

3. Report on Excavations

3.a. *Introduction*

The following section provides a formal report on the excavations at the Alamogordo landfill. Our efforts to document the excavation were not typical for archaeological work, but had to conform to access rules negotiated by the documentary film with the contractors doing the excavating, the NMED, and the city of Alamogordo. Our access to the site and to the excavations were further compromised by the desire of the film crew both to manage the revealing of the Atari games as a media event and to limit the circulation of information. Despite these limitations, the following report provides basic details of planning, the work of the bucket auger, the two days of excavation, and a basic report on the assemblage associated with the Atari game deposit.

Unlike conventional excavation, the stratigraphy in the Alamogordo landfill were fairly well understood prior to excavation. Conversations with Joe Lewandowski and the material he provided the film crew outlines the basic structure of the landfill deposit. Lewandowski provide an informal elevation plan of the landfill deposits. The top soil cover of the landfill was approximate 2 ft. Beneath that level was a 3-4 ft. layer of trash deposited in 1986. This sat atop another 2 ft of top cover deposited when the first phase of landfill activity at the site concluded in 1983. The 1983 landfill deposit was approximately 15 ft. and it sat directly atop the scatter of Atari games located immediately above virgin soil. The 1983 landfill deposit consisted of a series of columns deposited along the length of a east-west trench or cell. The material in this level slumped at the bottom of each column as it was dumped from the top of the trench. Unlike contemporary landfills, this level of trash was relatively uncompacted. Beneath this level was another distinct dumping episode which involved the Atari games and related material. This material was not deposited as a column, but spread in a thin layer across the bottom of the cell. Beneath the cell was the pre-landfill deposits.

The landscape of the landfill prior to excavation was largely indistinguishable from the surrounding dessert. The city of Alamogordo stands in the Tularosa basin near the foot of the Sacramento mountains which form the eastern side of the basin. The city stands at over 4000 ft amsl. The Tularosa basin the northern reach of the Chihuahua dessert and the neighborhood of Alamogordo is characterized by fine-grained silty loams at the surface and sandier loans beneath. Because the landfill was disturbed, however, we expected to find lenses of silty topsoil interspersed with sandier deposits. The site was covered with low shrubs and grasses characteristic of the region. The landfill itself was situated some 250 m behind the a commercial district of Alamogordo and accessed on a dirt road and consists of a 300 acre site. The dump itself consisted of a level area where the trenches had been cut, filed and graded surrounded by low hills consisting of the fill excavated for the creation and maintenance of the landfill. The light and sandy soil combined with the loosely packed landfill to produce an unstable environment for excavation. The light soil also

presented a challenge when driven by the high winds that the excavators encountered on the second day of the dig.

3.b. *Planning*

Unlike most archaeological projects where planning takes place months, if not years, in advance and represents an important occasion for ensuring a strong relationship between field procedures, methodology, and research goals. The planning phase of the Alamogordo Atari Expedition was a more ad hoc affair. Since we were not responsible or involved in acquiring permits or organizing equipment, we were not privy to those conversations. Moreover, the location of the excavation was expertly determined by Joe Lewandowski who had operated the landfill and was able use photographs taken at the time of the Atari dump to provide the general location for a series of core samples. We were also consulted on determining the location for the dig, and provided a rather more involved procedure that involved either cores or a series of narrow slit trenches over the most likely areas. Lewandowski's recommendation was better than ours and based on more detailed local knowledge. Unfortunately, we were not able to work with Lewandowski prior to the excavation and instead communicated directly with the film crew.

Planning for the excavation of the landfill began as early as August 2011 with Joe Lewandowski and various interested parties communicating with city officials. Over the next several months in 2011, Lewandowski secured preliminary to conduct a study from the environmental department and the city council with nine month window to secure funding; the mayor thought it was "a neat opportunity." By May 2013, however, the request to excavate had made little headway and an exasperated Lewandowski returned to city council to try to understand the status of the project on their end. The details of the situation in his presentation to the city council are challenging to make out, but it appears that two companies had begun to seek permission to excavate the landfill which apparently violate the terms of the 2011 agreement with city council. While these difficulties were ultimately resolved, they indicate not only the significant number of moving parts involved in coordinating this excavation, but the extensive time line and efforts by Lewandowski and others to make this excavation happen.

By 2014, the project had gained approval from both the city and were working to get approval from the New Mexico Environmental Department. The film crew and Lewandowski had a good idea where the games were located in the landfill. On March 11, 2014, an environmental and engineering firm Souder, Miller and Associates (SMA) of Las Cruces, New Mexico conducted cores to sample landfill gases over both the cell where the games were thought to be buried and took a single sample from the landfill cell some 20 m to the south. These cells ran east-west for approximately 150 m and were 20 m in width. The samples established that excavating the landfill would not expose the crew to toxic gases. The report on this work and the procedures that the

group conducting the excavations would follow was presented on March 18, 2014 with a series of revisions to an initial plan submitted to the NMED in early February 2014.

Shortly after this document was finalized, the production company corresponded with the archaeological team. While they provided only very basic information to us, we offered some basic observations on field methods in three areas. First, they were interested in a method or a standard that would allow them to say definitively that the games were not present. Evidence of absence has always been a difficult task for archaeological work, and the size and complexity of the landfill presented a challenging context for ruling out the presence of a particular deposit. Our contribution to this planning was simply to say that the best we could offer was a method for systematically exploring the landfill that could progressively eliminate potential locations for the Atari deposit.

We also discussed the size and shape of the trench. During the exploratory phase of excavation, Rothaus suggested combining coring with long slit trenches across the most likely area in the landfill. We speculated on the basis of photographs taken at the time of the dump that the games were spread over a 45 m x 10 m area across the bottom of a 20 x 120 m cell, but suggested that we would like to thoroughly investigate only a 10 x 10 m exposure. Since any vertical scarps associated with the silty loam of the Tularosa basin and the relatively loosely compacted landfill would be exceedingly unstable, they would have to be either gently sloped or stepped back if the plan called for archaeologists to enter the trench. In light of this situation, we proposed a depth-to-scarp ratio of 1:1.5. Depending on the depth of the deposit, this would make it a time consuming process to open a large exposure with a limited amount of heavy machinery.

Another specific concern for archaeological work was the possibility that the game layer was sealed under a cement cap. There were photographs in the media that showed cement trucks depositing their loads over what appeared to be the games in order to discourage looting. Conversations with various people present during the dumping of the Atari games including Joe Lewandowski assured the production team that the layer of cement was neither thick nor uniform, but intended to deter looting rather than to cover the entire deposit. At the same time, we suggested that the presence of a hard concrete cap would make it easier to use cores or slit trenches to locate the deposit of games.

Our initial hope was that the trench could be open for a week so that we could document carefully both the context of the games as well as the deposit associated with the games themselves. For reasons that were not initially clear to us, this was not possible, and the film crew proposed an alternate, two-day schedule for excavation. In this compressed time schedule and with out a clear idea of what to expect, Richard Rothaus decided to travel to Alamogordo with his truck filled with basic archaeological tools to ensure that we would not lose time or opportunities as a result of not having the proper equipment. We discussed informally the possibility of working through the night if conditions allowed, but recognized we had to adopt a flexible approach until we could understand the entire situation. Upon our arrival in Alamogordo it became clear that NMED and municipal

authorities set a two-day limit for the time that the dump could be open, and that the work could only go on at the site when environmental and site safety employees were present. So our documentation work would have to fit that schedule.

While we were trying to plan our work in Alamogordo, arrangements continued with the Sounder, Miller, and Associates, the production company, and Lewandowski. SMA drilled three additional cores to test for toxic gasses in the landfill cell to the south of the cell initially identified as containing the games. The results of these tests was presumably similar to those taken from the landfill to the north. The soil boring and pot-holing (digging of shallow test hole typically with a backhoe) demonstrated that the Atari games most likely 90 m to the southwest of the location identified in the initial plan submitted in February.

The greatest impediment to planning our work to document the Alamogordo landfill excavation was the halting communication with our team. This was a frustrating, but understandable, reality that reflected both the desire of the film crew to manage the flow of information in the lead up to the media event associated with the excavation and the remarkable complexity of producing a film about an excavation on a limited schedule.

3.c. Augering Atari

It appeared that the exact location of the Atari deposit in the Alamogordo landfill remained rather unclear as late as early April. This likely prompted initial exploration of subsurface deposits in the landfill using a bucket auger in the immediate. Several auger holes were made based on Joe Lewandowski's estimate of where the Atari games were dumped. He approximated the location of the trenches based on a series of photographs published in the local newspaper and the likely location of the photographer.

While our understanding of the planning phase of fieldwork has derived from public documents and conversations with the production company, the opportunity to witness the last phase of the exploratory phase came as the result of some unintentional guerrilla archaeology. Richard Rothaus who drove from Minnesota to the excavation area, arrived at the landfill earlier than the film production team expected. As a result, he was allowed access to the augering operation and observed at least three cores.

These cores were approximately 15 m apart and extended extended east to west in a line following the course of landfill cell that ran slightly to the southwest. The augur hole furthest east produced no cartridges. The auger hole approximate 15 m west produced Atari games as the did a third as did a third auger hole 15 m further west from that. Auger depths seemed to be >8-8.5 m (26-28 ft) when Atari games appeared. These augur holes located the deposit of games at the

western edge of the landfill cell and only slightly further west than the location identified on the modified plan submitted on April 14, 2014 by SMA.

The stratigraphy from auger holes was top to bottom: reddish soil, reddish soil and some trash, black soil with ash and nearly 50% of the volume as trash. Interestingly, none of the games showed signs of concrete and there was no evidence that the auger penetrated a concrete cap. The auger holes were marked and would direct the excavation on the next day. We were asked not to reveal the discovery of games. The auger cores reinforced the basic stratigraphy of the site presented by Lewandowski.

3.d. *Day 1*

Day 1 of excavation introduced our team to the specific process of excavation, the limits to our access, and the challenges associated with removing the substantial overburden of landfill. Upon our arrival at the site, we encountered several pieces of heavy equipment for use in the excavation. There was a the large excavator with 10 m reach, a front-end loader, and a small fleet of trucks that would remove the fill from the site and transport it to a nearby landfill. There was also a strictly maintained safety cordon around the excavation areas with a single access-control point. Because the excavator, loader, and trucks would be moving continuously during the dig, access to the work area was largely prohibited to non-essential personnel. Periodic breaks in excavating would occur to allow the archaeologists and members of the film production team to examine the trench. Most of our documentation work came from a base of operations set up immediately outside the safety cordon approximately 15 m from the area under excavation. We recorded regular observation in a field notebook and took photographs and video of both the trench and the material excavated. This vantage point also allowed us to get periodic, updates from city employees, the production crew, and the foreman of the excavation contractors. This information forms the basis for the following report on the excavation. The excavation work was fundamentally shaped by the instability of the landfill and the quantity of overburden. The excavator had to move regularly to ensure a secure footing for digging. Because the excavator had to move regularly and the excavation only had access to a limited number of trucks to move the trash to another landfill, the rate of work was slower than anticipated. The pace and depth of the Atari deposit eliminated any hope for excavating a large, open area with sufficiently stepped or sloped scarps to allow access to the trench or even clear views of the scarp during excavation.

At the start of excavation a bulldozer scraped perhaps 0.2 to 0.4 m of soil from the surface to create both a level space for the excavator but also to remove some of the overburden above the first level of garbage. The excavator initially positioned itself at the north side of the trench with its treads perpendicular to the east-west cut of the initial landfill deposit. From this position the excavator was able to remove approximately 3 m of material which included both the highest level

of reddish-brown soil, a level of trash, and then another level of reddish-brown soil. The second lens of reddish-brown soil represented an earlier surface associated with a temporary closure of this part of the landfill which was then covered by another round of dumping activity in the mid-1990s. Below that level was the trash deposited in the original landfill cell and it consisted of black soil and garbage. Because the landfill scarp was relatively unstable, the digger created a compacted platform for itself as it dug down, depositing each bucket load into one of a fleet of dump trucks required to cart the old trash to the new landfill several miles out of town. Each truck driver was given a bill of lading for their load to record how much material left the old landfill (Fig. 8).

After approximately 3 m of excavation, the scarp seemed unstable and the trench was backfilled. The excavator then moved west along the south side of the previously excavated area. A 2 m deep ramp was excavated that allowed the excavator to move west and to start to remove soil from a new trench to the north of its location and to the west and south of the first trench. The goal of this ramp was to situate the excavator on what was thought to be the more stable soil on the southern edge of the original cut made for the landfill. At the same time, a bucket loader joined the digger to help move excavated earth into the dump trucks and thus allow the excavator to focus on removing fill from the trench. By noon, the hole was perhaps 3 m deep with no sign of any Atari games. There was a concern that the digger would not arrive at the Atari level by six that evening, or that the digger's arm would not be long enough to reach down to 10 m below the surface.

Once the excavator had moved to a new location south of the now-backfilled trench, it opened a new trench some 1-2 m to the south and west of the original trench. To expedite removal of fill, the excavator would first pile the soil and garbage to the west of the trench before it was moved by the bulldozer to the east of the trench and loaded into trucks or piled atop the first trench to the east of the new trench. As the bulldozer pushed the bucket-loads of soil and trash from the west side of the trench to the north and east, it created a level area approximately the same elevation as the area on which the excavator sat to the south of the trench. From this new platform to the west of the trench, the excavator removed 6-7 m of fill. As expected, the stratigraphy of this new trench was similar to that of the first trench. There were alternating levels of soil and garbage for the first 2-3 m and then a consistent level black earth and garbage for 3-5 m.

From this level, black garbage was clearly visible in the excavator's scoop as well as a wide range of trash. Our vantage point offered only irregular glimpses of the material removed from the trench. The most visible material consisted of fabric, plastic, and dense cardboard. Plastic tarps and lawn bags formed meshworks of plastic torn by the excavator connecting pockets of discarded yard waste, household trash, and dirt. Pieces of corrugated cardboard from shipping boxes represented contact between the domestic and industrial world. At one point the excavator tore through a nylon parachute which billowed in the wind to remind us of the history of aviation in the region. The excavator unravelled spools of magnetic tape from broken cassettes and video tapes. As the pile of excavated trash grew larger, some of it spilled down the sides closer to the archaeological and when

archaeologists were able to enter the safety cordon, they documented an assemblage distinct to the 1980s. This group of materials included a glass Pepsi bottle, a Donnie and Marie Osmond poster probably associated with their successful late 1970s TV series, newspapers from the 1980s, and bills and check registers with similar dates (Fig. 9). By six that evening, the digger had gone as far as it could before daylight began to fade and stopped at about 9 m below the surface. The digging would continue the following morning and for much of the next afternoon as it searched for the games.

3.d. *Day 2*

Based on information from the cores and the dates found on material coming from the trench, there was reasonable confidence that the excavator had stopped within a meter of the Atari deposit. It is also possible, however, that the production team and the excavator had breached the Atari deposit in the evening of the Day 1 digging and simply did not divulge that information to the archaeologists. There was no visual indication that the Atari deposit had been breached, and there was no reluctance to allow the archaeology team to document the scarp prior to the start of excavation. Our slight distrust of the archaeological situation at the end of the first day of excavation reflected the questionable state of information moving between the production company and our team. Despite that lack of information moving between teams, the ragged scarp of the trench after Day 1, showed four clear depositional events that were consistent with our observations during Day 1: alternating bands of reddish brown soil with levels of trash.

By the time excavation preparation began, over 100 people had assembled awaiting entry into the landfill to watch the historic unearthing of the discarded Atari games. Social media had been ablaze with stories of the ongoing excavation, various digital and media outfits had sent reporters to cover the event, and the entire site had a carnival air to it with food trucks, production vehicles, and various Atari-related celebrities separated from the excavation area by a safety fence. Unlike salvage excavations or their even more staid academic counterparts, the festival atmosphere surrounding the excavation played on public's nostalgia for Atari, the interest in the documentary film, and an interest in the role of archaeology in validating an urban legend.

In preparation for a more public day of excavation, the production company set up a table near the safety fence. We also set up another two tables on the far side of the pit where we could document finds as they were recovered. A closer scrutiny of the trash being removed from the landfill revealed the remarkable level of preservation. As William Rathje noted thirty years ago, the level of preservation in the anaerobic conditions of a landfill offers a remarkable degree of preservation for organic material. Even grass clippings, for example, remain green and vibrant after over 30 years of burial. More important to this excavation, however, is the degree to which newspaper and other paper documents were preserved. These allowed us to establish very precise terminus post quem for the household trash. Since we know that the trash was deposited

systematically with trash collected later deposited atop trash collected earlier, the terminus post quem of objects from the levels provide the earliest data possible for the deposits.

Since we could not approach the edge of the trench and the pace of the excavation continued to be brisk, but decided to have the excavator dump every third bucket-full of material at the side of the trench for us to examine. We sampled this small pile by filling a 5-gallon bucket of material and sorting and documenting the contents. We did this efficiently with notes in a notebook, photography, and record additional notes via a portable digital audio recorder. Each bucket we examined was labeled with the whiteboard, using the bucket number, date, and time of excavation. In the more secure context of the excavation, we sampled five excavator-buckets of garbage and black soil removed from the trench and deposited in our sorting area.

These first four buckets consisted of domestic garbage datable to December and November 1983. Amidst the chips of broken plastic, there were a number of remarkably intact artifacts including: Coca Cola can, a candy cane, a paper check with the date of November 7, 1983. The presence of discarded boxes from toys and Christmas decorations suggested that the date in which the first buckets were deposited was near or slightly after the end of December 1983. Unfortunately the excavator was not able to remove material from the trench with enough delicacy for us to recognize individual depositional events. Moreover, the construction and leveling of the landfill disturbed the individual depositional events making individual truck loads impossible to discern.

High winds and blowing sand bedeviled our entire operation making it difficult, at first, and then impossible to prevent trash, our notes, and other debris from blowing about the site. There were sustained winds of over 20 mph with gusts of 40 mph recorded at the nearby Alamogordo airport. The light soil and dust kicked up by the constant movement of heavy equipment ensured that the entire operation was engulfed in wind-whipped and billowing dust. As a result, the first find associated with the Atari deposit was found by Tony Johnson, a visitor from Denver, Colorado, recovered the first surface find: a rubber top to an Atari joystick, which had likely blown from the digger's bucket over to the portable toilets (Fig. 12). The producers presented the artifact and the discoverer to the crowd over a public address system.

The excavator breached the Atari deposit in Basket 5, but this load clearly included some of the later material associated with regular household trash including a newspaper article dated to September 28, 1983 which featured a cover story on the dumping of the Atari games. By all accounts, the Atari deposit represented a single depositional process, made of [how many?] truck loads of Atari material dumped on the bottom of the landfill cell beneath the lowest level of domestic trash. The first Atari game discovered in that bucket was a boxed copy of *E.T.* The rest of the bucket contained other Atari cartridges and boxes, as well as paper manuals and inserts, plus an assortment of household trash. It would appear, then, that this level captured the contact between the Atari deposit and the later garbage. The absence of substantial quantities of concrete in the buckets that breached the Atari deposit confirmed that the concrete cap was irregularly applied to

the top of the Atari deposit and our trench may well have encountered the easternmost part of the Atari dump at the edge of the concrete cap.

With the discovery of Atari material, the nature of the excavation and documentation of material changed. The film crew had instructed Reinhard (who wore an earpiece and microphone for the day for crew communications) to alert them on a private channel if anything significant was found. When the excavator recovered an *E.T.* cartridge, Director Zak Penn, a soundman, and a cameraman arrived, placed the game in a bucket, and then Reinhard and Penn walked to present the artifact to the crowd and media. Reinhard unboxed the game for Penn. The box, beaten up from the landfill and extraction, yielded an intact *E.T.* cartridge, instruction booklet, and flyer for the *Raiders of the Lost Ark* game released by Atari in 1982 (Fig. 15).

Once the first Atari games were found, the team continued to examine the contents of each bucket-load, ferrying material to a set of tables further removed from the crowd and the excavator to unload, photograph, and record in a preliminary way (Fig. 16). The team arranged the games and hardware on the table for Guins to identify. We recorded his identifications in a notebook and photographed finds that were either rare or well-preserved. The finds were recorded by title, contents, and condition before being returned to their respective 5-gallon buckets. Special finds would be placed in banker boxes. The archaeologists were interviewed on camera during one recording session to describe the method and what was being found and saved.

As the crowd dispersed and the initial thrill of discovery gave way to the reality of standing in a landfill during a sand storm, the excavator moved more quickly to extract as much of the Atari deposit as possible. The bucket loads of games and other debris were dumped outside of the trench, and we worked quickly to document the material as it was being extracted and before city employees collected it for removal, sorting, and storage. The quantity of blowing dust, the time constraints of the production and excavation schedule, and the irregular flow of information made the work on Day 2 chaotic and exhausting.

3.e. *The Assemblage*

There were three challenges associated with documenting the assemblage produce by the excavation of the Alamogordo landfill. First and foremost, the excavation produced a massive quantity of material. The deliberate sampling techniques employed by Rathje's Garbage Project reflected his awareness that the contemporary world produces a tremendous quantity of discard every day. The second complication with our ability to document the assemblage from the landfill was the pace of excavation and the need to transport material removed from the landfill to a secure disposal site. The NMED simply would not allow piles of material from the landfill to remain exposed to the air and wind for any significant length of time. Finally, we did not have consistent

access to the discarded waste to allow for even superficial sampling because of the safety cordon around excavation area. While these limits were frustrating, they represent distinct challenges associated with the documentation of sites of contemporary discard.

Since systematic sampling of the landfill was not practical (and perhaps not even desirable), our observations on the character of the larger landfill assemblage will remain relatively general. The area of the landfill functioned as a dump for over 60 years with the earliest dumping at the site dating to the 1920s and the landfill functioning as the official discard area for Alamogordo solid waste from the 1960s to 1989. The dumping of Atari games was not the only sensational event to involve this landfill. In 1969, a local farmer accidentally fed his herd of pigs mercury treated grain. His family consumed the meat of contaminated hogs and his children developed acute mercury poisoning. The tragic decline in his children's health attracted national attention to the dangers of mercury poisoning. His contaminated hogs and any remaining grain was dumped in the landfill. During negotiations between the production company and the City of Alamogordo, there were several conversations relating to the risk exposing the community to mercury contamination. City council minutes revealed that the site had also seen the dumping of 5000 gallons of the pesticide malathion at the site. A series of tests conducted in 2004 by the New Mexico Environmental Department revealed that the soil and air at the site produced toxic chemicals at levels above federal limits. While all parties received assurances that these the most toxic areas of the landfill would not be disturbed, the general toxicity of the soil and air around the site represented an almost invisible component of the landfill assemblage that nevertheless constrained the way that the excavation of the landfill proceeded. Air monitoring, soil testing, and limited general exposure to the site served to ensure that no participants in the excavation were in sustained contact with contamination. The landfill produced small, but detectable quantities of methane, carbon dioxide, and other volatile organic compounds in greater levels than exist naturally. The toxicity of the landfill also brought to the fore the logistical challenges of excavating a modern period site and the complexities of a modern archaeological assemblage that includes chemicals in the air and the soil. On the one hand, we became aware of site formation processes that saw the material content of the landfill transformed into less visible gases and contamination.

We also recognized that the use history of the Alamogordo landfill included significant quantities of local trash from the community. The billowing form of the parachute evoked the community's close connection to the military aviation. The bags of grass clippings reflect the spread of irrigation and the suburban lawns in the desert southwest. The appearance of waste associated with national brands, from Coca Cola to Stroh's beer and Donnie and Marie Osmond reflects an anticipated integration of this community within national economic networks. The presence of Christmas decorations, cards, and empty boxes for mass-produced toys in the deposits immediately above the Atari levels shows the rapid conclusion of the holiday season, the general property of some parts of the community, and the commercial character of Christmas in the 1980s. The excavation of a

landfill presents an assemblage which reflects the history of the community, its discard practices, and the links between Alamogordo and the national trends.

The initial assemblage of Atari games removed from the landfill in Bucket 5 presented an overview of the games found throughout the Atari deposit. The Atari debris can be loosely grouped into six categories. (1) Paper artifacts included game boxes, instruction manuals, Atari Force comics, and catalogues as well as assorted cardboard likely from shipping boxes which would contain several boxes of games. (2) There were also a significant number of games in boxes. The types of boxes range widely from plastic “clamshell” or blister packs which contained silver Phoenix and Centipede cartridges to cardboard packaging containing the silver E.T. game as well as Star Raiders, Asteroids, and Defender games. (3) Some of these packages included price tags for Walmart and Target and more rarely return receipts and labels, and in cases where these had dates, they dated to 1981 or 1982. (4) In other cases, there were loose games. We generally noted that more loose games were more unusual titles in the overall assemblage. For example, Indy 500, Baseball, and Golf only appeared as loose cartridges and were all games that dated to 1980 or earlier. (5) We found a number of examples of Star Raiders video touch pads which were sold with the games. (6) Finally, we discovered several objects throughout the assemblage with small quantities of concrete on the artifacts.

The structure of the assemblage collected in Bucket 5 provides us with the basis for some basic observations. First, the games were remarkably well preserved and intact which speaks to their being exposed for only a short period of time before being buried under trash. It also suggests that the games were neither compacted in a consistent way. Second, there is little evidence for concrete on the games suggesting that the concrete cap was either not extensive or not particularly robust. The presence of price tags and occasional return receipts from major retail chains indicates that these games were either returned unsold or had been returned by unsatisfied buyers. Most of the games with price tags were released in 1981 or 1982 including E.T. (1982), Centipede (1982), Phoenix (1982), and Haunted House (1981). The presence of multipacks of games, including a group of 5 Asteroids games without price tags, indicate that some of these games were either returned by the retailer before they were put on sale or never sent out to retailers. A handful of pre-1980s games, like Indy 500 (1978), Baseball (1978), and Golf (1980) appeared as loose cartridges and did not appear in blister packs or boxes suggesting that there were some residual games in the deposit that probably had a different origin than the majority of material. The most common games, Missile Command (1982), Asteroids (1981), SwordQuest - Earthworld (1982), Ms. Pac-Man (1982) and Defender (1981) for the 2600 and the 5200 (1982) were later games and also appeared in boxes or blister packs. The presence of empty Defender and Ms. Pac-man boxes and loose Swordquest and Missile Command instruction manuals suggests that these loose games should probably be associated with these loose boxes and documentation. While this assemblage represents just a single

sample from the massive quantity of games produced by the excavation, it is representative of the larger pattern of the larger corpus of Atari material excavated over the course of the day.

As we hastily processed the first bucket of Atari material, additional material was removed from the trench and dumped along the side of the hole. We proceeded to document this material using digital photographs and taking quick notes as we went through the pile of discarded Atari material. Of particular note in this assemblage was a quantity of wood both from pallets and from what appear to have been crates. This did not appear in the first sample of material from the Atari deposit, and this probably reflects the first sample coming from the upper levels of the Atari deposit and the wood pallets being part of the lowest levels of this deposit. The larger sample of the Atari deposit revealed a greater diversity of game titles, but the games tended to be packaged in the same way. Some games were loose and others showing signs of being packaged for distribution or return. The larger sample also produced more game controllers, but there were few obvious indications of game consoles being part of this assemblage. The finds from the excavation will be treated in more detail later in this volume.

In short, the assemblage produced by the Alamogordo Atari Excavation is not straightforward. Despite our challenges documenting the Alamogordo landfill, it nevertheless presented a complicated image of both household trash and industrial and commercial discard. The presence of various toxic compounds produced by soil and air testing of the landfill revealed that the composition of the landfill did not remain static and extended to include small quantities of invisible and toxic gases. The removal of a substantial sample from the Atari deposit itself likewise reflected variation in the historical formation of the assemblage and its formation on site. The range of conditions of the games, their age, the presence of price tags or packaging.

3.f. *Conclusions*

Our efforts as archaeologists to document the actual field work in Alamogordo, New Mexico, remains provisional. The lack of communication between the production company, the contractors, and various city workers. As a result, our field work was initially limited to observing, largely behind a safety cordon, and then moving quickly through buckets of domestic trash as crowd of onlookers eagerly anticipated the discovery of Atari games.

The earliest phases of planning work, conducted by Joe Lewandowski and SMA, demonstrated that a fairly clear idea existed for both the location of the games and the extent of the excavation as early as February 2014. At the same time, the regular modification of the official plan for the work demonstrates that ongoing research continued to refine the plan and update the best-estimates on the locations of the game. This involved some conversations with the archaeologists and significant work on the part of both Lewandowski and the various contractors involved in the preparation. Considering the need to test the landfill for toxic gasses, to remove material from the old

Alamogordo landfill to a new location, and to coordinate environmental inspectors, contractors, the production crew, and city officials, it is hardly surprising that the excavation was well-planned and the outcome was as secure as possible prior to the two days of actual excavation. Like any academic or contract excavation, the dig itself was only as successful and controlled as the preparation of the excavators.

The excavation presented part of a complex assemblage of domestic and commercial material including both household trash and a substantial number of Atari games. The exceptional level of preservation of very recent discard made identifying and dating deposits far easier and more precise than in most excavation. The preservation of paper documents, seasonal decoration, and the Atari deposit itself revealed precisely the point where the depositional character of the landfill changed from the regular dumping of local trash to the single episode of dumping associated with the Atari dump. This point of contact defined the relationship between these two assemblages in an obvious way and stood in contrast with the more complex chemical and historical relationships present in the old Alamogordo landfill. The tragic memory of the mercury pigs, the dumping of pesticides associated with agriculture, and the toxic chemicals released as part of decomposition contributed to an assemblage at the landfill that extended both into the past of local memory and into the future as discarded objects underwent transformation.

At the end of the our day of participating in the excavations, the wind had driven us into the back of Rathaus's pick-up truck. We were able to watch the futile effort of a water truck to keep the dust down by spraying grey water on the down the pile of Atari games at the edge of the trench. City workers and contractors made their way through these piles removing games and placing them in plastic trash bags to transport from the site into city storage.