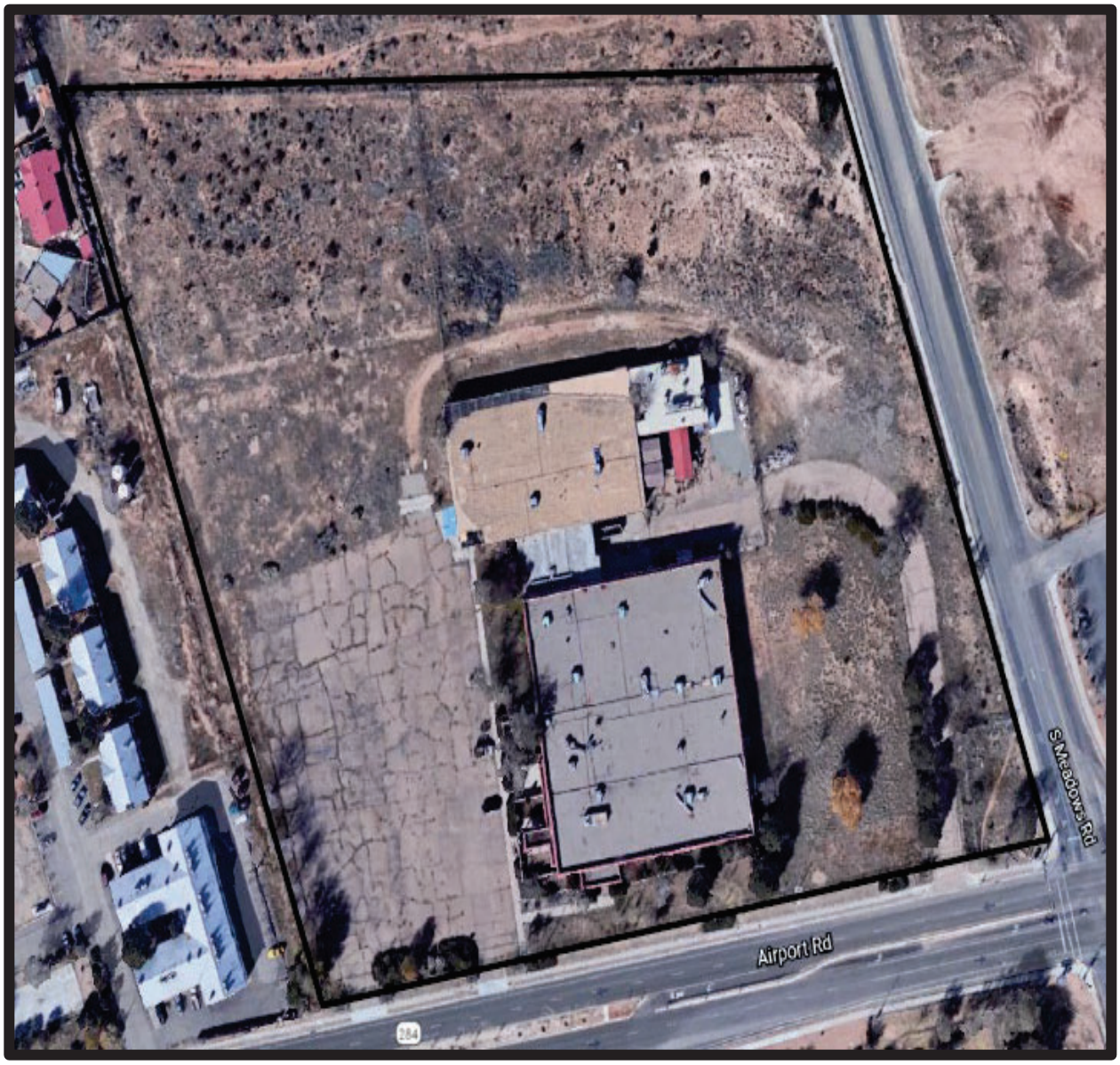
APPENDIX C

FINAL

BUILDING CHARACTERIZATION REPORT



FINAL BUILDING CHARACTERIZATION REPORT

Thermo Eberline Facility

5981 Airport Road

Santa Fe, New Mexico

CN ASSOCIATES
YOUR PARTNER IN RADIATION SAFETY

Final Building Characterization Report

Thermo Eberline Facility

5981 Airport Road
Santa Fe, New Mexico

September 2022

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ACRONYMS

Am-241	Americium 241
C-14	Carbon 14
Cf-252	Californium 252
Cm-244	Curium 244
cm^2	Centimeters Squared
COC	Chain of Custody
CN	C.N. Associates, Inc.
Company	Thermo Eberline LLC
cpm	Counts per Minute
Cs-137	Cesium 137
CSV	Calculated Screening Value
DCGL	Derived Concentration Guideline
dpm	Disintegration per Minute
DQA	Data Quality Assessment
DQI	Data Quality Indicator
DQO	Data Quality Objective
DUP	Laboratory Duplicate Analysis
Eberline	Eberline Instrument Corporation
EDD	Electronic Data Deliverable
GEL	GEL Laboratories, LLC
H-3	Tritium
HIC	High Integrity Container

HSA	Historical Site Assessment
HRW	High Range Well
LCS	Laboratory Control Sample
LANL	Los Alamos National Laboratory
LOU	Letter of Understanding
MARLAP	Multi-Agency Radiological Laboratory Analytical Protocols Manual
MARSAME	Multi-Agency Radiation Survey and Site Assessment of Material & Equipment Manual
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MB	Method Blank
mCi	milli-Curie
MDA	Minimum Detectable Activity
MDC	Minimum Detectable Concentration
MS	Matrix Spike Sample
NA	Not Analyzed
NMAC	New Mexico Administrative Code
NMED	New Mexico Environment Department
Np-237	Neptunium 237
NRC	Nuclear Regulatory Commission
ORISE	Oak Ridge Institute for Science & Education
PAOC	Potential Area of Concern
QA/QC	Quality Assurance/Quality Control

pCi/g	picoCuries per gram
Pu-238	Plutonium 238
Pu-239	Plutonium 239
RAM	Radioactive Material
RCB	Radiation Control Bureau
RSO	Radiation Safety Officer
Sft	Square Feet
SOW	Scope of Work
Sr-90	Strontium 90
TEDE	Total Effective Dose Equivalent
U	Analyte not identified above an MDC
UI	Uncertain Identification
U-234	Uranium 234
U-235	Uranium 235
U-238	Uranium 238
uCi	micro-Curie
USEPA	United States Environmental Protection Agency
WRS	Wilcoxon Rank Sum Test

EXECUTIVE SUMMARY

This report presents the results of the building characterization efforts at the Eberline Instrument Corporation (Eberline) facility located at the 5981 Airport Road property in Santa Fe, New Mexico (site or facility). This work was completed by CN Associates, Inc. (CN) on behalf of Thermo Eberline LLC (Company) in support of termination of the Radioactive Material (RAM) License # CS067 issued by the New Mexico Environment Department (NMED) Radiation Control Bureau (RCB or Bureau).

Building characterization was completed in direct coordination with the Bureau through weekly briefings, technical planning beginning in October 2019, field work starting in June 2020 and culmination of the work in the submittal of this report in February 2021. NMED RCB comments on the report were received in a letter dated January 20, 2022. The Company responded to NMED RCB comments in a letter dated April 19, 2022. This report represents the final Building Characterization Report revised in response to NMED RCB comments and incorporates the results of an additional 24 samples of building materials collected at NMED RCB's request. Those results were consistent with other results indicating no elevated activity detected above minimum detectable concentrations (MDAs).

The methods, results and conclusions of this work are described in the following sections of this report. The work included detailed radiation surveys in areas of the building where RAM was used, stored, and reportedly, or suspected to, have been released (defined as Potential Areas of Concern (PAOCs)), followed by collection of building material samples submitted to a third-party laboratory for volumetric analysis of licensed radionuclides. Survey and radiochemical analyses were benchmarked to Bureau recommended Surface and Volumetric Release Criteria commensurate with a Total Effective Dose Equivalent (TEDE) of 15 millirem per year (mrem/yr, lowered from the 25 mrem/year required by New Mexico Administrative Code (NMAC) 20.3.4.426B).

Results of radiation scanning surveys and fixed-point measurements for alpha and beta/gamma activity indicated:

- No areas of significantly elevated alpha or beta/gamma activity (greater than 3X's reference background) were identified during scanning surveys coving 100 percent of floors, walls to seven feet, and selected ceilings. Locations exhibiting alpha and/or beta/gamma activity at greater than 2Xs reference background were sampled and analyzed for target alpha

and beta/gamma emitting radionuclides for comparison to Bureau Volumetric Release Criteria.

- None of the more than 2,000 smears indicated the presence of removable alpha or beta/gamma activity at levels above the lowest Bureau Surface Release Criteria (14 disintegrations per minute (dpm)/100 square centimeters (cm^2) alpha and 4,670 dpm/100cm^2 beta/gamma).

- None of the more than 2,000 fixed-point measurements indicated total beta/gamma activity at levels above the lowest Bureau Surface Release Criteria for beta/gamma (4,670 dpm/100cm^2).

- Fixed-point static measurements for total alpha emitters indicated multiple locations where alpha activity may be present at levels exceeding the lowest Bureau Surface Release Criteria (14 dpm/100cm^2). Building materials at these locations were sampled and analyzed for target alpha emitting radionuclides for comparison to Bureau Volumetric Release Criteria.

A total of 711 radiochemical lab analyses were completed for target licensed radionuclides of 139 samples at locations where scan results indicated maximum recorded values 2Xs greater than reference background activity, where fixed-point static results exceeded applicable Bureau Surface Release Criteria, and at random locations to quantify activity levels of target radionuclides relative to Bureau Volumetric Release Criteria. **All analyses indicated activity levels of target radionuclides below reported MDCs and/or below Bureau Volumetric Release Criteria for licensed radionuclides.**

At the NMED RCB's request, 24 additional samples were collected of building substrates in PAOC-4, PAOC-7 and PAOC-8 for radiochemical analysis of alpha emitters. The results of all analyses were reports as "U" unidentified above an MDC. These additional results confirmed that the number of samples were adequate to confirm compliance with NMED RCB Release Criteria at 95 percent confidence.

CN concludes that the combined results of surveys and radiochemical analysis of building materials in the areas of the highest potential for residual impact of licensed radioactive material provide sufficient evidence that building surfaces meet Bureau Surface and Volumetric criteria for unrestricted release.

1 INTRODUCTION

1.1 BACKGROUND

The Eberline Instrument Corporation (Eberline) operated at the 5981 Airport Road property in Santa Fe, New Mexico (site or facility) from 1968 until 2007. Operations at the site included research and development, manufacturing, service and repair, calibration, and distribution of radioactive monitoring instruments. Eberline was purchased by Thermo Eberline LLC (Company) in 1979. The Company used and stored radioactive materials and devices under Radioactive Material License # CS067 issued by the New Mexico Environment Department (NMED) Radiation Control Bureau (RCB or Bureau). Figure 1-1 shows the location of the site and property boundaries.

The Company notified the RCB in a letter dated 6 June 2007 of its intent to cease principal manufacturing activities and begin the process of decommissioning the facility and terminating the radioactive materials (RAM) license. Since 2007, the Company completed substantial work at the site involving radiological materials disposition, site characterization, and remediation in support of site decommissioning and license termination. The Company submitted a draft Historic Site Assessment (HSA) in 2009.

One significant delay in site decommissioning was the presence of Americium 241 (Am-241) packaged in a physical form that presented obstacles to transportation and disposal. Delays in the disposition of this material caused the RCB to require that the Company exit decommissioning status until a feasible disposition pathway was established. After several years of cooperation between the Company, the RCB, and other state and federal agencies and government contractors, the Am-241 was safely transported and transferred to Los Alamos National Laboratories ("LANL") in February of 2016 where it is being unpackaged and disposed of by LANL under contract with the Company.

In September 2016, following Am-241 disposition, the Company met with the RCB to establish a decommissioning pathway forward. The RCB directed the Company to submit an updated HSA. On behalf of the Company, CN Associates, Inc. (CN) submitted the requested Draft HSA Report to the RCB on December 1, 2017. The RCB completed a detailed review of the Draft HSA and issued a comment letter dated January 9, 2019. On April 19, 2019, the Company submitted responses to the RCB comments and clarifications.

On August 19, 2019, the Company met with the RCB to review Bureau comments and clarifications and Company responses to the Draft HSA. The result of that meeting was an agreement on a process to complete future investigation and cleanup work at the site, finalize the HSA Report, and proceed with site decommissioning. The Company documented their understanding of the process in a letter to the RCB entitled, "Letter of Understanding" (LOU) dated September 16, 2019. An Amended LOU was submitted to the RCB dated October 2, 2020.

As outlined in the LOU, the Company agreed to work directly with the Bureau to complete additional site characterization and cleanup work including engaging in a series of regular meetings to review results and site technical issues. The Amended LOU clarified the Bureau's expectations that: 1) the Company file a Decommissioning Plan (DP) for Bureau review and approval prior to building demolition and/or remediation of Cesium 137 in soil beneath the building; and 2) the Company integrate applicable guidance of the Multi-Agency Radiation Survey & Assessment of Materials & Equipment (MARSAME) in addition to the Multi-Agency Radiation Survey & Site Investigation Manual (MARSSIM) into the decommissioning process. The Bureau also instructed the Company to complete the ongoing site characterization work and to address Bureau comments on the Draft Historical Site Assessment (HSA) parallel with DP development.

1.2 PURPOSE & SCOPE

The purpose of the building characterization is to address several concerns and comments raised by the Bureau regarding the potential for contamination to exist in the building from the variety of radionuclides and forms for which the Company was licensed to possess. CN worked with the Bureau over several months to address Bureau comments and concerns and reach consensus on the technical elements of a SOW for site building characterization. The SOW relied on information presented in the Draft HSA regarding Company use, storage and release, or potential for release of licensed RAM at the site, responses to Bureau comments and clarifications regarding previous investigations completed at the site, and technical discussions between CN and the Bureau.

The building characterization targeted an estimated 66,524 square feet (sft) of walls (to seven feet from the floor), floors, selected ceilings, and potential entry points for contamination into building structures (drain lines, sinks, lab hoods, HVAC vents, etc.) within 10 Potential Areas of Concern (PAOCs-1-10, Figure 1-2). PAOC-1-6 were selected based on past RAM use, storage, and/or known or suspected RAM release areas. PAOC-7-10 were added during the field work at the Bureau's request as areas where the Bureau believed either RAM waste was known to have been stored (PAOC-9), or locations where RAM released in the building may be located (e.g., bathrooms (PAOC-10) or potential airborne releases from PAOC-4 into PAOC-7 and 8).

Specific technical aspects of the building characterization incorporated to address Bureau technical concerns and comments on the Draft HSA included:

- Expanding the footprint of building survey coverage beyond that addressed in past surveys.
- Deployment of detailed reference grid over each survey area to ensure locations could be re-occupied for further evaluation or remediation and establish that an adequate number of measurement points were collected.
- Assessment for both surface and volumetric radioactive contamination of building materials to support planned future demolition and disposal of the building as part of site decommissioning.
- Evaluation for licensed radioactive materials for alpha and beta/gamma emitters at minimum detectable activity levels necessary to ensure compliance with RCB recommended Surface and Volumetric Release Criteria commensurate with a Total Effective Dose Equivalent (TEDE) of 15 millirem per year (mrem/yr, lowered from the 25 mrem/year required by New Mexico Administrative Code (NMAC) 20.3.4.426B).

2 METHODS

2.1 CHARACTERIZATION OBJECTIVES

The primary objective of this investigation was to assess the building for the presence or absence of residual contamination associated with past use, storage and/or known/suspected release of licensed RAM. The investigation focused on characterization of areas in the building with the highest potential for residual impact from licensed RAM. The investigation included a detailed design to definitively establish radiological conditions in the building and support subsequent planning and execution of building cleanup, if required, and demolition, removal, and disposal as part of site decommissioning.

2.2 DATA QUALITY OBJECTIVES

When data are being used to select between two alternative conditions (e.g., compliance or non-compliance with a standard), the Data Quality Objectives (DQO) process is a recommended systematic planning tool cited widely in Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) and described in detail by the Environmental Protection Agency (EPA) in "Guidance for the Data Quality Objectives Process" EPA QA/G 4 (August 2000). DQOs are qualitative and quantitative statements. They are designed to clarify the study objective, define the performance criteria, define the appropriate type of data needed, and specify tolerable probabilities of decision-making errors. Project-specific DQOs were developed using the seven-step DQO Process.

The DQOs outlined below are based on guidance provided in MARSSIM (1997) Section 3.2 which recommends that three HSA-DQO results be achieved:

- Identifying an individual or list of team members – including the decision-maker.
- Concisely describing the problem.
- Initially classifying the site and survey unit(s) as impacted or non-impacted.

These three DQO's are addressed below following EPA's 7-Step DQO process.

2.2.1 Step 1 – State the Problem & Decision Makers

Does sufficient information exist to define the nature and extent of potential residual impacts to building materials at the site (5981 Airport Road, Santa Fe, NM) and support the decision that areas have, or have not, been impacted by radiological activities at the site? The decision makers for this investigation were the Company and the RCB.

The planning team for this investigation was comprised of the following:

Representatives of the NMED RCB including:

- Mr. Santiago M. Rodriguez, Bureau Chief
- Mr. Michael Ortiz, Program Manager
- Mr. Victor M. Diaz, Licensing Specialist

Representatives of the Company included:

- Mr. Rick Podlaski, Company Senior Risk Manager
- Mr. Ron Cardarelli, Company RSO, Principal of CN
- Mr. John McTigue, CN Senior Project Manager
- Health Physicists, Engineers, and Radiochemist with CN

2.2.2 Step 2 – Identify the Decision

The principal study question is: Have areas of the building been impacted by the use, storage, or release of licensed radiological materials at the site? Potentially impacted areas are defined as those portions of the site known to contain, or having a reasonable possibility of containing, residual radioactivity above background. Potentially impacted areas in this investigation are identified as PAOC-1 through PAOC-10. Non-impacted areas are defined as those portions of the building known not to have, or having, any reasonable possibility of residual radioactivity exceeding natural background. The remainder of the building outside of PAOC-1 through PAOC-10 was designated as non-impacted areas. This decision supports potential future actions that may include release of areas from radiological controls, additional investigation, characterization, remediation, or management of radiologically impacted areas.

2.2.3 Step 3 – Identify Inputs to the Decision

Inputs to the decision are primarily historical documents (records, reports, and correspondence from the Company and RCB), interviews with former employees, and other pertinent local and regional data as summarized in the Draft HSA. Pertinent information is data that supports assessment of the principal study question and included radioactive material

authorizations, use, inventories, incident reports, contamination events, releases, spills, assessment, or remedial reports, etc. as identified in the HSA.

2.2.4 *Step 4 – Define the Boundaries of the Study*

Temporal boundaries for the study are defined by the period of use of radiological materials at the site. Spatial boundaries are defined by the locations of historical radiological materials storage, use or known or suspected release with the initial assumption that this includes PAOC-1 through PAOC-10.

If there is reasonable potential, or conclusive evidence, that an area was potentially impacted (i.e., contaminated) by site activities involving the use, storage, or release of licensed radioactive materials in the building, then that area was considered potentially radiologically impacted. Potentially impacted areas for this investigation included PAOC 1-10 (Figure 1-2). All other areas of the building were considered non-impacted.

2.2.5 *Step 5 – Develop a Decision Rule*

Decision rules were established based on release criteria issued by the Bureau in a letter to the Company dated December 6, 2019 (Appendix A). The Bureau issued release criteria for 11 primary alpha and beta/gamma emitting radionuclides on the Company's RAM license and proposed surface and volumetric threshold values below which the Bureau would allow unrestricted release of building materials and contents. In addition, the Bureau issued minimum detectable activity (MDA) levels (later defined as Minimum Detectable Concentrations (MDCs)) for volumetric analysis to be completed by a third-party laboratory. Limits on decision errors for surface and volumetric measurements are presented in further detail in the Data Validation Summary Report (Appendix D).

The Bureau's release criteria reflect compliance with a 15 mrem/yr TEDE. Since the building is to be demolished and disposed in a landfill and the 15 mrem/yr criteria reflect a dose threshold protective of unrestricted future use of the building, the Bureau's proposed criteria are intentionally conservative.

Table 2-1: Bureau Recommended Building Surface & Volumetric Release Criteria

Nuclide	Surface Release Criteria (dpm/100cm^2) Removable or Fixed	Volumteric Release Criteria (pCi/g)	Minimum Detectable Activity (MDA pCi/g))
Alpha Emitters			
Am-241	17	1.25	0.05
Pu-239	17	1.37	0.05
Pu-238	19	1.52	0.05
U-235	59	4.82	0.05
Cm-244	30	2.5	0.05
Np-237	14	0.6	0.05
Cf-252	52	4.12	0.05
Beta/Gamma Emitters			
H-3	1.14E+08	64.80	1.0
C-14	2.22E+06	6.96	1.0
Sr-90	4.67E+03	1.03	0.1
Cs-137	1.68E+04	6.60	1.0

Notes:
dpm- disintegrations per minute
cm^2- square centimeters
pCi/g – picocurie per gram
Note: NMED used NRC guidance documents for all 25 mrem/year values, extrapolated them, and reduced them tomeet the 15 mrem/year unrestricted use criteria based on risk.
Source: NMED RCB December 6, 2019 Letter of Clarification to Company RSO

The decision rules outlined below were established as "if-then-else" statements to determine actions for additional characterization based on the results of radiological surveying, sampling, and analysis. These decision rules ultimately establish the radiological status of the building regarding classification of impacted or non-impacted areas of the building to be addressed in site decommissioning. Where feasible, decision rules employed a direct comparison to the Bureau Surface and Volumetric Release Criteria (above in Table 2-1). Where a direct comparison was not feasible, thresholds of two-times (2Xs) reference background activity were employed (for surface scan measurements) and Calculated Screening Values (CSVs) corresponding to the lowest Bureau Surface Criteria for alpha emitters (14 dpm/100cm^2) were employed (for fixed-point measurements of total alpha activity, see Section 3.1).

	If	Then	Else
1	Scan surveys indicate the potential presence of alpha or beta/gamma radioactivity at greater than 2Xs background	Flag the area for additional surveys and/or sampling	Consider the area to have passed this screening criteria and consider sampling to confirm if volumetric activity levels of target radionuclides meet Bureau Volumetric Release Criteria
2	If analysis of smears indicate the potential for removable alpha or beta/gamma contamination greater than the lowest Bureau Surface Criteria in Table 2-1 (14 dpm/100cm^2 for alpha emitters and 4,670 dpm/100cm^2 for beta/gamma emitters)	Flag the area for additional surveys and/or sampling	Consider the area to have passed this screening criteria and consider sampling to confirm volumetric activity levels of target radionuclides meet Bureau Volumetric Release Criteria
3	Fixed-point static measurements indicate the potential for total alpha activity exceeding the Calculated Screening Values (CSVs) in cpm corresponding to the lowest Bureau Surface Criteria for alpha emitters in Table 2-1 (14 dpm/ 100cm^2)	Flag the area for additional surveys and/or sampling	Consider the area to have passed this screening criteria and consider sampling to confirm if volumetric activity levels of target radionuclides meet Bureau Volumetric Release Criteria
4	Fixed-point static measurements indicate the potential for total beta/gamma activity greater than the lowest Bureau Surface Criteria in Table 2-1 (4,670 dpm/100cm^2)	Flag the area for additional surveys and/or sampling	Consider the area to have passed this screening criteria and consider sampling to confirm if volumetric activity levels of target radionuclides meet Bureau Volumetric Release Criteria
5	Volumetric analysis indicate radionuclides at levels exceeding the criteria in Table 2-1	Identify as an impacted area and complete additional surveys and/or sampling to establish the boundaries of impact	Consider the area to have passed this screening criteria and be eligible for classification as a non-impacted area.
6	Evaluation indicates that a specific area has than absence of radioactivity from a combination of steps 1-5	Establish the area as non-impacted and consider if any added evaluation is required for confirmation	Consider the area as impacted and determine what added evaluation is required to establish the boundaries and extent of impact

2.2.6 *Step 6 – Specify Tolerable Limits on Decision Errors*

To minimize the chance for decision errors during building characterization, tolerable limits were identified to reduce the potential for decision errors of any significant consequence. Decision errors are classified as:

- Type I Decision Errors occur when the null hypothesis is rejected, but true. In this case survey and sampling results would be used to conclude that no residual contamination exists with a PAOC at levels above Bureau Release Criteria, when in fact it does. The decision error was set at 0.05.
- Type II Decision Errors occur when the null hypothesis is accepted, but false. In this case, survey and sampling results would be used to conclude that residual contamination exists within a PAOC at levels above Bureau Release Criteria, when in fact it does not. The decision error was set at 0.05.

In the above cases, a Type I decision error would have a greater consequence than a Type II error, potentially resulting in the release of building materials where contamination may in fact exist at levels greater than Bureau Release Criteria. A Type II error may result in a building location being subject to further evaluation and/or remediation when it was not necessary and would be of lower consequence.

To reduce the probability of a Type I or Type II decision error, the following weight-of-evidence approach was employed in data collection, analysis, and interpretation to support decisions regarding the presence or absence of licensed radionuclide contamination of building materials:

- 100 percent scan surveys of building surfaces were completed to assess the presence/absence of gross alpha and beta/gamma activity at levels exceeding site reference background levels.
- A square systematic grid was deployed over each building surface to collect surface measurements for both removable and total alpha and beta/gamma activity.
- The results of scanning and fixed-point measurement surveys were evaluated to select locations for sampling building materials for radionuclide-specific analysis to include:
    - Scan locations where the maximum alpha or beta/gamma activity within a survey grid was greater than 2Xs the reference background levels.
    - Locations where removable alpha or beta/gamma activity was greater than the lowest Bureau Surface Release Criteria for alpha (14 dpm/100cm^2) or beta/gamma (4,670 dpm/100cm^2) emitters.

    - Locations where total alpha activity was greater than the CVS for the lowest Bureau Surface Release Criteria for alpha emitters (calculated equivalent to 14 dpm/100cm^2) or beta/gamma activity was lower than the CVS for the lowest Bureau Surface Release Criteria for beta/gamma emitters (calculated equivalent to 4,670 dpm/100cm^2).
- Radiochemical analyses of building samples were subject to rigorous Quality Assurance/Quality Control (QA/QC) testing and analysis to ensure the results were of sufficient quality to ensure compliance with Bureau Volumetric Criteria for unrestricted release.
- Decisions regarding the rejection of the null hypothesis that would result in Type I errors, i.e., that building materials meet Bureau Criteria for Unrestricted Release, were based primarily on the results of radiochemical analysis meeting QA/QC criteria and secondarily on the results of scanning and fixed-point measurements for removable and total gross alpha and beta/gamma activity.
- The combined weight-of-evidence of survey results for potential surface contamination along with the validated laboratory results for radionuclide-specific volumetric activity, and the conservative application of the Bureau Release Criteria (i.e., applicable to a 15 mrem/yr TEDE for unrestricted use) to building materials planned for demolition and disposal (i.e., not for future unrestricted use), establish a reasonable degree of confidence that Type I and/or Type II decision errors, if present, would have no significant consequence.
- In consultation with NMED, the Wilcoxon Rank Sum (WRS) Test was applied to determine the number of data points needed to verify compliance with NMED RCB Release Criteria with 95 percent confidence.

2.2.7 *Step 7 – Optimize the Design for Collecting Data*

The building investigation design was optimized through the collection of successive rounds of survey data for which the results were used to guide the collection of subsequent surface and volumetric measurement points.

A square systematic grid was deployed over each PAOC building surface to collect surface measurements for both removable and total alpha and beta/gamma activity. The survey grids were established such that each grid was approximately 50sft or a 7'x7' area.

Surface measurements were initially collected by scanning 100 percent of the targeted survey area for gross alpha and beta/gamma activity. Scan thresholds were established to be as low as reasonably achievable based on instrument capability, background activity and mitigation of radon interference in the building to approach Bureau Surface Release Criteria. The established threshold for scan data was set at 2Xs the reference background activity.

Fixed-point measurements were collected at locations:

- exhibiting scan results greater than 2X's the reference background activity; and/or
- at the center point of the survey grid when scan results were consistent with, or less than, 2X's the reference background activity.

The results of scan, removable and total activity measurements were evaluated for each building material type (e.g., concrete, vinyl tile, sheetrock, etc.) within each PAOC to support the selection of sample locations for volumetric testing. Selection criteria included:

1) locations where scan results suggested alpha and/or beta/gamma activity greater than two-times (2Xs) reference background activity;
2) locations where removable activity for alpha and beta/gamma emitters were detected above the lowest Bureau Surface Release Criteria for alpha emitters (14 dpm/100cm^2) or beta/gamma emitters (4,670 dpm/100cm^2);
3) locations where total activity for alpha emitters exceeded the CSV for the lowest Bureau Surface Release Criteria for alpha emitters (14 dpm/100cm^2);
4) locations where total activity for beta/gamma emitters exceeded the CSV for the lowest Bureau Surface Release Criteria for beta/gamma emitters (4,670 dpm/100cm^2); and/or
5) if none of the above criteria were met, samples were collected at random locations or at the location of the maximum activity measured based on the scan results.

Employing the above hierarchy in the design of data collection optimized the usability of the data in supporting decision-making regarding the presence or absence of residual impact from licensed RAM to building surfaces in PAOC-1 through PAOC-10 at levels exceeding Bureau Surface and Volumetric Release Criteria.

2.3 IDENTIFICATION OF POTENTIAL AREAS OF CONCERN

The Eberline facility buildings occupy an estimated 66,600sft and are comprised of two structures: 1) a 41,600sft main building constructed in 1968; and 2) a 25,000sft Engineering Annex constructed in 1978 located to the north of the main building and connected by the loading dock (Figure 2-1). The layout of features and operations in PAOC-1 through PAOC-10 as adopted from the building layout map are displayed in Figures 2-2 through 2-10.

PAOC 1-6 were identified as locations within the buildings where the potential for residual impact of licensed RAM was greatest based on historic records of licensed RAM use, storage and release as documented in the Draft HSA and Bureau comments on the draft HSA requesting expansion of the footprint of several areas. PAOC 7-10 were added during the building characterization work at the Bureau's request. The location of each PAOC is shown in Figure 1-2. A description of each PAOC, its location and basis for selection as a PAOC for characterization is summarized below:

- **PAOC-1** – is the northwest portion of the Annex Building. PAOC-1 was the location of the former Eberline Technical Services Group (Figure 2-2). This area included a wet lab, storage, inventory area and offices and had been subject to use and storage of licensed RAM including short-term storage of the Am-241 prior to relocation to PAOC-4.
- **PAOC-2**- is a series of five storage closets located in the southwest corner of the Engineer portion of the Annex Building (Figure 2-3). These closets had reportedly been utilized for the storage of licensed RAM.
- **PAOC-3**- is the southeast portion of the Annex Building (Figure 2-3) and is divided into three areas including: 1) the northwest section utilized for Engineering Prototype; 2) the southwest section identified as an "Open Area" on the building map; and 3) the east half of PAOC-3 occupied by the "REAX" area. Each of these areas are suspected to have utilized licensed RAM in site operations.

- **PAOC-4**- is a room on the west end of the loading dock and utilized for storage of licensed RAM including inactive sources (licensed sources not currently in use, Figure 2-4). PAOC-4 is the former storage location of Am-241 following consolidation at the site into a High Integrity Container (HIC) for long-term storage.
- **PAOC-5**- is the northeast portion of the main building adjacent to the loading dock. PAOC-5 is comprised of three areas (Figure 2-5) including: 1) an outgoing shipping area occupying the northwest half adjacent to the loading dock; 2) a shipping and receiving area occupying the southwest half; and 3) a material control area occupying the east half with an upper mezzanine area. The east half of PAOC-5 was reportedly utilized items pending shipping, storage, and stock inventory. All three of these areas were locations of reported licensed RAM use associated with incoming and outgoing devices and materials. For survey purposes PAOC-5 was divided into three areas including a western (PAOC-5W), eastern half (PAOC-5E) and mezzanine (PAOC-5MEZ) for characterization.
- **PAOC-6**- is the main facility Production Floor occupying the center and eastern portion of the main building. PAOC-6 was divided into four quadrants for characterization of the floors and walls.
    - **PAOC-6NW** (northwest quadrant)- was utilized for servicing counters (multi-purpose survey meters, radiation monitors, alpha and beta/gamma counters and mini scalers) in the northwest corner with test, assembly and quality control areas occupying the remainder of PAOC-NW (Figure 2-6).
    - **PAOC-NE** (northeast quadrant)- was utilized for calibration and test cell work in the northwest section and occupied by the former calibration well room in the northeast section. The reminder of the area was utilized for survey instruments including ion chambers, neutron meters, microR meters, telescoping poles, high range gamma meters, emergency kits, electronic personnel dosimeters, handheld contamination meters, natural background reduction and portable gamma spectrometers (Figure 2-7).

- **PAOC-6SW**- the northern section was utilized for environmental monitors including area monitors, alpha air monitors, particulate and gas monitors, iodine monitors, stock sampling systems and pumps. The southern portion was occupied by office cubicles including the former Company RSO cubicles (Figure 2-8).
- **PAOC-6SE**- the northern section was utilized for detectors including GM, gas sealed, scintillators, neutron, smart probes, detector cases and accessories. The southern section was occupied by conference rooms, offices and trade show/demo items and storage (Figure 2-9).

- **PAOC-7**- is the Annex electrical distribution room located adjacent to PAOC-4. This area was characterized at the Bureau's request as a location where a potential release of activity from PAOC-4 could have migrated (Figure 2-4).
- **PAOC-8**- is an unidentified room located adjacent to PAOC-7. This area was characterized at the Bureau's request as a location where a potential release of activity from PAOC-4 could have migrated (Figure 2-4).
- **PAOC-9**- is a stock room for metals and plastic located south of PAOC-4 off the loading dock. This area was characterized at the Bureau's request as a location where contaminated materials were reportedly stored by a former Company RSO (Figure 2-4).
- **PAOC-10-** is the men's and women's restrooms located west of PAOC-6 in the main building. This area was characterized at the Bureau's request as a location where a potential release of activity in the building could have come to be deposited (Figure 2-10).

2.4 SURVEY METHODS

2.4.1 Survey Area Boundaries, Grids & Measurement Point Nomenclature

Survey area boundaries were established coincident with PAOC boundaries. The 10 PAOCs selected for characterization represented the most likely areas in the building where residual contamination may be present associated with former use, storage, or release of licensed RAM at the site. This determination was supported based on historic review of licensed RAM use, storage, and release in the building (as presented in the Draft HSA), at the request of the Bureau based on their review and

comment on the Draft HSA, and/or to address Bureau concerns regarding the potential for contamination of the building. As such, for the purpose of the building characterization, PAOC-1 -10 represent areas where the potential was greatest for residual contamination to remain at levels above Bureau Release Criteria.

An interior survey area reference grid was established using a one-foot spacing over the floor of each survey area (PAOC-1 -10). A direct measurement point grid was overlaid onto each reference grid using a maximum 7X7 foot area (or less than 50sft). The maximum 50sft spacing between direct measurement points was adopted in coordination with the Bureau. The actual number of measurement points within each survey area is summarized in Table 2-2 with no greater than 49sft between survey points. A total of 2,056 survey points were collected over the 66,524sft of building surface surveyed in PAOC-1 through PAOC-10 resulting in an average of 33sft between survey points.

The grid for walls was projected up seven feet from the floor to meet the maximum of 50sft between direct measurement points made on walls. Similarly, the floor grid was projected onto the horizontal portion of the ceiling in PAOC-4, 7 & 8 where ceiling surveys were performed to assess the potential for deposition of airborne activity in the source/HIC storage area in PAOC-4 and the adjacent areas (PAOC-7 & 8). A minimum of two additional direct measurement points per 50sft of horizontal ceiling area were added at random locations on vertical support structures present within each direct measurement point ceiling grid cell.

Table 2-2: PAOC 1-10 Survey Areas & Measurement Point Coverage

PAOC	Areas	Estimated Square Feet (Total)	Number of Point Measurements	Average Square Feet/Point
PAOC-1	Floors	2,698	56	48
PAOC-1	Walls to 7 ft. & Mounted Units	4,109	110	37
PAOC-2	Floors	220	5	44
PAOC-2	Walls to 7 ft.	840	25	34
PAOC-3	Floors	4,392	90	49
PAOC-3	Walls to 7 ft.	3,843	118	33
PAOC-4	Floors	210	6	35
PAOC-4	Walls to 7 ft.	414	10	41
PAOC-4	Ceiling (Horizontal & Strut)	210	29	7
PAOC-5	Floors	9,480	212	45
PAOC-5	Walls to 7 ft.	4,718	110	43
PAOC-6	Floors	11,752	264	45
PAOC-6	Walls to 7 ft. & HVAC Duct	5,488	279	20
PAOC-6	Ceiling (Horizontal & Beam)	12,992	541	24
PAOC-7	Floor	125	4	31
PAOC-7	Walls to 7 ft.	315	8	39
PAOC-7	Ceiling (Horizontal & Strut)	125	12	10
PAOC-8	Floor	247	9	27
PAOC-8	Walls to 7 ft.	445	12	37
PAOC-8	Ceiling	247	26	10
PAOC-9	Floor	1,160	26	45
PAOC-9	Walls to 7 ft.	992	23	43
PAOC-10	Floor	462	16	29
PAOC-10	Walls to 7 ft.	1,040	65	16
	Total Area/Points & Average	**66,524**	**2,056**	**33**

Survey grid plots and measurement point designations within each PAOC-1-10 are displayed in grid maps in Figures 2-11 through 2-48. Based on the tight grid spacing and large areas covered in several PAOCs, the grid maps were sectioned in half or in quadrants so that coordinates and measurement point designations are legible in 8 ½ x 11-inch format. For example, PAOC-6 was broken into four survey areas (PAOC-6NW, PAOC-6NE, PAOC-6SW and PAOC-6SE). Each of these survey areas were further divided into four quadrants in the grid maps (e.g., Figures 22-25 display the four quadrants of the PAOC-6NW survey area consisting of four figures displaying the NW, NE, SW and SE portions of the PAOC-6NW survey area). Please refer to the full set of grid maps for legend information in each survey area.

Measurement points were assigned a unique coordinate location (X, Y, Z) and designation within each PAOC according to the following criteria:

- The first character designates the PAOC, e.g., 1 through 10.
- The second character designates the building surface type where; "F" = Floor, "W" = Wall, "C or CF" = Ceiling, "CS" = Ceiling Structure.
- The third character for floor or ceiling locations designates the grid block within the PAOC (e.g., 1…56 if the floor or ceiling grid was comprised of 56 cells or grid blocks where no single grid block is greater than 50 sft). For example, a floor measurement point in PAOC-4, first grid block was designated 4-F-1. The corresponding ceiling measurement point is 4-C-1.
- The third character for a wall surface (i.e., W for the second character) designates the direction the technician is facing when they are surveying the wall, where: "N" is for North, "E" for East, "S" for South and "W" for West. For example, a wall along the north boundary in PAOC-4, Grid Block 1, was designated 4-W-N-1 for a wall measurement point.
- The last letters in the measurement designation indicate "C" for a measurement collected at the center of a grid block, "M" for a measurement collected at the location of the maximum recorded activity during scanning, and "R" corresponding to a location of a measurement point selected at random.
- In some cases, the grid layout resulted in more than one measurement point within a Grid Block. In that case a designation of "A", "B", or "C" was added at the end of the measurement point designation to distinguish between the measurements on the same surface within the same gid block.

The ceiling in PAOC-6 is constructed of pre-formed concrete trusses and beams. The 14 trusses each have a right, middle and left horizontal span separated by two vertical beams oriented north/south. This ceiling structure warranted application of a unique grid and measurement point designation system to ensure that the frequency of measurement points did not exceed 50sft for both horizontal and vertical ceiling surfaces. Figure 2-38 – 2-43 show a schematic of the PAOC-6 ceiling horizontal surfaces, trusses and beams divided into six sections, three northern and three southern sections that span Beams 1-8, 9-18 and 19-28, respectively.

The grid blocks for measurement points on horizontal surfaces correspond to areas of 48sft (4x12 ft) labeled 6C-1 through 6C-261, resulting in 261 measurement points on PAOC-6 ceiling horizontal surfaces. Figures 2-38 through 2-43 show each horizontal grid separated by beams running north-south and measurement point grid blocks lines (red and yellow) trending east-west. The grid blocks for measurement points on the 28 vertical beams (each up to two feet in width) span 48sft (2x24 ft) on both the east and west sides of each beam corresponding to measurement point designations 6B-1-E through 6B-28-E on the east sides and 6B-1-W through 6B-28-W on the west sides. The beam grid blocks in Figures 2-38 through 2-43 are separated by the black beam lines running north-south and by red horizontal lines running east-west. The N-S length of each beam is 104 feet, resulting in a total of 289 measurement points designated in red and green alternating on opposite sides of each vertical beam (e.g., designated 6B-1-E-1 in red and 6B-1-W-1 in green on the east and west sides of Beam 1, first grid block, respectively).

2.4.2 Building Materials & Background Reference Areas

Table 2-3 summarizes the 11 different types of building material substrates (vinyl floor tile, sheetrock wall, concrete wall, floor and ceiling, metal walls, beams and ceiling supports, metal conduits (sinks, drains, HVAC ducts), cinder block wall (painted), stucco wall (painted), brick wall, vinyl ceiling insulation and ceramic wall and floor tile (restrooms)) surveyed in the 10 PAOCs. Background reference areas were selected in portions of the building where there was no history of licensed RAM use, storage and/or disposal to collect site and substrate-specific measurements of background activity. The locations of background reference areas are displayed in Figure 2-49. Results of reference background measurements are summarized in Tables 3-1 through 3-10.

Due to the potential for radon interference with background reference measurements, radiation monitoring in reference areas was completed at different times of the day, on different days, and at different locations for the same substrate type, to account for temporal and spatial variations in the background activity of building substrates. A summary of the evaluation of radon interference in the building is provided in Appendix B. Additional background monitoring was conducted periodically during the survey work if a drift in activity (steady increase or decrease) was observed during performance of a survey.

Table 2-3: Building Material Substrates in PAOCs

		Building Material & Substrate Types										
PAOC	Building Area	Vinyl Floor Tile	Sheetrock Wall	Concrete Floor, Ceiling, Wall	Metal Wall, Beams, Ceiling Supports	Metal (Sink, Drain, Eye Wash, HVAC Duct)	Painted Cinder Block Wall	Brick Wall	Stucco Wall	Vinyl Ceiling Insulation	Carpet	Ceramic Tile
1	Annex Technical Services	X	X	X		X						
2	Annex Closet	X	X									
3	Engineering & REAX	X	X	X			X					
4	RAM/Inactive Source Storage			X	X				X	X		
5	Shipping, Receiving & Material Storage	X	X	X			X	X				
6	Production Floor & Office Cubicles	X	X	X	X	X	X				X	
7	Annex Electrical Distibution	X		X	X				X	X		
8	Empty Room Adjacent to PAOC-7			X	X							
9	Stock Room (Former RAM Waste Storage)			X	X				X	X		
10	Main Building Restrooms		X		X	X						X

2.4.3 *Survey Preparation, Methods & Equipment*

Areas designated as PAOCs were physically prepared by relocation of materials and equipment within each area to staging areas for subsequent radiological surveys for release. Screening surveys (Large Area Wipes (LAWs)) were conducted to ensure no transfer of radioactive contamination before the materials were moved.

Radon and its progeny presented a challenge when conducting beta/gamma and alpha surface contamination surveys. The degree of radon related interference varied from day to day and at times within the same day. Changing meteorological conditions were observed to be a major driver. The effect of radon interference was mitigated using portable fans and ventilation units to provide localized turnover of the air volume in a given survey area. In some instances, plastic sheeting was placed over the planned survey area as a prophylactic to prevent continual deposition of radon progeny while the existing surface progeny were allowed to decay. On occasion the level of radon interference was such that added ventilation or covering of surfaces was ineffective. In these cases, the

survey was postponed until meteorological conditions changed and the exiting radon progeny decayed to an acceptable level for surveys to commence.

CN's evaluation of radon at the site is presented in Appendix B. An evaluation of the 2022 radiological data from multiple sources confirmed CN's conclusion that elevated alpha activity on building surfaces is the result of radon progeny. The radon progeny were observed in all of the locations sampled at similar concentrations indicating the source is from radon gases migrating into the building at multiple locations from below ground with possible contributions from building materials (i.e., concrete aggregate constituents).

Given the possible radiological constituents of concern, handheld alpha and beta/gamma scintillators and large area gas proportional counters (alpha, beta/gamma detectors) were chosen to provide the desired detection capability for surface contamination measurements. Table 2-4 provides a summary of the types of survey instruments utilized in building characterization and the estimated range in minimum detectable activity (MDA) achieved with each instrument. Additional details on instrument efficiencies and calculated MDAs are included in Appendix C.

MDAs varied based on site background activity/radon interferences, building substrate type and count time. Instrument MDAs listed in Table 2-4 met Bureau Surface Release Criteria (Table 2-1) for:

- Beta/gamma scans, fixed-point removable and total activity measurements met the lowest Bureau Surface Release Criteria for beta/gamma emitters (4,670 dpm/100cm^2 for Sr-90).
- Tritium fixed-point measurements for total activity met the Bureau Surface Release Criteria for tritium (1.14E+08 dpm/100cm^2).
- Alpha fixed-point measurements for removable activity met the lowest Bureau Surface Release Criteria for alpha emitters (14 dpm/100cm^2).

Instrument MDAs were not sufficient to meet the lowest Bureau Surface Release Criteria (14 dpm/100cm^2) when scanning or making fixed-point measurements for total alpha activity. In the case of scanning, locations exhibiting 2X's the reference background activity were flagged for further evaluation by sampling and volumetric analysis. In the case of fixed-point measurements for total alpha activity, locations exceeding the CSV for the

lowest Bureau Surface Release Criteria for alpha emitters were flagged for further evaluation by sampling and volumetric analysis.

Table 2-4: Survey Instruments & Estimated Range in Minimum Detectable Activity

Instruments	Application	Range Mininum Dectectable Activity		Total Efficiency (4pi)	Background (cpm)	Window Thickness (mg/cm²)
		Alpha (dpm/100cm2)	Beta Gamma (dpm/100cm2)			
Ludlum Model 43-37-1 Gas Proportional Dectector Paired w/Ludlum Model 2360 Rate Meter	Alpha and beta/gamma Scan	125 - 200	550 - 700	Alpha: 7.3%; Beta/Gamma: 11.48%	Typically 10-30	0.8 mg/cm²
	Alpha and beta/gamma Fixed-Point	N/A	N/A		Typically 800-2,000	
Ludlum Model 43-93 or 43-89 Alpha-Beta Detector (ZnS(Ag) and plastic scintillators) paired with a Ludlum Model 2224-1 or 2360 Ratemeter	Alpha and beta/gamma Scan	115 - 300	1,200 - 1,700	Alpha: 11.25%; Beta/Gamma: 11.25%	Not requested	1.2 mg/cm²
	Fixed-Point	45 - 95	250 - 400			
Ludlum Model 3030 Alpha Beta Sample Counter (ZnS(Ag) and plastic scintillators)	Alpha and beta/gamma Fixed-Point	9 - 14	60 - 80	Alpha: 30-32%; Beta/gamma: 35-36%	Not requested	0.4 mg/cm²
Ludlum Model 44-110 Tritium Detector (Windowless Gas Proportional) paired w/a Ludlum Model 2350-1 Ratemeter	Beta Fixed-Point	N/A	450 - 700	H-3: ~60% as determined by instrument manufacturer	Not requested	0

N/A- Not Applicable

Where a direct comparison was not feasible, thresholds of two-times (2Xs) reference background activity were employed (for surface scan measurements) and Calculated Screening Values (CSVs) corresponding to the lowest Bureau Surface Criteria for alpha emitters (14 dpm/100cm²) were employed (for fixed-point measurements of total alpha activity, see Section 3.1).

Radiation technicians conducted the survey in accordance with CN-SF-RP-001 Building Characterization Procedure and applicable radiation survey instrument use procedures (see Appendix C). All detectors and associated ratemeters were calibrated by the manufacturer or an approved third-party vendor. Each detector/instrument combination was subject to a daily operational response check using beta/gamma and alpha emitting radiation sources.

Scanning, fixed-point measurement and smear data were collected on applicable survey forms and data collection sheets and provided to CN Health Physics and management personnel for review and approval. Survey data were transferred to spreadsheets for tabulation, comparison to reference background values, statistical analysis, and graphical representation.

2.4.4 Survey Records

Survey data quality was ensured through execution by experienced CN health physics personnel coupled with documentation review and data analysis conducted by CN senior health physics management and technical personnel.

When radiation surveys were completed, CN radiation technicians electronically scan the survey documents and provide the survey to CN health physics personnel for review. The survey review process included an examination of each survey for several key elements that included, but were not limited to:

- ensuring the intended goals established for the survey have been met (e.g., types and quantity of survey measurements, locations monitored, etc.);
- compliance with established procedures for survey type and instrument use;
- recording of instrument models, serial numbers, and calibration due dates;
- recording of associated survey data values such as MDA and background values:
- names and signatures of health physics personnel who conducted the survey; and
- evaluation of whether recorded radiation values merit resurvey, additional evaluation, or indicate any systemic issues or trends.

Copies of the survey records are available upon Bureau request.

2.5 VOLUMETRIC ANALYSIS OF BUILDING MATERIALS

2.5.1 Volumetric Sampling, Laboratory Analytical Methods & Analysis Criteria

Volumetric samples of building material substrates were collected and placed into pre-cleaned 500 milliliter (ml) sample jars provided by GEL Laboratories (GEL) of Charleston, South Carolina, a nationally and State of New Mexico Certified Laboratory. Sample locations were selected according to the results of surface radiation surveys and/or to target specific locations within PAOCs (see Section 2.2.7). Target radionuclides for volumetric analysis reflect those on the Company RAM license and those for which the Bureau issued volumetric release criteria and MDAs. Targeted radionuclides, Bureau Volumetric Release Criteria, Bureau Required MDAs, and analytical methods are summarized in Table 2-5. A summary of samples collected and laboratory analyses conducted by PAOC in included in Table 2-6.

Table 2-5: Target Radionuclides, Volumetric Release Criteria & Analytical Methods

Isotope	Decay Mode	Bureau Volumetric Release Criteria for 15mrem/year (pCi/g)	Bureau Required MDA (pCi/g)	Radiochemical Analysis Method	GEL Analytical Method
Americium-241	Alpha	1.25	0.05	Alpha Spectroscopy	DOE EML HASL 300 Am-05-RC Mod
Californium-252	Alpha	4.12	0.05	Alpha Spectroscopy	DOE EML HASL 300 Am-05-RC Mod
Carbon-14	Beta	6.96	1.0	Liquid Scintillation	EPA EERF C-01 Mod
Cesium-137	Beta	6.6	1.0	"High Resolution" Gamma Spectroscopy	DOE EML HASL 300 4.5.2.3/Ga-01-R
Curium-244	Alpha	2.5	0.05	Alpha Spectroscopy	DOE EML HASL 300 Am-05-RC Mod
Hydrogen-3	Beta	64.8	1.0	Liquid Scintillation	EPA 906.0 Mod
Neptunium-237	Alpha	0.6	0.05	Alpha Spectroscopy	DOE HASL 300 Mod
Plutonium-238	Alpha	1.52	0.05	Alpha Spectroscopy	DOE EML HASL 300 Pu-11-RC Mod
Plutonium-239	Alpha	1.37	0.05	Alpha Spectroscopy	DOE EML HASL 300 Pu-11-RC Mod
Strontium-90	Beta	1.03	0.1	"Radiochemistry"	EPA 905.0 Mod/DOE RP501 Rev. 1 Mod
Uranium-235	Alpha	4.82	0.05	Alpha Spectroscopy	DOE EML HASL 300 U-02-RC Mod

2.5.2 *Quality Assurance & Quality Control Procedures*

As part of the data quality objective (DQO) process, a validation plan is developed to assure that laboratory data is of sufficient quality to aid in decisions about the project. Processing specifications are communicated to the Laboratory through a Scope of Work (SOW) document. Information and requirements included in the SOW for this project included:

- Type and number of samples expected.
- Volume of sample to be collected.
- Radionuclides requiring quantification.
- Required minimum detectable concentrations (MDCs).
- The type and frequency of QC samples required.
- Approximate spike concentrations relative to the radionuclide concentration range of interest.
- Reporting requirements, e.g., standard data package with tracer recoveries, QC Summary Reports, and electronic data deliverable (EDD).
- Sample turn-around times, retention, and disposal requirements.
- Project management and chain of custody (COC) requirements.

Performance or acceptance criteria for data quality indicators (DQI) that are appropriate for the ultimate use of the data are also sometimes specified in the SOW. For this project, it was determined that the Laboratory's internal acceptance criteria would be adequate. The typical DQIs defined by the EPA include precision, bias, accuracy, representativeness, comparability, completeness, and sensitivity (USEPA 2002). QC samples are typically used to quantitatively evaluate precision, bias, and accuracy. Sensitivity is assessed through evaluating MDC compliance, and completeness is assessed by ensuring that all requested analyses have been completed. Comparability and representativeness are qualitative DQIs. Comparability involves ensuring that samples in a data set are processed using the same or similar procedures with similar sensitivity and specificity. Representativeness is used to evaluate how representative the sampling was relative to field conditions.

Sample results are verified and validated to ensure that the data were generated according to the predetermined specifications and that they are appropriate for their intended use. Data verification evaluates a data set to determine completeness, correctness, and comparability. Data validation assures that the data meets the acceptance criteria and are scientifically defensible. The final Data Quality Assessment (DQA)

determines whether, or not, the data quality is sufficient to meet the intended use of the data.

The data for this project was validated using guidance from the EPA and Multi-Agency Radiological Laboratory Analytical Protocols Manual (MARLAP, 2004). The results of the validation are presented in the Eberline Building Data Validation Summary Report in Appendix D.

3 RESULTS

3.1 OVERVIEW

Results of scan and fixed-point (removable and total activity) radiation surveys of alpha and beta/gamma activity were tabulated by substrate within each PAOC (Tables 3-1 through 3-10, see attached tables) to support the identification of candidate locations for volumetric sampling and radiochemical analysis according to the following criteria:

1) Maximum scan results recorded within each survey grid were compared with reference background activity for that substrate. Locations exceeding 2X's reference background activity were flagged as candidate locations for sampling and volumetric analysis.
2) Fixed-point removable activity as determined through counting of smears collected over 100cm^2 were converted to dpm/100cm^2. Results exceeding the lowest Bureau Surface Release Criteria for removable activity (14 dpm/100cm^2 alpha and 4,670 dpm/100cm^2 beta/gamma, see Table 2-1) were flagged as candidate locations for sampling and volumetric analysis for each substrate/PAOC.
3) Fixed-point static measurements of total alpha and beta/gamma activity in cpm were tabulated for comparison to a calculated screening value (CSV) in cpm corresponding to the lowest Bureau Surface Release Criteria for alpha (14 dpm/100cm^2) and beta/gamma (4,670 dpm/100cm^2) emitters as follows:

   *For alpha emitters CSV (cpm) = (14 dpm/100cm^2 * Instrument Efficiency) + Reference Background Activity (cpm)*

   *For beta/gamma emitters CSV (cpm) = (4,670 dpm/100cm^2 * Instrument Efficiency) + Reference Background Activity (cpm)*

   Locations exhibiting fixed-point activity exceeding the CSV were flagged as candidate locations for sampling and volumetric analysis for each substrate/PAOC.
4) In addition to the above criteria, random locations were selected for sampling for volumetric analysis for each substrate/PAOC. These random locations were selected based on:

a. the Bureau's request for additional sampling and analysis (e.g., in PAOC-2, PAOC-4, PAOC-7 and PAOC-8) necessary to meets 95 percent confidence in compliance with NMED RCB Release Criteria; and
b. at CN's discretion to confirm volumetric activity in each type of building substrate/material type within each PAOC independent of scan and fixed-point screening results.

Of the 2,056 smear results, none indicated the presence of removable alpha or beta/gamma activity exceeding the lowest applicable Bureau Surface Release Criteria for alpha emitters. In addition, none of the fixed-point total activity results for beta/gamma exceeded the lowest applicable Bureau Surface Release Criteria for beta/gamma emitters. As a result, sampling and volumetric analysis was based largely on identification of locations where:

1) the maximum recorded scan value was 2Xs greater than reference background activity;
2) where the fixed-point static result for total alpha activity exceeded the CSV (in cpm); and
3) at random locations selected to confirm volumetric activity even when survey results indicated activity levels below2X's reference background, Bureau Surface Screening Criteria and/or CSVs.

Employing these criteria resulted in approximately two-thirds of the radiochemical analyses being conducted for alpha emitters and one-third for beta/gamma emitters.

All substrates from each PAOC were sampled and submitted for volumetric analysis except metal surfaces which were not sampled based on the difficulty in sample collection, difficulty in processing metal for volumetric analysis and the lack in elevated removable or total activity detected on metal surfaces. Table 2-6 summarizes the 139 locations sampled and the radiochemical analyses completed by GEL Labs for each sample (excluding QA/QC samples). Sample locations for substrate types are shown in the grid maps for each PAOC (Figures 2-11 through 2-48).

Results of volumetric analysis of building samples are summarized for target licensed radionuclides by PAOC in Tables 3-12 through 3-21. Results of CN's QA/QC validation of laboratory results is included in Appendix D. CN's validation of the laboratory data indicate that data quality failures were limited to a small percentage of all analyses. In those instances, the data are supported by other companion analyses such that the few analytical failures noted are of no significant consequence to the usability of the reported results in determining compliance with Bureau Volumetric Release Criteria for target licensed radionuclides in PAOC-1 through PAOC-10.

Of the 668 laboratory analyses completed on 139 samples, 567 or approximately 85 percent were reported "U" unidentified above the minimum detectable concentrations (MDCs).

The remaining 15 percent of analyses with activity reported above an MDC were all reported at levels well below Bureau Volumetric Release Criteria for licensed radionuclides. The two samples exhibiting the highest reported activity that approached the Bureau Volumetric Release Criteria were concrete floor samples 6-NE-F-7-RS and 6-NE-F-8-RS with levels of Cs-137 at 4.2 pCi/g and 4.8 pCi/g, respectively, as compared to the Bureau Volumetric Release Criteria of 6.6 pCi/g. There were two samples collected from the concrete floor in PAOC-6NE adjacent to a cut in the floor slab (see Figure 2-27) where Cs-137 contaminated soil had been removed during past remedial actions.

The majority (88 percent) of detected radionuclides reported above MDCs were associated with uranium (U-234, U-235, and U-238) at levels of only a fraction of a Bureau Volumetric Release Criteria (e.g., the highest reported concentration of U-235 at 0.0504 pCi/g was in a concrete floor sample (5E-F-4-C) as compared to the Bureau Release Criterion of 4.82 pCi/g for U-235). A review of all building uranium results indicates that the average percentage, and the associated uncertainties (at one standard deviation), of U-234, U-235, and U-238 are not inconsistent with percentage of naturally occurring uranium as reported by Oak Ridge Institute for Science and Education (ORISE, 2012) as summarized in Table 3-11 below:

Table 3-11: Average Percentage of Uranium in Building Samples

Building Results (210 Analyses)	U-234	1 STD	U-235	1 STD	U-238	1 STD
Average Percentage by Radionuclide	45.43	5.45	5.31	6.17	49.26	5.62
ORISE (Reported Percentages of Naturally Occurring Uranium)	49.5		2.3		48.3	

One concrete sample from the ceiling in PAOC-6SE (PAOC-6-C-C-254) indicated a low-level detection of Cs-137 at 0.395 pCi/g, well below the Bureau Volumetric Release Criteria (6.6 pCi/g).

The only other licensed radionuclide reported at levels above MDCs of any significance was Tritium (H-3). Tritium was reported at five locations: one in PAOC-6NE (floor sample 6NE-F-56-C) at 1.64 pCi/g; two in PAOC-5E (wall 5E-W-S-67-B-M and wall 5E-W-W-33-M at 1.45 pCi/g and 1.59 pCi/g, respectively); and two in PAOC-5W (floor 5W-F-30-C and wall 5W-W-E-52-A-M at 1.02 pCi/g and 2.58 pCi/g, respectively). The Bureau Volumetric Release Criteria for H-3 is 64.8 pCi/g.

While the levels of tritium reported are only a small fraction of the Bureau Volumetric Release Criteria, H-3 is not readily detected with the handheld survey instruments that had been used for scans and fixed-point measurements. In addition, the frequency of samples for volumetric analysis for tritium in PAOC-5 and PAOC-6 was low. CN's discovery of a record in the building files during the characterization work indicated a reported release of 1 uCi tritium on the floor of the "assembly area" in 1970 (Appendix E). While the spill was reported cleaned up to residual levels below 3E-05uCi of tritium (as detected on a wipe sample), the low-level detections of tritium in PAOC-5 and PAOC-6 warranted further evaluation to assess if higher levels of residual tritium may remain in these areas.

In consultation with the Bureau, CN conducted additional surveys of PAOC-5 and PAOC-6 utilizing a Ludlum Model 2350-1 with a 44-110 windowless gas probe to collect static fixed-point one-minute counts on a two-foot spacing over a 90 sft grid (9x10ft) in and around each area of detection and in four additional locations in PAOC-6. This instrument was capable of detecting tritium to an MDA of 450 to 700 dpm/100cm^2 versus a Bureau Surface Release Criteria of 1.14E+08 dpm/100cm^2 (see Table 2-1). The highest level of activity detected in these surveys was 25,103 dpm/100cm^2 in an additional grid in PAOC-6NE. These results provided a reasonable level of assurance that higher levels of residual tritium are not present on building surfaces at levels that would approach Bureau Release Criteria.

Other low-level sporadic detections reported in the laboratory results, and/or uncertainties in results reported at levels below MDCs were reported for Americium 241 (Am-241), Carbon 14 (C-14), and Curium 244 (Cu-244). The very-low levels of activity reported in these samples, and/or the presence of companion analyses of building materials for the same radionuclides in the same PAOC, suggest the reported activity levels of these radionuclides are of little significance with respect to the Bureau

Volumetric Release Criteria and are within the expected range of potential for false positive results (at less than five percent of detections).

Radiological characterization of PAOC-1 through PAOC-10 is described below for each PAOC. Results are presented for the surveys completed with handheld instruments and the companion results of volumetric radiochemical analyses of building substrate samples collected based on survey findings. These results act as the basis for establishing the radiological status of building substrates within each PAOC based on the presence, or absence, of both surface and/or volumetric activity detectable at levels above, or below, applicable Bureau Surface and Volumetric Release Criteria (Table 2-1).

3.2 PAOC-1

The survey grid map for PAOC-1 is shown in Figure 2-11 (north half) and Figure 2-12 (south half). The surveys included a 100 percent scan of the floor and walls to seven feet, covering a combined area of over 6,800sft. Fixed-point measurements for removable (smears) and total (static) alpha and beta/gamma surface activity were completed at 166 locations including vinyl floor tile, sheetrock walls, concrete columns, and metal structures (a sink, drain, eye wash and fume hood).

Survey results for PAOC-1 are summarized in Table 3-1 by building substrate and were used as the basis for selection of 6 vinyl floor tile, 6 sheetrock wall and 3 concrete column support samples for radiochemical analysis (Table 2-6). Results of radiochemical analysis of PAOC-1 substrates are summarized in Table 3-12. The results of survey and radiochemical analyses for PAOC-1 are discussed by substrate below.

Vinyl Floor Tile

100% Scan Results-

- The maximum recorded scan results within each of the 56 grid blocks were below reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 56 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma activity.

Fixed-Point Total Activity Results-

- Results for fixed-point alpha activity exceeded the CSV for alpha emitters (calculated at 3.6 cpm) at 11 of 56 locations, ranging from 4 to 7 cpm.
- Five locations exhibiting the highest total alpha activity were sampled and analyzed by Alpha Spectroscopy.
- All 56 locations were below CSV for beta/gamma emitters (calculated at 960 cpm).
- One sample of tile was collected at the location of the highest beta/gamma activity (302 cpm) and submitted for analysis by Gamma Spectroscopy and other target isotopes (C-14 and H-3).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC with the following exceptions:
  1) Cm-244 at 0.019 pCi/g in duplicate sample 1-F-19-C (but reported at less than the MDC in the sample); and
  2) U-234/U-238 in sample 1-F-16-C (0.355 pCi/g/0.346 pCi/g), but below the comparative release criteria.
- Gamma emitters, H-3 and C-14 were reported as not identified above an MDC in all samples analyzed.

The above results confirm that vinyl floor tile in PAOC-1 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Sheetrock Walls

100% Scan Results-

- The maximum recorded scan results within each of the 90 grid blocks were below reference background levels for beta/gamma activity but did exceed 2Xs the reference background (1.7 to 3.3 cpm) at 4 locations (ranging from 5 to 6 cpm) for alpha activity.

Fixed-Point Removable (Smear) Results-

- Results of all 90 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma activity.

Fixed-Point Total Activity Results-

- Results for fixed-point alpha activity exceeded the CSV for alpha emitters (calculated at 3.6 to 4.8 cpm) at 23 of 90 locations with the highest levels up to 6 cpm.
- Five locations exhibiting the highest total alpha activity were sampled and analyzed by Alpha Spectroscopy.
- All 90 fixed-point measurements were below the CSV for beta/gamma emitters (calculated at 960 cpm).
- One sample of sheetrock was collected at the location of the highest beta/gamma activity (272 cpm) and submitted for analysis by Gamma Spectroscopy and other target isotopes (C-14, H-3, and Sr-90).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC with one exception: U-238 in one sample 1-W-E-37 at 0.074 pCi/g (below the comparative release criteria of 8.4 pCi/g).
- Gamma emitters, C-14, H-3, and Sr-90 were reported as not identified above an MDC in all samples analyzed.

The above results confirm that sheetrock walls in PAOC-1 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Concrete Supports (Wall)

100% Scan Results-

- The maximum recorded scan results within each grid block were below reference background levels for beta/gamma activity but did exceed 2Xs the reference background (3.3 cpm) at one location (at 6 cpm) for alpha activity. This location was sampled for analysis by Alpha Spectroscopy.

Fixed-Point Removable (Smear) Results-

- Results of all smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma activity.

Fixed-Point Total Activity Results-

- Results for total fixed-point alpha activity exceeded the CSV for for alpha emitters (calculated at 4.9 cpm) at 1 of 5 locations at 6 cpm. This location was sampled and analyzed by Alpha Spectroscopy.

- All 5 fixed-point measurements were below the CSV for total beta/gamma activity (calculated at 960 cpm). One sample of concrete was collected at the location of the highest beta/gamma activity (294 cpm) and submitted for analysis by Gamma Spectroscopy and other target isotopes (C-14, H-3, and Sr-90).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC except uranium: U-234/235/238 were reported in one sample 1-W-W-18-B-M at 0.622/0.037/0.653 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
- Gamma emitters, C-14, H-3 and Sr-90 were reported as not identified above an MDC in all samples analyzed.

The above results confirm that the concrete columns in PAOC-1 are not impacted by target licensed radionuclides at levels above Bureau Volumetric Release Criteria.

Metal Structures (Sink, Drain, Eye Wash & Hood)

100% Scan Results-

- The maximum recorded scan results for metal structures were below reference background levels for both alpha and beta/gamma activity, except one location on the fume hood exhibiting 5 cpm alpha, exceeding 2X's reference background (4.4 cpm).

Fixed-Point Removable (Smear) Results-

- Results of all 7 smears were below MDAs and the lowest Bureau Surface Release Criteria for both alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point total alpha and beta/gamma activity at all 7 locations were below the CSVs for the lowest Bureau Surface Release Criteria.

No samples of the metal structures were collected for radiochemical analysis since the smear and fixed-point survey results indicated no evidence of activity at levels above Bureau Surface Release Criteria.

3.3 PAOC-2

The survey grid map for PAOC-2 is shown in Figure 2-13. The surveys included a 100 percent scan of the floor and walls to seven feet, covering a combined area of 1,060sft. Fixed-point measurements for removable (smears) and total (static) alpha and beta/gamma surface activity were completed at 30 locations including vinyl floor tile and sheetrock walls.

Survey results for PAOC-2 are summarized in Table 3-2 by building substrate and used as the basis for selection of 5 vinyl floor tile and 5 sheetrock wall samples for radiochemical analysis (Table 2-6). Results of radiochemical analysis of PAOC-2 substrates are summarized in Table 3-13. The results of survey and radiochemical analyses for PAOC-2 are discussed by substrate below.

Vinyl Floor Tile

100% Scan Results-

- The maximum recorded scan results within each of the survey grid blocks were below reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSV for alpha emitters (calculated at 4.3 cpm) and beta/gamma emitters (calculated at 960 cpm).

Radiochemical Results-

- Five random locations were sampled and analyzed for target radionuclides at the Bureau's request (Table 2-5).
- Alpha emitters were reported as not identified above an MDC, except uranium U-234/U-238 in three of the floor samples 2-F-1-R, 2-F-3-R and 2-F-5-R up to 0.175 pCi/g and 0.196 pCi/g, respectively, and U-235 in 2-F-1-R at 0.03 pCi/g, but below comparative volumetric release criteria.
- Beta/gamma emitters, C-14, H-3, Sr-90 and Cs-137 were reported as not identified above an MDC in all samples analyzed.

The above results confirm that vinyl floor tile in PAOC-2 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Sheetrock Walls

100% Scan Results-

- The maximum recorded scan results within all 25 grid blocks were above the reference background levels for alpha (5 cpm vs 2.2 cpm background) and beta/gamma (300 cpm vs 258 cpm background) activity at all 25 locations surveyed.

Fixed-Point Removable (Smear) Results-

- Results of all 25 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma activity.

Fixed-Point Total Activity Results-

- Results for fixed-point total alpha and beta/gamma activity were below the CSVs at all 25 locations.

Radiochemical Results-

- Five random locations were sampled and analyzed for target radionuclides at the Bureau's request (Table 2-5).
- Alpha emitters were reported as not identified above an MDC, except uranium U-234 and/or U-238 in each of the samples analyzed at up to 0.037 pCi/g and 0.062 pCi/g, respectively, and below comparative volumetric release criteria.
- Beta/gamma emitters, C-14, H-3, Sr-90 and Cs-137 were reported as not identified above an MDC in all samples analyzed.

The above results confirm that the sheetrock walls in PAOC-2 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

3.4 PAOC-3

The survey grid map for PAOC-3 is shown in Figure 2-14 (West half) and Figure 2-15 (East half). The surveys included a 100 percent scan of the floor and walls to seven feet, covering a combined area over 8,200sft. Fixed-point measurements for removable (smears) and total (static) alpha and beta/gamma surface activity were completed at 208 locations including vinyl floor tile, sheetrock walls, painted block walls and concrete supports.

Survey results for PAOC-3 are summarized in Table 3-3 by building substrate and used as the basis for selection of 4 vinyl floor tile, 8 sheetrock wall, 2 painted block wall and 2 concrete support (wall) samples for radiochemical analysis (Table 2-6). Results of radiochemical analysis of PAOC-2 substrates are summarized in Table 3-14. The results of survey and radiochemical analyses for PAOC-3 are discussed by substrate below.

Vinyl Floor Tile

100% Scan Results-

- The maximum recorded scan results within each of the 90 grid blocks were at or below the range in reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 90 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point beta/gamma activity were below the CSV for beta/gamma emitters (calculated at 960 cpm), but just above the CSV for alpha emitters (calculated at 4.3 cpm) at three locations (at 4.5 cpm). These three locations were sampled and analyzed by Alpha Spectroscopy.
- One sample of floor tile was also collected at the location of the highest beta/gamma activity (307 cpm) and submitted for analysis by Alpha Spectroscopy, Gamma Spectroscopy and other target isotopes (C-14, H-3, and Sr-90), (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except uranium U-234/U-238 in sample 3-F-79-C at 0.160 pCi/g and 0.232 pCi/g, respectively, and below comparative volumetric release criteria.
- Beta/gamma emitters, C-14, H-3, Sr-90 and Cs-137 were reported as not identified above an MDC in all samples analyzed.

These results confirm that vinyl floor tile in PAOC-3 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Sheetrock Walls

100% Scan Results-

- The maximum recorded scan results within 20 of the 89 grid blocks surveyed ranged from 5 to 8 cpm, exceeding 2X's the reference background levels for alpha (2.2 cpm background). Three of the locations of highest activity were sampled for analysis by Alpha Spectroscopy.
- All of the 89 grid blocks surveyed exhibited maximum beta/gamma activity less than 2X's the reference background activity.

Fixed-Point Removable (Smear) Results-

- Results of all 89 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point beta/gamma activity were below the CSV for beta/gamma emitters (calculated at 960 cpm), but just above the CSV for alpha emitters (calculated at 3.8 cpm) at 15 of 89 locations (at levels ranging from 4 to 5.5 cpm).
- Five locations of the highest fixed-point alpha activity were sampled and analyzed by Alpha Spectroscopy (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except uranium U-234 and/or U-238 in sample 3-W-E-73-B-C at 0.065 pCi/g and 0.065 pCi/g, respectively, and below comparative volumetric release criteria.
- Cf-252 was reported in the duplicate analysis for sample 3-W-W-74-C at 0.057 pCi/g, but not identified above the MDC in the sample.

The above results confirm that the sheetrock walls in PAOC-3 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Painted Block Wall

100% Scan Results-

- The maximum recorded scan results within each of the 15 grid blocks were below 2X's the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 15 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs at all 15 locations.
- Since the block wall was painted, two locations (one of the highest alpha scan activity detected above background and one at the highest fixed-point alpha activity) were sampled for analysis by Alpha Spectroscopy (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except uranium U-234, U-235 and/or U-238 in sample 3-W-S-85-A-C at 0.917 pCi/g, 0.049 pCi/g and 1.03 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.

The above results confirm that the painted block walls in PAOC-3 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Concrete Supports (Wall)

100% Scan Results-

- The maximum recorded scan results within all survey grid blocks were below 2X's the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point beta/gamma activity at all locations were below the CSV for beta/gamma emitters.
- Two of the five locations exhibit total alpha activity (6.5 cpm) above the CSV for alpha emitters (calculated at 4.9 cpm). Samples were collected at these two locations of total elevated alpha activity for analysis by Alpha Spectroscopy (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except uranium U-234, U-235 and/or U-238 in sample 3-W-S-C-73-C at 0.831 pCi/g, 0.033 pCi/g and 0.833 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.

These results confirm that the concrete support structures in PAOC-3 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Ceramic Tile (Wall)

100% Scan Results-

- The maximum recorded scan results within each of the 7 grid blocks were below 2X's the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 7 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 7 locations were below the CSVs corresponding to the lowest Bureau Surface Release Criteria.

No samples of tile were collected for radiochemical analysis since the hard nature of the tile indicated no evidence of activity at levels above Bureau Surface Release Criteria.

3.5 PAOC-4

Survey results for PAOC-4 are summarized in Table 3-4 by building substrate and used as the basis for selection of one concrete floor, 4 vinyl ceiling insulation and 2 stucco wall samples for radiochemical analysis (Table 2-6). Two additional concrete floor samples (4-F-4-1-R and 4-F-4-2-R) were collected at the Bureau's request coincident with the footprint of the former HIC. Four additional samples including two vinyl tile (4CF-1-C and 4CF-6-C) and two concrete floor samples ((4CF-2-C and 4CF-4-C) were collected at the Bureau's request to ensure the number of samples collected would satisfy 95% confidence in compliance with NMED RCB Release Criteria. Results of radiochemical analysis of PAOC-4 substrates are summarized in Table 3-15. The results of survey and radiochemical analyses for PAOC-4 are discussed by substrate below.

Concrete Floor

100% Scan Results-

- The maximum recorded scan results within each of the 6 grid blocks were below 2Xs the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 6 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results for fixed-point total alpha activity exceeded the CSV for alpha emitters (calculated at 4.9 cpm) at 1 of 6 locations at 6 cpm. The location of highest alpha activity was sampled and analyzed by Alpha Spectroscopy.
- All 6 locations were below the CSV for beta/gamma emitters (calculated at 960 cpm).
- One sample of the concrete floor was collected at the location of the highest beta/gamma activity (400 cpm) and submitted for analysis by Gamma Spectroscopy and other target isotopes (C-14, H-3, and Sr-90).
- Two additional samples (4-F-1-R and 4-F-2-R, Table 2-6) of the concrete floor were collected at the Bureau's request at the location of the former HIC storage container for analysis by Alpha Spectroscopy.

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC with one exception, uranium: U-234/235/238 were reported in one sample 4-F-1-C at 0.599/0.041/0.575 pCi/g, respectively and below comparative volumetric release criteria.
- Gamma emitters, C-14, H-3, and Sr-90 were reported as not identified above an MDC in all samples analyzed.

The above results confirm that the concrete floor in PAOC-4 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Vinyl Ceiling Insulation (Horizontal Ceiling)

100% Scan Results-

- The maximum recorded scan results within each of the 6 grid blocks were below 2X's the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 6 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point beta/gamma activity were below the CSV for beta/gamma emitters (calculated at 960 cpm), but above the CSV for alpha emitters (calculated at 3.8 cpm) at 4 of 6 locations (at levels ranging from 4.5 to 5.5 cpm). All 4 locations were sampled and analyzed by Alpha Spectroscopy (see Table 2-5).

Radiochemical Results-

- All alpha emitters analyzed in each of the six ceiling insulation samples were reported as not identified above an MDC.

The above results confirm that vinyl ceiling insulation in PAOC-4 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Metal Ceiling Supports (Vertical Ceiling) & Metal Wall

100% Scan Results-

- The maximum recorded scan results within each of the grid blocks for the metal ceiling supports and walls were below 2X's reference background levels for both alpha and beta/gamma activity with one exception: one location on the ceiling supports where the maximum alpha scan activity was reported at 4 cpm compared to a reference background of 1.8 cpm.

Fixed-Point Removable (Smear) Results-

- Results of all 31 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 31 locations were below the CSVs for the lowest Bureau Surface Release Criteria.

No samples of the metal ceiling supports, or walls, were collected for radiochemical analysis since the survey results indicated no evidence of activity at levels above Bureau Surface Release Criteria.

Stucco Wall

100% Scan Results-

- The maximum recorded scan results within each of the 3 grid blocks were below the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 3 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CVS for the lowest Bureau Surface Release Criteria at all 3 locations.
- Two locations were sampled for analysis Alpha Spectroscopy since the surface was painted (to evaluate the potential for elevated alpha beneath the surface) (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except uranium U-234 and U-238 in sample 4-W-N-1-R at 0.299 pCi/g and 0.278 pCi/g, respectively and below comparative volumetric release criteria.

The above results confirm that the stucco walls in PAOC-4 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

3.6 PAOC-5

The survey grid maps for PAOC-5 are shown in Figure 2-17 through 2-21. The surveys included a 100 percent scan of the floor and walls to seven feet covering a combined area of approximately 14,200sft. Fixed-point measurements for removable (smears) and total (static) alpha and beta/gamma surface activity were completed at 322 locations including vinyl tile floor, sheetrock walls, painted block walls, concrete floors and walls, metal walls, and red brick wall.

Survey results for PAOC-5 are summarized in Table 3-5 by building substrate and used as the basis for selection of 3 vinyl tile floor, 5 sheetrock wall, 2 painted block wall, 10 concrete floor and/or wall and 3 brick wall samples for radiochemical analysis (Table 2-6). Results of radiochemical analysis of PAOC-5 substrates are summarized in Table 3-16. The results of survey and radiochemical analyses for PAOC-5 are discussed by substrate below.

Vinyl Floor Tile

100% Scan Results-

- The maximum recorded scan results within each of the 43 grid blocks were below the range in reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 43 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for alpha emitters (4.3 cpm) and beta/gamma emitters (960 cpm).
- Two locations exhibiting 4.0 cpm total alpha activity were sampled for analysis by Alpha Spectroscopy.
- One additional location of the highest fixed-point beta/gamma activity (320 cpm) was sampled for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) to confirm survey results (Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except U-238 in one of the floor samples 5W-F-30-C at 0.052 pCi/g and below comparative release criteria.
- Beta/gamma emitters, C-14, H-3, Sr-90 and Cs-137 were reported as not identified above an MDC in the sample analyzed.

The above results confirm that vinyl floor tile in PAOC-5 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Sheetrock Walls

100% Scan Results-

- The maximum recorded scan results within 8 of the 16 grid blocks surveyed ranged from 5 to 7 cpm, exceeding 2X's the reference background levels for alpha (2.2 cpm background).
- Four of the 8 locations exhibiting elevated alpha activity were sampled for analysis by Alpha Spectroscopy.
- All of the 16 grid blocks surveyed exhibited maximum beta/gamma activity less than 2X's the reference background activity.

Fixed-Point Removable (Smear) Results-

- Results of all 16 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 16 locations surveyed were below the CSVs for alpha emitters (3.8 cpm) and beta/gamma emitters (960 cpm).

- One location of the highest fixed-point beta/gamma activity (500 cpm) was sampled for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) to confirm survey results (Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except uranium U-234, U-235 and/or U-238 in sample 5-W-W-W-24-M at 0.070 pCi/g, 0.031 pCi/g and 0.073 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
- H-3 was reported in sample 5E-W-S-67-B-M at 1.45 pCi/g, below the Bureau Volumetric Release Criteria for tritium (64.8 pCi/g).
- In response to CN's discovery of a 1970 release of tritium in the building (Appendix E), additional fixed-point surveys were completed of the wall where the above detection of tritium was reported. Results of those surveys indicated the highest level of activity recorded was up to 5,400 dpm/100cm^2. The Bureau Surface Release Criteria for tritium is 1.14E+08 dpm/100cm^2.

The combined survey and volumetric results confirm that sheetrock walls in PAOC-5 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Painted Block Wall

100% Scan Results-

- The maximum recorded scan results within each of the 34 grid blocks were below 2X's the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 34 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for the lowest Bureau Surface Release Criteria at all 34 locations.

- Two locations, one of the highest alpha (4.5 cpm) and beta/gamma (600 cpm) fixed-point activity were sampled for analysis by Alpha Spectroscopy, Gamma Spectroscopy, and other target radionuclides (C-14, H-3, and Sr-90) to confirm survey results (Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except uranium U-234, U-235 and/or U-238 in sample 5W-W-W-1-C at 1.460 pCi/g, 0.102 pCi/g and 1.660 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
- H-3 was reported in sample 5E-W-W-35-M at 1.590 pCi/g, below the Bureau Volumetric Release Criteria for tritium (64.8 pCi/g).
- In response to CN's discovery of a 1970 release of tritium in the building (Appendix E), additional fixed-point surveys of the wall where the above detection of tritium was reported. Results of that survey indicated the highest level of activity recorded were up to 2,500 dpm/100cm^2. The Bureau Surface Release Criteria for tritium is 1.14E+08 dpm/100cm^2.

These combined survey and volumetric results confirm that sheetrock walls in PAOC-5 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Concrete Floor & Walls

100% Scan Results-

- The maximum recorded scan results within each of the 125 floor grid blocks were below reference background levels for alpha activity and beta/gamma activity.
- The maximum recorded scan results within 20 of 34 wall grid blocks were 5 to 7 cpm and up to 2X's greater than reference background levels for alpha activity (3.3).
- Six of the locations of the highest reported alpha activity on the wall (7 cpm) were sampled for analysis by Alpha Spectroscopy.
- The maximum recorded scan results within 16 of 34 wall grid blocks were 400 to 800 cpm and up to 2X's greater than reference background levels for beta/gamma activity (380 cpm).
- Four of the 16 locations of highest beta/gamma activity were sampled for analysis by Gamma Spectroscopy and for other target isotopes (C-14, H-3, and Sr-90).

Fixed-Point Removable (Smear) Results-

- Results of all 159 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results for fixed point alpha activity on concrete floors exceeded the CSVs for alpha emitters (4.9 cpm) at 5 of 125 locations at 5.5 to 7 cpm. All five floor locations were sampled and analyzed by Alpha Spectroscopy.
- Results for fixed point alpha activity on concrete walls were below the CSV for alpha emitters (4.9 cpm) at all 34 locations.
- Results of fixed-point beta/gamma activity at all 159 floor and wall locations surveyed were below the CSV for beta/gamma emitters (960 cpm).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC with three exceptions.
    - Uranium was reported in one wall and one floor sample. In wall sample 5E-W-N-9-M U234/235/238 were reported at 0.483/0.050/0.510 pCi/g, respectively and below Bureau/comparative Release Criteria.
    - In floor sample 5E-F-4-C U234/235/238 were reported at 0.331/0.051/0.372 pCi/g, respectively and below Bureau/comparative Release Criteria.
    - Am-241 was reported in analysis by Gamma Spectroscopy of wall sample 5E-W-N-7-M at 0.518 pCi/g. However, Alpha Spectroscopy analysis of sample 5E-W-N-7-M indicated Am-241 not identified above the MDC.
- Gamma emitters, C-14, H-3, and Sr-90 were reported as not identified above an MDC in all samples analyzed.

The above results confirm that the concrete floor and walls in PAOC-5 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Metal Wall

100% Scan Results-

- The maximum recorded scan results within each of the 5 grid blocks for the metal walls were below 2X's the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 5 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 5 locations were below the CSVs for the lowest Bureau Surface Release Criteria.

No samples of the metal walls were collected for radiochemical analysis since the survey results indicated no evidence of activity at levels above Bureau Surface Release Criteria.

Red Brick Wall

100% Scan Results-

- The maximum recorded scan results within each of the 10 grid blocks for the red brick walls were below 2X's the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 10 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 10 locations were below the CSVs for the lowest Bureau Surface Release Criteria.
- Three samples of the brick walls were collected for radiochemical analysis including two by Alpha Spectroscopy and one for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) to confirm survey results (Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except uranium U-234, U-235 and/or U-238 in sample 5W-W-E-35-B-C at 0.3 pCi/g, 0.034 pCi/g and 0.384 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
- H-3 was reported in sample 5E-W-E-52-A-M at 2.58 pCi/g, below the Bureau Volumetric Release Criteria for tritium (64.8 pCi/g).
- In response to CN's discovery of a 1970 release of tritium in the building (Appendix E), additional fixed-point surveys of the wall where the above detection of tritium was reported. Results of that survey indicated the highest level of activity recorded was up to 5,700 dpm/100cm^2. The Bureau Surface Release Criteria for tritium is 1.14E+08 dpm/100cm^2.

The combined survey and volumetric results confirm that red brick walls in PAOC-5 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

3.7 PAOC-6

The survey grid maps for PAOC-6 are shown in Figure 2-22 through 2-43. The surveys included a 100 percent scan of the floor, walls to seven feet and the ceiling covering a combined area of approximately 30,200sft. Fixed-point measurements for removable (smears) and total (static) alpha and beta/gamma surface activity were completed at 1,084 locations including vinyl tile floor, sheetrock walls, painted block walls, concrete floors and walls, metal HVAC duct, vents and risers, carpet, and the concrete ceiling.

The ceiling in PAOC-6 is constructed of pre-formed concrete trusses and beams. The 14 trusses each have a right, middle and left horizontal span separated by two vertical beams oriented north-south. This ceiling structure warranted application of a unique grid and measurement point designation system to ensure that the frequency of measurement points did not exceed 50sft for both horizontal and vertical surfaces. Figures 2-38 – 2-43 show a schematic of the PAOC-6 ceiling horizontal surfaces, trusses and beams divided into six sections, three northern and three southern sections that span Beams 1-8, 9-18 and 19-28, respectively.

The grid blocks for measurement points on horizontal surfaces correspond to areas of 48sft (4x12 ft) labeled 6C-1 through 6C-261, resulting in 261 measurement points on PAOC-6 ceiling horizontal surfaces. Figures 2-38 through 2-43 show each horizontal grid separated by beams running north-south and measurement point grid block lines (red and yellow) trending east-west. The grid blocks for measurement points on the 28 vertical beams (each up to two feet in width) span 48sft (2x24 ft) on both the east and west sides of each beam corresponding to 6B-1-E through 6B-28-E on the east sides and 6B-1-W through 6B-28-W on the west sides. The beam grid blocks in Figures 2-38 through 2-43 are separated by the black beam lines running north-south and by red horizontal lines running east-west. The N-S length of each beam is 104 feet, resulting in a total of 289 measurement points designated in red and green alternating on opposite sides of each vertical beam (e.g., designated 6B-1-E-1 in red and 6B-1-W-1 in green on the east and west sides of Beam 1, first grid block, respectively).

Survey results for PAOC-6 are summarized in Table 3-6 by building substrate and used as the basis for selection of 2 vinyl tile floor, 9 sheetrock wall, 3 painted block wall, 9 concrete floor and/or wall, 2 carpet and 2 concrete ceiling samples for radiochemical analysis (Table 2-6). Results of radiochemical analysis of PAOC-6 substrates are summarized in Table 3-17. The results of survey and radiochemical analyses for PAOC-6 are discussed by substrate below.

Vinyl Floor Tile

100% Scan Results-

- The maximum recorded scan results within each of the 122 grid blocks were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 122 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Fixed-point total beta/gamma activity was below the CSV for beta/gamma emitters (960 cpm) at all 122 locations.
- One of the 122 locations surveyed indicated total alpha activity of 4.5 cpm, slightly above the CSV for alpha emitters (4.3 cpm). This location of elevated alpha activity was sampled analyzed by Alpha Spectroscopy.

- One additional random location (NE Grid 56) closest to the former HRW location was sampled for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) to confirm survey results (Table 2-5).

Radiochemical Results-

- Alpha and beta/gamma emitters were reported as not identified above an MDC, except H-3 in one of the floor samples 6NE-F-56-C at 1.64 pCi/g and below the Bureau Volumetric Release Criteria for tritium (64.8 pCi/g).
- Beta/gamma emitters, C-14, H-3, Sr-90 and Cs-137 were reported as not identified above an MDC in the sample analyzed.
- In response to CN's discovery of a 1970 release of tritium in the building (Appendix E), additional fixed-point surveys of the floors in PAOC-6 were completed at the above location where tritium was reported above the MDC and at four additional random grids deployed in PAOC-6NW, NE, SW and SE. Results of those surveys indicated the highest level of activity recorded was up to 25,103 dpm/100cm^2 in the additional grid in PAOC-6NE. These results confirm residual levels of tritium on the Production Floor in PAOC-6NE, however, the levels remaining are orders of magnitude below the Bureau Surface Release Criteria tritium (1.14E+08 dpm/100cm^2).

The combined survey and volumetric results confirm that the vinyl tile floors in PAOC-6 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria and that while PAOC-6 floors show residual tritium, the levels are well below Bureau Surface Release Criteria of 1.14E+08 dpm/100cm^2.

Sheetrock Walls

100% Scan Results-

- The maximum recorded scan results within 125 of the 184 grid blocks surveyed ranged from 5 to 6 cpm, exceeding 2X's the reference background levels for alpha (2.2 cpm background).
- Six locations exhibiting the highest alpha activity (detailed in Table 3-6 Sheetrock Walls, 100% Scan results) were sampled for analysis by Alpha Spectroscopy.

- All 184 grid blocks surveyed exhibited maximum beta/gamma activity less than 2X's the reference background activity.

Fixed-Point Removable (Smear) Results-

- Results of all 184 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha surveys indicate activity at 11 of 184 locations surveyed were above the CSV for alpha emitters (3.8 cpm).
- None of the 184 locations exhibited beta/gamma activity exceeded the CSV for beta/gamma emitters (960 cpm).
- One of the locations of highest elevated alpha activity from fixed-point measurements was sampled and analyzed by Alpha Spectroscopy.
- Two random locations in PAOC-6NE adjacent to the former HRW and Cs-137 excavation area were sampled for analysis by Gamma Spectroscopy (Table 2-5).

Radiochemical Results-

- Alpha and gamma emitters were reported as not identified above an MDC in all nine samples analyzed.

The above results confirm that the sheetrock walls in PAOC-6 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Painted Block Wall

100% Scan Results-

- The maximum recorded scan results within each of the 25 grid blocks were below 2X's the reference background levels alpha activity.
- Seven of 25 locations exhibited maximum beta/gamma activity of 800 to 841 cpm exceeding 2X's the reference background activity for beta/gamma (399 cpm).
- Two locations of the highest beta/gamma activity were sampled for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3 and Sr-90) see Tables 2-5 and 3-6.

Fixed-Point Removable (Smear) Results-

- Results of all 25 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for the lowest Bureau Surface Release Criteria at all 25 locations.
- Since the block walls are painted, one location of the highest fixed-point alpha activity (4.5 cpm) was sample and analyzed by Alpha Spectroscopy.

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except Am-241 in one sample 6NW-W-N-49 at 0.01 pCi/g, below the Bureau Volumetric Release Criteria for Am-241 (4.12 pCi/g).
- Beta/gamma emitters were reported as not identified above an MDC in all analyses.

The above results confirm that the painted block walls in PAOC-6 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Concrete Floor & Walls

100% Scan Results-

- The maximum recorded scan results within each of the 65 floor grid blocks were below reference background levels for alpha activity and beta/gamma activity.
- The maximum recorded scan results within 2 of 7 wall grid blocks were reported at 8 cpm, greater than 2X's the reference background levels for alpha activity (3.3). One of these two locations was sampled for analysis by Alpha Spectroscopy.
- The maximum recorded scan results within all 7 wall grid blocks were below 2X's the reference background levels for beta/gamma activity (380 cpm).

Fixed-Point Removable (Smear) Results-

- Results of all 72 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results for fixed point alpha activity on concrete floors exceeded the CSV for alpha emitters (4.9 cpm) at 12 of 65 locations at 5 to 7 cpm. The five locations exhibiting the highest activity were sampled and analyzed by Alpha Spectroscopy.
- Results for fixed point alpha activity on concrete walls were below the CSV for alpha emitters (4.9 cpm) at all 7 locations.
- Results of fixed-point beta/gamma activity at all 72 floor and wall locations surveyed were below the CSV for beta/gamma emitters (960 cpm).

- Three random samples were collected from floor locations located adjacent to the cut in the floor slab in PAOC-6NE where past removal of Cs-137 impacted soil had been completed (Figure 2-27 shows sample locations). These samples were analyzed by Gamma Spectroscopy and other target isotopes (C-14, H-3, and Sr-90).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC with three exceptions.
- Uranium was reported in one wall and one floor sample.
    - In wall sample 6NE-W-E-53-M, U234/235/238 were reported at 0.358/0.021/0.379 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
    - In floor sample 6NE-F-28-C, U234/235/238 were reported at 0.332/0.025/0.409 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
- Cs-137 was reported in 2 of the 3 random floor samples collected in PAOC-6NE: 4.2 pCi/g in sample 6-NE-F-7-RS and 4.98 pCi/g in sample 6-NE-F-8-RS, below the Bureau Volumetric Release Criteria for Cs-137 (6.6 pCi/g).
- Beta/gamma emitters, C-14, H-3, and Sr-90 were reported as not identified above an MDC.

The above results confirm that the concrete floor and walls in PAOC-6 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Metal Ducts, Vents & Risers

100% Scan Results-

- The maximum recorded scan results within 43 of the 65 grid blocks for the metal ducts, vents, and risers in PAOC-6SE and PAOC-6SW ranged from 3 to 4 cpm, either at or above 2X's the reference background levels for alpha activity (1.8 cpm).
- The maximum recorded scan results within all 65 grid blocks were less than 2X's the reference background levels for beta/gamma activity (212 cpm).

Fixed-Point Removable (Smear) Results-

- Results of all 65 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 65 locations were below the CSVs for the lowest Bureau Surface Release Criteria.

No samples of the metal ducts, vents or risers were collected for radiochemical analysis since the survey results indicated no evidence of activity at levels above Bureau Surface Release Criteria.

Carpet

100% Scan Results-

- The maximum recorded scan results within each of the 12 grid blocks were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 12 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point beta/gamma surveys indicate activity below the CSVs for beta/gamma emitters (960 cpm) at all 12 locations.

- One of the 12 locations surveyed indicated total alpha activity of 4.5 cpm, slightly above the CSVs for alpha emitters (4.3 cpm). This location was sampled analyzed by Alpha Spectroscopy.
- One additional random location (SE Grid 45) was sampled for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) to confirm survey results (Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC except uranium reported in one carpet sample 6NW-F-2-C, U234/238 were reported at 0.088/0.082 pCi/g, respectively and below comparative volumetric release criteria.
- Beta/gamma emitters, Cs-137, H-3, and Sr-90 were reported as not identified above an MDC.
- C-14 was reported in one sample 6SE-F-45-C and the duplicate at 1.11 pCi/g, below the Bureau Volumetric Release Criteria (6.96 pCi/g).

The above results confirm that the carpet in PAOC-6 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Concrete Ceiling

100% Scan Results-

- The maximum recorded scan results within all 541 ceiling grid blocks were below 2X's reference background levels for alpha activity and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 541 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results for fixed point alpha and beta/gamma activity in all 541 locations on the concrete ceiling were below the CSVs for alpha emitters (4.9 to 5.8 cpm) and beta/gamma emitters (960 cpm).
- One sample was collected at a location of highest fixed-point alpha activity (4.5 cpm) and analyzed by Alpha Spectroscopy.
- One random sample was collected and analyzed by Gamma Spectroscopy and other target isotopes (C-14, H-3, and Sr-90).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC except uranium reported in one sample 6-C-C-123 U234/U235/U238 were reported at 0.521/0.04/0.552 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
- Cs-137 was reported in sample 6-C-C-254 and the duplicate at 0.395 pCi/g and 0.461 pCi/g, respectively, below the Bureau Volumetric Release Criteria for Cs-137 (6.6 pCi/g).
- Beta/gamma emitters C-14, H-3, and Sr-90 were reported as not identified above an MDC.

The above results confirm that the concrete ceiling in PAOC-6 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

3.8 PAOC-7

The survey grid maps for PAOC-7 are shown in Figure 2-44. The surveys included a 100 percent scan of the floor, ceiling, and walls to seven feet covering a combined area of approximately 565sft. Fixed-point measurements for removable (smears) and total (static) alpha and beta/gamma surface activity were completed at 24 locations including concrete floor, vinyl wall and ceiling insulation, metal ceiling support structures and stucco walls.

Survey results for PAOC-7 are summarized in Table 3-7 by building substrate and used as the basis for selection of 1 concrete floor, 2 vinyl ceiling/wall insulation and 2 stucco wall samples for radiochemical analysis (Table 2-6). Eight additional samples including three vinyl ceiling tile, two stucco wall and three concrete floor samples were collected at the Bureau's request to ensure the number of samples collected would satisfy 95% confidence in compliance with NMED RCB Release Criteria. Results of radiochemical analysis of PAOC-7 substrates are summarized in Table 3-18. The results of survey and radiochemical analyses for PAOC-7 are discussed by substrate below.

Concrete Floor

100% Scan Results-

- The maximum recorded scan results within each of the 4 grid blocks were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 4 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for the lowest Bureau Surface Release Criteria at all 4 locations.
- One location was sampled at the location of the highest fixed-point alpha activity (3.5 cpm) for analysis by Alpha Spectroscopy.
- One sample was collected at the highest fixed-point beta/gamma activity (369 cpm) for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H3, and Sr-90) (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except for uranium U-234/238 were reported in sample 7-F-4-C at 0.566/0.487 pCi/g, respectively and below comparative volumetric release criteria.
- Beta/gamma emitters Cs-137, C-14, H-3 and Sr-90 were reported as not identified above an MDC.

The above results confirm that the concrete floor in PAOC-7 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Vinyl Ceiling/Wall Insulation

100% Scan Results-

- The maximum recorded scan results within each of the 9 grid blocks were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 9 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for the lowest Bureau Surface Release Criteria.
- One location was sampled at the location of the highest fixed-point alpha activity (2 cpm) for analysis by Alpha Spectroscopy.
- One sample was collected at the location of highest fixed-point beta/gamma activity (239 cpm) for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except for uranium U-234/238 were reported in sample 7W-S-3-C at 0.209/0.210 pCi/g, respectively and below comparative volumetric release criteria.
- Beta/gamma emitters Cs-137, C-14, H-3 and Sr-90 were reported as not identified above an MDC.

The above results confirm that the vinyl ceiling and wall insulation in PAOC-7 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Metal Ceiling Supports (Vertical Ceiling) & Metal Wall

100% Scan Results-

- The maximum recorded scan results within each of the 8 grid blocks for the metal ceiling supports were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 8 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 8 locations were below the CSVs for the lowest Bureau Surface Release Criteria.

No samples of the metal ceiling supports were collected for radiochemical analysis since the survey results indicated no evidence of activity at levels above Bureau Surface Release Criteria.

Stucco Wall

100% Scan Results-

- The maximum recorded scan results within each of the 2 grid blocks were below the 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of both smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for the lowest Bureau Surface Release Criteria at both locations.
- One location was sampled for analysis Alpha Spectroscopy to evaluate the potential for elevated alpha beneath the painted surface.
- One sample was collected at the highest fixed-point beta/gamma activity (272 cpm) for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except uranium U-234, U-235 and U-238 in sample 7W-N-1-C at 0.273 pCi/g, 0.03 pCi/g and 0.292 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.

The above results confirm that the stucco walls in PAOC-7 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

3.9 PAOC-8

The survey grid maps for PAOC-8 are shown in Figure 2-45. The surveys included a 100 percent scan of the floor, ceiling, and walls to seven feet covering a combined area of approximately 939sft. Fixed-point measurements for removable (smears) and total (static) alpha and beta/gamma surface activity were completed at 37 locations including concrete floor, metal ceiling and walls.

Survey results for POAC-8 are summarized in Table 3-8 by building substrate and used as the basis for selection of 2 concrete floor samples for radiochemical analysis (Table 2-6). Eleven additional concrete floor samples were collected at the Bureau's request to ensure the number of samples collected would satisfy 95% confidence in compliance with NMED RCB Release Criteria. Results of radiochemical analysis of PAOC-8 substrates are summarized in Table 3-19. The results of survey and radiochemical analyses for PAOC-8 are discussed by substrate below.

Concrete Floor

100% Scan Results-

- The maximum recorded scan results within each of the 9 grid blocks were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 9 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for the lowest Bureau Surface Release Criteria at all 9 locations.
- One location was sampled at the location of the highest fixed-point alpha activity (3.5 cpm) for analysis by Alpha Spectroscopy.
- One sample was collected at the highest fixed-point beta/gamma activity (371 cpm) for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H03 and Sr-90) (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except for uranium U-234/235/238 were reported in sample 8-F-6-C at 0.645/0.053/0.585 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
- Beta/gamma emitters Cs-137, C-14, H-3 and Sr-90 were reported as not identified above an MDC.

These results confirm that the concrete floor in PAOC-8 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Metal Ceiling Supports (Vertical Ceiling) & Metal Wall

100% Scan Results-

- The maximum recorded scan results within each of the 39 grid blocks for the metal ceiling supports were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 39 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 39 locations were below the CSVs for the lowest Bureau Surface Release Criteria.

No samples of the metal ceiling supports were collected for radiochemical analysis since the survey results indicated no evidence of activity at levels above Bureau Surface Release Criteria.

3.10 PAOC-9

The survey grid maps for PAOC-9 are shown in Figure 2-46 (west half) and Figure 2-47 (east half). The surveys included a 100 percent scan of the floor and walls up to seven feet covering a combined area of approximately 2,150sft. Fixed-point measurements for removable (smears) and total (static) alpha and beta/gamma surface activity were completed at 49 locations including concrete floor, vinyl, metal, and stucco walls.

Survey results for PAOC-9 are summarized in Table 3-9 by building substrate and used as the basis for selection of 2 concrete floor, 2 vinyl wall insulation and 2 stucco wall samples for radiochemical analysis (Table 2-6). Results of radiochemical analysis of PAOC-9 substrates are summarized in Table 3-20. The results of survey and radiochemical analyses for PAOC-9 are discussed by substrate below.

Concrete Floor

100% Scan Results-

- The maximum recorded scan results within each of the 27 grid blocks were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 27 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for the lowest Bureau Surface Release Criteria at all 27 locations.
- One location was sampled at the location of the highest fixed-point alpha activity (4 cpm) for analysis by Alpha Spectroscopy.
- One sample was collected at the highest fixed-point beta/gamma activity (369 cpm) for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except for uranium U-234/235/238 were reported in sample 9-F-11-C at 0.487/0.054/0.524 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
- Beta/gamma emitters Cs-137, C-14, H-3, and Sr-90 were reported as not identified above an MDC.

These results confirm that the concrete floor in PAOC-9 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Vinyl Ceiling/Wall Insulation

100% Scan Results-

- The maximum recorded scan results within each of the 12 grid blocks were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 12 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for the lowest Bureau Surface Release Criteria.
- One location was sampled at the location of the highest fixed-point alpha activity (2 cpm) for analysis by Alpha Spectroscopy.
- One sample was collected at the highest fixed-point beta/gamma activity (369 cpm) for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) (see Table 2-5).

Radiochemical Results-

- Alpha and beata/gamma emitters were reported as not identified above an MDC in all analyses.

The above results confirm that the vinyl wall insulation in PAOC-9 is not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Metal Wall

100% Scan Results-

- The maximum recorded scan results within each of the 3 grid blocks for the metal ceiling supports were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 3 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 3 locations were below the CSVs for the lowest Bureau Surface Release Criteria.

No samples of the metal ceiling supports were collected for radiochemical analysis since the survey results indicated no evidence of activity at levels above Bureau Surface Release Criteria.

Stucco Wall

100% Scan Results-

- The maximum recorded scan results within each of the 9 grid blocks were below 2X's the reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 9 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity were below the CSVs for the lowest Bureau Surface Release Criteria at all 9 locations.
- One location was sampled for analysis Alpha Spectroscopy to evaluate the potential for elevated alpha beneath the painted surface.
- One sample was collected at the highest fixed-point beta/gamma activity (298 cpm) for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) (see Table 2-5).

Radiochemical Results-

- Alpha emitters including Am-241, Cf-252 and Cm-244 were reported at levels less than 0.04 pCi/g in sample 9-W-S-22-C or the duplicate, but not in both. The lack in verification of the low-level activity reported in the sample, or the duplicate, indicates the reported detections are likely false positive results of no significance.
- U-234 and U-238 were reported above an MDC in sample 9-W-S-22-C at 0.026 pCi/g, and 0.039 pCi/g, respectively and below comparative volumetric release criteria.

- Of the beta/gamma emitters, only Cs-137 was reported above an MDC at 0.068 pCi/g in sample 9-W-S-21-C, but below the Bureau Volumetric Release Criteria for Cs-137 (6.6 pCi/g).

These results confirm that the stucco walls in PAOC-9 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

3.11 PAOC-10

The survey grid maps for PAOC-10 are shown in Figure 2-48. The surveys included a 100 percent scan of the floor and walls up to seven feet covering a combined area of approximately 1,500sft. Fixed-point measurements for removable (smears) and total (static) alpha and beta/gamma surface activity were completed at 81 locations including ceramic tiles on floors and walls, sheetrock walls and metal fixtures (stall walls and sink traps).

Survey results for PAOC-10 are summarized in Table 3-10 by building substrate and used as the basis for selection of 2 ceramic tile wall samples for radiochemical analysis (Table 2-5). Results of radiochemical analysis of PAOC-10 substrates are summarized in Table 3-21. The results of survey and radiochemical analyses for PAOC-10 are discussed by substrate below.

Ceramic Tile Floors & Walls

100% Scan Results-

- The maximum recorded scan results within each of the 41 grid blocks were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 41 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 41 locations were below the CSVs for the lowest Bureau Surface Release Criteria.

- One location was sampled at the location of the highest fixed-point alpha activity (10.5 cpm) for analysis by Alpha Spectroscopy.
- One sample was collected at the highest fixed-point beta/gamma activity (600 cpm) for analysis by Gamma Spectroscopy and other target radionuclides (C-14, H-3, and Sr-90) (see Table 2-5).

Radiochemical Results-

- Alpha emitters were reported as not identified above an MDC, except for uranium U-234/235/238 were reported in sample 10-W-E-4-C at 0.397/0.025/0.467 pCi/g, respectively and below Bureau/comparative Volumetric Release Criteria.
- Beta/gamma emitters Cs-137, C-14, H-3 and Sr-90 were reported as not identified above an MDC.

The above results confirm that the ceramic tile floor and walls in PAOC-10 are not impacted by target licensed radionuclides at levels above Bureau Release Criteria.

Sheetrock Walls

100% Scan Results-

- The maximum recorded scan results within each of the two grid blocks were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of both smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma at both points were below CSVs for alpha emitters (3.8 cpm) and beta/gamma emitters (960 cpm).
- No samples of sheetrock were collected based on the low levels of activity encountered and the small areas occupied.

These results suggest that sheetrock walls in PAOC-10 are not impacted by target licensed radionuclides at levels above Bureau Surface Release Criteria.

Metal Structures (Stall Walls & Sink Traps)

100% Scan Results-

- The maximum recorded scan results in all 38 locations surveyed of the metal structures were below 2X's reference background levels for both alpha and beta/gamma activity.

Fixed-Point Removable (Smear) Results-

- Results of all 38 smears were below MDAs and the lowest Bureau Surface Release Criteria for alpha and beta/gamma emitters.

Fixed-Point Total Activity Results-

- Results of fixed-point alpha and beta/gamma activity at all 38 locations were below CSVs for the lowest Bureau Surface Release Criteria.

No samples of the metal structures were collected for radiochemical analysis since the smear and fixed-point survey results indicated no evidence of activity at levels above Bureau Surface Release Criteria.

4 CONCLUSIONS

4.1 SUMMARY OF RESULTS & CONCLUSIONS

On behalf of the Company, CN presents the following summary of results as the basis for conclusions of the Building Characterization:

- Scanning surveys covering 100 percent of the floors, walls, and ceilings surveyed within PAOC-1 through PAOC-10 did not identify any locations of elevated total alpha or beta/gamma activity (greater than 3Xs site background).

- None of the more than 2,000 smears analyzed indicated the presence of removable alpha or beta/gamma activity at levels above MDAs and/or the lowest Bureau Surface Release Criteria for alpha or beta/gamma emitters.

- None of the more than 2,000 fixed-point measurements for beta/gamma activity indicated total beta/gamma activity at levels above CSVs for the lowest Bureau Surface Release Criteria for beta/gamma emitters.

- Radiochemical analysis of building substrates indicated 85 percent were reported "U" unidentified above the MDC, or determined as "U", based on the duplicate analysis. The remaining 15 percent were reported above the MDC.

- **All analyses with activity reported above an MDC were at levels well below Bureau Volumetric Release Criteria for licensed radionuclides**. The two samples with the highest reported activity were concrete floor samples 6-NE-F-7-RS and 6-NE-F-8-RS with levels of Cs-137 at 4.2 pCi/g and 4.8 pCi/g, respectively, as compared to the Bureau Volumetric Release Criteria of 6.6 pCi/g. The two samples were collected from the floor in PAOC-6NE adjacent to a cut in the floor slab (see Figure 2-27) where Cs-137 contaminated soil had been removed during past remedial actions.

- The majority (88 percent) of the reported detections above MDCs were associated with uranium (U-234, U-235, and U-238) at levels of only a small fraction of the Bureau Volumetric Release Criteria (e.g., the highest reported concentration of U-235 at 0.0504 pCi/g was in a concrete floor sample (5E-F-4-C) as compared to the Bureau Release Criterion of 4.82 pCi/g for U-235). Results of all building substrates for uranium indicate an average percentage, with their associated uncertainties (at one standard deviation), for U-234, U-235, and U-238, that suggest that uranium in building materials is of a naturally occurring origin.

- The only other licensed radionuclide reported at levels above MDCs (but below Bureau Release Criteria) of any significance was tritium (H-3) at five locations in PAOC-5 and PAOC-6. Results of nine additional surveys provide a reasonable level of assurance that residual tritium is not present on building surfaces at levels that would approach Bureau Release Criteria.

- Data quality failures were limited to a small percentage of radiochemical analyses. Companion analyses provided supporting evidence of target radionuclide concentrations in building materials where data quality failures were identified. CN concludes that the quality of the radiochemical analysis is sufficient to support the usability of the results in determining the presence/absence of licensed radionuclides to levels consistent with Bureau Volumetric Release Criteria in the building materials tested.

- At the NMED RCB's request, 24 additional samples were collected of building substrates in PAOC-4, PAOC-7 and PAOC-8 for radiochemical analysis of alpha emitters. The results of all analyses were reports as "U" unidentified above an MDC. These additional results confirmed that the number of samples was adequate to confirm compliance with NMED RCB Release Criteria at 95 percent confidence.

CN concludes that the combined results of surveys and radiochemical analysis of building materials in the areas of highest potential for residual impact of licensed radioactive material (PAOC-1 through PAOC-10) provide sufficient evidence that building surfaces meet Bureau Surface and Volumetric criteria for unrestricted release.

5 REFERENCES

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TABLE 2-6
VOLUMETRIC SAMPLE AND ANALYSIS SUMMARY BY PAOC

PAOC/Sample	BUILDING SUBSTRATE	DOE EML HASL -Am-241, Cf) 300 (Cm-244 & 252	DOE EML HASL 300 Pu-11-RC Mod -Pu-238 & Pu) (239	DOE EML HASL 300 U-02-RC Mod (U-235)	DOE HASL 300 Mod (Np-237)	DOE EML HASL 300 Ga-01-R/4.5.2.3 Cs-137 + Licensed) (Emitters	-EPA EERF C 01 Mod (C-14)	EPA 906.0 Mod (H-3)	EPA Mod/DOE/905.0 RP501 Rev. 1 Mod (Sr-90)
PAOC-1									
1-F-5-C	Vinyl Floor Tile	1							
1-F-10-C	Vinyl Floor Tile	1							
1-F-16-C	Vinyl Floor Tile	1	1	1	1				
1-F-19-C	Vinyl Floor Tile	1							
1-F-33-C	Vinyl Floor Tile	1							
1-F-31-C	Vinyl Floor Tile					1	1	1	
1-W-N-8	Sheetrock Wall	1							
1-W-E-37	Sheetrock Wall	1	1	1	1				
1-W-W-40	Sheetrock Wall	1							
1-W-N-47	Sheetrock Wall	1							
1-W-E-54	Sheetrock Wall	1							
1-W-W-45	Sheetrock Wall					1	1	1	1
1-W-N-4-B-C	Concrete Support					1	1	1	1
1-W-W-51-B-C	Concrete Support	1							
1-W-W-18-B-M	Concrete Support	1	1	1	1				
PAOC-2									
2-F-1-R	Vinyl Floor Tile	1	1	1	1	1	1	1	1
2-F-2-R	Vinyl Floor Tile	1				1			
2-F-3-R	Vinyl Floor Tile	1	1	1	1	1	1	1	1
2-F-4-R	Vinyl Floor Tile	1				1			
2-F-5-R	Vinyl Floor Tile	1	1	1	1	1	1	1	1
2-W-S-1-B-R	Sheetrock Wall	1	1	1	1	1			
2-W-S-2-B-R	Sheetrock Wall	1				1			
2-W-E-3-R	Sheetrock Wall	1	1	1	1	1			
2-W-S-4-B-R	Sheetrock Wall	1				1			
2-W-W-5-R	Sheetrock Wall	1	1	1	1	1			
PAOC-3									
3-F-3-C	Vinyl Floor Tile	1							
3-F-12-C	Vinyl Floor Tile	1							
3-F-44-B-C	Vinyl Floor Tile	1							
3-F-79-C	Vinyl Floor Tile		1	1	1	1	1	1	1
3-W-W-1-M	Sheetrock Wall	1							
3-W-E-11-C-C	Sheetrock Wall	1							
3-W-W-23-M	Sheetrock Wall	1							
3-W-E-73-A-C	Sheetrock Wall	1							
3-W-E-73-B-C	Sheetrock Wall	1	1	1	1				
3-W-W-74-C	Sheetrock Wall	1							
3-W-S-87-A-M	Sheetrock Wall	1							
3-W-S-88-B-C	Sheetrock Wall	1							
3-W-E-74-M	Painted Block Wall	1							

TABLE 2-6
VOLUMETRIC SAMPLE AND ANALYSIS SUMMARY BY PAOC

PAOC/Sample	BUILDING SUBSTRATE	DOE EML HASL -Am-241, Cf) 300 (Cm-244 & 252	DOE EML HASL 300 Pu-11-RC Mod -Pu-238 & Pu) (239	DOE EML HASL 300 U-02-RC Mod (U-235)	DOE HASL 300 Mod (Np-237)	DOE EML HASL 300 Ga-01-R/4.5.2.3 Cs-137 + Licensed) (Emitters	-EPA EERF C 01 Mod (C-14)	EPA 906.0 Mod (H-3)	EPA Mod/DOE/905.0 RP501 Rev. 1 Mod (Sr-90)
3-W-S-85-A-C	Painted Block Wall	1	1	1	1				
3-W-E-17-B-C	Concrete Support	1							
3-W-S-C-73-C	Concrete Support	1	1	1	1				
PAOC-4									
4-F-1-C	Concrete Floor	1	1	1	1	1	1	1	1
4-F-4-1-R	Concrete Floor	1							
4-F-4-2-R	Concrete Floor	1							
4-CF-2-C	Concrete Floor	1							
4-CF-4-C	Concrete Floor	1							
4-CF-2-C	Vinyl Ceiling Ins.	1	1	1	1				
4-CF-3-C	Vinyl Ceiling Ins.	1							
4-CF-4-C	Vinyl Ceiling Ins.	1							
4-CF-5-C	Vinyl Ceiling Ins.	1							
4-CF-1-C	Vinyl Ceiling Ins.	1							
4-CF-6-C	Vinyl Ceiling Ins.	1							
4-W-N-1-R	Stucco Wall	1	1	1	1				
4-W-N-2-R	Stucco Wall	1							
PAOC-5									
5W-F-24-C	Vinyl Floor Tile	1							
5W-F-53-C	Vinyl Floor Tile	1	1	1	1				
5W-F-30-C	Vinyl Floor Tile					1	1	1	1
5-W-W-W-24-M	Sheetrock Wall	1	1	1	1				
5E-MZ-W-S-53-M	Sheetrock Wall	1							
5E-MZ-W-S-66-B-M	Sheetrock Wall	1							
5E-MZ-W-S-68-A-M	Sheetrock Wall	1							
5E-W-S-67-B-M	Sheetrock Wall					1	1	1	1
5W-W-W-1-C	Painted Block Wall	1	1	1	1				
5E-W-W-33-M	Painted Block Wall					1	1	1	1
5E-F-4-C	Concrete Floor	1	1	1	1				
5E-W-N-2-M	Concrete Wall	1							
5E-W-N-5-M	Concrete Wall	1							
5E-W-N-9-M	Concrete Wall	1	1	1	1				
5E-W-E-32-A-M	Concrete Wall	1							
5E-W-E-53-A-M	Concrete Wall	1							
5E-W-N-1-M	Concrete Wall					1			
5E-W-N-4-M	Concrete Wall					1	1	1	1
5E-W-N-7-M	Concrete Wall					1			
5E-W-N-11-M	Concrete Wall					1			
5W-W-E-35-B-C	Red Bick Wall	1	1	1	1				
5W-W-S-55-C	Red Brick Wall	1							
5W-W-E-52-A-M	Red Bick Wall					1	1	1	1

TABLE 2-6
VOLUMETRIC SAMPLE AND ANALYSIS SUMMARY BY PAOC

PAOC/Sample	BUILDING SUBSTRATE	DOE EML HASL -Am-241, Cf) 300 (Cm-244 & 252	DOE EML HASL 300 Pu-11-RC Mod -Pu-238 & Pu) (239	DOE EML HASL 300 U-02-RC Mod (U-235)	DOE HASL 300 Mod (Np-237)	DOE EML HASL 300 Ga-01-R/4.5.2.3 Cs-137 + Licensed) (Emitters	-EPA EERF C 01 Mod (C-14)	EPA 906.0 Mod (H-3)	EPA Mod/DOE/905.0 RP501 Rev. 1 Mod (Sr-90)
PAOC-6									
6SW-F-12-C	Vinyl Floor Tile	1	1	1	1				
6NE-F-56-C	Vinyl Floor Tile					1	1	1	1
6NW-W-E-2-M	Sheetrock Wall	1							
6NW-W-W-22-C	Sheetrock Wall	1	1	1	1				
6NE-W-W-3-M	Sheetrock Wall	1							
6NE-W-E-56-C	Sheetrock Wall	1							
6NE-W-N-8-C	Sheetrock Wall					1			
6NE-W-E-8-C	Sheetrock Wall					1			
6SW-W-W-N-39-M	Sheetrock Wall	1							
6SE-W-E-48-B-M	Sheetrock Wall	1							
6SE-W-S-37-C	Sheetrock Wall	1							
6NW-W-N-49-C	Painted Block Wall	1	1	1	1				
6NW-W-W-9-M	Painted Block Wall					1			
6NW-W-W-17-M	Painted Block Wall					1	1	1	1
6NE-F-12-C	Concrete Floor	1							
6NE-F-27-C	Concrete Floor	1							
6NE-F-28-C	Concrete Floor	1	1	1	1				
6NE-F-36-C	Concrete Floor	1							
6NE-F-38-C	Concrete Floor	1							
6NE-F-7-RS	Concrete Floor					1			
6NE-F-8-RS	Concrete Floor					1			
6NE-F-16-RS	Concrete Floor					1	1	1	1
6NE-W-E-53-M	Concrete Floor	1	1	1	1				
6NW-F-2-C	Carpet	1	1	1	1				
6SE-F-45-C	Carpet					1	1	1	1
6-C-C-123	Concrete Ceiling	1	1	1	1				
6-C-C-254	Concrete Ceiling					1	1	1	1
PAOC-7									
7-F-4-C	Concrete Floor	1	1	1	1	1	1	1	1
7W-N-2-R	Concrete Floor	1							
7F-1-C	Concrete Floor	1							
7F-2-C	Concrete Floor	1							
7F-3-C	Concrete Floor	1							
7W-S-3-C	Vinyl Ceiling Ins.	1	1	1	1				
7C-4-C	Vinyl Ceiling Ins.					1	1	1	1
7CS-1-V	Vinyl Ceiling Ins.	1							
7CS-2-V	Vinyl Ceiling Ins.	1							
7CS-3-V	Vinyl Ceiling Ins.	1							
7W-N-1-C	Stucco Wall	1	1	1	1				
7W-N-2-C	Stucco Wall					1	1	1	1

TABLE 2-6
VOLUMETRIC SAMPLE AND ANALYSIS SUMMARY BY PAOC

PAOC/Sample		BUILDING SUBSTRATE	DOE EML HASL -Am-241, Cf) 300 (Cm-244 & 252	DOE EML HASL 300 Pu-11-RC Mod -Pu-238 & Pu) (239	DOE EML HASL 300 U-02-RC Mod (U-235)	DOE HASL 300 Mod (Np-237)	DOE EML HASL 300 Ga-01-R/4.5.2.3 Cs-137 + Licensed) (Emitters	-EPA EERF C 01 Mod (C-14)	EPA 906.0 Mod (H-3)	EPA Mod/DOE/905.0 RP501 Rev. 1 Mod (Sr-90)
7W-N-1-R		Stucco Wall	1							
7W-N-2-R		Stucco Wall	1							
PAOC-8										
8-F-6-C		Concrete Floor	1	1	1	1				
8-F-9-C		Concrete Floor					1	1	1	1
8F-1-C		Concrete Floor	1							
8F-2-C		Concrete Floor	1							
8F-3-C		Concrete Floor	1							
8F-4-C		Concrete Floor	1							
8F-5-C		Concrete Floor	1							
8F-6-C		Concrete Floor	1							
8F-7-C		Concrete Floor	1							
8F-8-C		Concrete Floor	1							
8F-1-C-R		Concrete Floor	1							
8F-2-C-R		Concrete Floor	1							
8F-4-C-R		Concrete Floor	1							
8F-5-C-R		Concrete Floor	1							
PAOC-9										
9-F-11-C		Concrete Floor	1	1	1	1				
9-F-17-C		Concrete Floor					1	1	1	1
9-W-E-18-C		Vinyl Ceiling Ins.	1	1	1	1				
9-W-N-6-C		Vinyl Ceiling Ins.					1	1	1	1
9-W-S-22-C		Stucco Wall	1	1	1	1				
9-W-S-21-C		Stucco Wall					1	1	1	1
PAOC-10										
10-W-E-4-C		Ceramic Tile	1	1	1	1				
10-W-W-13-C		Ceramic Tile					1	1	1	1
TOTAL SAMPLES	**139**									
TOTAL ANALYSES	**340**		**111**	**37**	**37**	**37**	**41**	**26**	**26**	**25**

TABLE 3-1
PAOC-1 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-1- TILE FLOOR

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-1 Floor Tile	2,698	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count No. >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.6 to 4.8 cpm/Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	56													**Total Sample Locations**	**6**	
Alpha	56	19 to 23	14 to 18	0	56	13.1	-0.3 to 2.9	0	56	2 to 3.3	0.5 to 7	11 of 56	4 to 7	Sample 5 highest of 11 locations (5 to 7 cpm) for Analysis by Alpha Spec	5	Alpha Spec.
Beta/ Gamma	56	1,730 to 1,985	1,600 to 1,780	0	56	139.9	-87 to 62	0	56	291 to 302	225 to 302	0	NA	Analyze Tile Sample at highest location of Beta (302 cpm) for non-alpha Target Isotopes	1	Other Target Isotopes

PAOC-1- SHEETROCK WALLS

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-1 Sheetrock Wall	4,109	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/100cm2)	RESULT RANGE (dpm/100cm2)	Count No. >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.6 to 4.8 cpm/Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	90													**Total Sample Locations**	**6**	
Alpha	90	1.7 to 3.3	1 to 6	4 (5 to 6 cpm)	90	8 to 13	-1.3 to 5.2	0	90	1.7 to 3.3	1 to 6	23 of 90	3.5 to 6	Sample 5 highest of 23 locations (5 cpm) for Analysis by Alpha Spec	5	Alpha Spec.
Beta/ Gamma	90	242 to 380	207 to 300	0	90	95 to 140	-71 to 75	0	90	242 to 380	186 to 272	0	NA	Analyze Tile Sample at highest location of beta (272 cpm) for non-alpha Target Isotopes	1	Other Target Isotopes

PAOC-1- CONCRETE

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-1 Concrete Column	5	BKGD AVG (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/100cm2)	RESULT RANGE (dpm/100cm2)	Count No. >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 cpm/Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	5													**Total Sample Locations**	**3**	
Alpha	5	3.3	2 to 6	1 (6 cpm)	5	8.3	0 to 0.5	0	5	3.3	0.5 to 6	1 of 5	6	Sample one location > 2X's BKGD on Scan and one location > DCGL (each at 6 cpm) for Analysis by Alpha Spec	2	Alpha Spec.
Beta/ Gamma	5	381	260 to 300	0	5	341	-43 to 310	0	5	242 to 380	204 to 294	0	0	Analyze one (1) sample of concrete for other target isotopes from location with highest beta activity (294 cpm)	1	Other Target Isotopes

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TABLE 3-1
PAOC-1 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-1- BUILDING STRUCTURES- METAL (SINK, DRAIN, EYE WASH, HOOD)

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-1 Metal Structures	7	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/100cm2)	RESULT RANGE (dpm/100cm2)	Count No. >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.4 cpm/Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	7													**Total Sample Locations**	**0**	
Alpha	7	1.7 to 2.2	0 to 5	1 (5 cpm)	7	8.3 to 13.1	0 to 1	0	5	1.7 to 2.2	0.5 to 3	0	0	No samples - removable and FP activity < lowest DCGL. Metal is non-porus and inappropriate for volumetric sampling and analysis	0	none
Beta/ Gamma	7	212 to 258	210 to 280	0	7	98 to 140	-37 to 21	0	5	212 to 258	207 to 251	0	0	No samples - removable and FP activity < lowest DCGL. Metal is non-porus and inappropriate for volumetric sampling and analysis	0	none

TABLE 3-2
PAOC-2 SURVEY SUMMARY SAMPLE SELECTION CRITERIA

PAOC-2- TILE FLOOR

	Sft./ct.	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area-PAOC-2 Floor Tile	44	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100 cm2)	Count No. >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.3 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	5													**Total Sample Locations**	**5**	
Alpha	5	21	16	0	5	8.3	-0.6	0	5	2.7	0 to 1	0	NA	5 Floor Tile Samples analyzed (one from each closet) at Bureau request	5	Alpha Spec.
Beta/ Gamma	5	1,997	1,700	0	5	98	-69 to 16	0	5	297	259 to 272	0	NA	5 Floor Tile Samples analyzed (one from each closet) at Bureau request	5	Other Target Isotopes

PAOC-2- SHEETROCK WALLS

	Sft./ct.	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area-PAOC-2 Sheetrock Wall	840	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count No. >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.8 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	25													**Total Sample Locations**	**5**	
Alpha	25	2.2	5 (all locations)	All 25	25	8.3	-0.6 to 1.0	0	25	2.2	0 to 3	0	NA	5 Sheetrock Wall Samples analyzed (one from each closet) at Bureau request	5	Alpha Spec.
Beta/ Gamma	25	258	300 (all locations)	All 25	25	98	-262 to 43	0	25	258	255 to 298	0	NA	5 Sheetrock Wall Samples analyzed (one from each closet) at Bureau request	5	Other Target Isotopes

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TABLE 3-3
PAOC-3 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-3- TILE FLOOR

	Sft./ Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-3 Floor Tile	4,392	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.3 cpm/ Beta (960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	90													**Total Sample Locations**	**4**	
Alpha	90	21	18-22	0	90	8.3 to 9.7	-1.3 to 5.8	0	90	2.7	0 to 4.5	3	4.5	Three locations > 4.3 lowest criteria	3	Alpha Spec.
Beta/ Gamma	90	1,997	1,800	0	90	95	39 to 56	0	90	297	246 to 307	0	NA	One location- highest value (307)	1	Other Target Isotopes

PAOC-3- SHEETROCK WALLS

	Sft./ Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-3 Sheetrock Wall	3,843	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.8 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	89													**Total Sample Locations**	**8**	
Alpha	89	2.2	2 to 8	20 of 89 (all 5-8 cpm)	89	8.3 to 9.7	-1.3 to 5.5	0	89	2.2	0 to 5.5	15	4 to 5.5	Sample 3 of 20 locations > 2X's BKGD on Scan at 5-8 cpm & 5 Highest FP Locations (4-5.5 cpm) that exceed 3.8 lowest criteria	8	Alpha Spec.
Beta/ Gamma	89	258	250 to 400	0	89	94 to 97	-80 to 58	0	89	258	204 to 396	0	NA	None- results below background and lowest criteria	0	Other Target Isotopes

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TABLE 3-3
PAOC-3 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-3- PAINTED BLOCK WALL

	Sft./ Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-3 Sheetrock Wall	735	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 6.4 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	15													**Total Sample Locations**	**2**	
Alpha	15	4.8	2 to 8	0	15	8.3 to 9.1	0.2 to 0.3	0	15	4.8	0.5 to 5.0	0	NA	Sample one/highest location (8 cpm) > BKGD on Scan and one/highest at 5.0 cpm total FP activity < 6.4 criteria, but painted	2	Alpha Spec.
Beta/ Gamma	15	399	340 to 400	0	15	94 to 97	34 to 59	0	15	399	321 to 428	0	NA	None- results below background and lowest criteria	0	Other Target Isotopes

PAOC-3- CONCRETE

	Sft./ Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-3 Sheetrock Wall	245	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	5													**Total Sample Locations**	**2**	
Alpha	5	3.3	3 to 6	0	5	8.3 to 9.1	-0.6 to -1.0	0	5	3.3	1.0 to 6.5	2	6.5	Sample two locations at 6.5 cpm > 4.9 (lowest alpha criteria)	2	Alpha Spec.
Beta/ Gamma	5	380	260 to 350	0	5	94 to 97	1 to 60	0	5	258	255 to 298	0	NA	None- results below background and lowest criteria	0	Other Target Isotopes

TABLE 3-3
PAOC-3 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-3- CERAMIC TILE

	Sft./ Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-3 Ceramic Tile	343	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 15.2 cpm/ Beta 960 cpm)	RESULT RANGE > DCGL (cpm)	Rationale for Volumetric Sampling	Count Samples	Analysis
Grid Cell/Fixed-Points	7													**Total Sample Locations**	**0**	
Alpha	7	13.4	10 to 16	0	7	8.3	-0.6 to 2.6	0	7	13.4	9 to 15	0	NA	None activty at background and < 15.2 (lowest alpha criteria)	0	Alpha Spec.
Beta/ Gamma	7	470	1,000	0	7	97	-59 to 0	0	7	470	425 to 514	0	NA	None- results below background and lowest criteria	0	Other Target Isotopes

TABLE 3-4
PAOC-4 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-4- CONCRETE FLOOR

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-4 Concrete Floor	210	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 cpm/ Beta 960 cpm)	RESULT RANGE > DCGL (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	6													**Total Sample Locations**	**2**	
Alpha	6	29	24-32	0	6	9.7	-1.0 to 0.3	0	6	3.3	1.5 to 6	1	6	One (1) location (6.0 cpm) > 4.9 lowest criteria	1	Alpha Spec.
Beta/ Gamma	6	2,411	2,100-2,500	0	6	9	-14 to 55.1	0	6	380	341 to 400	0	NA	One location- highest value (400)	1	Other Target Isotopes

PAOC-4- VINYL CEILING INSULATION (Horizontal Ceiling)

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-4 Vinyl Ceiling Insulation	210	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.8 cpm/ Beta 960 cpm)	RESULT RANGE > DCGL (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	6													**Total Sample Locations**	**4**	
Alpha	6	2.2	1 to 4	0	6	9.7	-1.3 to 1.9	0	6	2.2	2.0 to 5.5	4 of 6	4.5 to 5.5	Sample 4 locations > lowest threshold (3.8)	4	Alpha Spec.
Beta/ Gamma	6	225	220 to 250	0	6	9	-51.9 to 17.6	0	6	225	230 to 234	0	NA	None- results consistent with background and well below lowest threshold (1,000)	0	N/A

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TABLE 3-4
PAOC-4 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-4- METAL CEILING SUPPORTS (Vertical Ceiling)

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-4 Metal Ceiling Support Structures	210 (+/-)	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.4 cpm/ Beta 960 cpm)	RESULT RANGE > DCGL (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	24													**Total Sample Locations**	**0**	
Alpha	24	1.8	1 to 4	1 at 4	24	9.7	-1.0 to 2.3	0	24	1.8	1 to 3	0	NA	None- results consistent with background and below lowest criteria	0	Alpha Spec.
Beta/ Gamma	24	212	220 to 250	0	24	9	-30.5 to 65.8	0	24	212	190 to 228	0	NA	None- results consistent with background and below lowest criteria	0	Other Target Isotopes

PAOC-4- METAL WALL

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-4 Metal Wall	343	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.4 cpm/ Beta 960 cpm)	RESULT RANGE > DCGL (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	7													**Total Sample Locations**	**0**	
Alpha	7	1.8	1 to 2	0	7	9.7	-1.3 to 0.3	0	7	1.8	0 to 2.5	0	NA	None- results consistent with background and below lowest criteria	0	Alpha Spec.
Beta/ Gamma	7	212	210 to 240	0	7	9	-38.5 to 41.7	0	7	212	206 to 228	0	NA	None- results consistent with background and below lowest criteria	0	Other Target Isotopes

PAOC-4- STUCCO WALL

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-4 Stucco Wall	147	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 6.9 cpm/ Beta 960 cpm)	RESULT RANGE > DCGL (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	3													**Total Sample Locations**	**2**	
Alpha	3	5.3	2	0	3	9.7	-1.3 to 1.9	0	3	5.3	All three at 2.5	0	NA	Results below background and lowest criteria- but will confirm for alpha since surface is painted.	2	Alpha Spec.
Beta/ Gamma	3	346	300 to 310	0	3	9	17.6 to 60.4	0	3	346	303 to 325	0	NA	None- results below background and lowest criteria	0	Other Target Isotopes

TABLE 3-5
PAOC-5 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-5W- TILE FLOOR

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-5W Vinyl Floor Tile	2,000	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.3 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	43													**Total Sample Locations**	**3**	
Alpha	43	21	5-6	0	43	8.3 to 9.1	-1.0 to 4.2	0	43	2.7	0.5 to 4.0	0	NA	Two locations at 4.0 cpm for confirmation of alpha activity	2	Alpha Spec.
Beta/ Gamma	43	1,997	1900-2000	0	43	94	-21 to 64	0	43	296	249 to 320	0	NA	One location- highest value (320)	1	Other Target Isotopes

PAOC-5W, E & MEZ- SHEETROCK WALLS

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-5W, 5E & 5MEZ Sheetrock Wall	750	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.8 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	16													**Total Sample Locations**	**5**	
Alpha	16	2.2	3 to 7	8 of 16 (7@5 cpm MEZ, 1@7 cpm in 5W)	16	8.3 to 10.3	-1.6 to 3.5	0	16	2.2	0 to 1.5	0	NA	Four locations > 2X BKGD (3 of 7 in MEZ @ 5 cpm & 1 of 1 in 5W at 7 cpm	4	Alpha Spec.
Beta/ Gamma	16	258	300 to 500	0	16	94 to 97	-21 to 34	0	16	258	119 to 273	0	NA	One location- highest value (500 on 5E Scan)	1	Other Target Isotopes

TABLE 3-5
PAOC-5 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-5W & 5E- PAINTED BLOCK WALL

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-5W & 5E Painted Block Wall	1,600	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 6.4 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	34													**Total Sample Locations**	**2**	
Alpha	34	4.8	6 to 7	0	34	8.3 to 10.3	-1.6 to 3.2	0	34	4.8	0.5 to 4.5	0	NA	Sample one/highest location on 5W (4.5 cpm) total FP activity < 6.4 criteria, but painted	1	Alpha Spec.
Beta/ Gamma	34	399	400 to 600	0	34	94 to 96	-240 to 56	0	34	399	126 to 432	0	NA	One location- highest value (600 on 5E Scan)	1	Other Target Isotopes

PAOC-5E FLOOR, 5W FLOOR & 5MEZ FLOOR & WALL- CONCRETE

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-5W, 5E & 5MEZ CONCRETE FLOOR & WALL	7,700	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	159													**Total Sample Locations**	**15**	
Alpha Floor	125	29	8 to 20	0 Floor	125	9.1 to 9.7	-1.3 to 5.8	0	125	3.3	1 to 7.5	4 in 5W> 4.9, 1 in 5E> 4.9	5W - 5 to 7.5 & 5E 5.5	4 of 4 in 5W FP at 5 to 7.5 cpm and 1 of 1 in 5E FP at 5.5 cpm (> 4.9 lower criteria)	5	Alpha Spec.
Alpha Wall	34	3.3	5 to 7	7 cpm 1/1 W, 7 cpm 19/19 E, 0/MEZ	34	8.3 to 10.3	-1.6 to 5.2	0	34	3.3	0.5 to 4.5	0	NA	1 of 1 Wall location in 5W SM at 7 cpm & 5 of 19 Wall locations in 5E SM at 7 cpm (> 2Xs BKGD)	6	Alpha Spec.
Beta/ Gamma Floor	125	2411	2200 to 2500	0 Floor	125	94 to 97	-70 to 59	0	125	380	317 to 408	0	NA	None- results below 2Xs background and lowest criteria	0	
Beta/ Gamma Wall	34	380	400 to 800	16/19 at 800 E Only	34	94 to 97	-62 to 45	0	34	380	126 to 428	0	NA	4 of 16 Wall locations in 5E where SM at 800cpm (>2Xs BKGD)	4	Other Target Isotopes

TABLE 3-5
PAOC-5 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-5W METAL WALLS

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-5W Metal Wall	245	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.4 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	5													**Total Sample Locations**	**0**	
Alpha	5	1.8	1	0	5	8.3	-0.6	0	5	1.8	1.5 to 2.5	0	NA	None- results below 2Xs background and lowest criteria	0	Alpha Spec.
Beta/ Gamma	5	212	300	0	5	94	-21 to 43	0	5	212	239 to 293	0	NA	None- results below 2Xs background and lowest criteria	0	Other Target Isotopes

PAOC-5W RED BRICK WALL

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-5W Red Brick Wall	490	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	10													**Total Sample Locations**	**3**	
Alpha	10	3.3	All 10 at 2 cpm	0	10	8.3	-0.6 to 2.6	0	10	3.3	1.5 to 4	0	NA	2 of 10 FP wall locations 4 cpm < 4.9 lowest criteria but collected as confirmation samples	2	Alpha Spec.
Beta/ Gamma	10	380	All 10 at 500 cpm	0	10	94	-27 to 59	0	10	380	400 to 428	0	NA	One location- highest value (500 on 5W Scan)	1	Other Target Isotopes

TABLE 3-6
PAOC-6 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-6NW, 6NE, 6SW & 6SE- VINYL TILE FLOOR

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-6NW, 6NE, 6SE & 6SW Vinyl Floor Tile	5,978	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.3 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	122													**Total Sample Locations**	**2**	
Alpha	122	21	17-20	0	122	7.3 to 8.3	-1.0 to 5.8	0	122	2.7	0 to 4.5	1 at 4.5 cpm> 4.3 cpm lower limit in SW-12	4.5	One FP location in SW-12 at 4.5 cpm > lowest criteria (4.3 cpm)	1	Alpha Spec.
Beta/ Gamma	122	1,997	1,800-2,200	0	122	95 to 97	-255 to 74	0	122	296	243 to 383	0	NA	One random location (NE Grid 56 closest to HRW) to provide confirmation- results consistent with background and below lowest criteria	1	Gamma Spec. & Other Target Isotopes

PAOC-6NW, 6NE, 6SW & 6SE- SHEETROCK WALLS

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-6NW, 6NE, 6SE & 6SW Sheetrock Wall	9,016	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.8 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	184													**Total Sample Locations**	**9**	
Alpha	184	2.2	4 to 6	31 of 42 at 5 to 6 cpm 6NW + 24 of 24 all at 5 cpm 6NE + 18 of 27 at 5 cpm 6SW + 52 of 91 at 5 cpm 6SE > 2Xs BKGD	184	9.1 to 9.7	-1.3 to 3.5	0	184	2.2	0 to 4.5	5 locations 6NW + 2 locations NE + 4 locations SE > 3.8	4 to 5 cpm	1) 2 locations 6NW-1 highest of SM (6 cpm) >BKGD + 1 highest FP (4.5 cpm) > 3.8 lowest criteria; 2) 2 locations 6NE- 1 highest of SM (5 cpm) >BKGD + 1 FP (4.5 cpm) > 3.8 lowest criteria; 3) 6SW- 1 location SW-1 highest of SM (5 cpm) >BKGD; 4) 6SE- 2 locations SE-1 highest of SM (5 cpm) >BKGD + 1 highest FP (4 cpm) > 3.8 lowest criteria	7	Alpha Spec.
Beta/ Gamma	184	258	280 to 300	0	184	95 to 97	-57 to 56	0	184	258	233 to 290	0	NA	Two random location (NE Grid 8 E & W Walls adjacent to HRW) to provide confirmation- results consistent with background and below lowest criteria	2	Gamma Spec.

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TABLE 3-6
PAOC-6 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-6NW & 6SW- PAINTED BLOCK WALL

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-6NW & 6SW Painted Block Wall	1,225	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 6.4 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	25													**Total Sample Locations**	**3**	
Alpha	25	4.8	5 to 8	0	25	8.3 to 9.2	-0.6 to 2.6	0	25	4.8	2.5 to 4.5	0	NA	NW - Sample one/highest location (4.5 cpm) total FP activity < 6.4 criteria, but painted	1	Alpha Spec.
Beta/ Gamma	25	399	440 to 841	NW - 7 of 17 (800 to 841 cpm) >2X's BKGD	25	95 to 97	-65 to 26	0	25	399	357 to 444	0	NA	NW- Sample 2 highest (826 & 841 cpm) of 7 locations > 2Xs BKGD	2	Gamma Spec & Other Target Isotopes

PAOC- 6NE & 6NW Floor & Wall & 6SE & 6SW Columns/Wall- CONCRETE

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-6NM, 6NE, 6SW & 6SE Floor & Wall/Column	3,381	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	72													**Total Sample Locations**	**9**	
Alpha Floor	65	29	9 to 20	0 Floor	65	8.3 to 9.7	-8.2 to 7.3	0	65	3.3	1 to 7	NE Floor - 12 locations > 4.9 cpm	5 to 7 cpm	NE Floor- Sample 5 highest (6 to 7 cpm) of 12 location > lowest criteria (4.9 cpm)	5	Alpha Spec.
Alpha Wall	7	3.3	4 to 8	6NE - 2 of 2 Wall at 8cpm > 2X's BKGD at 3.3 cpm	7	7.3 to 9.7	-0.6 to 2.6	0	7	3.3	1 to 4.5	0	NA	NE Wall Sample 1 of 2 wwith SM at 8 cpm >2Xs BKGD ar 3.3 cpm	1	Alpha Spec.
Beta/ Gamma Floor	65	2411	2,000 to 2,300	0 Floor	65	95 to 96	-42 to 35	0	65	380	289 to 419	0	NA	Three locations (NE Grid 7, 8 & 16 closest to HRW) to provide confirmation- results consistent with background and below lowest criteria	3	Gamma Spec. & Other Isotopes
Beta/ Gamma Wall	7	380	300 to 500	0 Wall	7	96 to 97	-42 to 37	0	7	380	260 to 419	0	NA	None- results below 2Xs background and lowest criteria	0	Other Target Isotopes

TABLE 3-6
PAOC-6 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-6 NW, NE, SE, SW Metal Duct, Vents & Risers

	LF/Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-6 Metal Duct, Vent & Risers	387 LF Duct/27 Vents/6 Risers	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.4 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	65													**Total Sample Locations**	**0**	
Alpha	65	1.8	3 to 4	6SE - All 27 locations 4 cpm & 6SW All 16 of 16 locations 4 cpm > 2X's BKGD	65	8.3 to 9.2	-0.6 to 6.1	0	65	1.8	0 to 2.5	0	NA	None- results > 2Xs background in SE & SW Grids by only 0.4 cpm (4 vs 3.6), all results consistent at 4 (no elevated areas), no elevated removable activity, no elevated fixed point activity and all FP < lowest criteria	0	Alpha Spec.
Beta/ Gamma	65	212	250	212 to 250	65	95 to 97	-46 to 66	0	65	212	248 to 291	0	NA	None- results below 2Xs background and lowest criteria	0	Other Target Isotopes

PAOC-6NW & 6SE CARPET

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-6NW & 6SE Carpet	588	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.2 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	12													**Total Sample Locations**	**2**	
Alpha	12	19.5	17 to 18	0	12	7.3 to 8.2	-0.6 to 2.9	0	12	2.6	1.5 to 4.5	1 NW Block	4.5 cpm	NW - Sample one/highest location (4.5 cpm) total FP activity > lowest criteria (4.2 cpm)	1	Alpha Spec.
Beta/ Gamma	12	1,802	1,200 to 2,000	0	12	95 to 96	-22 to 25	0	12	263	300 to 350	0	NA	One random location (SE Grid 45) to provide confirmation- results consistent with background and below lowest criteria	1	Other Target Isotopes

PAOC-6 CONCRETE CEILING

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-6 Concrete Ceiling	13,000	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	MAX > 2X BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 or 5.8 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	541													**Total Sample Locations**	**2**	
Alpha	541	3.3 to 4.1	4 to 5	0	541	7.3 to 10.3	-1.6 to 5.2	0	541	4 to 4.2	0.5 to 4.5	0	NA	One sample at highest FP location for alpha (4.5 cpm) Grid Block 123 Flat for confirmation	1	Alpha Spec.
Beta/ Gamma	541	332 to 431	300 to 400	0	541	94 to 99	-40 to 75	0	541	333 to 432	300 to 445	0	NA	One sample at highest FP location for beta/gamma (445 cpm) Grid Block 219 Flat for confirmation	1	Gamma Spec. & Other Isotopes

TABLE 3-7
PAOC-7 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-7- CONCRETE FLOOR

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-7 Concrete Floor	196	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	4													**Total Samples (co-located)**	**2**	
Alpha	4	29	All at 20	0	4	9.7	-1.3 to 0.0	0	4	3.3	2.5 to 3.5	0	NA	One (1) highest location (3.5 cpm) for analytical confirmation	1	Alpha Spec.
Beta/ Gamma	4	2,411	All at 2,200	0	4	96	15 to 55	0	4	380	359 to 369	0	NA	One (1) location- highest value (369) for analytical confirmation	1	Other Target Isotopes

PAOC-7- VINYL CEILING & WALL INSULATION

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-7 Vinyl Ceiling Insulation	440	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.8 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	9													**Total Sample Locations**	**2**	
Alpha	9	2.2	All at 4	0	9	8.3	-0.6 to 2.6	0	9	2.2	1 to 2	0	NA	One (1) highest location (2 cpm) for analytical confirmation	1	Alpha Spec.
Beta/ Gamma	9	225	All at 300	0	9	97	49.5 to 57	0	9	225	216 to 239	0	NA	One (1) location- highest value (239) for analytical confirmation	1	N/A

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TABLE 3-7
PAOC-7 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-7- METAL CEILING SUPPORTS (Vertical Ceiling)

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-7 Metal Ceiling Support Structures	200 (+/-)	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.4 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	8													**Total Sample Locations**	**0**	
Alpha	8	1.8	3 to 4	1 at 4	8	8.3	-0.6 to 2.6	0	8	1.8	0.5 to 2	0	NA	None- results consistent with background and below lowest criteria	0	Alpha Spec.
Beta/ Gamma	8	212	400	0	8	97	1.6 to 52	0	8	212	210 to 242	0	NA	None- results consistent with background and below lowest criteria	0	Other Target Isotopes

PAOC-7- STUCCO WALL

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-7 Stucco Wall	80	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 6.9 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	2													**Total Sample Locations**	**2**	
Alpha	2	5.3	4	0	2	8.3	-0.6	0	2	5.3	2.5 to 3	0	NA	One (1) highest location (3 cpm) for analytical confirmation	1	Alpha Spec.
Beta/ Gamma	2	346	300	0	2	97	5 to 7	0	2	346	268 to 272	0	NA	One (1) location- highest value (272) for analytical confirmation	1	Other Target Isotopes

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TABLE 3-8
PAOC-8 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-8- CONCRETE FLOOR

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-8 Concrete Floor	441	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	9													**Total Samples**	**2**	
Alpha	9	29	All at 20	0	9	9.7	-1.3 to 1.9	0	9	3.3	1.5 to 3.5	0	NA	One (1) highest location (3.5 cpm) for analytical confirmation	1	Alpha Spec.
Beta/ Gamma	9	2,411	All at 2,200	0	9	96	-6.4 to 60.4	0	9	380	343 to 371	0	NA	One (1) location- highest value (371) for analytical confirmation	1	Other Target Isotopes

PAOC-8- METAL CEILING (Flat & Supports) & WALLS

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-8 Metal Ceiling (Flat & Supports) & Walls	+/- 1,400	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.4 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	39													**Total Sample Locations**	**0**	
Alpha	39	1.8	All 2 cpm	0	39	8.3	-0.6 to 2.6	0	39	1.8	0 to 2	0	NA	None- results consistent with background and below lowest criteria	0	Alpha Spec.
Beta/ Gamma	39	212	All 250 cpm	0	39	97	-14 to 60.4	0	39	212	210 to 236	0	NA	None- results consistent with background and below lowest criteria	0	Other Target Isotopes

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TABLE 3-9
PAOC-9 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-9- CONCRETE FLOOR

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-9 Concrete Floor	1,300	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 4.9 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	27													**Total Samples (co-located)**	**2**	
Alpha	27	29	All at 20	0	27	9.7	-1.3 to 1.9	0	27	3.3	2 to 4	0	NA	One (1) highest location (4 cpm) for analytical confirmation	1	Alpha Spec.
Beta/ Gamma	27	2,411	All at 2,200	0	27	96	-252 to -246	0	27	380	342 to 369	0	NA	One (1) location- highest value (369) for analytical confirmation	1	Other Target Isotopes

PAOC-9- VINYL WALL INSULATION

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-9 Vinyl Ceiling Insulation	575	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.8 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	12													**Total Sample Locations**	**2**	
Alpha	12	2.2	3 to 4	0	12	8.3	-0.2 to 0.8	0	12	2.2	0 to 2	0	NA	One (1) highest location (2 cpm) for analytical confirmation	1	Alpha Spec.
Beta/ Gamma	12	225	30 to 300	0	12	97	-46.9 to -47.9	0	12	225	200 to 236	0	NA	One (1) location- highest value (236) for analytical confirmation	1	N/A

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TABLE 3-9
PAOC-9 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-9- METAL WALL

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-9 Metal Wall	140	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.4 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	3													**Total Sample Locations**	**0**	
Alpha	3	2.8	All 3 cpm	0	3	8.3	-0.6 to 2.6	0	3	2.8	1 to 1.5	0	NA	None- results consistent with background and below lowest criteria	0	Alpha Spec.
Beta/ Gamma	3	212	All 300 cpm	0	3	97	-46.9 to -47.9	0	3	212	210 to 222	0	NA	None- results consistent with background and below lowest criteria	0	Other Target Isotopes

PAOC-9- STUCCO WALL

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-9 Stucco Wall	400	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 6.9 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	9													**Total Sample Locations**	**2**	
Alpha	9	5.3	4	0	9	8.3	-0.6 to 2.6	0	9	5.3	2 to 3	0	NA	One (1) highest location (3 cpm) for analytical confirmation	1	Alpha Spec.
Beta/ Gamma	9	346	300	0	9	97	49 to 59	0	9	346	264 to 298	0	NA	One (1) location- highest value (298) for analytical confirmation	1	Other Target Isotopes

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TABLE 3-10
PAOC-10 SUMMARY OF SURVEY RESULTS SAMPLE SELECTION CRITERIA

PAOC-10- CERAMIC TILE FLOOR & WALLS

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-10 Concrete Floor	1,800	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 15.2 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	41													**Total Samples (co-located)**	**2**	
Alpha	41	13.4 to 26.5	4 to 10	0	41	8.3 to 9.1	-1.0 to 2.6	0	41	13.4	4 to 10.5	0	NA	One (1) highest location (10.5 cpm) for analytical confirmation	1	Alpha Spec.
Beta/ Gamma	41	470 & 2,230	600 to 1,100	0	41	97	-16.6 to 55.6	0	41	470	453 to 600	0	NA	One (1) location- highest value (600) for analytical confirmation	1	Other Target Isotopes

PAOC-10- SHEETROCK WALL

	Sft./Count	100% Scan			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-10 Sheetrock Wall	80	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.8 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	2													**Total Sample Locations**	**0**	
Alpha	2	2.2	4	0	2	8.3	-0.6 to 1.0	0	2	2.2	1 to 1.5	0	NA	None- results consistent with background and below lowest criteria	0	NA
Beta/ Gamma	2	258	300	0	2	97	-21.9 to 34.2	0	2	258	253 to 261	0	NA	None- results consistent with background and below lowest criteria	0	NA

PAOC-10- METAL WALL & SINK TRAPS

	Sft./Count	100% Scan (Wall Only)			Fixed-Point Removable Activity (Smears)					Fixed-Point Total Activity				Sample Selection Criteria		
Area- PAOC-10 Metal Wall	1,200	BKGD RANGE (cpm)	RESULT MAX RANGE (Gross cpm)	Count No. of MAX > 2Xs BKGD	count	MDA (dpm/ 100cm2)	RESULT RANGE (dpm/ 100cm2)	Count >MDA or Lowest DCGL dpm/100cm2 (Alpha - 14 or Beta- 4,670)	count	AVG. BKGD (cpm)	RESULT RANGE (Gross cpm)	Count No. > CSV (Alpha 3.4 cpm/ Beta 960 cpm)	RESULT RANGE > CSV (cpm)	Rationale for Volumetric Sampling	Count No. of Samples	Analysis
Grid Cell/Fixed-Points	38													**Total Sample Locations**	**0**	
Alpha	38	1.8	All 3 cpm	0	38	8.3 to 9.7	-1.3 to 2.6	0	38	1.8	0 to 2.5	0	NA	None- results consistent with background and below lowest criteria	0	Alpha Spec.
Beta/ Gamma	38	212	All 300 cpm	0	38	96 to 97	-9.1 to 53	0	38	212	212 to 289	0	NA	None- results consistent with background and below lowest criteria	0	Other Target Isotopes

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-12: PAOC-1

Sample ID				1-F-10-C				1-F-16-C				1-F-19-C				1-F-19-C			
GEL Laboratory ID				521063002				521063003				521063004				1204650923			
Collection Date				08/31/20				08/31/20				08/31/20				08/31/20			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Vinyl Tile			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	0.002	0.008	U	0.016	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.007	0.018	U	0.041	0.002	0.021	U	0.040	0.002	0.019	U	0.038	0.010	0.013	U	0.018
	Cf-252	0.05	4.12	0.017	0.022	U	0.033	0.004	0.011	U	0.019	0.019	0.020	U	0.026	0.012	0.016	U	0.024
	Cm-243/244	0.05	2.5	0.020	0.026	U	0.040	0.004	0.013	U	0.023	0.007	0.020	U	0.036	**0.019**	0.015		0.007
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	-0.001	0.005	U	0.010	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	0.001	0.004	U	0.008	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	**0.355**	0.063		0.047	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	0.015	0.018	U	0.023	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	**0.346**	0.059		0.027	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-12: PAOC-1

Sample ID				1-F-19-C				1-F-31-C				1-F-31-C				1-F-31-C			
GEL Laboratory ID				1204650923				521063006				1204644022				1204646675			
Collection Date				08/31/20				08/31/20				08/31/20				08/31/20			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Vinyl Tile			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Duplicate				Normal				Duplicate				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.010	0.013	U	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.012	0.016	U	0.024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	**0.019**	0.015		0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	0.049	0.077	U	0.150	-0.086	0.257	U	0.462	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	-0.016	0.034	U	0.058	0.020	0.034	U	0.074	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	0.080	0.349	U	0.620	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	-0.208	0.555	U	0.953	NA	NA	NA	NA	0.327	0.562	U	0.949

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-12: PAOC-1

Sample ID				1-F-5-C				1-F-10-C				1-F-19-C				1-F-33-C			
GEL Laboratory ID				521063001				521063002				521063004				521063005			
Collection Date				08/31/20				08/31/20				08/31/20				08/31/20			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Vinyl Tile			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.012	0.020	U	0.033	-0.007	0.018	U	0.041	0.002	0.019	U	0.038	0.007	0.018	U	0.032
	Cf-252	0.05	4.12	0.007	0.012	U	0.018	0.017	0.022	U	0.033	0.019	0.020	U	0.026	0.021	0.021	U	0.026
	Cm-243/244	0.05	2.5	0.011	0.016	U	0.025	0.020	0.026	U	0.040	0.007	0.020	U	0.036	-0.003	0.019	U	0.040
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-12: PAOC-1

Sample ID				1-W-N-8				1-W-E-37				1-W-E-54				1-W-N-47			
GEL Laboratory ID				521067001				521067002				521067005				521067004			
Collection Date				08/28/20				08/28/20				08/28/20				08/28/20			
Substrate				Sheetrock				Sheetrock				Sheetrock				Sheetrock			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	-0.001	0.009	U	0.021	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.025	0.045	U	0.076	0.010	0.012	U	0.019	-0.005	0.032	U	0.066	0.000	0.026	U	0.051
	Cf-252	0.05	4.12	0.000	0.031	U	0.062	0.000	0.005	U	0.005	-0.011	0.022	U	0.054	0.009	0.017	U	0.013
	Cm-243/244	0.05	2.5	0.006	0.032	U	0.059	0.000	0.007	U	0.013	-0.005	0.023	U	0.051	0.004	0.021	U	0.039
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	0.000	0.008	U	0.019	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	-0.003	0.009	U	0.024	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	0.032	0.026	U	0.038	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	0.000	0.009	U	0.018	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	**0.074**	0.027		0.007	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-12: PAOC-1

Sample ID				1-W-W-45				1-W-W-45				1-W-W-45				1-W-W-40			
GEL Laboratory ID				521067006				1204644170				1204646676				521067003			
Collection Date				08/28/20				08/28/20				08/28/20				08/28/20			
Substrate				Sheetrock				Sheetrock				Sheetrock				Sheetrock			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Duplicate				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005	0.018	U	0.034
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.003	0.010	U	0.027
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.003	0.010	U	0.026
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.471	0.483	U	0.862	-0.338	0.485	U	0.656	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	-0.062	0.079	U	0.128	0.039	0.075	U	0.147	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	-0.020	0.053	U	0.095	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	0.501	0.686	U	1.170	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	-0.266	0.551	U	0.947	NA	NA	NA	NA	-0.438	0.549	U	0.949	NA	NA	NA	NA

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-12: PAOC-1

Sample ID				1-W-W-40				1-W-W-18-B-M				1-W-W-18-B-M				1-W-W-51-B-C			
GEL Laboratory ID				1204657007				521068003				1204660344				521068002			
Collection Date				08/28/20				08/28/20				08/28/20				08/28/20			
Substrate				Sheetrock				Concrete				Concrete				Concrete			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Duplicate				Normal				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	0.00185	0.00701	U	0.013	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.011	0.0229	U	0.038	-1E-08	0.0449	U	0.085	0.0224	0.0254	U	0.0358	0.003	0.007	U	0.013
	Cf-252	0.05	4.12	0.006	0.0164	U	0.017	-0.00423	0.0185	U	0.041	0.000	0.0108	U	0.0117	-0.002	0.004	U	0.011
	Cm-243/244	0.05	2.5	-0.002	0.0172	U	0.041	-0.016	0.0192	U	0.049	0.0074	0.0178	U	0.0283	0.003	0.007	U	0.013
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	-0.00726	0.0106	U	0.031	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	-0.00911	0.0142	U	0.038	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	**0.622**	0.0908		0.048	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	**0.0374**	0.0247		0.026	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	**0.653**	0.0913		0.035	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-12: PAOC-1

Sample ID				1-W-N-4-B-C				1-W-N-4-B-C				1-W-N-4-B-C				1-W-W-51-B-C			
GEL Laboratory ID				521068001				1204644171				1204646677				1204644373			
Collection Date				08/28/20				08/28/20				08/28/20				08/28/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Duplicate				Duplicate				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000	0.009	U	0.019
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000	0.004	U	0.006
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.007	0.006	U	0.020
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.075	0.099	U	0.194	-0.074	0.145	U	0.289	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	-0.024	0.027	U	0.045	0.033	0.035	U	0.077	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	0.015	0.055	U	0.098	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	0.205	0.299	U	0.511	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	-0.620	0.548	U	0.953	NA	NA	NA	NA	-0.627	0.548	U	0.954	NA	NA	NA	NA

Notes:

All values are reported in picoCuries per gram (pCi/g)

Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for additional details

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U = Analyte Not Identified >MDC

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-13: PAOC-2

Sample ID				2-F-1-R				2-F-1-R				2-F-1-R				2-F-1-R			
GEL Laboratory ID				523950001				1204669316				1204669202				1204677723			
Collection Date				10/05/20				10/05/20				10/05/20				10/05/20			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Vinyl Tile			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Duplicate				Duplicate				Duplicate			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	0.011	0.024	U	0.041	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.014	0.012	U	0.015	0.006	0.015	U	0.026	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.000	0.006	U	0.013	-0.002	0.007	U	0.016	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	-0.002	0.008	U	0.017	-0.002	0.009	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	0.000	0.017	U	0.035	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	-0.007	0.016	U	0.038	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.164**	0.041		0.031	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	**0.030**	0.019		0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	**0.135**	0.037		0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.059	0.151	U	0.259	NA	NA	NA	NA	0.191	0.362	U	0.694	NA	NA	NA	NA
	Cs-137	1	6.6	-0.016	0.040	U	0.062	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	0.010	0.050	U	0.092	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	-0.705	0.662	U	1.180	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	0.142	0.474	U	0.805	NA	NA	NA	NA	NA	NA	NA	NA	0.291	0.469	U	0.792

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-13: PAOC-2

Sample ID				2-F-2-R				2-F-3-R				2-F-4-R				2-F-5-R			
GEL Laboratory ID				523950002				523950003				523950004				523950005			
Collection Date				10/05/20				10/05/20				10/05/20				10/05/20			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Vinyl Tile			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	0.017	0.028	U	0.045	NA	NA	NA	NA	-0.002	0.014	U	0.033
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.007	0.011	U	0.018	0.020	0.015	U	0.020	0.015	0.013	U	0.016	0.015	0.015	U	0.021
	Cf-252	0.05	4.12	0.003	0.009	U	0.016	0.000	0.007	U	0.014	0.000	0.007	U	0.013	0.002	0.008	U	0.013
	Cm-243/244	0.05	2.5	0.006	0.011	U	0.018	0.005	0.012	U	0.020	-0.003	0.008	U	0.018	-0.002	0.011	U	0.023
DOE EML HASL 300 Pu-02-RC Mod	Pu-238	0.05	1.52	NA	NA	NA	NA	-0.005	0.009	U	0.027	NA	NA	NA	NA	-0.003	0.010	U	0.025
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	0.000	0.014	U	0.030	NA	NA	NA	NA	-0.012	0.014	U	0.037
	U-233/234		7.8 [2]	NA	NA	NA	NA	**0.175**	0.052		0.048	NA	NA	NA	NA	**0.129**	0.036		0.025
	U-235/236	0.05	4.82	NA	NA	NA	NA	0.009	0.026	U	0.047	NA	NA	NA	NA	0.025	0.019	U	0.025
	U-238		8.4 [2]	NA	NA	NA	NA	**0.196**	0.054		0.049	NA	NA	NA	NA	**0.147**	0.038		0.025
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	-0.043	0.142	U	0.220	0.049	0.077	U	0.150	0.004	0.074	U	0.122	-0.006	0.065	U	0.108
	Cs-137	1	6.6	0.020	0.024	U	0.045	-0.004	0.022	U	0.040	-0.014	0.023	U	0.039	0.007	0.024	U	0.046
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	-0.034	0.044	U	0.093	NA	NA	NA	NA	-0.041	0.046	U	0.099
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	-0.180	0.670	U	1.170	NA	NA	NA	NA	0.131	0.683	U	1.170
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	0.553	0.485	U	0.811	NA	NA	NA	NA	0.415	0.485	U	0.815

Notes:

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-13: PAOC-2

Sample ID				2-F-5-R				2-F-5-R				2-W-E-3-R				2-W-E-3-R			
GEL Laboratory ID				1204669317				1204669203				523952003				1204681922			
Collection Date				10/05/20				10/05/20				10/05/20				10/05/20			
Substrate				Vinyl Tile				Vinyl Tile				Sheetrock				Sheetrock			
Building Surface				Floor				Floor				Wall				Wall			
QC Code				Duplicate				Duplicate				Normal				Duplicate			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	-0.008	0.013	U	0.037	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.005	0.015	U	0.026	NA	NA	NA	NA	0.070	0.064	U	0.084	0.006	0.030	U	0.055
	Cf-252	0.05	4.12	0.000	0.007	U	0.014	NA	NA	NA	NA	-0.027	0.040	U	0.100	-0.018	0.026	U	0.066
	Cm-243/244	0.05	2.5	0.007	0.013	U	0.022	NA	NA	NA	NA	-0.035	0.054	U	0.124	-0.011	0.027	U	0.063
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	0.006	0.011	U	0.019	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	-0.002	0.009	U	0.019	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	**0.037**	0.028		0.034	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	0.010	0.018	U	0.027	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	**0.062**	0.032		0.026	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	0.045	0.252	U	0.457	0.074	0.432	U	0.681	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	-0.014	0.058	U	0.103	0.013	0.069	U	0.140	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-13: PAOC-2

Sample ID				2-W-S-1-B-R				2-W-S-2-B-R				2-W-S-4-B-R				2-W-W-5-R			
GEL Laboratory ID				523952001				523952002				523952004				523952005			
Collection Date				10/05/20				10/05/20				10/05/20				10/05/20			
Substrate				Sheetrock				Sheetrock				Sheetrock				Sheetrock			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.007	0.007	U	0.025	NA	NA	NA	NA	NA	NA	NA	NA	-0.013	0.013	U	0.045
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.002	0.016	U	0.034	0.009	0.021	U	0.034	0.012	0.013	U	0.019	0.009	0.010	U	0.015
	Cf-252	0.05	4.12	-0.001	0.012	U	0.028	0.005	0.018	U	0.030	0.001	0.006	U	0.011	0.004	0.008	U	0.013
	Cm-243/244	0.05	2.5	0.007	0.020	U	0.034	0.008	0.021	U	0.037	0.000	0.008	U	0.016	0.000	0.007	U	0.015
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	0.008	0.010	U	0.013	NA	NA	NA	NA	NA	NA	NA	NA	0.011	0.011	U	0.015
	Pu-239/240	0.05	1.37	0.005	0.009	U	0.013	NA	NA	NA	NA	NA	NA	NA	NA	0.005	0.007	U	0.009
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	0.021	0.024	U	0.038	NA	NA	NA	NA	NA	NA	NA	NA	0.021	0.020	U	0.030
	U-235/236	0.05	4.82	0.014	0.016	U	0.022	NA	NA	NA	NA	NA	NA	NA	NA	0.014	0.014	U	0.019
	U-238		8.4 [2]	**0.032**	0.020		0.022	NA	NA	NA	NA	NA	NA	NA	NA	**0.024**	0.014		0.006
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.093	0.321	U	0.574	0.029	0.221	U	0.360	-0.021	0.155	U	0.248	0.068	0.116	U	0.199
	Cs-137	1	6.6	0.058	0.085	U	0.192	0.022	0.113	U	0.224	0.046	0.053	U	0.122	0.008	0.058	U	0.114
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	-0.627	0.548	U	0.954	NA	NA	NA	NA

Notes:

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Table 3-13: PAOC-2

Sample ID				2-W-W-5-R				2-W-W-5-R				2-W-W-5-R				2-W-W-5-R			
GEL Laboratory ID				1204666387				1204666761				1204666391				120466395			
Collection Date				10/05/20				10/5/20				10/5/20				10/5/20			
Substrate				Sheetrock				Sheetrock				Sheetrock				Sheetrock			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Duplicate				Duplicate				Duplicate				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	-0.002	0.010	U	0.026	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.006	0.013	U	0.022	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.000	0.006	U	0.012	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	0.000	0.009	U	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002	0.007	U	0.012
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.024	0.021	U	0.028
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005	0.012	U	0.019
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.029**	0.020		0.023
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	-0.106	0.126	U	0.181	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	0.012	0.060	U	0.103	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All values are reported in picoCuries per gram (pCi/g)

Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for additional details

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U = Analyte Not Identified >MDC

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[2] - Release Criteria for U-234 and U-238 Adopted Based NUREG/CR-5512, Volume 3 DandD Screening Methodology scaled to a 15 mrem/yr TEDE

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-13: PAOC-2

Sample ID				2-W-W-5-R			
GEL Laboratory ID				1204666399			
Collection Date				10/5/20			
Substrate				Sheetrock			
Building Surface				Wall			
QC Code				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy							
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	0.024	0.021	U	0.028
	U-235/236	0.05	4.82	0.005	0.012	U	0.019
	U-238		8.4 [2]	**0.029**	0.020		0.023
Gamma Spectroscopy							
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA
Gas Flow Proportional Counting							
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA
Liquid Scintillation Counting							
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-14: PAOC-3

Sample ID				3-F-3-C				3-F-3-C				3-F-12-C				3-F-44-B-C			
GEL Laboratory ID				521069001				1204644393				521069002				521069003			
Collection Date				08/31/20				08/31/20				08/31/20				08/31/20			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Vinyl Tile			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Duplicate				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.001	0.015	U	0.033	0.014	0.017	U	0.023	-0.014	0.013	U	0.044	-0.002	0.008	U	0.019
	Cf-252	0.05	4.12	0.000	0.007	U	0.011	-0.001	0.007	U	0.017	-0.001	0.010	U	0.024	-0.003	0.009	U	0.024
	Cm-243/244	0.05	2.5	0.002	0.010	U	0.019	-0.001	0.007	U	0.016	-0.005	0.011	U	0.031	0.003	0.010	U	0.010
DOE EML HASL 300 Pu-02-RC Mod	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-01-R Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-14: PAOC-3

Sample ID				3-F-79-C				3-F-79-C				3-F-79-C				3-W-E-11-C-C			
GEL Laboratory ID				521069004				1204644172				1204646678				521069006			
Collection Date				08/31/20				08/31/20				08/31/20				08/31/20			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Sheetrock			
Building Surface				Floor				Floor				Floor				Wall			
QC Code				Normal				Duplicate				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	0.011	0.021	U	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.006	0.020	U	0.036
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000	0.012	U	0.023
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000	0.011	U	0.022
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	-0.003	0.006	U	0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	-0.003	0.006	U	0.017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.160**	0.071		0.066	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	0.023	0.030	U	0.037	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	**0.232**	0.080		0.053	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.009	0.166	U	0.310	-0.025	0.082	U	0.131	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	0.039	0.039	U	0.087	-0.023	0.033	U	0.055	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	-0.073	0.048	U	0.096	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	0.328	0.330	U	0.549	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	-0.757	0.557	U	0.972	NA	NA	NA	NA	-0.226	0.564	U	0.969	NA	NA	NA	NA

Notes:

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-14: PAOC-3

Sample ID				3-W-W-1-M				3-W-W-23-M				3-W-W-74-C				3-W-W-74-C			
GEL Laboratory ID				521069005				521070001				521070004				1204659413			
Collection Date				09/02/20				09/02/20				09/02/20				09/02/20			
Substrate				Sheetrock				Sheetrock				Sheetrock				Sheetrock			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Normal				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.023	0.027	U	0.042	0.013	0.026	U	0.044	0.046	0.156	U	0.283	0.018	0.206	U	0.384
	Cf-252	0.05	4.12	0.000	0.008	U	0.011	-0.004	0.014	U	0.033	0.024	0.081	U	0.072	**0.057**	0.083		0.057
	Cm-243/244	0.05	2.5	0.002	0.014	U	0.028	0.006	0.018	U	0.031	0.046	0.167	U	0.305	-0.054	0.117	U	0.260
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-14: PAOC-3

Sample ID				3-W-E-73-B-C				3-W-E-73-B-C				3-W-S-88-B-C				3-W-S-87-A-M			
GEL Laboratory ID				1204644409				521070003				521070006				521070005			
Collection Date				09/01/20				09/01/20				09/02/20				08/31/20			
Substrate				Sheetrock				Sheetrock				Sheetrock				Sheetrock			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Duplicate				Normal				Normal				Normal			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	-0.007	0.013	U	0.036	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.008	0.018	U	0.031	0.004	0.012	U	0.021	0.004	0.020	U	0.039	-0.008	0.042	U	0.090
	Cf-252	0.05	4.12	0.000	0.009	U	0.014	0.000	0.007	U	0.011	0.000	0.015	U	0.022	0.000	0.023	U	0.025
	Cm-243/244	0.05	2.5	0.007	0.018	U	0.033	0.000	0.010	U	0.022	-0.010	0.016	U	0.051	0.008	0.035	U	0.061
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	-0.001	0.012	U	0.028	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	0.000	0.017	U	0.036	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	**0.065**	0.031		0.026	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	-0.003	0.014	U	0.029	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	**0.064**	0.031		0.029	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Table 3-14: PAOC-3

Sample ID				3-W-E-73-A-C				3-W-E-74-M				3-W-E-74-M				3-W-S-85-A-C			
GEL Laboratory ID				521070002				521071001				1204661834				521071002			
Collection Date				09/01/20				09/01/20				09/01/20				09/03/20			
Substrate				Sheetrock				Painted Block				Painted Block				Painted Block			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Normal				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.002	0.007	U	0.013
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.001	0.012	U	0.028	0.140	0.215	U	0.358	0.040	0.112	U	0.193	-0.004	0.009	U	0.025
	Cf-252	0.05	4.12	-0.001	0.013	U	0.029	0.000	0.117	U	0.234	0.021	0.092	U	0.161	0.000	0.008	U	0.011
	Cm-243/244	0.05	2.5	-0.010	0.014	U	0.045	0.070	0.136	U	0.222	-0.060	0.087	U	0.220	-0.003	0.012	U	0.029
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.004	0.007	U	0.021
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.004	0.012	U	0.023
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.917**	0.103		0.043
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.049**	0.026		0.022
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.030**	0.107		0.022
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All values are reported in picoCuries per gram (pCi/g)

Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for additional details

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U = Analyte Not Identified >MDC

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-14: PAOC-3

Sample ID				3-W-S-C-73-C				3-W-E-17-B-C				3-W-E-17-B-C			
GEL Laboratory ID				521071004				1204657009				521071003			
Collection Date				09/01/20				09/01/20				09/01/20			
Substrate				Concrete				Concrete				Concrete			
Building Surface				Wall				Wall				Wall			
QC Code				Normal				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy															
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.005	0.004	U	0.009	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.001	0.009	U	0.022	0.005	0.020	U	0.036	-0.015	0.031	U	0.064
	Cf-252	0.05	4.12	-0.002	0.010	U	0.023	-0.003	0.011	U	0.026	0.006	0.012	U	0.009
	Cm-243/244	0.05	2.5	-0.010	0.012	U	0.037	0.008	0.016	U	0.025	-0.015	0.018	U	0.043
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	0.000	0.013	U	0.028	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	0.002	0.013	U	0.024	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.831**	0.0875		0.022	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	**0.033**	0.021		0.023	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	**0.833**	0.0876		0.023	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy															
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting															
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting															
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All values are reported in picoCuries per gram (pCi/g)

Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for addition

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-15: PAOC-4

Sample ID				4-F-1-C				4-F-1-C				4-F-4-1-R				4-F-4-2-R			
GEL Laboratory ID				1204644173				1204646679				521072002				521072003			
Collection Date				09/01/20				09/01/20				09/04/20				09/04/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Duplicate				Duplicate				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	0.019	0.023	U	0.031	0.000	0.016	U	0.035
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA	0.008	0.017	U	0.023	0.004	0.013	U	0.013
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA	0.003	0.013	U	0.022	-0.003	0.009	U	0.026
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.070	0.183	U	0.385	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	0.008	0.032	U	0.065	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	0.373	0.573	U	0.967	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-15: PAOC-4

Sample ID				4-F-1-C				4-F-1-C				4-CF-4-C				4-CF-5-C			
GEL Laboratory ID				521072001				1204644456				521073003				521073004			
Collection Date				09/01/20				09/01/20				09/01/20				09/01/20			
Substrate				Concrete				Concrete				Vinyl Insulation				Vinyl Insulation			
Building Surface				Floor				Floor				Ceiling				Ceiling			
QC Code				Normal				Duplicate				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.002	0.006	U	0.015	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.001	0.008	U	0.018	0.002	0.009	U	0.017	0.000	0.019	U	0.037	0.037	0.036	U	0.049
	Cf-252	0.05	4.12	-0.001	0.006	U	0.014	0.000	0.006	U	0.009	-0.006	0.012	U	0.030	0.000	0.015	U	0.012
	Cm-243/244	0.05	2.5	0.000	0.008	U	0.019	0.002	0.009	U	0.014	0.000	0.014	U	0.029	-0.001	0.026	U	0.049
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	-0.006	0.010	U	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	-0.009	0.011	U	0.032	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.599**	0.070		0.028	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	**0.041**	0.020		0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	**0.575**	0.068		0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.022	0.166	U	0.306	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	0.013	0.030	U	0.053	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	-0.006	0.054	U	0.097	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	0.151	0.296	U	0.515	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	0.312	0.564	U	0.952	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-15: PAOC-4

Sample ID				4-CF-2-C				4-CF-2-C				4-CF-3-C			
GEL Laboratory ID				521073001				1204644482				521073002			
Collection Date				09/01/20				09/01/20				09/01/20			
Substrate				Vinyl Insulation				Vinyl Insulation				Vinyl Insulation			
Building Surface				Ceiling				Ceiling				Ceiling			
QC Code				Normal				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy															
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.012	0.012	U	0.037	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.009	0.027	U	0.027	0.021	0.034	U	0.052	-0.006	0.016	U	0.035
	Cf-252	0.05	4.12	0.000	0.021	U	0.028	0.006	0.019	U	0.017	0.000	0.008	U	0.009
	Cm-243/244	0.05	2.5	0.000	0.020	U	0.027	0.000	0.026	U	0.052	0.000	0.014	U	0.027
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	-0.007	0.010	U	0.028	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	-0.008	0.010	U	0.031	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	0.015	0.018	U	0.028	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	0.013	0.015	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	0.029	0.026	U	0.038	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy															
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting															
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting															
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Table 3-15: PAOC-4

Sample ID				4-W-N-1-R				4-W-N-2-R				4-W-N-2-R			
GEL Laboratory ID				521074001				521074002				1204644498			
Collection Date				09/03/20				09/03/20				09/03/20			
Substrate				Stucco				Stucco				Stucco			
Building Surface				Wall				Wall				Wall			
QC Code				Normal				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy															
ASTM C 1475-00 Modified	Np-237	0.05	0.6	0.001	0.006	U	0.012	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.002	0.011	U	0.022	0.001	0.009	U	0.019	-0.005	0.009	U	0.027
	Cf-252	0.05	4.12	-0.001	0.006	U	0.013	0.000	0.005	U	0.008	0.000	0.008	U	0.012
	Cm-243/244	0.05	2.5	-0.001	0.005	U	0.013	0.001	0.007	U	0.016	-0.004	0.008	U	0.025
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	-0.002	0.005	U	0.014	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	-0.006	0.006	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.299**	0.052		0.042	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	0.024	0.018	U	0.024	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	**0.278**	0.047		0.024	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy															
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting															
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting															
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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Table 3-15: PAOC-4

Sample ID				4CF-1-C				4CF-2-C				4CF-4-C				4CF-6-C			
GEL Laboratory ID				580099001				582885001				52885002				580099002			
Collection Date				4/7/2022				4/7/2022				4/7/2022				4/7/2022			
Substrate				Vinyl Tile				Concrete				Concrete				Vinyl Tile			
Building Surface				Ceiling				Floor				Floor				Ceiling			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.008	0.009	U	0.023	-0.009	0.016	U	0.036	-0.001	0.011	U	0.023	-0.003	0.012	U	0.025
	Cf-252	0.05	4.12	0.000	0.007	U	0.014	0.000	0.008	U	0.009	0.004	0.009	U	0.014	0.000	0.007	U	0.013
	Cm-243/244	0.05	2.5	-0.012	0.015	U	0.033	-0.031	0.018	U	0.049	-0.001	0.010	U	0.021	-0.006	0.010	U	0.023
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All values are reported in picoCuries per gram (pCi/g)

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5W-F-30-C				5W-F-24-C				5W-F-30-C				5W-F-30-C			
GEL Laboratory ID				1204660080				522014001				522014003				1204655859			
Collection Date				09/14/20				09/14/20				09/14/20				09/14/20			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Vinyl Tile			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Duplicate				Normal				Normal				Duplicate			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	0.003	0.024	U	0.046	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA	-0.005	0.013	U	0.030	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	-0.008	0.015	U	0.034	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	0.012	0.170	U	0.340	0.020	0.041	U	0.083
300, 4.5.2.3/Ga-	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	-0.028	0.040	U	0.065	0.063	0.074	U	0.078
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	0.010	0.040	U	0.069	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	1.020	0.828	U	1.380	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	-0.350	0.483	U	0.838	NA	NA	NA	NA	-0.087	0.476	U	0.818	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5W-F-53-C				5W-F-53-C				5-W-W-W-24-M				5E-W-S-67-B-M			
GEL Laboratory ID				522014002				1204660598				522015001				1204649943			
Collection Date				09/14/20				09/14/20				09/14/20				09/14/20			
Substrate				Vinyl Tile				Vinyl Tile				Sheetrock				Sheetrock			
Building Surface				Floor				Floor				Wall				Wall			
QC Code				Normal				Duplicate				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.005	0.014	U	0.039	NA	NA	NA	NA	0.000	0.018	U	0.037	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.006	0.010	U	0.026	0.000	0.009	U	0.020	-0.120	0.332	U	0.736	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.001	0.008	U	0.015	-0.003	0.008	U	0.020	0.000	0.173	U	0.187	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	-0.007	0.008	U	0.024	-0.004	0.010	U	0.026	-0.237	0.328	U	0.793	NA	NA	NA	NA
DOE EML HASL 300 Pu-02-RC Mod	Pu-238	0.05	1.52	-0.004	0.017	U	0.038	NA	NA	NA	NA	-0.002	0.012	U	0.025	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	-0.005	0.015	U	0.036	NA	NA	NA	NA	0.002	0.018	U	0.033	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	-0.001	0.028	U	0.053	NA	NA	NA	NA	**0.070**	0.032		0.034	NA	NA	NA	NA
	U-235/236	0.05	4.82	0.000	0.015	U	0.030	NA	NA	NA	NA	**0.031**	0.021		0.020	NA	NA	NA	NA
	U-238		8.4 [2]	**0.052**	0.026		0.021	NA	NA	NA	NA	**0.073**	0.030		0.025	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.021	0.222	U	0.326
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.013	0.038	U	0.068
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5E-W-S-67-B-M				5E-W-S-67-B-M				5E-MZ-W-S-68-A-M				5-W-W-W-24-M			
GEL Laboratory ID				522015005				1204660081				522015004				1204669291			
Collection Date				09/14/20				09/14/20				09/14/20				09/14/20			
Substrate				Sheetrock				Sheetrock				Sheetrock				Sheetrock			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Duplicate				Duplicate				Normal				Duplicate			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	0.007	0.010	U	0.014	-0.037	0.124	U	0.263
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA	-0.002	0.007	U	0.015	0.019	0.065	U	0.057
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA	-0.003	0.007	U	0.016	-0.054	0.117	U	0.260
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.002	0.123	U	0.187	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	0.060	0.084	U	0.111	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	0.016	0.048	U	0.086	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	**1.450**	0.843		1.380	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	0.494	0.436	U	0.728	0.084	0.494	U	0.843	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5E-MZ-W-S-53-M				5E-MZ-W-S-66-B-M				5E-W-W-33-M				5W-W-W-1-C			
GEL Laboratory ID				522015002				522015003				1204660082				522016001			
Collection Date				09/14/20				09/14/20				09/16/20				09/16/20			
Substrate				Sheetrock				Sheetrock				Painted Block				Painted Block			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Normal				Duplicate				Normal			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.000	0.010	U	0.020
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.012	0.016	U	0.026	-0.012	0.018	U	0.038	NA	NA	NA	NA	-0.019	0.055	U	0.113
	Cf-252	0.05	4.12	-0.003	0.006	U	0.015	-0.002	0.012	U	0.026	NA	NA	NA	NA	0.007	0.023	U	0.020
	Cm-243/244	0.05	2.5	-0.006	0.009	U	0.022	-0.004	0.011	U	0.024	NA	NA	NA	NA	0.025	0.039	U	0.061
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.023	0.032	U	0.050
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.009	0.022	U	0.050
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.460**	0.132		0.036
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.102**	0.037		0.024
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**1.660**	0.140		0.009
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	0.444	0.481	U	0.808	NA	NA	NA	NA

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5E-W-W-33-M				5W-W-W-1-C				5E-W-W-33-M				5E-W-N-7-M			
GEL Laboratory ID				522016002				1204669292				1204649944				1204687050			
Collection Date				09/16/20				09/16/20				09/16/20				09/16/20			
Substrate				Painted Block				Painted Block				Painted Block				Concrete			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Duplicate				Duplicate				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	0.018	0.043	U	0.075	NA	NA	NA	NA	0.018	0.021	U	0.032
	Cf-252	0.05	4.12	NA	NA	NA	NA	0.000	0.030	U	0.061	NA	NA	NA	NA	0.005	0.009	U	0.007
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	-0.024	0.037	U	0.087	NA	NA	NA	NA	0.002	0.012	U	0.021
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	-0.138	0.190	U	0.321	NA	NA	NA	NA	-0.043	0.085	U	0.138	NA	NA	NA	NA
	Cs-137	1	6.6	0.006	0.031	U	0.056	NA	NA	NA	NA	0.014	0.049	U	0.093	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	-0.024	0.028	U	0.063	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	**1.590**	0.876		1.430	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	-0.126	0.489	U	0.840	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5E-W-N-1-M				5E-W-N-2-M				5E-W-N-4-M				5E-W-N-4-M			
GEL Laboratory ID				522018007				522018002				522018008				1204655860			
Collection Date				09/16/20				09/16/20				09/16/20				09/16/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Normal				Normal				Duplicate			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	0.000	0.019	U	0.040	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA	0.000	0.009	U	0.012	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	-0.008	0.012	U	0.034	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL	Am-241	0.05	1.25	0.005	0.072	U	0.136	NA	NA	NA	NA	-0.058	0.307	U	0.545	0.046	0.153	U	0.253
300, 4.5.2.3/Ga-	Cs-137	1	6.6	0.007	0.052	U	0.100	NA	NA	NA	NA	0.036	0.051	U	0.105	0.011	0.064	U	0.130
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	0.003	0.031	U	0.061	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	0.708	0.802	U	1.350	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	0.545	0.466	U	0.778	NA	NA	NA	NA

Notes:

All values are reported in picoCuries per gram (pCi/g)

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5E-W-N-4-M				5E-W-N-5-M				5E-W-N-7-M				5E-W-N-7-M			
GEL Laboratory ID				1204660083				522018003				526389001				522018009			
Collection Date				09/16/20				09/16/20				09/16/20				09/16/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Duplicate				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	0.006	0.024	U	0.043	0.007	0.019	U	0.033	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA	-0.006	0.012	U	0.028	0.000	0.007	U	0.007	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	0.000	0.017	U	0.035	0.002	0.012	U	0.022	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.518**	0.389		0.326
300, 4.5.2.3/Ga-	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.009	0.064	U	0.130
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	0.232	0.480	U	0.812	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5E-W-N-9-M				5E-W-E-32-A-M				5E-W-E-53-A-M				5E-W-N-11-M			
GEL Laboratory ID				1204660600				522018005				522018006				522018010			
Collection Date				09/16/20				09/16/20				09/16/20				09/16/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Duplicate				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	**0.013**	0.012		0.007	0.023	0.032	U	0.050	0.000	0.015	U	0.033	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.000	0.005	U	0.007	0.000	0.018	U	0.036	0.005	0.014	U	0.014	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	-0.003	0.008	U	0.021	0.022	0.032	U	0.049	-0.002	0.019	U	0.043	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.009	0.145	U	0.269
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.002	0.092	U	0.183
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5E-F-4-C				5E-F-4-C				5E-W-N-9-M				5W-W-E-35-B-C			
GEL Laboratory ID				522018001				1204660599				522018004				522021001			
Collection Date				09/16/20				09/16/20				09/16/20				09/17/20			
Substrate				Concrete				Concrete				Concrete				Red Brick			
Building Surface				Floor				Floor				Wall				Wall			
QC Code				Normal				Duplicate				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.003	0.014	U	0.034	NA	NA	NA	NA	-0.003	0.011	U	0.028	0.002	0.013	U	0.026
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.000	0.013	U	0.027	0.001	0.013	U	0.027	0.007	0.013	U	0.021	0.003	0.013	U	0.024
	Cf-252	0.05	4.12	0.001	0.009	U	0.016	0.000	0.006	U	0.009	0.004	0.010	U	0.016	-0.001	0.007	U	0.017
	Cm-243/244	0.05	2.5	-0.005	0.008	U	0.023	0.000	0.006	U	0.008	0.001	0.010	U	0.021	0.001	0.011	U	0.022
DOE EML HASL 300 Pu-02-RC Mod	Pu-238	0.05	1.52	-0.005	0.011	U	0.026	NA	NA	NA	NA	0.001	0.013	U	0.026	-0.002	0.008	U	0.020
	Pu-239/240	0.05	1.37	-0.008	0.010	U	0.028	NA	NA	NA	NA	-0.002	0.012	U	0.027	-0.002	0.008	U	0.020
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.331**	0.061		0.037	NA	NA	NA	NA	**0.483**	0.072		0.035	**0.300**	0.061		0.058
	U-235/236	0.05	4.82	**0.051**	0.024		0.008	NA	NA	NA	NA	**0.050**	0.024		0.008	**0.034**	0.021		0.023
	U-238		8.4 [2]	**0.372**	0.063		0.020	NA	NA	NA	NA	**0.510**	0.073		0.020	**0.384**	0.064		0.046
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5W-W-E-35-B-C				5W-W-E-52-A-M				5W-W-E-52-A-M				5W-W-E-52-A-M			
GEL Laboratory ID				1204660601				522021003				1204658174				1204660084			
Collection Date				09/17/20				09/17/20				09/17/20				09/17/20			
Substrate				Red Brick				Red Brick				Red Brick				Red Brick			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Duplicate				Normal				Duplicate				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.001	0.009	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.000	0.005	U	0.007	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	-0.004	0.008	U	0.021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	0.025	0.147	U	0.260	0.004	0.191	U	0.333	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	0.098	0.133	U	0.136	0.091	0.119	U	0.106	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	-0.040	0.028	U	0.070	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	**2.580**	0.837		1.300	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	-0.307	0.449	U	0.778	NA	NA	NA	NA	-0.475	0.462	U	0.805

Notes:

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-16: PAOC-5

Sample ID				5W-W-S-55-C			
GEL Laboratory ID				522021002			
Collection Date				09/17/20			
Substrate				Red Brick			
Building Surface				Wall			
QC Code				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy							
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.012	0.018	U	0.047
	Cf-252	0.05	4.12	0.002	0.016	U	0.032
	Cm-243/244	0.05	2.5	0.002	0.018	U	0.036
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA
Gamma Spectroscopy							
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA
Gas Flow Proportional Counting							
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA
Liquid Scintillation Counting							
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6SW-F-12-C				6NE-F-56-C				6NE-F-56-C				6NE-F-56-C			
GEL Laboratory ID				1204660602				522022002				1204655861				1204660085			
Collection Date				09/17/20				09/17/20				09/17/20				09/17/20			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Vinyl Tile			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Duplicate				Normal				Duplicate				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.001	0.007	U	0.017	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.000	0.007	U	0.009	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	0.000	0.009	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	0.184	0.232	U	0.455	-0.025	0.090	U	0.162	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	0.007	0.057	U	0.117	-0.013	0.051	U	0.099	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	-0.035	0.031	U	0.057	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	**1.640**	0.829		1.340	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	-0.128	0.494	U	0.850	NA	NA	NA	NA	-0.039	0.512	U	0.878

Notes:

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Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for additional details

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6SW-F-12-C				6NE-W-E-8-C				6NE-W-N-8-C				6NE-W-W-3-M			
GEL Laboratory ID				522022001				522023006				522023005				522023003			
Collection Date				09/17/20				09/17/20				09/17/20				09/17/20			
Substrate				Vinyl Tile				Sheetrock				Sheetrock				Sheetrock			
Building Surface				Floor				Wall				Wall				Wall			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.008	0.013	U	0.041	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.004	0.016	U	0.031	NA	NA	NA	NA	NA	NA	NA	NA	0.002	0.014	U	0.027
	Cf-252	0.05	4.12	-0.003	0.008	U	0.021	NA	NA	NA	NA	NA	NA	NA	NA	-0.005	0.008	U	0.022
	Cm-243/244	0.05	2.5	-0.003	0.010	U	0.025	NA	NA	NA	NA	NA	NA	NA	NA	-0.011	0.014	U	0.034
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	-0.015	0.014	U	0.038	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	-0.008	0.009	U	0.027	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	-0.003	0.027	U	0.052	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	0.006	0.021	U	0.039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	0.014	0.023	U	0.039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	0.213	0.576	U	0.965	0.085	0.287	U	0.550	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	-0.143	0.104	U	0.155	0.004	0.079	U	0.150	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6NW-W-W-22-C				6NW-W-W-22-C				6SE-W-E-48-B-M				6SE-W-S-37-C			
GEL Laboratory ID				1204664512				522023002				522023008				522023009			
Collection Date				09/17/20				09/17/20				09/17/20				09/17/20			
Substrate				Sheetrock				Sheetrock				Sheetrock				Sheetrock			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Duplicate				Normal				Normal				Normal			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	-0.005	0.009	U	0.029	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.002	0.011	U	0.023	0.009	0.014	U	0.023	0.014	0.014	U	0.022	0.000	0.007	U	0.014
	Cf-252	0.05	4.12	-0.002	0.005	U	0.012	-0.003	0.007	U	0.019	0.001	0.004	U	0.004	0.001	0.007	U	0.012
	Cm-243/244	0.05	2.5	0.001	0.006	U	0.011	-0.004	0.012	U	0.028	0.001	0.004	U	0.004	0.000	0.008	U	0.015
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	-0.012	0.016	U	0.037	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	-0.002	0.014	U	0.029	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	-0.015	0.020	U	0.042	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	0.009	0.013	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	0.011	0.017	U	0.029	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:
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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6SW-W-W-N-39-M				6NE-W-E-56-C				6NW-W-E-2-M				6NW-W-N-49-C			
GEL Laboratory ID				522023007				522023004				522023001				522024001			
Collection Date				09/17/20				09/17/20				09/17/20				09/18/20			
Substrate				Sheetrock				Sheetrock				Sheetrock				Painted Block			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005	0.015	U	0.025
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.001	0.011	U	0.021	-0.003	0.011	U	0.023	0.006	0.009	U	0.015	0.003	0.014	U	0.025
	Cf-252	0.05	4.12	-0.001	0.005	U	0.012	-0.001	0.005	U	0.012	-0.002	0.005	U	0.013	0.000	0.004	U	0.004
	Cm-243/244	0.05	2.5	-0.002	0.005	U	0.014	-0.001	0.006	U	0.014	-0.006	0.006	U	0.018	0.005	0.011	U	0.018
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.024	0.019	U	0.026
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.006	0.018	U	0.033
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.882**	0.095		0.046
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.030**	0.020		0.019
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.962**	0.097		0.024
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6NW-W-W-9-M				6NW-W-N-49-C				6NW-W-W-17-M				6NW-W-W-17-M			
GEL Laboratory ID				522024002				1204664513				522024003				1204665166			
Collection Date				09/18/20				09/18/20				09/18/20				09/18/20			
Substrate				Painted Block				Painted Block				Painted Block				Painted Block			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Duplicate				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	**0.010**	0.009		0.004	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA	0.002	0.005	U	0.005	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	0.004	0.008	U	0.011	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.126	0.142	U	0.249	NA	NA	NA	NA	-0.082	0.211	U	0.347	0.082	0.437	U	0.757
	Cs-137	1	6.6	0.000	0.062	U	0.118	NA	NA	NA	NA	-0.028	0.061	U	0.093	-0.021	0.081	U	0.138
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	-0.005	0.035	U	0.070	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	-0.237	0.846	U	1.480	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	0.156	0.456	U	0.774	0.327	0.475	U	0.801

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6-NE-F-27-C				6-NE-F-28-C				6-NE-F-28-C				6-NE-F-36-C			
GEL Laboratory ID				522025002				522025003				1204664514				522025004			
Collection Date				09/18/20				09/18/20				09/18/20				09/18/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Normal				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	-0.007	0.012	U	0.038	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.006	0.009	U	0.012	0.000	0.014	U	0.026	0.006	0.012	U	0.020	0.007	0.012	U	0.018
	Cf-252	0.05	4.12	0.000	0.005	U	0.005	0.000	0.005	U	0.005	0.000	0.005	U	0.005	0.005	0.010	U	0.007
	Cm-243/244	0.05	2.5	0.002	0.008	U	0.015	0.002	0.008	U	0.015	-0.006	0.008	U	0.019	0.005	0.013	U	0.022
DOE EML HASL 300 Pu-02-RC Mod	Pu-238	0.05	1.52	NA	NA	NA	NA	-0.003	0.015	U	0.032	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	0.005	0.018	U	0.034	NA	NA	NA	NA	NA	NA	NA	NA
	U-233/234		7.8 [2]	NA	NA	NA	NA	**0.332**	0.055		0.044	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	**0.025**	0.018		0.022	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	**0.409**	0.057		0.028	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6-NE-F-7-RS				6-NE-F-8-RS				6-NE-W-E-53-M				6-NE-W-E-53-M			
GEL Laboratory ID				522025006				522025007				522025009				1204664515			
Collection Date				09/18/20				09/18/20				09/18/20				09/18/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Wall				Wall			
QC Code				Normal				Normal				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	0.006	0.016	U	0.028	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	0.005	0.008	U	0.012	-0.002	0.023	U	0.043
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA	-0.003	0.007	U	0.016	0.007	0.018	U	0.031
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA	0.003	0.009	U	0.015	0.003	0.016	U	0.029
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	-0.005	0.013	U	0.029	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	-0.007	0.010	U	0.025	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	**0.358**	0.059		0.032	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	**0.021**	0.016		0.007	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	**0.379**	0.061		0.032	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	-0.065	0.083	U	0.147	-0.045	0.138	U	0.256	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	**4.200**	0.286		0.108	**4.980**	0.140		0.040	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6-NE-F-12-C				6-NE-F-16-RS				6-NE-F-16-RS				6-NE-F-38-C			
GEL Laboratory ID				522025001				522025008				1204667410				522025005			
Collection Date				09/18/20				09/18/20				09/18/20				09/18/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Normal				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.005	0.017	U	0.031	NA	NA	NA	NA	NA	NA	NA	NA	-0.007	0.022	U	0.046
	Cf-252	0.05	4.12	0.002	0.006	U	0.006	NA	NA	NA	NA	NA	NA	NA	NA	-0.003	0.011	U	0.025
	Cm-243/244	0.05	2.5	0.016	0.014	U	0.017	NA	NA	NA	NA	NA	NA	NA	NA	0.002	0.016	U	0.030
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	0.035	0.143	U	0.242	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	0.011	0.028	U	0.050	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	0.034	0.043	U	0.072	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	-0.108	0.485	U	0.843	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	0.318	0.280	U	0.468	0.030	0.272	U	0.463	NA	NA	NA	NA

Notes:

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6SE-F-45-C				6SE-F-45-C				6SE-F-45-C				6NW-F-2-C			
GEL Laboratory ID				522026002				1204667411				1204663119				522026001			
Collection Date				09/17/20				09/17/20				09/17/20				09/17/20			
Substrate				Carpet				Carpet				Carpet				Carpet			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Duplicate				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.005	0.014	U	0.037
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.008	0.008	U	0.011
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.001	0.005	U	0.011
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.001	0.006	U	0.013
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.005	0.014	U	0.026
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.004	0.009	U	0.015
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.088**	0.033		0.037
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.013	0.019	U	0.032
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.082**	0.030		0.030
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	-0.213	0.924	U	1.290	NA	NA	NA	NA	-0.292	0.380	U	0.573	NA	NA	NA	NA
	Cs-137	1	6.6	0.008	0.172	U	0.327	NA	NA	NA	NA	0.099	0.214	U	0.444	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	0.063	0.056	U	0.092	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	-0.002	1.060	U	1.830	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	**1.100**	0.413		0.673	**1.110**	0.381		0.617	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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Table 3-17: PAOC-6

Sample ID				6NW-F-2-C				6-C-C-254				6-C-C-123				6-C-C-123			
GEL Laboratory ID				1204662779				1204667412				522027001				1204662780			
Collection Date				09/17/20				09/18/20				09/18/20				09/18/20			
Substrate				Carpet				Concrete				Concrete				Concrete			
Building Surface				Floor				Ceiling				Ceiling				Ceiling			
QC Code				Duplicate				Duplicate				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	-0.005	0.012	U	0.032	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.009	0.009	U	0.014	NA	NA	NA	NA	0.011	0.009	U	0.012	0.003	0.010	U	0.018
	Cf-252	0.05	4.12	-0.002	0.005	U	0.011	NA	NA	NA	NA	0.001	0.004	U	0.004	-0.002	0.006	U	0.013
	Cm-243/244	0.05	2.5	-0.001	0.007	U	0.015	NA	NA	NA	NA	0.001	0.005	U	0.009	0.005	0.010	U	0.018
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	-0.008	0.016	U	0.033	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	0.006	0.014	U	0.025	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	**0.521**	0.064		0.036	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	**0.040**	0.020		0.021	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	**0.552**	0.064		0.023	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	0.454	0.325	U	0.543	NA	NA	NA	NA	NA	NA	NA	NA

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-17: PAOC-6

Sample ID				6-C-C-254				6-C-C-254			
GEL Laboratory ID				522027002				1204663120			
Collection Date				09/18/20				09/18/20			
Substrate				Concrete				Concrete			
Building Surface				Ceiling				Ceiling			
QC Code				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy											
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy											
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.117	0.157	U	0.301	-0.051	0.166	U	0.312
	Cs-137	1	6.6	**0.395**	0.087		0.054	**0.461**	0.107		0.047
Gas Flow Proportional Counting											
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	-0.030	0.032	U	0.071	NA	NA	NA	NA
Liquid Scintillation Counting											
EPA 906.0 Modified	Tritium	1	64.8	0.278	0.562	U	0.956	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	0.068	0.319	U	0.541	NA	NA	NA	NA

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-18: PAOC-7

Sample ID				7-F-4-C				7-F-4-C				7-F-4-C				7-F-4-C			
GEL Laboratory ID				1204666179				1204666083				1204667381				522483001			
Collection Date				09/21/20				09/21/20				09/21/20				09/21/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Duplicate				Duplicate				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.013	0.010	U	0.036
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.029	0.030	U	0.044	NA	NA	NA	NA	NA	NA	NA	NA	0.025	0.041	U	0.069
	Cf-252	0.05	4.12	0.007	0.021	U	0.036	NA	NA	NA	NA	NA	NA	NA	NA	-0.004	0.013	U	0.029
	Cm-243/244	0.05	2.5	-0.014	0.024	U	0.055	NA	NA	NA	NA	NA	NA	NA	NA	-0.018	0.025	U	0.058
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.001	0.012	U	0.025
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.012	0.010	U	0.031
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.566**	0.080		0.050
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.011	0.021	U	0.036
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	**0.487**	0.076		0.052
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	0.034	0.242	U	0.443	NA	NA	NA	NA	0.034	0.085	U	0.137
	Cs-137	1	6.6	NA	NA	NA	NA	-0.010	0.049	U	0.079	NA	NA	NA	NA	0.039	0.035	U	0.071
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.015	0.033	U	0.069
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.212	0.830	U	1.420
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	-0.123	0.451	U	0.776	-0.644	0.422	U	0.744

Notes:

All values are reported in picoCuries per gram (pCi/g)

Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for additional details

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U = Analyte Not Identified >MDC

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Bolded Values Represent Reported Concentrations > MDC

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[2] - Release Criteria for U-234 and U-238 Adopted Based NUREG/CR-5512, Volume 3 DandD Screening Methodology scaled to a 15 mrem/yr TEDE

QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-18: PAOC-7

Sample ID				7C-4-C				7C-4-C				7C-4-C				7W-S-3-C			
GEL Laboratory ID				522486002				1204666084				1204667382				1204666180			
Collection Date				09/21/20				09/21/20				09/21/20				09/21/20			
Substrate				Vinyl Insulation				Vinyl Insulation				Vinyl Insulation				Vinyl Insulation			
Building Surface				Ceiling				Ceiling				Ceiling				Wall			
QC Code				Normal				Duplicate				Duplicate				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.018	0.014		0.014
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.002	0.006	U	0.006
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.011	0.014	U	0.032
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	0.003	0.533	U	0.903	2.880	1.910	U	4.320	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	0.012	0.307	U	0.592	-0.215	0.408	U	0.692	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	0.025	0.055	U	0.096	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	1.690	1.790	U	3.010	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	-0.162	0.462	U	0.795	NA	NA	NA	NA	-0.030	0.372	U	0.637	NA	NA	NA	NA

Notes:

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-18: PAOC-7

Sample ID				7W-S-3-C				7W-N-1-C				7W-N-1-C				7W-N-2-C			
GEL Laboratory ID				522486001				522486003				1204666181				522486004			
Collection Date				09/21/20				09/21/20				09/21/20				09/21/20			
Substrate				Vinyl Insulation				Stucco				Stucco				Stucco			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Normal				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.006	0.011	U	0.030	-0.005	0.009	U	0.023	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.027	0.022	U	0.030	0.013	0.021	U	0.036	0.023	0.021	U	0.030	NA	NA	NA	NA
	Cf-252	0.05	4.12	-0.009	0.011	U	0.029	-0.009	0.012	U	0.029	-0.007	0.010	U	0.024	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	0.007	0.013	U	0.021	-0.008	0.014	U	0.032	-0.013	0.017	U	0.038	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	0.001	0.020	U	0.040	0.000	0.012	U	0.026	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	0.010	0.022	U	0.039	0.001	0.018	U	0.036	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.209**	0.053		0.048	**0.273**	0.059		0.046	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	0.019	0.021	U	0.031	**0.030**	0.020		0.008	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	**0.210**	0.050		0.034	**0.292**	0.059		0.037	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.048	0.109	U	0.196
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.022	0.034	U	0.069
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.025	0.031	U	0.066
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.944	0.844	U	1.410
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.031	0.405	U	0.694

Notes:

All values are reported in picoCuries per gram (pCi/g)

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-18: PAOC-7

Sample ID				7W-N-2-C				7W-N-2-C			
GEL Laboratory ID				1204666085				1204667383			
Collection Date				09/21/20				09/21/20			
Substrate				Stucco				Stucco			
Building Surface				Wall				Wall			
QC Code				Duplicate				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy											
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy											
DOE HASL	Am-241	0.05	1.25	0.008	0.117	U	0.204	NA	NA	NA	NA
300, 4.5.2.3/Ga-	Cs-137	1	6.6	0.000	0.136	UI	0.153	NA	NA	NA	NA
Gas Flow Proportional Counting											
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting											
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	-0.345	0.471	U	0.818

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-18: PAOC-7

Sample ID				7CS-1-V				7CS-2-V				7CS-3-V				7W-N-1-R			
GEL Laboratory ID				580099003				580099004				580099005				580098001			
Collection Date				4/7/2022				4/7/2022				4/7/2022				4/7/2022			
Substrate				Vinyl Tile				Vinyl Tile				Vinyl Tile				Stucco			
Building Surface				Ceiling				Ceiling				Ceiling				Wall			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.015	0.024	U	0.040	-0.014	0.023	U	0.050	-0.011	0.021	U	0.049	0.000	0.007	U	0.013
	Cf-252	0.05	4.12	0.003	0.009	U	0.008	0.003	0.012	U	0.022	0.000	0.011	U	0.012	0.000	0.005	U	0.005
	Cm-243/244	0.05	2.5	-0.005	0.015	U	0.033	0.011	0.021	U	0.036	-0.004	0.016	U	0.035	-0.002	0.006	U	0.013
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-18: PAOC-7

Sample ID				7W-N-2-R				7F-1-C				7F-2-C				7F-3-C			
GEL Laboratory ID				580098002				582885003				582885004				582885005			
Collection Date				4/7/2022				44658.000				44658.000				44658.000			
Substrate				Stucco				Concrete				Concrete				Concrete			
Building Surface				Wall				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.011	0.017	U	0.026	0.010	0.013	U	0.017	-0.002	0.009	U	0.019	-0.005	0.013	U	0.028
	Cf-252	0.05	4.12	0.003	0.010	U	0.009	0.003	0.008	U	0.008	-0.001	0.007	U	0.016	-0.002	0.006	U	0.015
	Cm-243/244	0.05	2.5	0.005	0.015	U	0.026	-0.008	0.012	U	0.029	-0.006	0.007	U	0.019	-0.005	0.009	U	0.021
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Pu-239/240	0.05	1.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-235/236	0.05	4.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-238		8.4 [2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cs-137	1	6.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EPA EERF C-01 Modified	C-14	1	6.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-19: PAOC-8

Sample ID				8-F-6-C				8-F-6-C				8-F-9-C				8-F-9-C			
GEL Laboratory ID				522489001				1204662781				522489002				1204663121			
Collection Date				09/21/20				09/21/20				09/21/20				09/21/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Duplicate				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.016	0.017	U	0.048	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.005	0.013	U	0.024	**0.019**	0.013		0.016	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.002	0.007	U	0.012	0.001	0.006	U	0.010	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	0.002	0.009	U	0.017	-0.007	0.011	U	0.024	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	0.000	0.010	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	0.007	0.012	U	0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.645**	0.077		0.025	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	**0.053**	0.025		0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	**0.585**	0.073		0.026	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	0.049	0.138	U	0.264	-0.034	0.232	U	0.397
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	0.017	0.033	U	0.067	0.016	0.035	U	0.072
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	-0.006	0.043	U	0.078	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	0.289	0.568	U	0.966	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	-0.392	0.317	U	0.548	NA	NA	NA	NA

Notes:

All values are reported in picoCuries per gram (pCi/g)

Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for additional details

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-19: PAOC-8

Sample ID				8-F-9-C			
GEL Laboratory ID				1204667413			
Collection Date				09/21/20			
Substrate				Concrete			
Building Surface				Floor			
QC Code				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy							
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA
Gamma Spectroscopy							
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA
Gas Flow Proportional Counting							
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA
Liquid Scintillation Counting							
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	0.419	0.319	U	0.533

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-19: PAOC-8

Sample ID				8F-1-C				8F-2-C				8F-3-C				8F-4-C			
GEL Laboratory ID				582885006				582885007				52885008				52885011			
Collection Date				4/7/2022				4/7/2022				4/7/2022				4/7/2022			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.005	0.011	U	0.017	-0.010	0.011	U	0.031	0.003	0.009	U	0.015	-0.002	0.016	U	0.035
	Cf-252	0.05	4.12	-0.002	0.008	U	0.019	-0.002	0.008	U	0.020	0.002	0.007	U	0.007	-0.006	0.015	U	0.037
	Cm-243/244	0.05	2.5	-0.012	0.012	U	0.032	0.007	0.016	U	0.029	-0.006	0.011	U	0.027	0.006	0.016	U	0.027
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Pu-239/240	0.05	1.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-235/236	0.05	4.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-238		8.4 [2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cs-137	1	6.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EPA EERF C-01 Modified	C-14	1	6.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-19: PAOC-8

Sample ID				8F-5-C				8F-7-C				8F-8-C				8F-1-C-R			
GEL Laboratory ID				582885009				582885015				582885016				582885009			
Collection Date				4/7/2022				4/7/2022				4/7/2022				4/7/2022			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.002	0.022	U	0.043	-0.007	0.011	U	0.025	0.002	0.014	U	0.027	0.005	0.016	U	0.029
	Cf-252	0.05	4.12	0.003	0.010	U	0.010	-0.002	0.005	U	0.012	0.005	0.009	U	0.008	-0.002	0.007	U	0.018
	Cm-243/244	0.05	2.5	-0.002	0.013	U	0.030	-0.003	0.012	U	0.024	0.003	0.012	U	0.023	-0.008	0.009	U	0.027
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Pu-239/240	0.05	1.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-235/236	0.05	4.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-238		8.4 [2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cs-137	1	6.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EPA EERF C-01 Modified	C-14	1	6.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

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QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-19: PAOC-8

Sample ID				8F-2-C-R				8F-4-C-R				8F-5-C-R			
GEL Laboratory ID				582885010				582885013				582885014			
Collection Date				4/7/2022				4/7/2022				4/7/2022			
Substrate				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor			
QC Code				Normal				Normal				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy															
ASTM C 1475-00 Modified	Np-237	0.05	0.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	-0.005	0.013	U	0.031	0.014	0.021	U	0.031	0.012	0.018	U	0.028
	Cf-252	0.05	4.12	0.001	0.010	U	0.019	-0.003	0.011	U	0.027	0.004	0.013	U	0.021
	Cm-243/244	0.05	2.5	-0.006	0.015	U	0.034	0.007	0.020	U	0.035	0.000	0.013	U	0.028
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Pu-239/240	0.05	1.37	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-235/236	0.05	4.82	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	U-238		8.4 [2]	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gamma Spectroscopy															
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	Cs-137	1	6.6	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Gas Flow Proportional Counting															
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Liquid Scintillation Counting															
EPA 906.0 Modified	Tritium	1	64.8	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
EPA EERF C-01 Modified	C-14	1	6.96	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A

Notes:

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-20: PAOC-9

Sample ID				9-F-11-C				9-F-11-C				9-F-17-C				9-F-17-C			
GEL Laboratory ID				522492001				1204666183				522492002				1204665953			
Collection Date				09/21/20				09/21/20				09/21/20				09/21/20			
Substrate				Concrete				Concrete				Concrete				Concrete			
Building Surface				Floor				Floor				Floor				Floor			
QC Code				Normal				Duplicate				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.018	0.014	U	0.036	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.016	0.020	U	0.032	0.016	0.024	U	0.040	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.005	0.015	U	0.026	0.000	0.006	U	0.007	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	-0.005	0.019	U	0.039	-0.002	0.010	U	0.021	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	-0.019	0.013	U	0.038	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	-0.012	0.016	U	0.039	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.478**	0.068		0.037	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	**0.054**	0.024		0.018	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	**0.524**	0.070		0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	-0.099	0.131	U	0.234	-0.064	0.118	U	0.213
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	0.017	0.050	U	0.100	0.114	0.126	U	0.164
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	0.037	0.047	U	0.080	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	-0.898	0.839	U	1.500	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	0.106	0.450	U	0.774	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-20: PAOC-9

Sample ID				9-F-17-C				9-W-E-18-C				9-W-E-18-C				9-W-N-6-C			
GEL Laboratory ID				1204667401				522493001				1204666184				522493002			
Collection Date				09/21/20				09/21/20				09/21/20				09/21/20			
Substrate				Concrete				Vinyl Insulation				Vinyl Insulation				Vinyl Insulation			
Building Surface				Floor				Wall				Wall				Wall			
QC Code				Duplicate				Normal				Duplicate				Normal			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	-0.014	0.015	U	0.037	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	0.005	0.013	U	0.022	0.000	0.015	U	0.029	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA	0.002	0.006	U	0.006	0.002	0.007	U	0.006	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	-0.007	0.012	U	0.027	-0.008	0.012	U	0.029	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	-0.003	0.012	U	0.029	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	0.007	0.012	U	0.017	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	0.019	0.033	U	0.057	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	0.006	0.019	U	0.034	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	0.030	0.025	U	0.033	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.066	1.270	U	2.230
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.082	0.281	U	0.498
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.011	0.048	U	0.098
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.817	1.440	U	2.540
EPA EERF C-01 Modified	C-14	1	6.96	0.280	0.408	U	0.690	NA	NA	NA	NA	NA	NA	NA	NA	-0.085	0.347	U	0.603

Notes:

All values are reported in picoCuries per gram (pCi/g)

Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for additional details

NA = Not Analyzed

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[2] - Release Criteria for U-234 and U-238 Adopted Based NUREG/CR-5512, Volume 3 DandD Screening Methodology scaled to a 15 mrem/yr TEDE

QC Code Normal = Sample, Duplicate = Duplicate of Sample

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-20: PAOC-9

Sample ID				9-W-N-6-C				9-W-N-6-C				9-W-S-21-C				9-W-S-21-C			
GEL Laboratory ID				1204665954				1204667402				1204665955				522496002			
Collection Date				09/21/20				09/21/20				09/21/20				09/21/20			
Substrate				Vinyl Insulation				Vinyl Insulation				Stucco				Stucco			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Duplicate				Duplicate				Duplicate				Normal			
Analysis Method	Analyte	NMED RCB Required MDC	NMED RCB Volumetric Release Criterion[1]	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL	Am-241	0.05	1.25	-0.244	1.830	U	3.320	NA	NA	NA	NA	0.300	0.283	U	0.519	0.058	0.159	U	0.305
300, 4.5.2.3/Ga-	Cs-137	1	6.6	0.047	0.326	U	0.648	NA	NA	NA	NA	0.021	0.056	U	0.105	**0.068**	0.046		0.068
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.014	0.033	U	0.059
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	-0.044	0.826	U	1.430
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	-0.198	0.359	U	0.629	NA	NA	NA	NA	0.520	0.480	U	0.801

Notes:

All values are reported in picoCuries per gram (pCi/g)

Table summarizes lab results following quality assurance (QA)/quality control (QC) evaluation of data- see QA/QC Evaluation (Appendix D)/Laboratory Reports (Appendix E) for additional details

NA = Not Analyzed

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[2] - Release Criteria for U-234 and U-238 Adopted Based NUREG/CR-5512, Volume 3 DandD Screening Methodology scaled to a 15 mrem/yr TEDE

QC Code Normal = Sample, Duplicate = Duplicate of Sample

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-20: PAOC-9

Sample ID				9-W-S-21-C				9-W-S-22-C				9-W-S-22-C			
GEL Laboratory ID				1204667403				522496001				1204666185			
Collection Date				09/21/20				09/21/20				09/21/20			
Substrate				Stucco				Stucco				Stucco			
Building Surface				Wall				Wall				Wall			
QC Code				Duplicate				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy															
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA	-0.003	0.008	U	0.019	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA	0.009	0.016	U	0.024	**0.026**	0.019		0.020
	Cf-252	0.05	4.12	NA	NA	NA	NA	**0.029**	0.023		0.025	0.022	0.020	U	0.026
	Cm-243/244	0.05	2.5	NA	NA	NA	NA	0.022	0.020	U	0.024	**0.039**	0.024		0.029
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA	0.005	0.012	U	0.019	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA	0.002	0.013	U	0.026	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA	**0.332**	0.067		0.038	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA	0.023	0.021	U	0.025	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA	**0.348**	0.069		0.040	NA	NA	NA	NA
Gamma Spectroscopy															
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gas Flow Proportional Counting															
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Liquid Scintillation Counting															
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	0.594	0.487	U	0.808	NA	NA	NA	NA	NA	NA	NA	NA

Notes:

All values are reported in picoCuries per gram (pCi/g)

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BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-21: PAOC-10

Sample ID				10-W-E-4-C				10-W-E-4-C				10-W-W-13-C				10-W-W-13-C			
GEL Laboratory ID				522488001				1204666182				522488002				1204665952			
Collection Date				09/21/20				09/21/20				09/21/20				09/21/20			
Substrate				Ceramic Tile				Ceramic Tile				Ceramic Tile				Ceramic Tile			
Building Surface				Wall				Wall				Wall				Wall			
QC Code				Normal				Duplicate				Normal				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy																			
ASTM C 1475-00 Modified	Np-237	0.05	0.6	-0.006	0.008	U	0.021	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	0.008	0.013	U	0.023	0.003	0.012	U	0.021	NA	NA	NA	NA	NA	NA	NA	NA
	Cf-252	0.05	4.12	0.000	0.004	U	0.004	0.000	0.005	U	0.005	NA	NA	NA	NA	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	-0.006	0.010	U	0.022	-0.007	0.009	U	0.023	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	0.001	0.014	U	0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	0.005	0.013	U	0.024	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	**0.397**	0.059		0.036	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-235/236	0.05	4.82	**0.025**	0.017		0.020	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
	U-238		8.4 [2]	**0.467**	0.062		0.029	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Gamma Spectroscopy																			
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA	NA	NA	NA	NA	-0.120	0.223	U	0.345	0.030	0.358	U	0.580
	Cs-137	1	6.6	NA	NA	NA	NA	NA	NA	NA	NA	0.013	0.043	U	0.080	0.002	0.057	U	0.091
Gas Flow Proportional Counting																			
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA	NA	NA	NA	NA	-0.038	0.033	U	0.078	NA	NA	NA	NA
Liquid Scintillation Counting																			
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA	NA	NA	NA	NA	-0.716	0.808	U	1.440	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	NA	NA	NA	NA	NA	NA	NA	NA	-0.086	0.304	U	0.528	NA	NA	NA	NA

Notes:

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THERMO EBERLINE LLC
BUILDING CHARACTERIZATION - VOLUMETRIC LABORATORY ANALYSES
Table 3-21: PAOC-10

Sample ID				10-W-W-13-C			
GEL Laboratory ID				1204667400			
Collection Date				09/21/20			
Substrate				Ceramic Tile			
Building Surface				Wall			
QC Code				Duplicate			
Analysis Method	**Analyte**	**NMED RCB Required MDC**	**NMED RCB Volumetric Release Criterion[1]**	Result	Uncertainty	Qualifier	MDC
Alpha Spectroscopy							
ASTM C 1475-00 Modified	Np-237	0.05	0.6	NA	NA	NA	NA
DOE EML HASL 300 Am-05-RC Mod	Am-241	0.05	1.25	NA	NA	NA	NA
	Cf-252	0.05	4.12	NA	NA	NA	NA
	Cm-243/244	0.05	2.5	NA	NA	NA	NA
DOE EML HASL 300 Pu-	Pu-238	0.05	1.52	NA	NA	NA	NA
	Pu-239/240	0.05	1.37	NA	NA	NA	NA
DOE EML HASL 300 U-02-RC Mod	U-233/234		7.8 [2]	NA	NA	NA	NA
	U-235/236	0.05	4.82	NA	NA	NA	NA
	U-238		8.4 [2]	NA	NA	NA	NA
Gamma Spectroscopy							
DOE HASL 300, 4.5.2.3/Ga-	Am-241	0.05	1.25	NA	NA	NA	NA
	Cs-137	1	6.6	NA	NA	NA	NA
Gas Flow Proportional Counting							
EPA 905.0 Modified/DOE RP501 Rev. 1 Modified	Sr-90	0.1	1.03	NA	NA	NA	NA
Liquid Scintillation Counting							
EPA 906.0 Modified	Tritium	1	64.8	NA	NA	NA	NA
EPA EERF C-01 Modified	C-14	1	6.96	-0.117	0.352	U	0.613

Notes:

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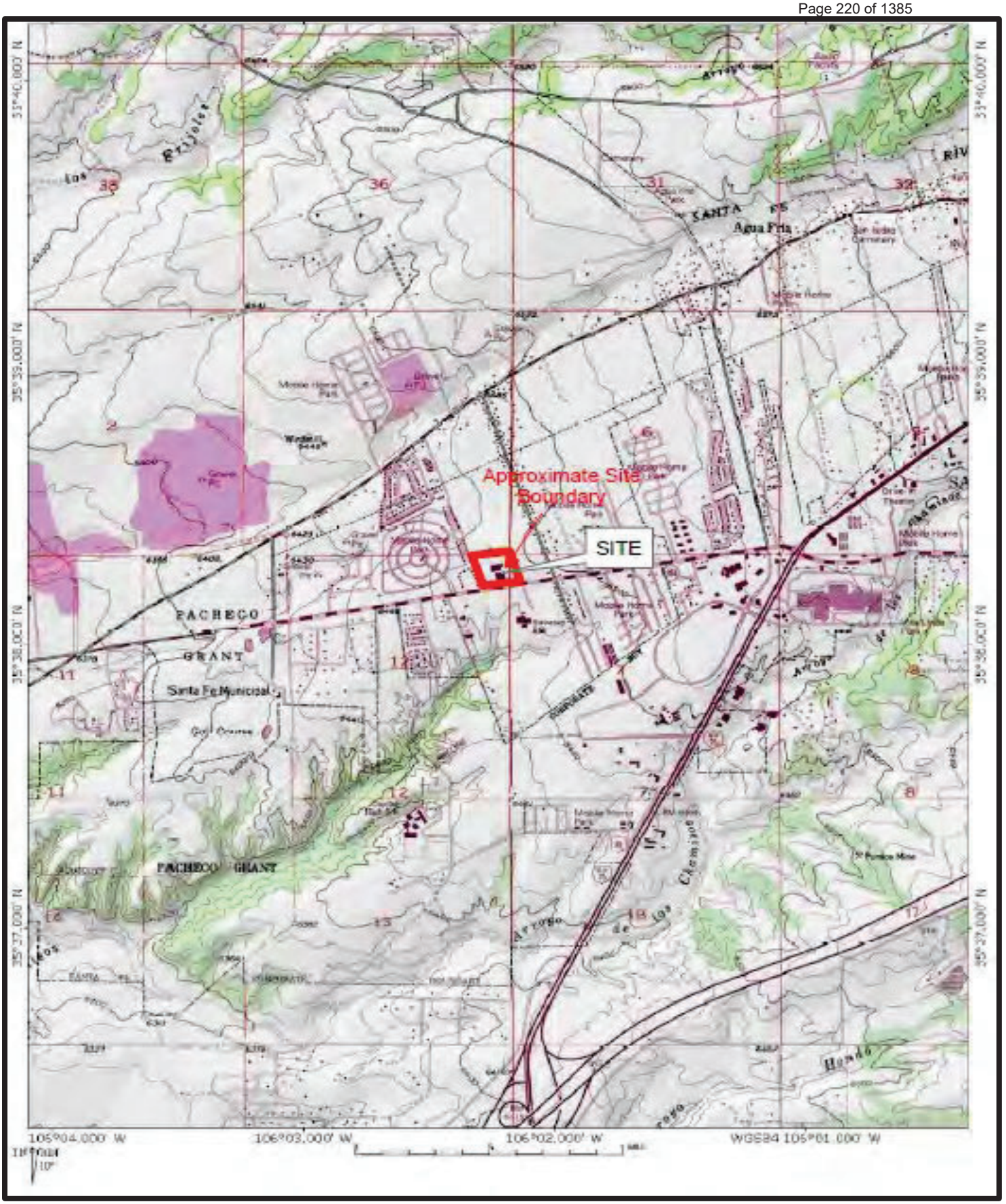

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FIGURE 1-1: SITE LOCUS MAP

THERMO EBERLINE LLC

5981 AIRPORT ROAD, SANTA FE, NM

Source: National Geographic Holdings, Inc. TOPO!, 200

Legend

- Approximate Site Boundary
- Contour Interval (20 ft)

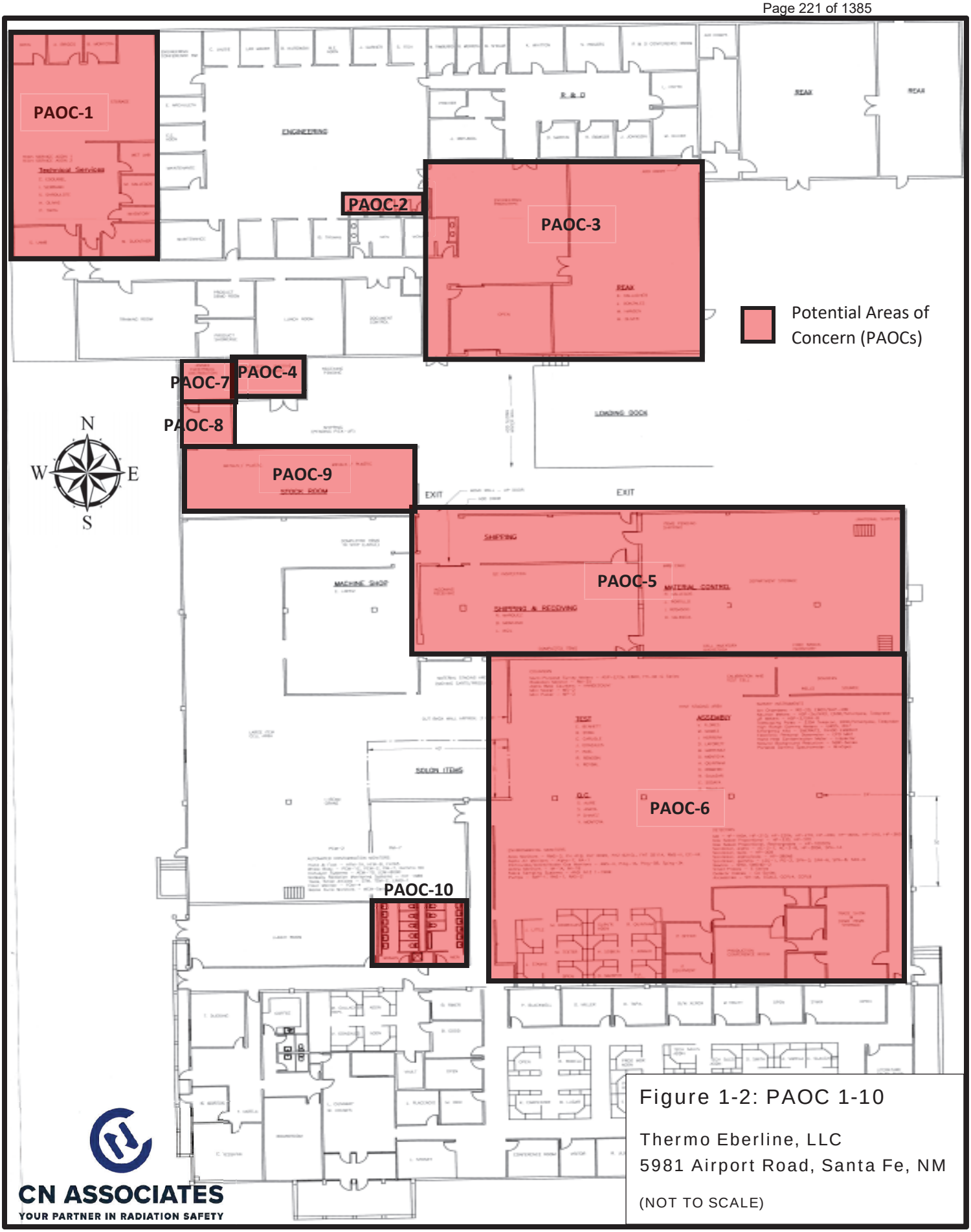

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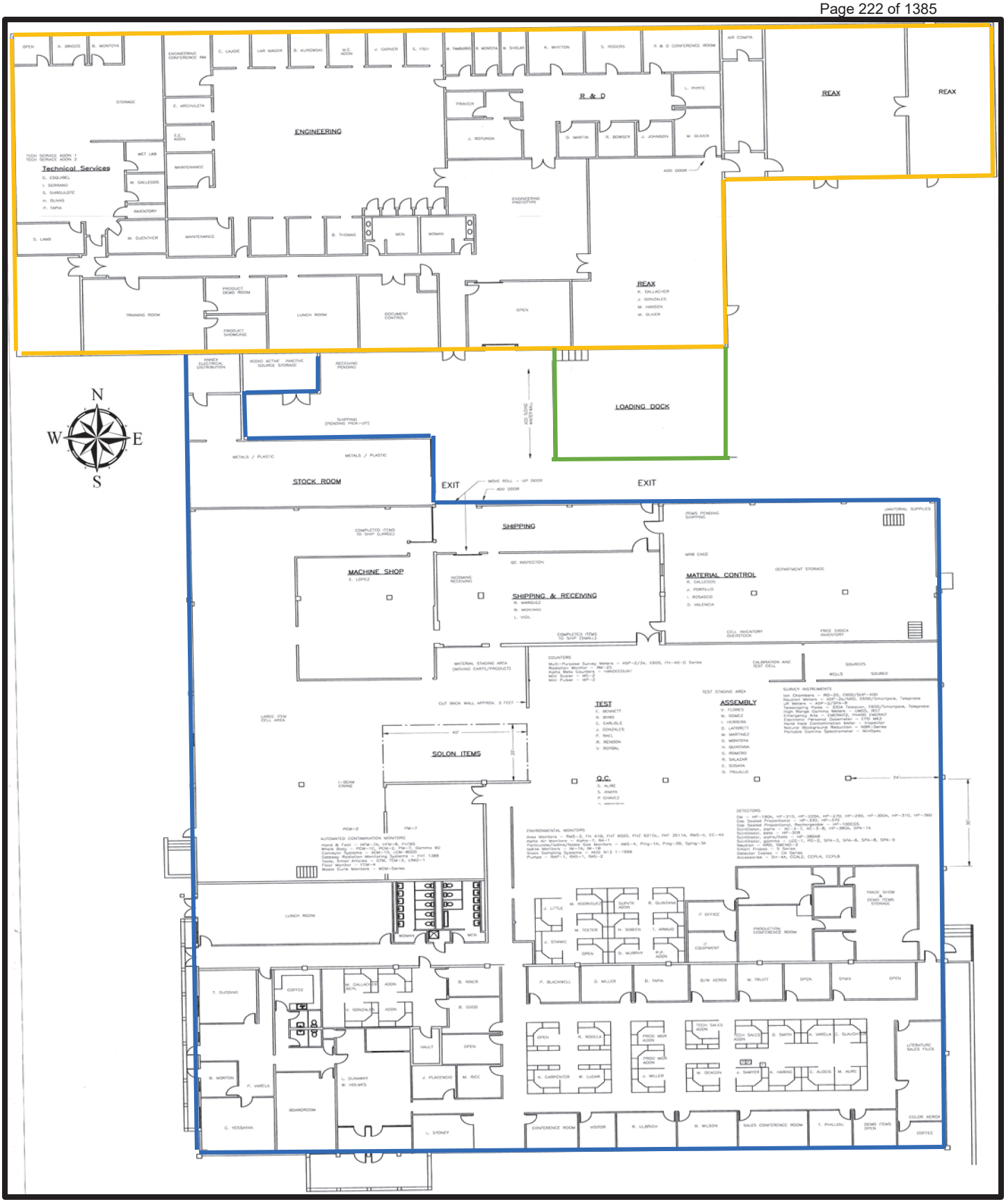
Figure 1-2: PAOC 1-10

Thermo Eberline, LLC
5981 Airport Road, Santa Fe, NM

(NOT TO SCALE)



F RE 2-1: S TE LOC S MAP

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(NOT TO SCALE)

ANNE

LOA N OC

MA N L N

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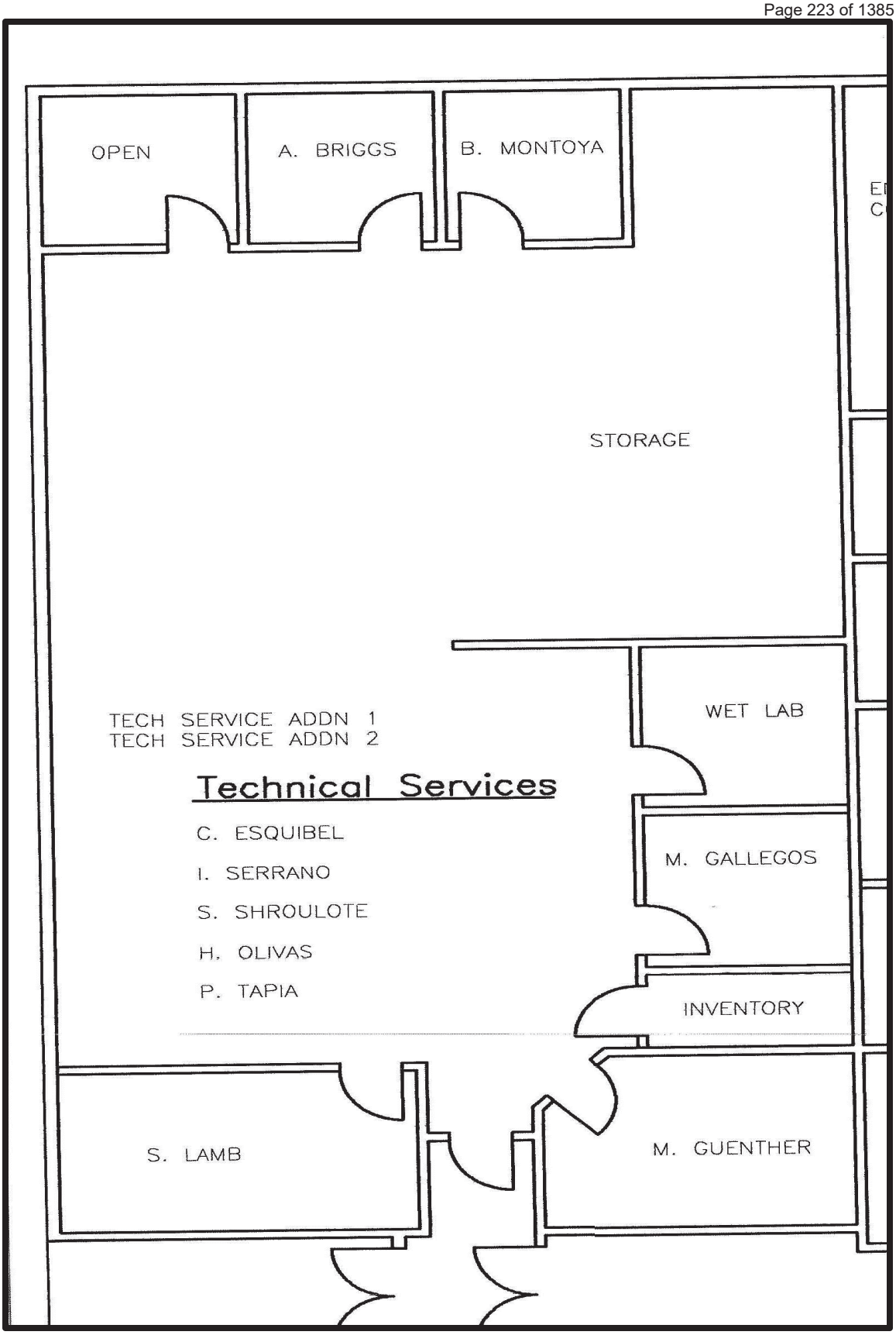

F RE 2-2: PAOC-1 (Anne)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(NOT TO SCALE)

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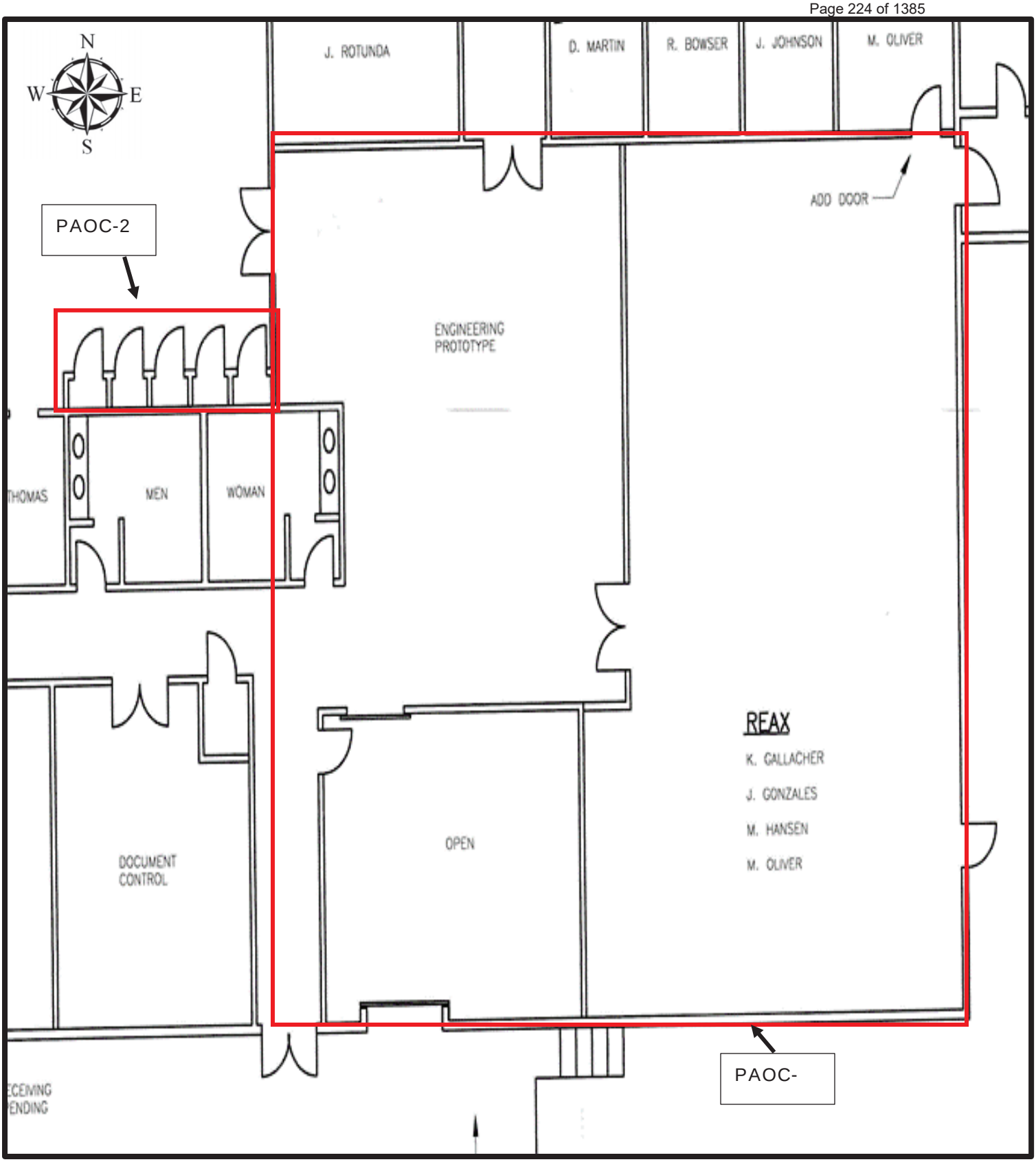

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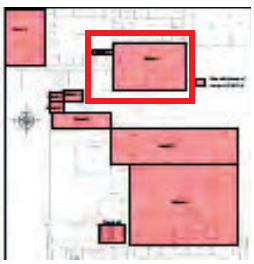
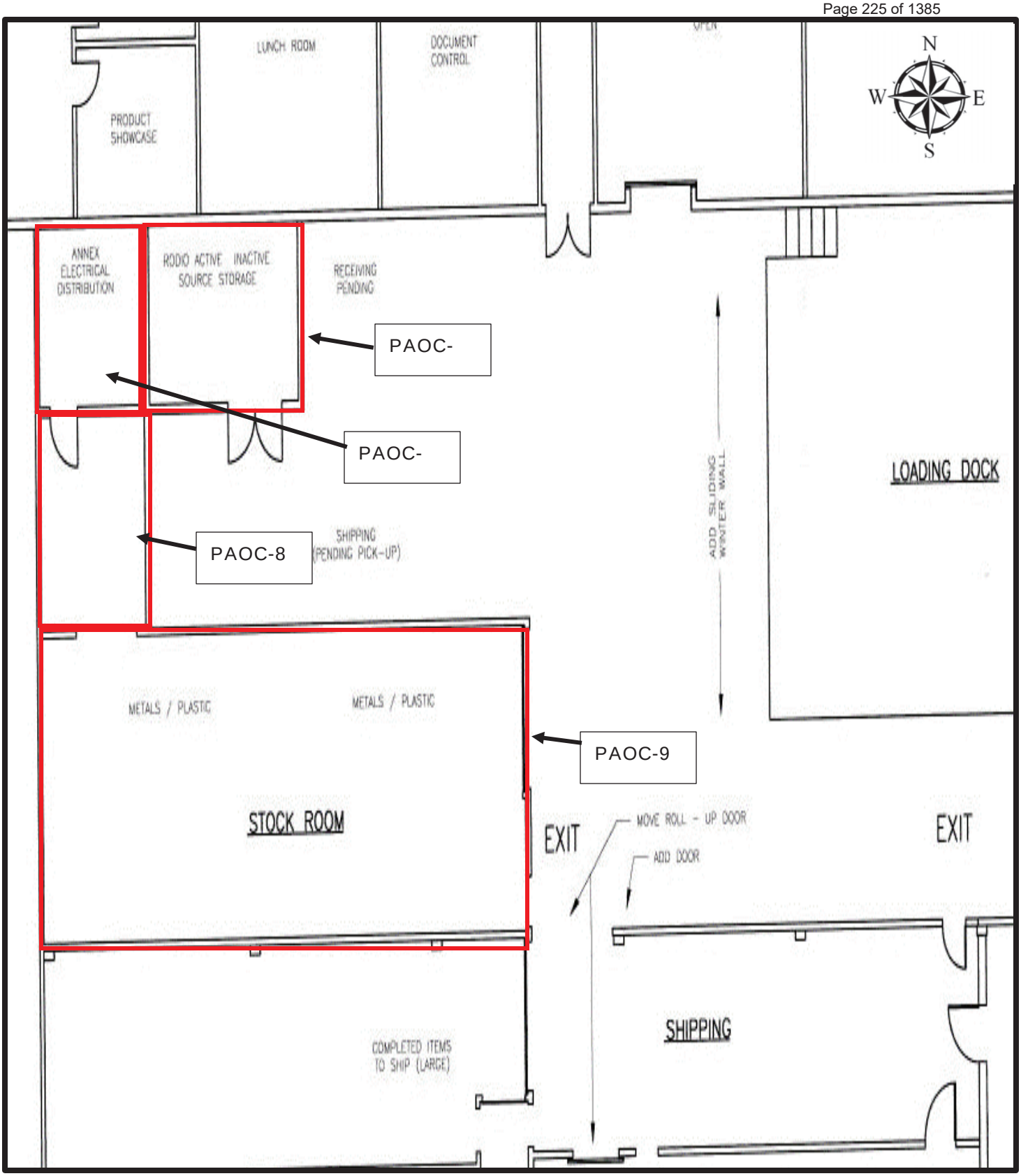
F RE 2- : PAOC-2 (Anne)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(NOT TO SCALE)





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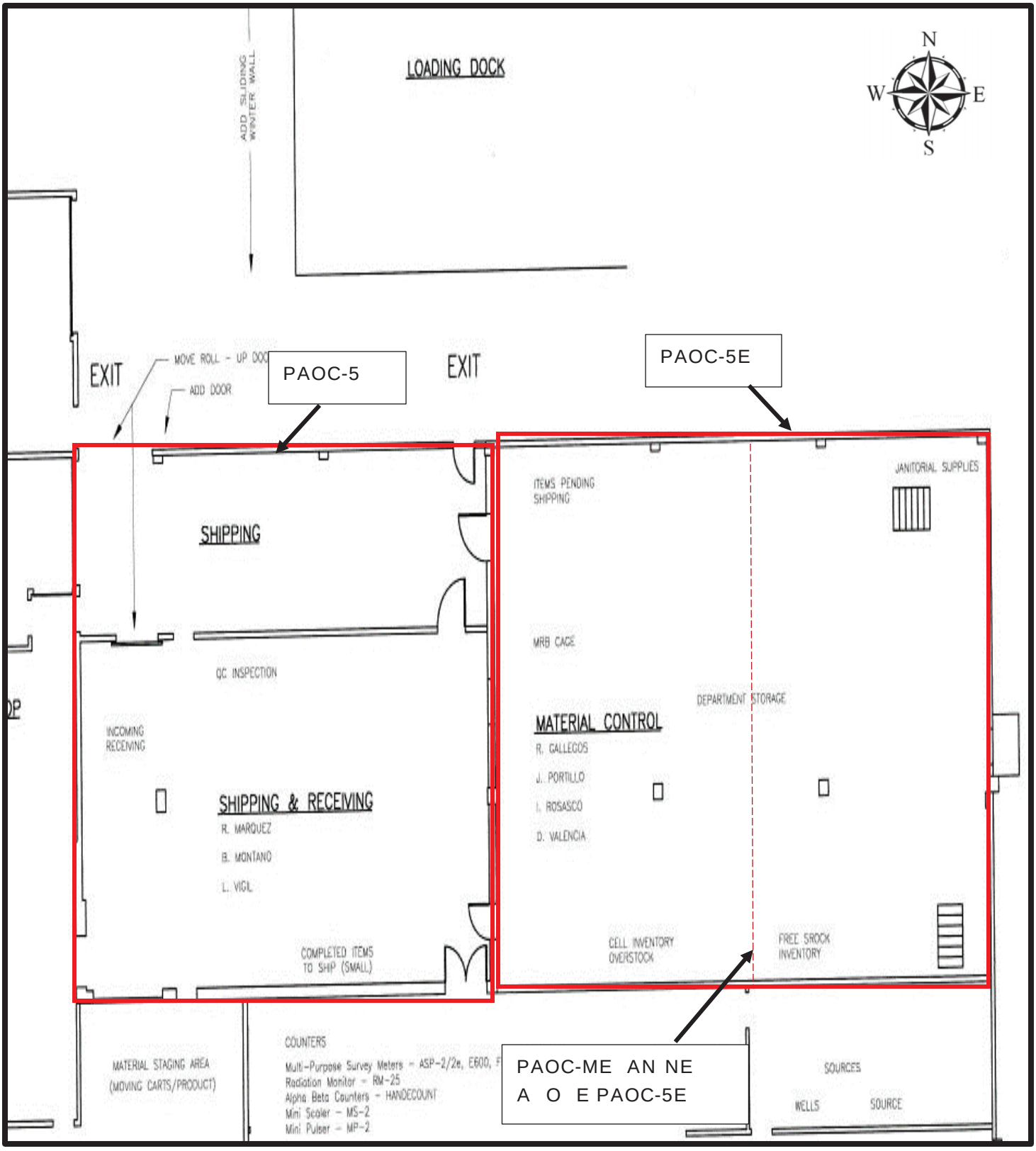
F RE 2- : PAOC- , , 8 9

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(NOT TO SCALE)



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F RE 2-5: PAOC-5 , 5E 5ME

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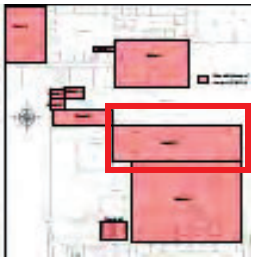
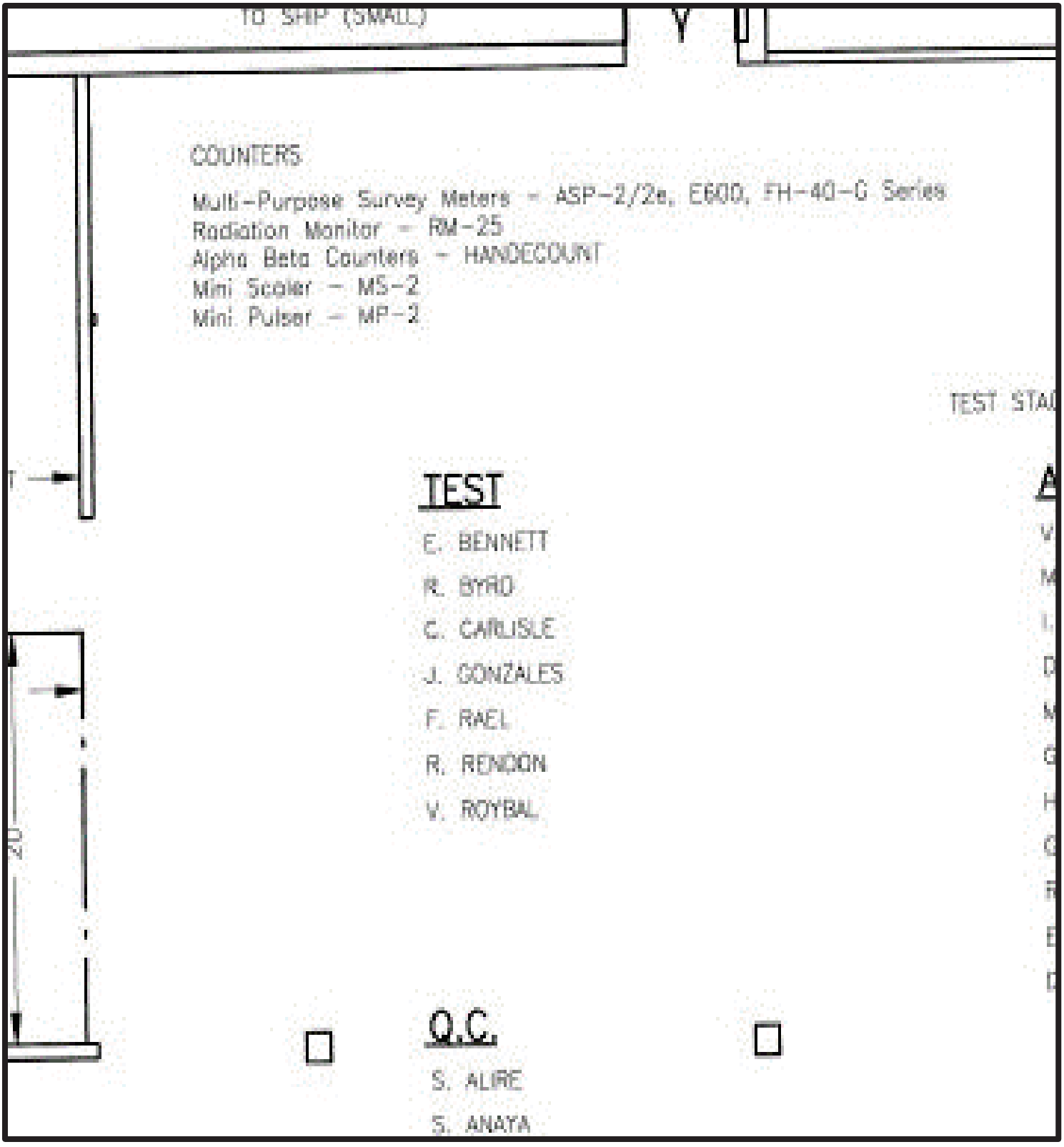
(NOT TO SCALE)





CN ASSOCIATES
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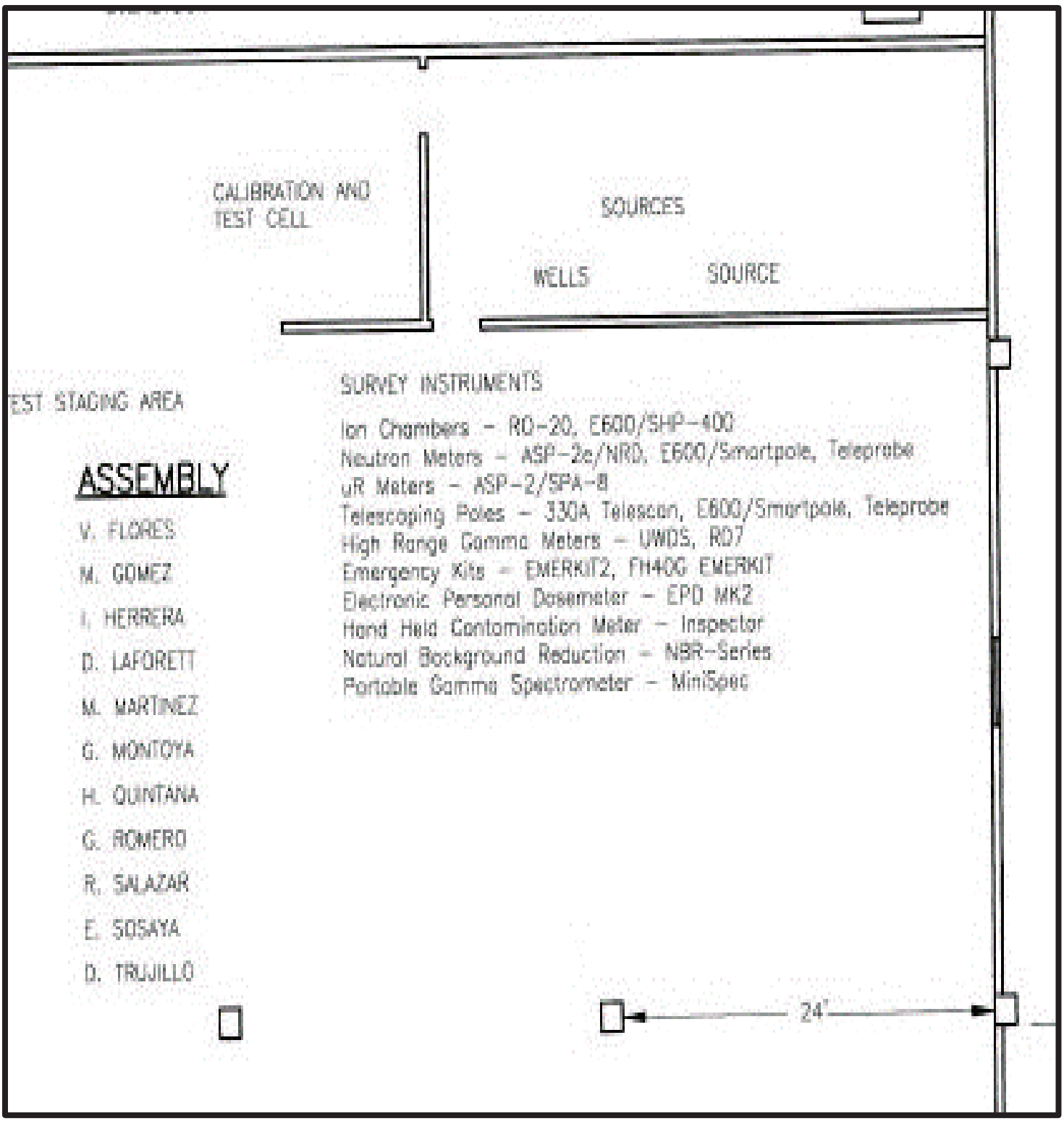
F RE 2- : PAOC- N

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(NOT TO SCALE)



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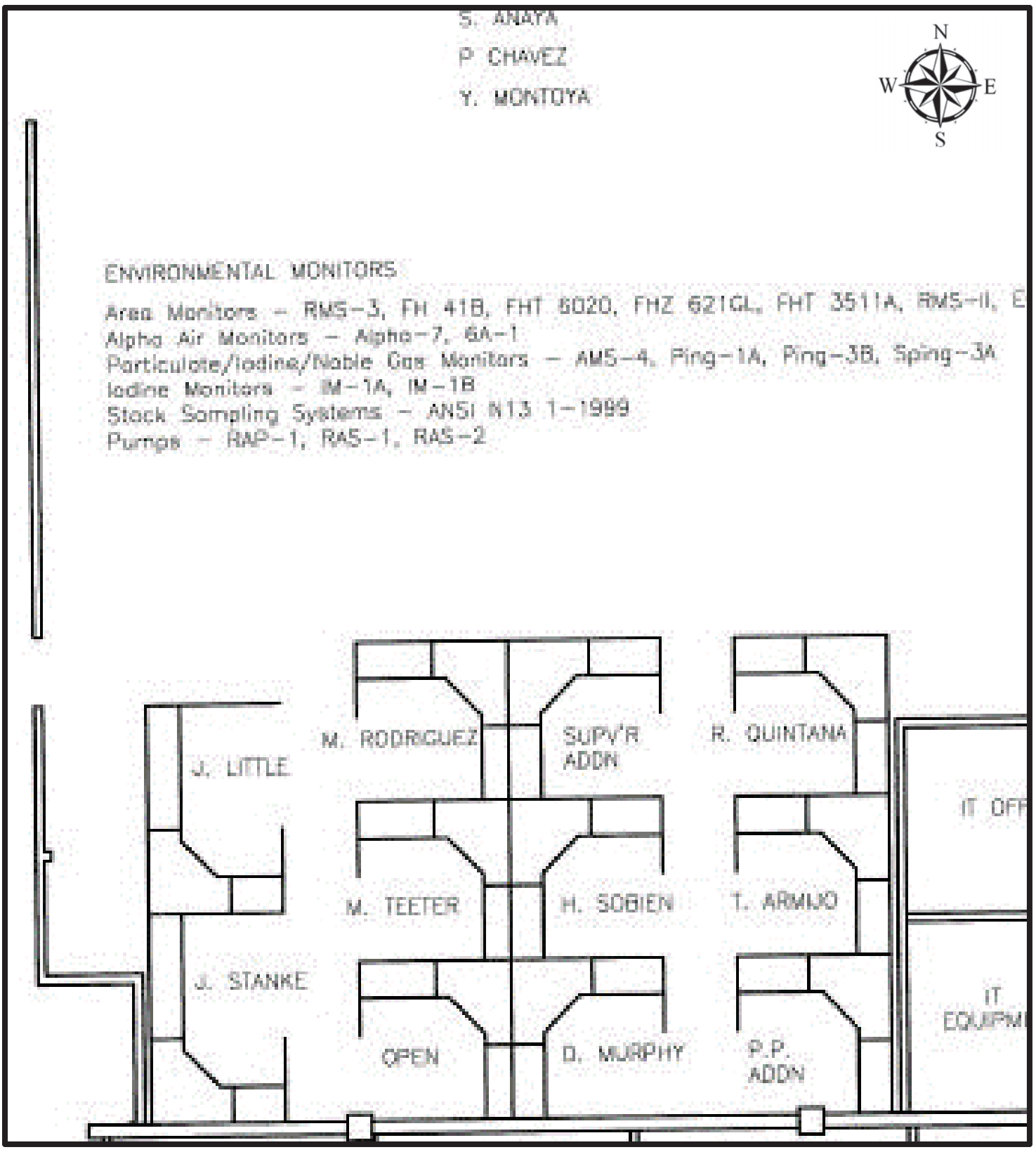
YOUR PARTNER IN RADIATION SAFETY

F RE 2- : PAOC- NE

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(NOT TO SCALE)



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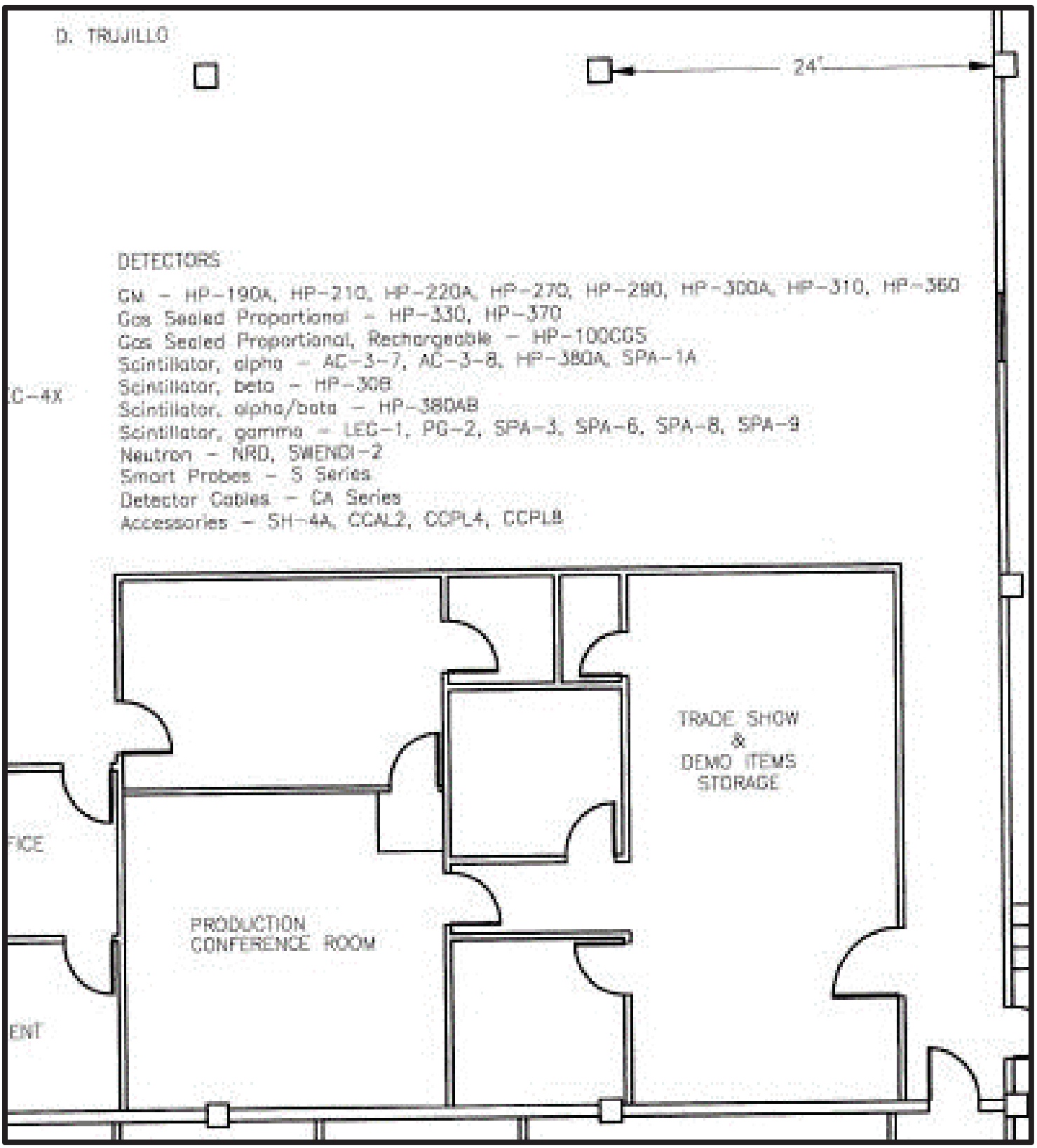
F RE 2-8: PAOC- S

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(NOT TO SCALE)



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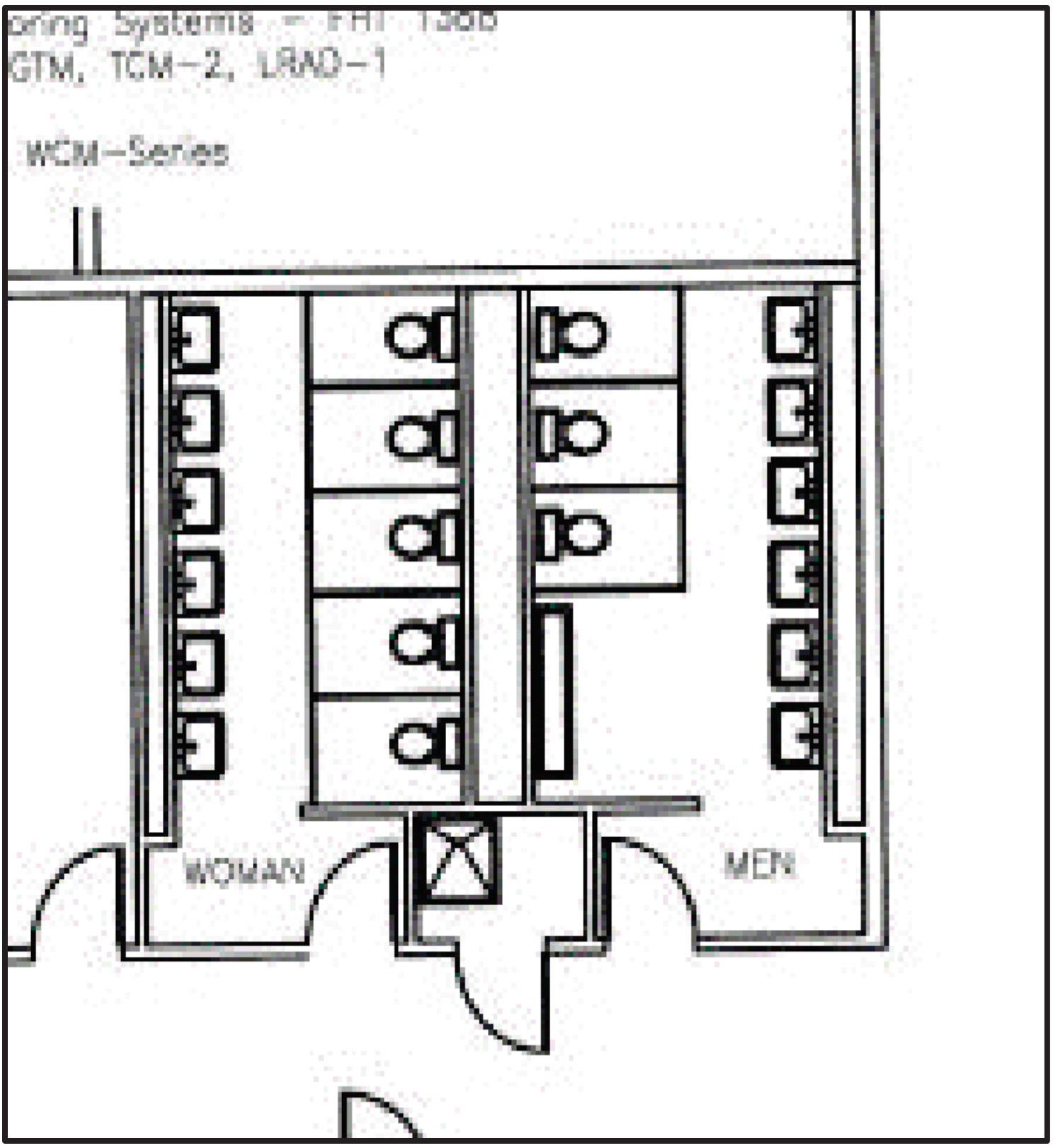
F RE 2-9: PAOC- SE

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(NOT TO SCALE)



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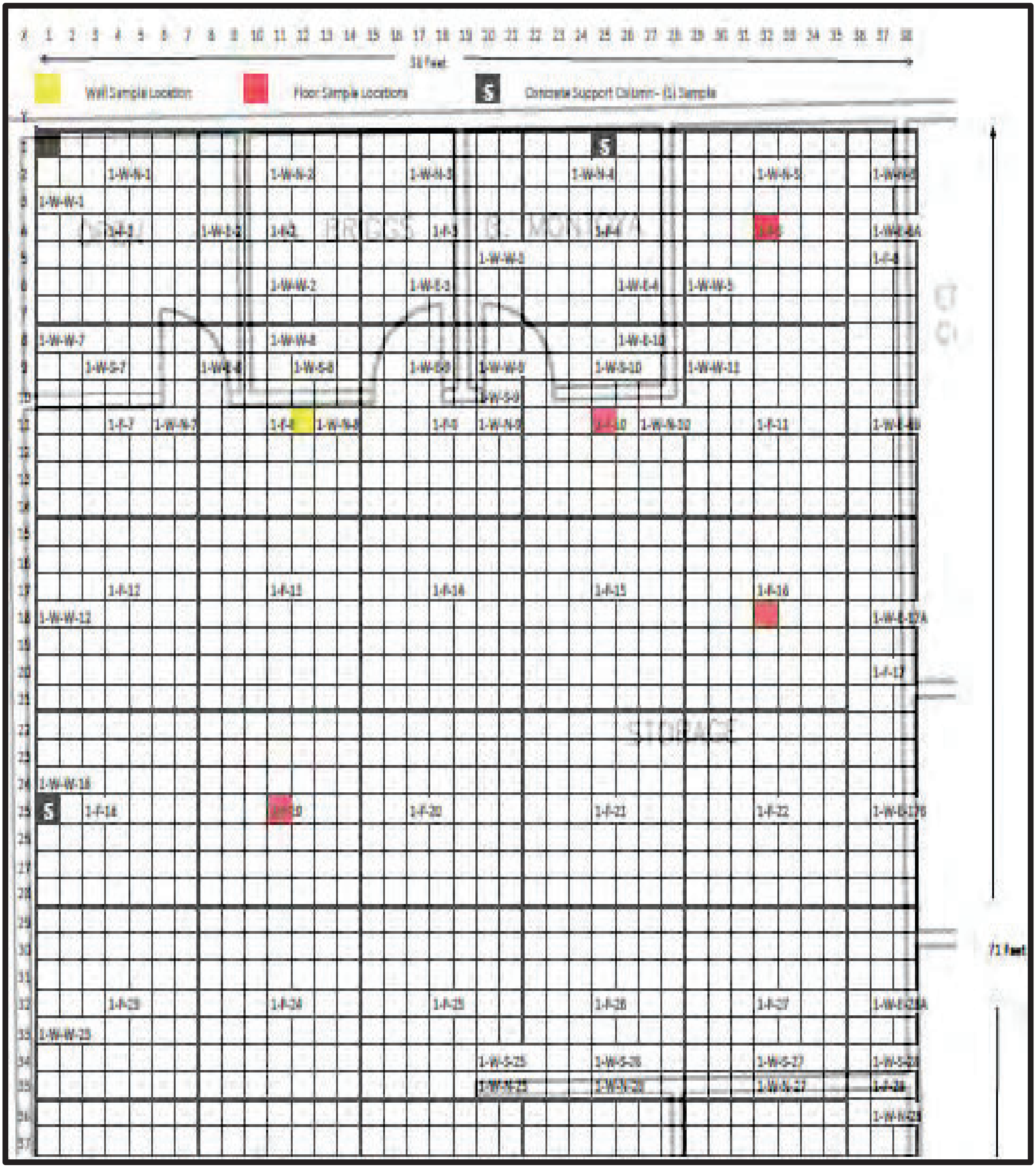
F RE 2-10: PAOC-10

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(NOT TO SCALE)



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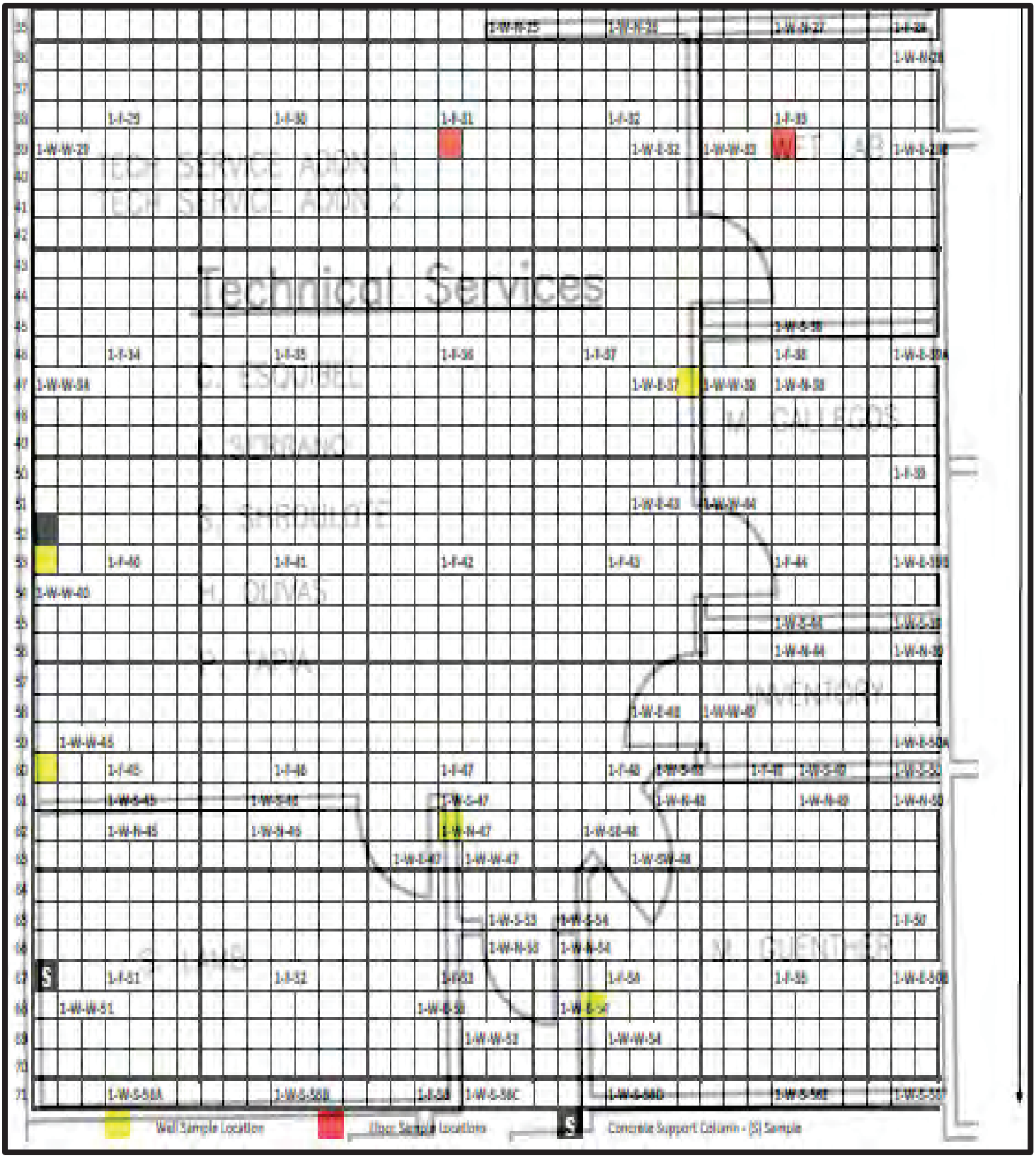
F RE 2-11: PAOC-1 R MAP
(North al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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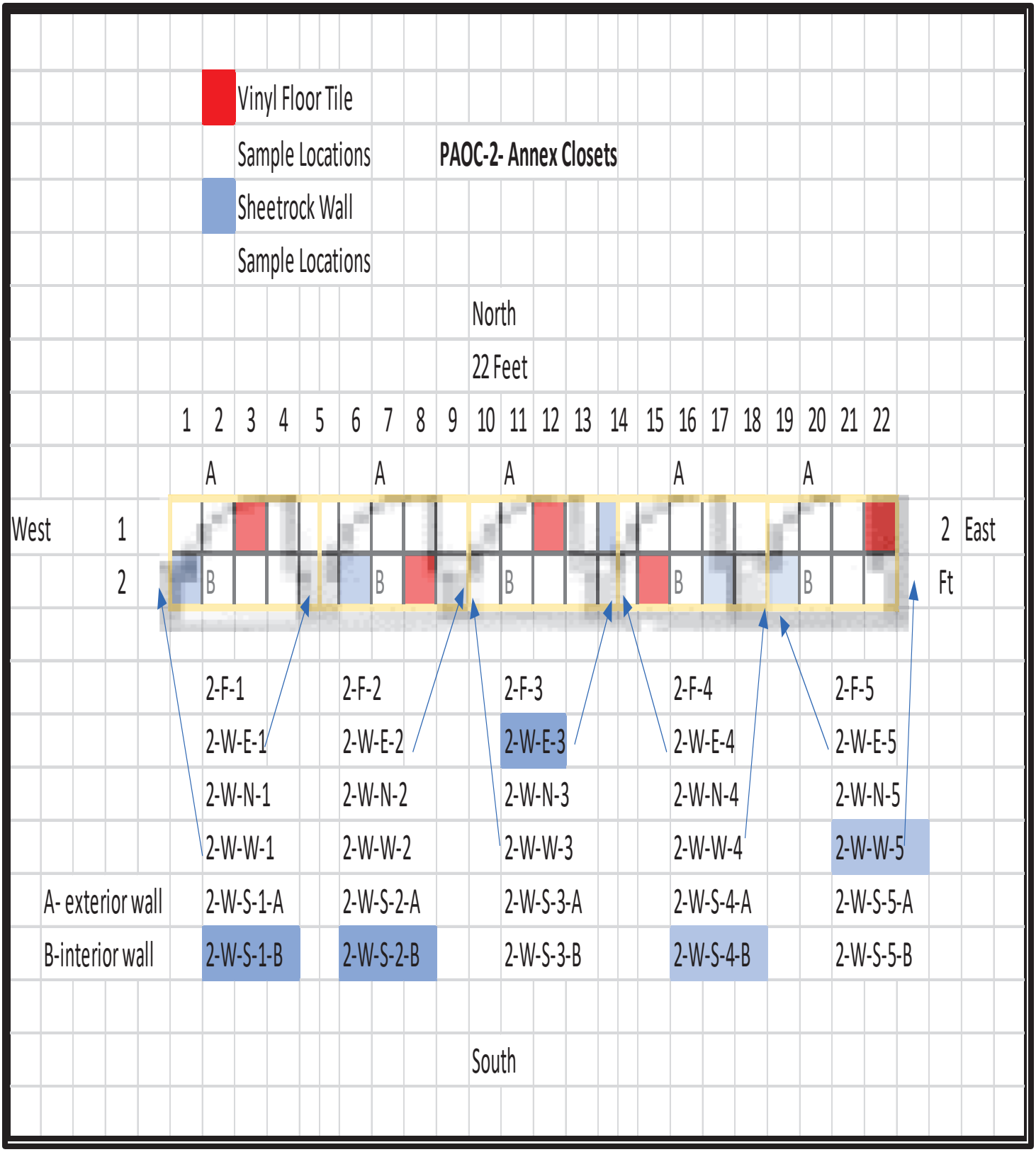
F RE 2-12: PAOC-1 R MAP
(South al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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F RE 2-1 : PAOC-2 R MAP

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)

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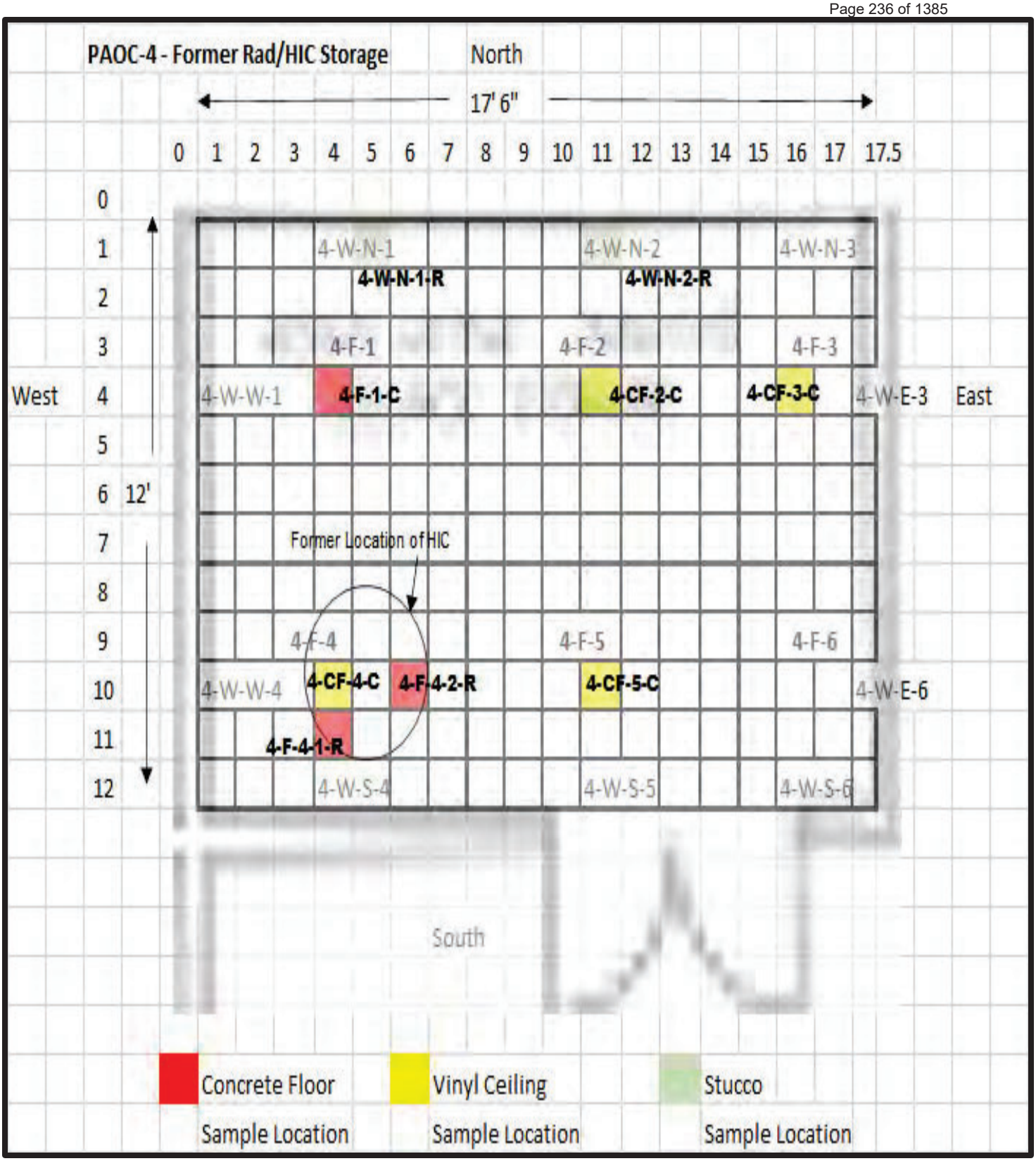
F RE 2-1 : PAOC- R MAP
(e t al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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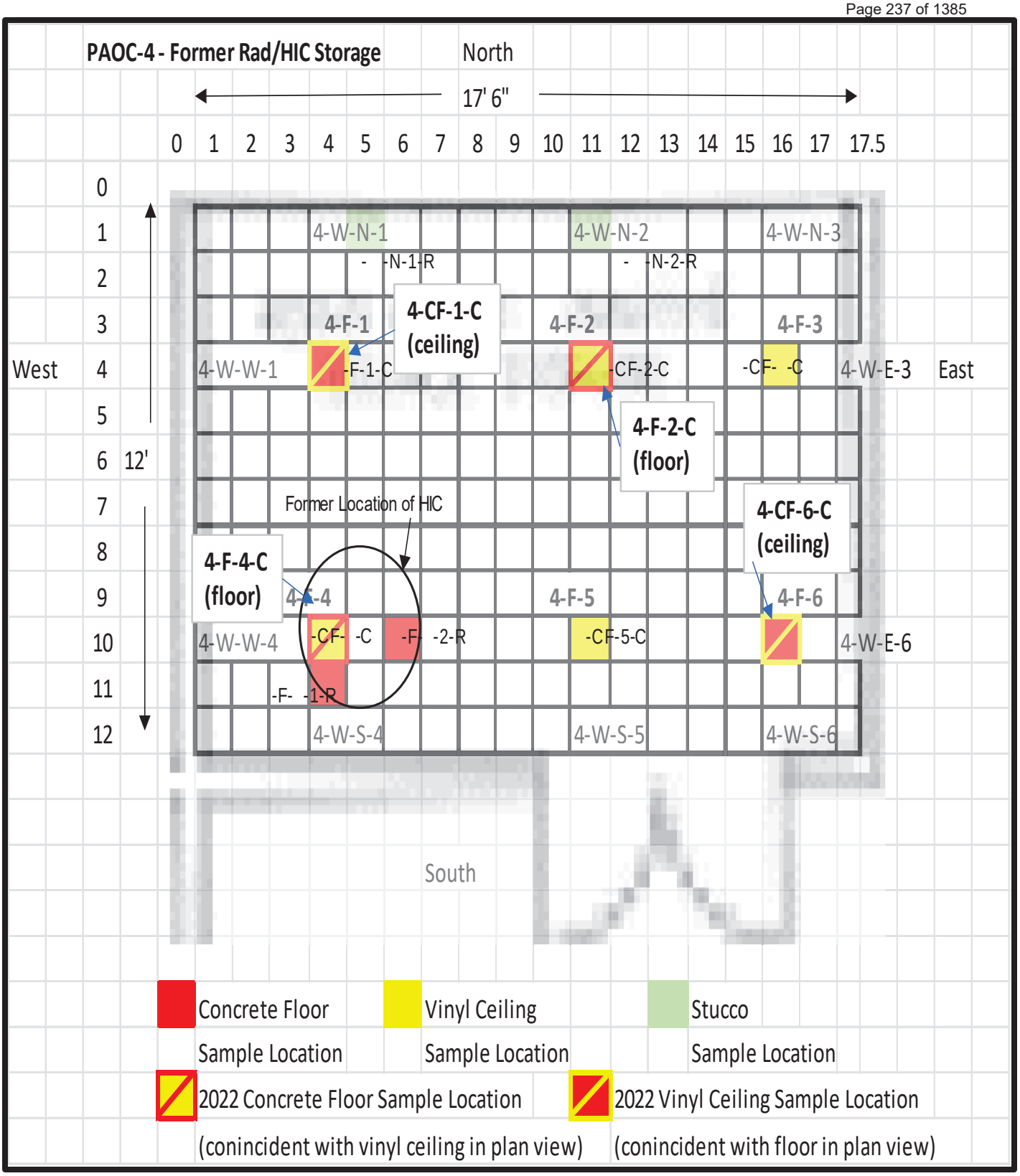
F RE 2-1 : PAOC- R MAP

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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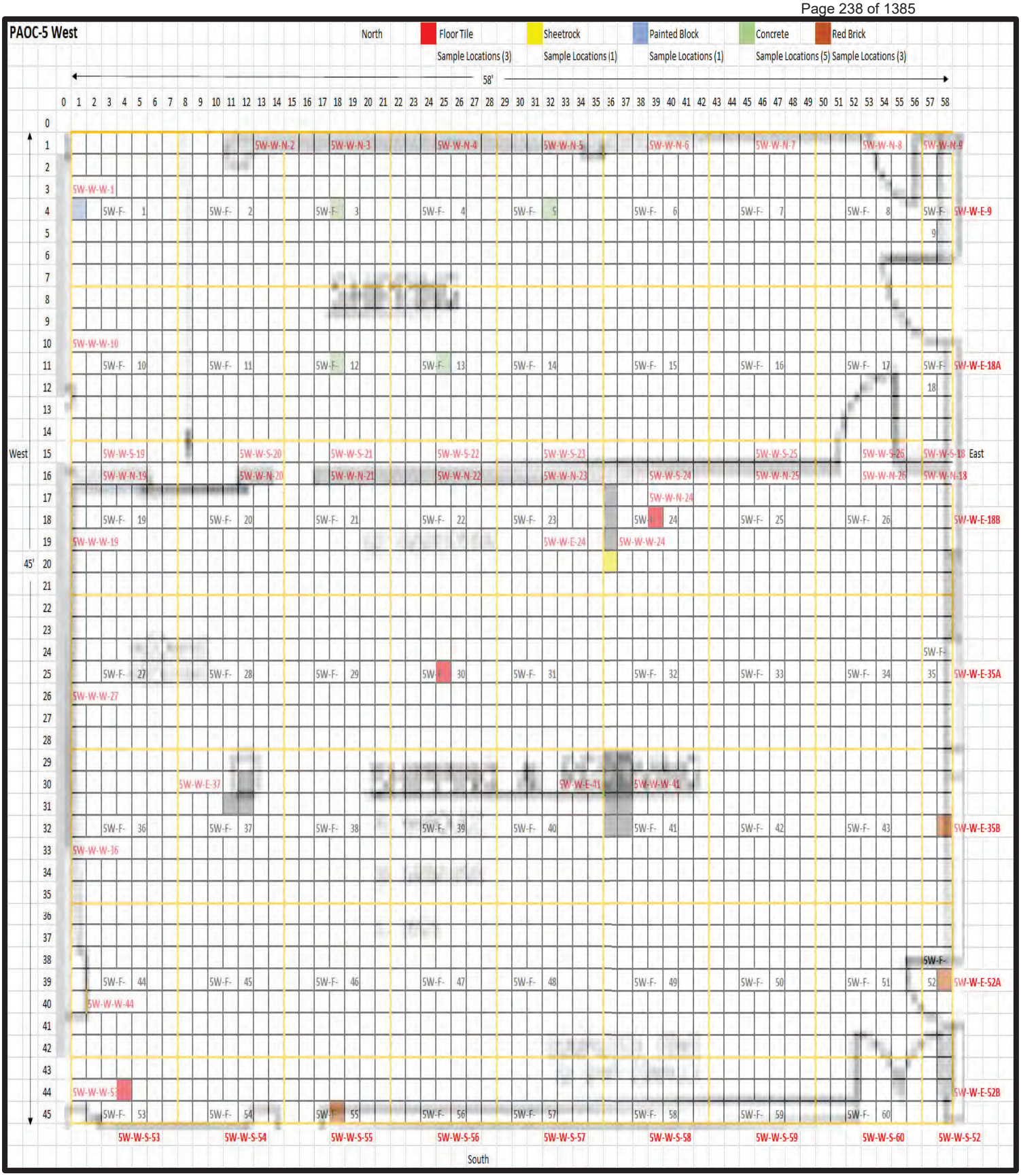
F RE 2-1 : PAOC- R MAP

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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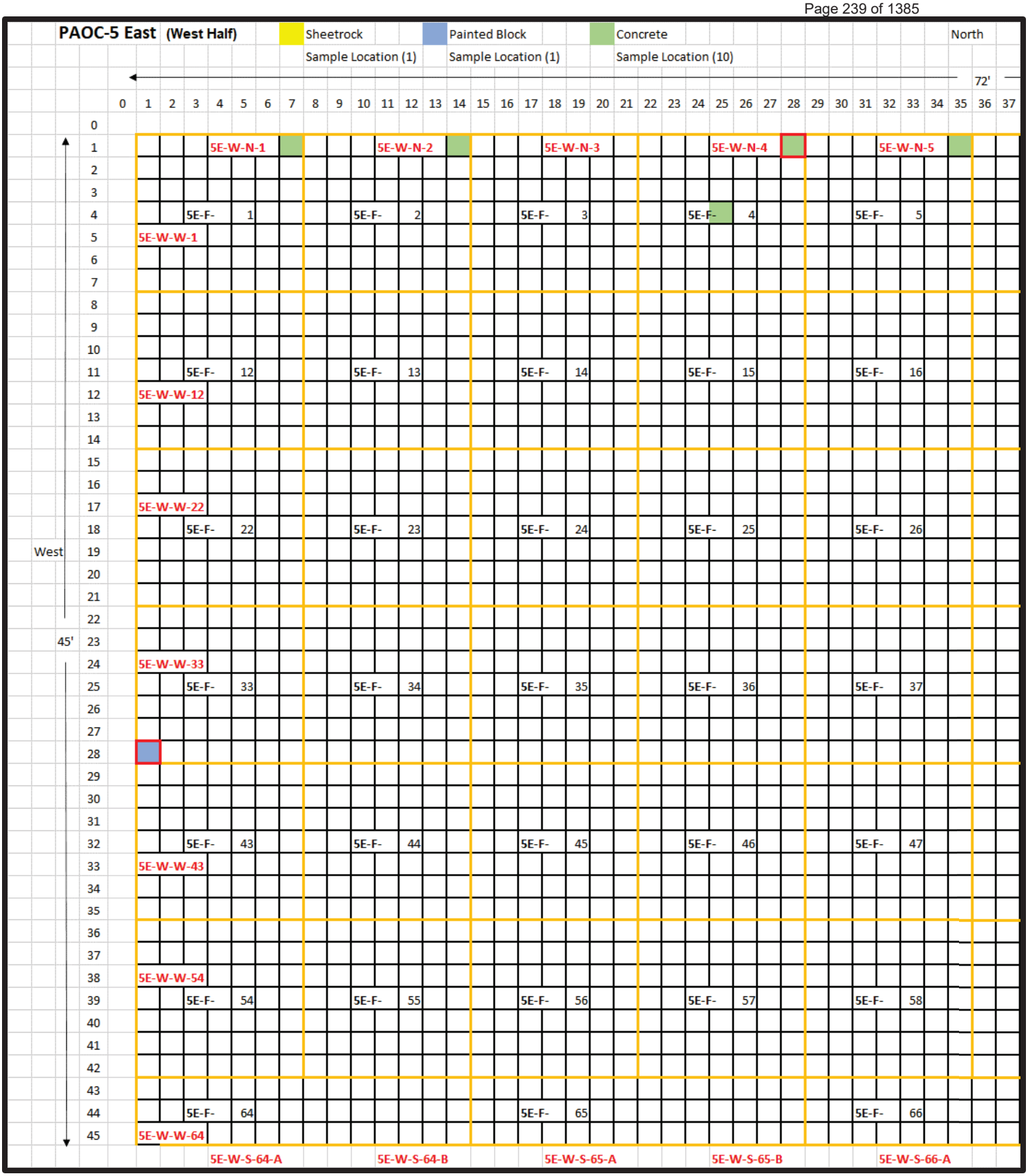
F RE 2-1 : PAOC-5 R MAP
(e t al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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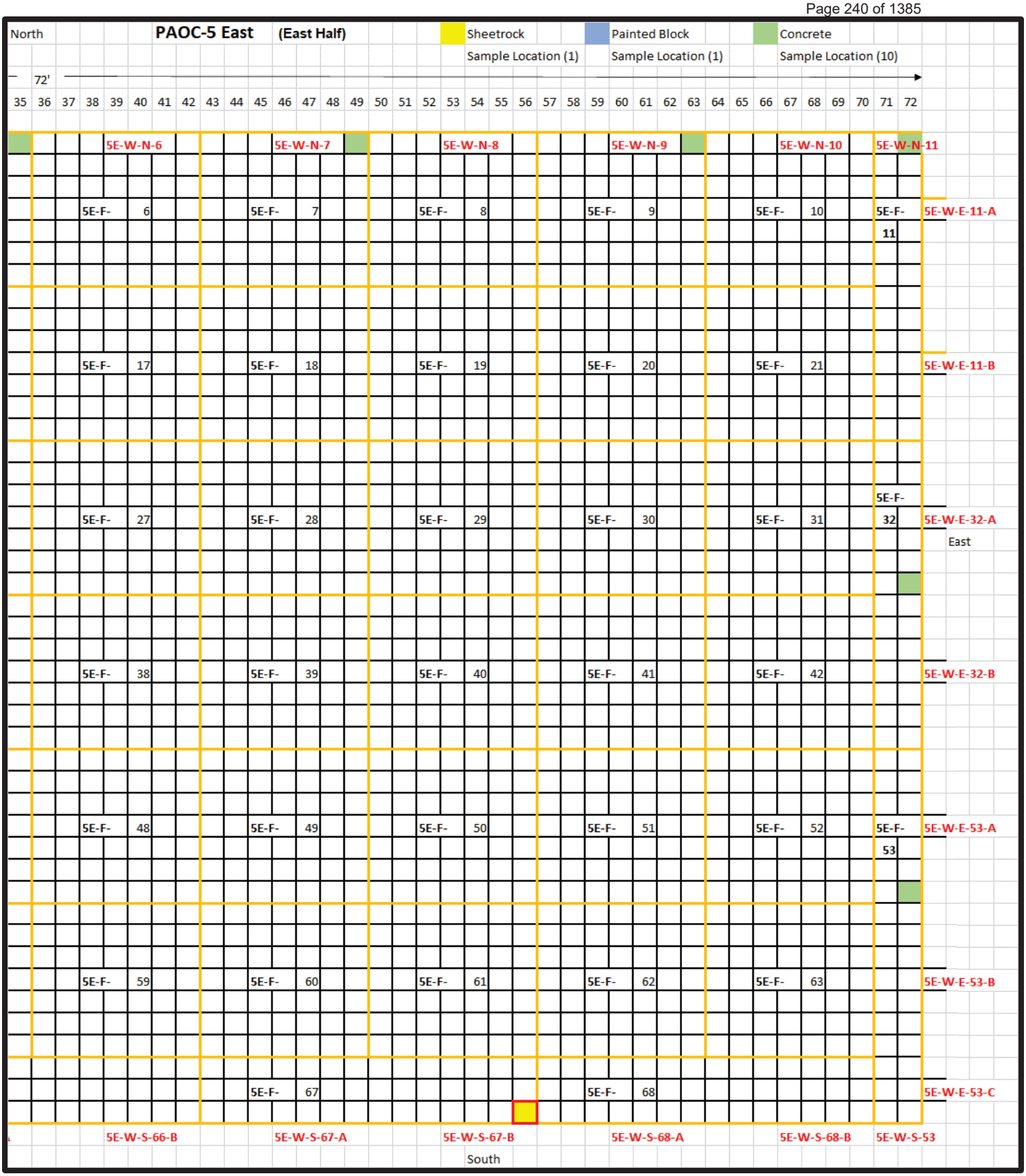
F RE 2-18: PAOC-5E R MAP
(e t al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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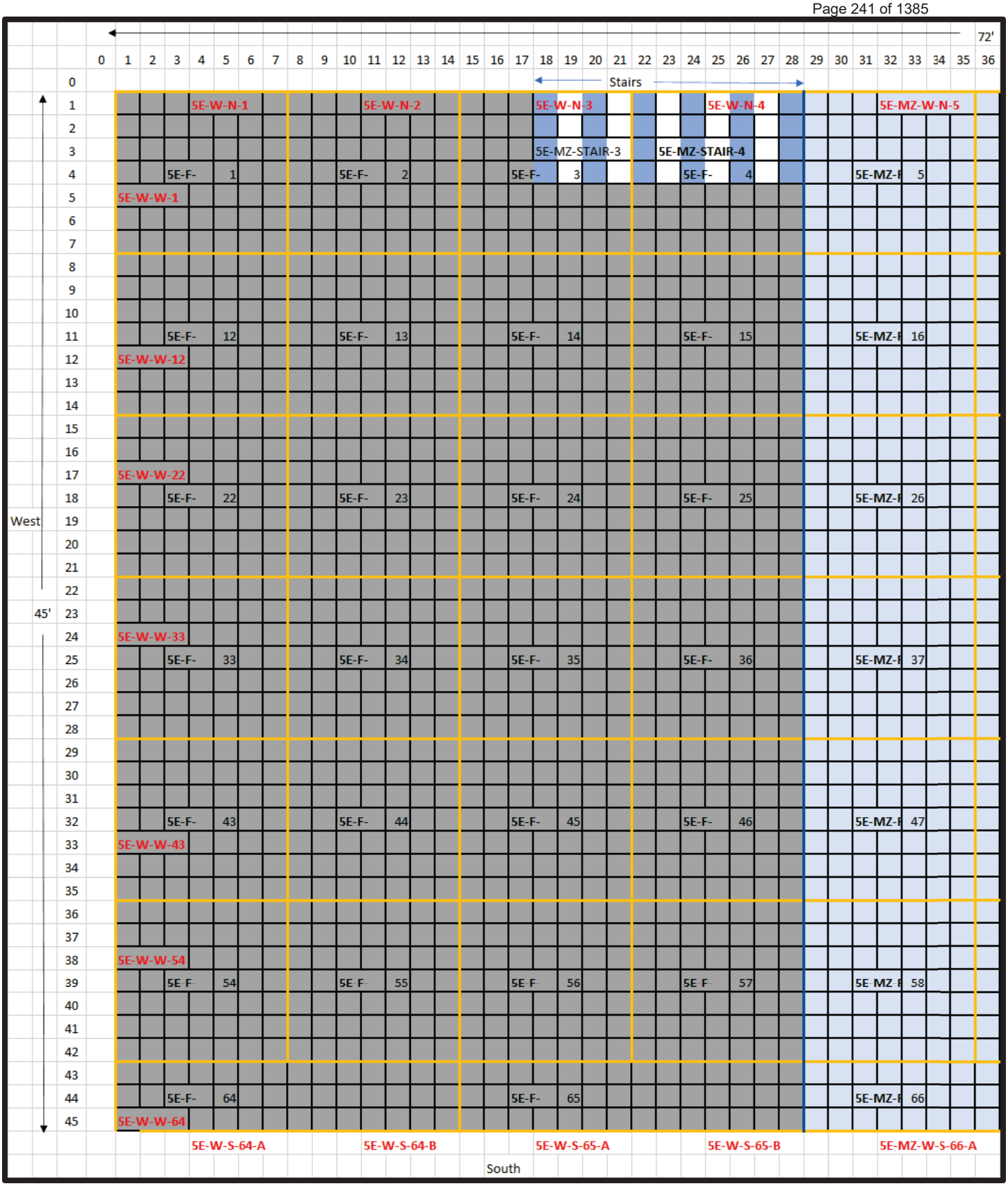
F RE 2-19: PAOC-5E R MAP
(Ea t al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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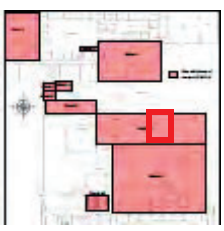
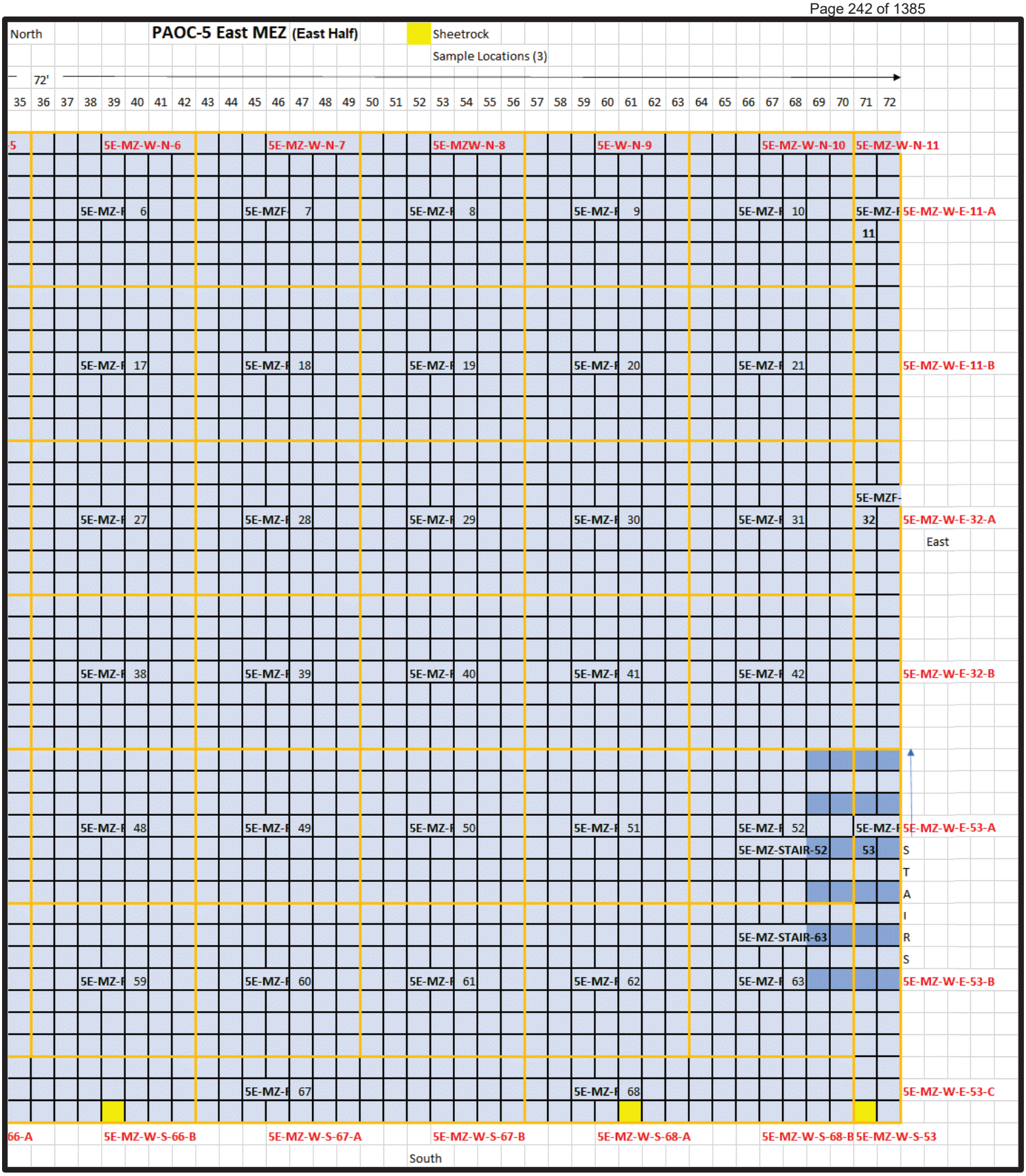
F RE 2-20: PAOC-5ME R MAP
(e t al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)





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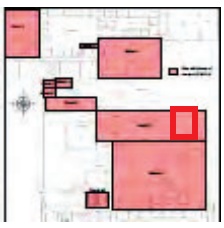
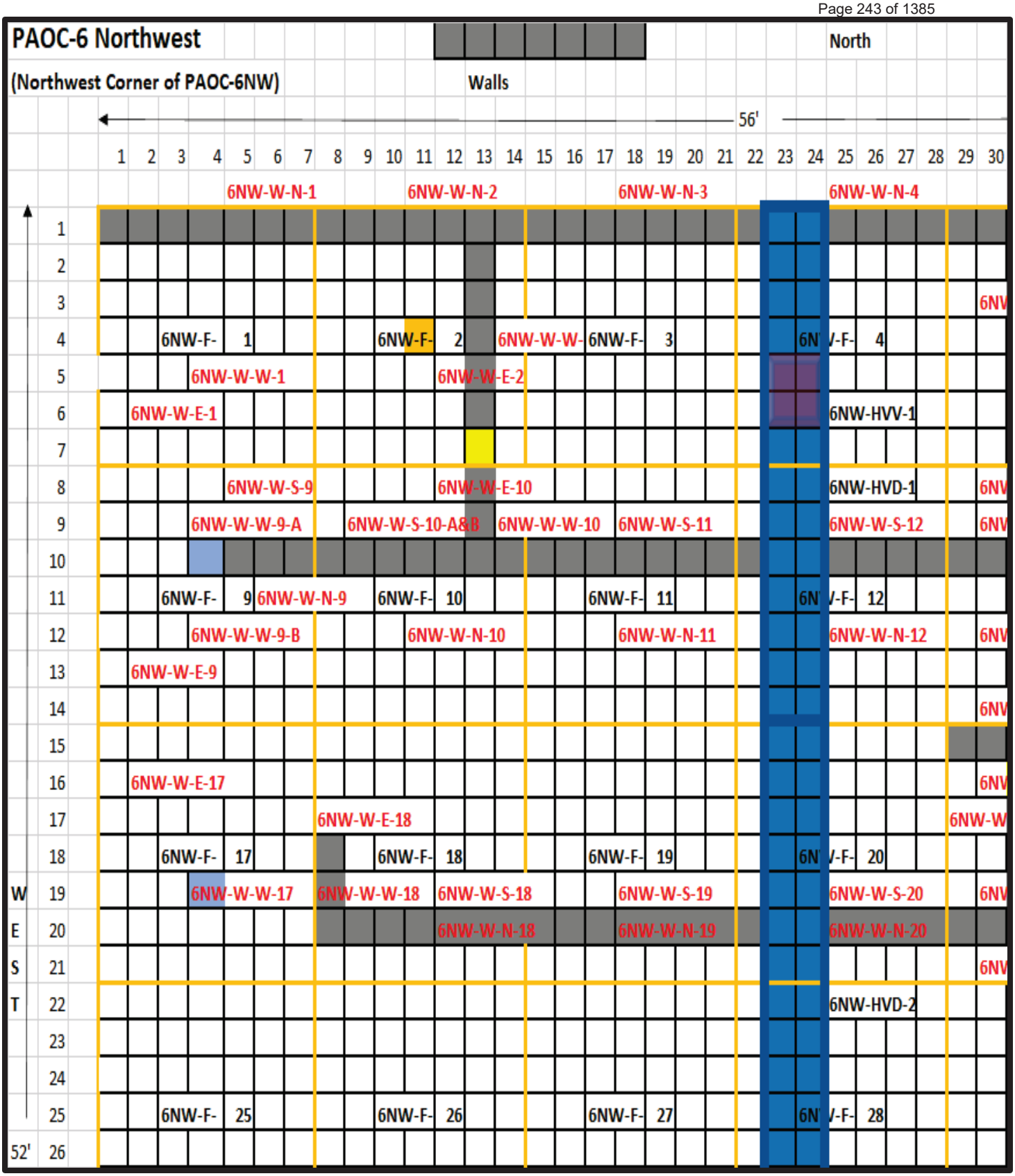
F RE 2-21: PAOC-5ME R MAP
(Ea t al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)





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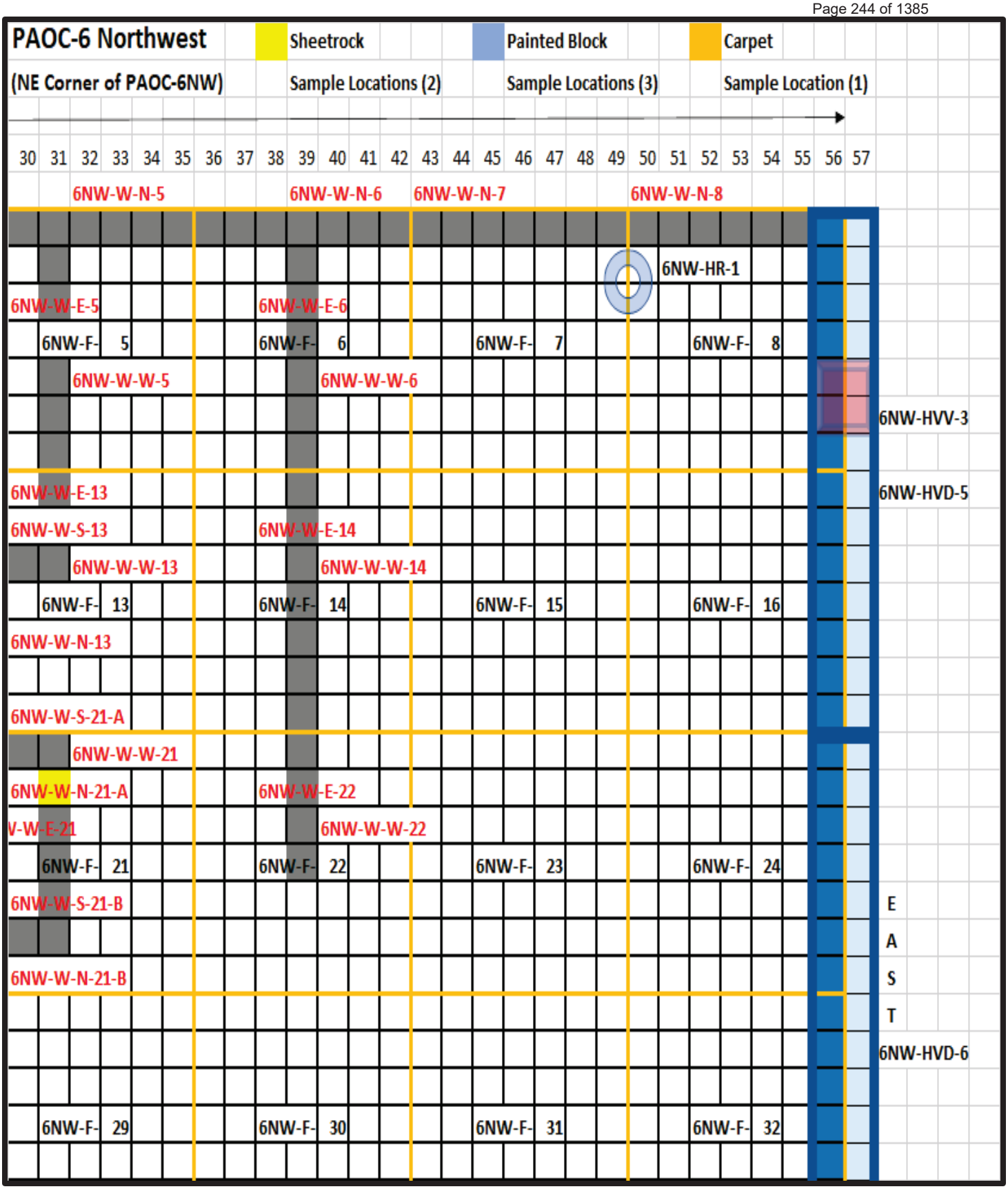
F RE 2-22: PAOC- N R MAP
(N Corner o PAOC- N)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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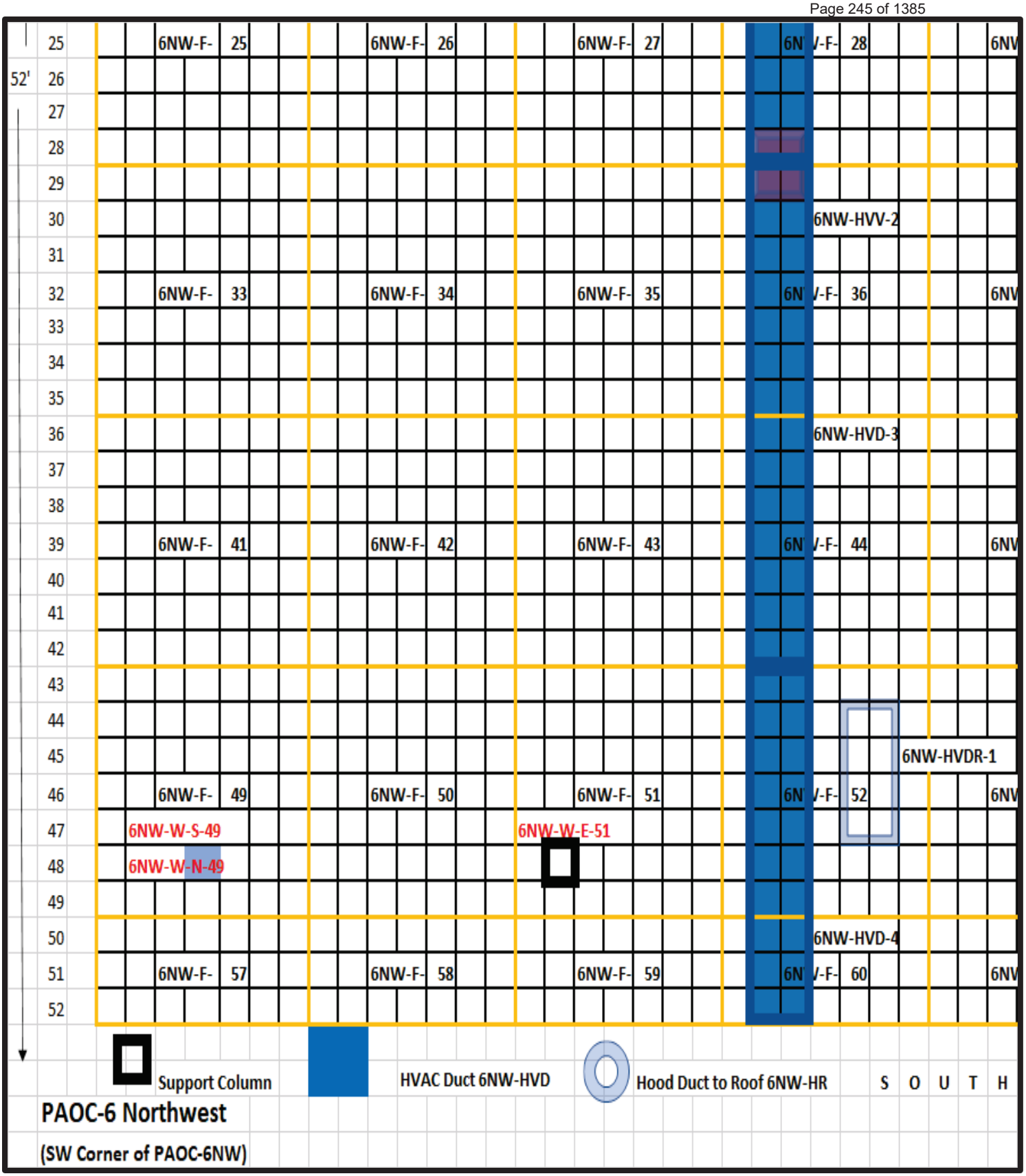
F RE 2-2 : PAOC- N R MAP
(NE Corner o PAOC- N)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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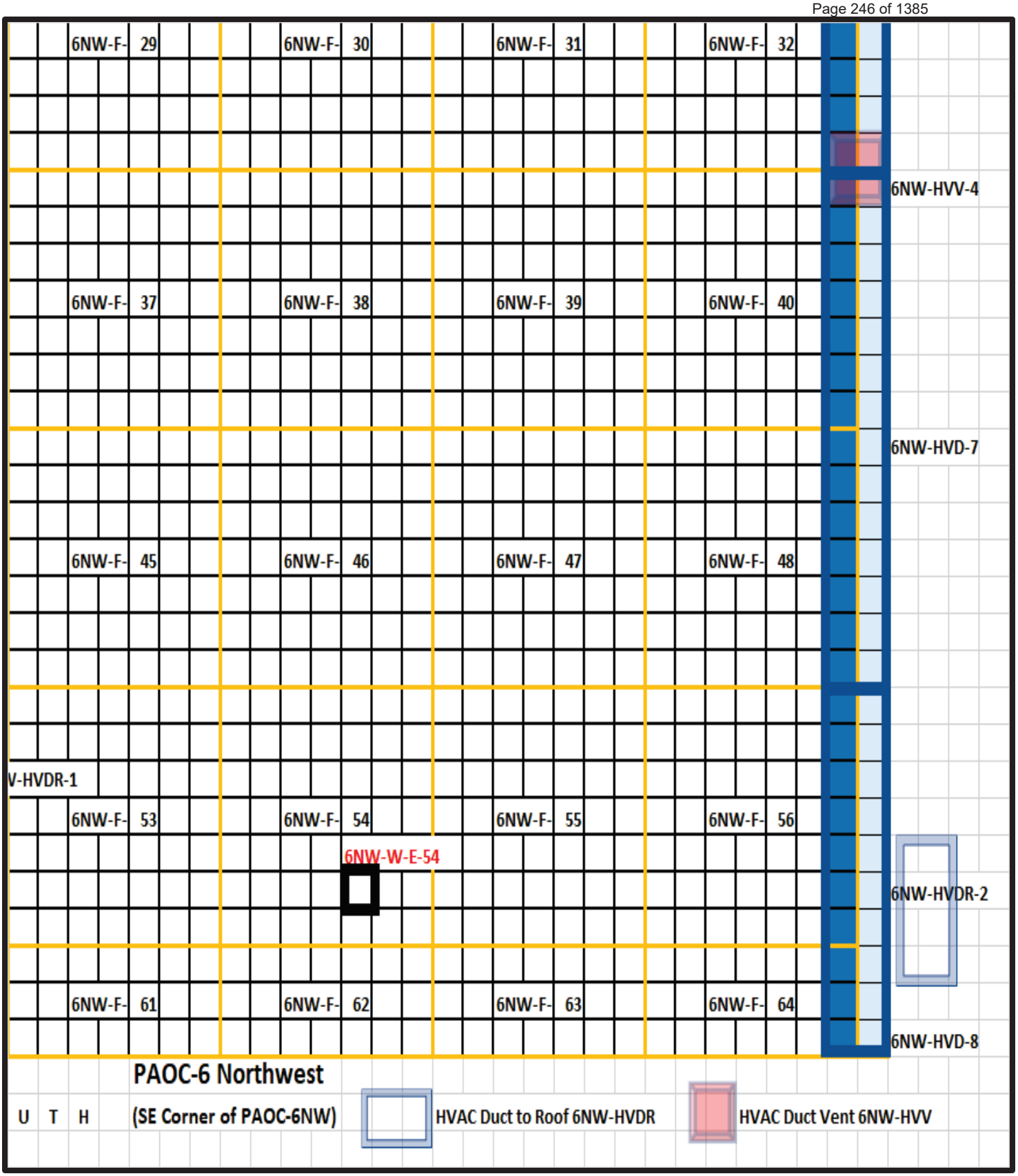
F RE 2-2 : PAOC- N R MAP
(S Corner o PAOC- N)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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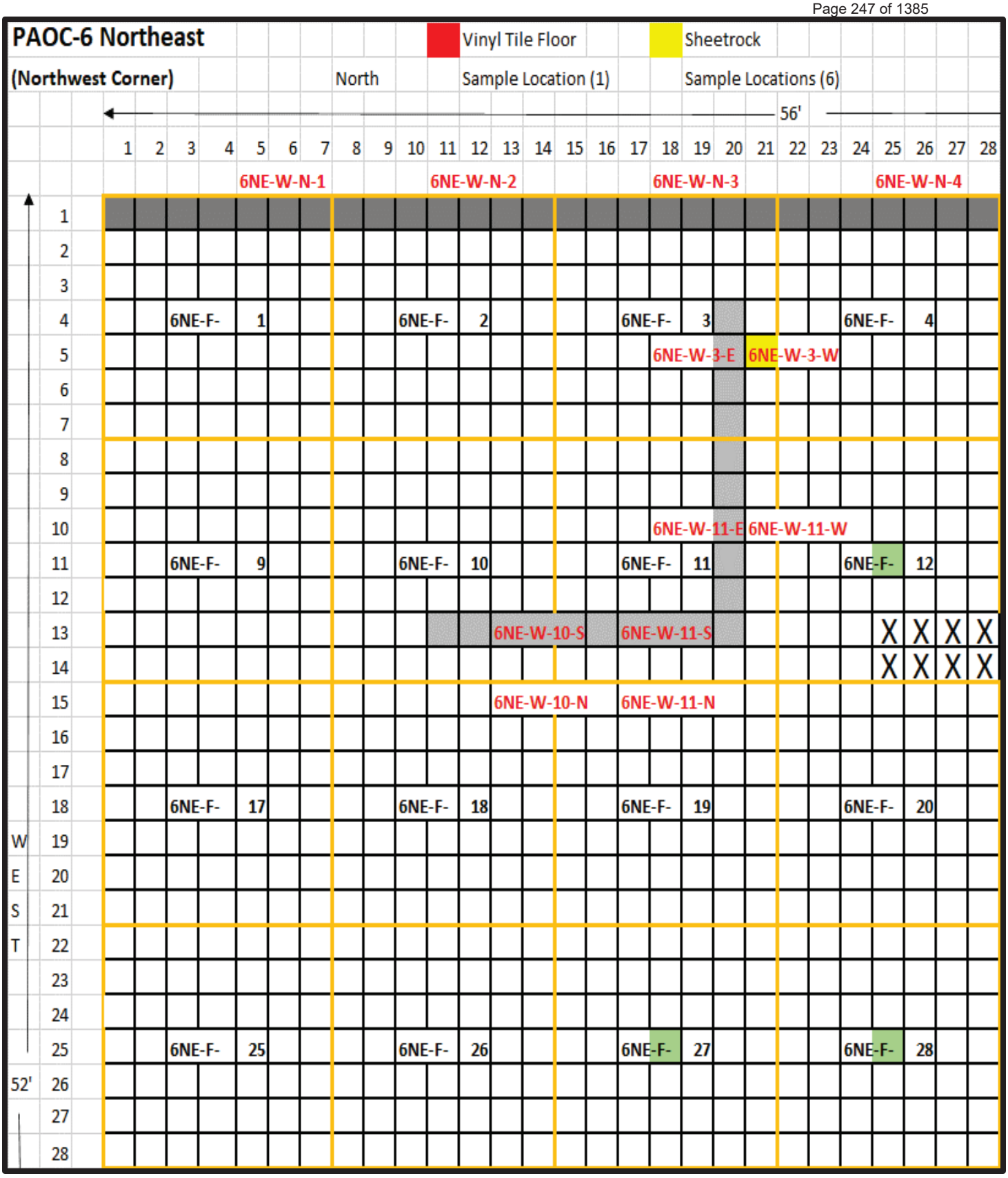
F RE 2-25: PAOC- N R MAP
(SE Corner o PAOC- N)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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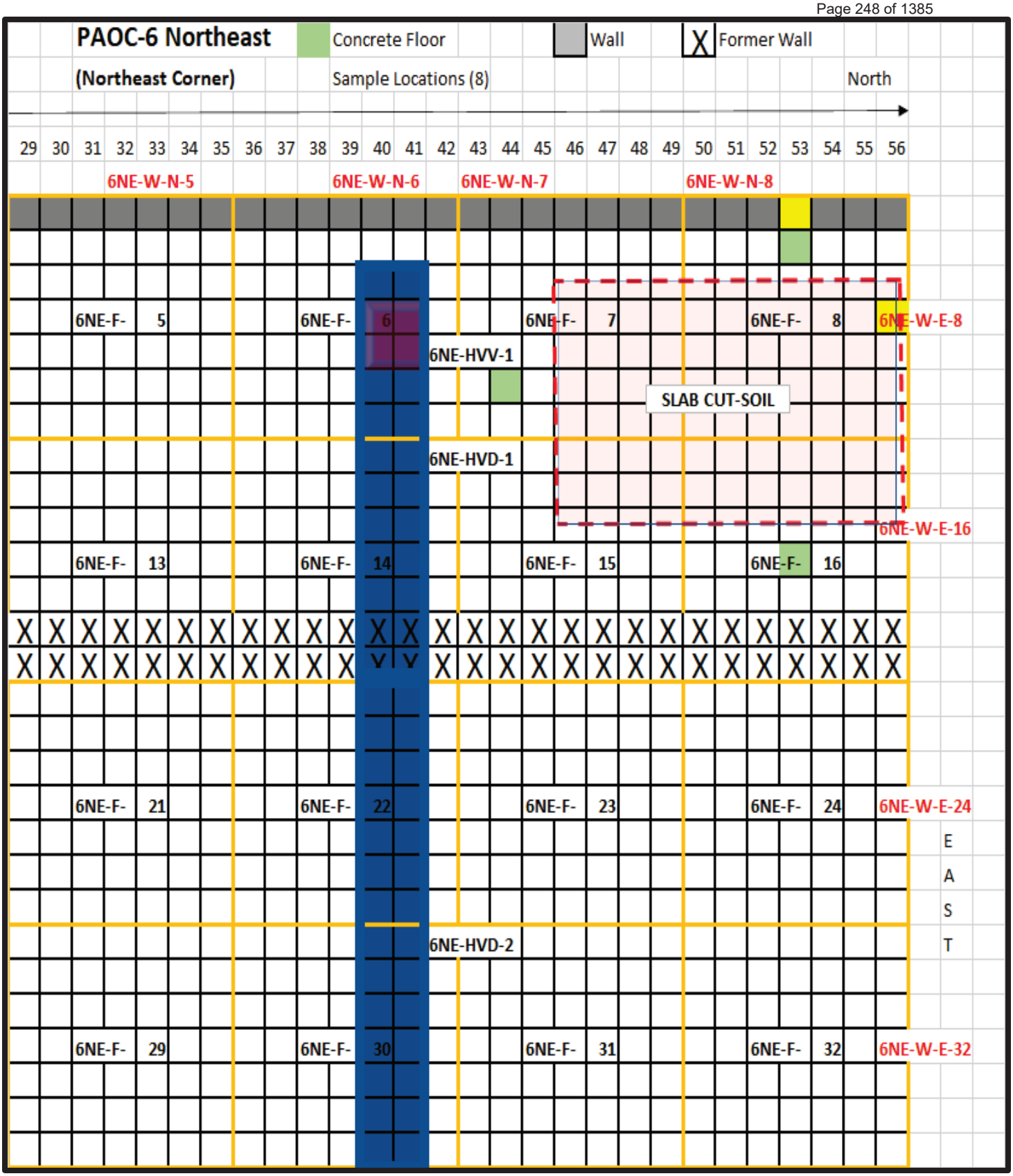
F RE 2-2 : PAOC- NE R MAP
(N Corner o PAOC- NE)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



CN ASSOCIATES
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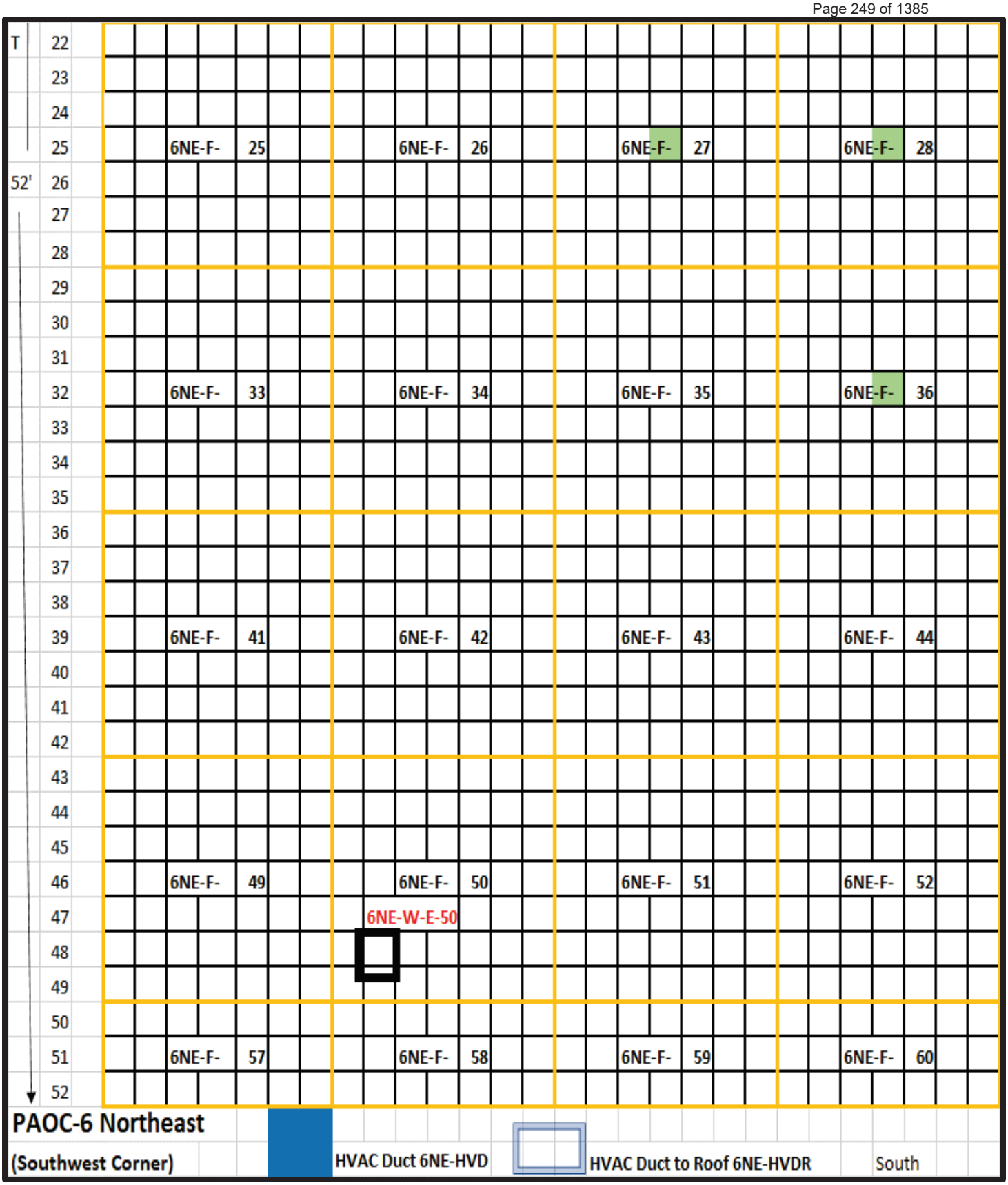
F RE 2-2 : PAOC- NE R MAP
(NE Corner o PAOC- NE)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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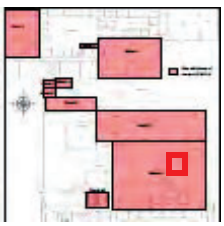
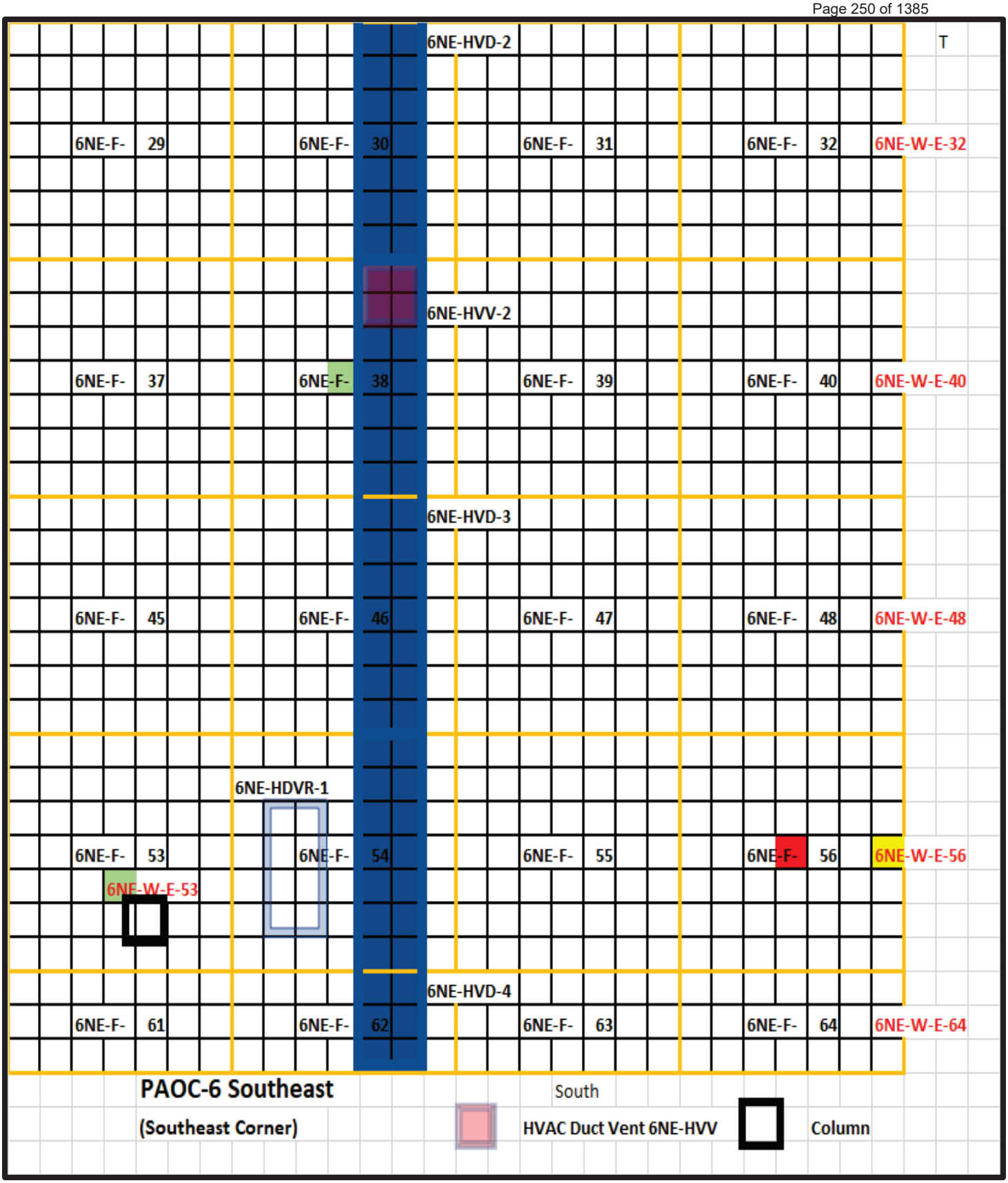
F RE 2-28: PAOC- NE R MAP
(S Corner o PAOC- NE)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)





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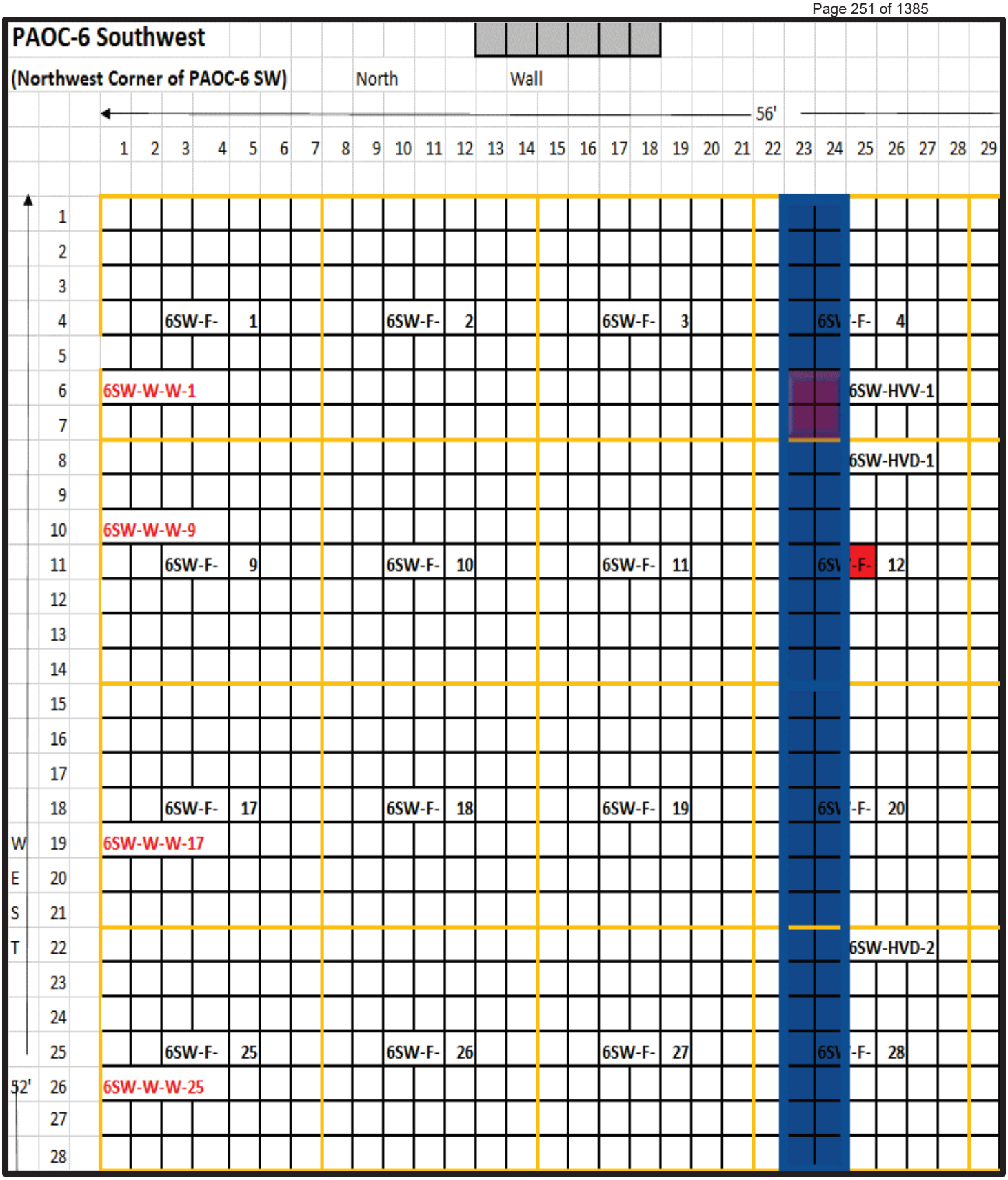
F RE 2-29: PAOC- NE R MAP
(SE Corner o PAOC- NE)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



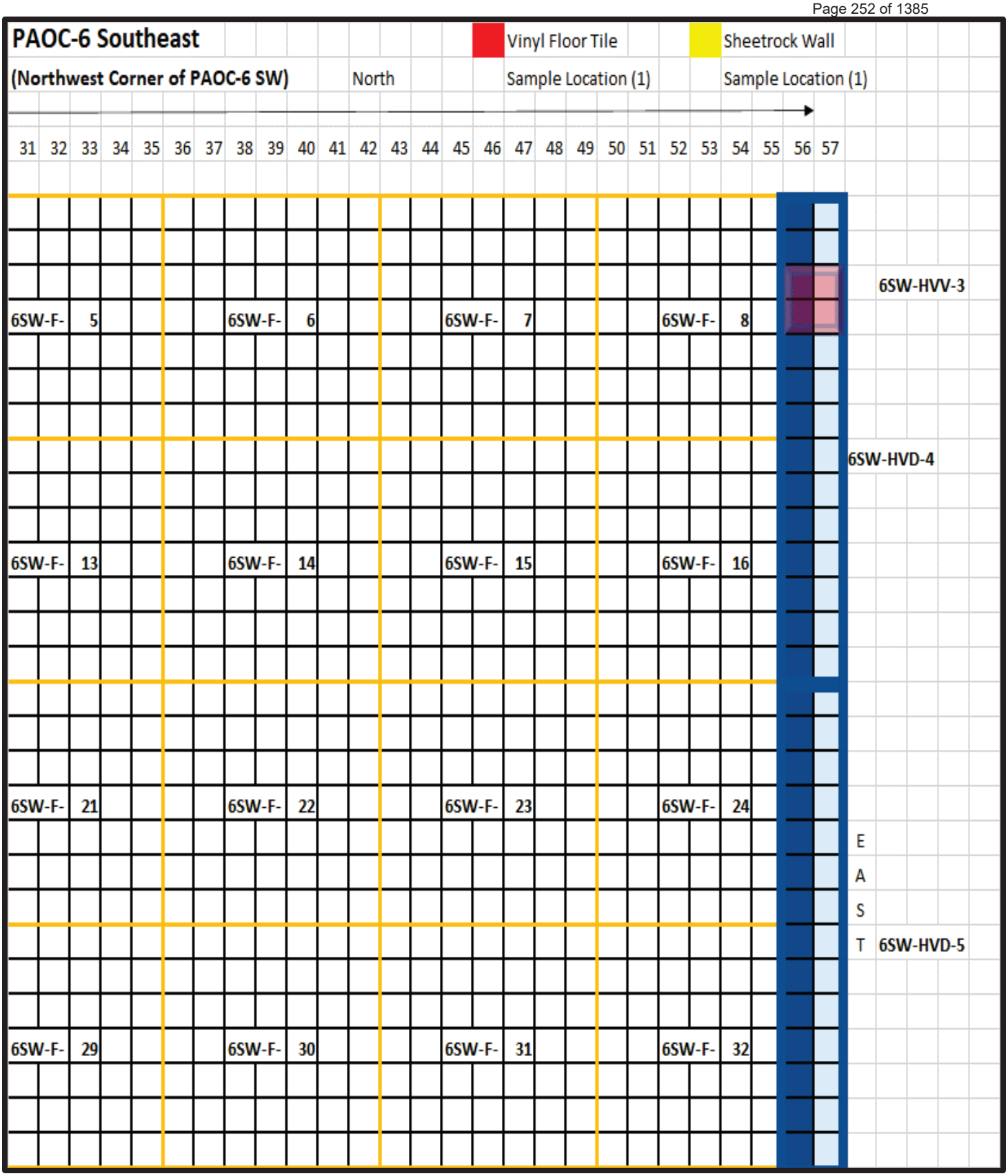
CN ASSOCIATES
YOUR PARTNER IN RADIATION SAFETY

F RE 2- 0: PAOC- S R MAP
(N Corner o PAOC- S)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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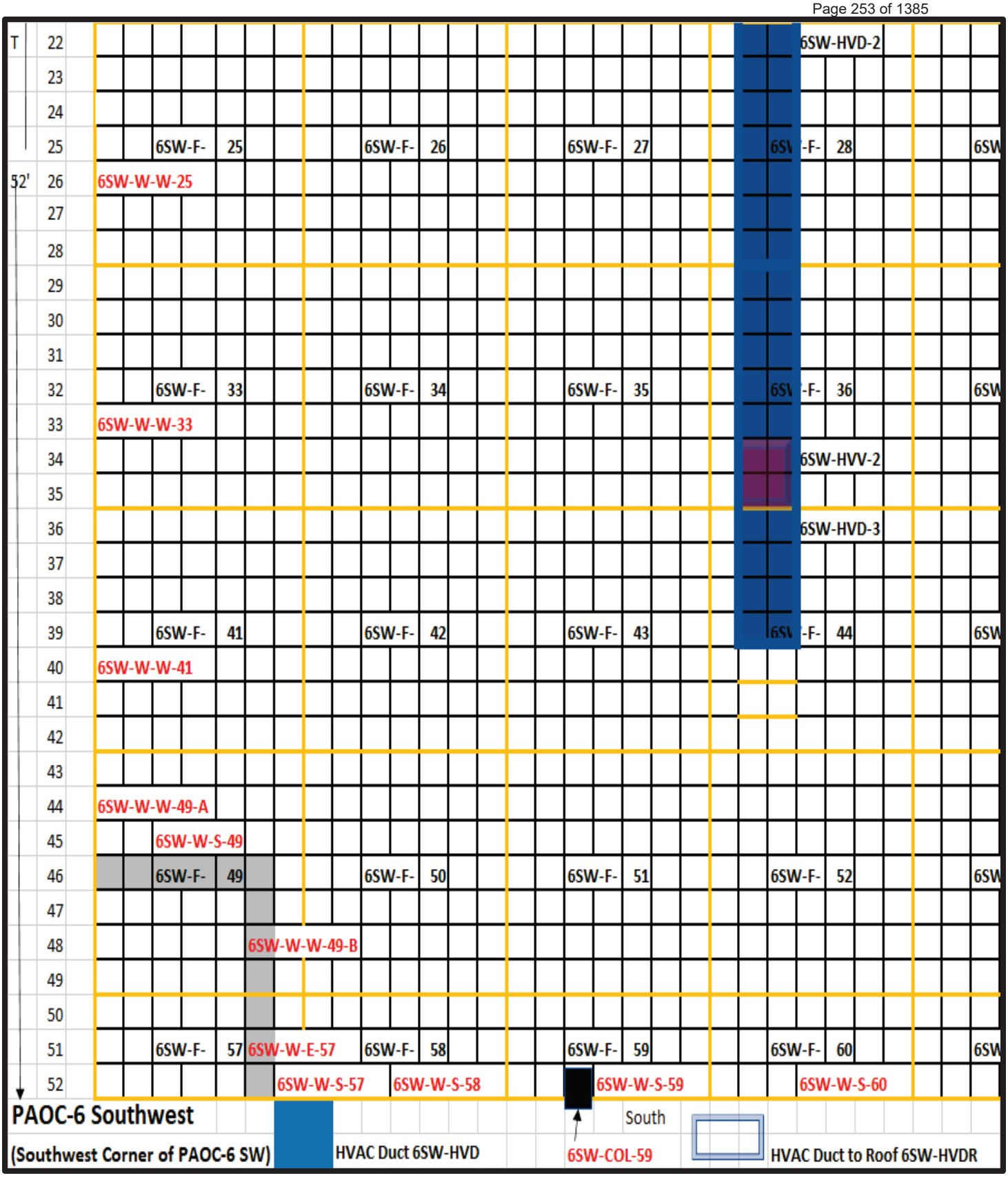
F RE 2- 1: PAOC- S R MAP
(NE Corner o PAOC- S)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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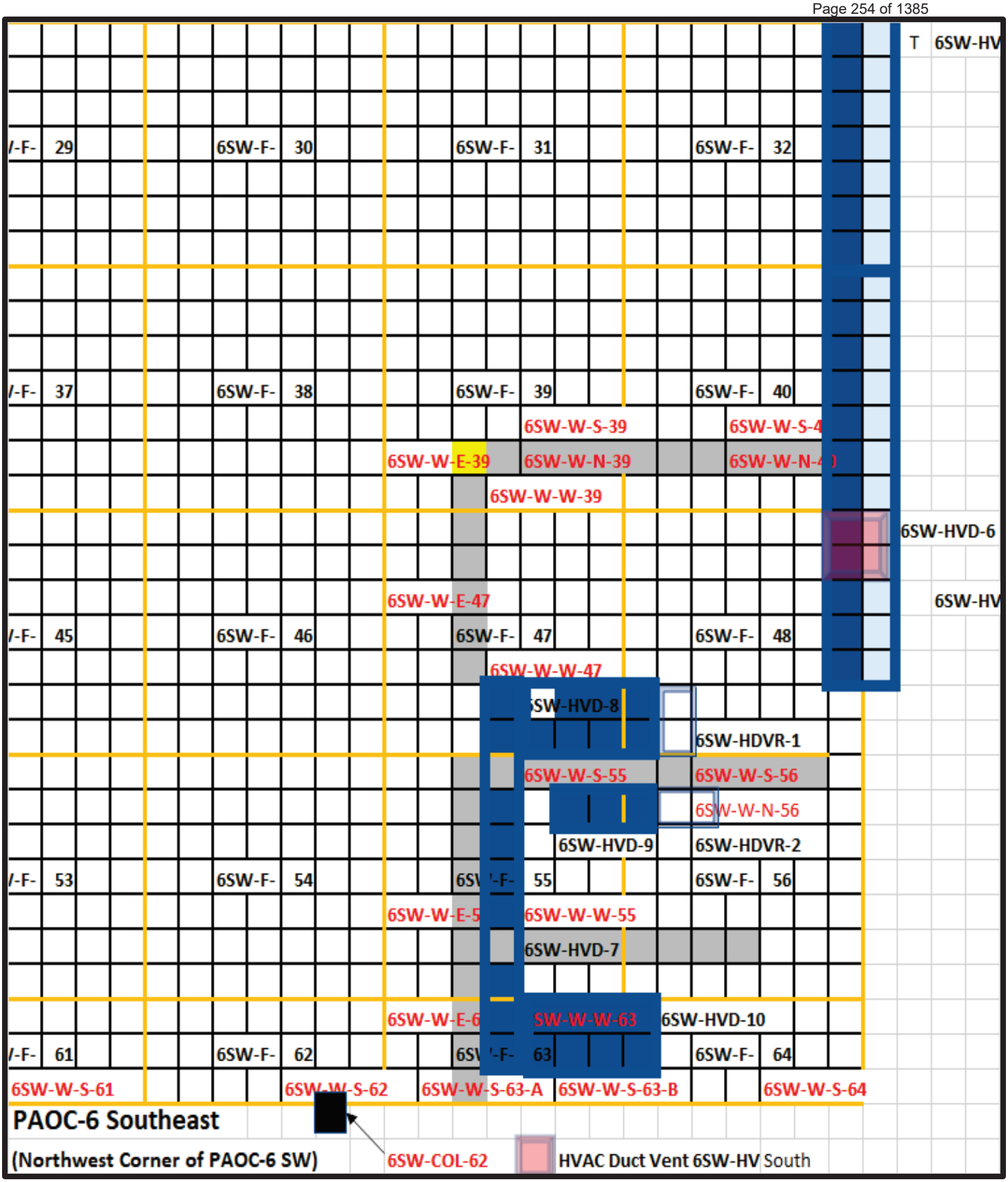
F RE 2- 2: PAOC- S R MAP
(S Corner o PAOC- S)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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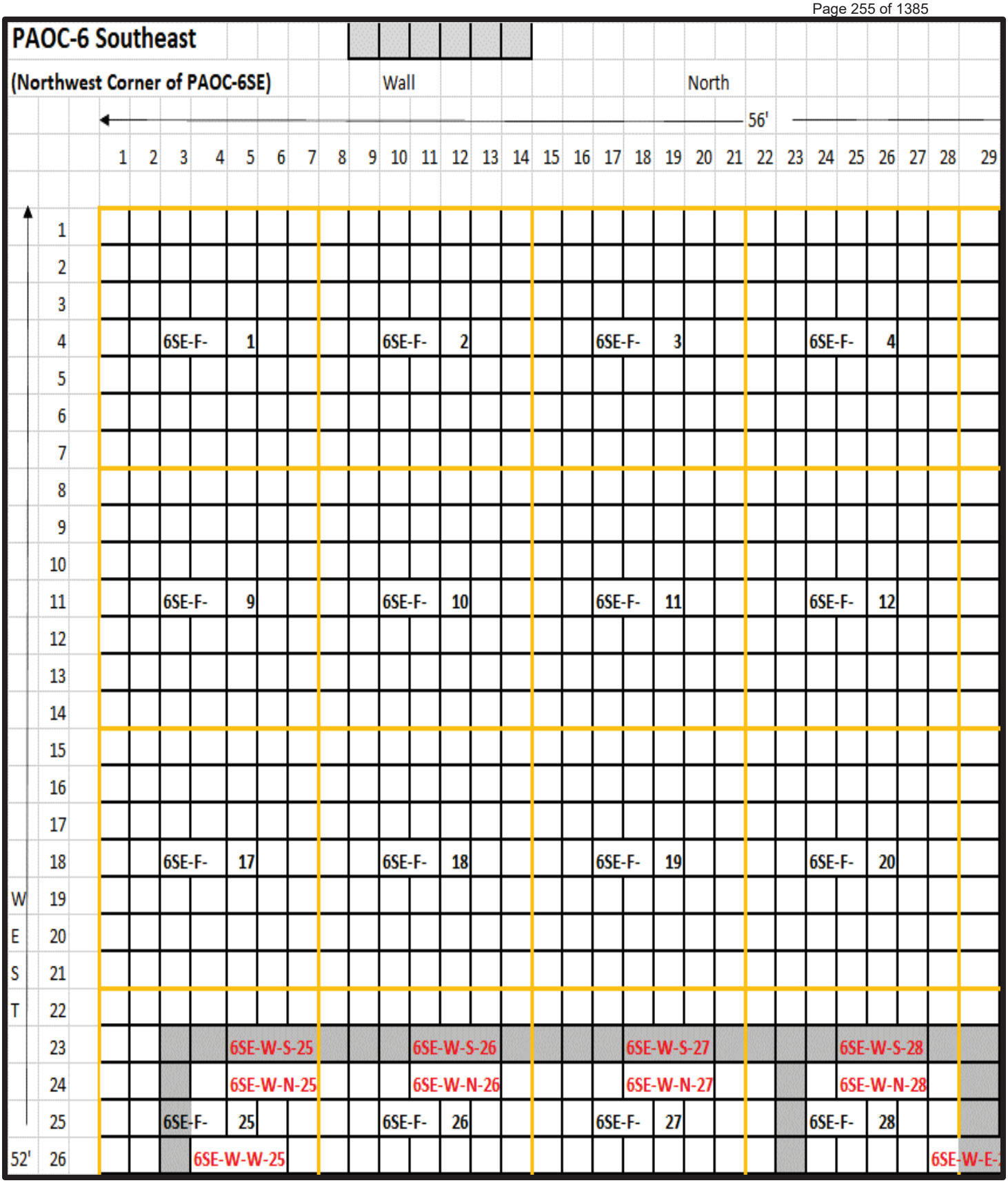
F RE 2- : PAOC- S R MAP
(SE Corner o PAOC- S)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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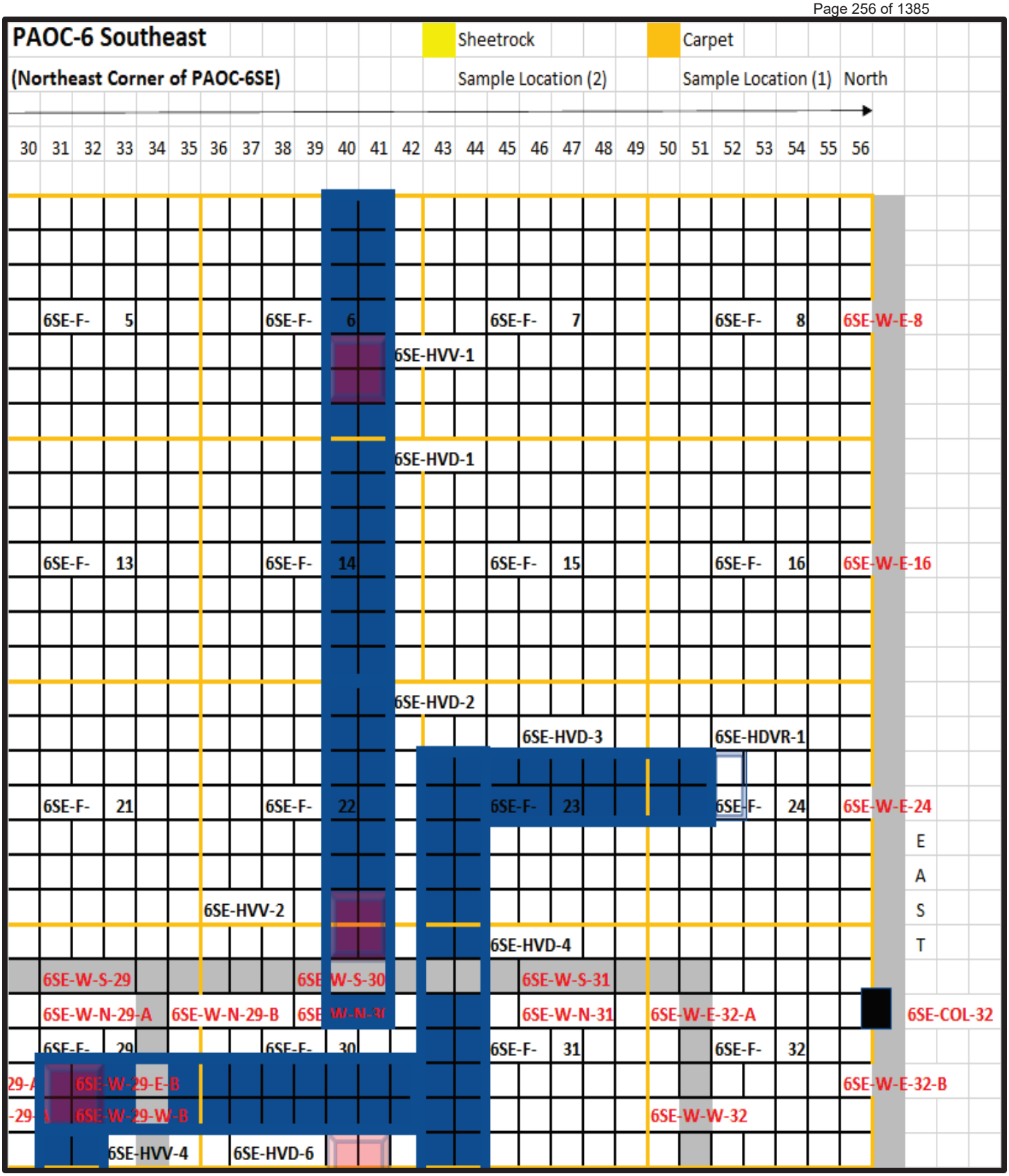
F RE 2- : PAOC- SE R MAP
(N Corner o PAOC- SE)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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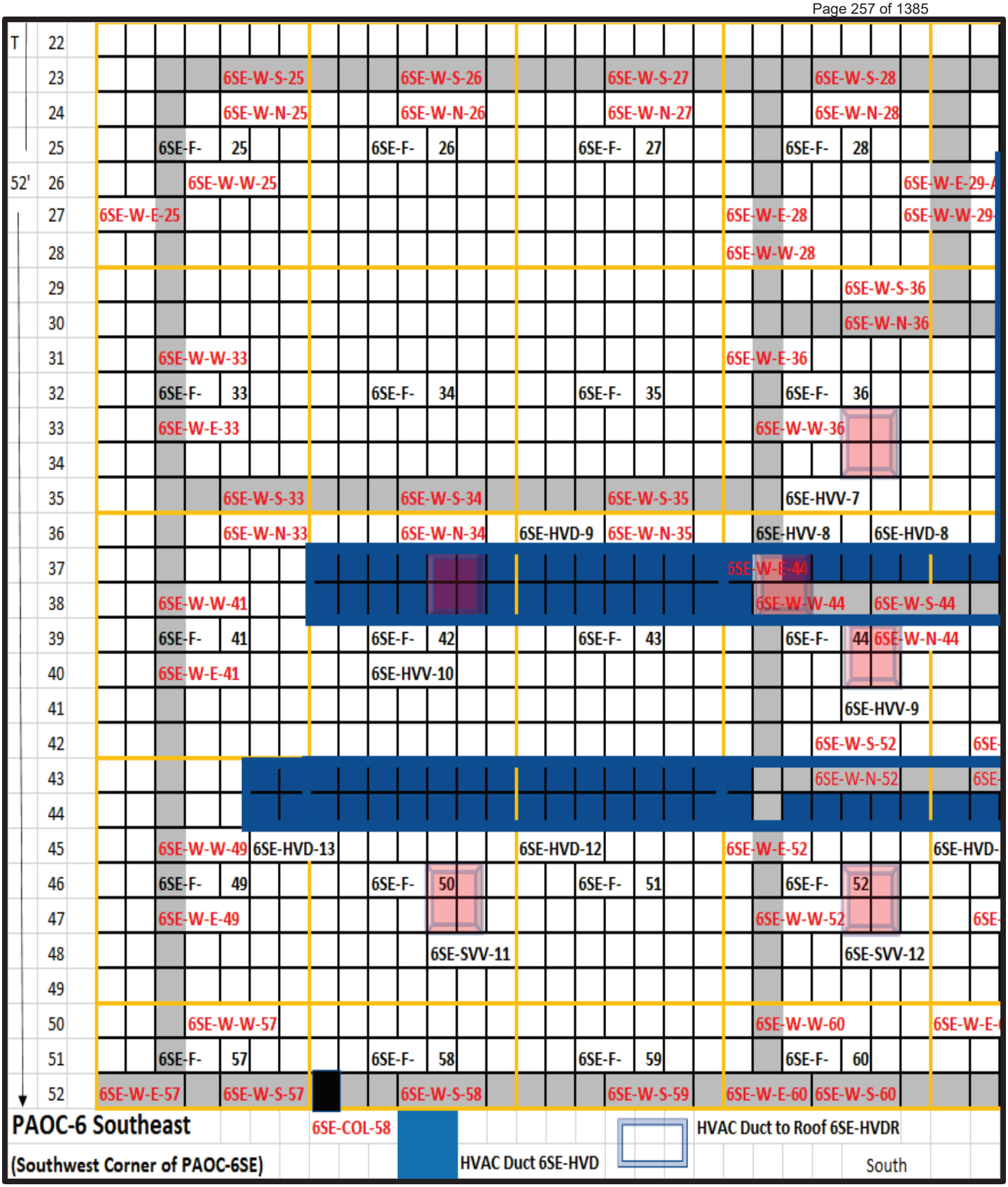
F RE 2- 5: PAOC- SE R MAP
(NE Corner o PAOC- SE)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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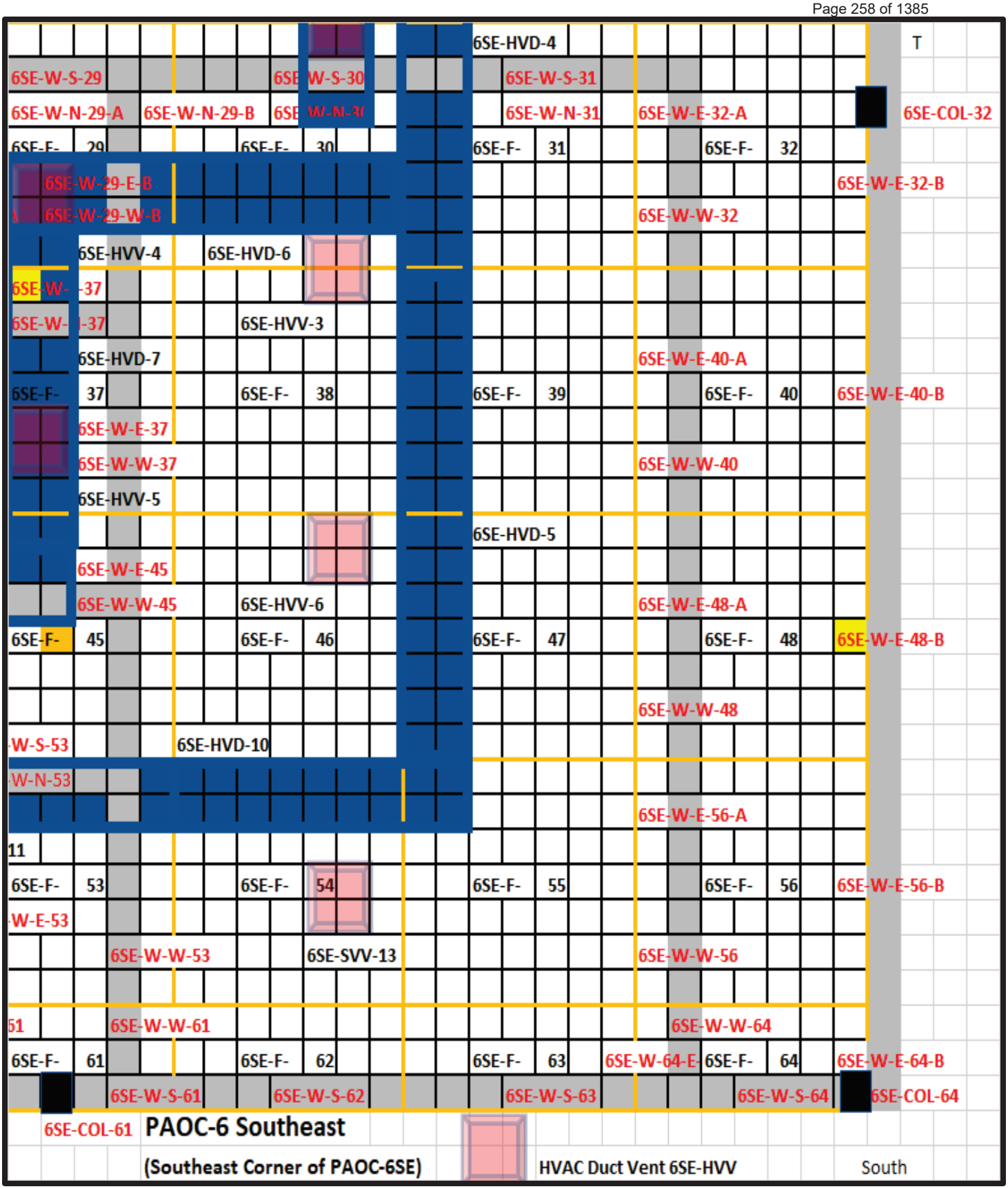
F RE 2- : PAOC- SE R MAP
(S Corner o PAOC- SE)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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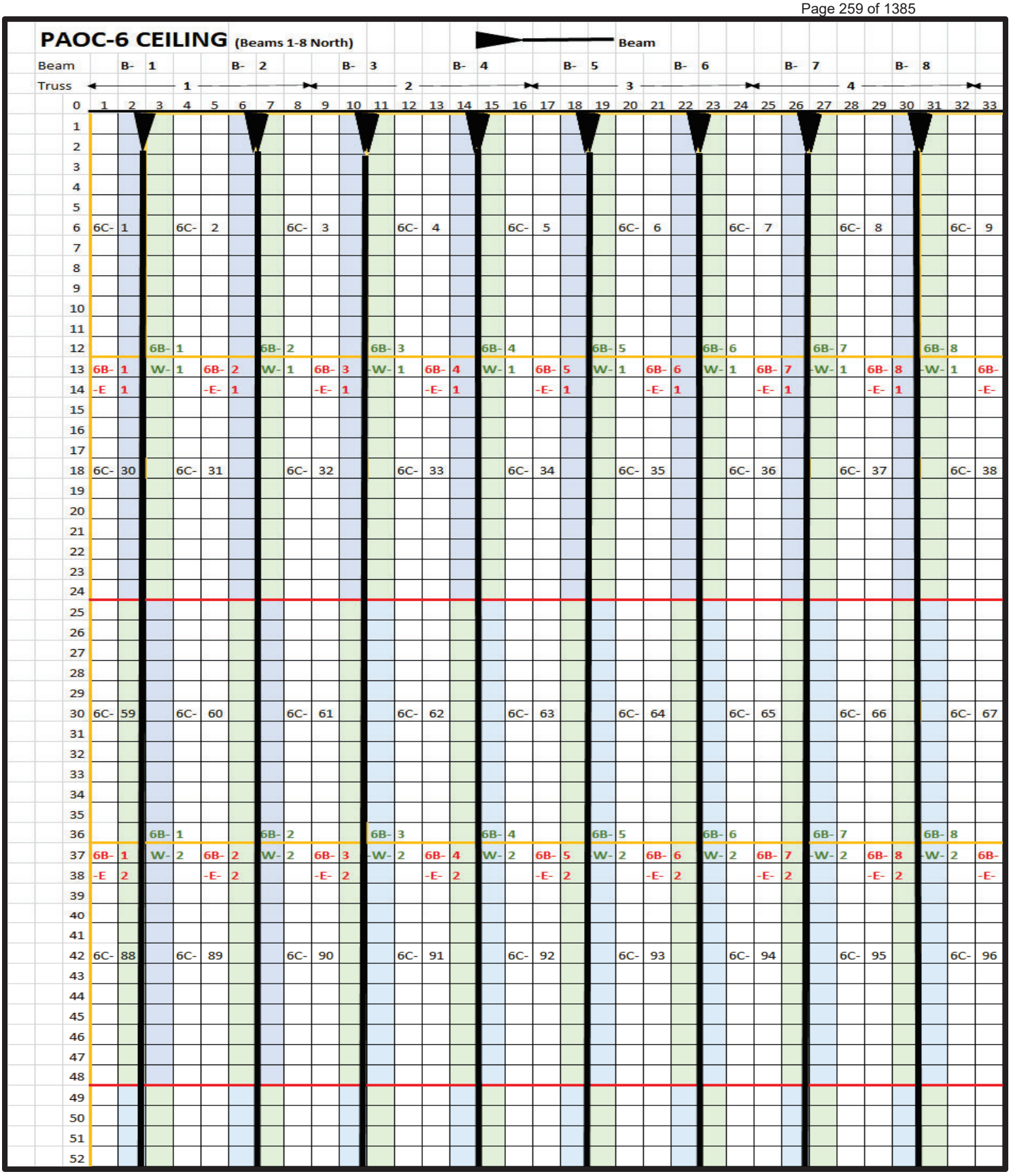
F RE 2- : PAOC- SE R MAP
(SE Corner o PAOC- SE)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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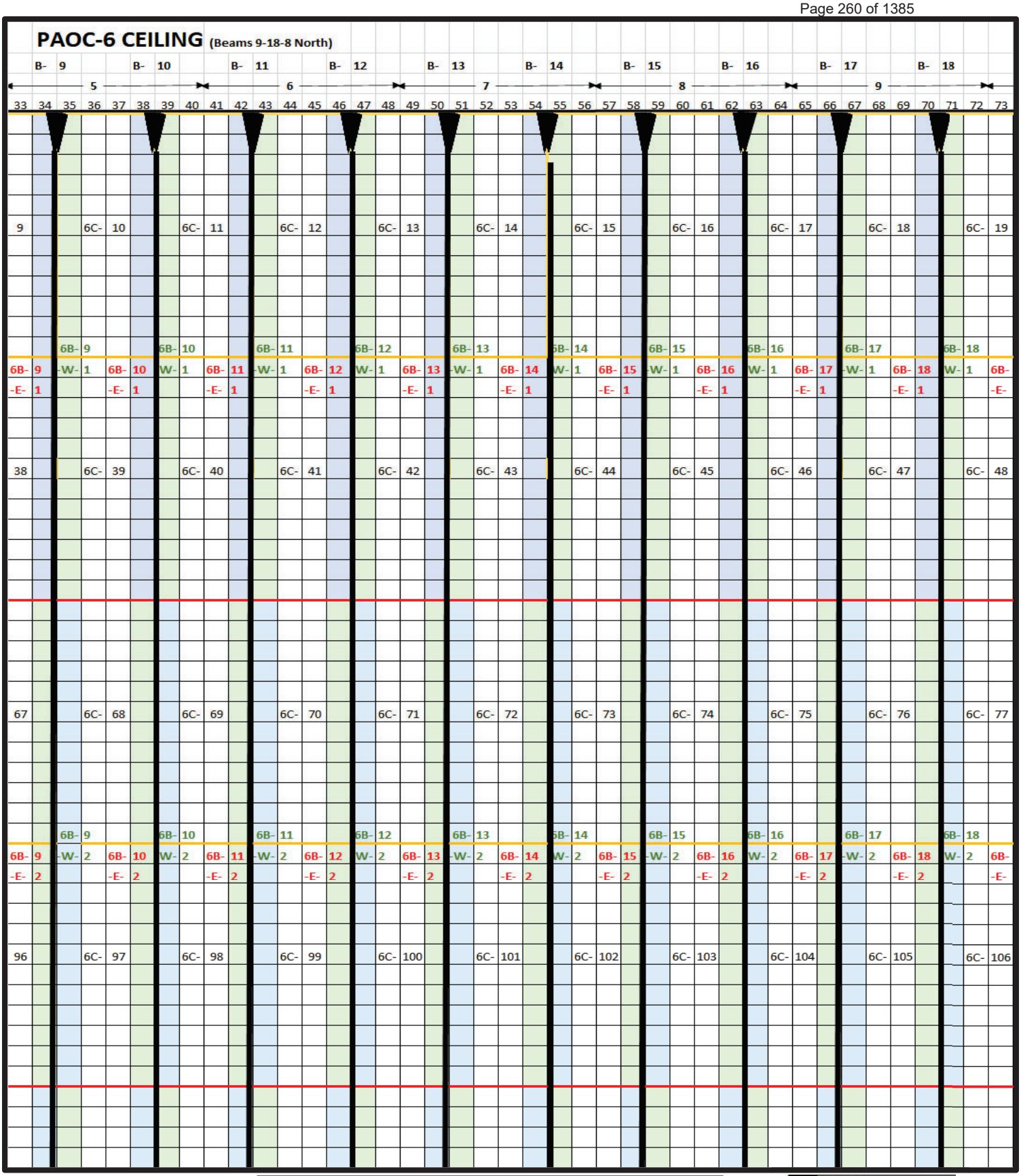
F RE 2- 8: PAOC- CE L N R MAP
(eam 1-8 North)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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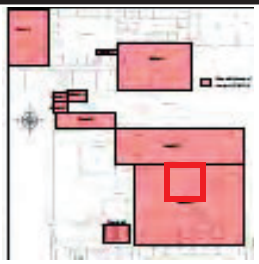
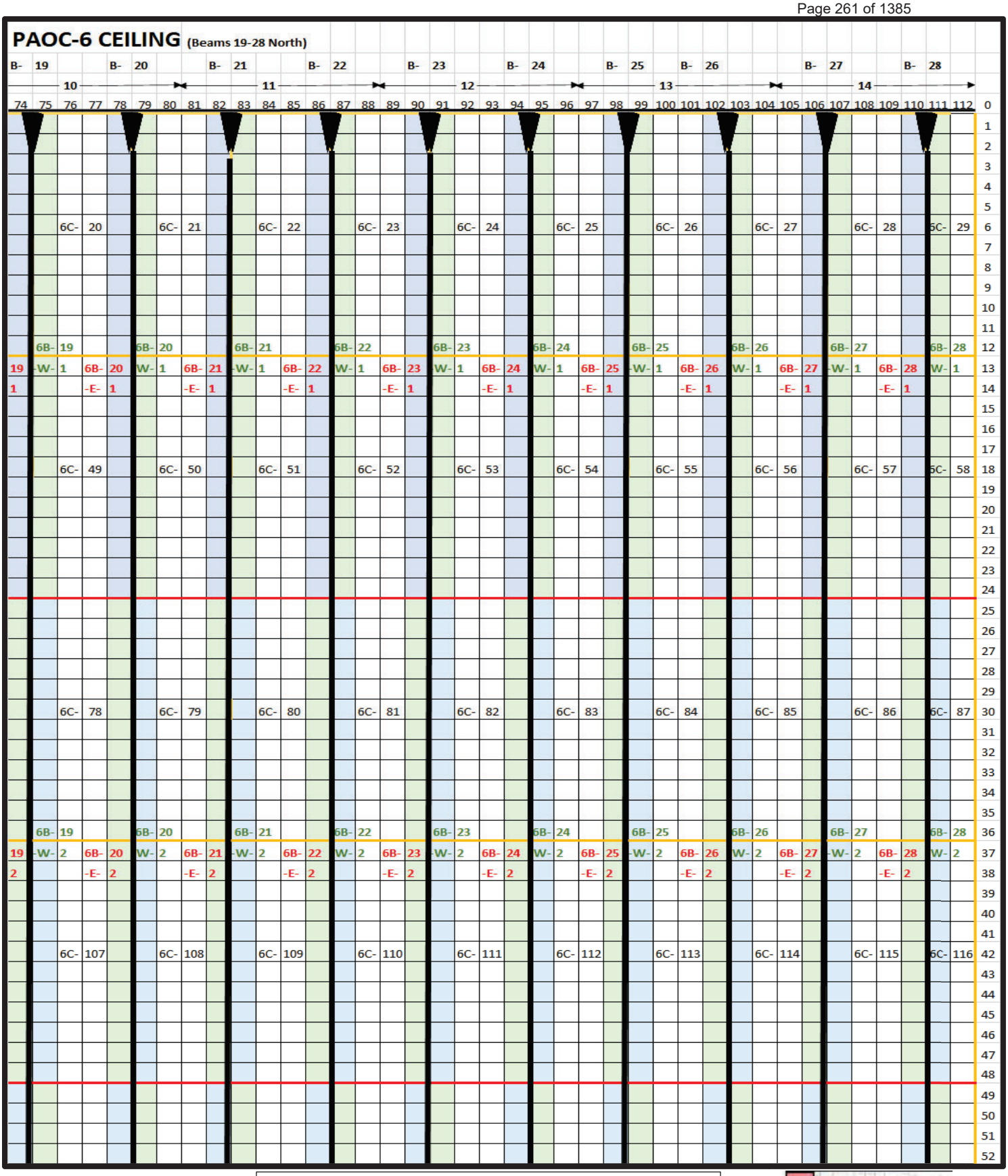
F RE 2- 9: PAOC- CE L N R MAP
(eam 9-18 North)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)





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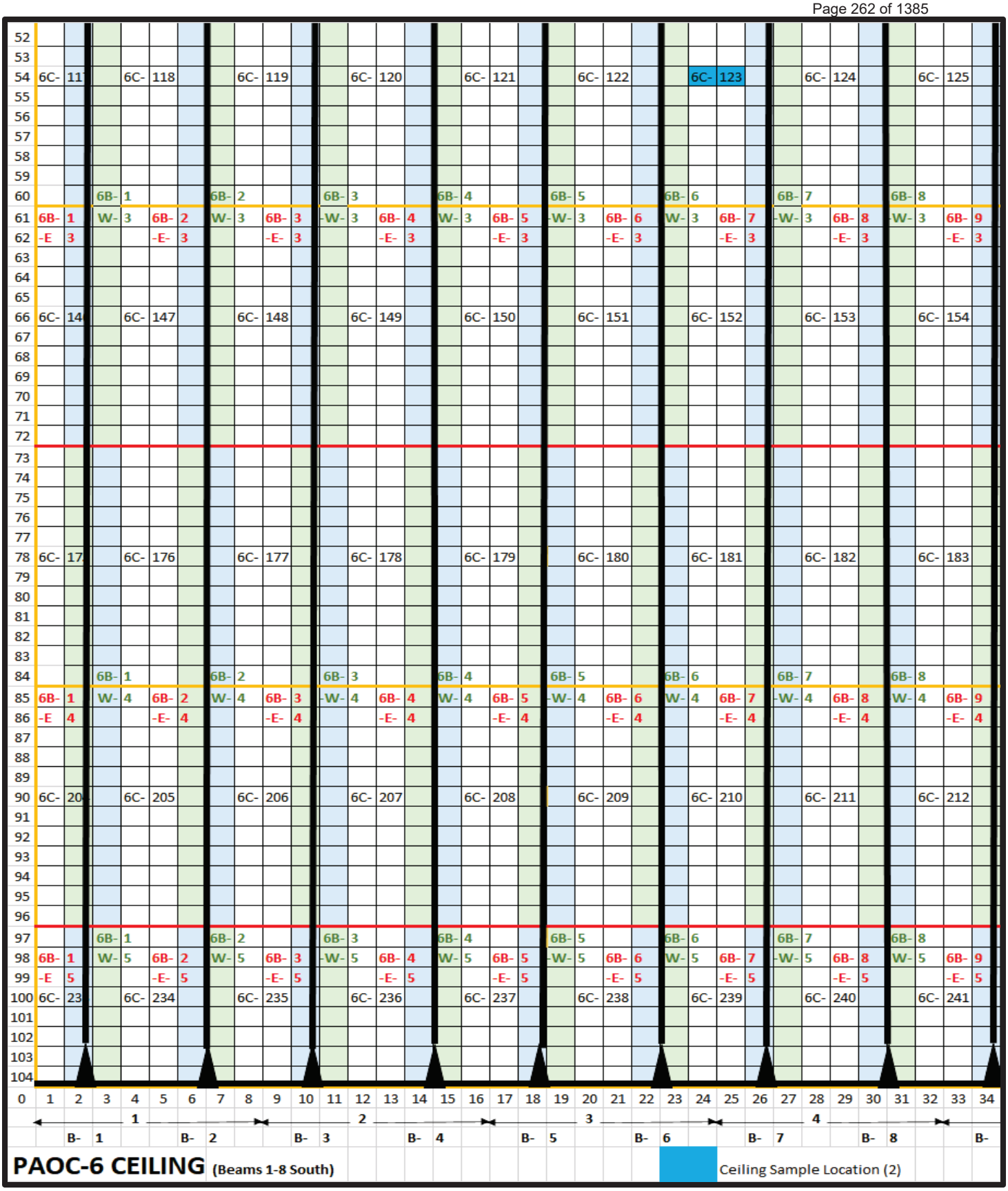
F RE 2- 0: PAOC- CE L N R MAP
(eam 19-28 North)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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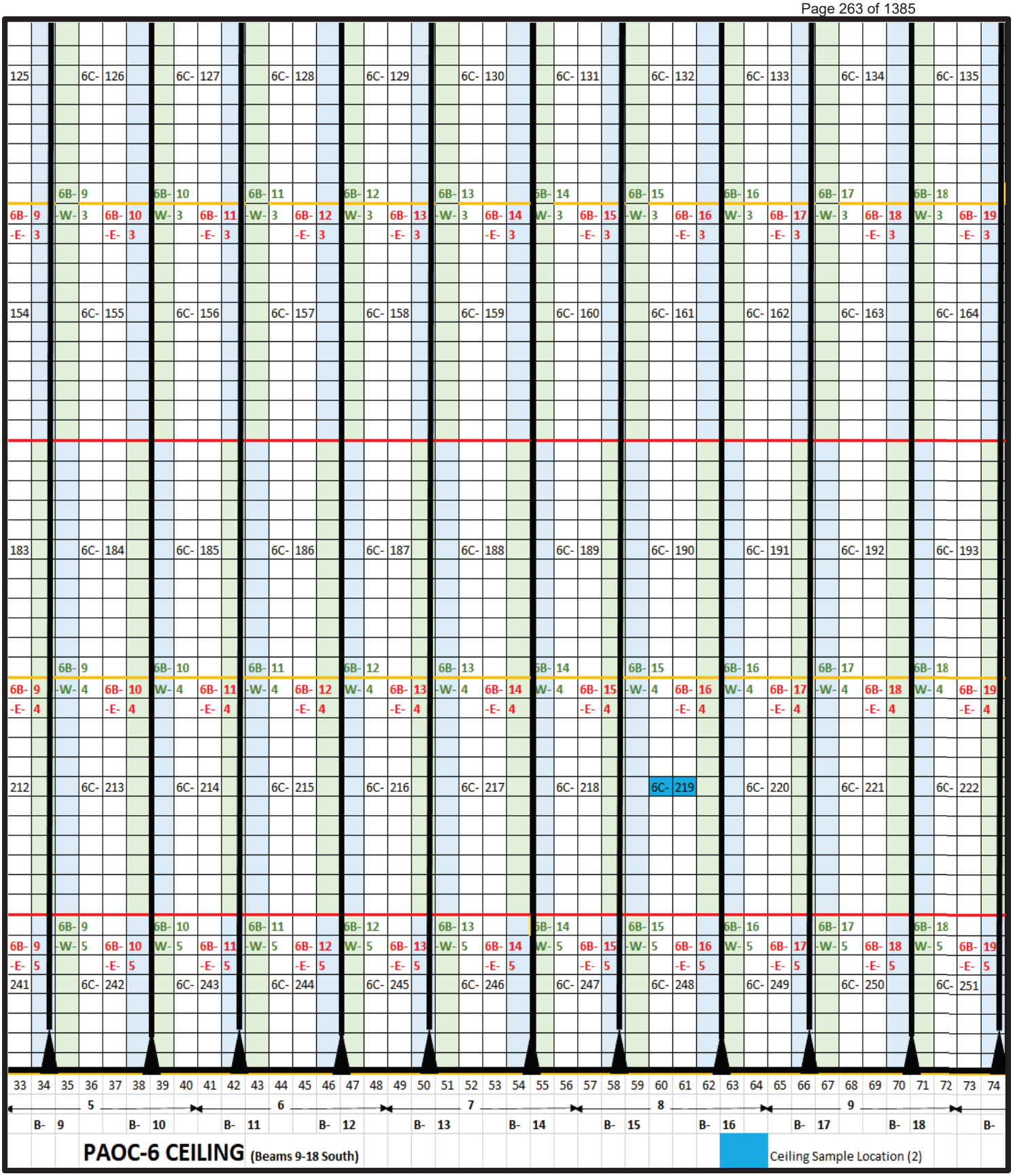
F RE 2- 1: PAOC- CE L N R MAP
(eam 1-8 South)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



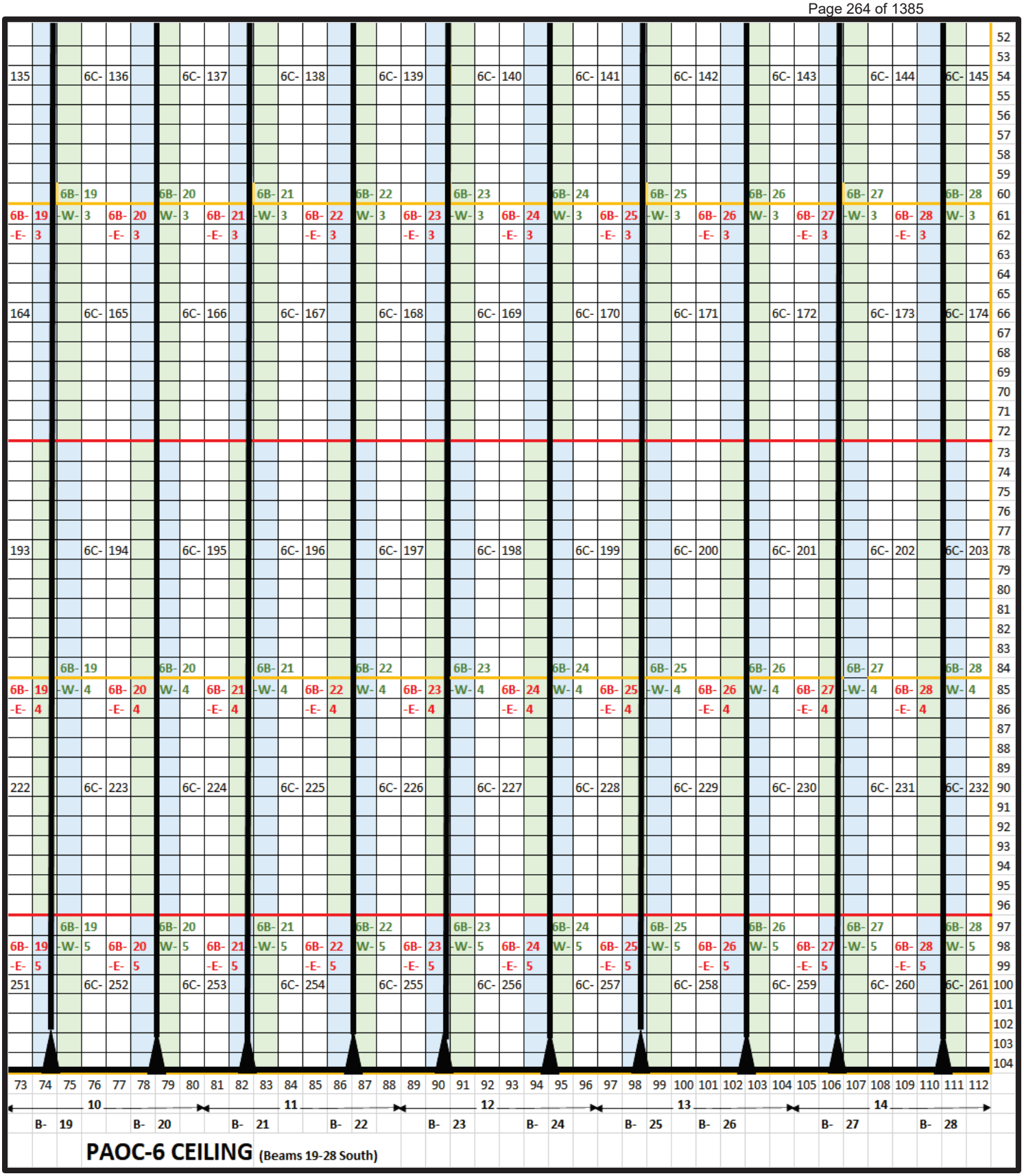
CN ASSOCIATES
YOUR PARTNER IN RADIATION SAFETY

F RE 2- 2: PAOC- CE L N R MAP
(eam 9-18 South)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



CN ASSOCIATES
YOUR PARTNER IN RADIATION SAFETY

F RE 2- : PAOC- CE L N R MAP
(eam 19-28 South)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)

PAOC-

Concrete Floor

2020 Vinyl Insulation

2022 Vinyl Insulation

Sample Location (4)

Sample Location (2)

Ceiling Sample (3)

NORT

Stucco Wall

10FT

Wall- Stucco Wall

Sample Locations (4)

	0	1	2	3	4	5	6	7	8	9	10
	1			7W-N-1					7W-N-2		
	2	7W-N-1-R							7W-N-2-R		
	3	7W-W-1								7W-E-2	
E	4			7F-	1-C				7-F-	2-C	
S	5			7CS-1-V					7CS-2-V		
T	6										
	7										
12 5 FT	8										
Wall- Vinyl	9	7W-W-3								7W-E-4	
Insulation	10			7-F-	3-C				7-F-	4-C	
	11			7CS-3-V/7CS-3					7C-4/7CS-4		
	12			7W-S-3						7W-S-4	

E A S T

Wall- Vinyl Insulation

12.50

SO T

Wall- Vinyl Insulation

Ceiling- Metal & Vinyl Insulation

Floor Concrete

Stucco Wall

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F RE 2- : PAOC- R MAP

T ERMO E ERL NE LLC

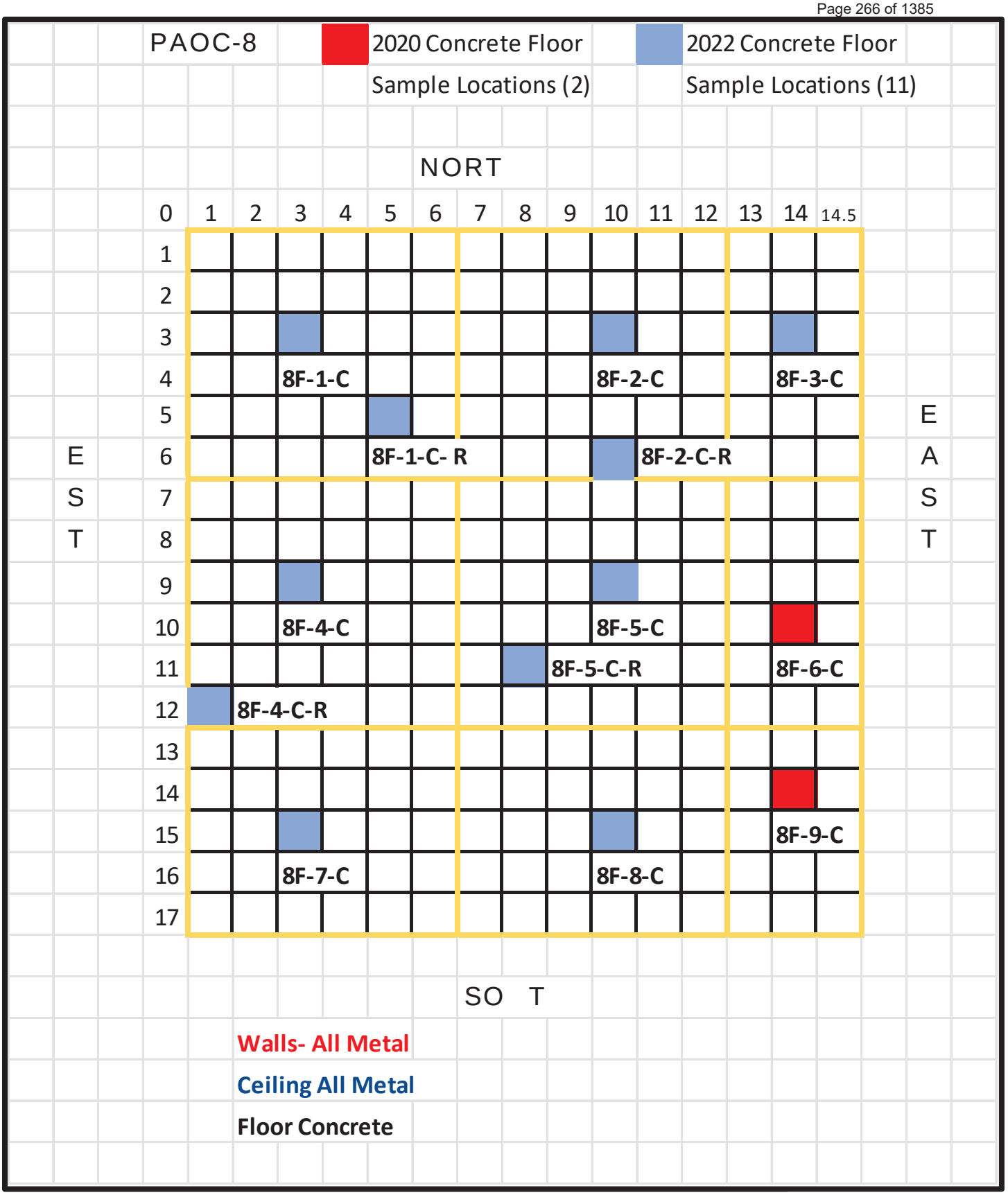
5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)

PAOC-8

2020 Concrete Floor Sample Locations (2)

2022 Concrete Floor Sample Locations (11)



Walls- All Metal

Ceiling All Metal

Floor Concrete

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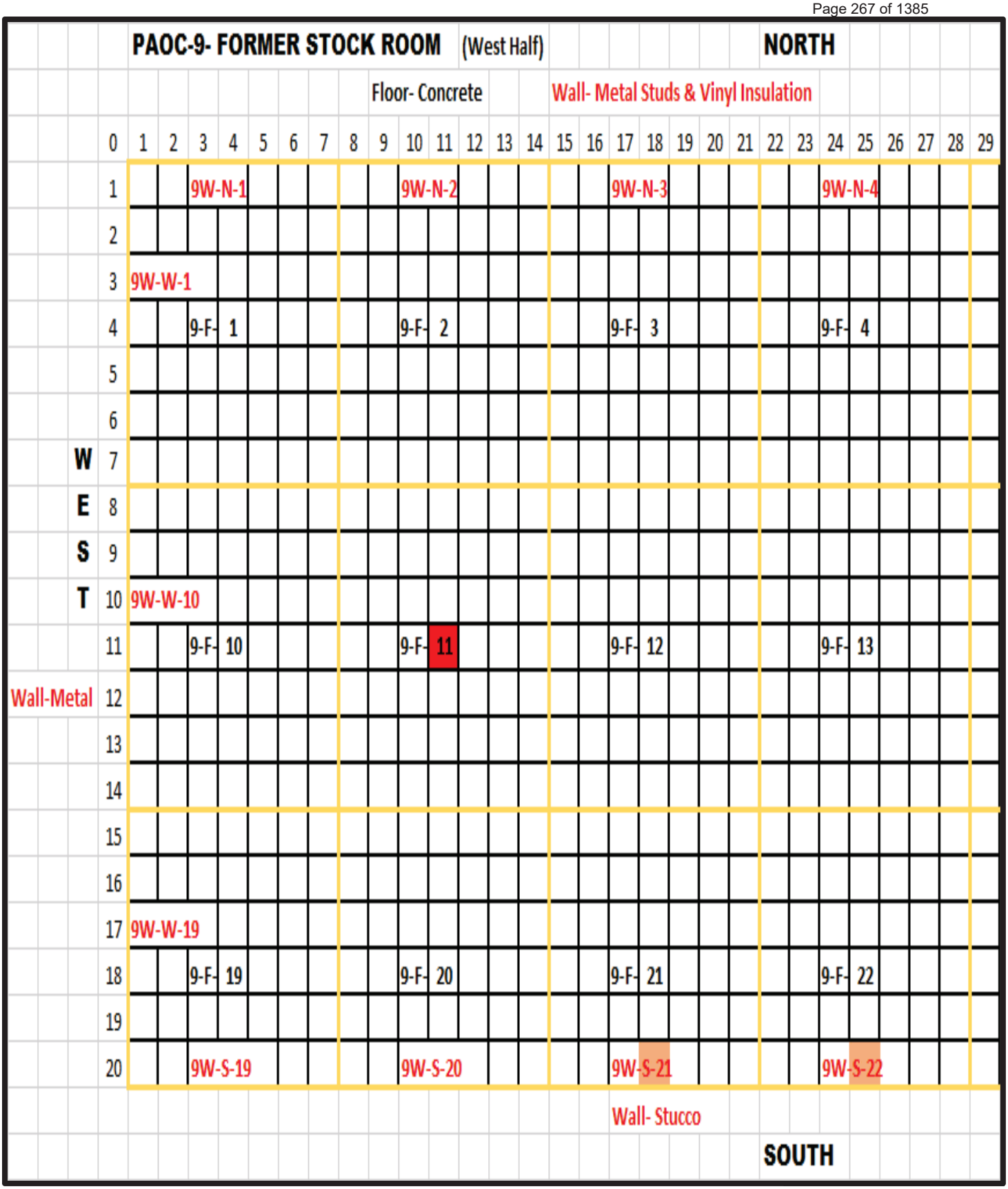
F RE 2- 5: PAOC-8 R MAP

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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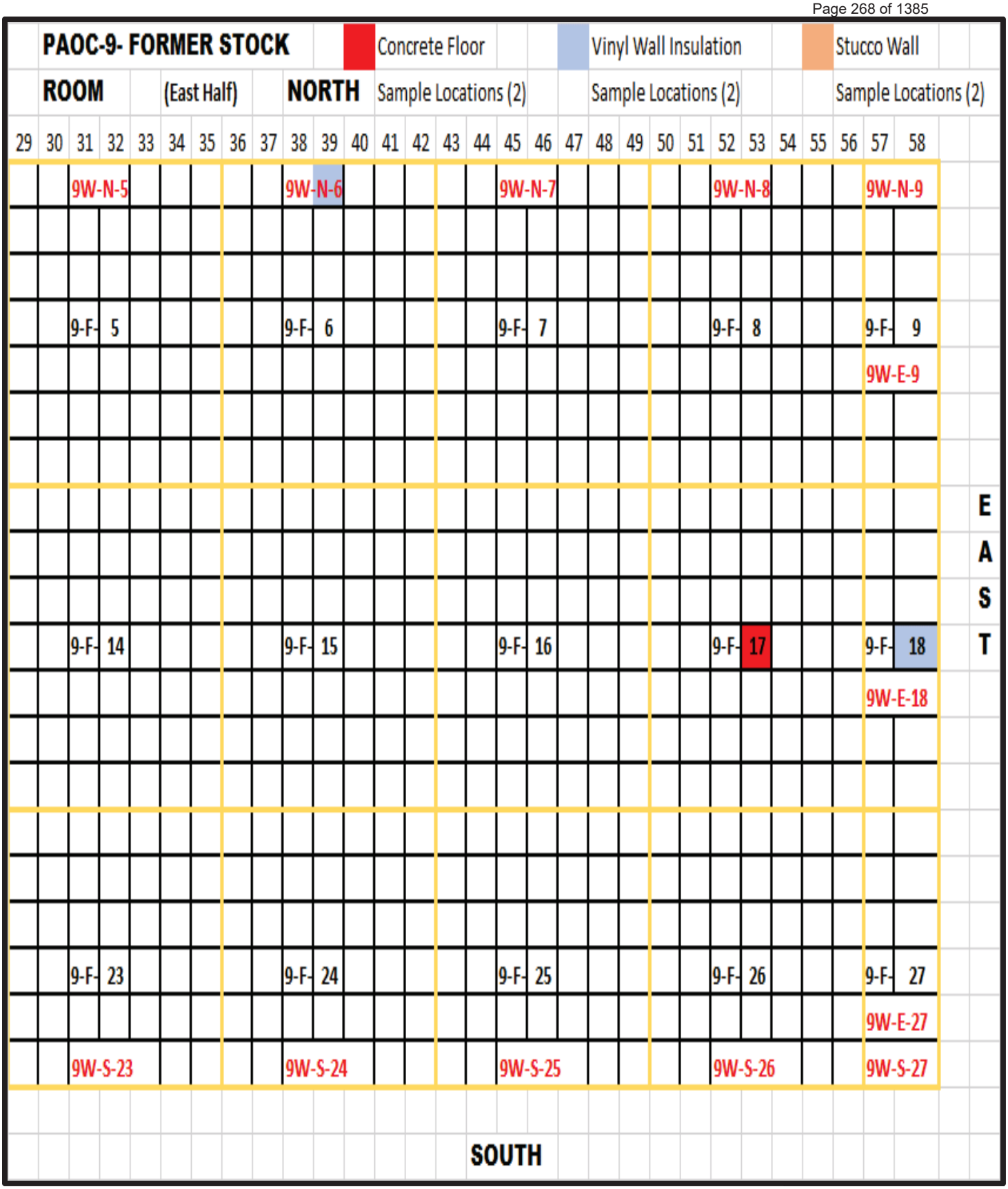
F RE 2- : PAOC-9 R MAP
(e t al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



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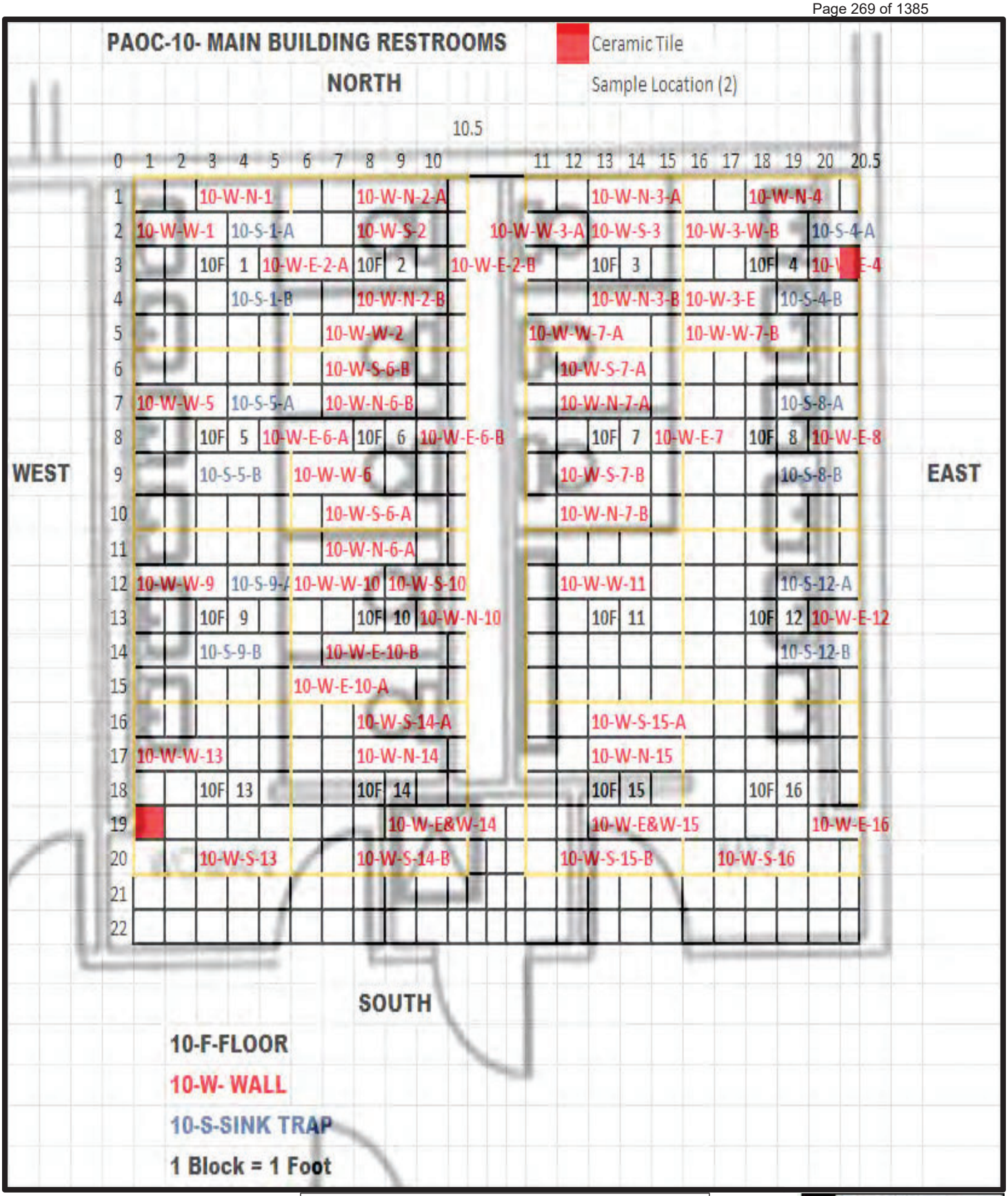
F RE 2- : PAOC-9 R MAP
(Ea t al)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)



F RE 2- 8: PAOC-10 R MAP
(Re t Room)

T ERMO E ERL NE LLC

5981 A RPORT ROA , SANTA FE, NM

(rid Cell 1 Foot)

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Figure 2- 9: PAOC 1-10 a ground Re eren e Area

Thermo Eberline, LLC
5981 Airport Road, Santa Fe, NM

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