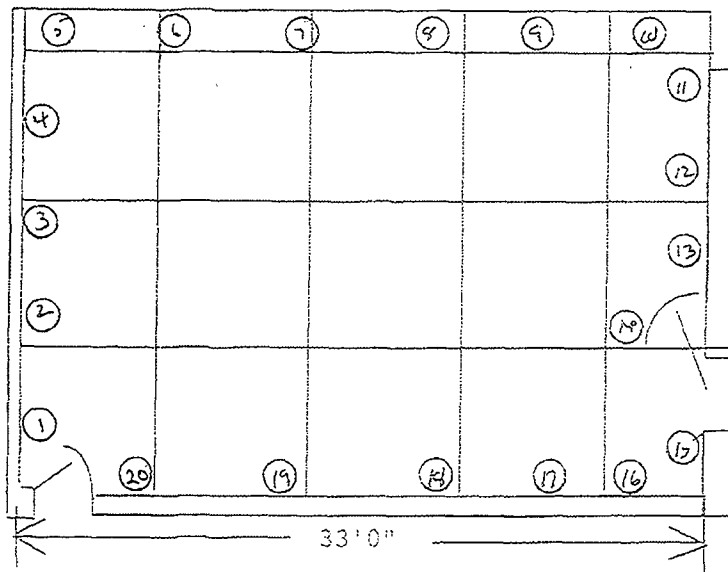
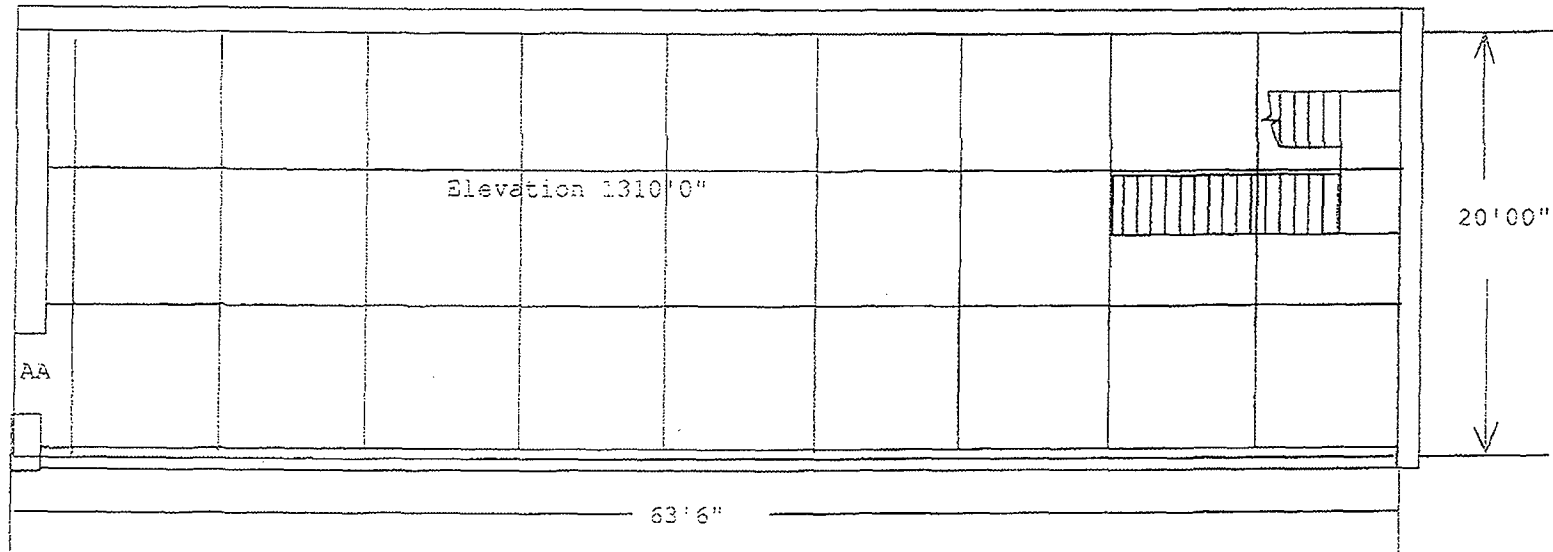
Room join at AA

○ z Smears + Points

Pkg 38

Overhead Structures In Smaller
Room on Bottom Floor

Structures - 1



Room join at AA

○ = Smears + Points

PKg 38

Wall Above 2 Meters In Smaller
On Bottom Floor

Wall - 1



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 39	Prepared by: Doug Schult
Location: Turbine Building Hot Side Drain Lines	Date prepared: 9/20/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description

The survey area includes the remaining sections of 3 drain lines on the hot side of the Turbine Building Basement. The majority of the drain lines have been removed allowing access to both ends of the remaining sections. The remaining sections have been cleaned in preparation for the survey.

Drain Line Number 1 runs from beneath the condenser into the hot side sump.

Drain Line Number 2 runs from the condensate pit, through a concrete wall, and terminates beneath the condenser.

Drain Line Number 3 runs through the side of the hot side sump and terminates in an open pit adjacent to the sump.

General Survey Instructions

- 1) Due to the potential for varying backgrounds paired measurements (background and total beta activity) are required at each measurement location.
- 2) Due to the number of measurements in each drain line scans are not required.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a cylindrical gas flow proportional detector.
- When performing the surveys for total beta activity collect paired measurements. Each measurement (background and total beta activity) use a count time of 5 minutes.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Snears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK039	DR001				Drain Line Number 1	NA	15	NA	NA	2
PK039	DR002				Drain Line Number 2	NA	3	NA	NA	2
PK039	DR003				Drain Line Number 2	NA	2	NA	NA	2

Package Review	
Date Package Completed	9-23-06
Package Reviewed by and Date	Carl Smith 1-17-07
Survey Comments	

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 40	Prepared by: Doug Schult
Location: Turbine Building Hot Side Trenches	Date prepared: 10/1106
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the Turbine Building hot side trenches that were created during the excavation and removal of the equipment drains and floor drains.</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100m²</p>

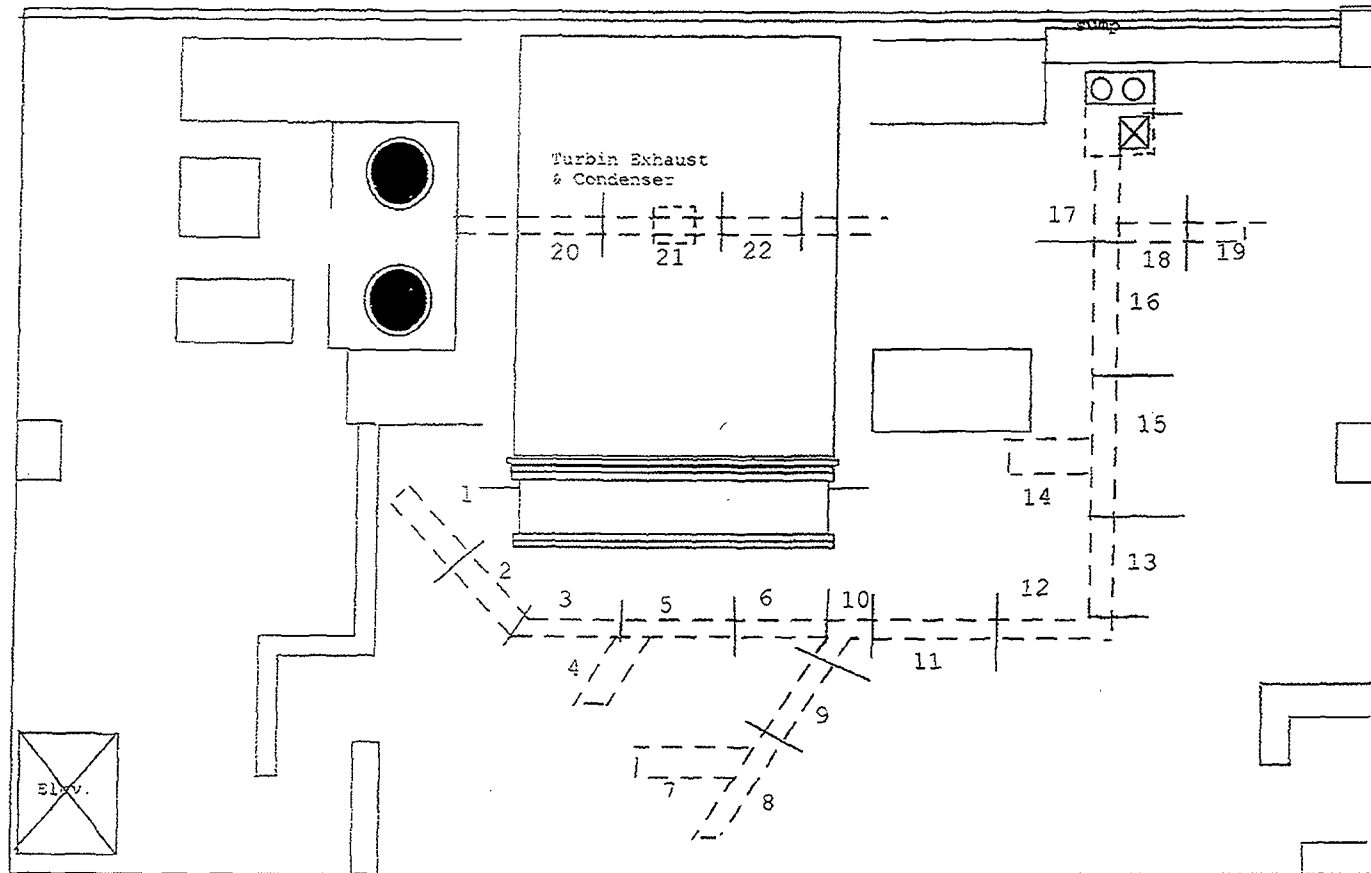
General Survey Instructions
<ol style="list-style-type: none"> 1) Grid the trenches into 2 meter sections using a permanent marker such as a spray paint or equivalent to designate the grids along the length of the trenches by marking the adjacent concrete floor. Number the grids sequential and indicate the grid locations on the attached drawing. 2) Perform a beta scan of 100% of the accessible surfaces holding the detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for at least 90 seconds. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation 3) Collect a composite soil/debris sample from within the confines of each grid. Label each sample with a sequential numbering system that includes the survey package number and the grid from which the sample was obtained, i.e. 40-1, 40-2, 40-3, etc. 4) At sampling locations 40-1 and 40-20 collect an additional sample and label the samples 40-1QC and 40-20QC respectively. 5) Upon returning the samples to the office fill out the appropriate chain of custody forms, affix a security seal across the top of the sample container and apply a label to the sample container indicating the sampling location, the date the sample was taken, and the name of the individual collecting the sample.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L3	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK040	Trench				Trenches	100%	NA	NA	NA	NA

Soil sample locations



PKg 40

Trench

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 41	Prepared by: Doug Schult
Location: Miscellaneous Locations Throughout The Plant	Date prepared: 10/7/06
Area Classification: Impacted - NA	Pathfinder Final Status Survey

Area Description
The survey consists of collecting smears for assessing removable tritium contamination at miscellaneous locations throughout the plant.

General Survey Instructions
<ol style="list-style-type: none">1) Collect a tritium smear at each of the numbered locations identified below and place the smear in the pre numbered vials.2) Immediately prior to collecting the smear the surface of the smear should be moistened using approximately 1 to 2 ml of clean filtered water.3) Collect the smear by smearing a surface area of at least 100 cm².4) Once the smears have been collected, prepare the chain of custody paperwork and ship the smears to the off site laboratory for analysis.

Special Instructions

Collect a tritium smear at the following locations

1. Inside the Turbine Building hot side sump
2. Inside the condenser
3. Inside of Pipe Number 1 leading to the hot side sump
4. Inside 1 of the condensate pump sumps
5. Inside the Turbine Building cold side sump
6. In 1 of the Turbine Building cold side trenches
7. On the Turbine Basement hot side floor next, to the Reactor Building
8. Inside the Turbine Building elevator
9. On the floor beneath the previous location of the Hydrogen recombiner on the Turbine Building mezzanine
10. Inside the old rad waste storage room on the Turbine Building mezzanine
11. Inside the remaining sections of the turbine
12. On the floor on the lowest level of the Fuel Handling Building
13. Inside the sump on the lowest level of the Fuel Handling Building
14. Inside 1 of the mud drums in the Boiler Building
15. In 1 of the Boiler Building trenches
16. In the Boiler Building sump
17. On the first floor of the Water Treatment Building
18. On the second floor of the Water Treatment Building
19. On the floor in the Temporary Loading and Storage Building
20. On the floor of the Warehouse

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L3	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							

Package Review	
Date Package Completed	
Package Reviewed by and Date	<i>E. J. 1/25/07</i>

Survey Comments

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 42	Prepared by: Doug Schult
Location: Lowest Level Of The Fuel Handling Building	Date prepared: 10/10/06
Area Classification: Impacted - Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor of the lowest level of the Fuel Handling Building.</p> <p>The lowest level of the Fuel Handling Building is approximately 370 m².</p> <p>See attached drawing</p> <p>Class 2 survey areas are limited in size to less than 1000 m²</p>

General Survey Instructions

- 1) Grid the floor using 3 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Prepare a map or drawing of the survey unit showing the grid layout.
- 3) Perform a beta scan of 50% of the accessible surfaces within each grid holding the detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Each grid should be scanned for a minimum of 5 minutes. Use the L7 code to record the grid number being scanned. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 4) Collect a total beta activity measurement at locations identified during the scan as having residual activity. If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified mark the area and notify the Project Manager.
- 5) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 3 to give the X coordinate and the second random number is multiplied by 3 to give the Y coordinate

Floors: R=0.996, X=2.99 m R=0.228, Y= 0.68 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.822, X=2.47 m R=0.932, Y= 2.80 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.
- 6) Mark the required number of random measurement locations on each of the structures specified below.
- 7) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number
- 8) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

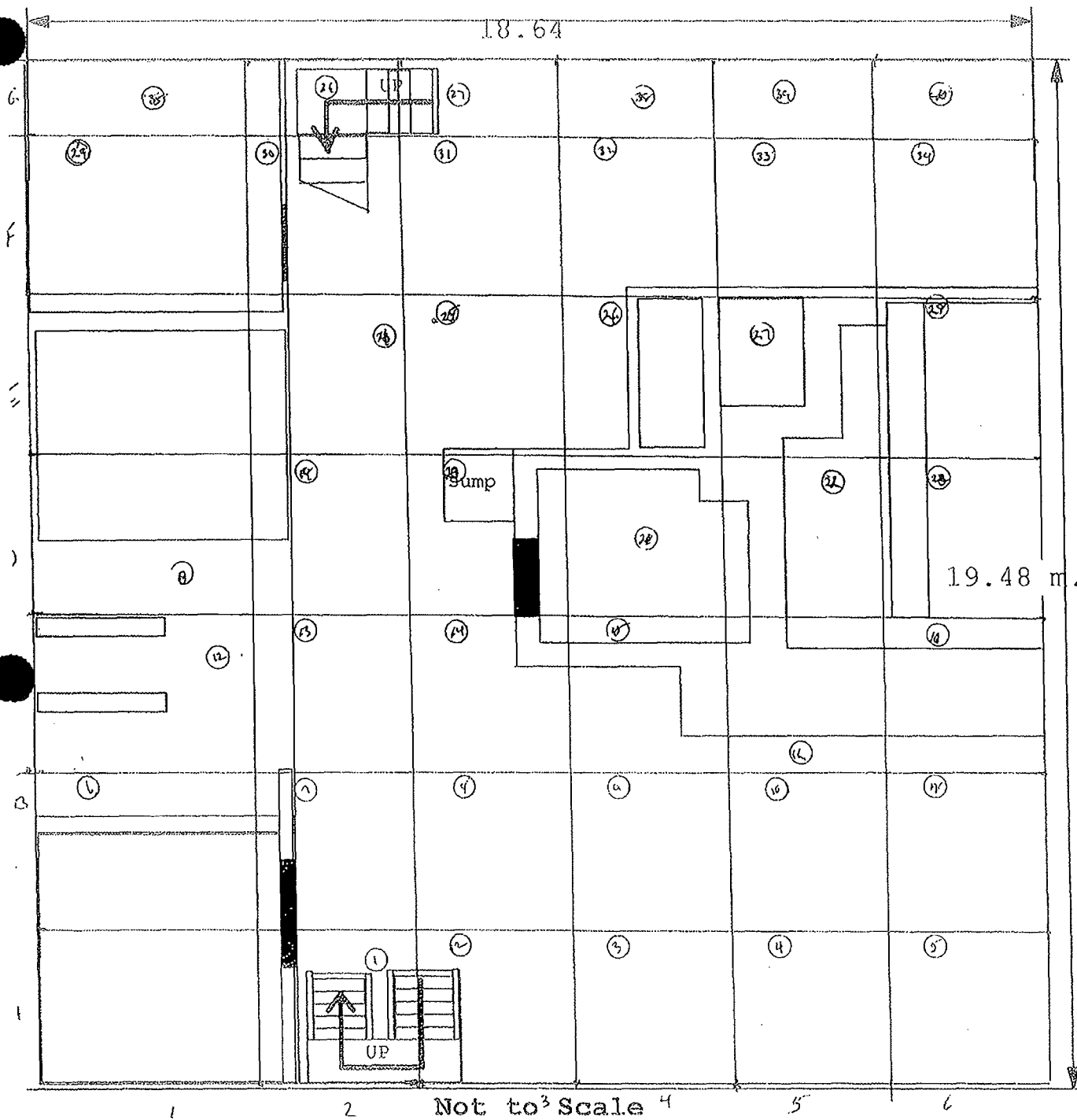
- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK042	FL001				Floor	50%	Each Grid	NA	NA	Each Grid

Package Review	
Date Package Completed	10-19-06
Package Reviewed by and Date	Carl Holt 1-17-07 <i>[Signature]</i> 1/25/07

Survey Comments
The horizontal structures in the overhead spaces and the ceiling of the Cooling Tower Basin are considered non impacted and will not be surveyed. These structures were added following the collapse of the Cooling Towers.

Fuel Handling Building Basement Elev. 1297' 0"



○ = Smears + Points

Pkg 42

Floor

Cps 3

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 43	Prepared by: Doug Schult
Location: Turbine Building Elevator, The Floor Beneath The Turbine Building Elevator, And The Elevator Room	Date prepared: 10/30/06
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the Turbine Building elevator, the floor beneath the Turbine Building elevator, and Elevator Room in the basement of the Turbine Building.

The Turbine Building elevator is approximately 4 m².

The floor beneath the Turbine Building elevator is approximately 4 m²

The Elevator Room is approximately 4 m²

See attached drawing

Class 3 survey areas are not limited in size.

General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 1 minute around each fixed point measurement location except for those beneath the elevator. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number.
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

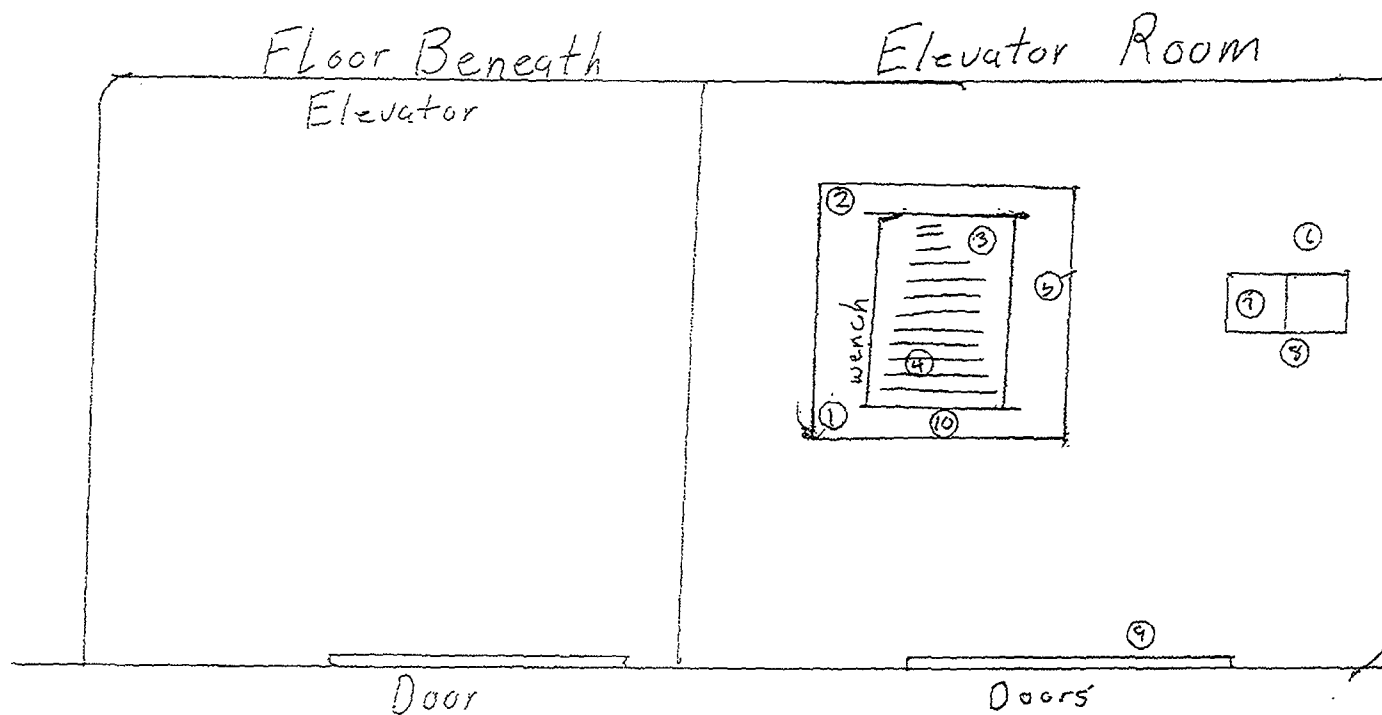
- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK043	F0001				Elevator	10%	24	NA	NA	24
PK043	ST001				Floor Beneath Elevator	10%	5	NA	NA	5
PK043	ST002				Elevator Room	10%	10	NA	NA	10
PK043	ST003				Non Permanent Structures In The Elevator Room	10%	10	NA	NA	10

Package Review	
Date Package Completed	H 11-1-06 Jerry Tharnt / Carl Ingle by Carl Ingle 1-16-07
Package Reviewed by and Date	Carl Ingle 1-16-07 <i>[Signature]</i> 1/25/07

Survey Comments	
Due to safety concerns and limited accessibility the floor beneath the elevator will not be scanned.	
The Floor Beneath the Elevator was scanned with help from Plant Personnel	

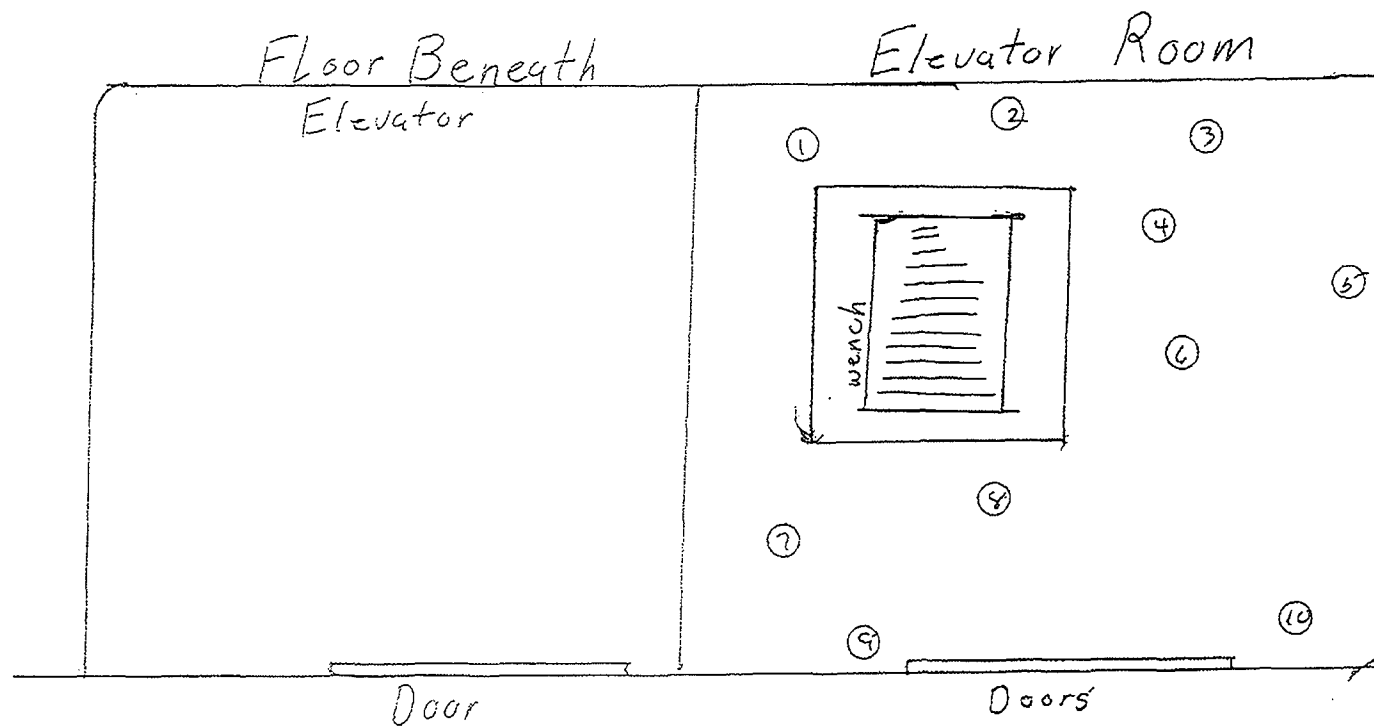
Oz Smears + Points
Pkg 43
Non-permanent Structures in
Elevator Room



○ = Smears + Points

PKg 43

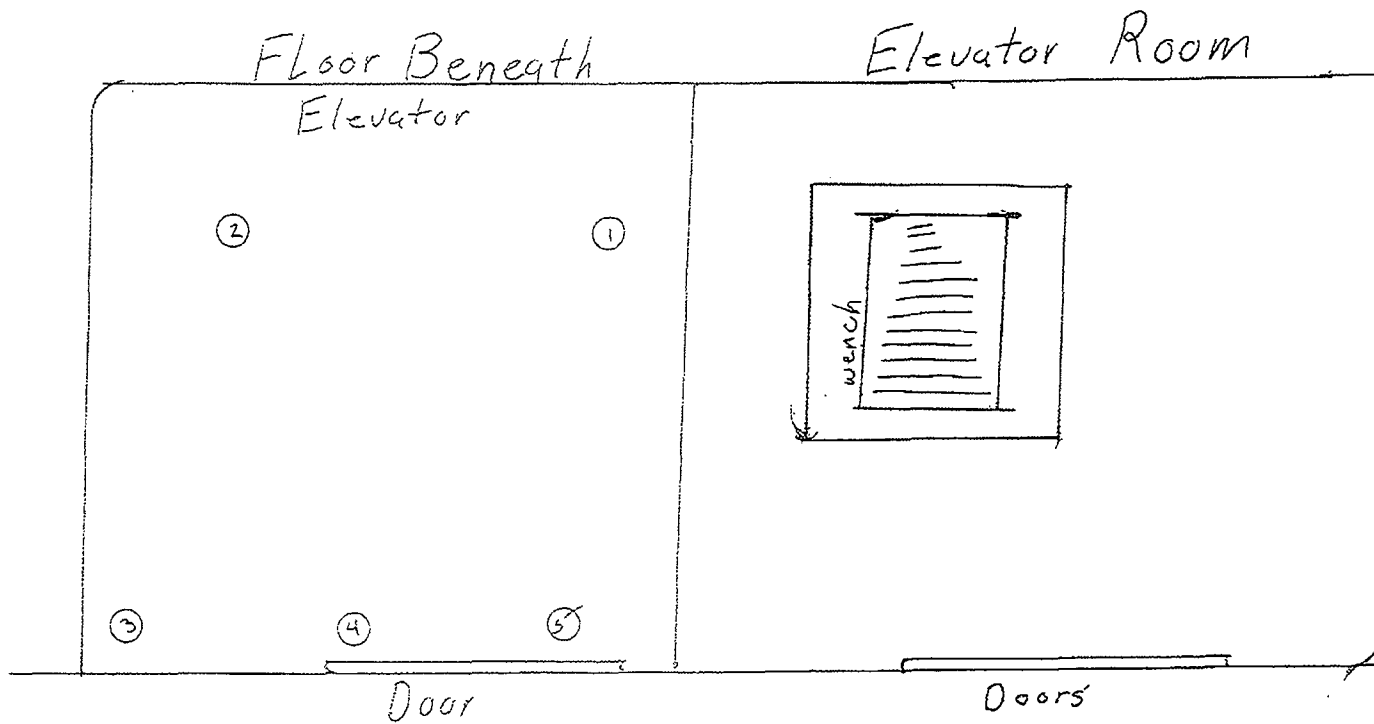
Elevator Room



O = Smears + Points

Pkgs 43

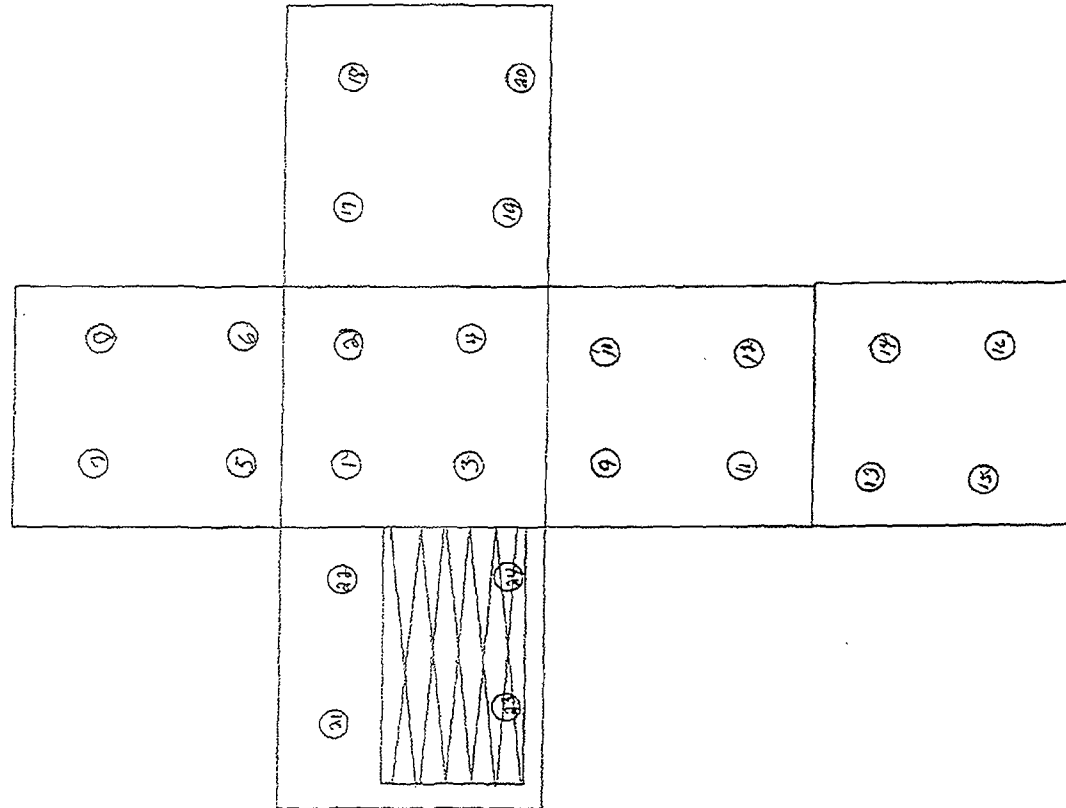
Floor Beneath Elevator



○ = Smears + Points

Pkg 43

Turbine Buildings Elevator



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 44	Prepared by: Doug Schult
Location: Floor, Walls And Ceiling Within The Precipitator Building	Date prepared: 10/24/06
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the floor, walls, and ceiling within the Precipitator Building.

The Precipitator Building is approximately 266 m²

See attached drawing

Class 3 survey areas are not limited in size.

General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 1 minute around each total beta activity measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number.
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK044	FL001				Bottom Of Pools	10%	30	NA	NA	30
PK044	W0001				Walls Of Pools	10%	30	NA	NA	30
PK044	W0002				Interior Building Walls	10%	20	NA	NA	20
PK044	C0001				Ceiling	10%	20	NA	NA	20
PK044	ST001				Walkways	10%	20	NA	NA	20

Package Review

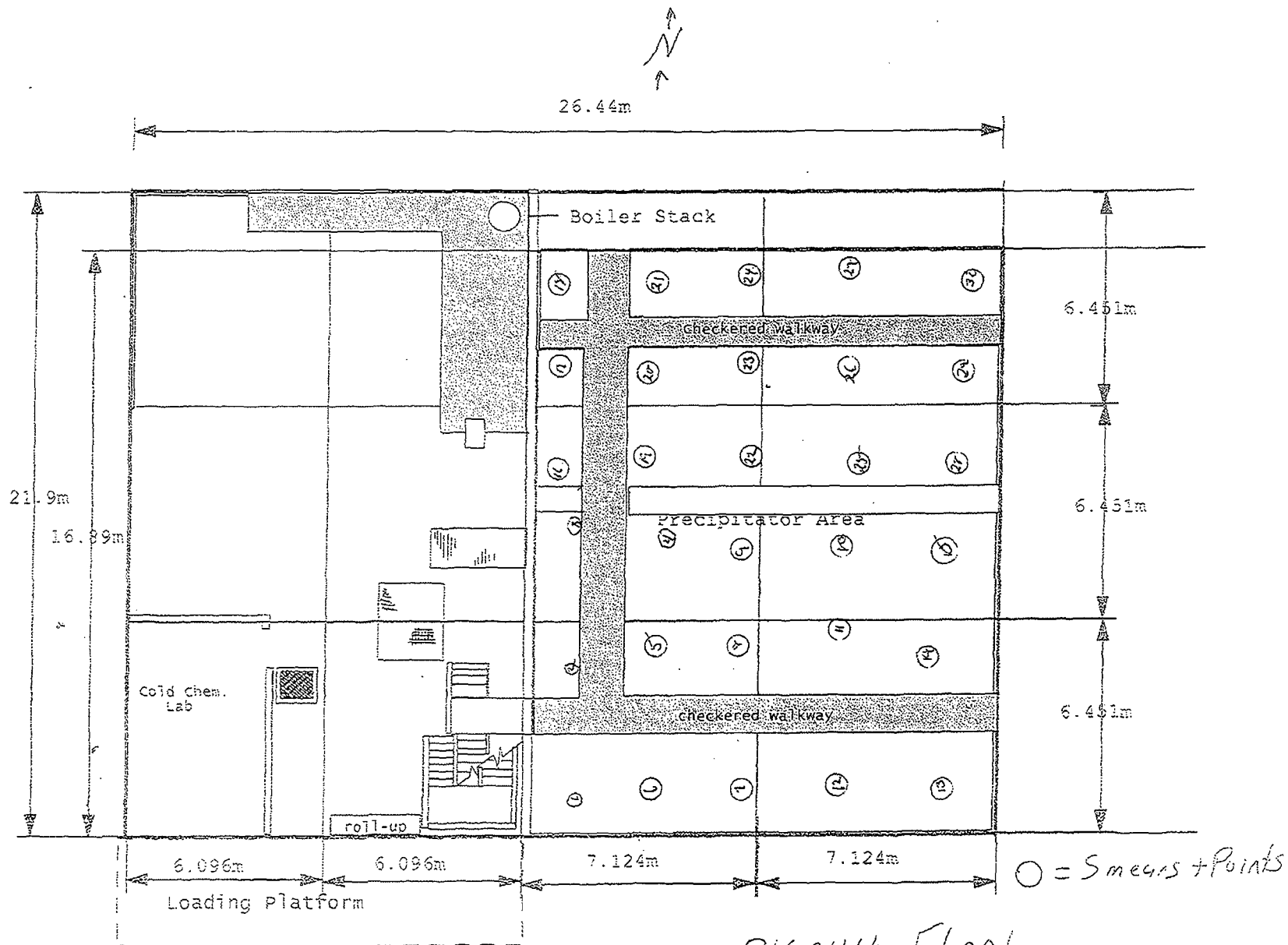
Date Package Completed

Package Reviewed by and Date

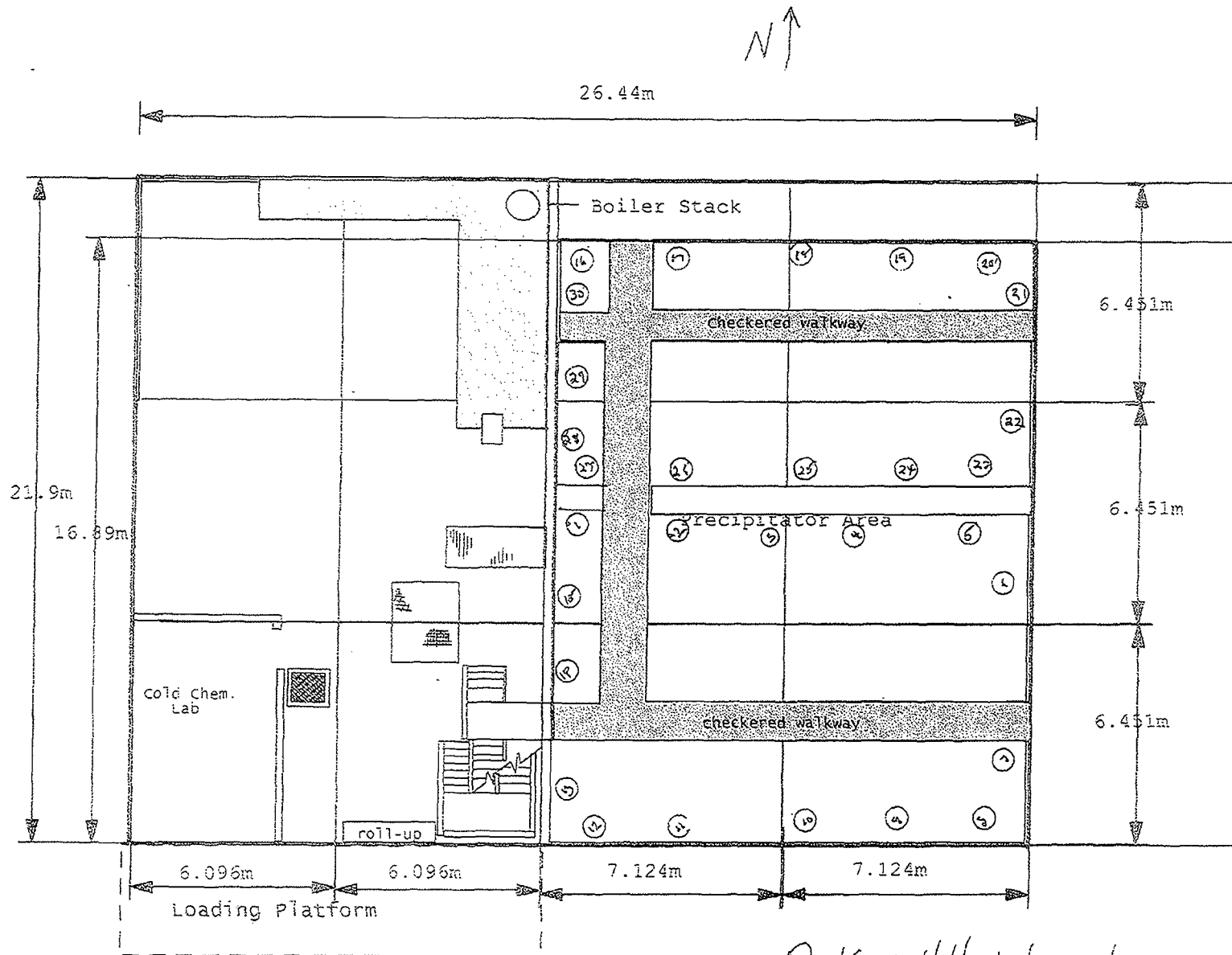
11-6-06 Sean McInerney / Carol Inslo By Carol Inslo 1-16-07

Carol Inslo 1-16-07 J. V. 1/25/07

Survey Comments

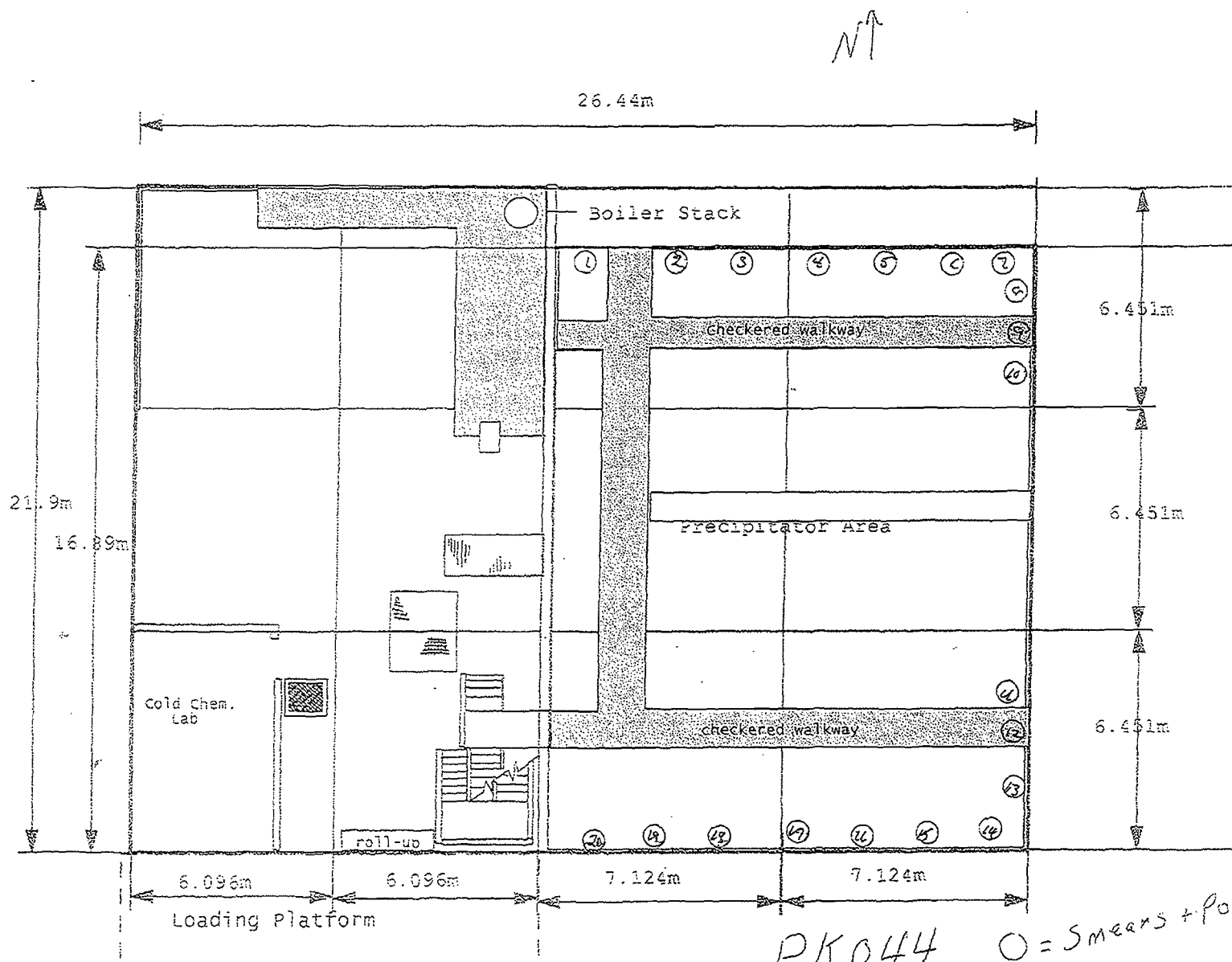


Water Treatment Plant PK 044 Floor
Bottom of Pools



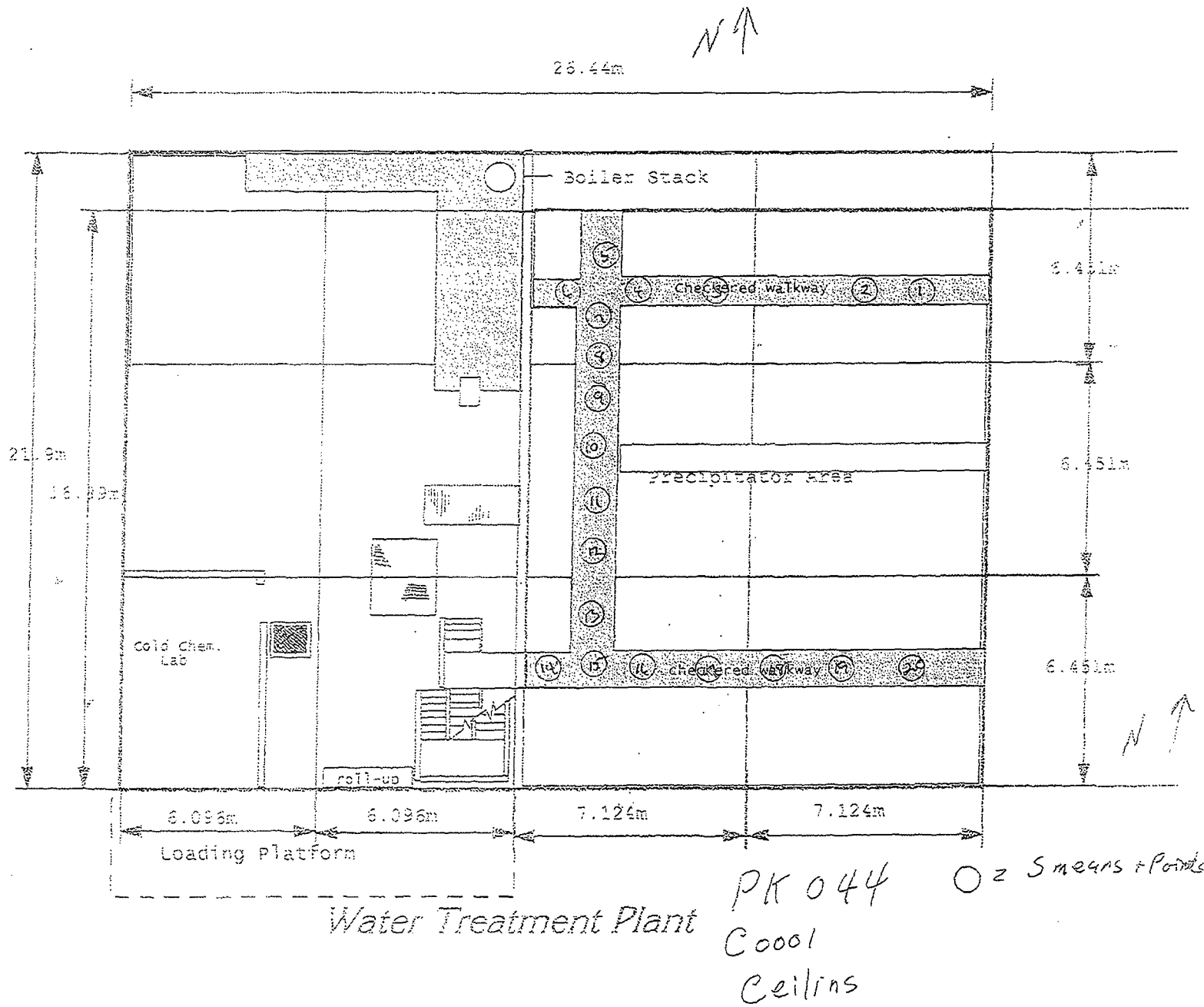
Water Treatment Plant

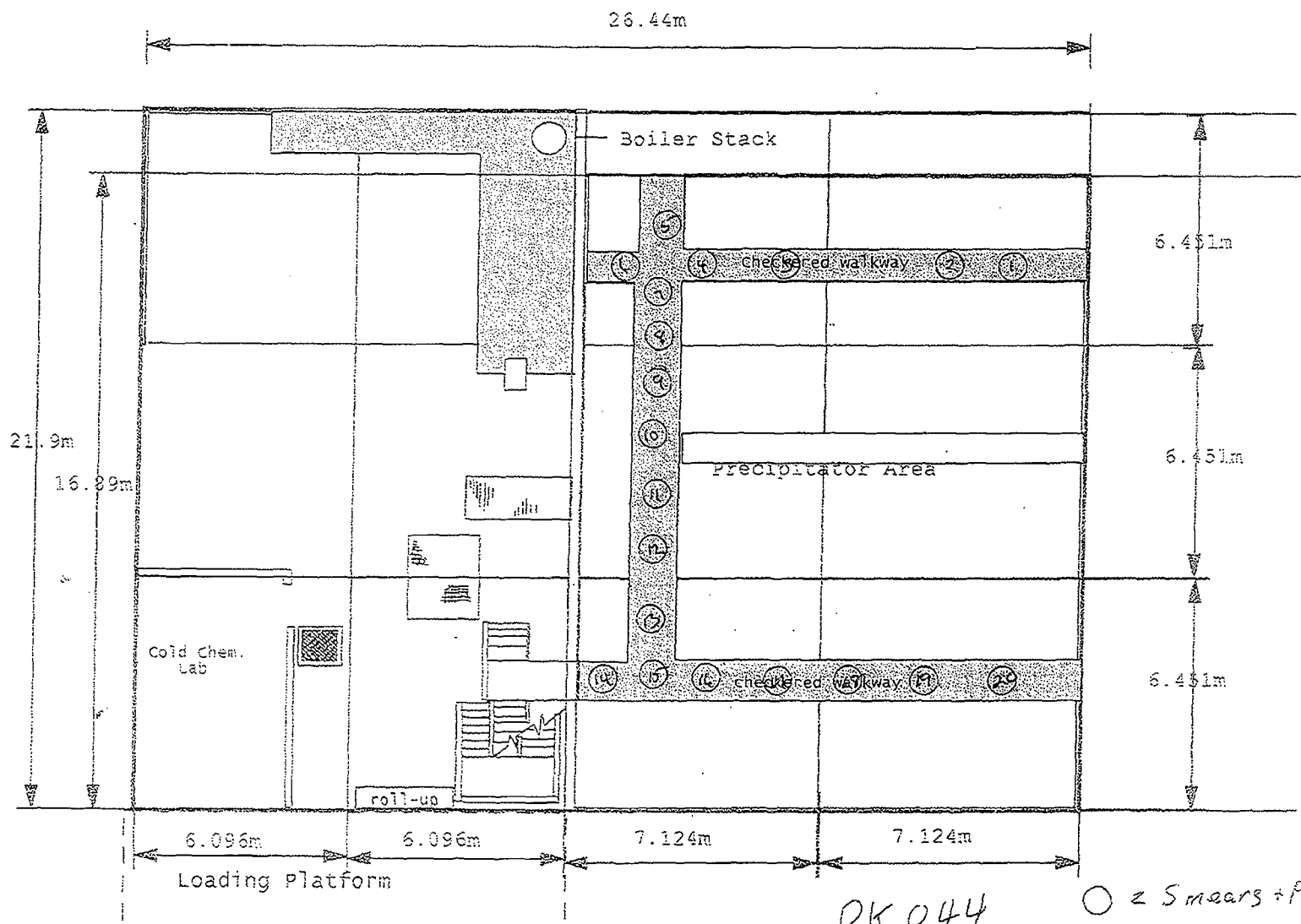
PK 044 Woodl
 ○ = Smears + Points
 Walls of Pools



Water Treatment Plant

PK044
W0002
Interior Buildings Walls
○ = Smeers + Points





Water Treatment Plant

PK 044
ST001
Walkways

○ = 5 meters + Points

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 45	Prepared by: Doug Schult
Location: Walls Above 2 Meters And Overhead Structures On The Turbine Building Mezzanine	Date prepared: 10/2606
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the walls above 2 meters and horizontal structures in the overhead on the Turbine Building Mezzanine.

The Turbine Building Mezzanine is approximately 900 m².

See attached drawing

Class 3 survey areas are not limited in size.

General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 2 minutes around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

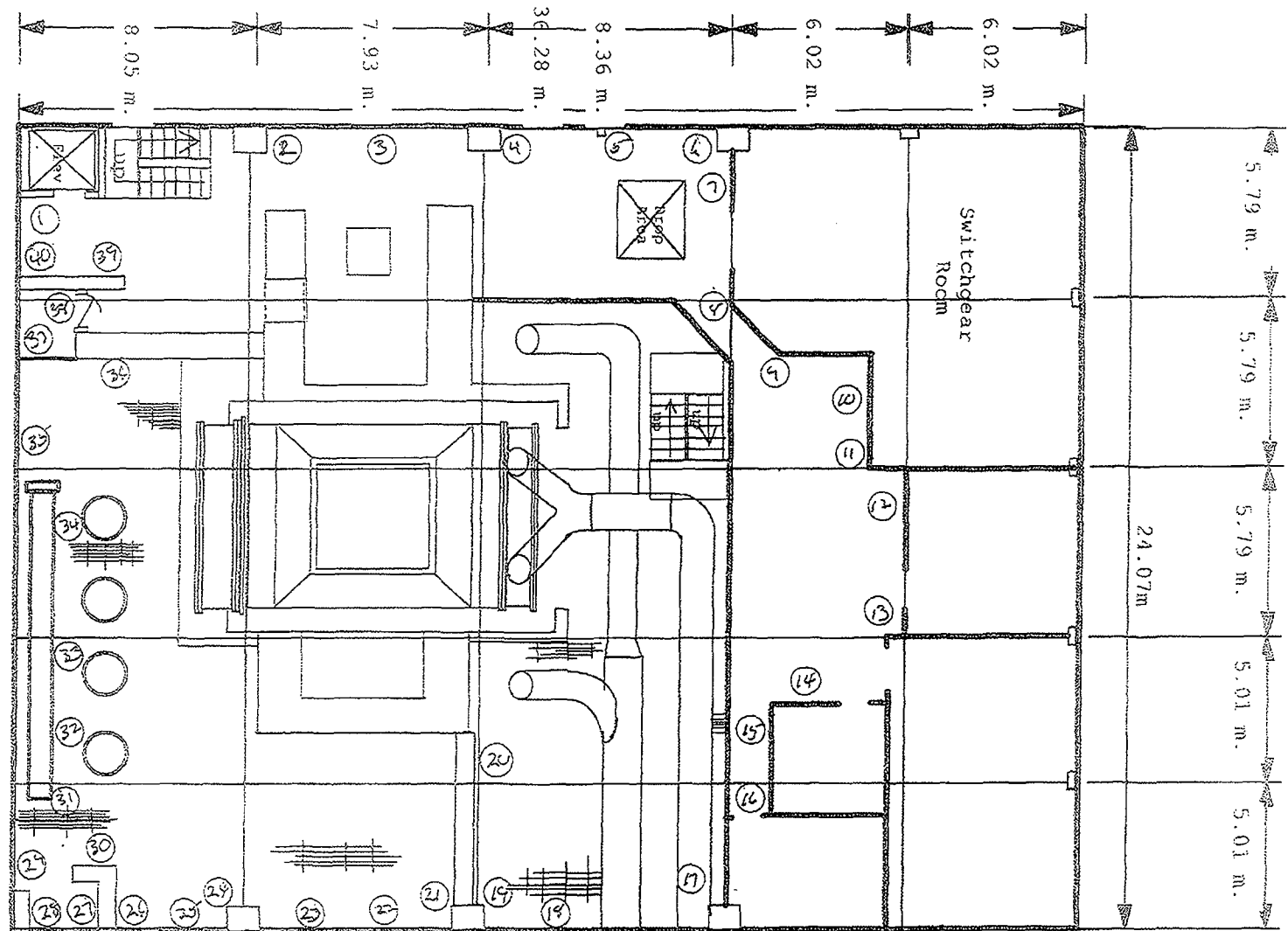
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK045	W0001				Walls Above 2 Meters	10%	17	NA	NA	17
PK045	ST001				Overhead Structures	10%	11	NA	NA	11

Package Review	
Date Package Completed	10-28-06
Package Reviewed by and Date	Carl Dwyer 1-16-07 [Signature] 1/25/07

Survey Comments
Due to safety concerns, safety harnesses will be worn when surveying the remaining sections of the turbine and the exposed structures surrounding the turbine

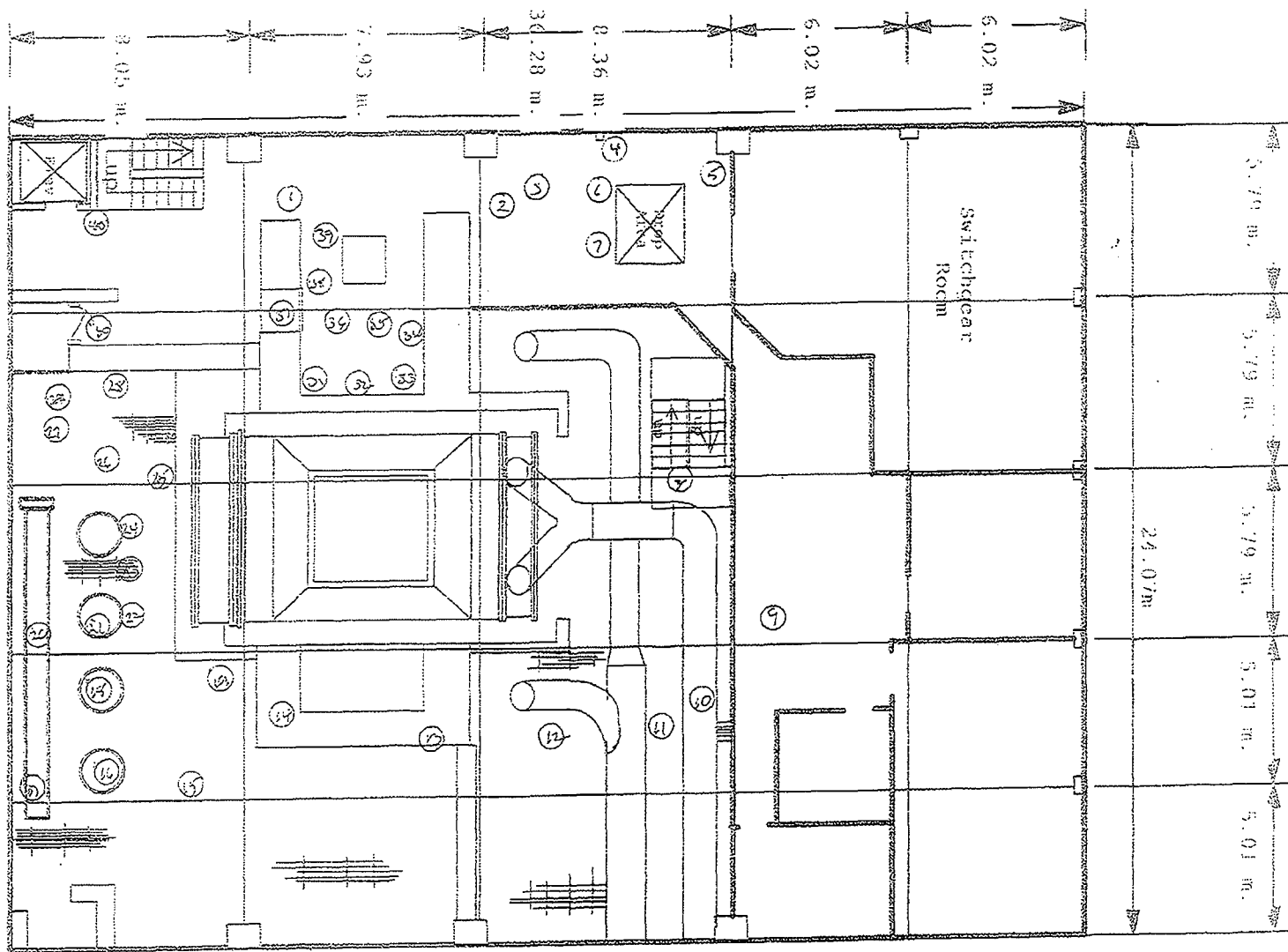


○ = Smears + points

Pkg 45

Walls Above 2 Meters

Walls - 1



○ = Smeas + Points
 PKg 45
 Overhead Structure
 Structure -1



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 46	Prepared by: Doug Schult
Location: Electrical Room, Office, And Storage Room On Turbine Building On Turbine Building Mezzanine	Date prepared: 10/30/06
Area Classification: Impacted - Class 3	Pathfinder Final Status Survey

Area Description

The survey area includes the floors walls, overhead structures and non permanent items in the Electrical Room, Office, And Storage Room On Turbine Building Mezzanine

The Electrical Room is approximately 100 m².

The Office is approximately 36 m²

The Storage Room is approximately 30 m²

See attached drawing.

Class 3 survey areas are not limited in size.

General Survey Instructions

- 1) Perform a beta scan of at least 10% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 1 minute around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation.
- 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process.
- 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number
- 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 5) Obtain a smear at each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

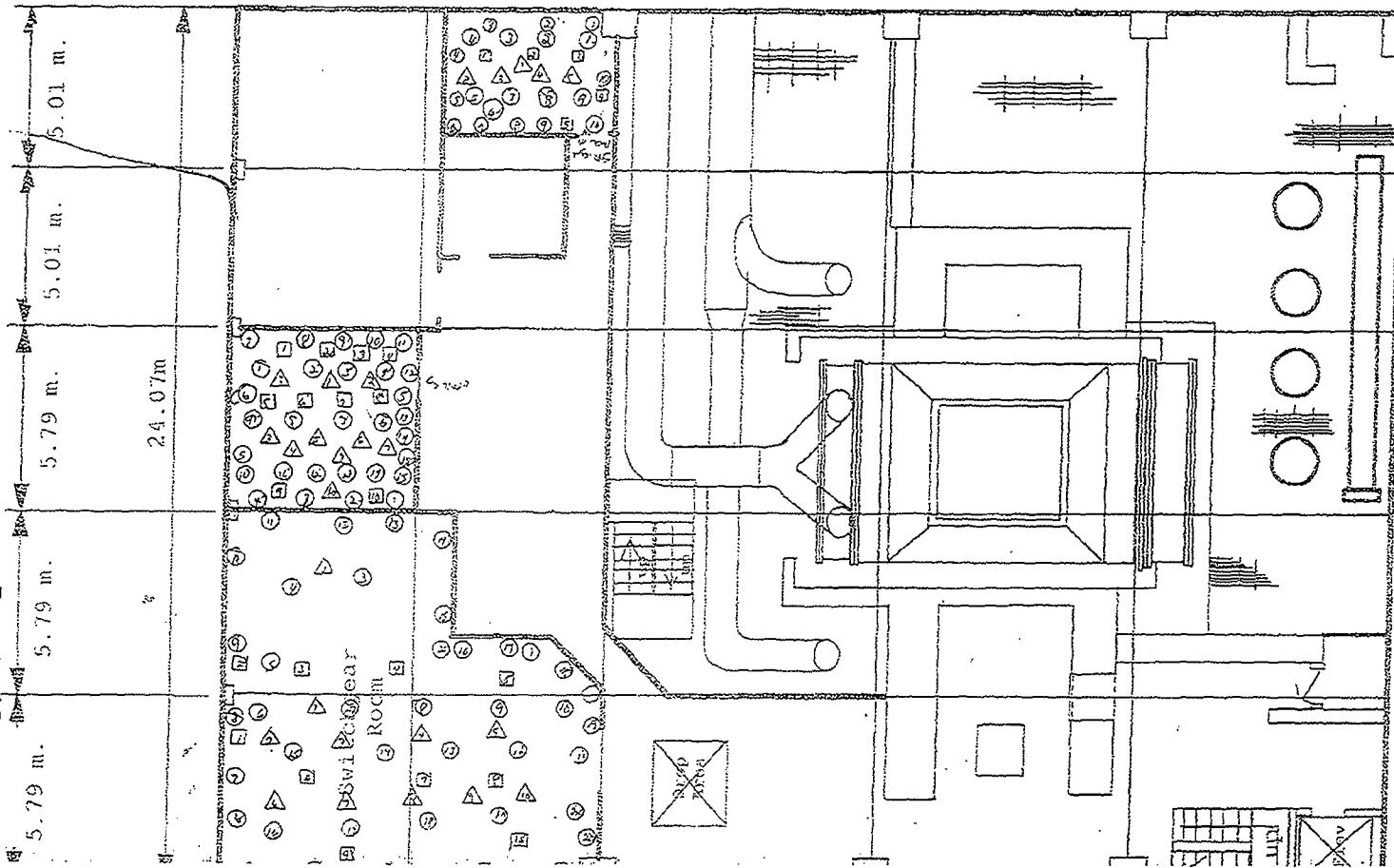
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK046	F0001				Floor In Electrical Room	10%	20	NA	NA	20
PK046	W0001				Walls In Electrical Room	10%	20	NA	NA	20
PK046	ST001				Overhead Structures in Electrical Room	10%	10	NA	NA	10
PK046	ST002				Non Permanent Items In Electrical Room	10%	10	NA	NA	10
PK046	F0002				Floor In Office	10%	15	NA	NA	15
PK046	W0002				Walls In Office	10%	15	NA	NA	15
PK046	ST003				Overhead Structures in Office	10%	10	NA	NA	10
PK046	ST004				Non Permanent Items In Office	10%	10	NA	NA	10
PK046	F0003				Floor In Storage Room	10%	10	NA	NA	10
PK046	W0003				Walls In Storage Room	10%	10	NA	NA	10
PK046	ST005				Overhead Structures in Storage Room	10%	5	NA	NA	5
PK046	ST006				Non Permanent Items In Storage Room	10%	5	NA	NA	5

Package Review	
Date Package Completed	11-6-04 Terry Theriot / Carl Tasia By Carl J. 1-16-07
Package Reviewed by and Date	Carl J. 1-16-07 [Signature] 1/25/07

Survey Comments
Due to safety concerns, safety harnesses will be worn when surveying the remaining sections of the turbine and the exposed structures surrounding the turbine



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 47	Prepared by: Doug Schult
Location: Overhead Structures In The Larger Room On The Bottom Floor And On The Top Floor Of The Water Treatment Building	Date prepared: 11/4/2006
Area Classification: Impacted - Class 2	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the overhead structures in the larger room on the bottom floor and on the top floor of the Water Treatment Building</p> <p>The larger room on the bottom floor of the Water Treatment Building is approximately 118 m².</p> <p>The top floor of the Water Treatment Building is approximately 230 m²</p> <p>See attached drawings</p> <p>Class 2 survey areas are limited to 1000 m².</p>

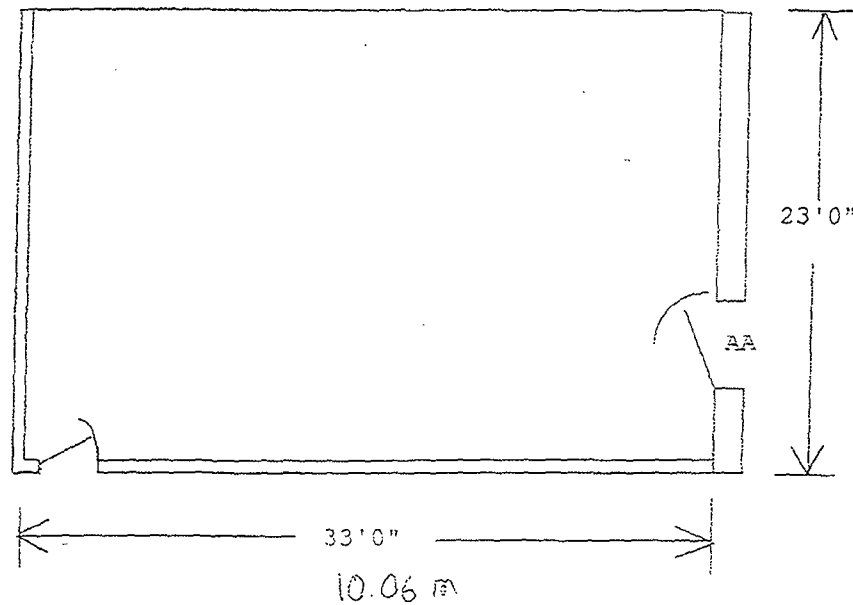
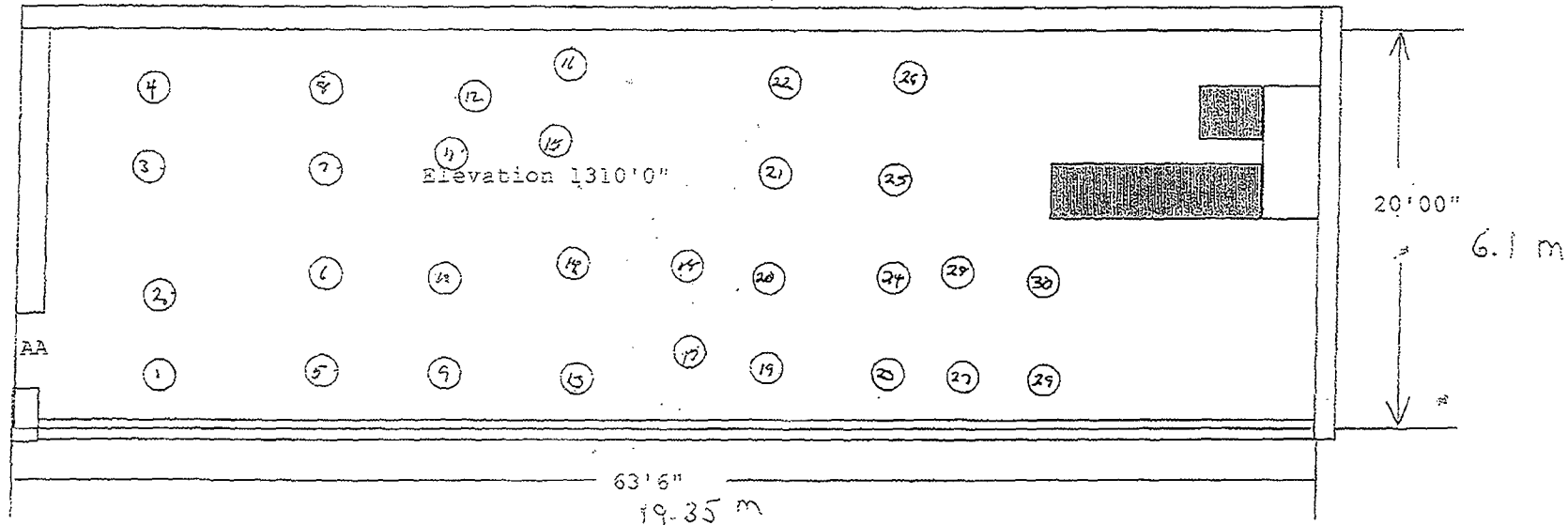
General Survey Instructions
<ol style="list-style-type: none"> 1) Perform a beta scan of at least 50% of the accessible surfaces holding the detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan for 3 minutes around each fixed point measurement location. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation. 2) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location. Fixed point measurement locations will include random measurement locations and any biased locations identified during the scanning process. 3) Collect a total beta activity measurement at each fixed point measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the measurement number. 4) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager. 5) Obtain a smear at each of the total beta activity measurement location. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- Do not include measurements from more than 1 survey unit on the same download.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

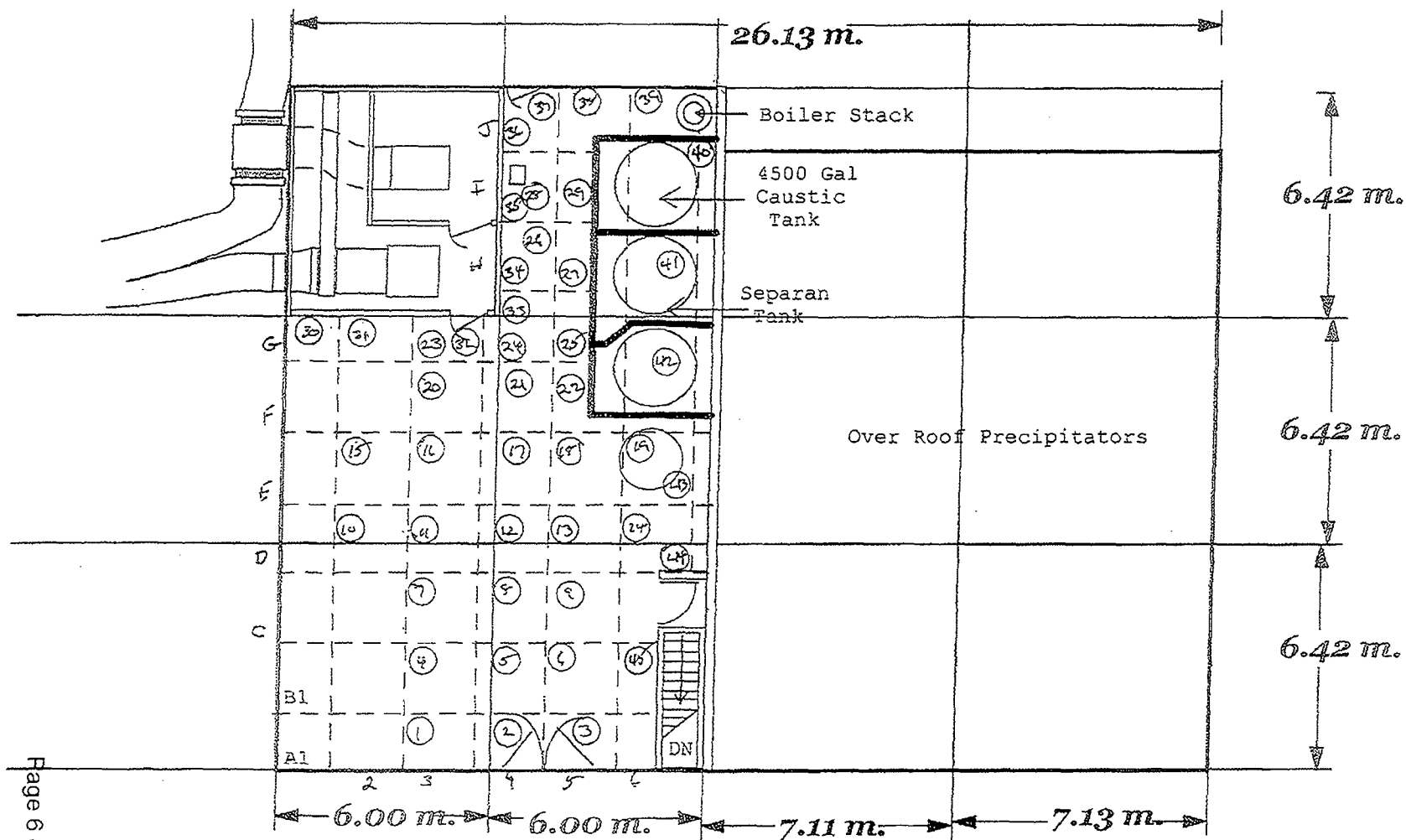
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK047	ST001				Overhead Structures In Larger Room On Bottom Floor	50%	30	NA	NA	30
PK047	ST002				Overhead Structures On Top Floor	50%	45	NA	NA	45

PK047 ST001



Room join at AA

○ = Smeas + Points Location
 PKg 47
 Overhead Structure In
 Larger Room on Bottom Floor



Demin Room

O = Smears + Points

Pkg 47

overhead Structures on Top Floor

Structure - 2

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 48	Prepared by: Doug Schult
Location: Inside of Condenser Hotwell	Date prepared: 11/20/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls, and overhead tube assemblies within the Condenser Hotwell</p> <p>The inside of the Condenser Hotwell is approximately 48 m².</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate

Floors: R=0.843, X=0.843 m R=0.378, Y= 0.378 m
Walls: R=0.843, X=0.843 m R=0.378, Y= 0.378 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.202, X=0.202m R=0.282, Y= 0.282 m
Walls: R=0.202, X=0.202 m R=0.282, Y= 0.282 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.
- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.
- 11) Collect an exposure rate measurement in contact with the base of each of the vertical support pipes and at 6 inches above each total beta activity measurement location located on the floor of the condenser. The count time for each exposure rate measurement should be 15 sec.

Special Instructions

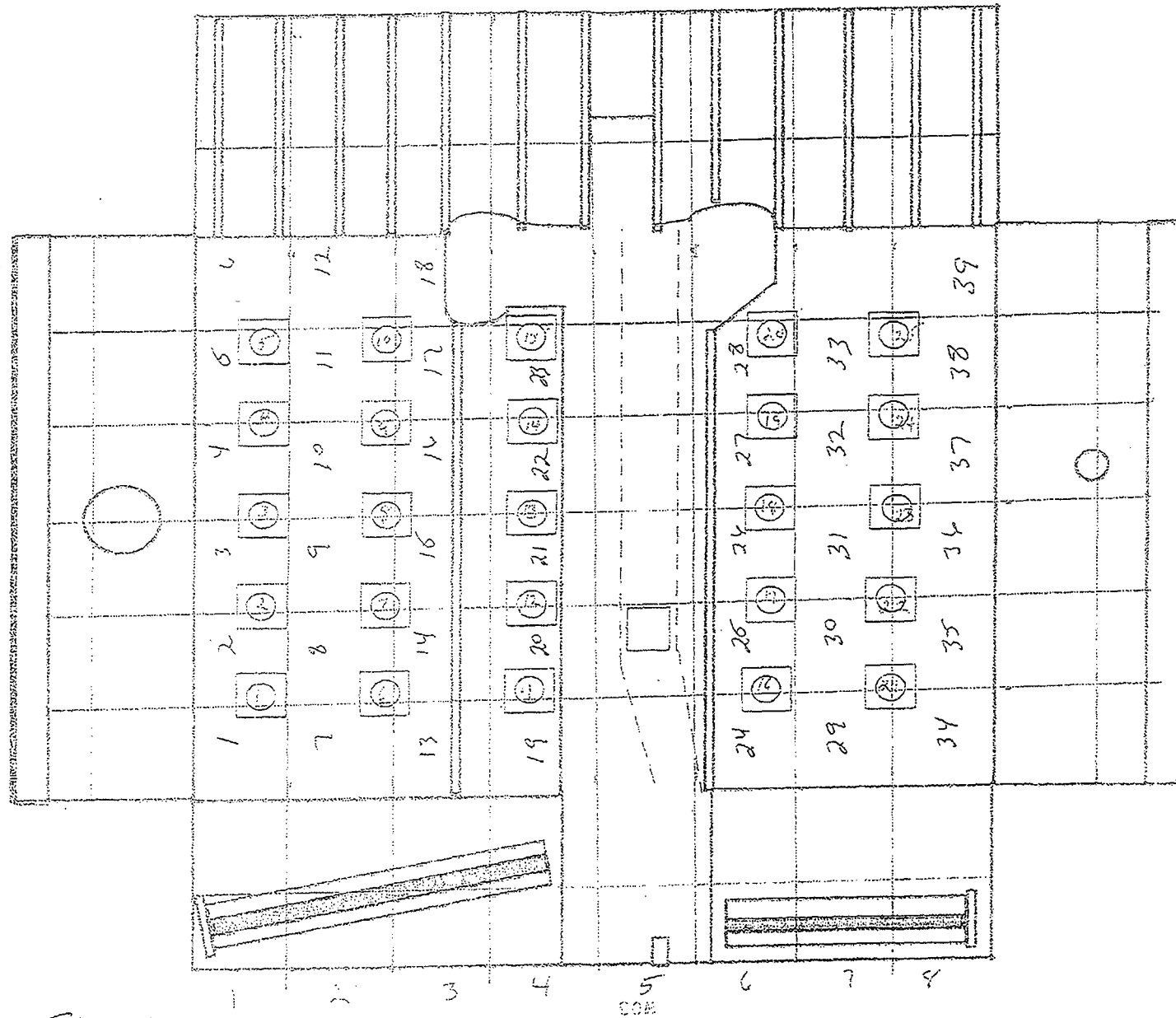
- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- For exposure rate measurements, source check instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Do not include measurements from more than 1 survey unit on the same download.

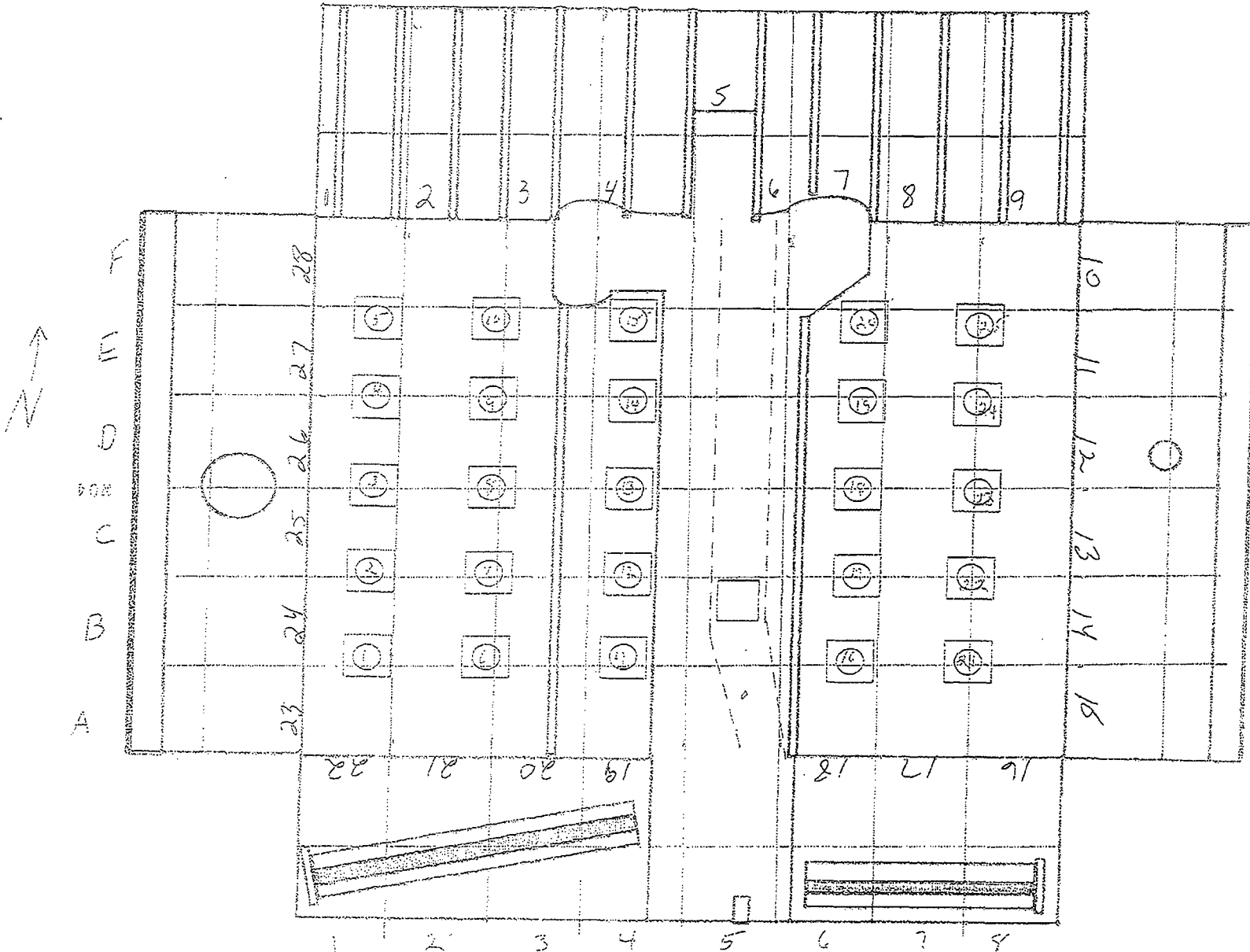
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK048	FL001				Floor	100%	Each Grid	NA	Each Grid	Each Grid
PK048	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK048	ST001				Overhead Structures	100%	30	NA	NA	30
PK048	ST002				Large Diameter Pipe	100%	10	NA	NA	10
PK048	ST003				Vertical Support Pipes	100%	Each Pipe	NA	Each Pipe	Each Pipe

PK48 FLOOR

1-39 11/28/06

N
A B C D E F





202

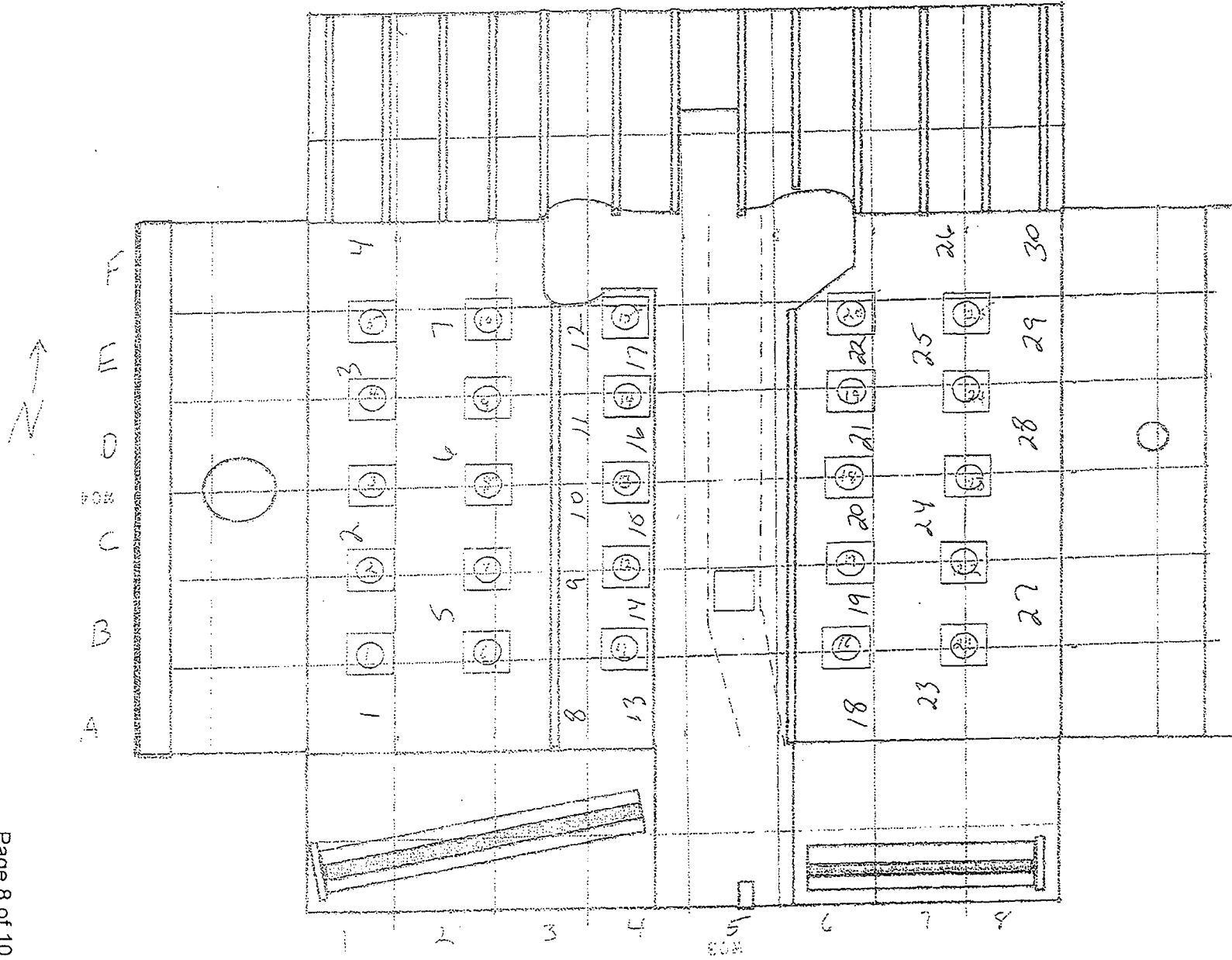
PK 48

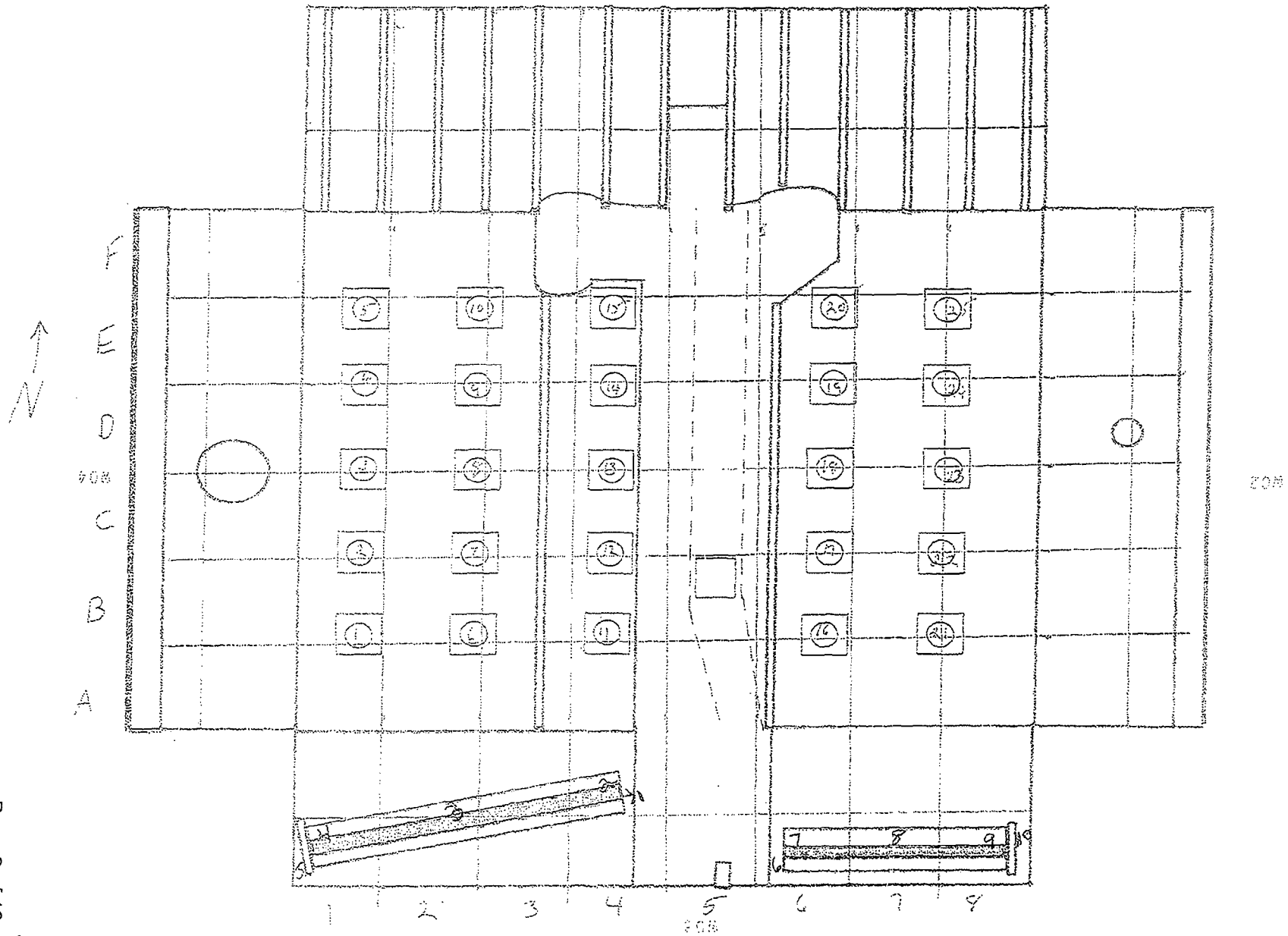
WALLS

1-28

11/28/06

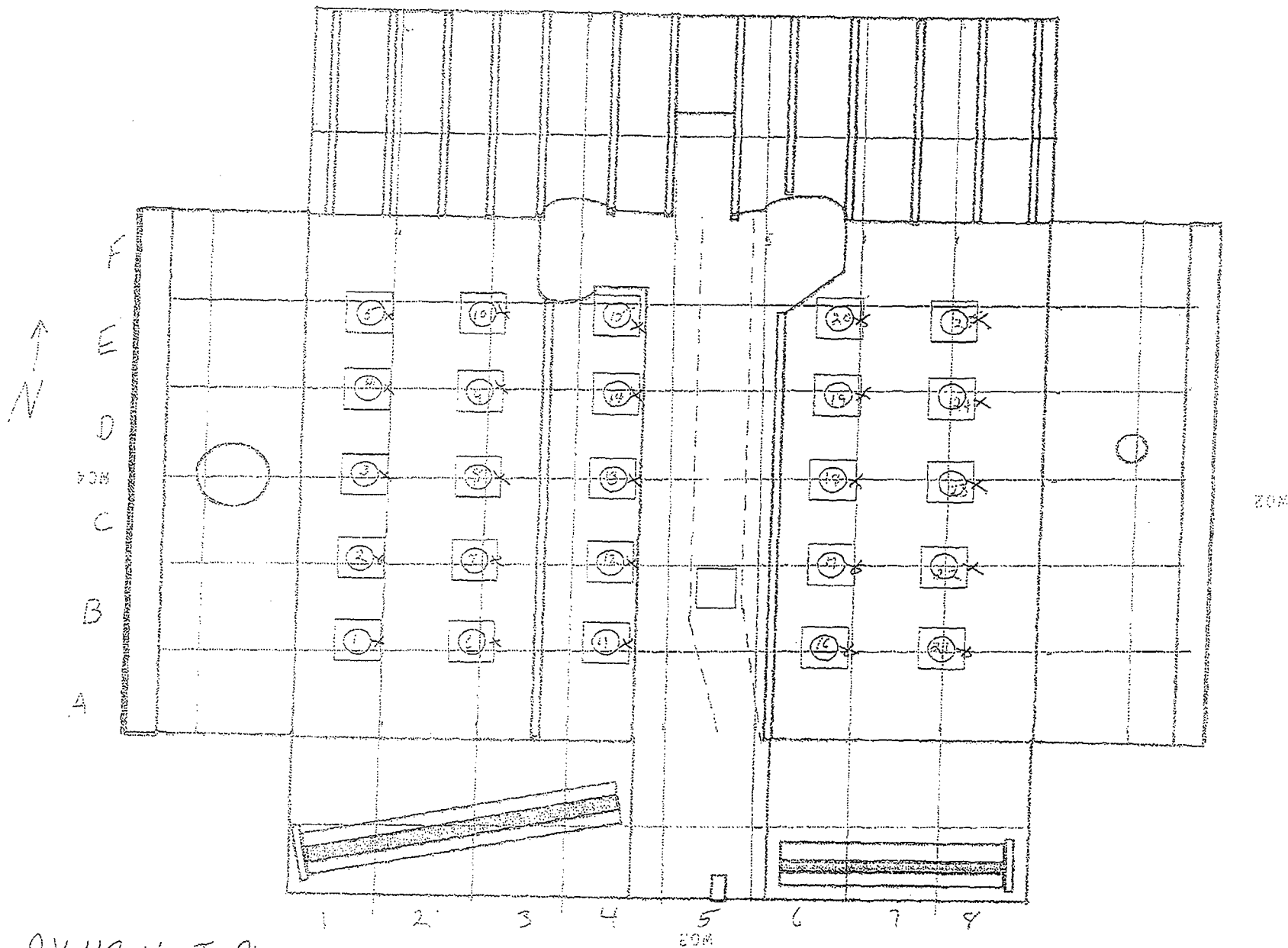
PK 48 OVER HEAD
STRUCTURE #1
1-30 11/28/06





PK 48 Large Diameter Pipe
 STRUCTURE #2
 1-10 11/28/06

PK 48 Vent Pipe
 STRUCTURE #3
 1-25 11/28/06



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 49	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Turbine Building Mezzanine, Section A	Date prepared: 11/27/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, and overhead structures on the Turbine Building Mezzanine, Section A.</p> <p>Following the removal of several sections of overhead piping sections of the Turbine Building Mezzanine are to be resurveyed as Class 1 Survey Areas. The sections to be resurveyed on the Turbine Building Mezzanine have been designated as Sections A through E.</p> <p>Section A of the Turbine Building Mezzanine is approximately 64 m²</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.233, X=0.233 m R=0.489, Y= 0.489 m

Walls: R=0.233, X=0.233 m R=0.489, Y= 0.978 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.974, X=0.974 m R=0.733, Y= 0.733 m

Walls: R=0.974, X=0.974 m R=0.733, Y= 1.466 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- For exposure rate measurements, source check instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Do not include measurements from more than 1 survey unit on the same download.

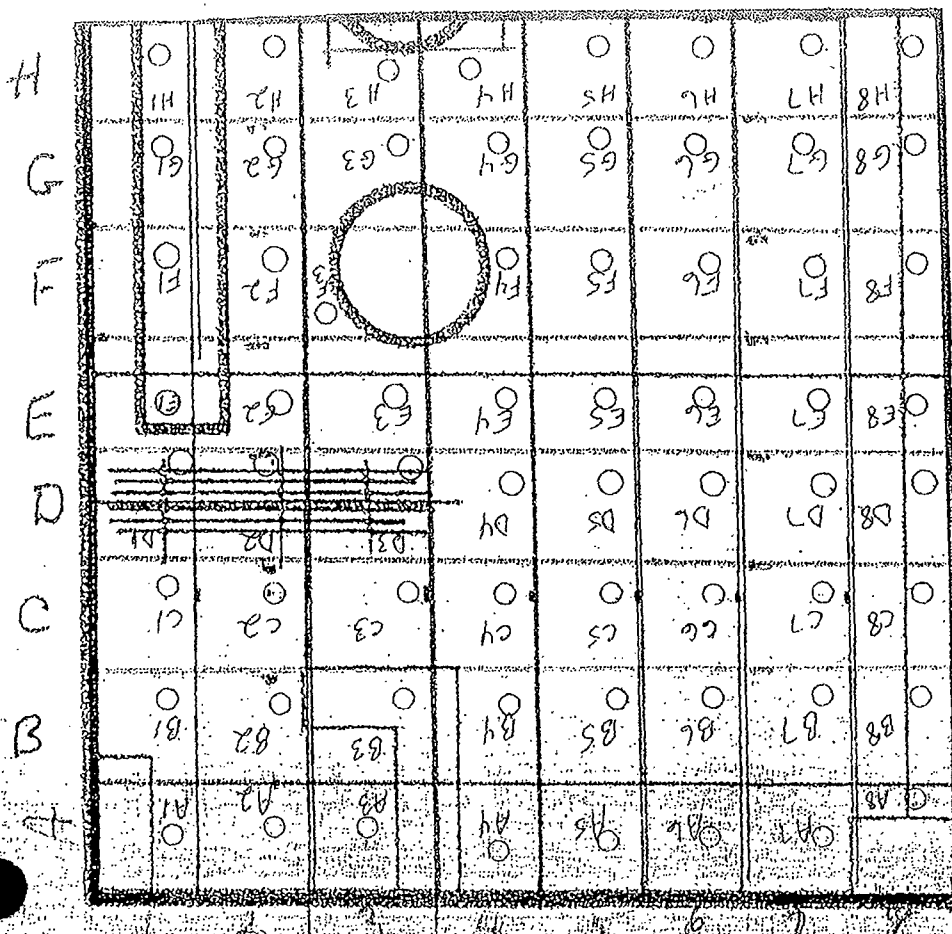
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK049	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK049	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK049	ST001				Overhead Structures	100%	30	NA	20	30

Package Review

Date Package Completed 11-29-06 Terry Throat / Tina Robertson / Carl Emile Ba Cull / 1-15-07

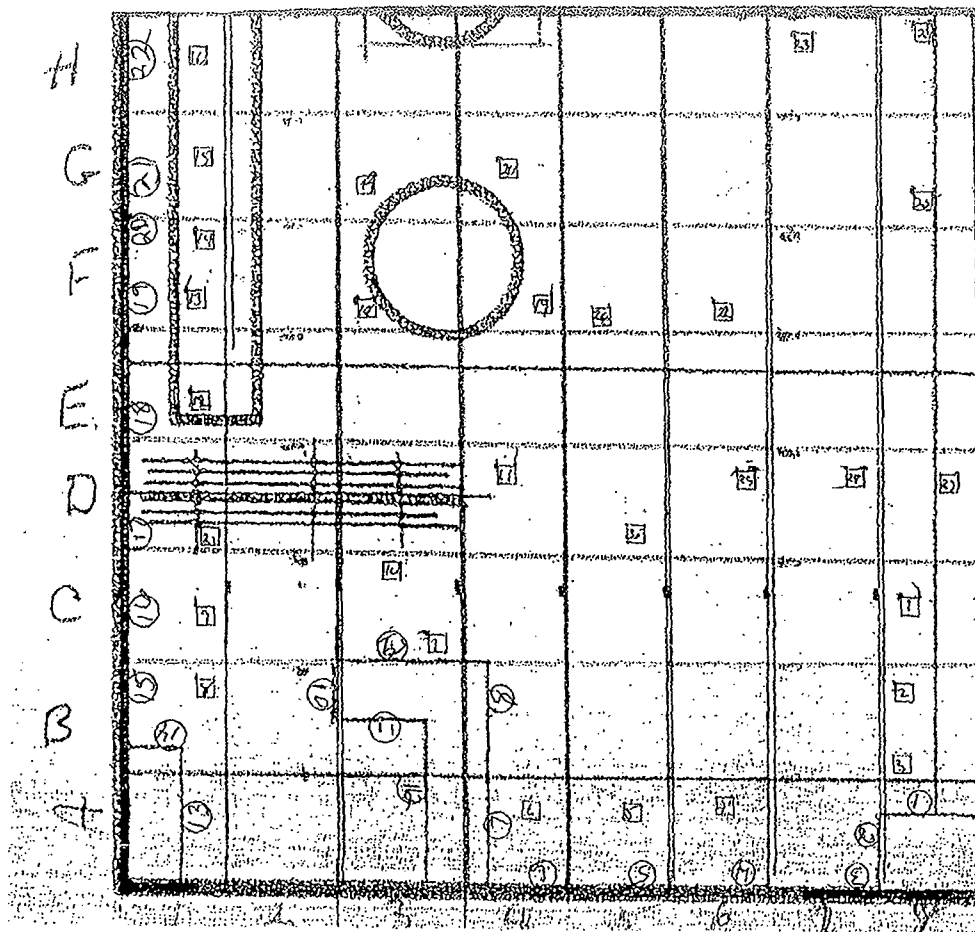
Package Reviewed by and Date Carl Long 1-16-07 NOLA

	01/1/23	Survey Comments
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PK49 FLOOR ○ = Smears + Points
 Turbine Bldg Mezzanine, Section A
 11/29/06

A1 - A8
 ↓
 H1 - H8



PK 49 WALLS TURBINE Bldg MEZZANINE, SECTION A

11/29/06 1-22 O = Smears + Points on walls

□ = Smears + Points on overhead structures

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 50	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Turbine Building Mezzanine, Section B	Date prepared: 11/29/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description

The survey area includes the floor, walls below 2 meters, and overhead structures on the Turbine Building Mezzanine, Section B.

Following the removal of several sections of overhead piping sections of the Turbine Building Mezzanine are to be resurveyed as Class 1 Survey Areas. The sections to be resurveyed on the Turbine Building Mezzanine have been designated as Sections A through E.

Section B of the Turbine Building Mezzanine is approximately 56 m²

See attached drawing

Class 1 survey areas are limited in size to less than 100 m²

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X, Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.117, X=0.117 m R=0.379, Y= 0.379 m

Walls: R=0.117, X=0.117 m R=0.379, Y= 0.744 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.882, X=0.882 m R=0.498, Y= 0.498 m

Walls: R=0.882, X=0.882 m R=0.498, Y= 0.996 m

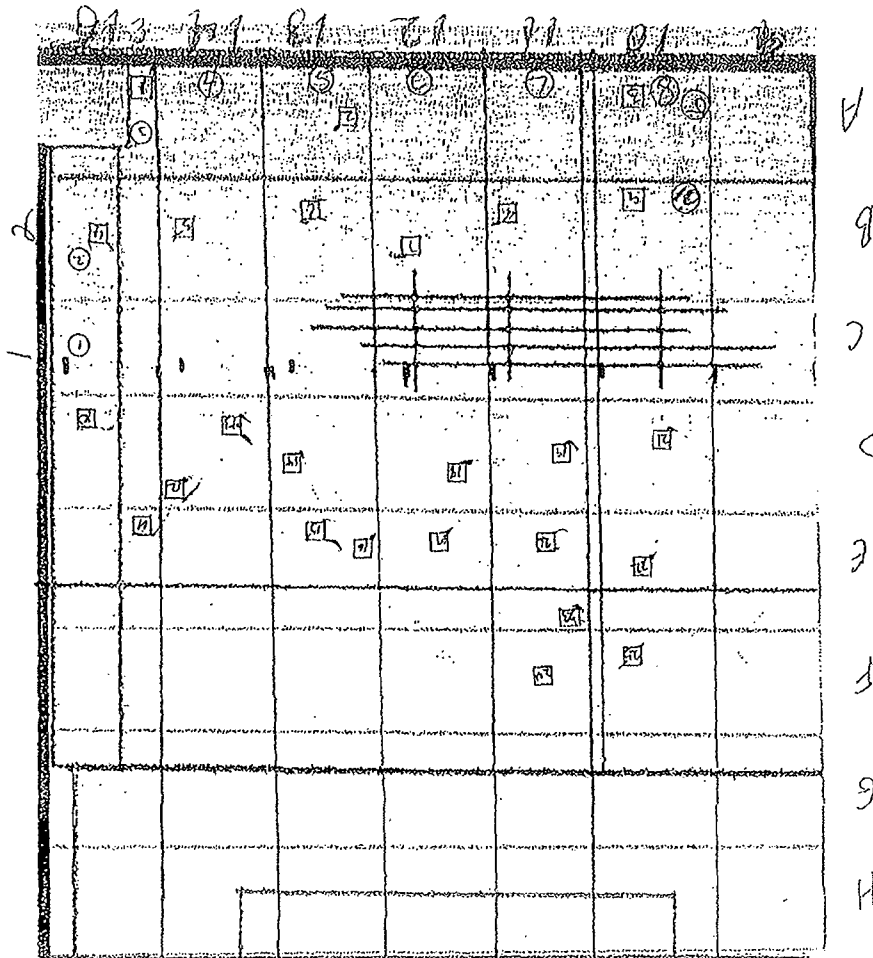
In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- For exposure rate measurements, source check instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Do not include measurements from more than 1 survey unit on the same download.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK050	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK050	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK050	ST001				Overhead Structures	100%	25	NA	20	25



PK 50 WALLS Turbine Bldg mezzanine, Section B
 11/30/06 1-10 O = Smears + Points on walls

□ = Smears + Points on Overhead structures

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 51	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Turbine Building Mezzanine, Section C	Date prepared: 11/29/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, and overhead structures on the Turbine Building Mezzanine, Section C.</p> <p>Following the removal of several sections of overhead piping sections of the Turbine Building Mezzanine are to be resurveyed as Class 1 Survey Areas. The sections to be resurveyed on the Turbine Building Mezzanine have been designated as Sections A through E.</p> <p>Section C of the Turbine Building Mezzanine is approximately 78 m²</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.645, X=0.645 m R=0.773, Y= 0.773 m

Walls: R=0.645, X=0.645 m R=0.773, Y= 1.546 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.226, X=0.226 m R=0.859, Y= 0.859 m

Walls: R=0.226, X=0.226 m R=0.859, Y= 1.718 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

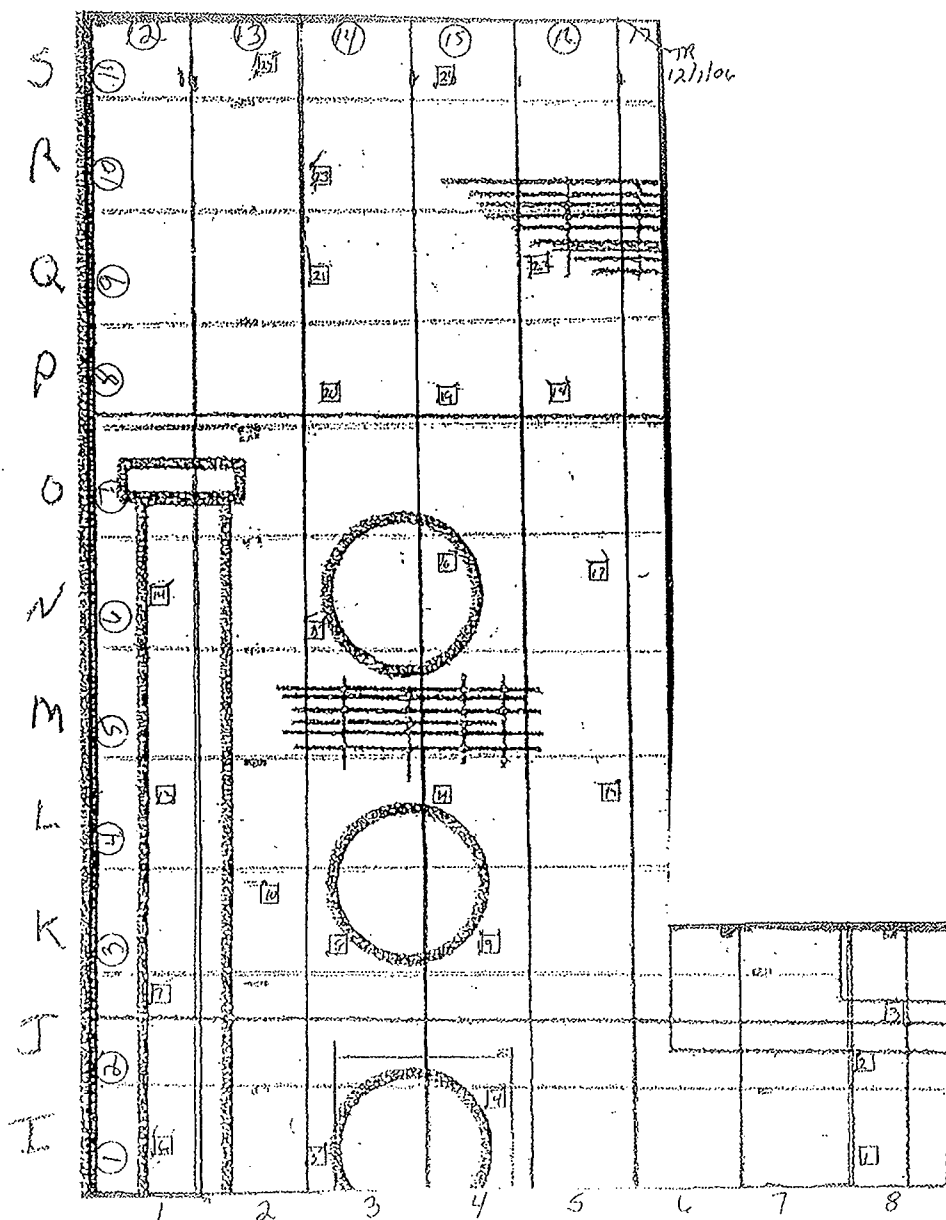
Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- For exposure rate measurements, source check instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Do not include measurements from more than 1 survey unit on the same download.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK051	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK051	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK051	ST001				Overhead Structures	100%	25	NA	20	25

Package Review	
Date Package Completed	12-2-06
Package Reviewed by and Date	Civil Eng 1-16-07 GJS 1/25/07

Survey Comments

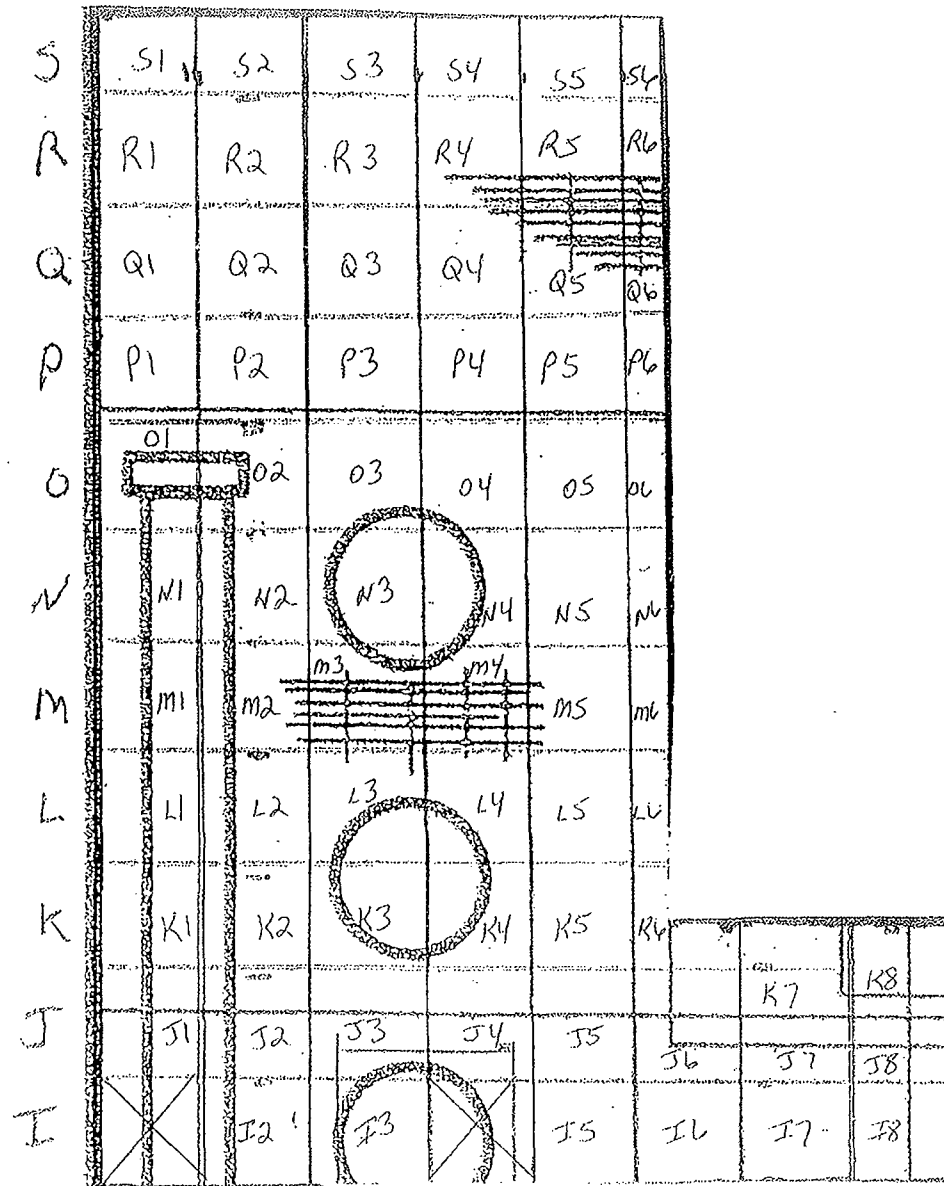


PK 51 WALLS TURBINE Bldg MEZZANINE, SECTION C.

11/31/06 1-16

○ = Smears + Points on walls

□ = Smears + Points on overhead structures



PK51 FLOOR TURBINE Bldg Mezzanine, Section C
 70 TOTAL 11/31/06

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 52	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Turbine Building Mezzanine, Section D	Date prepared: 11/30/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, and overhead structures on the Turbine Building Mezzanine, Section D.</p> <p>Following the removal of several sections of overhead piping sections of the Turbine Building Mezzanine are to be resurveyed as Class 1 Survey Areas. The sections to be resurveyed on the Turbine Building Mezzanine have been designated as Sections A through E.</p> <p>Section D of the Turbine Building Mezzanine is approximately 72 m²</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.226, X=0.226 m R=0.254, Y= 0.254 m

Walls: R=0.226, X=0.226 m R=0.254, Y= 0.508 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.887, X=0.887 m R=0.291, Y= 0.291 m

Walls: R=0.887, X=0.887 m R=0.291, Y= 0.582 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- For exposure rate measurements, source check instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Do not include measurements from more than 1 survey unit on the same download.

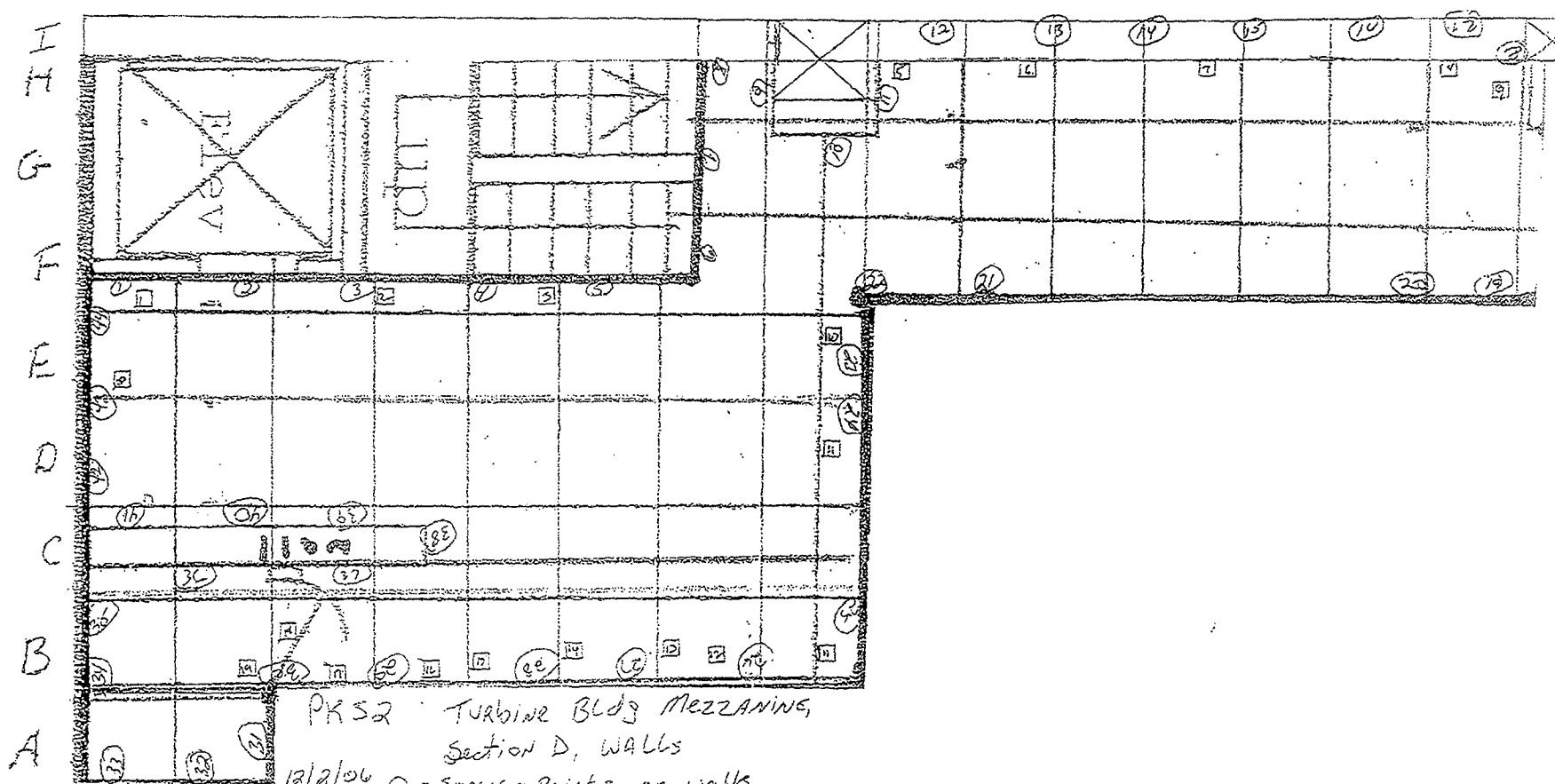
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK052	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK052	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK052	ST001				Overhead Structures	100%	20	NA	15	20

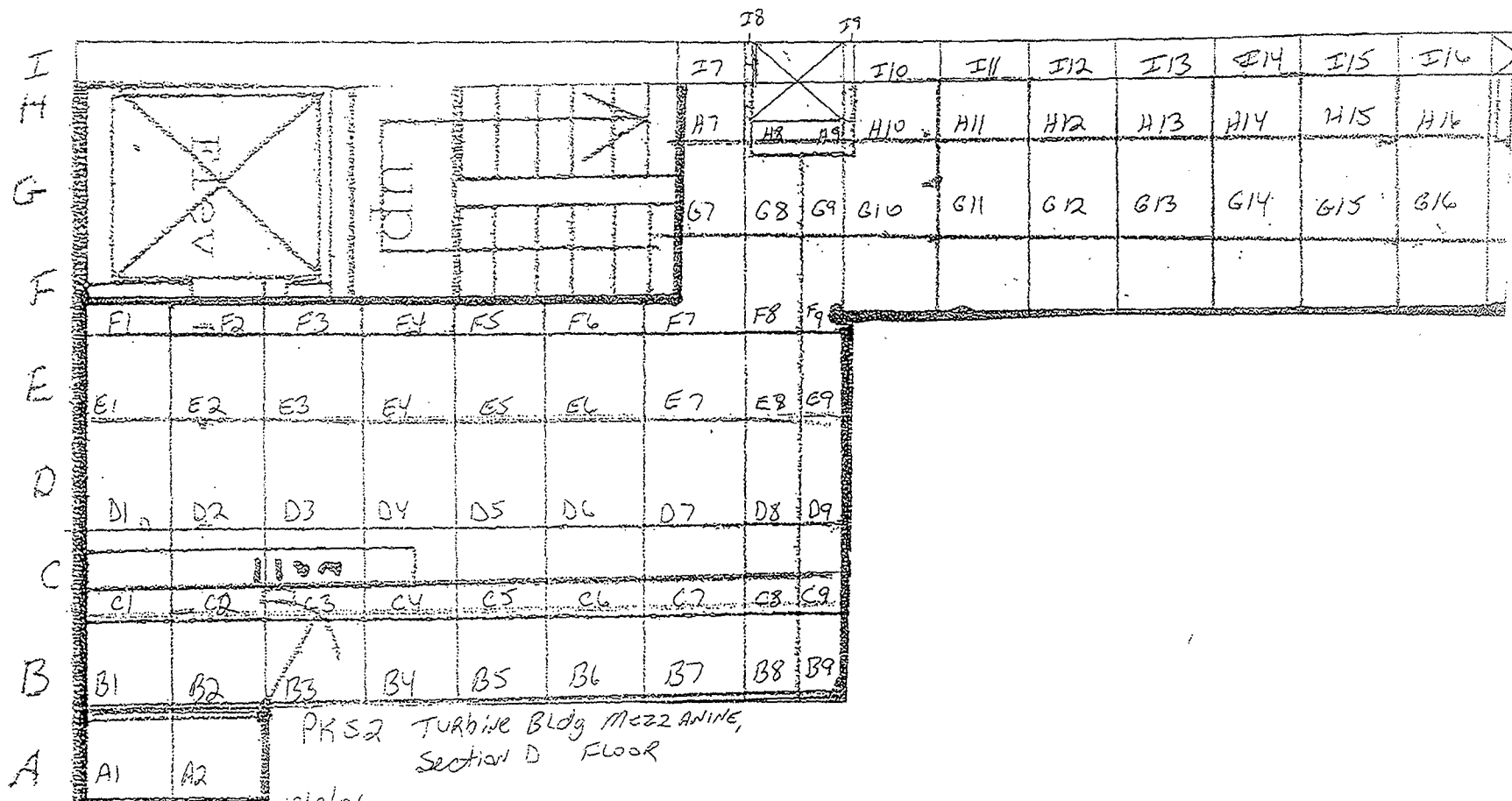
Package Review

Date Package Completed 12-2-06 Jason L. Smith & Lisa Robertson Bz Carl H. 1-15-07

Package Reviewed by and Date Carl Best 1-16-07 1/16/07

Survey ID	Survey Date	Survey Comments
1	2023-01-15	Initial survey, no comments.
2	2023-02-01	Comments on data collection process.
3	2023-02-15	Feedback on survey questions.
4	2023-03-01	Analysis of survey results.
5	2023-03-15	Final survey report.





Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 53	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Turbine Building Mezzanine, Section E	Date prepared: 11/30/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description

The survey area includes the floor, walls below 2 meters, and overhead structures on the Turbine Building Mezzanine, Section E.

Following the removal of several sections of overhead piping sections of the Turbine Building Mezzanine are to be resurveyed as Class 1 Survey Areas. The sections to be resurveyed on the Turbine Building Mezzanine have been designated as Sections A through E.

Section E of the Turbine Building Mezzanine is approximately 38 m²

See attached drawing

Class 1 survey areas are limited in size to less than 100 m²

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.387, X=0.387 m R=0.276, Y= 0.276 m

Walls: R=0.387, X=0.387 m R=0.276, Y= 0.552 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.729, X=0.729 m R=0.182, Y= 0.182 m

Walls: R=0.729, X=0.729 m R=0.182, Y= 0.364 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- For exposure rate measurements, source check instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Do not include measurements from more than 1 survey unit on the same download.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK053	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK053	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK053	ST001				Overhead Structures	100%	20	NA	15	20

Package Review

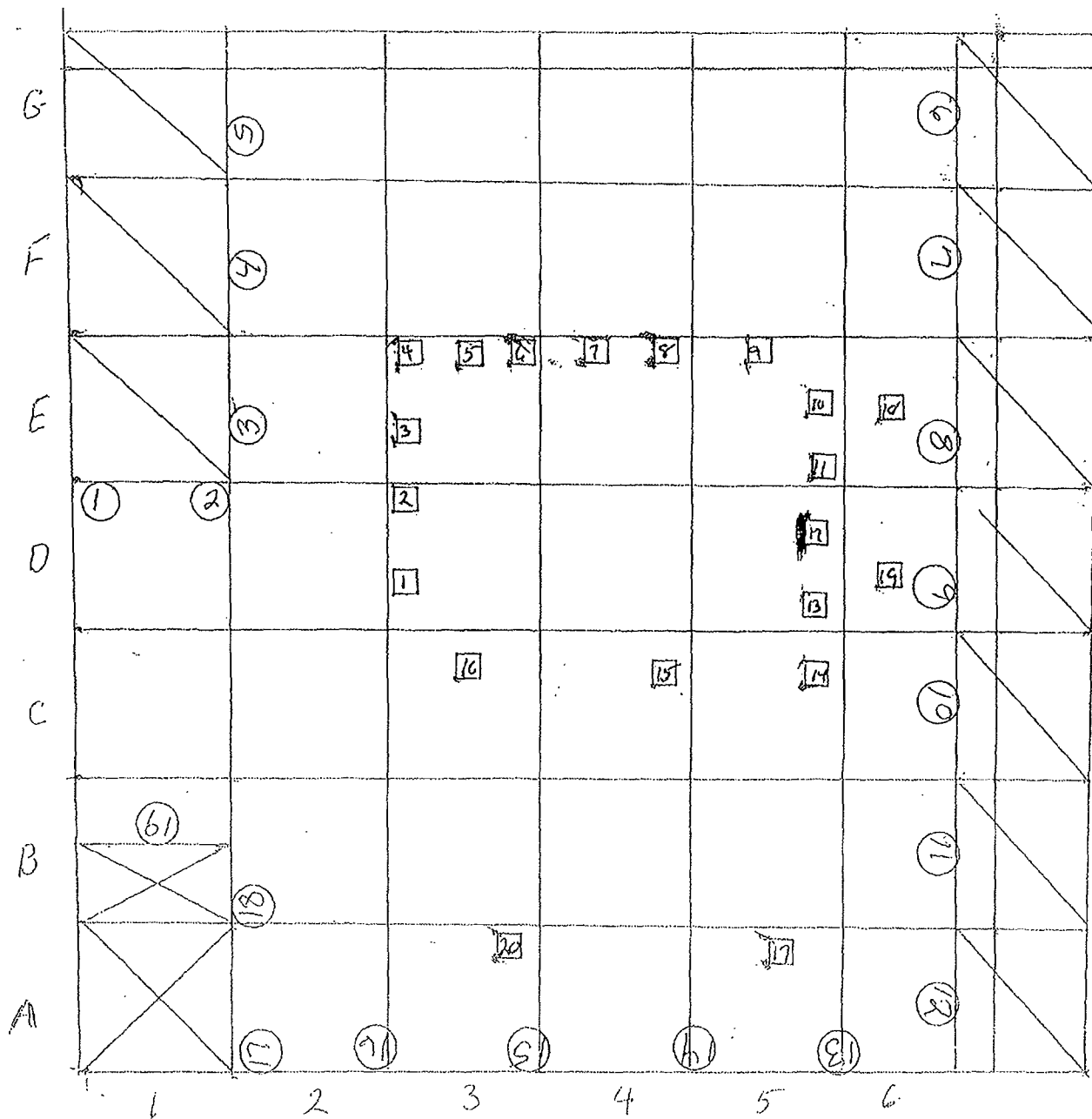
Date Package Completed	12-3-06
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Package Reviewed by and Date Paul Galt 1-15-07

Date Paul Galt 1-15-07

Survey Comments

Page 5 of 7



PK053
12/1/06
1-19

Turbine Bldg Mezzanine,
Section E, WALLs

○ = Smeers + Points on Walls

□ = Smeers + Points on Overhead Structures

G		G2	G3	G4	G5	G6
F		F2	F3	F4	F5	F6
E		E2	E3	E4	E5	E6
D	D1	D2	D3	D4	D5	D6
C	C1	C2	C3	C4	C5	C6
B	B1	B2	B3	B4	B5	B6
A		A2	A3	A4	A5	A6
	1	2	3	4	5	6

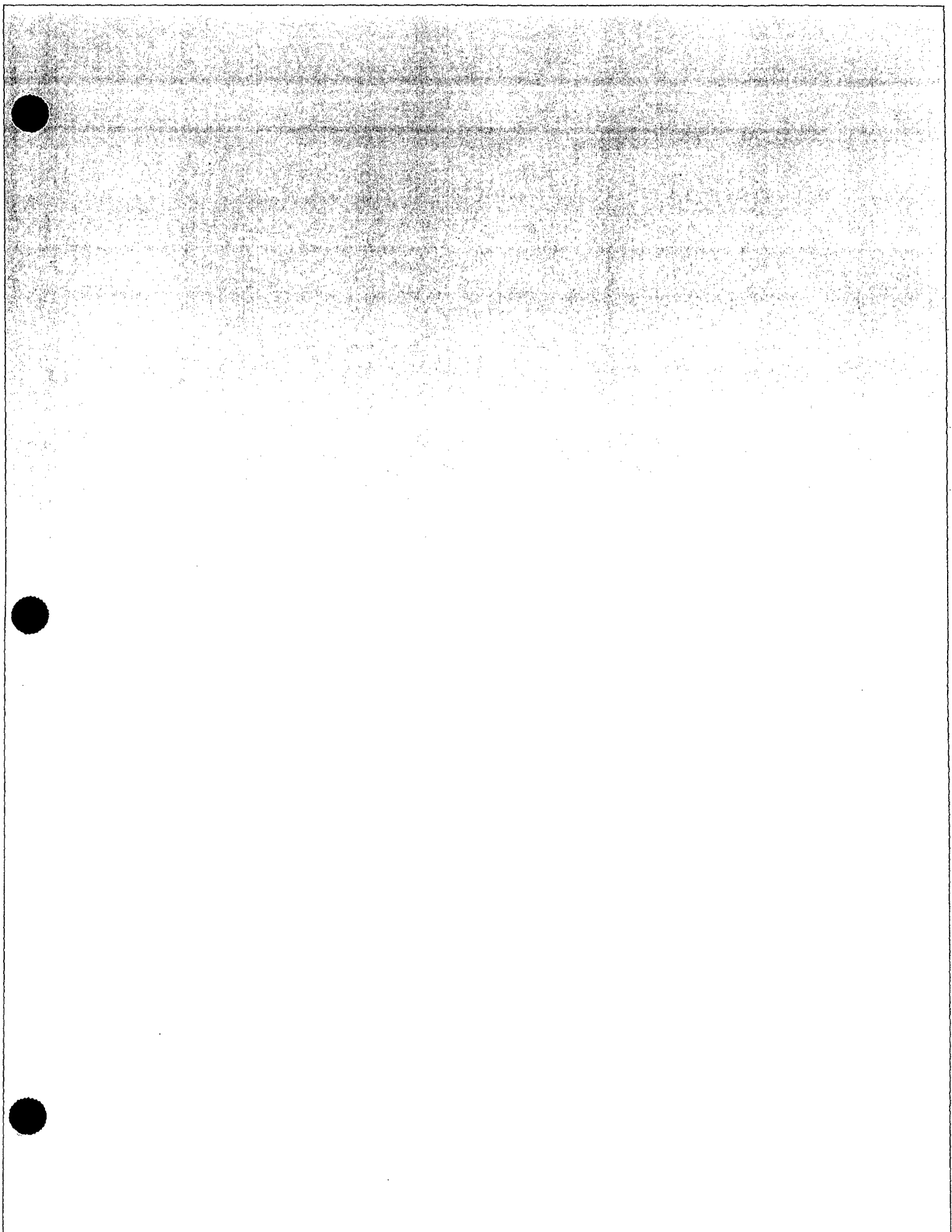
PK053 TURBINE Bldg MEZZANINE,
Section E, FLOOR

12/2/06

A2-A6

↓

G2-G6



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 54	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Hot Side Of The Turbine Building Basement, Section A	Date prepared: 12/2/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description

The survey area includes the floor, walls below 2 meters, and overhead structures on the hot side of the Turbine Building Basement, Section A.

Following the removal of several sections of overhead piping on the hot side of the Turbine Building Basement, the hot side of the Turbine Building Basement is to be resurveyed. The hot side of the Turbine Building Basement divided into 5 Class 1 Survey Units and designated Sections A through E.

Section A of the Turbine Building Basement is approximately 86 m²

See attached drawing

Class 1 survey areas are limited in size to less than 100 m²

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.389, X=0.389 m R=0.839, Y= 0.839 m

Walls: R=0.389, X=0.389 m R=0.839, Y= 1.678 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.447, X=0.447 m R=0.333, Y= 0.333 m

Walls: R=0.447, X=0.447 m R=0.333, Y= 0.666 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- For exposure rate measurements, source check instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Do not include measurements from more than 1 survey unit on the same download.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK054	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK054	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK054	ST001				Overhead Structures	100%	20	NA	15	20

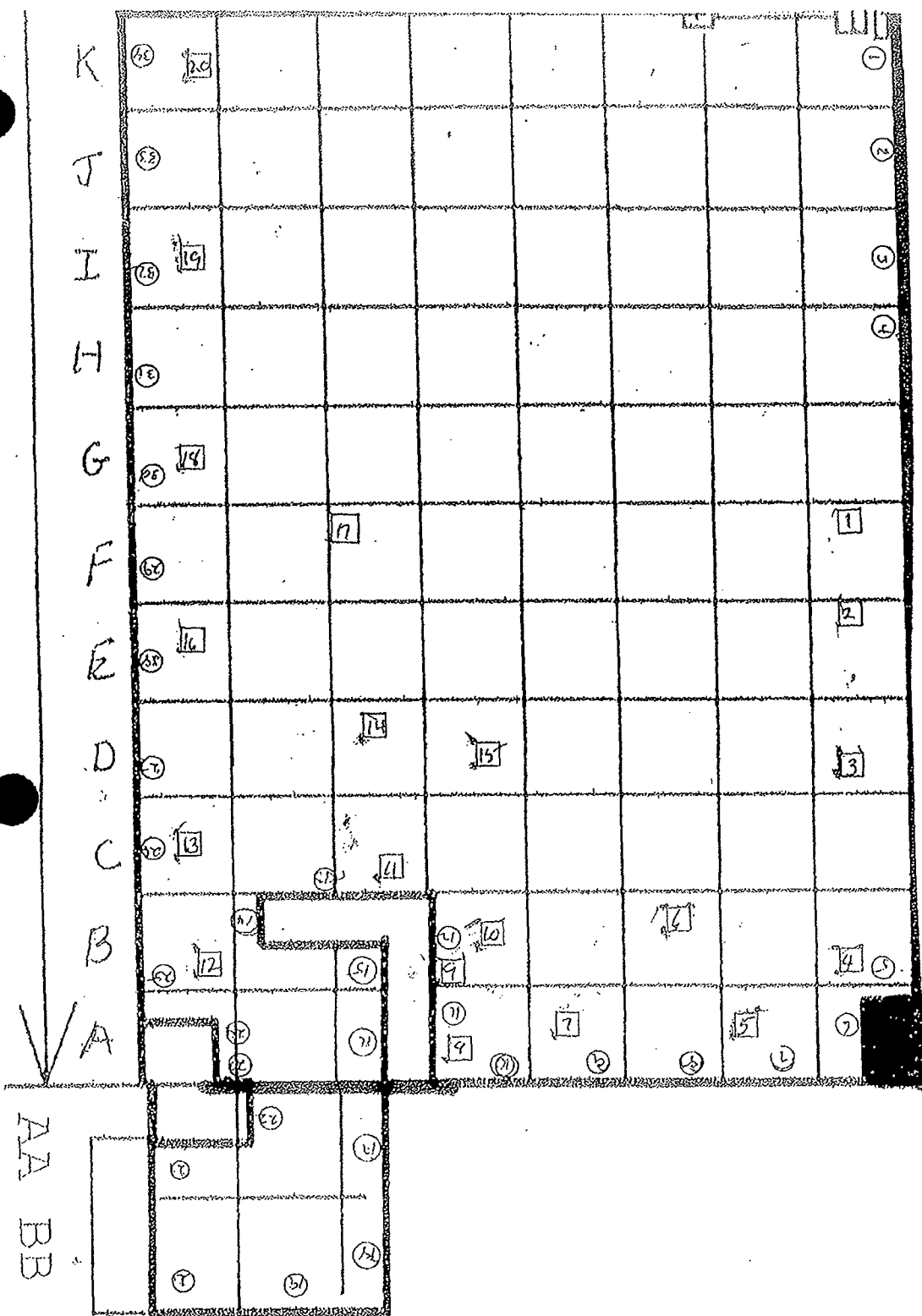
Package Review	
Package Review	

Date Package Completed 12-14-21 1 21 # 2. DIA 1-2001

Package Reviewed by and Date 12-7-06 Jerry Schwartz / Jina Holmstrom / By Carl Galt 1-18-07

Case No. 11551
K/7/11/25/07

Survey ID	Survey Date	Survey Comments
01	01/01/2020	
02	01/01/2020	
03	01/01/2020	
04	01/01/2020	
05	01/01/2020	
06	01/01/2020	
07	01/01/2020	
08	01/01/2020	
09	01/01/2020	
10	01/01/2020	
11	01/01/2020	
12	01/01/2020	
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18	01/01/2020	
19	01/01/2020	
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90	01/01/2020	
91	01/01/2020	
92	01/01/2020	
93	01/01/2020	
94	01/01/2020	
95	01/01/2020	
96	01/01/2020	
97	01/01/2020	
98	01/01/2020	
99	01/01/2020	
100	01/01/2020	



PK 54 WALLS, Outside of the Turbine Bldg. Basement,
Section A

12/3/06 1-34

○ = Smears + Points on walls

□ = Smears + Points on Overhead Structures

K	K1	K2	K3	K4	K5	K6	K7	K8
J	J1	J2	J3	J4	J5	J6	J7	J8
I	I1	I2	I3	I4	I5	I6	I7	I8
H	H1	H2	H3	H4	H5	H6	H7	H8
G	G1	G2	G3	G4	G5	G6	G7	G8
F	F1	F2	F3	F4	F5	F6	F7	F8
E	E1	E2	E3	E4	E5	E6	E7	E8
D	D1	D2	D3	D4	D5	D6	D7	D8
C	C1	C2	C3	C4	C5	C6	C7	C8
B	B1	B2	B3	B4	B5	B6	B7	B8
V A	A1	A2	A3	A4	A5	A6	A7	A8
AA	AA1	AA2	AA3					
BB	BB1	BB2	BB3					

PKS4 FLOORS Hotside of the Turbine Bldg
 12/3/2006 Basement, Section A

AA1-AA3
 BB1-BB3
 A1-A8
 K1-K8

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 55	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Hot Side Of The Turbine Building Basement, Section B	Date prepared: 12/2/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, and overhead structures on the hot side of the Turbine Building Basement, Section B.</p> <p>Following the removal of several sections of overhead piping on the hot side of the Turbine Building Basement, the hot side of the Turbine Building Basement is to be resurveyed. The hot side of the Turbine Building Basement divided into 5 Class 1 Survey Units and designated Sections A through E.</p> <p>Section B of the Turbine Building Basement is approximately 76 m²</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.212, X=0.212 m R=0.385, Y= 0.385 m

Walls: R=0.212, X=0.212 m R=0.385, Y= 0.770 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.624, X=0.624 m R=0.662, Y= 0.662 m

Walls: R=0.624, X=0.624 m R=0.662, Y= 1.324 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- For exposure rate measurements, source check instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Do not include measurements from more than 1 survey unit on the same download.

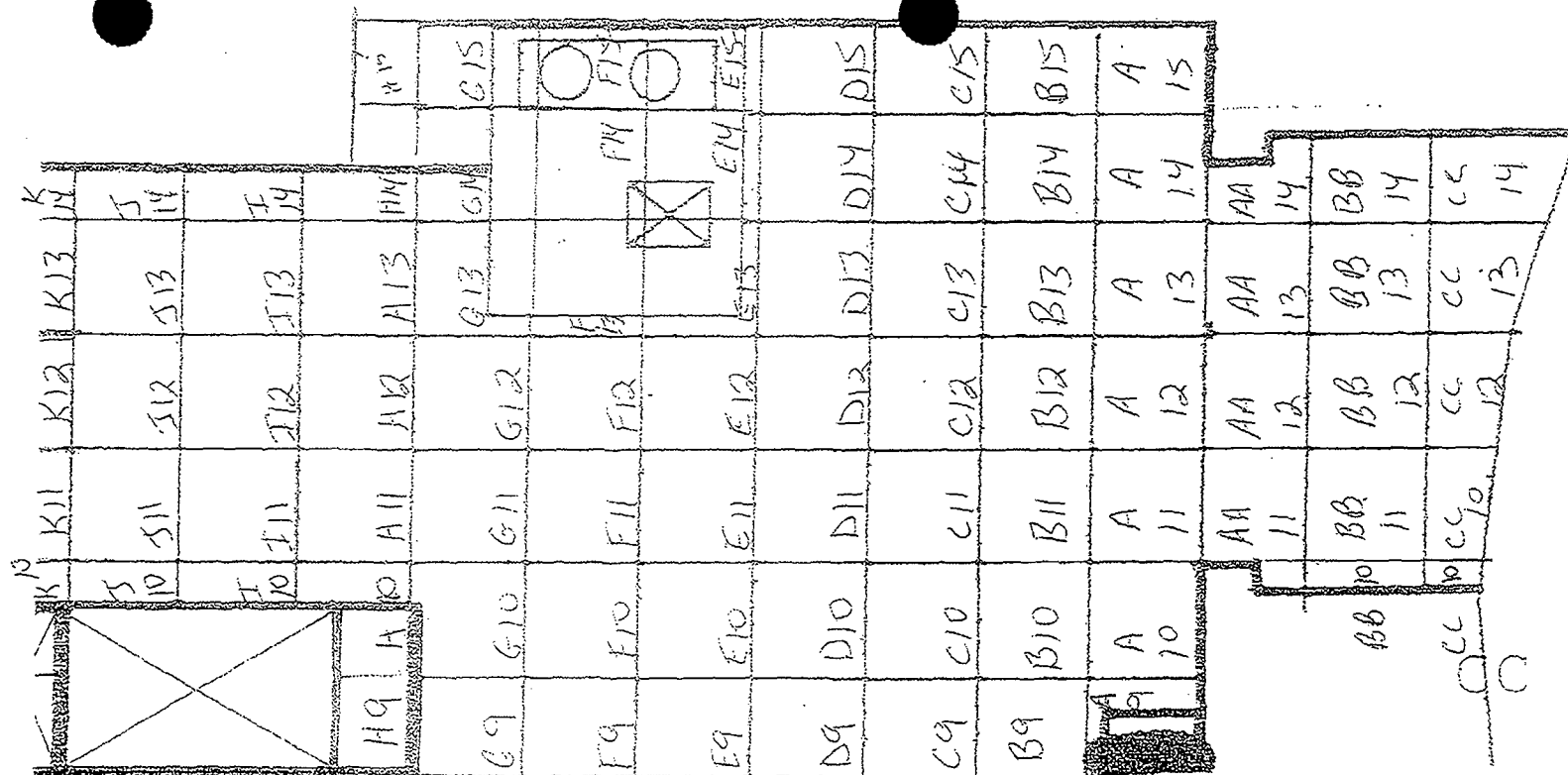
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK055	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK055	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK055	ST001				Overhead Structures	100%	20	NA	15	20

Package Review	
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Date Package Completed
12-4-66 From Tibbits / Low Relative / Dr. Piddick 1-18-67

Package Reviewed by and Date Paula P. 1-15-07

Survey ID	Survey Comments
21	



PK55

12/4/08

Hot Side of the Turbine Bldg, Basement,
Section B
FLOOR

A9-A15

↓

K9-K14

AA11-AA14

↓

CC10-CC14

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 56	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Hot Side Of The Turbine Building Basement, Section C	Date prepared: 12/2/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, and overhead structures on the hot side of the Turbine Building Basement, Section C.</p> <p>Following the removal of several sections of overhead piping on the hot side of the Turbine Building Basement, the hot side of the Turbine Building Basement is to be resurveyed. The hot side of the Turbine Building Basement divided into 5 Class 1 Survey Units and designated Sections A through E.</p> <p>Section C of the Turbine Building Basement is approximately 52 m²</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.333, X=0.333 m R=0.655, Y= 0.655 m

Walls: R=0.333, X=0.333 m R=0.385, Y= 1.330 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.632, X=0.632 m R=0.887, Y= 0.887 m

Walls: R=0.632, X=0.632 m R=0.887, Y= 1.774 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- For exposure rate measurements, source check instrumentation using a Cs-137 source.
- For exposure rate measurements, use a 44-10 detector whenever possible.
- Do not include measurements from more than 1 survey unit on the same download.

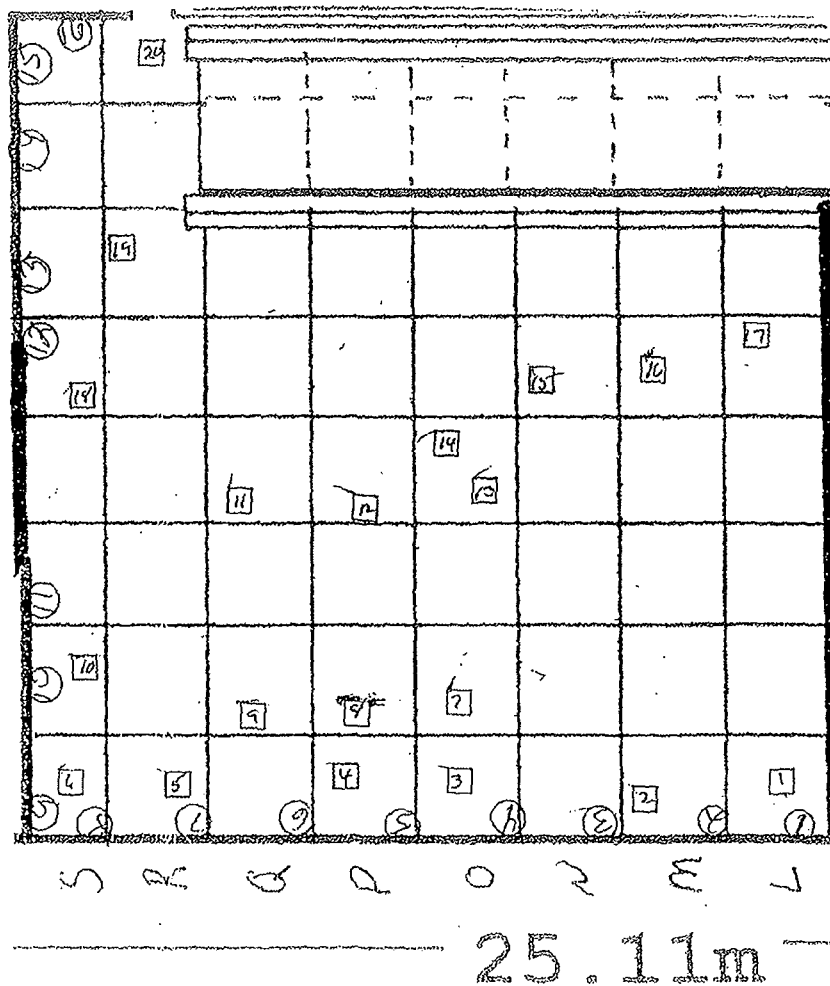
Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK056	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK056	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK056	ST001				Overhead Structures	100%	20	NA	15	20

Package Review

Date Package Completed 12-5-06 *Kevin Thiriot / Linda Robertson / R. Coulter* 1-15-07

Package Reviewed by and Date: Carl [signature] 1-15-07 [signature]

Survey Number	Survey Date	Survey Comments
1	1/1/2020	
2	1/15/2020	
3	2/1/2020	
4	2/15/2020	
5	3/1/2020	
6	3/15/2020	
7	4/1/2020	
8	4/15/2020	
9	5/1/2020	
10	5/15/2020	
11	6/1/2020	
12	6/15/2020	
13	7/1/2020	
14	7/15/2020	
15	8/1/2020	
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28	2/15/2021	
29	3/1/2021	
30	3/15/2021	
31	4/1/2021	
32	4/15/2021	
33	5/1/2021	
34	5/15/2021	
35	6/1/2021	
36	6/15/2021	
37	7/1/2021	
38	7/15/2021	
39	8/1/2021	
40	8/15/2021	
41	9/1/2021	
42	9/15/2021	
43	10/1/2021	
44	10/15/2021	
45	11/1/2021	
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48	12/15/2021	
49	1/1/2022	
50	1/15/2022	
51	2/1/2022	
52	2/15/2022	
53	3/1/2022	
54	3/15/2022	
55	4/1/2022	
56	4/15/2022	
57	5/1/2022	
58	5/15/2022	
59	6/1/2022	
60	6/15/2022	
61	7/1/2022	
62	7/15/2022	
63	8/1/2022	
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66	9/15/2022	
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82	5/15/2023	
83	6/1/2023	
84	6/15/2023	
85	7/1/2023	
86	7/15/2023	
87	8/1/2023	
88	8/15/2023	
89	9/1/2023	
90	9/15/2023	
91	10/1/2023	
92	10/15/2023	
93	11/1/2023	
94	11/15/2023	
95	12/1/2023	
96	12/15/2023	
97	1/1/2024	
98	1/15/2024	
99	2/1/2024	
100	2/15/2024	



PK56 WALLS, Hot side of the Turbine Bldg,
 BASEMENT, Section C. O = Smears + Points on Walls

□ = Smears + Points on
 Overhead Structures

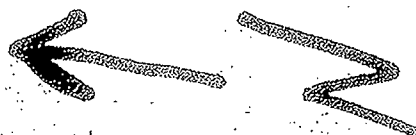
1-16

12/5/06



69								
58	88	88	88	88	88	88	88	88
57	87	87	87	87	87	87	87	87
								87
56	86	86	86	86	86	86	86	86
55	85	85	85	85	85	85	85	85
54	84	84	84	84	84	84	84	84
53	83	83	83	83	83	83	83	83
52	82	82	82	82	82	82	82	82
51	81	81	81	81	81	81	81	81
S W E N								

25.11m



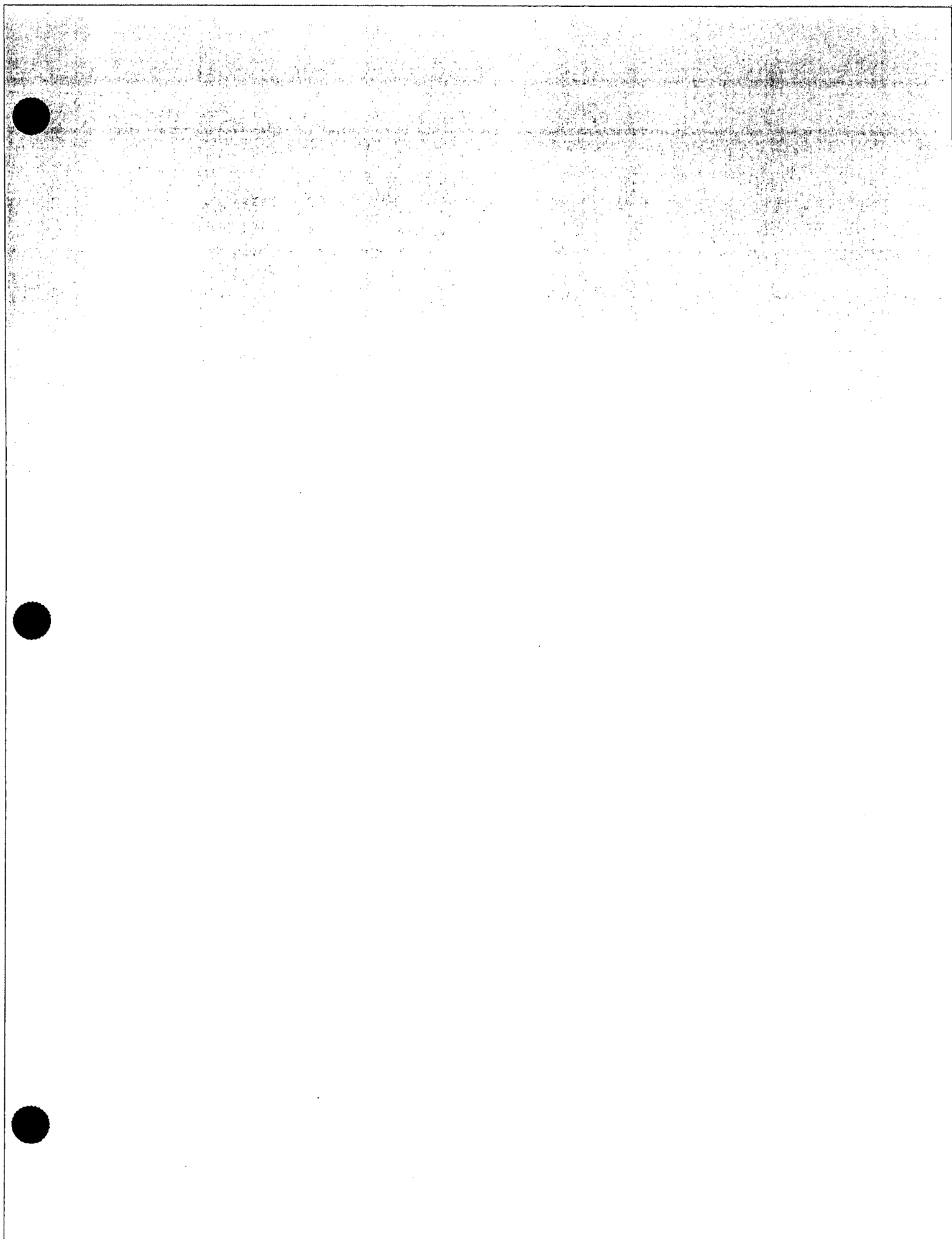
PK 56 FLOOR Hot Side Turbine Bldg.
Basement Section C

12/5/06

L1 - L8 - S1 - S9



S1 - S9



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 57	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Hot Side Of The Turbine Building Basement, Section D	Date prepared: 12/2/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, and overhead structures on the hot side of the Turbine Building Basement, Section D.</p> <p>Following the removal of several sections of overhead piping on the hot side of the Turbine Building Basement, the hot side of the Turbine Building Basement is to be resurveyed. The hot side of the Turbine Building Basement divided into 5 Class 1 Survey Units and designated Sections A through E.</p> <p>Section D of the Turbine Building Basement is approximately 90 m²</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately $\frac{1}{2}$ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.833, X=0.833 m R=0.339, Y= 0.339 m

Walls: R=0.833, X=0.833 m R=0.339, Y= 0.678 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.393, X=0.393 m R=0.776, Y= 0.776 m

Walls: R=0.393, X=0.393 m R=0.776, Y= 1.552 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- Do not include measurements from more than 1 survey unit on the same download.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK057	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK057	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK057	ST001				Overhead Structures	100%	20	NA	NA	20

Package Review

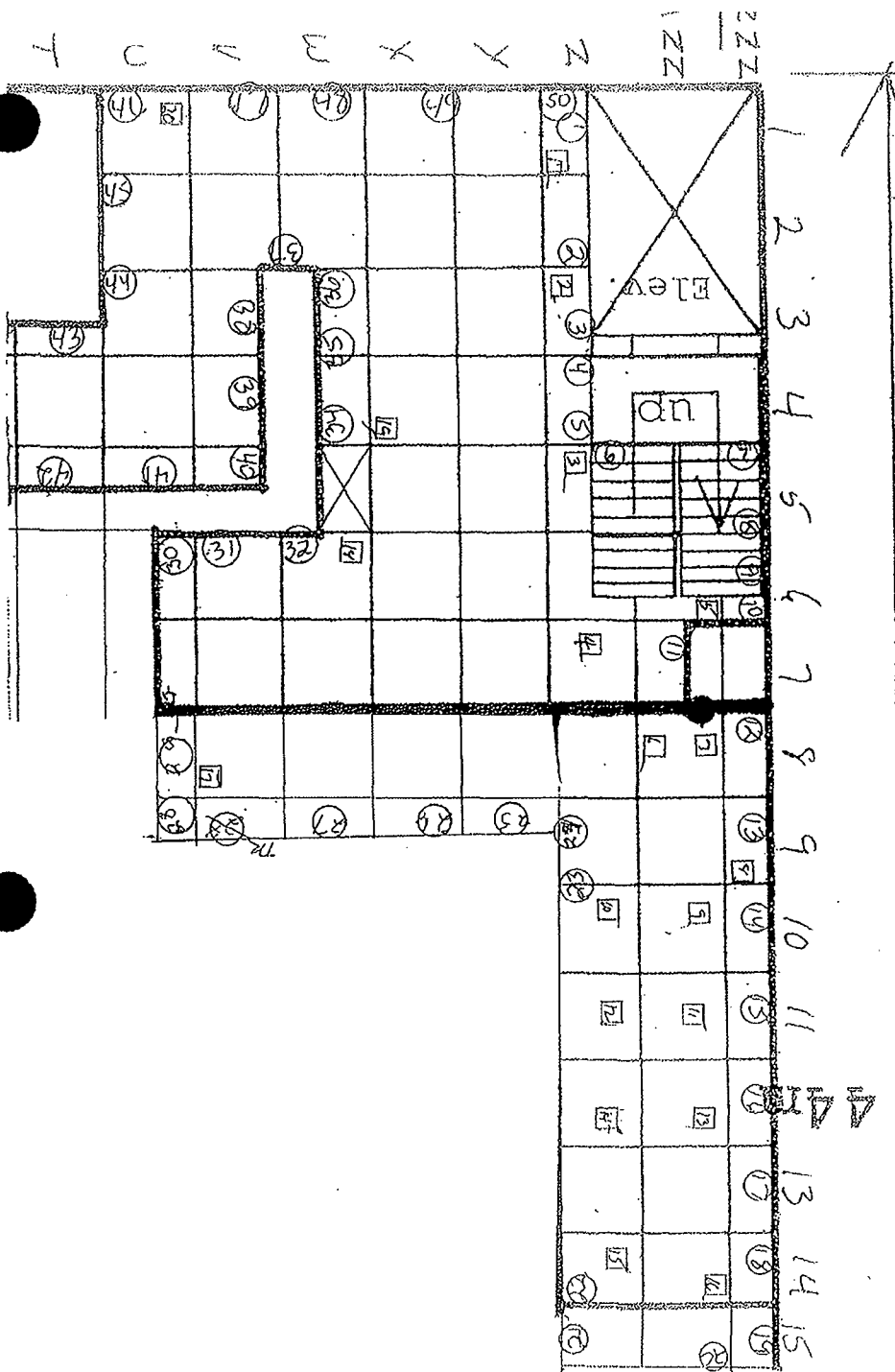
Date Package Completed

12-5-06 Jerry Theroil / Lino Robertson / Carl [unclear]

Package Reviewed by and Date

Carl [unclear] 1-15-07 [unclear] 1/25/07

Survey Comments



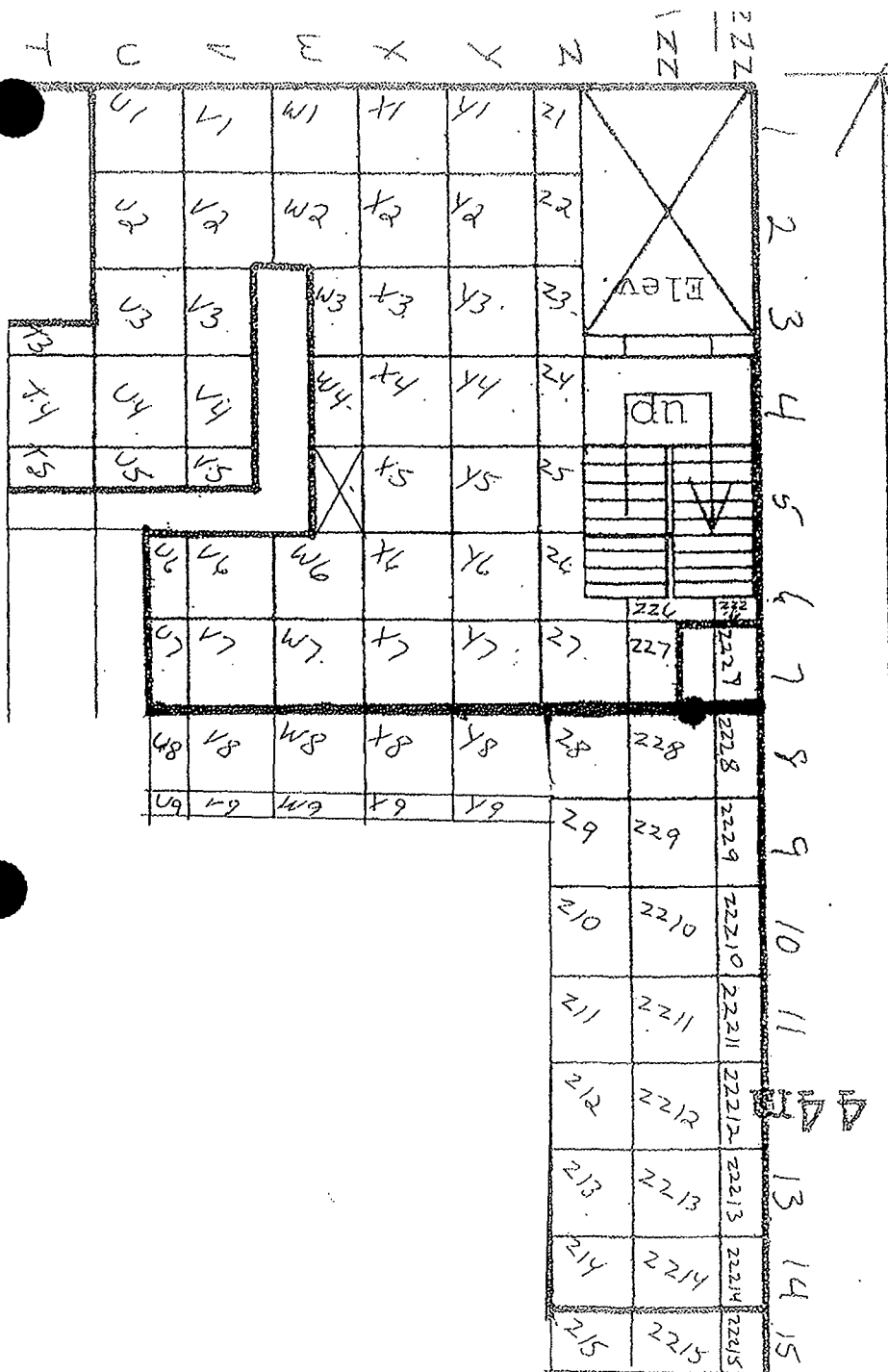
PK57 WALLS Outside of the Turbine Bldg,
Basement, Section D

○ = Smears + Points on walls

1-50

12/5/06

□ = Smears + Points on overhead structures



PK 57 FLOOR 5 Outside of the Turbine Bldg
Basement, Section D

12/5/06

T3-T5

U1-U9

↓
Y1-Y9

Z1-Z15

↓
222.6-222.15

Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 58	Prepared by: Doug Schult
Location: Floors, Walls Below 2 Meters, and Overhead Structures On The Hot Side Of The Turbine Building Basement, Section E	Date prepared: 12/2/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor, walls below 2 meters, and overhead structures on the hot side of the Turbine Building Basement, Section E.</p> <p>Following the removal of several sections of overhead piping on the hot side of the Turbine Building Basement, the hot side of the Turbine Building Basement is to be resurveyed. The hot side of the Turbine Building Basement divided into 5 Class 1 Survey Units and designated Sections A through E.</p> <p>Section E of the Turbine Building Basement is approximately 41 m²</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Grid the walls below two meters by designating a new grid every 1 meters beginning in the south west corner of the room and work towards the north, then east, then south, then west. The corners of each grid should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room.
- 3) Prepare a map or drawing of the survey unit showing the grid layout.
- 4) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately ½ inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 5) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 6) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate for the floor grids and 2 to give the Y coordinate for the wall grids

Floors: R=0.221, X=0.221 m R=0.439, Y= 0.439 m

Walls: R=0.221, X=0.221 m R=0.439, Y= 0.878 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.771, X=0.771 m R=0.339, Y= 0.339 m

Walls: R=0.771, X=0.771 m R=0.339, Y= 0.678 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.

- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number.
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.
- Do not include measurements from more than 1 survey unit on the same download.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK058	FL001				Floor	100%	Each Grid	NA	NA	Each Grid
PK058	W0001				Walls	100%	Each Grid	NA	NA	Each Grid
PK058	ST001				Overhead Structures	100%	20	NA	NA	20

Package Review

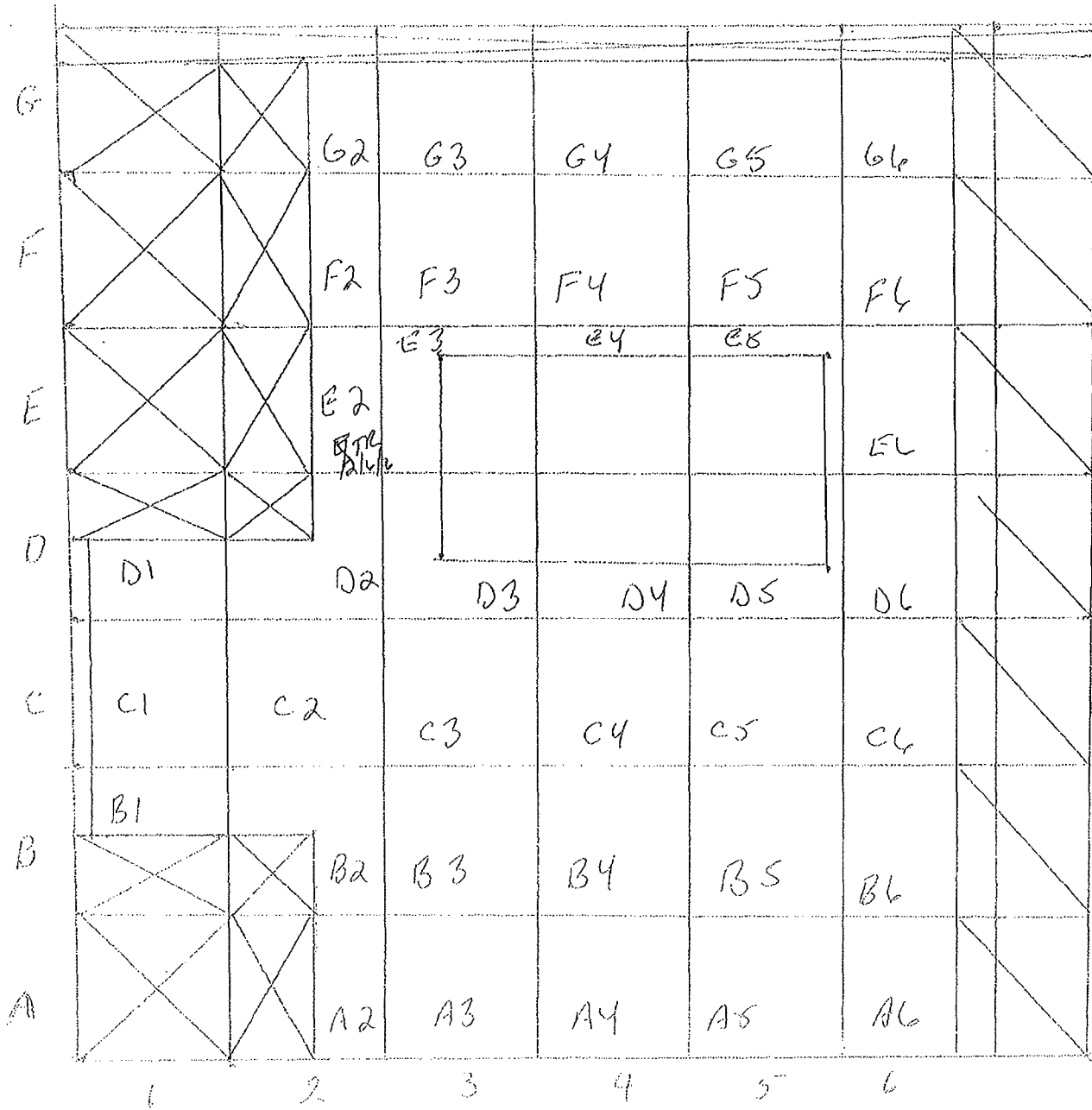
Date Package Completed

Package Reviewed by and Date

12-6-06 Jerry Theriot / Tim Robinson / Carl
 Carl Judd 1-15-07 [Signature] 1/25/01

Survey Comments

PK 058



12/4/06

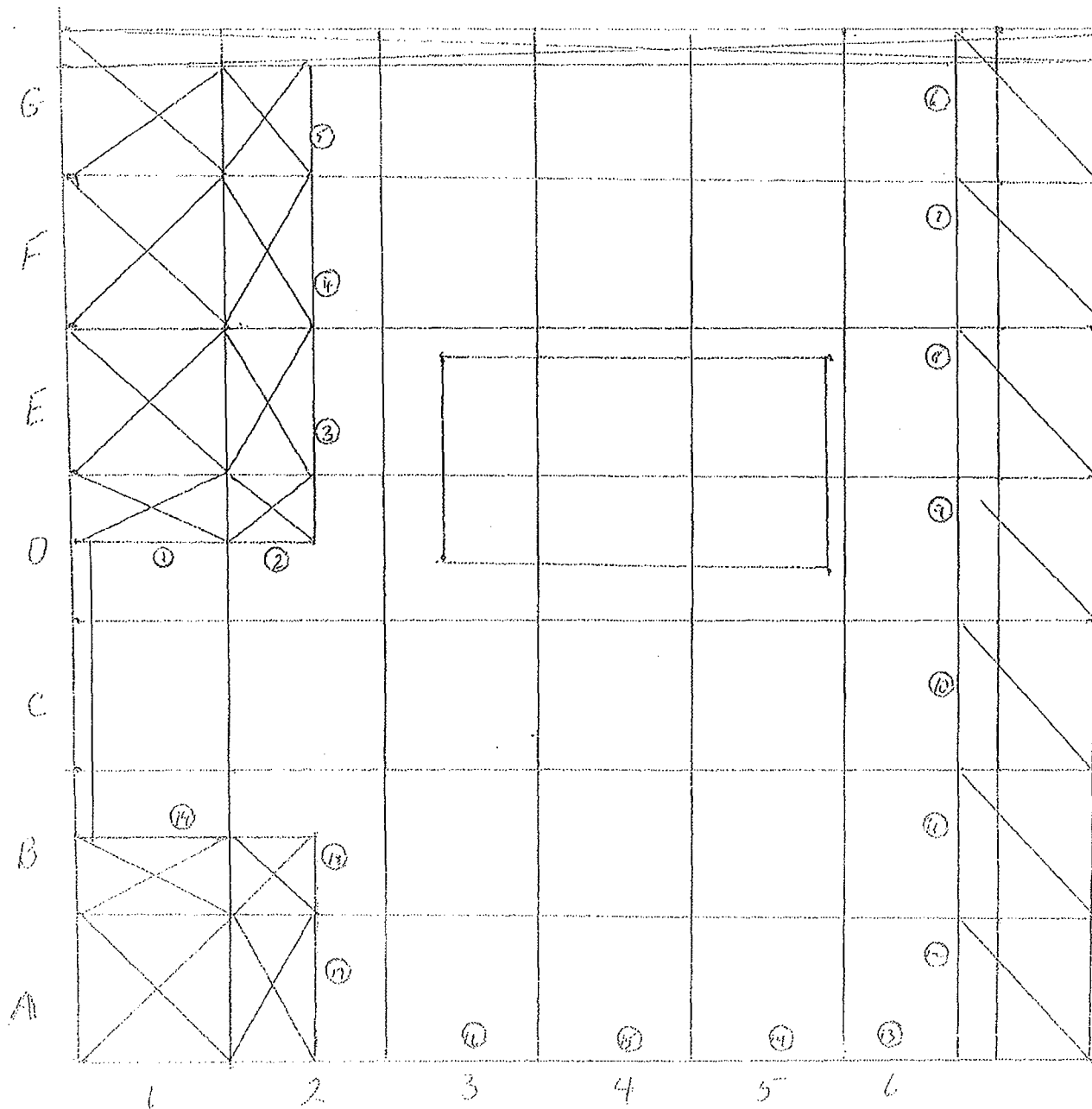
Hotside Turbine Bldg, Basement
Section E, Floor

A1-A6

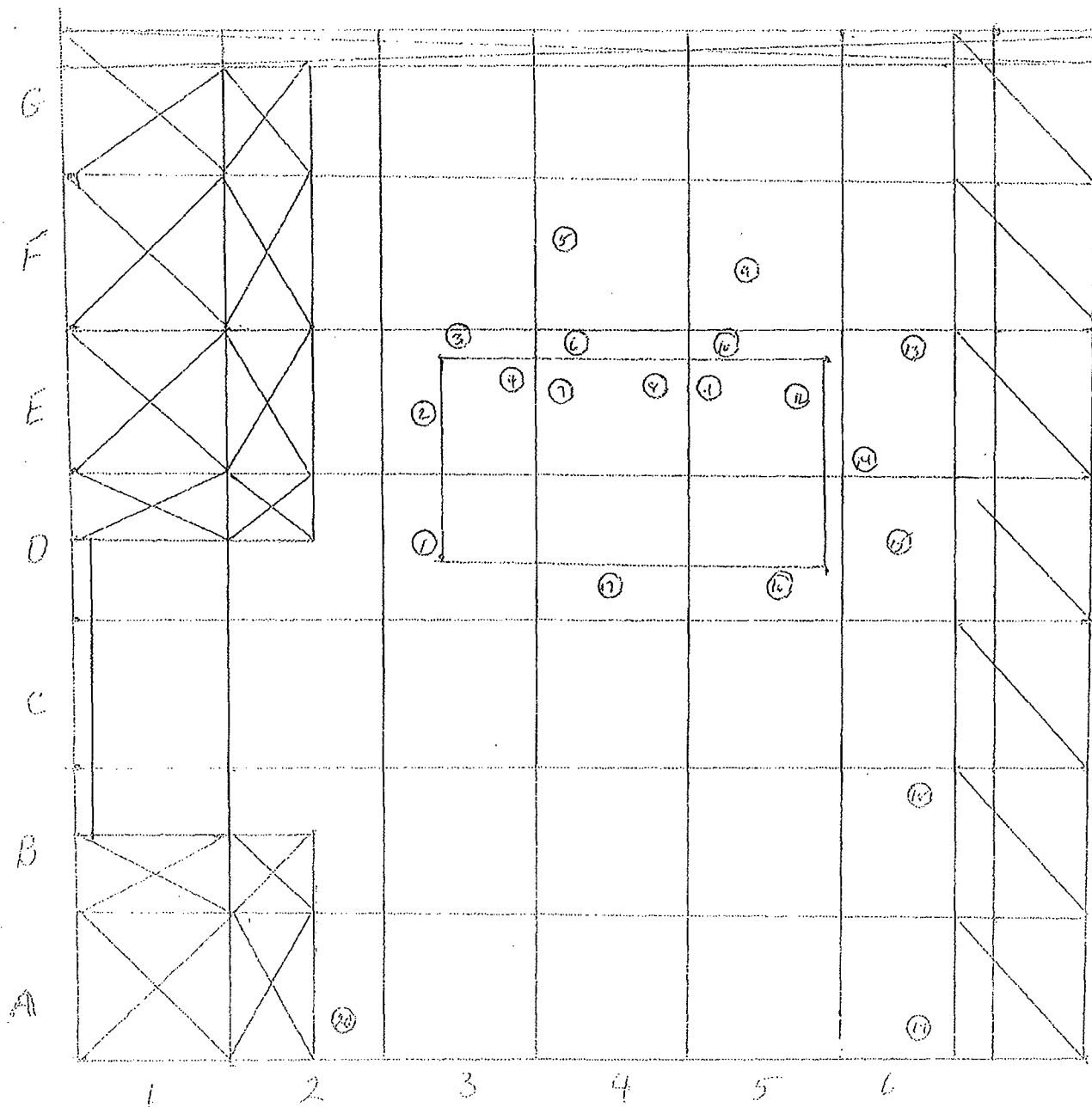
↓

62-66

PK 058 - walls



PK 058 Overhead Structures



Duratek Inc.
Survey Package Worksheet
Pathfinder Final Status Survey

Package Identification No.: 59	Prepared by: Doug Schult
Location: Floors Beneath Condenser	Date prepared: 12/01/06
Area Classification: Impacted - Class 1	Pathfinder Final Status Survey

Area Description
<p>The survey area includes the floor beneath the condenser.</p> <p>The floor beneath the condenser is approximately 54 m²</p> <p>See attached drawing</p> <p>Class 1 survey areas are limited in size to less than 100 m²</p>

General Survey Instructions

- 1) Grid the floor using 1 meter grids beginning in the south west corner of the room. The corners of the grids should be marked using permanent markers, paint, etc. Label the grids using a coordinate system that begins in the south west corner of the room. Use a numeric numbering system for the west-east axis and an alpha numeric numbering system for the south-north axis.
- 2) Prepare a map or drawing of the survey unit showing the grid layout.
- 3) Perform a beta scan of 100% of the accessible surfaces within each grid holding the gas flow proportional detector approximately 1/2 inch from the surface being scanned and moving the detector approximately 1 detector's width per second. Scan each grid for 1.5 minutes. Mark any areas of elevated activity using a non permanent marker such as a piece of tape or sticker for a follow-up evaluation
- 4) Prepare a map or drawing of the survey unit showing the approximate location of each fixed point measurement location.
- 5) Mark the systematic measurement location within each grid using the following X,Y coordinates determined using a random number generator provided by Excel. This software is used to generate 2 random numbers between 0.00 and 1.00. The first random number is multiplied by 1 to give the X coordinate and the second random number is multiplied by 1 to give the Y coordinate.
- 6)

Floors: R=0.473, X=0.473 m R=0.938, Y= 0.938 m

In cases where the systematic measurement location in a given grid is not accessible a second set of random numbers has been generated for determining the systematic measurement location for the grid in question.

Floors: R=0.382, X=0.382 m R=0.184, Y= 0.184 m

In cases where neither of the systematic measurement locations in a given grid are not accessible obtain a measurement as close to the center of the grid as possible. If the entire grid is not accessible move on to the next grid.
- 7) Mark the required number of random measurement locations on each of the structures specified below.
- 8) Obtain a total beta activity measurement at each measurement location. The count time should be sufficient (approx 30 sec) to achieve an MDA of less than 1,000 dpm/100 cm². Use the L7 code to record the grid number in which the measurement is being obtained. For non gridded surfaces (structures) record the measurement number
- 9) If activity in excess of the criteria for release for unrestricted use (5000 dpm/100 cm²) is identified, mark the area and notify the Project Manager.
- 10) Obtain a smear at approximately each of the total beta activity measurement locations. Analyze each smear for alpha and beta activity. Wait approximately 24 hours before analyzing the smears to allow the decay of short lived radon progeny.

Special Instructions

- For beta measurements, source check all instrumentation using a Tc-99 source.
- For total beta activity measurements, use a 43-68 detector (or equivalent) whenever possible.
- When performing a survey for total beta activity (scans and/or total beta activity measurements), collect three 5 minute backgrounds per survey unit. One prior to beginning the survey, one approximately half way through the survey, and one at the end of the survey. The field backgrounds should be collected at different spots within the survey unit.
- The MDA for total beta activity measurements shall be less than 1000 dpm/100 cm².
- Beta scans should be performed by moving the detector at a speed of approximately 1 detector width per second.

Location Code					General Description	Beta Scan	Direct Beta	Gamma Scan	Direct Gamma	Smears
L1	L2	L6	L7	L8						
Package ID	Surface or Structure		Grid ID or Meas #							
PK059	FL001				Floor	100%	Each Grid	NA	NA	Each Grid

FLOOR UNDER CONDENSER PK 59 12/1/06

