



BP CHEMICALS

BP Chemicals Inc.
Ft. Amanda Road
P.O. Box 628
Lima, Ohio 45802-0628
(419) 226-1200

VIA OVERNIGHT MAIL

Mr. Sam Nalluswami, Project Manager
Decommissioning and Regulatory Issues Branch
Division of Low-Level Waste Management and Decommissioning
Office of Nuclear Materials Safety and Safeguards
United States Nuclear Regulatory Commission
One White Flint North
11555 Rockville Road
Rockville, MD 20852

November 10, 1993

Re: License No. SUB-908
Docket No. 040-07604

Subject: Supplemental Data and Information
NRC Request of April 23, 1993

Dear Mr. Nalluswami:

BP Chemicals Inc. herewith submits its response to the United States Nuclear Regulatory Commission's April 23, 1993 request for supplemental data and information regarding the decontamination of certain facilities at its Lima, Ohio chemical manufacturing plant. The response for all but the last item of the request for additional information or clarification/correction is in the attached Exhibit A prepared by BP Chemicals' contractor, RUST Federal Services (formerly CWM-NRSI). The last item of information requested was as follows:

"What will be the final disposition of contaminated soil that remains with the ANI Plant and Thermaloxidizer area?"

Response: As previously indicated in our March 3, 1993 letter to USNRC, BP Chemicals plans to place all contaminated soil in onsite disposal cells which conform to USEPA minimum technology standards for RCRA hazardous wastes. This plan will be pursued if it is supported by a pathways analysis and will be implemented upon receipt of an NRC license amendment authorizing onsite burial of low-level radioactive contaminated soil. A license amendment application for this work will be submitted after BP Chemicals receives approval of its license amendment application for onsite burial of mixed wastes which is currently under NRC review. A copy of the March 3, 1993 letter to USNRC, which describes the BP Chemicals plan for onsite disposal in more detail, is attached for your information as Exhibit B.

It is hoped that this response adequately resolves the NRC's questions and need for additional information. If there are any further questions, please give me a call at 419/226-1299.

Sincerely,

William M. Rupert, P.E.
Technical Specialist - Environmental

110033

WMR:ll

Enc.

cc: K. C. Lambert - USNRC - Region III
WMR93/SN1110.doc

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PDR ADOCK 04007604
C PDR

0210
1/11

EXHIBIT A

October 18, 1993

Mr. William M. Rupert, P.E.
Technical Specialist Environmental
BP Chemicals, Inc.
Ft. Amanda Road
P.O. Box 628
Lima, Ohio 45802-0628

SUBJECT: RESPONSE TO BP CHEMICAL'S REQUEST FOR ADDITIONAL
INFORMATION RELATED TO THE CAT-21 D&D PROJECT DATED 13
AUGUST 1993.

Dear Mr. Rupert:

The following is Rust Federal Services, (formerly CWM-NRSI) response to the issues raised by the NRC's request for additional information related to the BP CAT-21 D&D Final Report (enclosure 1). This information is not intended to replace the CAT-21 Decommissioning Project Final Report or data maintained in the permanent project files.

* NRC Comment: Bullet 1 (Volume 1 of 3): The sixth bullet under your response to Items A1 and B1 states "The "B" reactor could not be decontaminated to meet the radiological release criteria". This statement is later contradicted in the response for Items A4, B4, and C2 which states that all post remedial action data, including Acrylonitrile Reactor B, met acceptable surface contamination levels.

RUST Answer: All post remedial action survey data on the Acrylonitrile Reactor A (internals and externals), Acrylonitrile Reactor B (externals only), the Central Warehouse and recycled Scrap Metal, met acceptable surface contamination levels as per U.S. Atomic Energy Commission Regulatory guide 1.86 as supported by tabulated data in the associated final report. This data was verified by the Oak Ridge Institute for Science and Education.

Decontamination efforts within the "B" Reactor were hampered by extremely restricted access and the requirement to keep all structures in an operational condition. Furthermore, the time constraint of the shutdown schedule was not sufficient for complete decontamination. The internals of the "B" Reactor do not meet the residual contamination limits due to fixed DU contamination remaining in some areas.

* NRC Comment: Bullet 2 (Volume 1 of 3): The Central Warehouse information proved in Enclosures 4 and 5, is not adequate. Is the data provided in the Enclosure 4 characterization data? Is the data provided in t Enclosure 5, the post-remedial action data? It is difficult for ORISE to establish the correlation between the

grid coordinates and the characterization data found in Enclosure 4, and the grid ID #'s and the post-remedial action data in Enclosure 5. Clarification of this is necessary to confirm that contaminated areas were remediated, and to determine the radiological conditions of those areas that were inaccessible at the time of the confirmatory survey. Please provide a detailed floor plan showing the grid system and grid ID #'s used within the Central Warehouse.

RUST Answer:

• NRC Comment: Bullet 3 (Volume 1 of 3): The response to Items A1 and B1 indicate that concrete loading docks and large expansion joint areas were removed as part of the remedial activities. Were any samples collected beneath these areas to determine if soil contamination was present?

RUST Answer: Two large areas in the vicinity of the east and west loading docks required complete removal of the concrete floor slab due to deeply imbedded fixed contamination. Several large expansion joint areas were subjected to surgical removal in order to reach deeply imbedded DU material. No soil samples were taken of the underlying area since it was evident that contamination did not migrate through the concrete layer. The entire slabs were only removed to facilitate proper restoration. The entire storehouse was subdivided and subjected to complete verification surveys in accordance with the methodology and release criteria of the Decommissioning Plan. All areas surveyed within the central storehouse met the radiological requirements for unrestricted release.

• NRC Comment: Bullet 4 Volume 1 of 3: The Central Warehouse data provided in Enclosure 5 indicates activity levels of 0 dpm/100cm². A more appropriate value to report is the minimum detectable activity level.

RUST Answer: For data in Enclosure 5, the Alpha MDA= 31dpm/100cm², Beta MDA= 72dpm/100cm². This information is supported on the Contamination/Radiation survey reports for the Storehouse. The data listed as 0 dpm/100cm² indicated less than the above MDA levels.

• NRC Comment: Bullet 5 Volume 3 of 3, Enclosure 8: Some figures provided in Enclosure 8 are incorrectly keyed to indicate where ORISE collected samples. It appears that BP Chemicals misinterpreted areas indicated as remediated on ORISE's figures to also mean soil samples were collected.

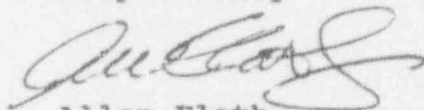
RUST Answer: Refer to enclosures 1,2, and 3 for corrected figures.

• NRC Comment: Bullet 6 Volume 3 of 3, Enclosure 8: Figure: ACRYLO II SOIL AND GRID LAYOUT AND STATUS, Grid Coordinate: S3982, W4218:

It is unclear whether BP Chemicals has addressed the location with elevated uranium concentrations levels which ORISE identified at this grid.

RUST Answer: Grid Coordinate, S3982, W4218, is identified on "BP Chemicals Decommissioning Project Soil Survey Data Sheet as W4250, S3950 and was addressed as indicated by enclosure 4.

Respectfully



Allen Flath
Manager of Projects

enclosures:

- 1) BP Chemical Letter and NRC Letter containing questions answered in this package (3 pages)
- 2) Detailed warehouse Grid maps (32 pages)
- 3) Detailed Ceiling/Floor grid maps (folded prints, 2 pages)
- 4) Catalyst Plant Perimeter Soil Grid Layout and Status (1 page)
- 5) Acrylo II Soil Grid Layout and Status (1 page)
- 6) Impoundment Pond Area Soil Grid Layout and Status (1 page)
- 6) Grid Coordinate, S3982, W4218 Soil Survey Data Sheets (12 pages)

ENCLOSURE 1

**BP CHEMICALS**

BP Chemicals Inc.
Ft. Amador Plaza
P.O. Box 528
Lima, Ohio 45802-0628
(419) 226-1206

Mr. Al Flath
RUST International
140 Stoneridge Drive
Columbia, SC 29210

August 13, 1993

Subject: NRC Comments on Supplemental Data
and Information Submitted January 13, 1993

Dear Al:

The NRC has commented on the package of supplemental data and information prepared by RUST International (formerly SWM Nuclear Remedial Services, Inc.) and submitted by BP Chemicals on January 13, 1993. A copy of the NRC comments are herewith forwarded for your review. It is requested that RUST International prepare a response to the NRC comments and forward that response to my attention at BP Chemicals for subsequent submission to NRC.

As soon as you have had a chance to review the NRC comments and assess the amount of effort needed to respond, please call me at 419/226-1229.

Sincerely,

A handwritten signature in cursive script, appearing to read 'Will Rupert'.

William M. Rupert, P.E.
Technical Specialist - Environmental

WMR:ll

cc: R. A. DeLeonardis
S. M. Maki
H. M. Blythe
P. C. Campbell

File R9-93
WMR93/AF0813.doc



UNITED STATES
NUCLEAR REGULATORY COMMISSION
WASHINGTON, D. C. 20545

APR 23 1993

Mr. William M. Rupert, P.E.
Technical Specialist Environmental
BP Chemicals, Inc.
Ft. Amanda Road
P.O. Box 628
Lima, Ohio 45802-0628

SUBJECT: BP CHEMICALS AMERICA, INC., LIMA, OHIO
SUPPLEMENTAL DATA AND INFORMATION

Dear Mr. Rupert:

The Oak Ridge Institute for Science and Education (ORISE) reviewed the supplemental data and information provided in the 3 Volume package on January 13, 1993, by BP Chemicals, Inc. (BP Chemicals). This supplemental data and information were necessary for satisfactory performance of the confirmatory surveys of the site as part of the independent verification process. The supplemental data and information were provided to fill some data gaps that had been previously identified. The information addressed most of the data gaps. However, some of the information requires clarification or correction in order for ORISE to complete the confirmatory process and to finalize the draft reports.

The following is a summary of the request for additional information or clarification/correction:

- Volume 1 of 3: The sixth bullet under your response to Items A1 and B1 states "The "B" reactor could not be decontaminated to meet the radiological release criteria". This statement is later contradicted in the response for Items A4, B4, and C2 which states that all post remedial action data, including Acrylonitrile Reactor B, met acceptable surface contamination levels.
- Volume 1 of 3: The Central Warehouse information provided in Enclosures 4 and 5, is not adequate. Is the data provided in the Enclosure 4 characterization data? Is the data provided in Enclosure 5, the post-remedial action data? It is difficult for ORISE to establish the correlation between the grid coordinates and the characterization data found in Enclosure 4, and the grid ID #'s and the post-remedial action data in Enclosure 5. Clarification of this is necessary to confirm that contaminated areas were remediated, and to determine the radiological conditions of those areas that were inaccessible at the time of the confirmatory survey. Please provide a detailed floor plan showing the grid system and grid ID #'s used within the Central Warehouse.
- Volume 1 of 3: The responses to Items A1 and B1 indicate that concrete loading docks and large expansion joint areas were removed as part of the remedial activities. Were any samples collected beneath these areas to determine if soil contamination was present?

Enclosure (1)

APR 23 1993

Mr. William M. Rupert, P.E.

2

- Volume 1 of 3: The Central Warehouse data provided in Enclosure 5 indicates activity levels of 0 dpm/100 cm². A more appropriate value to report is the minimum detectable activity level.
- Volume 3 of 3, Enclosure 8: Some figures provided in Enclosure 8 are incorrectly keyed to indicate where ORISE collected samples. It appears that BP Chemicals misinterpreted areas indicated as remediated on ORISE's figures to also mean soil samples were collected.

ORISE collected samples at the following locations:

Figure: ACRYLO II SOIL GRID LAYOUT AND STATUS

Block 23
Grid coordinate: S3700, W4300

Figure: CATALYST PLANT PERIMETER SOIL GRID LAYOUT AND STATUS

Blocks 14 and 15

Figure: IMPOUNDMENT POND AREA SOIL GRID LAYOUT AND STATUS

Blocks 1, 2, 11, 12, and the block northwest of block 12 & second block west of block 11.
Grid coordinate: S3050, W3950

- Volume 3 of 3, Enclosure 8:

Figure: ACRYLO II SOIL AND GRID LAYOUT AND STATUS

Grid coordinate: S3982, W4218

It is unclear whether BP Chemicals has addressed the location with elevated uranium concentration levels which ORISE identified at this grid.

- What will be the final disposition of contaminated soil that remains with the ANI Plant and Thermaloxidizer area?

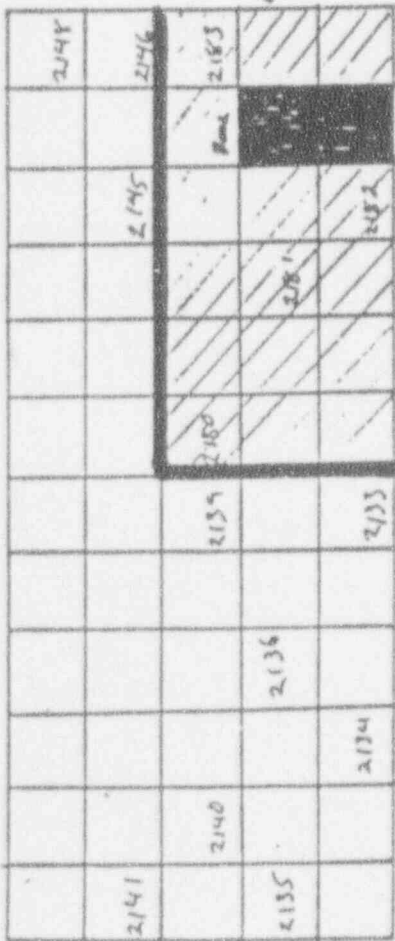
If you have any questions, please contact Sam Nalluswami of my staff at (301) 504-2502.

John H. Austin
John H. Austin, Chief
Decommissioning and Regulatory
Issues Branch
Division of Low-Level Waste Management
and Decommissioning, NMSS

cc: Timothy J. Vitkus, ORISE

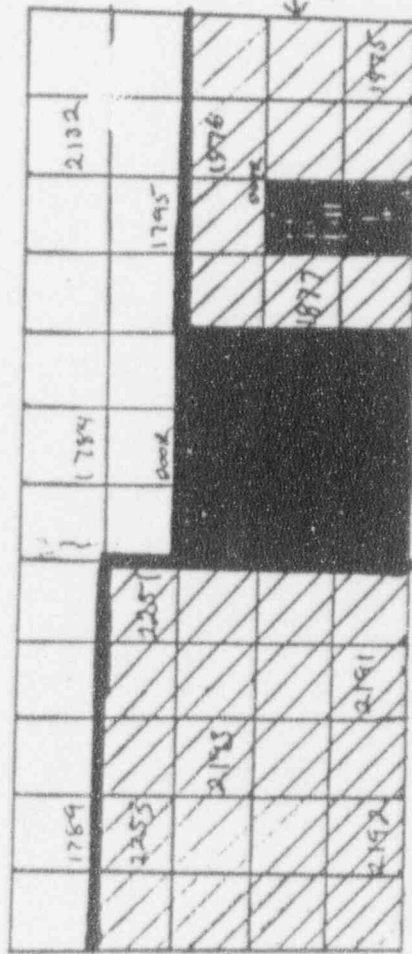
Enclosure (1)

ENCLOSURE 2



Wall A-W

North →
 ← west outside wall of Room A-1



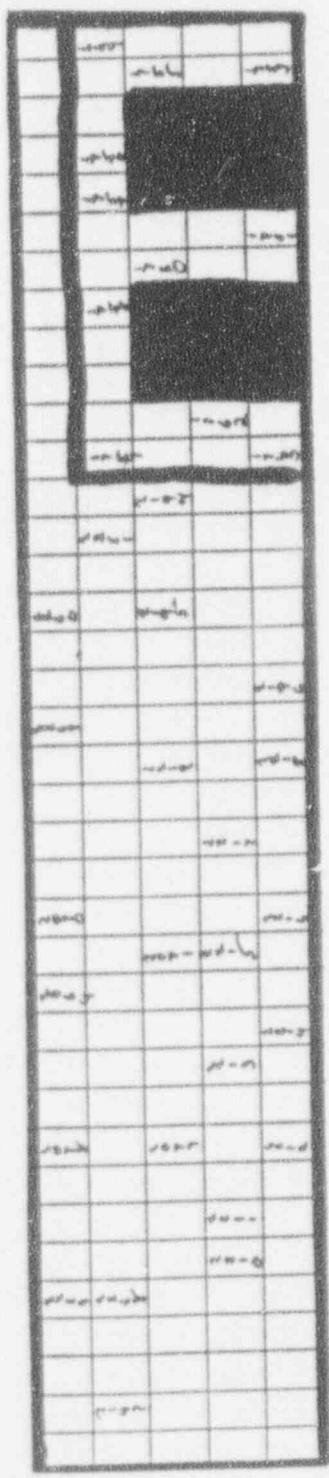
Wall A-E

← East outside wall of Room A-1

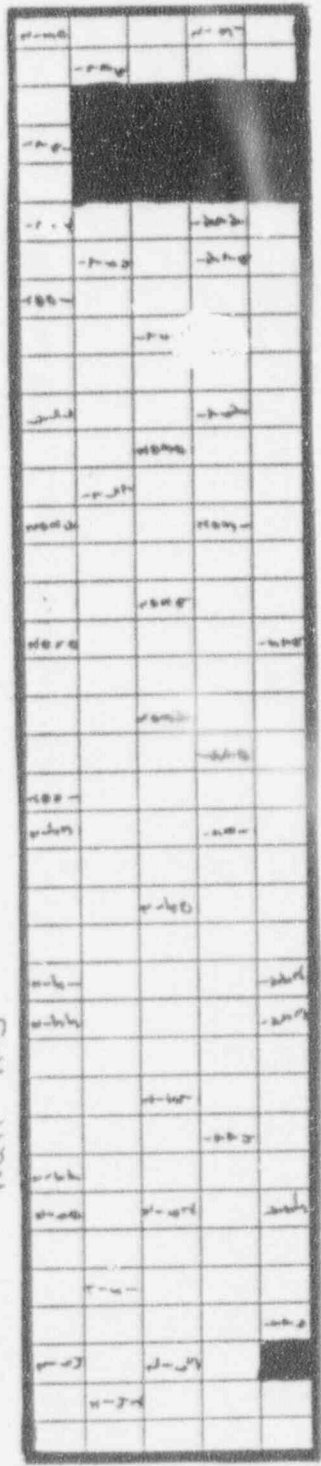
North →

↑ outside wall
 Room A-2

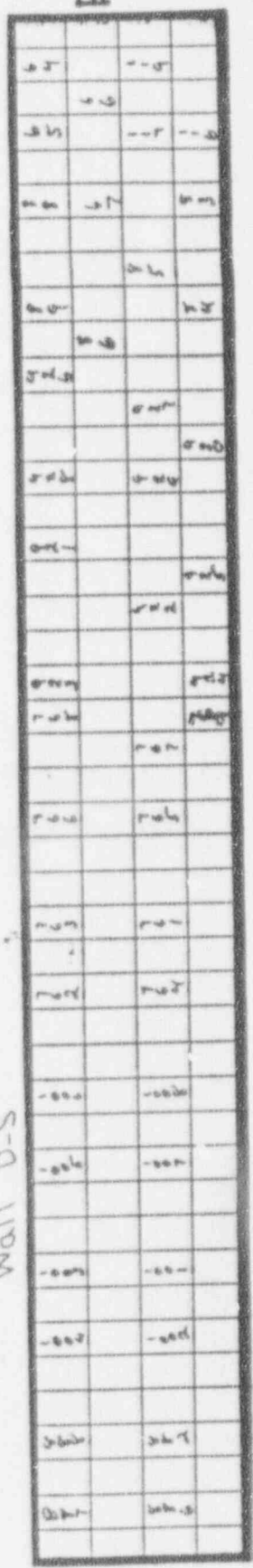
Wall A-N



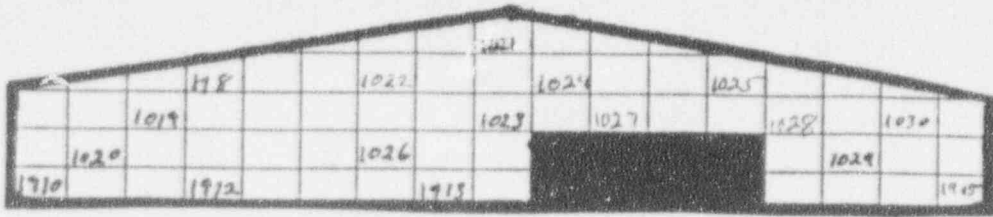
Wall A-S



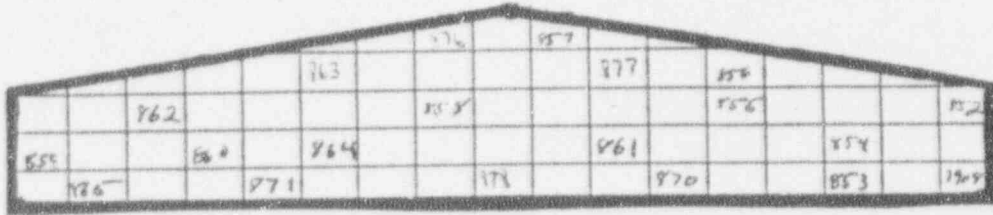
Wall D-S



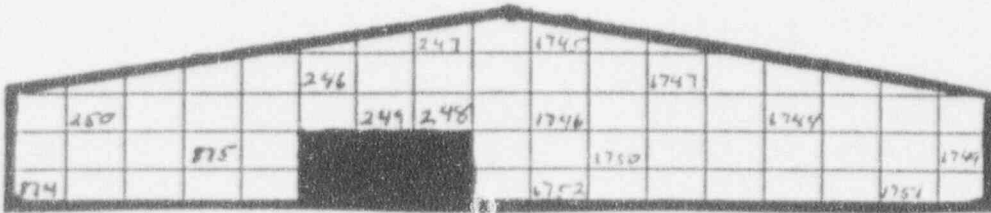
Wall B-E



Wall B-E2



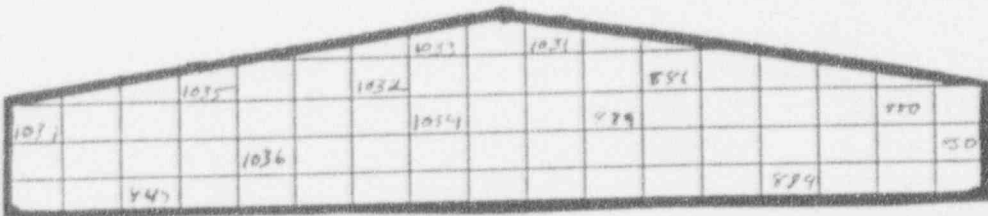
Wall C-W



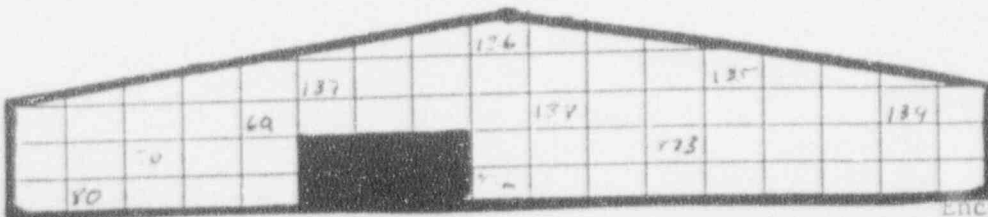
Wall C-E



Wall D-E



Wall D-W



ROOM A-1



2226		

North Wall

		2225
2223		
		2221

West Wall

		2230
		2229

Floor

		2224
		2227

East Wall

2228		
		2222
		2221

Ceiling

2220		

South Wall

ROOM A-4

		2017

North Wall

		2018

West Wall

		2016

Floor

		2019

East Wall

		2021

Ceiling

		2020

South Wall

Room A-2

2081		2081		2084
		2271		2272
		2236		2236
2235				2239

North Wall



			2234
		2276	
			2233
2240	2277	2232	
			2231

West Wall

	2262		
2265			2264
		2267	
			2270

Floor

	2240		2086
2241			2273
	2242		2088
		2274	
2243			2089

East Wall

2079			2085
		2083	
			2087
2098			2091

Ceiling

			2092
2275			
2244			

South Wall

Room A-3

North Wall

West Wall

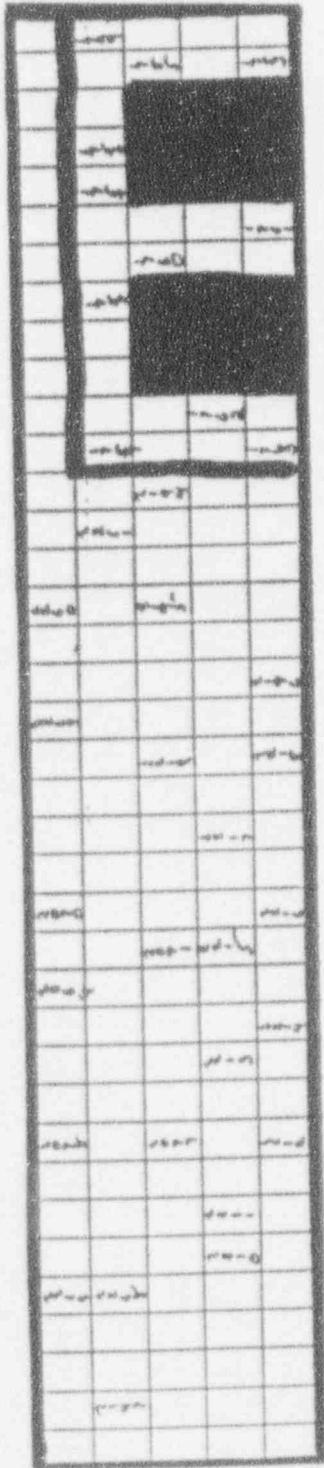
Floor

East Wall

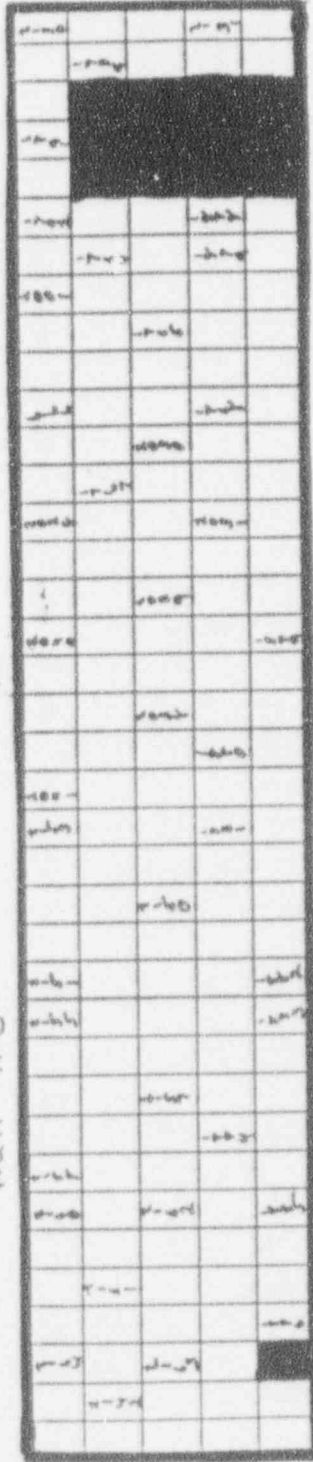
Ceiling

South Wall

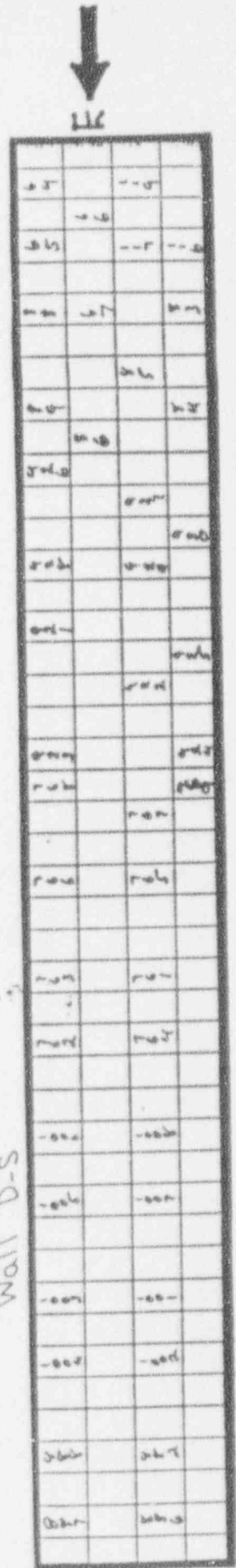
Wall A-N



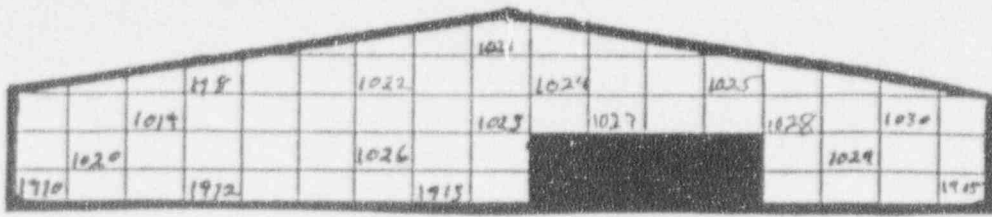
Wall A-S



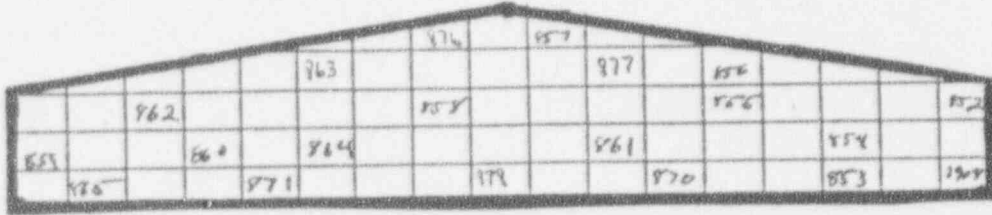
Wall D-S



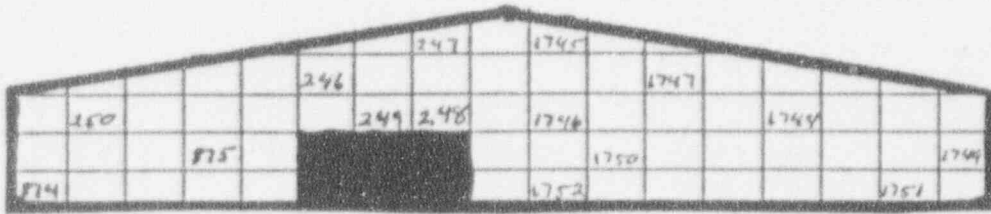
Wall B-E



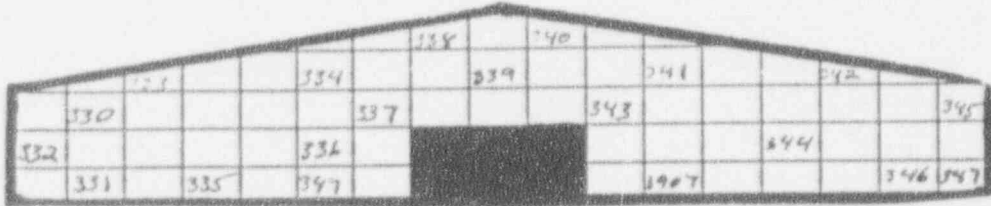
Wall B-E2



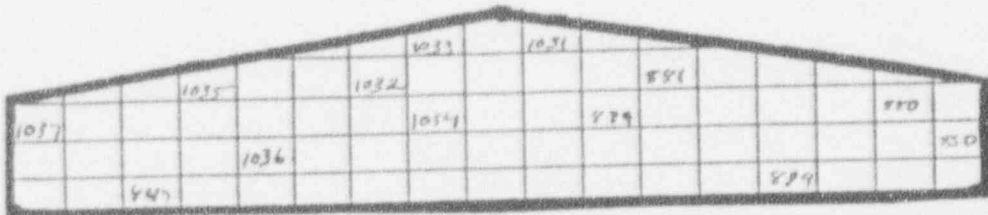
Wall C-W



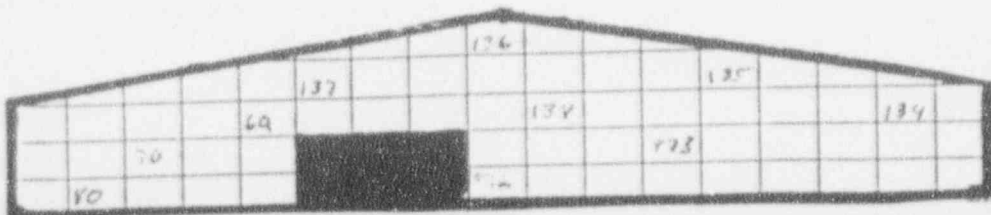
Wall C-E



Wall D-E



Wall D-W



ROOM A-1



2226		

North Wall

		2225
2223		
		2221

West Wall

		2230
		2229

Floor

		2224
		2227

East Wall

2228		
		2227
		2222

Ceiling

2220		

South Wall

ROOM A-4

	2017

North Wall

	2013

West Wall

	2016

Floor

	2019

East Wall

	2021

Ceiling

	2010

South Wall

ROOM A-2

2081	2092	2094
	2271	2272
	2276	2278
2285		2289

North Wall



		2234
	2276	
		2293
2277	2282	
		2281

West Wall

	2262	
2265		2264
	2267	
		2270

Floor

	2240		2086
2241		2273	
	2242		2088
		2274	
2243			2089

East Wall

2079			2085
		2083	
		2087	
2089			2091

Ceiling

			2092
2275			
2244			

South Wall

ROOM A-3

North Wall

West Wall

Floor

East Wall

Ceiling

South Wall

NORTH Wall

166		167
169	100	
	201	
168		

Fig 02 N

139		140		143
	141			
	144			
145		146		
	148	147		
149		150		
	151		153	
152		154		
155		157		156
	159		160	
	162		161	
163		164		165

Bays

● 5 Meters high
5 Meters wide
15 Meters long

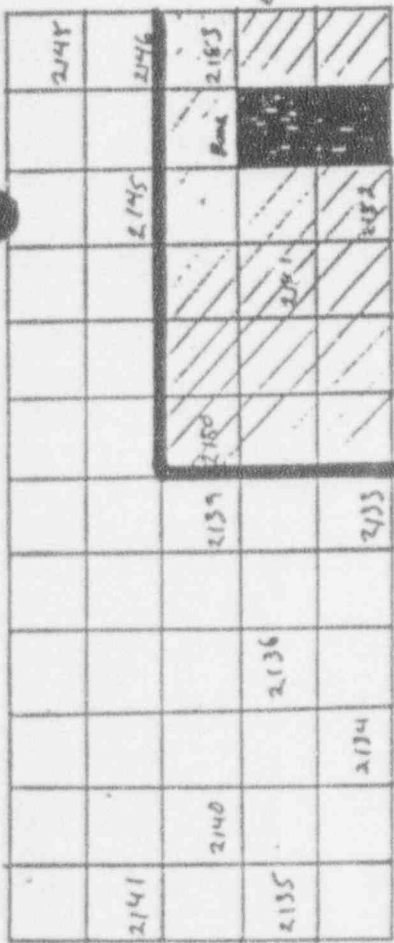
← N

East wall

175		174		173		172	171		170
	179			178		177		176	
185		184		183		182	181		180

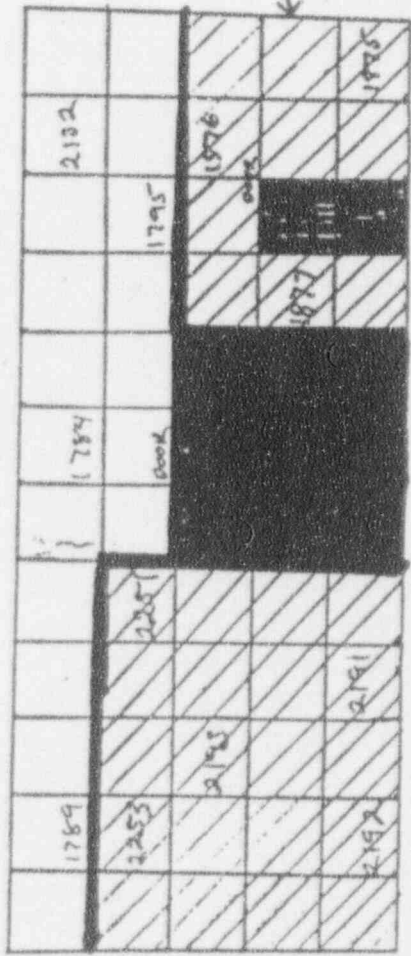
West wall

191		190		189		188		187		186
	193			194		195				
199		192		193		194		197		196



North →
 ← West outside wall of Room A-1

Wall A-W

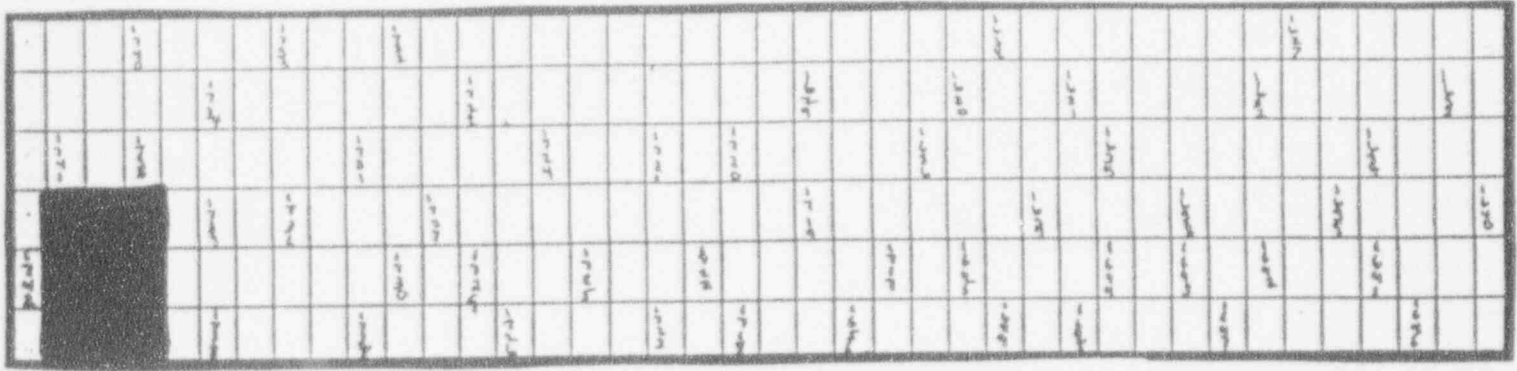


← East outside wall of Room A-4

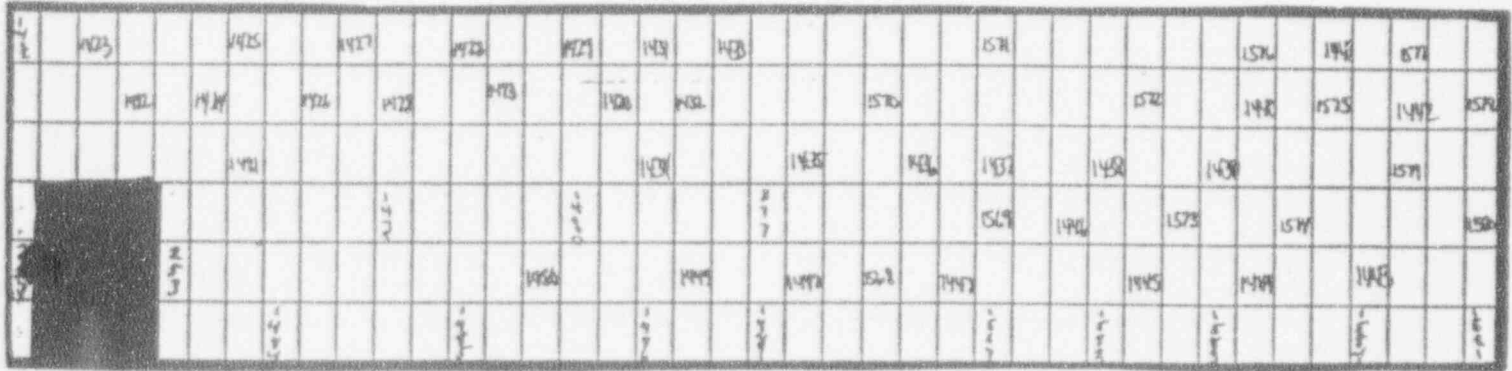
Wall A-E

North →

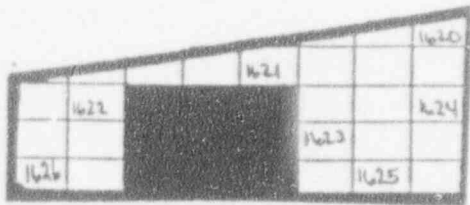
← outside wall
 Rear A-2



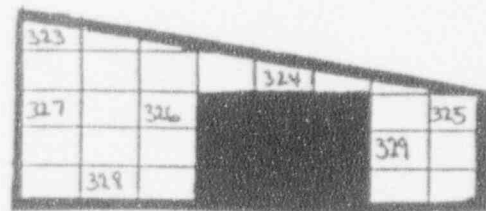
Wall C-SI - North View



Wall C-SI South View



Wall C-EI West Side



Wall C-EI East Side

	1146		1148
1145		1147	
		1176	
1125			1117

floor N ↑

1173				1174	
			1172		
1171					1170
		1169			
1168					1167
				1166	
					1165
1164					1163
					1162

North wall ↓

East wall

1149		1151		1153		1155		1156	
	1150		1152		1154		1130		1121
		1134		1132		1131		1129	
	1135		1133						

West wall

1144		1143		1142		1140		1137		1136
						1139		1124		1122
	1116			1118		1120		1121		1123
		1117				1119				

← N

E



East Wall

1345	1844	1842	1849	1847	1349	1350	1340
1264	1265	1266	1267	1268	1342	1259	
1263	1262	1261	1260	1259	1341	1258	1257

West Wall

1242	1243	1244	1245	1246	1247	
1241	1240	1239	1238	1237	1236	1235
1230	1229	1228	1227	1226	1225	1224

1418	1417	1421
1419		
1420		

Floor

1289	1290	1287	1286	1285	1284	1282	1279	1278	1277	1276	1275
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I - Beans

←
North

●	2042				2047			2266		
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East View

I - Bean 5

	2154							2012		
--	------	--	--	--	--	--	--	------	--	--

West View

	2152					2051			2076	
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East View

I - Bean 6

				2066						2156
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West View

●		2159						2054		
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East View

I - Bean 7

										2164
--	--	--	--	--	--	--	--	--	--	------

West View

							2168			
--	--	--	--	--	--	--	------	--	--	--

East View

I - Bean 8

●	2203				2202			2194		2143
---	------	--	--	--	------	--	--	------	--	------

West View

I Beans

←
North

●		1788		1794			1800
---	--	------	--	------	--	--	------

East view

I - Bean 1

1811			1812			2225	
------	--	--	------	--	--	------	--

West View

	1808		1807			2025	
--	------	--	------	--	--	------	--

East View

I - Bean 2

128			1829		2007		2003
-----	--	--	------	--	------	--	------

West View

●	1825		1824		2004		2002
---	------	--	------	--	------	--	------

East View

I - Bean 3

		2032		2252			
--	--	------	--	------	--	--	--

West View

		2257		2258		2036	
--	--	------	--	------	--	------	--

East View

I - Bean 4

●	2072					2045	
---	------	--	--	--	--	------	--

West View

I Beans

←
North

2042				2047				2266		
------	--	--	--	------	--	--	--	------	--	--

East View

I - Bean 5

2154								2022		
------	--	--	--	--	--	--	--	------	--	--

West View

2152								2051		2076
------	--	--	--	--	--	--	--	------	--	------

East View

I - Bean 6

				2066						2156
--	--	--	--	------	--	--	--	--	--	------

West View

								2059		
--	--	--	--	--	--	--	--	------	--	--

East View

I - Bean 7

										2164
--	--	--	--	--	--	--	--	--	--	------

								2168		
--	--	--	--	--	--	--	--	------	--	--

I - Bean 8

2203								2202		2152		2143
------	--	--	--	--	--	--	--	------	--	------	--	------

F

← N

ADDITIONAL WALL
↙

East wall

777	180	779	779
771	773	775	
776	772	774	776

West wall

843	851	849	847	845
844	842	850	843	846
	839	838	827	823

757	763	759
-----	-----	-----

FLOOR ↗

755	756	757	758	759
752	754	755	756	757
749	750	751	752	753
746	747	748	749	750

Boys
 15 Meters high
 5 Meters wide
 15 Meters long



North Wall

166	169	200	167
	201		
168			

East wall

175	174	173	172	171	170
	179		177		176
185	184	183		182	181

West wall

191	190	189	188	187	186
	193		194	195	
199	198	197			196

Floor N

139	140	141	142	143	144	145	146	147	148	149	150	151	152	153	154	155	156	157	158	159	160	161	162	163	164	165
-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----	-----

↖ N

NORTH WALL
↘

East wall

1572	1521	1510	1519	1512	1517	1516
1477		1524				1463
	1476			1469		
1573	1472		1470	1468	1467	1466

West wall

1102	1104	1106	1107	1107	1101	1462
	1103	1105	1107			1463
1115	1113		1111	1109		
	1114	1112	1110		1465	1464

FLOOR N ↑

1101	1475	1473
1474		1473

1501	1502	1503	1504	1505	1506	1507	1508	1509	1510

I Beans

←
North

			1799			1794				1800
--	--	--	------	--	--	------	--	--	--	------

East View

I - Beans 1

1811				1812				2225		
------	--	--	--	------	--	--	--	------	--	--

West View

	1808			1807				2023		
--	------	--	--	------	--	--	--	------	--	--

East View

I - Beans 2

1827				1829			2007			2003
------	--	--	--	------	--	--	------	--	--	------

West View

	1825			1829			2004			2002
--	------	--	--	------	--	--	------	--	--	------

East View

I - Beans 3

				2032			2252			
--	--	--	--	------	--	--	------	--	--	--

West View

			2257		2258			2036		
--	--	--	------	--	------	--	--	------	--	--

East View

I - Beans 4

								2045		
--	--	--	--	--	--	--	--	------	--	--

West View



North
West

East wall

1416	1361	1357	1355	1352
1417	1359	1356	1354	1351
	1360	1353		

West wall

1410	1409	1206	1198	1196
1411	1407	1406	1404	1402
		1201	1197	
	1202	1405	1403	

Floor

1150	1152	1151	1156
1153		1154	1158
	1155	1157	1160
			1162
			1163

EO

← N

East wall

1149		1151	1153		1155	1156	
	1150			1154			
		1134	1132		1130		1128
	1135			1131		1129	

West wall

1144		1143		1140	1137		1136
			1142			1132	
				1139			
	1116		1112		1124		1122
		1117		1119		1123	

NORTH WALL
↓

Floor N ↑

1146	1143	1147		1148
1145		1126		
1125				1127

1170		1171							
			1172						
								1163	

NORTH WALL
↙

1412	1414	
1413		1415

East wall

1416	1361	1357	1355	1352
1417	1340	1359	1353	1351

West wall

1410	1409	1206	1199	1196
1411	1409	1406	1404	1402
	1407	1202	1405	1403

Floor

1150	1193	1142			1155
1151			1159	1189	
1152		1170			
1153				1184	1183
1182					1181

↙ N

1101	1375	1473
	1475	1473
1474		

flood N

1514	1515								
1612	1511	1510							
1508									
1507						1506			
						1505			
1504								1503	
								1502	
1501									1500

NORTH
Wall

East wall

1522	1521	1520	1519	1518	1517	1516
1477	1524					1463
	1476			1469		
1472	1471		1470	1468	1467	1466

N

West wall

1102	1104	1106	1108	1101	1462
	1103	1105	1107		1463
1115	1113	1111	1109		
	1114	1112	1110	1465	1464

715	716	717
	713	
		712

FLOOR ↗

	627		626
629		628	
	630		631
632			634
635	633		
	636		637
638		639	
	640		641
		642	
			643

North Wall ↘

East wall

647		649		701			
	649		650		702		
619		621		613			625
612		620		622		624	

West wall

703		705						710
	704			702		659		709
			706				645	
649		644		708				646

← N

← N

East wall

777	780	779	779
771	773	775	776
769	772	774	776

West wall

843	840	849	847	845
844	839	847	846	823
842	838	827	827	827

North wall

781	759
760	759

floor N

753	754	757	748	744
752	750	749	748	746
751	749	748	748	745

**OVERSIZE
DOCUMENT
PAGE PULLED**

SEE APERTURE CARDS

NUMBER OF OVERSIZE PAGES FILMED ON APERTURE CARDS 2

APERTURE CARD/HARD COPY AVAILABLE FROM

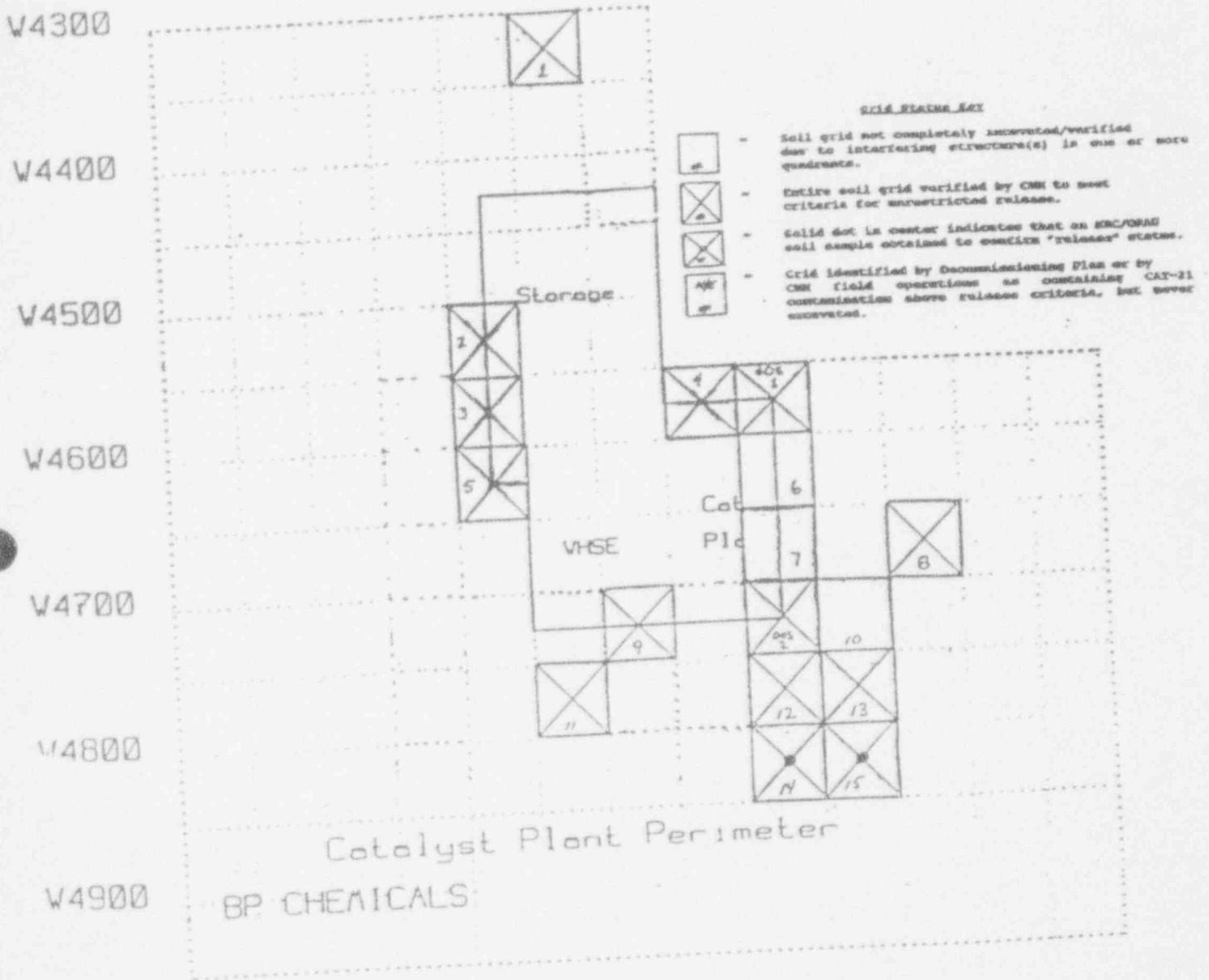
9402150337-01

RECORDS AND REPORTS MANAGEMENT BRANCH





02

ENCLOSURE 3

CATALYST PLANT PERIMETER SOIL GRID LAYOUT AND STATUS



SOIL STATUS KEY

-  - Soil grid not completely excavated/verified due to interfering structure(s) in one or more quadrants.
-  - Entire soil grid verified by CMR to meet criteria for unrestricted release.
-  - Solid dot in center indicates that an SRC/DRAG soil sample obtained to confirm "release" status.
-  - Grid identified by Decommissioning Plan or by CMR field operations as containing CAT-21 contamination above release criteria, but never excavated.

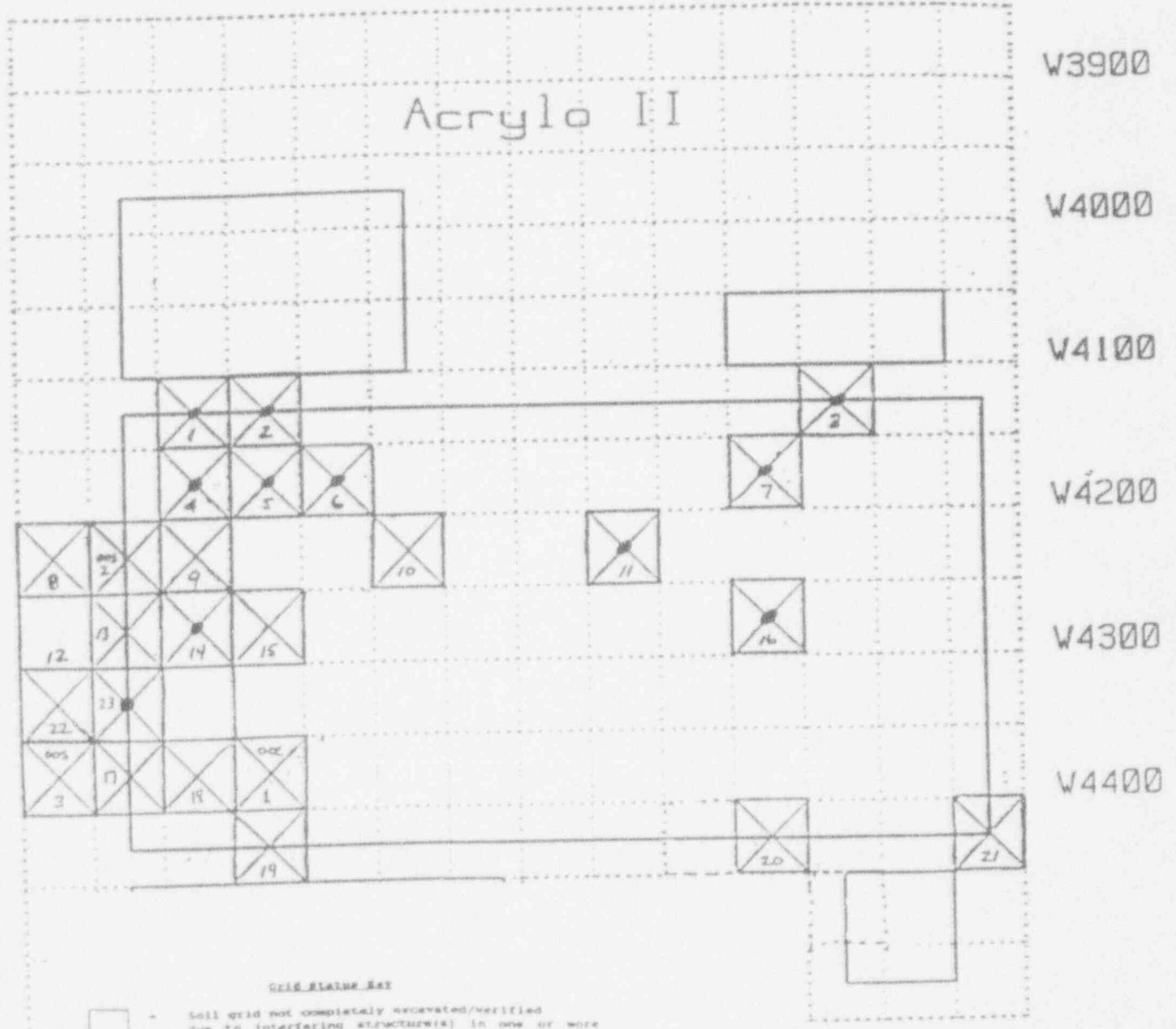






W4300
 W4400
 W4500
 W4600
 W4700
 W4800
 W4900

S2600 S2700 S2800 S2900 S3000 S3100 S3200

ENCLOSURE 4

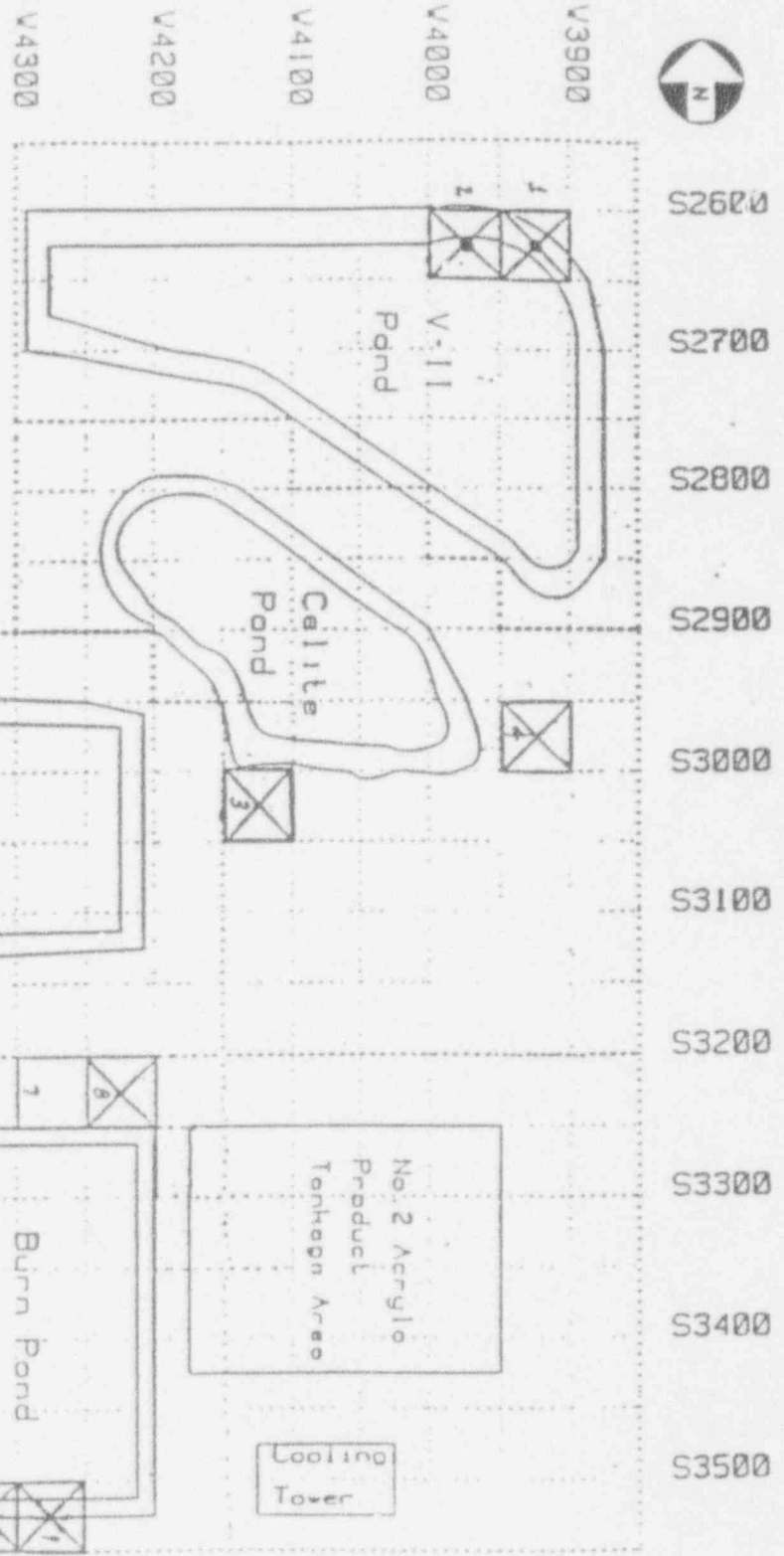
S3600 S3700 S3800 S3900 S4000 S4100 S4200



- Grid Status Key**
-  - Soil grid not completely excavated/verified due to interfering structure(s) in one or more quadrants.
 -  - Entire soil grid verified by CWM to meet criteria for unrestricted release.
 -  - Solid dot in center indicates that an NRC/ORAU soil sample obtained to confirm "release" status.
 -  - Grid identified by Decommissioning Plan or by CWM field operations as containing CXT-21 contamination above release criteria, but never excavated.

ACRYLO II SOIL GRID LAYOUT AND STATUS

ENCLOSURE 5



BP CHEMICALS

- Soil grid not completely excavated/verified due to interfering structures/ in one or more quadrants.
- Entire soil grid verified by CM to meet criteria for unrestricted release.
- Soil not in contact indicates that an RRC/BAU soil sample obtained to confirm "release" status.
- Grid identified by Remediation Plan or by CM field operations as containing CAT-21 contamination above release criteria, but never excavated.

IMPOUNDMENT POND AREA SOIL GRID LAYOUT AND STATUS

ENCLOSURE 6

CHEM--NUCLEAR ENVIRONMENTAL SERVICES, INC.

BP Chemicals CAT-21 Project

Excavation Tracking Sheet

Grid Number: 11

Grid Coordinate: 4250 3950

Excavation Volume Estimate: 25 Cu Ft

Max Volume W/O BP Approval: 75 Cu Ft

Date	Amount Soil/Gravel Excavated (Cu Ft)	ESTIMATED RATIO (SOIL/GRAVEL)	ESTIMATED DISPOSED SOIL (Cu Ft)	ESTIMATED GRAVEL SCREENED	Gravel SCRAPED (CU FT)
9-4	20	-	-	-	40
Total(s)	20				40

Date/Time Maximum Volume W/O BP Approval Exceeded: _____/_____

BP Approval To Proceed: _____ Date/Time: _____

ACRYLLO II

GRID 11

LOCATION 4250 3950

Date permission requested for grid backfill. 9-10-91

Permission to backfill granted. M. J. MARI 9-10-91
Signature Date

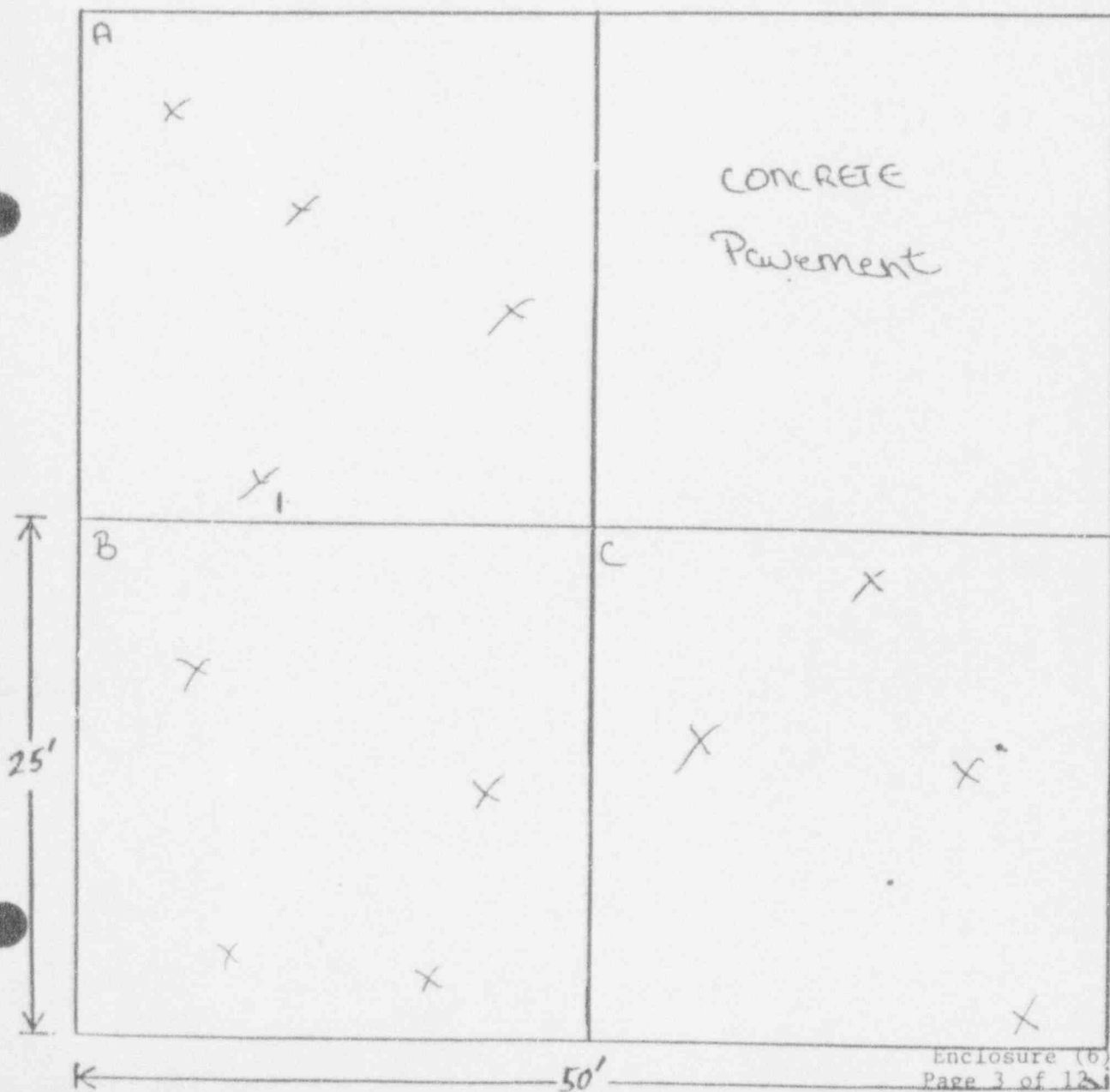
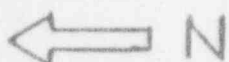
BP CHEMICALS DECOMMISSIONING PROJECT
SOIL SURVEY DATA SHEET

LOCATION: Accylo II GRID NO.: W4250 S3950

CNES GRID NO.: 11 DATE SURVEYED: 9-4-91

SURVEYOR: S Wood

COMMENTS: _____



***** 05-SEP-91 14:17:43 *****

4200/3950 11A ACR2 VERIF

SPECTRAL FILE NAME: AC944.DAT
SAMPLE DATE: 04-SEP-91 14:00:00
SAMPLE IDENTIFICATION: SAMPLE#4
TYPE OF SAMPLE: SOIL
SAMPLE QUANTITY: 645.0000 UNITS: GRAMS
SAMPLE GEOMETRY: MARINELLI
EFFICIENCY FILE NAME: MARINELI.EFF

ACQUIRE DATE: 05-SEP-91 14:06:33 * FWHM(1332) 1.973
PRESET TIME(LIVE): 600. SEC * SENSITIVITY: 10.000
ELAPSED REAL TIME: 600. SEC * SHAPE PARAMETER : 10.0 %
ELAPSED LIVE TIME: 600. SEC * NBR ITERATIONS: 10.

DETECTOR: DTR #1 * LIBRARY:SOIL.LIB
CALIB DATE: 27-AUG-91 09:20:30 * ENERGY TOLERANCE: 1.250 KEV
KEV/CHNL: .1702247 * HALF LIFE RATIO: 8.00
OFFSET: -.6738562 KEV * ABUNDANCE LIMIT: 80.00%

ENERGY WINDOW 16.35 TO 1393.81

PK	IT	ENERGY	AREA	BKGND	FWHM	CHANNEL	LEFT	PW	CTS/SEC	%ERR	FIT
1	0	63.22	192.	97.	.75	375.37	365	22	3.20E-01	15.6	
2	0	92.62	313.	62.	1.20	548.08	539	24	5.22E-01	9.3	
3	0	295.25	56.	24.	.89	1738.46	1733	13	9.35E-02	19.3	
4	0	351.93	81.	28.	.70	2071.39	2062	17	1.35E-01	15.0	

PEAK SEARCH COMPLETED (REV 15.8 - ND PC VERSION MAR 90)

● TOTAL LINES IN SPECTRUM 4
UNIDENTIFIED PEAKS 2
IDENTIFIED IN SUMMARY REPORT 2 50.00%

NATURAL PRODUCT

NUCLIDE	SBHR	HLIFE	DECAY	PCI /GRAMS	1-SIGMA ERROR	%ERR
TH-234	NP	24.10D	1.029	1.033E 1	9.579E -1	9.27

MINIMUM DETECTABLE ACTIVITY REPORT (ND PC VERSION SEP 89)

PEAK WIDTH = 3.00 FWHM. CONFIDENCE LEVEL = 4.66.

NUCLIDE	BKG	ENERGY	MINIMUM PCI /GRAMS
PA-234M	12.	1001.00	HALF LIFE TOO SHORT
PA-234	5.	900.00	8.9074E+02
U-234	63.	53.00	0.0000E+00
U-235	116.	185.72	1.6777E-01
TE-132	9.	772.70	1.3066E-01
AN-511	14.	511.01	6.9609E-02

 ***** 05-SEP-91 14:06:37 *****

4250/3950 11B ACR2 VERIF

SPECTRAL FILE NAME: AC943.DAT
 SAMPLE DATE: 05-SEP-91 14:00:00
 SAMPLE IDENTIFICATION: SAMPLE#3
 TYPE OF SAMPLE: SOIL
 SAMPLE QUANTITY: 687.0000 UNITS: GRAMS
 SAMPLE GEOMETRY: MARINELLI
 EFFICIENCY FILE NAME: MARINELI.EFF

ACQUIRE DATE: 05-SEP-91 13:55:56 * FWHM(1332) 1.973
 PRESET TIME(LIVE): 600. SEC * SENSITIVITY: 10.000
 ELAPSED REAL TIME: 600. SEC * SHAPE PARAMETER : 10.0 %
 ELAPSED LIVE TIME: 600. SEC * NBR ITERATIONS: 10.

DETECTOR: DTR #1 * LIBRARY:SOIL.LIB
 CALIB DATE: 27-AUG-91 09:20:30 * ENERGY TOLERANCE: 1.250 KEV
 KEV/CHNL: .1702247 * HALF LIFE RATIO: 8.00
 OFFSET: -.6738562 KEV * ABUNDANCE LIMIT: 80.00%

ENERGY WINDOW 16.35 TO 1393.81

PK	IT	ENERGY	AREA	BKGND	FWHM	CHANNEL	LEFT	FW	CTS/SEC	%ERR	FIT
1	0	63.32	299.	128.	.86	375.92	366	24	4.98E-01	12.0	
2	0	92.49	400.	67.	.99	547.30	539	18	6.66E-01	7.1	
3	0	351.92	115.	16.	.77	2071.32	2059	24	1.92E-01	12.1	
4	0	609.75	72.	16.	.85	3586.01	3577	18	1.20E-01	16.1	

PEAK SEARCH COMPLETED (REV 15.8 - ND PC VERSION MAR 90)

NUCLIDE IDENTIFICATION SYSTEM
SUMMARY OF NUCLIDE ACTIVITY

(MD PC VERSION DEC 88)

PAGE 1

TOTAL LINES IN SPECTRUM	4	
UNIDENTIFIED PEAKS	2	
IDENTIFIED IN SUMMARY REPORT	2	50.00%

NATURAL PRODUCT

NUCLIDE	SBHR	HLIFE	DECAY	PCI /GRAMS	1-SIGMA ERROR	%ERR
TH-234	NP	24.10D	1.000	1.204E 1	8.573E -1	7.12

MINIMUM DETECTABLE ACTIVITY REPORT (ND PC VERSION SEP 89)

WIDTH = 3.00 FWHM. CONFIDENCE LEVEL = 4.66.

NUCLIDE	BKG	ENERGY	MINIMUM PCI /GRAMS
PA-234M	9.	1001.00	2.7462E+03
PA-234	8.	900.00	8.8942E+01
U-234	80.	53.00	0.0000E+00
U-235	116.	185.72	1.5752E-01
TE-132	9.	772.70	9.8957E-02
AN-511	22.	511.01	8.1925E-02

***** 05-SEP-91 11:54:23 *****

4250/3950 11C ACR2 VERIF

SPECTRAL FILE NAME: AC925.DAT
SAMPLE DATE: 04-SEP-91 13:55:00
SAMPLE IDENTIFICATION: SAMPLE#5
TYPE OF SAMPLE: SOIL
SAMPLE QUANTITY: 831.0000 UNITS: GRAMS
SAMPLE GEOMETRY: MARINELLI
EFFICIENCY FILE NAME: MARINELI.EFF

ACQUIRE DATE: 05-SEP-91 11:34:39 * FWHM(1332) 1.973
PRESET TIME(LIVE): 600. SEC * SENSITIVITY: 10.000
ELAPSED REAL TIME: 600. SEC * SHAPE PARAMETER : 10.0 %
ELAPSED LIVE TIME: 600. SEC * NBR ITERATIONS: 10.

DETECTOR: DTR #1 * LIBRARY:SOIL.LIB
CALIB DATE: 27-AUG-91 09:20:30 * ENERGY TOLERANCE: 1.250 KEV
KEV/CHNL: .1702247 * HALF LIFE RATIO: 8.00
OFFSET: -.6738562 KEV * ABUNDANCE LIMIT: 80.00%

ENERGY WINDOW 16.35 TO 1393.81

PK	IT	ENERGY	AREA	BKGND	FWHM	CHANNEL	LEFT	PW	CTS/SEC	%ERR	FIT
1	0	63.21	687.	185.	.88	375.31	364	21	1.15E+00	6.5	
2	0	92.53	1001.	189.	1.01	547.56	538	26	1.67E+00	5.0	
3	0	185.72	186.	41.	.77	1095.00	1083	22	3.10E-01	10.8	

PEAK SEARCH COMPLETED (REV 15.8 - ND PC VERSION MAR 90)

● TOTAL LINES IN SPECTRUM 3
UNIDENTIFIED PEAKS 0
IDENTIFIED IN SUMMARY REPORT 3 100.00%

NATURAL PRODUCT

NUCLIDE	SBHR	HLIFE	DECAY	PCI /GRAMS	1-SIGMA ERROR	%ERR
TH-234	NP	24.10D	1.026	2.557E 1	1.266E 0	4.95
U-235	NP	7.04E+08Y	1.000	4.396E -1	4.735E -2	10.77

MINIMUM DETECTABLE ACTIVITY REPORT (ND PC VERSION SEP 89)

PEAK WIDTH = 3.00 FWHM. CONFIDENCE LEVEL = 4.66.

NUCLIDE	BKG	ENERGY	MINIMUM PCI /GRAMS
PA-234M	48.	1001.00	HALF LIFE TOO SHORT
PA-234	12.	900.00	8.3858E+02
U-234	151.	53.00	0.0000E+00
TE-132	12.	772.70	1.1459E-01
AN-511	19.	511.01	6.2941E-02

EXHIBIT B



BP CHEMICALS

Memorandum

Mr. Sam Nalluswami, Project Manager
Decommissioning and Regulatory Issues Branch
Division of Low-Level Waste Management and Decommissioning
Office of Nuclear Materials Safety and Safeguards
United States Nuclear Regulatory Commission
One White Flint North
11555 Rockville Road
Rockville, MD 20852

March 3, 1993

RE: License No. SUB-908
Docket No. 040-07604

Subject: Site-Wide Decontamination and Decommissioning Strategy

Dear Mr. Nalluswami:

On November 17, 1992, BP Chemicals submitted for NRC approval a document entitled "Revised RESRAD Analysis of the Pond Area." The subject document was intended to demonstrate that BP Chemicals can bury all remaining radiologically contaminated soil and debris, including mixed wastes, on site while satisfying all NRC concerns regarding long-term radiological impact. While the Revised RESRAD Analysis of the Pond Area Report may demonstrate an acceptable long-term impact, further clarification of BP Chemicals' strategy may be needed in order to relate that report to our ongoing decommissioning activities and the various documents which have been submitted to NRC over the past several years.

Therefore, the following description of our plant-wide strategy is provided for your information. The strategy deals with all radioactive wastes, contaminated materials and debris including mixed wastes known to exist at BP Chemicals, Lima, Ohio, with the exception of one contaminated acrylonitrile reactor which currently remains in service. The quantities of these wastes, materials and debris have previously been provided in a July 2, 1992 letter to Robert M. Bernero of NRC and in the Revised RESRAD Analysis of the Pond Area Report submitted on November 17, 1992. The categories of these wastes, materials and debris are as follows:

- Mixed Waste (i.e., radioactive and RCRA hazardous waste) including sludge, contaminated soil and debris contained in and underlying four ponds (Deepwell Pond, Burn Pond, V-1 Pond and Celite Pond);
- Mixed Waste including sludge, contaminated soil and debris buried at SWMU No. 102 (landfill);
- Mixed Waste contaminated soil at SWMU No. 98 (catalyst settler);
- Low-Level Radioactive Waste consisting of drums of sand blast waste from the decontamination and decommissioning of the catalyst plant.

- Low-Level Radioactive Waste consisting of contaminated soil remaining from the partial decontamination of the Acrylo I Production Area;

Our strategy is based on meeting all conditions of our NRC license as well as meeting all other known requirements. One such requirements is that mixed wastes and low-level radioactive wastes may not be placed in the same disposal cell according to USEPA. Therefore, separate cells are proposed to accommodate known quantities of mixed wastes and known quantities of low-level radioactive waste. A second requirement is that of timing. Mixed wastes must be dealt with in a timely fashion to comply with USEPA and Ohio EPA requirements as well as NRC requirements. Therefore, mixed waste activities are planned prior to work on low-level radioactive wastes. A third requirement is to locate the various disposal cells in close proximity to each other for ease of management, site maintenance and security. Since the northeast corner of the plant, known as the East Ponds Area, is home to the four ponds containing mixed waste, this area has been selected for the future site of all mixed waste and low-level radioactive waste disposal cells. A drawing of the East Ponds Area of the plant is attached for reference.

The strategy of BP Chemicals is organized into three phases as described below. Each phase will be implemented sequentially as necessitated by the physical limitations of the site. Phase I will be the mixed waste pond closure. Phase II will be the remediation of all RCRA Solid Waste Management Units containing mixed wastes. Phase III will be the remediation of all low-level radiologically contaminated soil and debris from the Acrylo I Production Area. A more detailed description of each phase follows:

Phase I

Four ponds in the East Ponds area contain mixed waste sludges and debris. The ponds are identified as Deepwell Pond, Burn Pond, V-1 Pond and Celite Pond. The soil underlying these ponds is also suspected of being contaminated with low-level radioactive and RCRA hazardous waste constituents. A plan has been developed which calls for the consolidation of all sludges and contaminated soil from V-1 Pond and Celite Pond into Burn Pond and Deepwell Pond for temporary storage. Upon confirmatory survey and release of the decontaminated V-1 Pond and Celite Pond, these two ponds will be converted into disposal cells meeting RCRA minimum technology design requirements. All sludge will be stabilized and placed in these cells to be known as V-1 Cell and Celite Cell. All contaminated soil will also be placed in these cells to the limit of their combined capacities. Excess quantities of contaminated soil (if such exists) will be stockpiled for Phase II. Contaminated debris will be decontaminated for unrestricted release or, if this is not possible, will be placed in the V-1 and Celite Cells.

A portion of Phase I is currently being implemented in accordance with conditions of BP Chemicals' existing NRC license. This portion is identified as Division I work. The remainder of Phase I which may not be implemented without additional NRC approvals is designated as Division II work. Division II work is currently on hold pending receipt of NRC approvals.

BP Chemicals has submitted and received NRC approval of a health and safety plan as well as a safety analysis report, both of which were needed to initiate Division I work. BP Chemicals has also submitted a license amendment application which NRC approved to authorize deepwell injection of pond water as a part of Division I work. A soil sampling plan, a project-specific pathway analysis report, a license amendment application to authorize on-site disposal and a financial assurance package have also been submitted to NRC in conjunction with the project. None of these documents have been approved by NRC. The delays in approval of the soil sampling plan and the project-specific pathway analysis report presently threaten to cause the shutdown and demobilization of the project. All of the other unapproved documents could likewise cause delay, shutdown and demobilization in the future if they are

not approved in a timely fashion. BP Chemicals' schedule calls for completion of all Division I work by April 30, 1993 and for completion of all Division II work by September 30, 1993.

Phase II

A third cell will be constructed at the site presently occupied by Burn Pond and Deepwell Pond. This cell will be known as Burn Cell. It will be used to dispose of any excess contaminated soil from Phase I work. It may also be used to dispose of any mixed waste sludges, contaminated soil and debris excavated from SWMU Nos. 98 and 102 as a part of the plant's corrective measures implementation per corrective action requirements of our USEPA RCRA Permit. The possible use of the Burn Cell in conjunction with the facility's corrective action program is uncertain pending receipt of approvals from USEPA and Ohio EPA. The Burn Cell will be designed to meet RCRA minimum technology standards.

A license amendment application for Phase II together with all other required documents is currently being finalized for submission to NRC. Construction of the Burn Cell will be dictated by receipt of approvals from NRC, USEPA and Ohio EPA, but it is anticipated that it would be initiated immediately upon completion of Phase I work.

Phase III

A fourth disposal cell will be constructed at the present site of V-2 Pond. This cell will be known as V-2 Cell. It will be used to dispose of all low-level radioactive contaminant materials including the sand blast waste from the catalyst plant decontamination and decommissioning and contaminated soil from the Acrylo I decontamination and decommissioning. Contaminated debris will be decontaminated for unrestricted release or, if this is not possible, will be disposed of in V-2 Cell. V-2 Cell will be constructed to meet the same design standards incorporated in the other cells.

Phase III will require an additional NRC license amendment. Preparation of the application has not yet been initiated. The project will be scheduled for completion no later than the expiration date of BP's current license (1997). The actual schedule will be dictated by receipt of NRC approvals as well as by USEPA regulations currently pending, which affect the continued use of V-2 Pond.

It is hoped that this explanation of BP Chemicals' strategy for decontaminating and decommissioning the Lima site provides the NRC with a good overview and assists the NRC in its ongoing review of documents affecting the proposed work at our site. If there are any questions, please give me a call at 419/226-1299.

Sincerely,

William M. Rupert, P.E.
Technical Specialist - Environmental

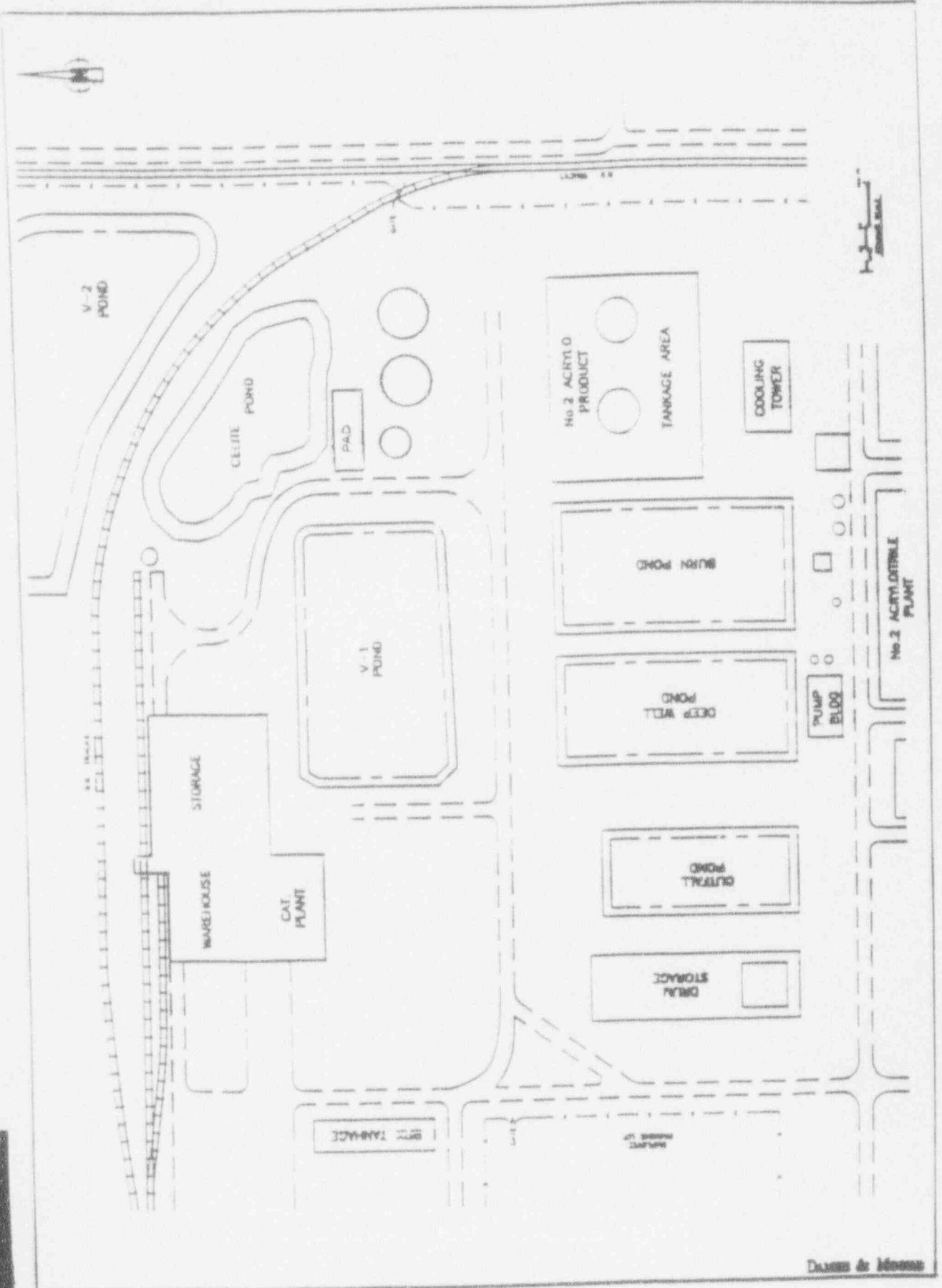
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Enc.

cc: Ken Lambert - NRC Region III

bcc: P. C. Campbell
H. M. Blythe
R. A. DeLeonardis
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BP CHEMICALS - LIMA



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