Facility Evaluation Report (FER) Part 1

For Compliance with 40 CFR §257.75(c)

Legacy Coal Combustion Residuals (CCR) Surface Impoundments and CCR Management Units Final Rule

Martin Drake Power Plant

Colorado Springs Utilities

December 13, 2024

Table of Contents

List of Tables

List of Figures

List of Appendices

Table i. Summary of 40 CFR Section §257.75 Facility Evaluation Required Components

Facility Evaluation Requirements	Compliance with Requirement
(c)(1) No later than February 9, 2026, the owner or operator of an active facility or a facility with a legacy CCR surface impoundment must prepare a Facility Evaluation Report Part 1, which shall contain, to the extent reasonably and readily available, the information specified in paragraphs (c)(1)(i) through (xiv) of this section. The owner or operator has prepared the Facility Evaluation Report Part 1 when the report has been placed in the facility's operating record as required by §257.105(f)(25).	Complete when Part 1 FER is placed in the facility operating record
(i) The name and address of the person(s) owning and operating the facility; the unit name associated with each regulated CCR unit and CCR management unit at the facility; and the identification number of each regulated CCR unit and CCR management unit if any have been assigned by the state or by the owner.	Section 2.0
(ii) The location of any CCR management unit identified on the most recent U.S. Geological Survey (USGS) 7½-minute or 15-minute topographic quadrangle map, or a topographic map of equivalent scale if a USGS map is not available. The location of each regulated CCR unit at the facility must also be identified in the same manner.	Sections 2.0 and 2.1
(iii) A statement of the purpose(s) for which each CCR management unit at the facility is or was used.	Section 2.2
(iv) A description of the physical and engineering properties of the foundation and abutment materials on which each CCR management unit is constructed.	Section 2.3
(v) A discussion of any known spills or releases of CCR, including any associated remediation activities, from each CCR management unit and whether the spills or releases were reported to state or federal agencies.	Section 2.4
(vi) Any record or knowledge of structural instability of each CCR management unit.	Section 2.5
(vii) Any record or knowledge of groundwater contamination associated or potentially associated with each CCR management unit.	Section 2.6
(viii) The size of each CCR management unit, including the general lateral and vertical dimensions and an estimate of the volume of waste contained within the unit.	Section 2.7
(ix) Dates when each CCR management unit first received CCR and when each CCR management unit ceased receiving CCR.	Section 2.8
(x) Identification of all types of CCR in each CCR management unit at the facility.	Section 2.9
(xi) A narrative description of any closure activities that have occurred, including any applicable engineering drawings or reports.	Section 2.10
(xii) A narrative that documents the data reviewed as part of the facility evaluation process, and that lists all data and information indicating the presence or absence of CCR management units at the facility.	Section 2.11
(xiii) Any supporting information used to identify and evaluate CCR management units at the facility, including but not limited to any construction diagrams, engineering drawings, permit documents, wastestream flow diagrams, aerial photographs, satellite images, historical facility maps, any field or analytical data, groundwater monitoring data or reports, inspection reports, documentation of interviews with current or former facility workers, and other documents used to identify and evaluate CCR management units at the facility.	Section 2.12

Table i. Summary of 40 CFR Section §257.75 Facility Evaluation Required Components

Facility Evaluation Requirements	Compliance with Requirement
(xiv) A narrative description of any data gaps for information in paragraphs (c)(i) through (xiii) of this section, not available in existing information collection records and a plan for remedying identified data gaps through a physical examination of the facility, including any field or laboratory work needed to remedy data gaps in the Facility Evaluation Report Part 1 record. The plan must include the major milestones needed to fill the identified data gaps (e.g., a physical examination of the facility, sampling of media, measurements of CCR concentrations in and around the unit or physical presence, delineation of CCR management unit(s)) and dates to complete such needed tasks. Also, as necessary and timely, any updates to data gap remedy plans must be added to the public record during the Facility Evaluation Report Part 1.	Sections 2.13 and 2.14
(2) The owner or operator of any facility regulated under this subpart must obtain a certification from a qualified professional engineer stating that the Facility Evaluation Report Part 1 meets the requirements of paragraph (c)(1) of this section.	Section 3.0
(3) The owner or operator of any facility regulated under this subpart must certify the Facility Evaluation Report Part 1 required by paragraph (c)(1) of this section with the following statement signed by the owner or operator or an authorized representative:	Section 4.0
(4) No later than February 9, 2026, the owner or operator must notify the Agency of the establishment of a CCR website using the procedures in §257.107(a) via the “contact us” form on EPA’s CCR website.	Complete
(5) The owner or operator of any facility regulated under this subpart that does not contain any CCR management unit must submit Facility Evaluation Report Part 1 documenting the steps taken during the facility evaluation to determine the absence of any CCR management unit. The Facility Evaluation Report Part 1 must include the certifications required under paragraph (c)(3) of this section.	N/A

1. Introduction and Purpose

On May 8, 2024, the United States Environmental Protection Agency (EPA) finalized changes to the Coal Combustion Residuals (CCR) regulations for inactive surface impoundments at inactive electric utilities, referred to as legacy CCR surface impoundments, and added regulations for CCR Management Units (CCRMUs). Through implementation of the 2015 CCR rule, EPA found areas at regulated CCR facilities where CCR was disposed of or managed on land outside of regulated units at CCR facilities, referred to as CCRMUs. The updated Rule requires groundwater monitoring, corrective action, closure, and post-closure care requirements for all CCRMUs at covered facilities. This Rule change, referred to as the Legacy CCR Rule, was effective November 8, 2024.

Covered facilities are required to complete a facility evaluation, which includes preparation of a Part 1 Facility Evaluation Report (FER) followed by a Part 2 FER. Covered facilities include active electric utilities, or independent power producers that generated power for the electrical grid on or after October 19, 2015. By definition, the former Martin Drake Power Plant (Drake) is an active facility, considered a covered facility, and is required to prepare a Part 1 FER.

The purpose of this Part 1 FER is to review reasonably and readily available information for Drake on CCR placement and whether CCR was either routinely and systematically placed on land, or where facility activities otherwise resulted in measurable accumulations of CCR on land to ultimately determine the potential existence and locations of CCRMUs containing at least one ton of CCR.

The definition of a CCRMU from 40 CFR Section §257.53 is:

> *CCR management unit means any area of land on which any noncontainerized accumulation of CCR is received, is placed, or is otherwise managed, that is not a regulated CCR unit. This includes inactive CCR landfills and CCR units that closed prior to October 19, 2015, but does not include roadbed and associated embankments in which CCR is used unless the facility or a permitting authority determines that the roadbed is causing or contributing to a statistically significant level above the groundwater protection standard established under § 257.95(h).*

This report documents the historical records that were reviewed, identifies data gaps, and describes a plan for conducting a physical inspection of the site to verify locations and fill data gaps in the Part 2 FER.

The format of this report follows the required CCR Rule FER elements in 40 CFR Section §257.75(c)(1)(i) through (xiv).

2. Facility Description

The former Drake facility is owned by the City of Colorado Springs on behalf of its enterprise Colorado Springs Utilities (Utilities) and is located at 700 Conejos Street, Colorado Springs, CO 80903. A location map for Drake is shown in Figure 1.

Site owner and contact information is:

Colorado Springs Utilities – Operations Division
Attn: Power Plant Manager
P.O. Box 1103, Mail Code 40
Colorado Springs, CO 80947

The Drake facility was a coal-fired plant. It began operation in 1925 (Meigs 1987). Drake had three boilers (Unit 1) capable of producing 5,000 kilowatts of electricity (Meigs 1987). In 1932, 1945, and 1949, steam turbine generators (Units 2, 3, and 4) were added to the site and the units were fueled by oil or natural gas, not coal. In 1962, 1968, and 1974 larger steam turbine generators (Units 5, 6, and 7) were constructed, each designed to run on natural gas or coal. When Units 5 and 6 were built, coal was the backup fuel, but by the 1974 construction of Unit 7, coal was the primary fuel. Units 1 through 4 were removed in 1996 (Thompson 2004). Drake operated for nearly a century before ceasing operation of the coal-burning units in August 2021. Demolition of the Drake facility was initiated in 2023. The original power plant was replaced with six modular dual-fuel capable (can operate on diesel or natural gas) generators, that are installed next to the old structure. The modular generators will continue to generate electricity during times of peak demand.

The facilities at Drake that managed coal ash include the Bottom Ash Settling Basins, Equalization (EQ) Basin, West Spray Pond, South Spray Pond, Cooling Tower No. 4 Basin, Fly Ash Silo, and Historic Ash Basins (Figure 2 and Figure 3). Additionally, a hydroveyor ash sluicing system located inside the zero discharge plant building was used for handling fly ash from Unit 5 when it was fueled with coal (it was primarily fueled with natural gas) from approximately 1977 to 1993/1994 (Figure 2). According to the response provided by Utilities to the 2010 EPA Information Collection Request (ICR) associated with effluent limitations guidelines, there was 0.51 acres of open ash impoundments at Drake and there were no landfills. The ICR also referenced 3.87 acres of closed ash impoundments (Drk 06816 Part C V2.pdf).

Bottom ash was generated at Drake and managed in the East and West Bottom Ash Settling Basins (Figure 2) from 1978 through plant shutdown. From the Bottom Ash Settling Basins, decanted bottom ash water flowed to the EQ Basin, and then to the West Spray Pond (CSU 1995). This process is depicted in the Process Water Diagram included in Appendix A. As shown on the Process Water Diagram, solids were removed from each of these ash-handling facilities and transported off site for placement in the CCR Landfill at Utilities' Ray Nixon Power Plant (RNPP) site (also known as Clear Spring Ranch).

As part of the recent power plant demolition, the East and West Bottom Ash Settling Basins, the EQ Basin, and the West Spray Pond were cleaned out and demolished. As noted in Table 2 and further described in Section 2.12, these facilities were concrete lined. The area around these units was investigated visually for the presence of CCR at the surface during a HDR site reconnaissance on July 23, 2024. Because these facilities were concrete lined tanks, they were not CCR units subject to the 2015 CCR Rule. Because there is no indication CCR was placed outside these units, and during the July 2024 site reconnaissance there was no presence of CCR on the land surface surrounding the units (e.g., associated with spills during loading, pipe leaks, or concrete basin cracks), this former ash management infrastructure and areas around them are not CCRMUs.

The South Spray Pond was constructed in 1935 on the eastern edge of the site (Figure 2) and was cleaned out and filled with soil in 2001/2002. As noted in Table 1 and further described in Section 2.11, this pond/basin was constructed of reinforced concrete as depicted in the design drawings from the City of Colorado Springs. While it was in use, it reportedly received Solar Evaporation Pond water that was primarily stormwater and could have received bottom ash water and cooling tower water when the West Spray Pond was being serviced or cleaned out. Water from the South Spray Pond went to the Cooling Tower No. 4 Basin, the West Spray Pond, or City Sewer. No records were identified that document ash accumulation or cleanouts, however it was reported by knowledgeable staff that all solids were cleaned out of the pond before it was filled with soil in 2001/2002. Because this pond was a concrete lined tank and demolished prior to 2015, it was not subject to the 2015 CCR Rule. Because there is no indication CCR was placed on the ground associated with this pond, the South Spray Pond and the area around it is not a CCRMU.

The former Cooling Tower No. 4 Basin was a concrete basin used to hold recirculated cooling water from the Drake Cooling Tower No.4 until approximately 2012. This basin was demolished prior to 2015. The former basin floor consisted of 8 to 15 inches of concrete (Terracon, 2012). Soil sampling was performed beneath the basin in 2012 after the basin was cleaned out as part of taking Cooling Tower No. 4 offline. Soil data and boring logs indicated no residual contamination from CCR beneath the basin. Because this basin was a concrete lined tank and demolished prior to 2015, it was not subject to the 2015 CCR Rule. Because there is no indication CCR was placed on the ground associated with this basin, the Cooling Tower No. 4 Basin is not a CCRMU.

Sometime between the 1960s (before 1969) and 1980s, CCR was stored in the Historic Ash Basin located on the western edge of the site south of the former Coal Pile that has since been removed (Figure 2). The Historic Ash Basin location was relocated over time, moving south, and the final iteration of the basin is shown on 1984 site plans as an HDPE-lined ash pond. There were no available records that indicated the historic ash basins were lined prior to 1977 when the first pond area with engineered drawings was constructed. According to Thompson in *A Quick History of the Power Plants of the Pikes Peak Region* (2004), coal was the backup fuel source for the site from 1932 to 1974, and only was a primary fuel between 1925 and 1932 and again between 1974 and 2021. As described in later sections, due to the historic aerial photographs confirming the ash placement on the land surface and existing boring logs with

CCR in quantities that appear to be greater than one ton, the Historic Ash Basin area is a CCRMU. Table 1 includes details of each facility described above.

The response provided by Utilities to the 2010 EPA ICR associated with effluent limitations guidelines included a Fly Ash System Description. The fly ash system at Drake conveyed fly ash from Units 5, 6, and 7 ash hoppers (inside the units) to the fly ash silo (Figure 2). The system utilized both vacuum and pressure blowers in enclosed systems. The fly ash silo and unloading area was on a concrete pad and fly ash was unloaded from the silo into trucks that transported the fly ash to the RNPP CCR Landfill for final disposal. A concrete lined stormwater basin located adjacent to the fly ash silo and unloading area collected precipitation runoff from within the paved contained fly ash silo area. The stormwater basin was cleaned out following shut down of the plant in 2021. Because the fly ash silo area and runoff were contained within a paved area and concrete basin, and there is no potential concern for fly ash on the ground surface outside of the paved fly ash silo area, this area is not considered a CCRMU.

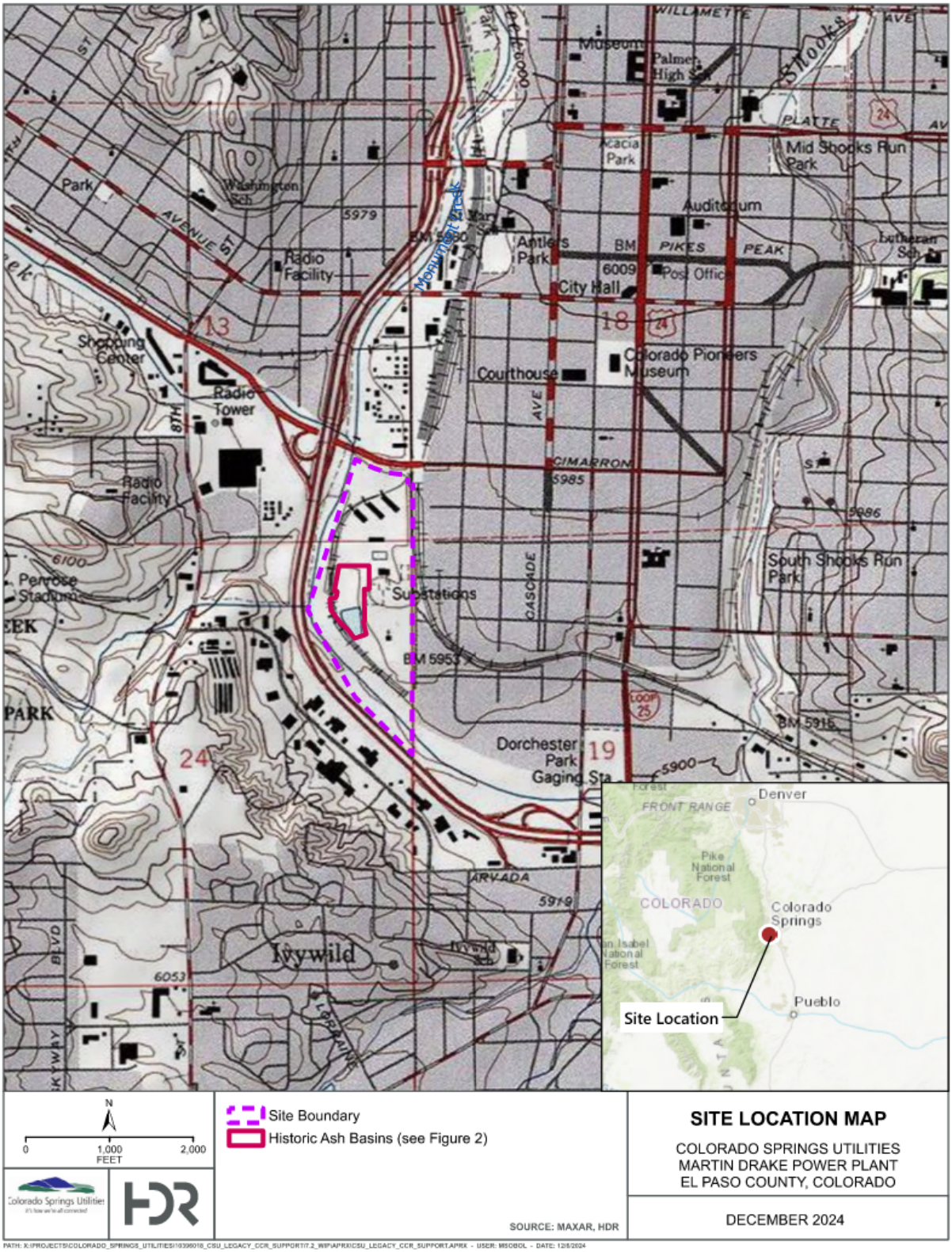


Figure 1. Site Location Map

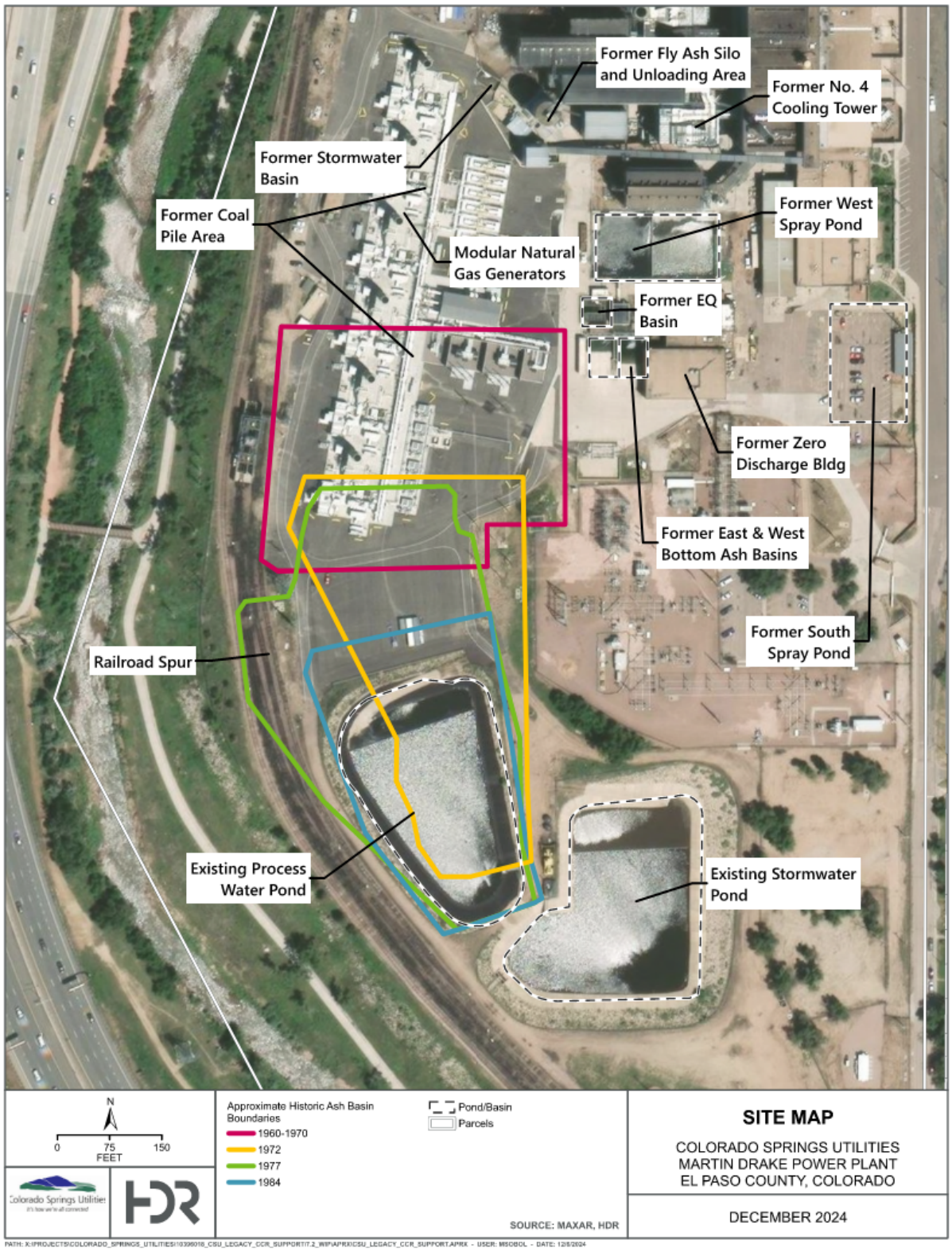


Figure 2. Site Map

Table 1. Drake Plant Facility Details		
Facility Name	**Year Constructed**	**Lined**
Bottom Ash Settling Basins (East and West)	1978	Yes - Concrete
Equalization (EQ) Basin	1978	Yes – Concrete
West Spray Pond	1946	Yes – Concrete
South Spray Pond	1935	Yes – Concrete
Historic Ash Basin	1960s and relocated south	1984 – HDPE lined Prior – No liner

2.1. CCRMUs Identified on Maps

There is a Historic Ash Basin that is known to have been located south of the Former Coal Pile and where the Existing Process Water Pond is currently located. The Historic Ash Basin is the only CCRMU identified at Drake. Historic aerial maps and plant drawings illustrate the location of the ash basin(s) moved south over time, in 1972, 1977, and again in 1984 (Appendix B). Figure 2 shows the approximate boundaries of the ash basin(s) at these time intervals. The locations are partially confirmed through coal ash being logged in borings completed in the footprint of some of the historic basins, as described further in Section 2.12.

2.2. Purpose of CCRMU

No records were available that directly stated the use of the Historic Ash Basins; however, it appears the basins were used to dispose of ash in the low-lying, unlined areas depicted in Figure 2 starting sometime following plant startup through 1977 when the first pond area with engineered drawings was constructed (Appendix B). The 1984 Facility Site map describes the Ash Pond as being HDPE lined and mostly within the footprint of the 1977 Ash Pond (Appendix B).

2.3. Physical and Engineering Properties Foundation and Abutment Materials of CCRMU

The Historic Ash Basins were essentially a low-lying area on the ground where CCR was managed or disposed of from the 1960s through sometime before 1977 when an engineered, incised pond was designed and constructed. In the older aerial photographs of the Historic Ash Basins, the basins appear to be in natural low-lying areas and unlined. In the 1984 site plan, there is reference to an HDPE liner for an excavated ash pond with a spillway on the south end of the pond (Appendix B).

Existing conditions at the site include asphalt pavement and utility infrastructure below, at, and above ground surface around and to the north of the Existing Process Water Pond (i.e., north of the 1984 Ash Pond footprint).

2.4. Known Spills or Releases of CCR

Based on records reviewed, there are no known spills or releases of CCR from the ash treatment or storage units at the facility. The demolished ponds and basins that were used to manage CCR at Drake were all concrete lined.

2.5. Structural Instability

Based on records reviewed, there is no indication of structural instability related to the Historic Ash Basins. There are no aboveground engineered structures related to the basins.

2.6. Groundwater Contamination Associated with the CCRMU

Based on records reviewed, there was no record of groundwater contamination associated with the Historic Ash Basins. Groundwater elevation information reviewed indicates groundwater is present at the site and generally flows from north to south.

2.7. Physical Dimensions of the CCRMU

The physical dimensions of the Historic Ash Basins were estimated using the historic aerial images of the area (Figure 2). While there are boring logs available with feet of ash logged, there is an insufficient number of borings to define the size of the basins (lateral and vertical extent of CCR). Table 3 lists the approximate area of the Historic Ash Basins in 1969, 1972, 1977, and 1984. These measurements were approximated using the historic aerial photographs depicted in Appendix B. The cumulative footprint of the Historic Ash Basins over time is approximately 6.52 acres. This was determined by measuring the approximate area of all the historic outlines combined. Based on the limited boring logs reviewed, the vertical extent of CCR in the Historical Ash Basins ranges from approximately 0 to 22 feet below ground surface (when the borings were advanced).

Table 2. Approximate Area of Historic Ash Basins from 1960s to 1984

Year	Approximate Area (acres)
1960–1970	2.54
1972	2.62
1977	3.84
1984	2.21

2.8. Operation Dates of Each CCRMU

The Historic Ash Basins operated from approximately the 1960s to an unknown time after 1984.

2.9. CCR Type(s)

Based on the records reviewed, the types of CCR that appear to have been in the Historic Ash Basins include bottom ash and fly ash. Utilities defines bottom ash as a coarse angular ash

particle that is too large to be carried up into the smokestacks, so it forms in the bottom of the coal furnace. Similarly, Utilities defines fly ash as a very fine, powdery material composed mostly of silica associated with the burning of finely-ground coal in a boiler (Burns & McDonnell Engineering Company, Inc. 2021).

2.10. Narrative Description of Any Closure Activities

No records were identified that addressed the removal of coal ash or closure of the Historic Ash Basins within the identified Historic Ash Basin Investigation Area.

This section does not address the closure of the Bottom Ash Settling Basins, EQ Basin, West Spray Pond, or South Spray Pond because these facilities that previously handled coal ash were concrete lined, and thus not considered CCR units or CCRMUs.

2.11. Narrative of Data Reviewed

Documents that were reviewed and found to be significant to the findings of the CCRMU at Drake are described in narrative format in this section. Section 2.12 lists all the documents reviewed for this Part 1 FER.

Records Reviewed

HISTORIC ASH BASINS

Numerous records were reviewed that indicated the Historic Ash Basins should be investigated as a CCRMU. Reviewing boring logs for previous soil borings located in and around the Historic Ash Basins confirmed that ash (or CCR) is present within at least a portion of the Historic Ash Basin boundaries. Figure 3 shows borings in the general vicinity of the basins dating back to the 1960s.

Table 4 lists all existing borings that have been identified in Figure 3 including whether there is ash present in the borings and at what depths (at the time the borings were completed). There are 12 borings that indicate the thickness of ash in the area ranges from approximately 5 to 18.5 feet. Because of the extent and thickness of ash in boring logs, it appears that there is greater than one ton of CCR in the Historic Ash Basin area and therefore, it has been identified as a CCRMU. Available boring logs at Drake outside of the Historic Ash Basin Investigation Area identified in Figure 3 were also reviewed for the presence of ash, there were 13 boring logs with no ash identified (Table 4).

BOTTOM ASH SETTLING BASINS, EQ BASIN, WEST SPRAY POND, SOUTH SPRAY POND, AND COOLING TOWER NO. 4 BASIN

The Bottom Ash Settling Basins were incised below grade, meaning the units did not have risk of structural instability. According to the design drawings, the basins had three concrete sidewalls and the fourth side is a ramp that was used to collect ash with a truck for final disposal at the RNPP CCR Landfill. The ramp and bottom of the basins were constructed of reinforced concrete. Architectural Section drawings produced by Lutz, Daily & Brain in 1977 depict these details. Additionally, according to a Concrete Impoundment Inspection Form dated December

2015, both basins were in very good condition and it was certified that each basin had a permeability sufficiently less than 10^{-6} cm/sec. The inspection form stated that there were large scratches in the concrete along the sides of the basin, likely due to heavy equipment moving the ash out of the basin. The form noted that that the scraping or pitting was not impairing the integrity of the basin and the damage was only superficial. A similar inspection report was filed in 2007.

The EQ Basin was located partially above grade, so there was a potential risk of structural instability. Aside from this, the EQ Basin was lined with reinforced concrete as noted in the same Architectural Section drawings cited above (Lutz, Daily & Brain 1977). A Concrete Impoundment Inspection Form dated April 2014 stated that the concrete in the basin did not require any repairs. Photos were included in the report that confirmed this statement.

The West Spray Pond was also lined with reinforced concrete as depicted in the design drawings from the City of Colorado Springs in 1946, which included a floor plan and rebar spacing details. Additionally, many Concrete Impoundment Inspection Forms were reviewed from 2003 through 2014. The 2014 inspection indicated the pond condition was good, and any potential leakage was minimized by past repair work. Additionally, major remodel work was done to the pond in May 2012, repairs were made as necessary to expansion-joint seals and concrete, and there was no indication of leakage occurring to the surrounding soils. Based on the inspection findings, the concrete West Spray Pond was in overall good condition when in use.

The South Spray Pond was a basin located on the eastern edge of the site that was previously removed. While this facility was in use, the unit was concrete lined as depicted in the design drawings from the City of Colorado Springs in 1935. Concrete wall design drawings demonstrate that the unit was lined with reinforced concrete. No inspection records were reviewed for the South Spray Pond because it was previously removed, and no closure records were identified. Because these units had concrete bases and walls, there is no risk of contaminants leaching from the CCR to groundwater. Inspection records for each of the facilities indicate that the structures were in proper condition while they were in use. Construction diagrams, engineering drawings, and inspection records were reviewed as part of the determination of CCRMUs. These records and the site visit (described below) allowed HDR to confirm that the Bottom Ash Settling Basins, EQ Basin, West Spray Pond, and South Spray Pond are not CCR units under the 2015 CCR Rule due to their concrete lining and are not CCRMUs due to no CCR being stored in or identified on the ground in the vicinity of these facilities.

The Cooling Tower No. 4 Basin was a concrete basin used to hold recirculated cooling water from the Drake Cooling Tower No.4. This basin was demolished prior to 2015. The former basin floor consisted of 8 to 15 inches of concrete (Terracon, 2012). Soil sampling was performed beneath the basin in 2012 after the basin was cleaned out as part of taking Cooling Tower No. 4 offline. Soil data and boring logs indicated no residual contamination from CCR beneath the basin. Because this basin was a concrete lined tank and demolished prior to 2015, it was not

subject to the 2015 CCR Rule. Because there is no indication CCR was placed on the ground associated with this basin, the Cooling Tower No. 4 Basin is not a CCRMU.

FLY ASH SILO

The 2010 EPA ICR response included a Fly Ash System Description. The fly ash system at Drake conveyed fly ash from Units 5–7 ash hoppers to the ash silo (Figure 2). Fly ash was unloaded from the silo into trucks that transported fly ash to the RNPP CCR Landfill for final disposal. The fly ash silo and unloading area was on a concrete pad. A concrete lined stormwater basin located adjacent to the fly ash silo and unloading area collected precipitation runoff from within the paved contained fly ash silo area. The stormwater basin was cleaned out following shut down of the plant in 2021. Because the fly ash silo area and runoff were contained within a paved area and concrete basin, and there is no potential concern for fly ash on the ground surface outside of the paved fly ash silo area, this area is not considered a CCRMU. At the time of the site reconnaissance, the silo and facilities around the silo had been demolished and the area could not be accessed due to demolition activities.

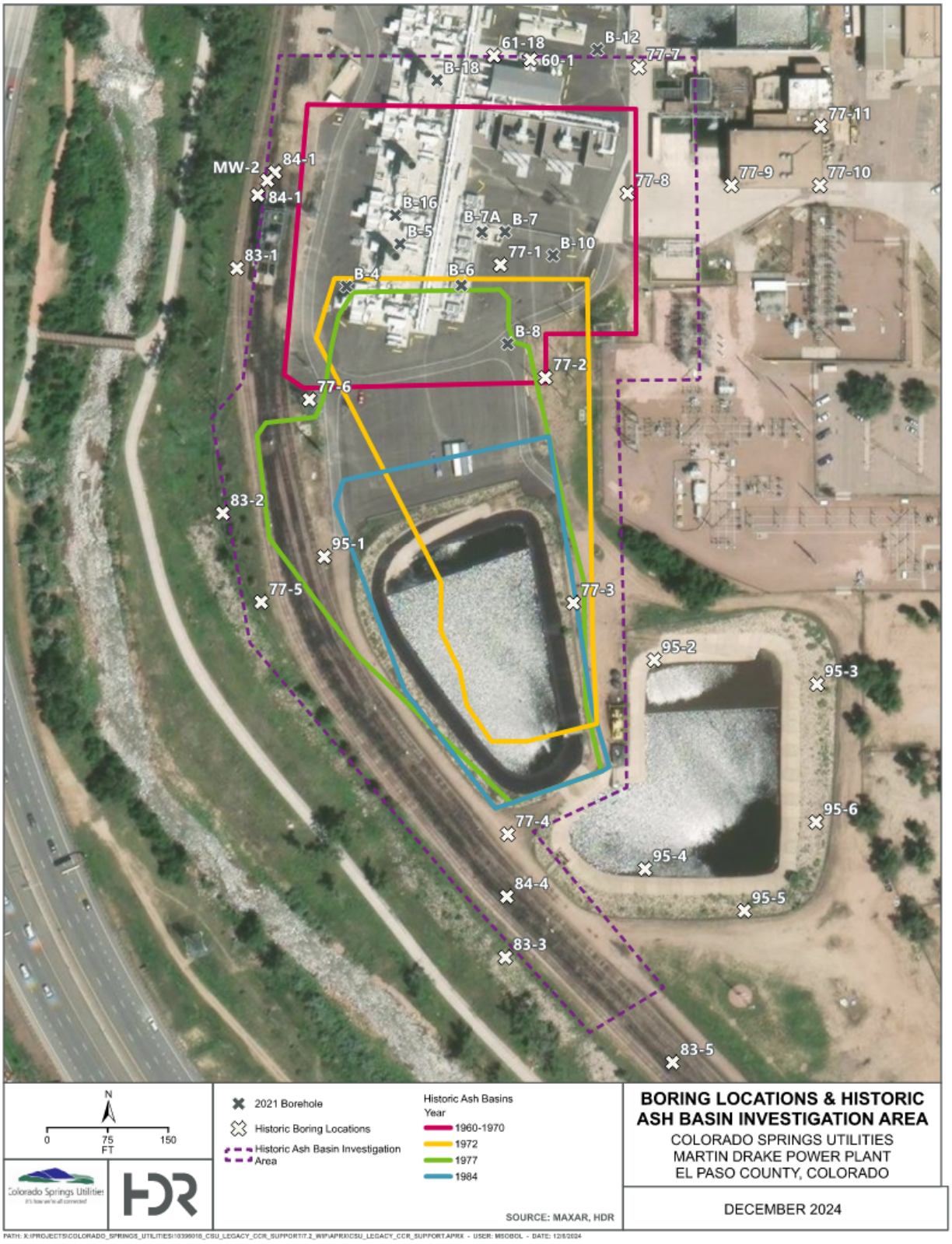


Figure 3. Boring Locations and Ash Basin Investigation Area Map

Table 3. Boring Log Ash Identification

Reference[1]	Boring ID	Coal Ash Present (Yes/No)	Depth of Ash (ft bgs)
Lutz Daily & Brain, 1984	84-1	No	—
Lutz Daily & Brain, 1984	83-1	No	—
Lutz Daily & Brain, 1984	83-2	No	—
Lutz Daily & Brain, 1984	77-4	Yes	0-5
Lutz Daily & Brain, 1984	77-5	Yes	5-15
Lutz Daily & Brain, 1984	77-6	Yes	0-10
Lutz Daily & Brain, 1984	61-18	No	—
Lutz Daily & Brain, 1984	60-1	No	—
Woodward-Clyde, 1995	84-4	Yes	0–5
Terracon Consultants, Inc., 2021	B-4	Yes	0–8.5
Terracon Consultants, Inc., 2021	B-5	Yes	6.5–12
Terracon Consultants, Inc., 2021	B-6	Yes	8.5–20
Terracon Consultants, Inc., 2021	B-7	Yes	3.5–22
Terracon Consultants, Inc., 2021	B-7A	Yes	1.5–17
Terracon Consultants, Inc., 2021	B-8	Yes	0–12
Terracon Consultants, Inc., 2021	B-10	Yes	0–12
Terracon Consultants, Inc., 2021	B-12	No	—
Terracon Consultants, Inc., 2021	B-16	Yes	3.5–17
Terracon Consultants, Inc., 2021	B-18	No	—
CTL Thompson, Inc., 1995	95-1	No	—
CTL Thompson, Inc., 1995	95-2	No	—
CTL Thompson, Inc., 1995	95-3	No	—
CTL Thompson, Inc., 1995	95-4	No	—
CTL Thompson, Inc., 1995	95-5	No	—
CTL Thompson, Inc., 1995	95-6	No	—
Unknown	77-1	Unknown	
Unknown	77-2	Unknown	
Unknown	77-3	Unknown	
Unknown	77-7	Unknown	
Unknown	77-8	Unknown	
Unknown	77-9	Unknown	
Unknown	77-10	Unknown	
Unknown	77-11	Unknown	

[1] References listed as “Unknown” notate borings that were identified on a boring location map from Utilities but the boring logs could not be located for review.

Site Visits and Interviews

In addition to reviewing records for this Part 1 FER, HDR conducted a site visit on July 23, 2024. During the site visit, HDR personnel toured the site and visited each known CCR management area to help identify and evaluate CCRMUs at the facility. Current and former Utilities personnel knowledgeable of the site operations were present for the site visit to provide site-specific details. Each known CCR management area discovered through the records review was inspected during the site visit to confirm the records review findings. The site visit findings did not identify any additional storage of CCR on the ground around the facility at any locations that are not identified above. There was no CCR present in the Bottom Ash Settling Basins, EQ Basin, and West Spray Pond and there was no indication of leakage from the units. These units were designated for demolition in the weeks following the site visit. The South Spray Pond, Cooling Tower No. 4 Basin, and Fly Ash Silo were not evaluated during the site visit because they had been previously demolished.

Interviews with Utilities' personnel during the site reconnaissance did not identify any additional storage of CCR on the ground or spills around the facility at any locations that are not identified above. Additionally, the historic aerial photographs reviewed (listed in Section 2.12) did not identify any additional storage of CCR on the ground around the facility at any locations that are not identified above.

2.12. Supporting Information to Identify and Evaluate CCRMU

The following sections list all the documents reviewed as part of the Part 1 FER. Any documents that were single files (photographs, maps, aerial photographs, etc.) that did not belong to a specific report or study that can be referenced are listed below using the file names only. Any documents listed below that were significant to the findings of the CCRMU are described in narrative format in Section 2.11 above.

Construction Diagrams and Engineering Drawings

The following construction diagrams and engineering drawings were reviewed for this Part 1 FER:

- 1996 Sanitary Sewer Profile.pdf.
- 1996 Stormwater Waste Water Ponds Drop Inlet Spillway.pdf.
- 1996 Stormwater Wastewater Ponds Decant Facility.pdf.
- 1996 Stormwater Wastewater Ponds – Pond Sections.pdf.
- 1996 Stormwater Wastewater Ponds Grading Plan.pdf.
- 1996 Stormwater Wastewater Ponds Piping Plans.pdf.
- Drake – Fly Ash.jpg.
- Drake Ponds Figure.pdf.
- Drake – 1974 – Ash Pond End Wall Detail.jpg.
- Drake – 1981 – Ash Pond Liner.jpg.
- Drake – 1985 – Solar Evaporation Pond Level Control System Electrical Schematic.jpg.
- Drake – 1987 – Solar Evaporation Pond Level Control System Schematic.jpg.

- Drake – 1987 – Solar Evaporation Pond Pump And Platform Schematic.jpg.
- Drake – 1987 – Solar Evaporation Pond Pump Floating Platform.jpg.
- Drake – 1995 – Alternative A Pond Site Plan.pdf.
- Drake – 1996 – Pond Site Grading Plan.jpg.
- Drake – 1996 – Pond Site Piping Plan.jpg.
- Drake Railroad Extension Drawings 3703-DP-002 through 3703-DP-005
- Drake – 2012 – West Spray Pond Separation Project General Construction.pdf.
- 1977 Bottom Ash and EQ Basin Architectural Elevations.pdf.
- 1977 Bottom Ash and EQ Basin Architectural Sections – Drawing 1.pdf.
- 1977 Bottom Ash and EQ Basin Architectural Sections – Drawing 2.pdf.
- 1935 South Spray Pond Concrete Expansion Joint Design Drawing.pdf.
- 1935 South Spray Pond Concrete Layout Drawing.pdf.
- 1935 South Spray Pond Concrete Reinforcing and Details Design Drawing.pdf.
- 1935 South Spray Pond Concrete Retaining Wall Design Drawing.pdf.
- 1935 South Spray Pond Ground Plan.pdf.
- 1946 West Spray Pond Concrete Expansion Joints Design Drawing.pdf.
- 1946 West Spray Pond Concrete Reinforcing and Details Drawing.pdf.

Permit Documents

The following permit documents were reviewed for this Part 1 FER:

- Approval of the Materials Management Plan, Martin Drake Power Plant – Temporary Natural Gas Generation Project (CDPHE, 2021).
- Materials Management Plan (Burns & McDonnell Engineering Company, Inc., 2021).
- EPA Questionnaire Request (Cover Letter Plant 06816 Drake.PDF).
- Drake Ash Handling Questionnaire (Drk 06816 Part C V2.pdf).

Waste Stream Flow Diagrams

The following waste stream flow diagrams were reviewed for this Part 1 FER:

- 2017 Drake Process Water System (April 2017).pdf.
- 1995 Source for Bottom Ash and EQ Basins.pdf.
- Drake Spray Pond and #4 Cooling Tower Sources.PDF.
- 1995 South Spray Pond and Cooling Tower 4 Sources.pdf.
- 1995 Source for West Spray Pond.pdf.
- Water Cycles – Drake Process Water Sys.pdf.
- Water Cycles – Drake WW Treatment Pond Sys.pdf.
- Fly Ash Systems Description (JFR, 2010).

Aerial Photographs

The following aerial photographs were reviewed for this Part 1 FER:

- 1937 – Aerial.jpg.

- 1953 – Aerial.tif.
- 1960 – Aerial.tif.
- 1969 – Aerial.tif.
- 1972 – Aerial.tif.
- Bottom Ash – Concrete Basins_Tanks.pdf.

Historical Facility Maps

The following historical facility maps were reviewed for this Part 1 FER:

- 1900 Sanborn Index Map.jpg.
- 1900 Sanborn Map 2.jpg.
- 1900 Sanborn Map.jpg.
- 1907 – Sanborn Map – Pre Drake.jpg.
- 1917 Sanborn Index Map.jpg.
- 1917 Sanborn Map.jpg.
- 1925 – Plot Plan.pdf.
- 1960 – Plot Plan – Poor Copy.jpg.
- 1962 – Sanborn Map.jpg.
- 1986 Drake Site Plan.pdf.
- 1995 Jan Impoundment Map.pdf.
- 2012 Drake Impoundments & Tank Locations.pdf.
- Basic Site Plan.pdf.
- Ash Basin History.pdf.
- Drake 06816 Site Map.pdf.

Field or Analytical Data

The studies listed below included borings that were drilled in or near the Historic Ash Basin Investigation Area (Figure 3). Studies and other documents notated with an asterisk (*) contain borings that are depicted in Table 4 and Figure 3.

- 0 – Boring Locations.pdf.*
- Lutz, Daily & Brain, 1984.*
- Chen-Northern, Inc., 1989.
- Chen-Northern, Inc., 1990.
- CSU, 1995.
- Chen-Northern, Inc., 1992.
- Lincoln DeVore, Inc., 1992.
- City of Colorado Springs, 1992.
- Woodward-Clyde, 1995.*
- CTL/Thompson, Inc., 1995.
- Terracon Consultants Western, Inc., 1997.
- Kleinfelder West, Inc., 2010.*

- Kleinfelder West, Inc., 2011.
- Terracon Consultants, Inc., 2012
- Triax Engineering, 2015.
- CSU, 2019.
- Terracon Consultants, Inc., 2021.*

Groundwater Quality Monitoring Data or Reports

The following groundwater quality and elevation data and reports were reviewed for this Part 1 FER:

- 1992 - MW-1,-2,-3 Boring Logs, Slug Test, GW Data.pdf
- 1995 – Groundwater Flow.pdf
- 2019 March 12 – GW Flow Direction.pdf
- 2019 March 26 – GW Flow Direction.pdf
- 2024 Sept 26 – GW Flow Direction.pdf

Inspection Reports and Documentation of Interviews

The following inspection reports were reviewed for this Part 1 FER:

- West Bottom Ash Basin July 2007 Inspection.pdf.
- Bottom Ash Basins December 2015 Inspection.doc.
- EQ Basin April 2014 Inspection (04252014 Inspection.pdf).
- Final West Spray Pond Inspection 2003.pdf.
- Final West Spray Pond Inspection 5-2004.pdf.
- West Spray Pond Inspection Form 3-2006.pdf.
- West Spray Pond Inspection Form 3-2008.doc.
- West Spray Pond Inspection Form 3-2010.doc.
- West Spray Pond Inspection Form 4-2012.pdf.
- Draft – West Spray Pond Inspection Form 4-2012.doc.

No additional documentation of interviews with current or former facility workers were available for review.

Other Documents

The following additional documents were reviewed for this Part 1 FER:

- *A Century of Power 1886–1986* (Meigs 1987).
- Drake Historical Booklet.pdf.
- *A Quick History of the Power Plants of the Pikes Peak Region* (Thompson, 2004).
- *It's How We're All Connected: The Story of Colorado Springs Utilities* (Forte 2018).
- *The Historic Mill Street Dump* (Tucker et al. 2001).
- *Limited Site Investigation Martin Drake Power Plant Cooling Tower No. 4 Basin* (Terracon, 2012).
- *Contract Documents, Drake Railroad Extension Project (Utilities, 2001).*

- *Fly Ash Silo Stormwater Basin Cleanout Photos.*

2.13. Data Gaps

After reviewing all available records provided by Utilities, the following data gaps have been identified:

1. The primary data gap identified is the size of the Historic Ash Basins CCRMU, including the lateral and vertical dimensions and an estimate of the volume of CCR. As discussed in Section 2.2, the Historic Ash Basins migrated south over time, causing uncertainty with the extent and dimensions of the basins. This data gap will be remedied in the Part 2 FER as described in Section 2.14.

2. Some of the borings noted in Table 4 are considered data gaps because these logs were not located for review and could aid in estimating the extent and dimensions of the Historic Ash Basins (i.e., Data Gap 1). Specifically, borings drilled in 1977 were not located. This data gap will be remedied in the Part 2 FER as described in Section 2.14.

2.14. Data Gap Remedy Plan

To remedy Data Gaps 1 and 2 identified in Section 2.13, a physical investigation in the vicinity of the Historic Ash Basins will be performed with the objective of identifying the size and vertical and lateral extent of the CCRMU. Fieldwork will include subsurface investigation activities (e.g., drilling exploratory borings) to confirm the presence/absence of CCR. It is assumed at this time that the ash can be delineated visually using continuous sampling while drilling. Photographs of the investigation activities will be documented.

To support the investigation work, existing boring data will be confirmed and utilities, lined ponds, and other site obstructions will be identified and avoided as critical infrastructure. Avoiding utilities and lined ponds may result in a larger assumed footprint of CCR in the subsurface, if required, depending upon available boring data. The subsurface investigation will utilize a reasonable spacing and step out approach while avoiding critical infrastructure, to identify the size and vertical and lateral extent of the CCRMU. Initial investigation locations will extend beyond known ash locations. Following the existing boring data review and field investigation, vertical and lateral profiles of the CCRMU will be prepared to show the approximate extent of CCR and estimate the volume of CCR contained in the units.

The estimated date for completing the data gap remedy work described above, and including in the Part 2 FER, is no later than the end of 2025.

3. Professional Engineer Certification

Facility Evaluation Report – Part 1 for Compliance with the Coal Combustion Residuals Rule

Colorado Springs Utilities (Utilities)

Martin Drake Power Plant (Drake), Colorado Springs, Colorado

I hereby certify that this Facility Evaluation Report – Part 1 for the Martin Drake Power Plant meets the requirements of 40 CFR Section §257.75(c)(1).

Hearn, Jeffrey Charles

Digitally signed by Hearn, Jeffrey Charles
Date: 2025.02.13 11:35:51-07'00'

Jeffrey C. Hearn
Colorado PE License: 58093
License Renewal Date: 10/31/2025

4. Owner Certification

Facility Evaluation Report – Part 1 for Compliance with the Coal Combustion Residuals Rule

Colorado Springs Utilities (Utilities)

Martin Drake Power Plant (Drake), Colorado Springs, Colorado

I certify under penalty of law that I have personally examined and am familiar with the information submitted in this demonstration and all attached documents, and that, based on my inquiry of those individuals immediately responsible for obtaining the information, I believe that the submitted information is true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment.

Nick Forehand Digitally signed by Nick Forehand
Date: 2025.02.14 07:03:04 -07'00'

NAME

Manager - Power Plants

TITLE

2/14/2025

DATE

5. References

Burns & McDonnell Engineering Company, Inc., 2021. Materials Management Plan, Revision No. 1, October 2021.

CDPHE, 2021. Re: Approval of the Materials Management Plan, Martin Drake Power Plant – Temporary Natural Gas Generation Project, Colorado Springs, Colorado, October 20, 2021.

Chen-Northern, Inc., 1989. Location of Exploratory Borings.

Chen-Northern, Inc., 1990. Soil and Foundation Investigation, Proposed Baghouse Unit 7, Martin Drake Power Plant, Colorado Springs, Colorado, January 9, 1990.

Chen-Northern, Inc., 1992. Geotechnical Engineering Study, Proposed Fly Ash Storage Silo and Transformer Pad, Martin Drake Power Plant, Colorado Springs, Colorado, April 7, 1992.

City of Colorado Springs, 1992. Colorado Springs Utilities Electrical Generation Department, Interoffice Memorandum, Subject: Drake Monitoring Wells, October 20, 1992.

CSU, 1995. Colorado Springs Utilities Electric Generation Department, Interoffice Memorandum, February 24, 1995.

CSU, 2001. Contract Documents between Colorado Springs Utilities and Kirkland Construction LLP for Drake Railroad Extension Project, June 2001.

CSU, 2019. Drake Monitoring Wells, March 29, 2019.

CTL/Thompson, Inc., 1995. Subsoil Investigation, Wastewater and Stormwater Detention Ponds, Martin Drake Power Plant, Colorado Springs, Colorado, May 2, 1995.

Forte, 2018. It’s How We’re All Connected: The Story of Colorado Springs Utilities.

Kleinfelder West, Inc., 2010. Subject: Geotechnical Investigation Report, Proposed Improvements to Drake Plant South Substation, Martin Drake Power Plant, Colorado Springs, Colorado, March 19, 2010.

Kleinfelder West, Inc., 2011. Subject: Geotechnical Investigation Report, Proposed Martin Drake Power Plant Units 6 & 7 FGD System Modifications, 700 S. Conejos Street, Colorado Springs, Colorado, December 1, 2011.

Lincoln DeVore, Inc., 1992. Re: Monitoring Well Placement and Slug Tests, Martin Drake Power Plant, Colorado Springs, Colorado, October 16, 1992.

Lutz Daily & Brain Consulting Engineers, 1984. Specifications for Martin Drake Power Plant, Unit Train Unloading Facility, Coal Handling Foundations and Coal Crew Facilities Building.

Meigs, 1987. A Century of Power 1886–1986, Colorado Springs Department of Utilities, Electric Transmission & Distribution Division.

Terracon Consultants Western, Inc., 1997. Geotechnical Engineering Report, Baghouse No. 5, Martin Drake Station, Colorado Springs, Colorado, May 1, 1997.

Terracon Consultants, Inc., 2012. Limited Site Investigation, Martin Drake Power Plant Cooling Tower No. 4, Colorado Springs, Colorado, November 27, 2012.

Terracon Consultants, Inc., 2021. Drake Temporary Natural Gas Generators, Colorado Springs, Colorado, May 10, 2021, Revised August 4, 2021.

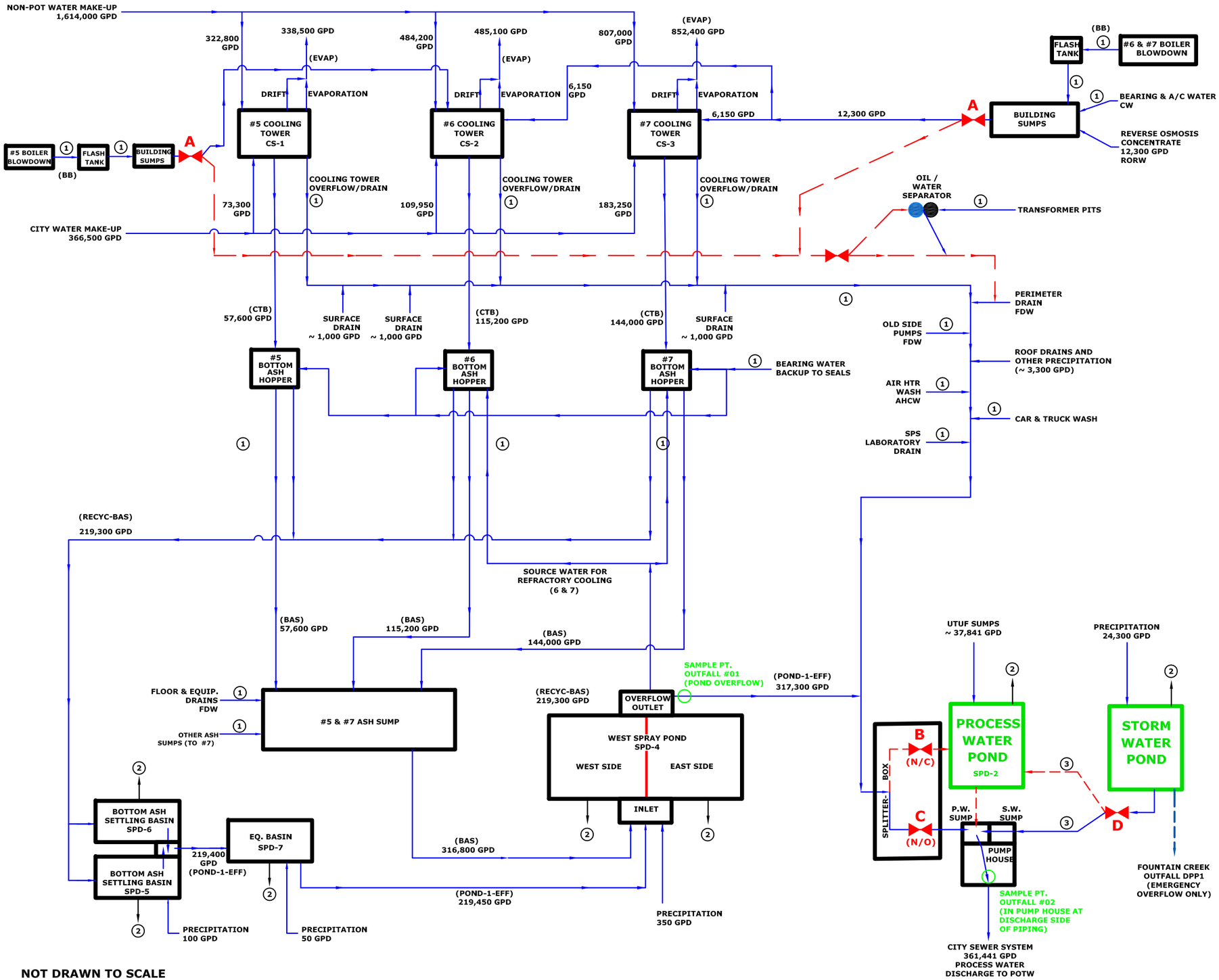
Thompson, 2004. A Quick History of the Power Plants of the Pikes Peak Region.

Triax Engineering, 2015. Subsurface Exploration and Foundation Analysis, Drake Tower, Proposed 100-ft Self Support Tower, 700 Conejos Street, Colorado Springs, CO, August 15, 2015.

Tucker et al., 2001. The Historic Mill Street Dump (5EP3946), El Paso County, Colorado, August 2001.

Woodward-Clyde, 1995. Geology/Hydrogeology Report for Colorado Industrial Wastewater Interim Permit Application, Drake Power Plant Impoundments, Colorado Springs, Colorado, May 1995.

Appendix A. Process Water Diagram



NOT DRAWN TO SCALE

Colorado Springs Utilities

It's how we're all connected

Environment, Health, and Safety Division
121 South Tejon Street, Fourth Floor
Colorado Springs, Colorado 80903

LEGEND

- C — Indicates Process Water System Valve (See Slug Discharge Control Plan narrative for details)
- SAMPLE PT. OUTFALL #01 — Indicates Wastewater Discharge and Sampling Point
- Indicates Normal Process Water Flow Path
- Indicates Re-directed Process Water Flow Path When Valve Is Activated

Notes:

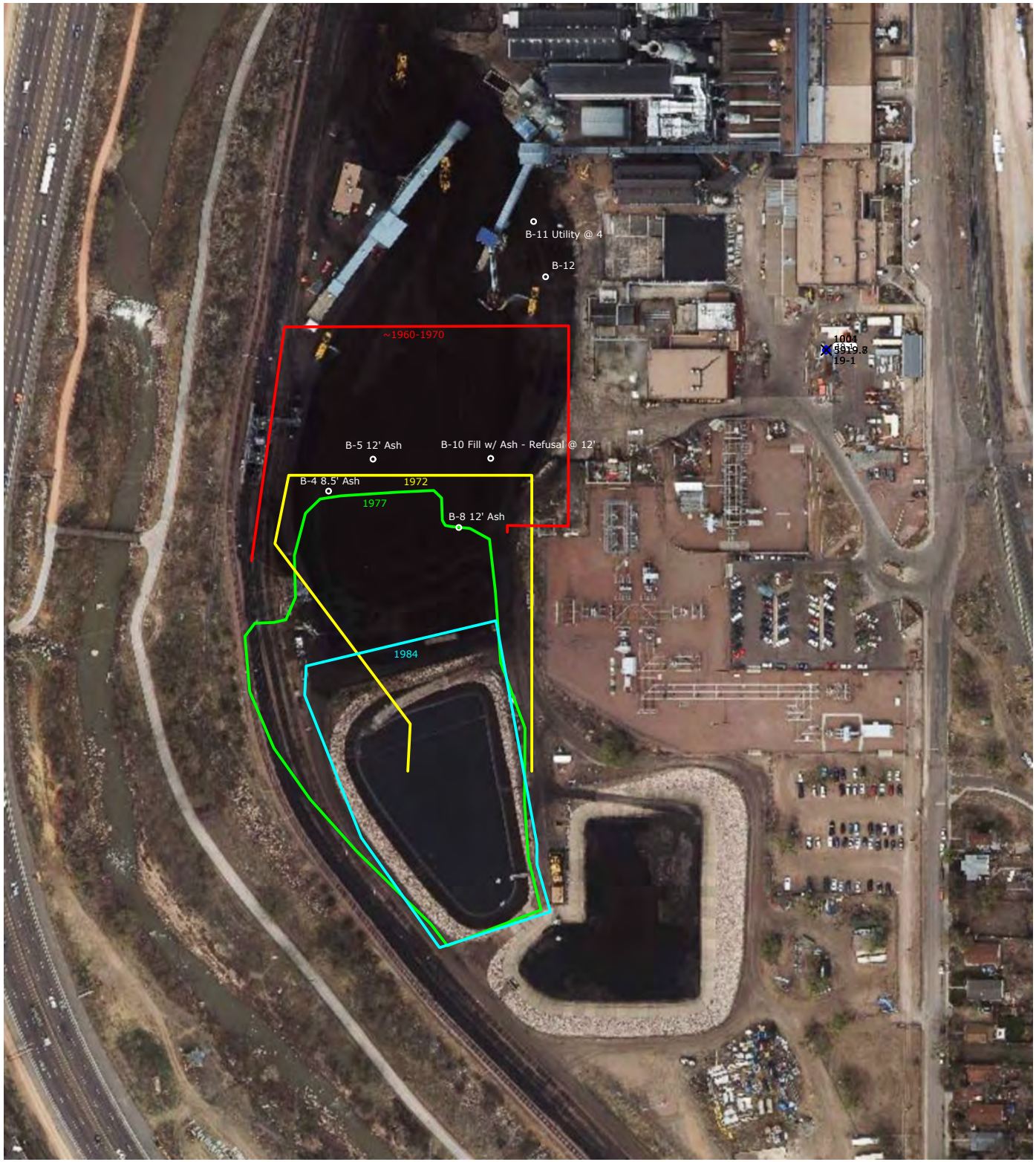
1. Minimal quantity of flow (not measured)
2. Solids removed offsite to clear spring ranch (haul)
3. Temporary piping route (not hard-piped)

PROCESS WATER SYSTEM DIAGRAM

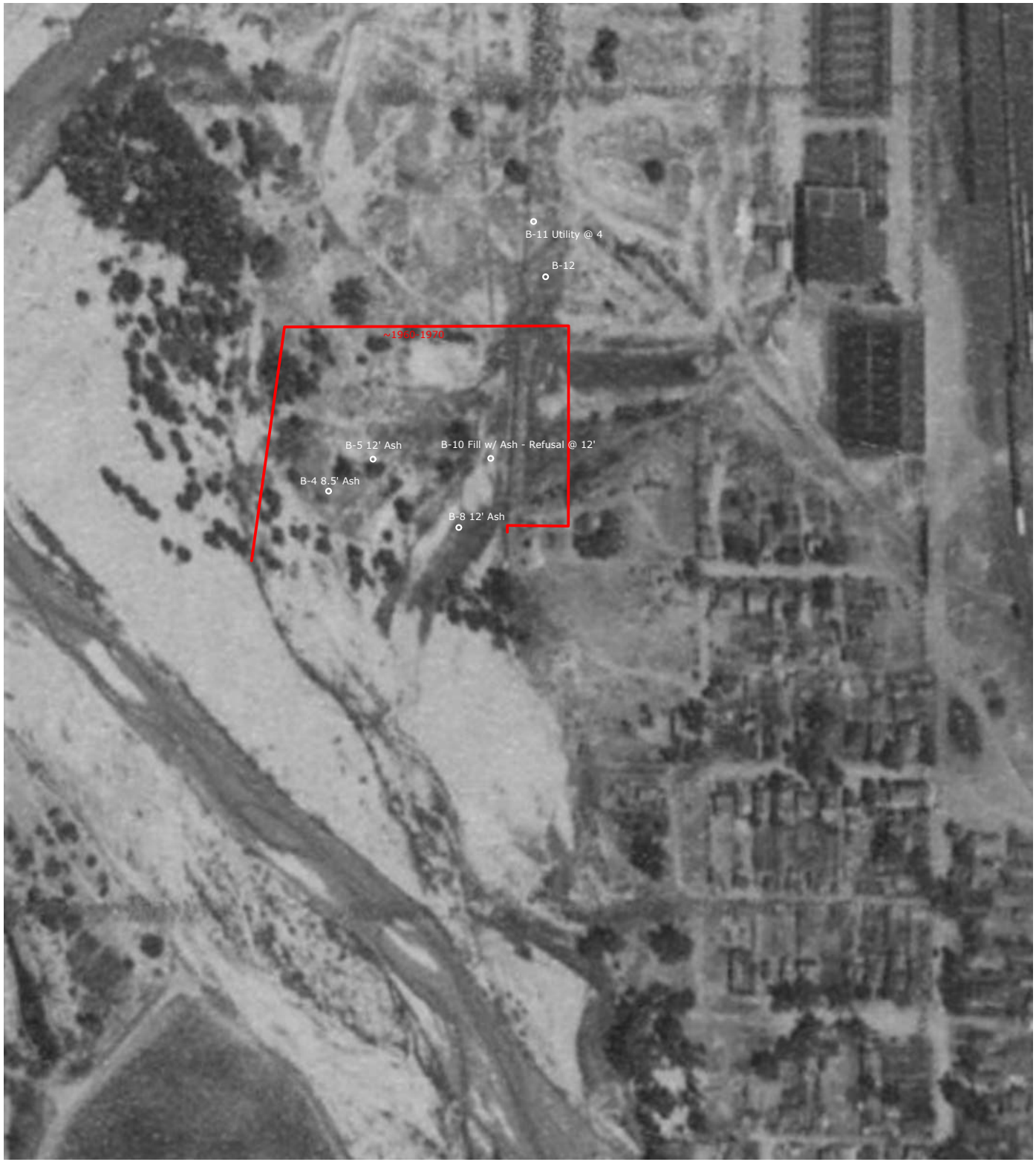
Martin Drake Power Plant
700 S. Conejos Street
Colorado Springs

Project No: 60-200-2	**Figure Number A-1**
Prepared By: See Note Above	
Date: March 2013	
Revisions: April 2017	

Appendix B. Historic Ash Basin Maps



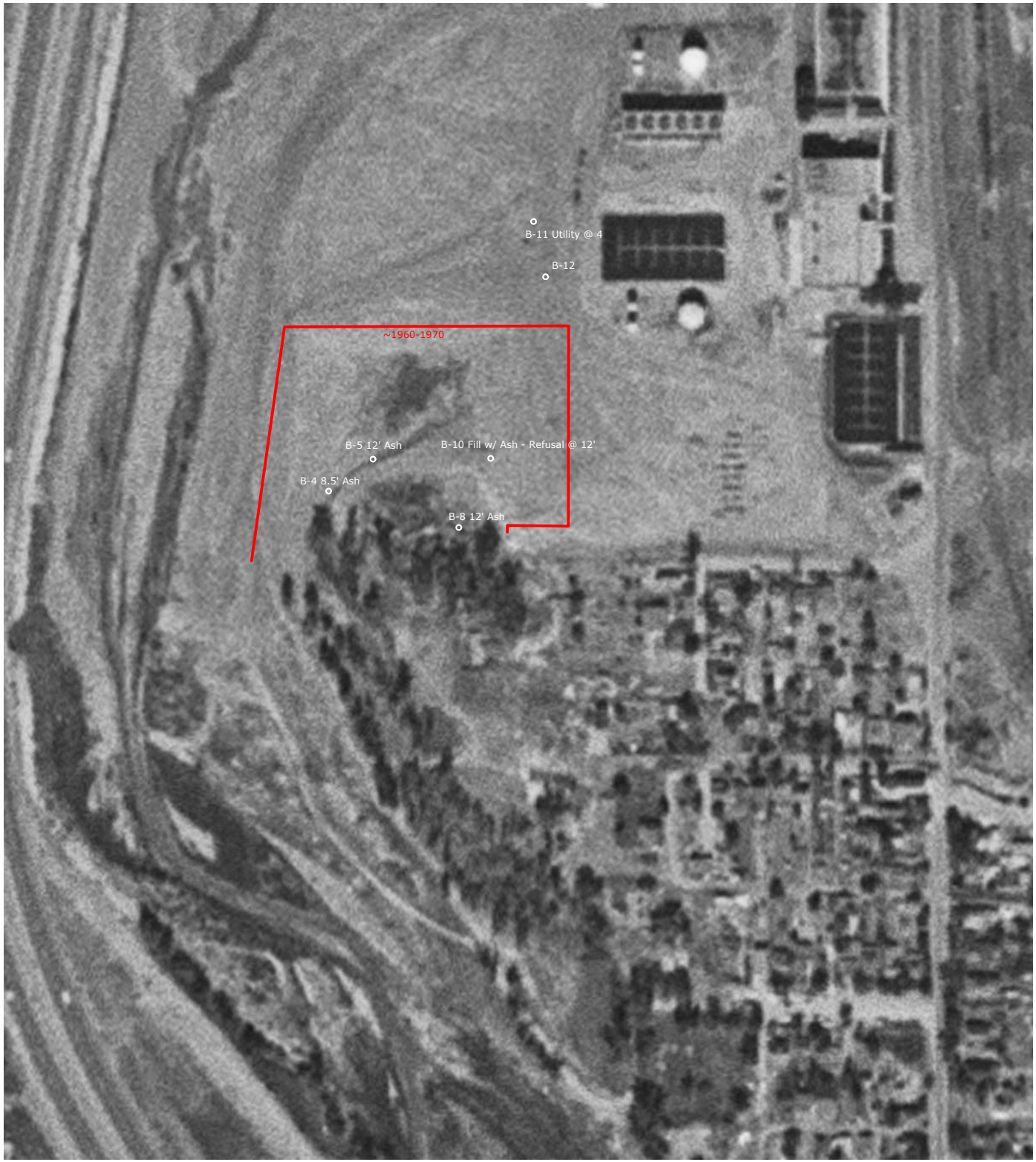
Historical Ash Basins


B-11 Utility @ 4
B-12
~1960-1970
B-5 12' Ash
B-10 Fill w/ Ash - Refusal @ 12'
B-4 8.5' Ash
B-8 12' Ash

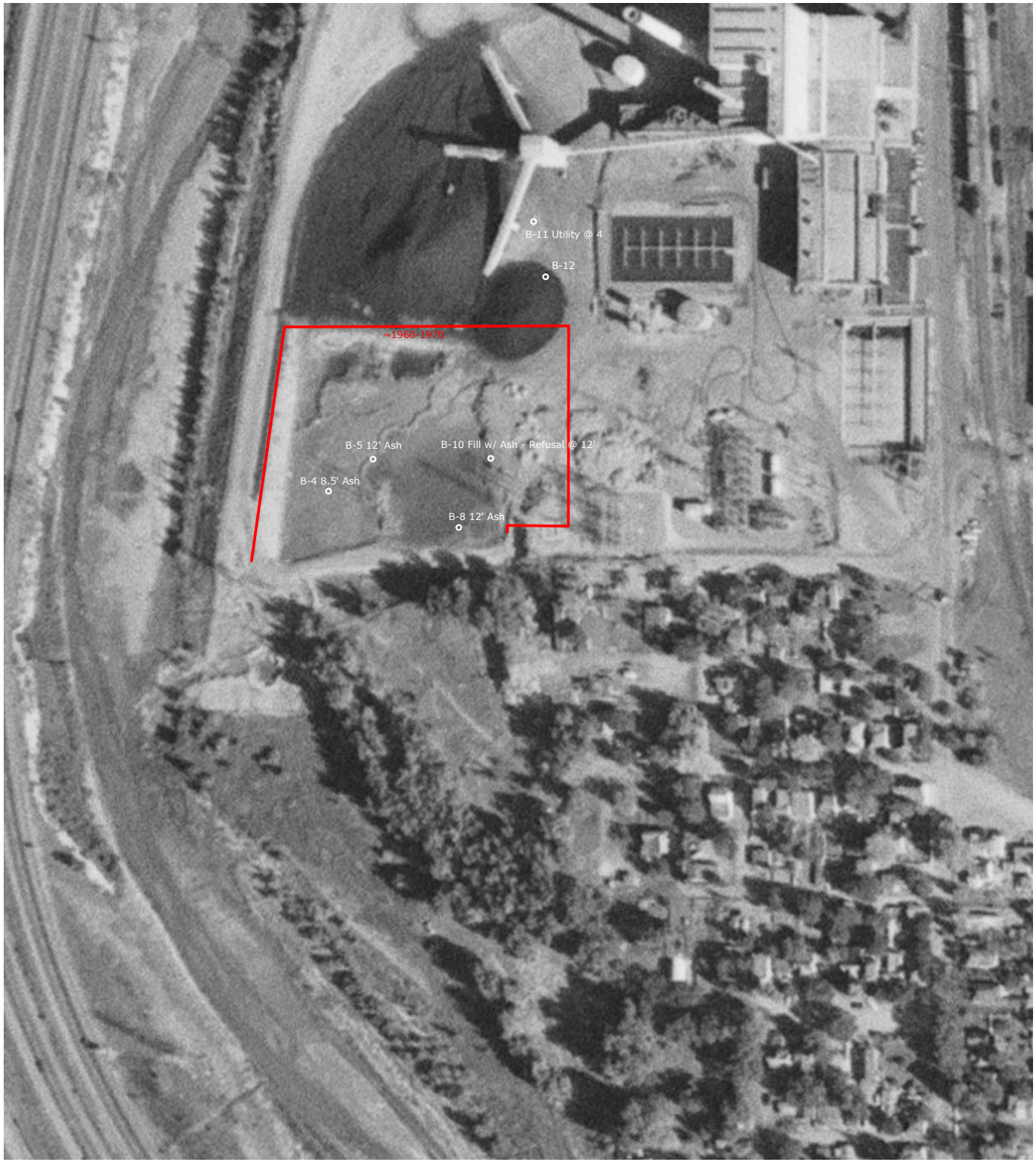
1937


B-11 Utility @ 4
B-12
~1960-1970
B-5 12' Ash
B-10 Fill w/ Ash - Refusal @ 12'
B-4 8.5' Ash
B-8 12' Ash

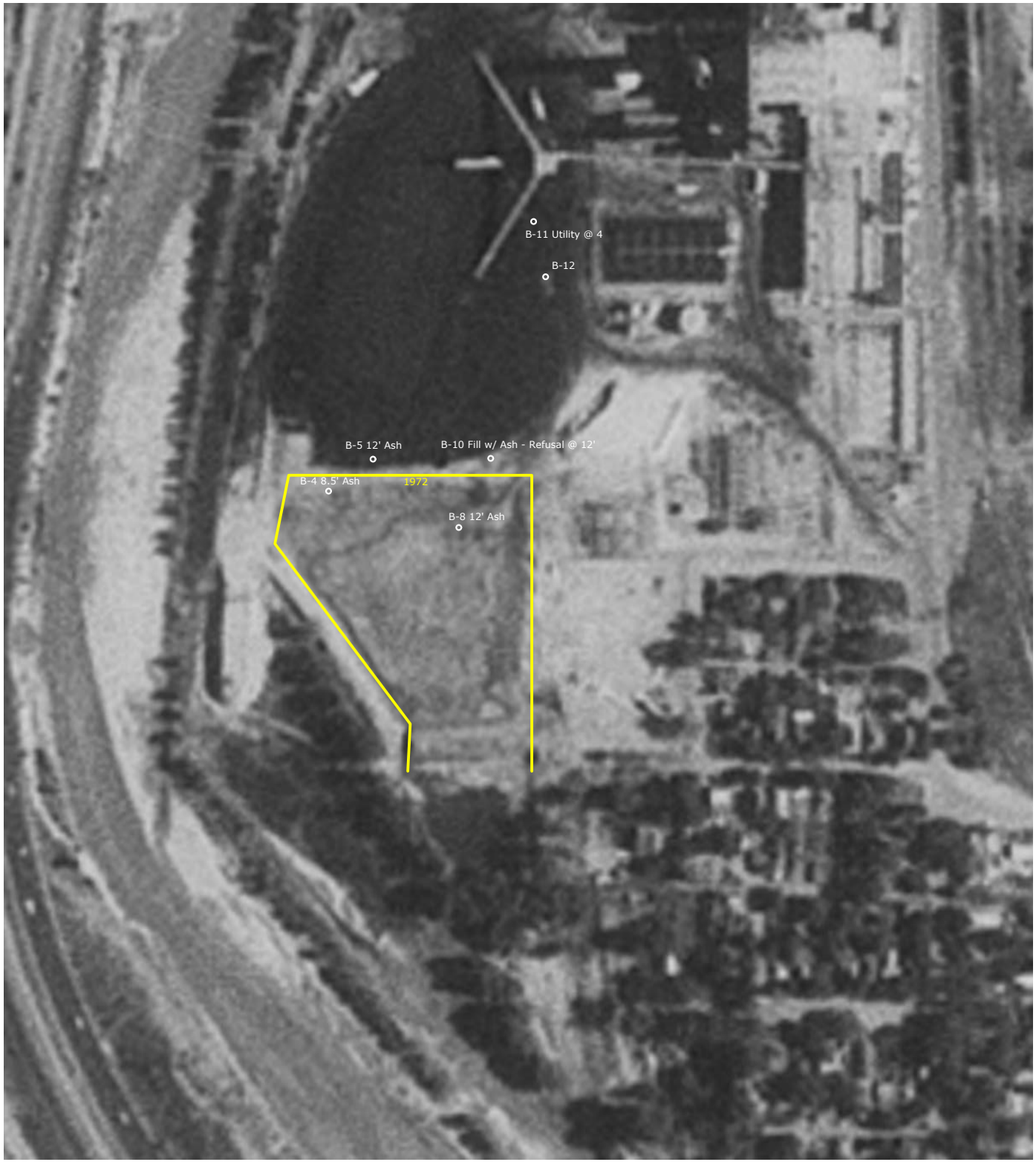
1953


B-11 Utility @ 4
B-12
~1960-1970
B-5 12' Ash
B-10 Fill w/ Ash - Refusal @ 12'
B-4 8.5' Ash
B-8 12' Ash

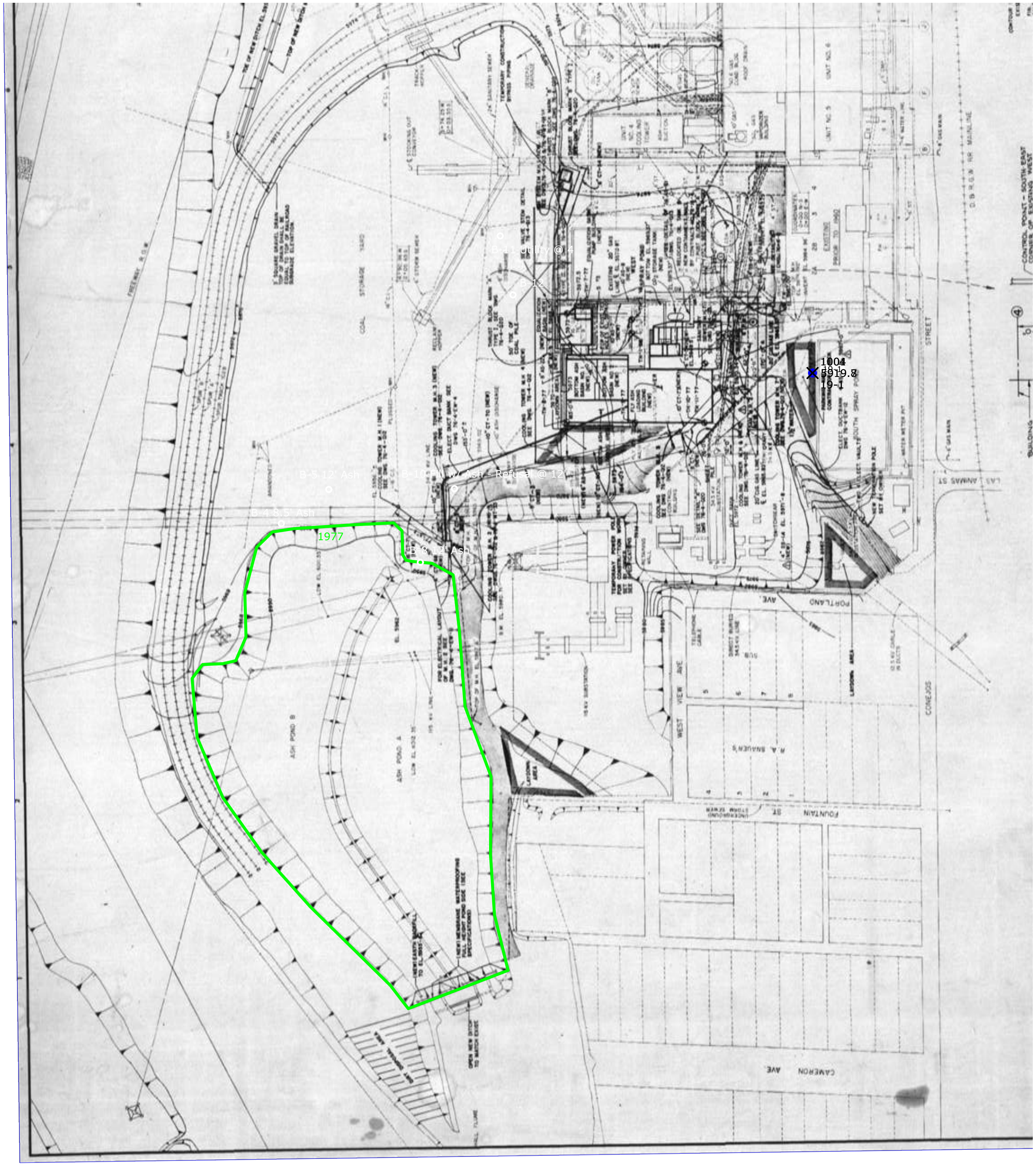
1960


B-11 Utility @ 4
B-12
~1960-1970
B-5 12' Ash
B-10 Fill w/ Ash - Refusal @ 12'
B-4 8.5' Ash
B-8 12' Ash

1969


B-11 Utility @ 4
B-12
B-5 12' Ash
B-10 Fill w/ Ash - Refusal @ 12'
B-4 8.5' Ash
1972
B-8 12' Ash

1972



1977


INTERSTATE HIGHWAY 25
DUST SUPPRESSION ENCLO
CREW FA
TRACK NO. 1
TRACK NO. 2
TRACK NO. 4
TRACK NO. 3
TRACK HOPPER
72" WIDE INCLINED STOCKOUT CONVEYOR
SAMPLE HOUSE
10,000 TON COAL STORAGE PILE
ASH POND (HDPE LINED)
1984
WEST VIEW AVE
CONEJOS STREET
D.&R.G.W. RR MAINLINE
CAMERON AVE
FOUNTAIN ST
PORTLAND AVE
WEST SPRAY POND
SOUTH SPRAY POND
BAGHOUSE
UNIT NO. 4 COOLING TOWER
UNIT NO. 5
UNIT NO. 6

1984