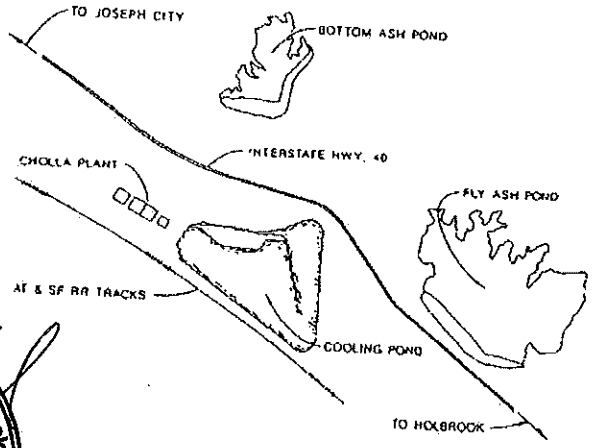
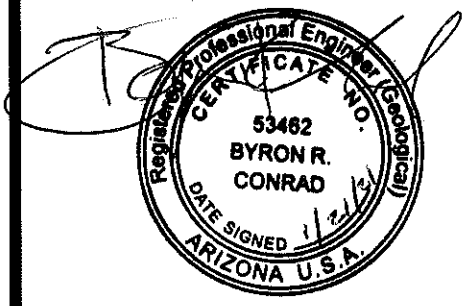
CHOLLA POWER PLANT
Fly Ash Dam, Bottom Ash Dam, Sedimentation Pond, and Bottom Ash Monofill

Annual CCR Impoundment and Landfill Inspection Report

2020





aps

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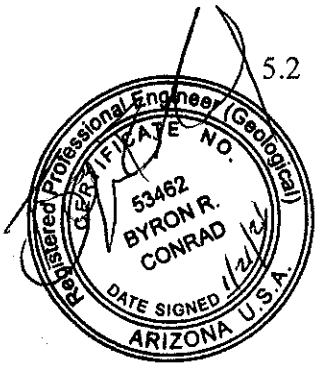

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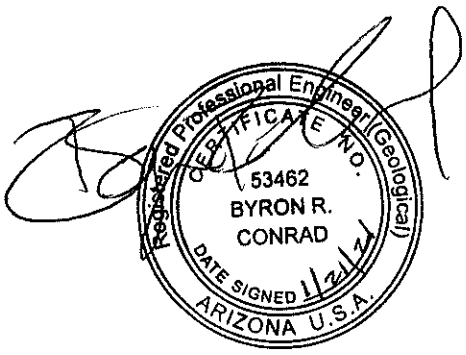

1.0 INTRODUCTION

Arizona Public Service Company (APS) prepared this report to comply with the Environmental Protection Agency's (EPA) Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule (2015) requiring "*...inspections by a qualified professional engineer at intervals not exceeding one year to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards*" (40 CFR 257.83(b)(1) for CCR surface impoundments and 40 CFR 257.84(b)(1) for CCR landfills). AECOM staff participated in the CCR unit inspection and provided technical support in the preparation of this document.

This report includes a review of relevant data in the operating record and visual inspections of the Fly Ash Dam, Bottom Ash Dam, Sedimentation Pond, and the Bottom Ash Monofill. The Fly Ash Dam and Bottom Ash Dam are instrumented with piezometers, settlement monuments, seepage totalizers, and wells.

Inspection Conducted by

Byron R. Conrad, P.E.
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APS Generation, Fossil Projects Coal
Arizona Public Service Company

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2.0 SITE BACKGROUND AND INSPECTION CONDITIONS

The Cholla Power Plant (Cholla, the Plant) is located nine miles west of Holbrook, Arizona. The Plant is located in the north half of Section 23, Township 18 North, Range 19 East in Navajo County, adjacent to and north of the Little Colorado River. The Plant site and off-site facilities comprise portions of Sections 22 through 27 in Township 18 North, Range 19 East and Section 30 in Township 18 North, Range 20 East. The Plant began operation of Unit 1 at the site in 1961 and Units 2, 3, and 4 were constructed between 1976 and 1981. Three operational units (Units 1, 3, and 4) currently burn sub-bituminous coal to provide a total net generating capacity of 767 megawatts (MW). Units 1, 3, and 4 are operated based on load and economic factors.

The coal combustion process produces Coal Combustion Residuals (CCR) including; bottom ash (silty sand, Unified Soil Classification System SM), fly ash (low plasticity silt, Unified Soil Classification System ML), and Flue Gas Desulfurization sludge (FGD). The Plant has four CCR units: the Bottom Ash Pond, the Fly Ash Pond, the Bottom Ash Monofill, and the Sedimentation Pond. The Bottom Ash Pond and the Fly Ash Pond are used for CCR disposal. The Bottom Ash Monofill is a coal combustion waste landfill used for long-term storage and disposal of dewatered bottom ash transferred from the Bottom Ash Pond. The Sedimentation Pond collects water from drains located on the Plant site and receives CCR in storm water, process water, and Plant washdown from the west side of the Plant. CCR material is also unloaded from vacuum trucks into this unit at an unloading station with a water spray system for dust suppression. These coal combustion waste facilities are the subject of this inspection report.

The field inspection was conducted on Monday, November 16, 2020 and Tuesday, November 17, 2020. Conditions were cool to mild (31-66 degrees Fahrenheit) with no wind and clear skies. Approximately 5.89 inches of precipitation had fallen since the start of the year based on data recorded near Holbrook, Arizona (Weather Underground 2020). Units 1 and 3 were running at the time of the inspection.

Instrumentation at the dams consists of open standpipe PVC piezometers, open well points, simulated weirs, flow meters with totalizers, and brass survey caps on a concrete base measured using a Global Positioning System (GPS) survey. The water level in the piezometers is measured with an electronic water level indicator attached to a cable stamped with increments of 0.01 feet. The impounded water level in the Bottom Ash Pond is measured by an elevation indicator based on NGVD29 set at the edge of the water. The impounded water level in the Fly Ash Pond is measured on a monthly basis using GPS equipment.

The benchmark for the elevations reported for GPS surveys of the settlement monuments at the Cholla Power Plant is based on the Randell 2 monument located on the north side of the Joseph City I-40 overpass. Detailed information of Randell 2 can be found on the National Geodetic Survey (NGS) website. The latitude and longitude of the monument are based on the NAD83 datum. The NGS (2020) lists the elevation of the monument as 5088.09 feet (NAVD88).

3.0 UNIT DESCRIPTIONS

3.1 FLY ASH DAM

The Fly Ash Dam is represented on Figure 1 – Fly Ash Pond Site Map.

The Fly Ash Dam (listed by the Arizona Department of Water Resources (ADWR) as Dam #09.28) was constructed between 1976 and 1978, has a capacity of 18,000 acre-feet, is approximately 80 feet high with an approximately 4,583-foot long clay core zoned earth embankment, and has a Federal Emergency Management Agency (FEMA) rating of intermediate size and high hazard. The maximum normal operating water level is elevation (EL) 5114 feet. The water level was measured most recently by survey to be at EL 5085.571 feet on November 4, 2020. The water level in the Fly Ash Pond is measured on a monthly basis because the water level gauge is located in an area that has been covered with evaporites and can no longer be read. The monthly water level readings are recorded during the monthly settlement monument survey.

3.2 BOTTOM ASH DAM

The Bottom Ash Dam is represented on Figure 2 – Bottom Ash Pond Site Map.

The Bottom Ash Dam (ADWR Dam #09.27) was constructed between 1976 and 1978, has a capacity of 2,300 acre-feet, is approximately 73 feet high with an approximately 4,040-foot long clay core zoned earth embankment, and has a FEMA rating of intermediate size and high hazard. The maximum operating water level is EL 5117.8 feet. The water level was observed to be at EL 5109.20 feet during the inspection on November 16, 2020.

In 1993, the pond was re-permitted to an operating level of EL 5118.6 feet (NGVD29). In 1997, a reassessment of the flood pool allocation revealed the need to lower the operating level to EL 5117.8 feet (NGVD29). In April 1999, APS obtained a major modification of ADEQ APP permit, File No. 100568, that allows dewatered bottom ash to be dredged from the pond and placed in a new facility known as the Bottom Ash Monofill located on a 43-acre parcel located adjacent to the north and east sides of the Bottom Ash Pond.

3.3 SEDIMENTATION POND

The Sedimentation Pond is represented on Figure 3 – Sedimentation Pond Site Map.

The Sedimentation Pond is a holding pond for CCR solids and CCR-impacted surface water that was placed into service in 1976 by constructing an embankment along the southeast and northwest sides. The area surrounding the Sedimentation Pond was subsequently mass-filled such that the crest appears to be at ground level. It has two cells with a maximum depth of 10 feet, a surface area of approximately 1.6 acres, and a nominal total capacity of approximately 10.7 acre-feet (in the absence of the Sedimentation Tank). The crest is at EL 5019.0 feet (NGVD29). There was no water in the Sedimentation Pond at the time of the inspection on November 17, 2020 and the remaining CCR impounded within the pond footprint was stockpiled in the North Cell.

In Spring 2020, APS began construction of the reinforced concrete Sedimentation Tank within the footprint of the Sedimentation Pond North Cell. The Sedimentation Tank is intended to replace the function of the Sedimentation Pond and allow the Sedimentation Pond to be decommissioned.

When the Sedimentation Tank (Sedi Tank) construction is complete, the pipes draining into the existing Sedimentation Pond will have been rerouted to the Sedimentation Tank or to the bottom ash sluice water side of the general water tank, The ancillary concrete structures associated with the Sedimentation Pond will be removed and APS will place structural fill in the remaining Sedimentation Pond footprint to bring the site to the surrounding grade. The Sedimentation Pond will then be removed from service and no longer function as a CCR unit. The Sedi Tank will not be subject to annual inspections under the CCR Rule (EPA 2015). Construction of the Sedi Tank walls were completed at the time of this inspection; the volume of the Sedi Tank is approximately 0.41 acre-feet.

3.4 BOTTOM ASH MONOFILL

The Bottom Ash Monofill is represented on Figure 4 – Bottom Ash Monofill Site Map.

The Bottom Ash Monofill is a coal combustion waste landfill that was constructed beginning in the late 1990s. In 2009, the Arizona Department of Environmental Quality (ADEQ) executed an amendment to Cholla Plant Aquifer Protection Permit No. P-100568 for the currently-permitted 43-acre footprint and maximum storage elevation of 5,261.0 feet, with final slopes of 4H:1V (horizontal : vertical). Storm water run on is diverted around the landfill by a diversion ditch sized to convey the peak 100-year flow. On-site storm water runoff is conveyed to a retention basin and eventually routed to the Bottom Ash Pond. The retention basin has a capacity of 8.2 acre-feet with an overall depth of 12 feet and 3H:1V side slopes.

In 2015, the Bottom Ash Monofill was expanded to the north and east to its maximum APP-permitted footprint to add capacity for continuing operations at the Plant.

4.0 FIELD INSPECTIONS

This section contains the 2020 annual field inspections conducted by APS and accompanied by a representative from AECOM at the Fly Ash Dam (Section 4.1), the Bottom Ash Dam (Section 4.2), the Sedimentation Pond (Section 4.3), and the Bottom Ash Monofill (Section 4.4). The results are reprinted and formatted to fit this report.

4.1 APS FIELD INSPECTION – FLY ASH DAM

<table>
<tr><td colspan="2">Fly Ash Dam</td><td colspan="2">State Identification Number (SID): 09.28</td><td rowspan="16">Not Applicable</td><td rowspan="16">No</td><td rowspan="16">Yes</td><td rowspan="16">Monitor</td><td rowspan="16">Repair</td><td rowspan="16">Investigate</td></tr>
<tr><td>SID: 09.28</td><td>Dam Name: Fly Ash Dam</td><td>Type: Earth</td><td>Purpose: Fly ash disposal</td></tr>
<tr><td colspan="2">Contact(s): Byron Conrad, P.E. (APS)</td><td colspan="2">Report Date: January 15, 2021</td></tr>
<tr><td colspan="2">Inspected by: Byron Conrad, P.E. (APS)
Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: November 16, 2020</td></tr>
<tr><td colspan="2">Reviewed by: Byron Conrad, P.E. (APS)</td><td colspan="2">Review Date: January 15, 2021</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5,120</td><td colspan="2">Design Spillway Crest Elevation: None</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 6</td><td colspan="2">Measured Total Freeboard (ft): 34.43
(November 4, 2020)</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 80</td><td colspan="2">Structural Height (ft): 80</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): 4,583</td><td>Upstream Slope: 3:1</td><td>Downstream Slope: 3:1</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): 24</td><td>Lat: 34° 56' 10.0" N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 110° 16' 06.0" W</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 420</td><td colspan="2">Reservoir Storage (ac-ft): 18,000</td></tr>
<tr><td colspan="4">Inflow Design Flood/Safe Flood-Passing Capacity: PMF – fully contained</td></tr>
<tr><td colspan="2">Reservoir Level During Inspection (ft): EL 5085.571
(November 4, 2020)</td><td rowspan="2">Photos: Yes</td><td rowspan="2">Pages: 5</td></tr>
<tr><td colspan="2">Estimated Solids Level (ft): ~ EL 5095.4 at the discharge pipe</td></tr>
</table>

Fly Ash Dam		SID: **09.28**	N/A	No	Yes	Mon	Rep	Inv
COMPLIANCE CHECKLIST								
1	***CONDITION SUMMARY, LICENSE, EAP, NEXT INSPECTION***							
a	Recorded downstream hazard: **High**	Should hazard be revised?		**X**				
b	If high hazard, estimate downstream persons-at-risk (PAR): **>301**	Is there a significant increase since the last inspection?		**X**				
c	Recorded size: **Intermediate**	Should size be revised?		**X**				
d	Any safety deficiencies? **No**	Describe:		**X**				
e	Any statute or rule violations? **No**	Describe and list required action:		**X**				
f	Safe storage level on License: **5,114 feet**	Should level be revised:		**X**				
g	Any License violations? **No**	Describe and list required action:		**X**				
h	Date of current License: **10/21/1986**	Should new License be issued?		**X**				
i	Date of last Emergency Action Plan revision: **03/2017**	Should EAP be revised?		**X**				
j	Any Agency actions? **No**	Describe and list required action:		**X**				
k	Normal inspection frequency: **Weekly, Annually**	Should inspection frequency be revised?		**X**				
l	Recommended date for next inspection: **November 2021**							

MONITORING CHECKLIST								
2	***INSTRUMENTATION AND MONITORING***							
a	Describe: **1) A review of the file indicates 37 piezometers and wells in and around the embankment. 2) Sixteen settlement monuments located along the crest. 3) The water level in the reservoir is measured by GPS survey each month. 4) Flow measurement devices at each downstream sump and the return lines to the reservoir to estimate seepage rates.**							
b	Any repair or replacement required? **No**	Describe: **See comment i.**		**X**				
c	Date of last report: **January 2020 (for 2019)**	Should new readings be taken and new report provided? **Annual reporting is required.**			**X**			

DAM EMBANKMENT CHECKLIST								
3	***DAM CREST***							
a	Settlements, slides, depressions?			**X**				
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking? **See comment ii.**				**X**	**X**		
d	Animal burrows? **Ant hills were observed at various locations across the crest (Photos IMG_2233 and IMG_2273).**				**X**	**X**		
e	Adverse vegetation?			**X**				
f	Erosion?			**X**				
4	***UPSTREAM SLOPE***							
a	Erosion? **Minor erosion and soil wasting observed along the upstream slope. See comment iii.**				**X**	**X**		
b	Inadequate ground cover?			**X**				
c	Adverse vegetation? **None observed. Continue to monitor vegetation.**			**X**		**X**		
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?			**X**				
f	Stone deterioration? **Minor wasting observed. See comment iv.**				**X**	**X**		
g	Settlements, slides, depressions, bulges?			**X**				
h	Animal burrows? **None observed. Continue to monitor.**			**X**		**X**		

Fly Ash Dam		SID: **09.28**	N/A	No	Yes	Mon	Rep	Inv
5	***DOWNSTREAM SLOPE***							
a	Erosion?	**No deep erosion (greater than 1 foot deep) observed. Continue to monitor.**		**X**		**X**		
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?	**Continue removing adverse vegetation.**		**X**		**X**		
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?			**X**				
f	Stone deterioration?	**Minor wasting observed. See comment iv.**			**X**	**X**		
g	Settlements, slides, depressions, bulges?			**X**				
h	Soft spots or boggy areas?	**There is evidence of historic seepage beyond the downstream toe. Continue to monitor.**			**X**	**X**		
i	Movement at or beyond toe?			**X**				
j	Animal burrows?	**None observed. Continue to monitor.**		**X**		**X**		
6	***ABUTMENT CONTACTS***							
a	Erosion?	**No significant erosion (greater than 1 foot deep) observed. Continue to monitor.**		**X**		**X**		
b	Differential movement?			**X**				
c	Cracks?			**X**				
d	Settlements, slides, depressions, bulges?			**X**				
e	Seepage?	**Historic seepage has been observed downstream of the Northwest Abutment during previous inspections. The areas were observed to be dry during this inspection.**		**X**		**X**		
f	Animal burrows?	**None observed. Continue to monitor.**		**X**		**X**		
7	***SEEPAGE/PIPING CONTROL DESIGN FEATURE(S)***							
a	Describe:	**1) The Geronimo and Hunt seepage collection and pump back systems are located downstream of the dam near I-40 for fluid interception.** **2) Discharge from the crest side of the reservoir creates a beach to prevent water from being stored against the upstream face.**						
b	Internal drains flowing?				**X**	**X**		
c	Seepage at or beyond toe?	**See comment v.**			**X**	**X**		
d	If so, does seepage contain fines?	**No water was observed in the sumps.**		**X**				
e	Evidence of sand boils at or beyond toe?			**X**				

RESERVOIR CHECKLIST								
8	***RESERVOIR***							
a	High water marks?			**X**				
b	Erosion/slides into pool area?			**X**				
c	Sediment accumulation?	**The reservoir was designed to impound sediment.**			**X**			
d	Floating debris present?			**X**				
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?			**X**				
g	Structures below dam crest elevation?			**X**				

Additional comments and recommendations for the Fly Ash Dam:

i. The water level gauge was covered with sediment in 2015. The water level in the pond is currently measured by GPS survey along with the monthly monument readings. This method is sufficient so long as the water level continues to remain low. The inspectors were unable to locate the current water elevation measurement lathe during this inspection, but were able to locate the lathe observed during the 2019 inspection. Photo IMG_2449 in the attached Fly Ash Dam Photo Log (Appendix A) shows this location relative to the pond elevation during the November 2020 inspection.

ii. A shallow (up to 2-inches deep), discontinuous, longitudinal crack was observed spanning a length of 20 feet along the upstream half of the crest near M-5B (Photo IMG_2331). The deepest portion of the crack spanned approximately 3 feet (Photo IMG_2328). The crack should be marked and monitored during weekly inspections. If the crack is observed to grow or deepen, it should be repaired and its cause should be investigated.

    A second 6-foot long crack was observed in the wider portion of the upstream shoulder south of Piezometer F-124 (Photo IMG_2353). This crack is near areas of minor erosion on the upstream slope and is in part of the dam crest that was widened in early 2000 to accommodate piezometer installation activities. This crack should be marked and monitored during weekly inspections. If the crack is observed to grow or begin to affect the original dam crest, it should be repaired and its cause should be investigated.

iii. Minor erosion was observed along the upstream slope near the piezometers screened in the dam core (Photos IMG_2344 and IMG_2351). The eroded portion was observed to be relatively unchanged during this inspection compared to the 2019 inspection. The affected portion of the upstream slope is part of the dam crest widening constructed in early 2000 to accommodate piezometer installation activities. The crest is approximately 40 feet wide in this area (compared to the design crest width of 24 feet). The erosion appears to be in the extended portion and is not affecting the original crest.

iv. Minor stone deterioration was also observed during previous inspections. Continue to monitor.

v. Seepage has historically been observed at the Geronimo seep, the Hunt seep, the I-40 seep, and in areas of relatively lower elevation along the downstream toe. The Geronimo and Hunt Sumps were active during the inspection while areas downstream of the West Embankment were dry. APS recently installed several new groundwater monitoring wells near the Geronimo Sump and along the downstream toe (Photo IMG_2524). These wells were installed as part of the corrective action measures APS is taking at the Fly Ash Pond and are not part of the embankment safety monitoring network.

    APS reported that one of the wells in the Geronimo seep was found to be plugged during the summer. APS had repaired the well prior to this inspection.

    The I-40 seep was observed to be relatively more damp during this inspection than it was during the 2019 inspection (Photos IMG_2580 and IMG_2584).

vi. Continue removing excessive natural vegetation in accordance with APS's preferred protocol, the NMOSE "*Vegetation Management on Dams*" (2011) document.

vii. The weekly inspection reports for the period between October 1, 2019 and September 30, 2020 were reviewed and indicate the following:

    a. Seepage at the abutment contacts was noted as requiring monitoring throughout the year. APS monitors seepage on a regular basis and did not record any adverse seepage conditions during the review period.

viii. The weekly inspection reports for the period between October 1, 2019 and September 30, 2020 do not indicate that there were any appearances of actual or potential structural weakness or other conditions that have the potential to disrupt the operation or safety of the CCR unit.

4.2 APS FIELD INSPECTION – BOTTOM ASH DAM

<table>
<tr><td colspan="2">Bottom Ash Dam</td><td colspan="2">State Identification Number (SID): 09.27</td><td rowspan="15">Not Applicable</td><td rowspan="15">No</td><td rowspan="15">Yes</td><td rowspan="15">Monitor</td><td rowspan="15">Repair</td><td rowspan="15">Investigate</td></tr>
<tr><td>SID: 09.27</td><td>Dam Name: Bottom Ash Dam</td><td>Type: Earth</td><td>Purpose: Bottom ash containment</td></tr>
<tr><td colspan="2">Contact(s): Byron Conrad, P.E. (APS)</td><td colspan="2">Report Date: January 15, 2021</td></tr>
<tr><td colspan="2">Inspected by: Byron Conrad, P.E. (APS),
Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: November 16, 2020</td></tr>
<tr><td colspan="2">Reviewed by: Byron Conrad, P.E. (APS)</td><td colspan="2">Review Date: January 15, 2021</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5,123.3</td><td colspan="2">Design Spillway Crest Elevation: None</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 5.5</td><td colspan="2">Measured Total Freeboard (ft): 14.1</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 73</td><td colspan="2">Structural Height (ft): 73</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): 4,040</td><td>Upstream Slope: 3:1</td><td>Downstream Slope: 3:1</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): 12</td><td>Lat: 34° 57' 07.0" N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 110° 17' 22.7" W</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 80</td><td colspan="2">Reservoir Storage (ac-ft): 2,300</td></tr>
<tr><td colspan="4">Inflow Design Flood/Safe Flood-Passing Capacity: PMF – fully contained.</td></tr>
<tr><td colspan="2">Reservoir Level During Inspection (ft): 5109.20</td><td rowspan="2">Photos: Yes</td><td rowspan="2">Pages: 4</td></tr>
<tr><td colspan="2">Estimated Solids Level (ft): Varies – approx. EL 5115 feet</td></tr>
</table>

Bottom Ash Dam		SID: **09.27**		N/A	No	Yes	Mon	Rep	Inv
COMPLIANCE CHECKLIST									
1	***CONDITION SUMMARY, LICENSE, EAP, NEXT INSPECTION***								
a	Recorded downstream hazard: **High**	Should hazard be revised?			**X**				
b	If high hazard, estimate downstream persons-at-risk (PAR): **>301**	Is there a significant increase since the last inspection?			**X**				
c	Recorded size: **Intermediate**	Should size be revisited?			**X**				
d	Any safety deficiencies? **No**	Describe:			**X**				
e	Any statute or rule violations? **No**	Describe and list required action:			**X**				
f	Safe storage level on License: **5,117.8 feet**	Should level be revised:			**X**				
g	Any License violations? **No**	Describe and list required action:			**X**				
h	Date of current License: **12/11/1998**	Should new License be issued?			**X**				
i	Date of last Emergency Action Plan revision: **03/2017**	Should EAP be revised?			**X**				
j	Any Agency actions? **No**	Describe and list required action:			**X**				
k	Normal inspection frequency: **Weekly, Annually**	Should inspection frequency be revised?			**X**				
l	Recommended date for next inspection: **November 2021**								

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe: **1) 19 piezometers and wells in and around the embankment.** **2) 10 settlement monuments.** **3) A V-notch weir and seepage monitoring systems.** **4) Water level gauge in the reservoir.**								
b	Any repair or replacement required? **No.**	Describe: **See comment i.**			**X**				
c	Date of last report: **January 2020 (for 2019)**	Should new readings be taken and new report provided? **Annual reporting is required.**				**X**			

DAM EMBANKMENT CHECKLIST								
3	***DAM CREST***							
a	Settlements, slides, depressions?			**X**				
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking? **See comment ii.**				**X**	**X**		
d	Animal burrows?			**X**		**X**		
e	Adverse vegetation?			**X**				
f	Erosion? **See comment iv.**				**X**	**X**	**X**	
4	***UPSTREAM SLOPE***							
a	Erosion? **Minor erosion near the crest observed. See comment iv.**				**X**	**X**		
b	Inadequate ground cover?			**X**				
c	Adverse vegetation? **There is vegetation in the pond near the West Abutment (Photo IMG_2593).**				**X**		**X**	
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?			**X**				
f	Stone deterioration?			**X**				
g	Settlements, slides, depressions, bulges?			**X**				
h	Animal burrows? **None observed. Continue to monitor.**			**X**		**X**		

Bottom Ash Dam			SID: **09.27**	N/A	No	Yes	Mon	Rep	Inv
5	***DOWNSTREAM SLOPE***								
a	Erosion?	**Erosion gullies at the toe of the East Embankment downstream slope do not appear to be affecting the embankment (Photos IMG_2748 and IMG_2759).**			**X**		**X**		
b	Inadequate ground cover?				**X**				
c	Adverse vegetation?	**Much of the dense vegetation and all of the woody vegetation observed near the West Abutment Weir during previous inspections has been removed (Photo IMG_2825). Continue to monitor the area and remove vegetation in accordance with the NMOSE (2011) guidance.**			**X**		**X**		
d	Longitudinal/Transverse cracking?				**X**				
e	Inadequate riprap?				**X**				
f	Stone deterioration?	**Riprap deterioration does not appear to have accelerated since the previous inspection.**				**X**	**X**		
g	Settlements, slides, depressions, bulges?					**X**			
h	Soft spots or boggy areas?	**See comment v.**				**X**	**X**		
i	Movement at or beyond toe?				**X**				
j	Animal burrows?	**None observed. Continue to monitor.**			**X**		**X**		
6	***ABUTMENT CONTACTS***								
a	Erosion?				**X**				
b	Differential movement?				**X**				
c	Cracks?				**X**				
d	Settlements, slides, depressions, bulges?				**X**				
e	Seepage?	**Yes. Measured approximately 1.13 gpm at the West Abutment Weir during the inspection. Continue to monitor.**				**X**	**X**		
f	Animal burrows?	**None observed. Continue to monitor.**			**X**		**X**		
7	***SEEPAGE/PIPING CONTROL DESIGN FEATURE(S)***								
a	Describe:	**Several monitoring, seepage, and pump back collection systems are located downstream of the dam.**							
b	Internal drains flowing?					**X**			
c	Seepage at or beyond toe?	**See comment v.**				**X**	**X**		
d	If so, does seepage contain fines?				**X**		**X**		
e	Evidence of sand boils at or beyond toe?				**X**				

	RESERVOIR CHECKLIST							
8	***RESERVOIR***							
a	High water marks?			**X**				
b	Erosion/slides into pool area?			**X**				
c	Sediment accumulation?	**Bottom ash settles in the reservoir, is removed, and is placed in the Bottom Ash Monofill.**			**X**			
d	Floating debris present?			**X**				
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?			**X**				
g	Structures below dam crest elevation?	**There is a divider dike in the center of the pond.**			**X**			

Additional comments and recommendations for the Bottom Ash Dam:

i. APS reported that in June, one of the pumps at the P-232 seepage intercept area was observed to be leaking. APS repaired the pump and no leaks were observed during the inspection.

ii. There is a crack in the support material on the downstream side of settlement monument M-13. The surrounding fill is beginning to separate from the concrete (Photo IMG_2642). The fill does not affect the structural integrity of the dam, but the crack should be monitored and repaired if abnormal movements are indicated at M-13.

iii. APS recently bladed the dam crest. As a result, no holes were observed on the South Embankment crest and fewer erosion holes were observed on the East Embankment crest compared to the 2019 inspection (Photos IMG_2694, IMG_2695, IMG_2700, IMG_2704, and IMG_2718). None of the holes observed during this inspection appeared to extend deeper than 1 foot.

iv. Continue to monitor the erosion around the siphon line encasements (Photo IMG_2646), soil wasting, and erosion gullies (Photos IMG_2748 and IMG_2759) observed during the 2018 inspection. Repair erosion if the eroded depth exceeds 1 foot. Investigate the source of sediment collecting in the diversion ditch between the East Embankment access road and the East Embankment.

v. Seepage and boggy areas were observed along the downstream toe in locations of known and active seepage (e.g. the Petroglyph Seep (Photo IMG_2802), the Tanner Wash seep, the Bottom Ash Toe Drain Sump, the West Abutment Weir (Photo IMG_2825), and the P-232 seepage intercept area (Photo IMG_2793)). The water at the Petroglyph seep appeared clear; no water was present in the Petroglyph sump. The Tanner Wash sump contained greenish-red algae at the time of the inspection. The sump should be cleared of algae to facilitate observing sediment (or lack thereof) in the water.

vi. The weekly inspection reports for the period between October 1, 2019 and September 30, 2020 were reviewed and indicate the following:

   a. Erosion at the abutment contacts was noted as requiring monitoring throughout the year.

   b. Seepage at the abutment contacts was noted as requiring monitoring throughout the year. APS monitors seepage on a regular basis and did not record any adverse seepage conditions during the review period.

vii. The weekly inspection reports for the period between October 1, 2019 and September 30, 2020 do not indicate that there were any appearances of actual or potential structural weakness or other conditions that have the potential to disrupt the operation or safety of the CCR unit.

4.3 APS FIELD INSPECTION – SEDIMENTATION POND

<table>
<tr><td colspan="2">Sedimentation Pond</td><td colspan="2">State Identification Number (SID): N/A</td><td rowspan="16">Not Applicable</td><td rowspan="16">No</td><td rowspan="16">Yes</td><td rowspan="16">Monitor</td><td rowspan="16">Repair</td><td rowspan="16">Investigate</td></tr>
<tr><td>SID: N/A</td><td>Dam Name: Sedimentation Pond</td><td>Type: Earth</td><td>Purpose: CCR-Impacted Surface Water Collection</td></tr>
<tr><td colspan="2">Contact(s): Byron Conrad, P.E. (APS)</td><td colspan="2">Report Date: January 15, 2021</td></tr>
<tr><td colspan="2">Inspected by: Byron Conrad, P.E. (APS), Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: November 17, 2020</td></tr>
<tr><td colspan="2">Reviewed by: Byron Conrad, P.E. (APS)</td><td colspan="2">Review Date: January 15, 2021</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5019</td><td colspan="2">Design Spillway Crest Elevation: Twin 16-inch corrugated polyethylene pipes, ungated, with trash rack</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 2</td><td colspan="2">Measured Total Freeboard (ft): No water currently impounded in the CCR unit</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 11</td><td colspan="2">Structural Height (ft): East embankment: 11 ft West embankment: 0 ft (areal fill around the Pond raised the surrounding ground surface to the elevation of the dam crest)</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): 1,100</td><td>Upstream Slope: 1.5:1 (by inspection)</td><td>Downstream Slope: 1.5:1 (by inspection)</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): 24</td><td>Lat: 34° 56′ 29.9″N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 110° 18′ 14.9″W</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 1.6</td><td colspan="2">Reservoir Storage (ac-ft): 10.29</td></tr>
<tr><td colspan="4">Inflow Design Flood/Safe Flood-Passing Capacity: Not Calculated</td></tr>
<tr><td colspan="2">Reservoir Level During Inspection (ft): No water currently impounded in the CCR unit</td><td rowspan="2">Photos: Yes</td><td rowspan="2">Pages: 4</td></tr>
<tr><td colspan="2">Estimated Solids Level (ft): CCR in the Pond is currently stockpiled in the North Cell</td></tr>
</table>

Sedimentation Pond		SID: **N/A**		N/A	No	Yes	Mon	Rep	Inv
COMPLIANCE CHECKLIST									
1	***CONDITION SUMMARY/LICENSE/EAP/NEXT INSPECTION***								
a	Recorded downstream hazard: **Very Low**	Should hazard be revised?			**X**				
b	If high hazard, estimate downstream persons-at-risk (PAR): **N/A**	Is there a significant increase since the last inspection?			**X**				
c	Recorded size: **Small**	Should size be revised?			**X**				
d	Any safety deficiencies? **No**	Describe:			**X**				
e	Any statute or rule violations? **No**	Describe and list required action:			**X**				
f	Safe storage level on License: **N/A**	Should level be revised:			**X**				
g	Any License violations? **No**	Describe and list required action:			**X**				
h	Date of current License: **N/A**	Should new License be issued?			**X**				
i	Date of last Emergency Action Plan revision: **N/A**	Should EAP be revised?			**X**				
j	Any Agency actions? **No**	Describe and list required action:			**X**				
k	Normal inspection frequency: **Weekly, Annually**	Should inspection frequency be revised?			**X**				
l	Recommended date for next inspection: **See comment i.**								

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe: **There are no instruments or other monitoring devices for this structure due to its small size.**								
b	Any repair or replacement required? **No.**	Describe: **Not applicable**	**X**						
c	Date of last report: **January 2020 (for 2019)**	Should new readings be taken and new report provided? **Annual reporting is required.**			**X**				

DAM EMBANKMENT CHECKLIST								
3	***DAM CREST***							
a	Settlements, slides, depressions?			**X**				
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking?			**X**				
d	Animal burrows?			**X**				
e	Adverse vegetation?			**X**				
f	Erosion?			**X**				
4	***UPSTREAM SLOPE***							
a	Erosion? **The upstream slope appears to be steeper than the 3H:1V design slope.**			**X**				
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?			**X**				
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?			**X**				
f	Stone deterioration?			**X**				
g	Settlements, slides, depressions, bulges?			**X**				
h	Animal burrows?			**X**				

Sedimentation Pond		SID: N/A	N/A	No	Yes	Mon	Rep	Inv
5	***DOWNSTREAM SLOPE***							
a	Erosion?	**See comment iii.**			**X**	**X**		
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?			**X**				
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?			**X**				
f	Stone deterioration?			**X**				
g	Settlements, slides, depressions, bulges?			**X**				
h	Soft spots or boggy areas?			**X**				
i	Movement at or beyond toe?			**X**				
j	Animal burrows?			**X**				
6	***ABUTMENT CONTACTS***							
Abutments are not defined due to general grading in the area.								
a	Erosion?		**X**					
b	Differential movement?		**X**					
c	Cracks?		**X**					
d	Settlements, slides, depressions, bulges?		**X**					
e	Seepage?		**X**					
f	Animal burrows?		**X**					
7	***SEEPAGE/PIPING CONTROL DESIGN FEATURE(S)***							
a	Describe:	**None.**						
b	Internal drains flowing?		**X**					
c	Seepage at or beyond toe?			**X**				
d	If so, does seepage contain fines?		**X**					
e	Evidence of sand boils at or beyond toe?			**X**				

RESERVOIR CHECKLIST								
8	***RESERVOIR***							
a	High water marks?			**X**				
b	Erosion/slides into pool area?			**X**				
c	Sediment accumulation?	**The reservoir has been drained and APS is in the process of removing the sediment.**		**X**				
d	Floating debris present?			**X**				
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?	**APS has removed a portion of the concrete weir separating the North Cell from the South Cell as part of the Sedi Tank construction.**		**X**				
g	Structures below dam crest elevation?	**Yes, two 16-inch corrugated polyethylene pipe outlets in the South Cell (Photo IMG_2918) and the Sedi Tank (Photo IMG_2944).**			**X**			

Additional comments and recommendations for the Sedimentation Pond:

i. In Spring 2020, APS began construction of the reinforced concrete Sedimentation Tank within the footprint of the Sedimentation Pond North Cell. The Sedimentation Tank is intended to replace the function of the Sedimentation Pond and permit the Sedimentation Pond to be decommissioned. When the Sedimentation Tank (Sedi Tank) construction is complete, the pipes draining into the existing Sedimentation Pond will have been rerouted to the Sedimentation Tank or to the bottom ash sluice water side of the general water tank. The ancillary concrete structures associated with the Sedimentation Pond will be removed and APS will place structural fill in the remaining Sedimentation Pond footprint to bring the site to the surrounding grade. The Sedimentation Pond will then be removed from service and no longer function as a CCR unit.

ii. The upstream slopes appear to be steeper than the design slope. With the reservoir drained, no indications of tension cracks, sloughs, or localized over-steepened sections of the slope were observed.

iii. Minor erosion was observed along the edges of the concrete outfall structure (Photo IMG_2918). The erosion did not appear to be worse compared to previous inspections. Continue monitoring.

iv. In Spring 2020, APS began constructing an alternative storage system for CCR to permit the decommissioning of the existing Sedimentation Pond. The new Sedi Tank will be an in-ground concrete tank expected to be in service prior to October 2021. APS intends to follow the applicable closure, post-closure, recordkeeping, and notification requirements when removing the Sedimentation Pond from service.

v. The weekly inspection reports for the period between October 1, 2019 and September 30, 2020 were reviewed and do not indicate that there were any appearances of actual or potential structural weakness or other conditions that have the potential to disrupt the operation or safety of the CCR unit.

4.4 APS FIELD INSPECTION – BOTTOM ASH MONOFILL

<table>
<tr><td colspan="2">Bottom Ash Monofill</td><td colspan="2">State Identification Number (SID): N/A</td><td rowspan="12">Not Applicable</td><td rowspan="12">No</td><td rowspan="12">Yes</td><td rowspan="12">Monitor</td><td rowspan="12">Repair</td><td rowspan="12">Investigate</td></tr>
<tr><td>SID: N/A</td><td>Landfill Name: Bottom Ash Monofill</td><td>Type: Landfill</td><td>Purpose: Permanent Storage of Dry Bottom Ash Dredged from Bottom Ash Pond</td></tr>
<tr><td colspan="2">Contact(s): Byron Conrad, P.E. (APS)</td><td colspan="2">Report Date: January 15, 2021</td></tr>
<tr><td colspan="2">Inspected by: Byron Conrad, P.E. (APS), Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: November 16-17, 2020</td></tr>
<tr><td colspan="2">Reviewed by: Byron Conrad, P.E. (APS)</td><td colspan="2">Review Date: January 15, 2021</td></tr>
<tr><td colspan="2">Design Maximum Ash Elevation (ft): 5261</td><td colspan="2">Current Ash Elevation: 5184 feet for capped west portion, 5116 feet for east portion.</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): Not a dam, not applicable.</td><td>Design Side Slope: 4:1 (Final)</td><td>Observed Side Slope: 3:1, steeper (2:1) towards the south end of the west side.</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): Not a dam, not applicable.</td><td>Lat: 34° 57' 35.4"N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 110° 17' 06.3"W</td></tr>
<tr><td colspan="2">Landfill Area (acres): 43 (maximum permitted area)</td><td colspan="2">Landfill Capacity (ac-ft): 2,417</td></tr>
<tr><td colspan="4">Inflow Design Flood/Safe Flood-Passing Capacity: Diversion of 100-year, 24-hour run-on storm</td></tr>
<tr><td colspan="2">Photos: Yes</td><td colspan="2">Pages: 2</td></tr>
</table>

Bottom Ash Monofill		SID: N/A	N/A	No	Yes	Mon	Rep	Inv
MONITORING CHECKLIST								
1	***INSTRUMENTATION AND MONITORING***							
a	Describe: **There are no instruments or other monitoring devices for this structure.**							
b	Any repair or replacement required? **N/A**	Describe: **N/A**	**X**					
c	Date of last report: **January 2020 (for 2019)**	Should new readings be taken and new report provided? **N/A**	**X**					
2	***CONDITION SUMMARY***							
a	Waste placed in good practices?				**X**			
3	***LANDFILL CONFIGURATION***							
a	Settlements, slides, slope instability?			**X**				
b	Cracking?			**X**				
c	Run on control?				**X**			
d	Run off control?				**X**			
e	Erosion? **See comment ii.**			**X**		**X**		
f	Dust control issues?			**X**				

Additional comments and recommendations for the Bottom Ash Monofill:

i. APS placed approximately 150,000 cubic yards of CCR in the Bottom Ash Monofill in 2020.

ii. Shallow erosion rills were observed throughout the CCR unit (Photos IMG_2724, IMG_2839, IMG_2884, and IMG_2894) and incipient erosion was observed in locations of historic erosion at the Stormwater Detention Basin (Photos IMG_2866, IMG_2870, and IMG_2875). Continue to monitor and repair erosion if the eroded depth exceeds 1 foot.

iii. The weekly inspection reports for the period between October 1, 2019 and September 30, 2020 were reviewed and do not indicate that there were any appearances of actual or potential structural weakness or other conditions that have the potential to disrupt the operation or safety of the CCR unit.

5.0 DATA REVIEW

5.1 FLY ASH DAM

5.1.1 Geometry Changes Since Last Inspection

There have not been any significant changes to the geometry of the unit since the last inspection in 2019.

5.1.2 Instrumentation

The locations of geotechnical and other related instrumentation in the vicinity of the Fly Ash Dam are shown on Figure 5 – Fly Ash Dam Instrumentation Map.

The minimum and maximum recorded readings for each instrument over the October 1, 2019 – September 30, 2020 (current) review period are reported in the following table:

Instrument Name	Minimum	Maximum	Unit
Open Standpipe Piezometers (10/1/19 to 9/30/20)			
F-81	5058.56	5059.27	EL (ft)
F-88	5000.32	5004.02	EL (ft)
F-89	5053.88	5055.16	EL (ft)
F-90	4993.32	4996.21	EL (ft)
F-91	5005.49	5007.92	EL (ft)
F-92	5010.16	5012.82	EL (ft)
F-93	5016.90	5017.80	EL (ft)
F-100	5077.59	5079.25	EL (ft)
F-101	5048.44	5048.76	EL (ft)
F-102	5024.88	5025.92	EL (ft)
F-103	5017.46	5018.04	EL (ft)
F-104	5062.86	5065.68	EL (ft)
F-105	5081.83	5085.09	EL (ft)
F-106	5014.57	5015.76	EL (ft)
F-107	5024.20	5025.88	EL (ft)
F-108	5054.27	5057.15	EL (ft)
F-109	5034.20	5036.03	EL (ft)
F-110	5086.27	5090.22	EL (ft)
F-111	5030.09	5031.22	EL (ft)
F-112	5027.17	5027.74	EL (ft)
F-113	5042.22	5042.61	EL (ft)
F-114	5024.58	5024.83	EL (ft)
F-115	5032.67	5033.07	EL (ft)

Instrument Name	Minimum	Maximum	Unit
F-117	5083.23	5084.70	EL (ft)
F-123	5084.42	5086.25	EL (ft)
F-124	5085.66	5086.82	EL (ft)
F-125	Dry	Dry	EL (ft)
F-126	5077.28	5079.14	EL (ft)
F-127	5071.04	5073.37	EL (ft)
F-128	5089.42	5090.70	EL (ft)
F-129	5082.38	5084.02	EL (ft)
F-130	5075.23	5077.40	EL (ft)
F-131	5057.16	5059.04	EL (ft)
F-132	5085.65	5087.31	EL (ft)
F-133	5077.13	5082.85	EL (ft)
F-134	5062.14	5064.23	EL (ft)
W-123	5035.67	5037.49	EL (ft)
Settlement Monuments (10/1/19 to 9/30/20)			
M-1	5120.917	5121.021	EL (ft)
M-2	5120.410	5120.481	EL (ft)
M-3	5119.789	5119.890	EL (ft)
M-4	5118.966	5119.043	EL (ft)
M-5	5117.924	5117.995	EL (ft)
M-5A	5117.731	5117.822	EL (ft)
M-5B	5117.550	5117.636	EL (ft)
M-5C	5117.882	5117.991	EL (ft)
M-6	5119.018	5119.105	EL (ft)
M-6A	5118.617	5118.727	EL (ft)
M-6B	5119.635	5119.712	EL (ft)
M-6C	5119.986	5120.091	EL (ft)
M-7	5119.446	5119.560	EL (ft)
M-8	5119.564	5119.634	EL (ft)
M-9	5119.978	5120.058	EL (ft)
M-10	5119.942	5120.025	EL (ft)
Totalizers (10/1/19 to 9/30/20)			
Geronimo	0.00	12.55	gpm
Hunt	0.00	14.35	gpm

The data for the piezometers during the current review period indicate that the water levels recorded in formations hydraulically connected to the reservoir are generally declining along with the reservoir water level; however, the water levels in piezometers F-110 (screened in the alluvium

underlying the dam) and F-128 (screened in the core of the dam) have decreased compared to prior years, but remain higher than the current reservoir water level. In addition, the water levels in piezometers F-124 and F-132 (both screened in the core of the dam), have not decreased as quickly as the reservoir level has decreased and are near the elevation of the reservoir. Approximately 50 feet of CCR is impounded against the upstream slope of the dam near these instruments, forming a buttress to prevent slope instability. APS will continue to monitor these and nearby instruments.

The data for the settlement monuments during the current review period indicate no significant elevation changes or trends related to the performance of the dam.

The data for the totalizers during the current review period indicates that the seepage flow rates have decreased compared to flow rates recorded prior to 2019, likely due to a lower reservoir pool as the Plant reduces its water usage and sends less water to the Fly Ash Pond.

5.1.3 CCR and Water Elevations

The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection (the October 1, 2019 – September 30, 2020 timeframe) is presented in the following table:

Water	Depth of Water (ft) (calculated)	Water Elevation (ft) (surveyed)	Measurement Location
Minimum	15.64	5085.64 (9/10/2020)	Northeast Area of Pond
Maximum	17.656	5087.656 (3/26/2020)	Northeast Area of Pond
Present (this inspection)	15.64	5085.64 (9/10/2020)	Northeast Area of Pond
CCR	**Depth of CCR (ft) (calculated)**	**CCR Elevation (ft) (estimated)**	**Measurement Location**
Minimum	54.4	5094.4 (2019 inspection)	Inlet Pipe
Maximum	56.4	~5095.4 (2020 inspection)	Inlet Pipe
Present (this inspection)	56.4	~5095.4 (2020 inspection)	Inlet Pipe

Water elevation measurements are made by Plant surveyors using GPS techniques on a monthly basis. The CCR elevation is estimated by measuring the gap from the invert of the discharge pipe to the top of the CCR surface at the time of the annual inspection.

Reported water depths are calculated relative to the estimated lowest elevation (approximately EL 5070 feet) of the intersection of the upstream edge of the impounded fly ash with natural ground, based on a 2015 bathymetry survey. Reported CCR depths are calculated relative to the estimated lowest elevation (approximately EL 5040 feet) of the intersection of the upstream slope of the dam with natural ground, based on original as-built dam construction drawings (APS 1977). In contrast to the 2018-2019 timeframe, the CCR elevation measured during this year's inspection indicates a net increase in CCR as APS continues to place material in the reservoir. It is likely that the 2019 measurement indicating a net decrease in CCR volume was either due to the material in the reservoir consolidating or the accuracy of the measurement technique.

5.1.4 Storage Capacity

The estimated storage capacity of the CCR unit at the time of the inspection was 18,000 acre-feet (ac-ft).

5.1.5 Approximate Impounded Volume at Time of Inspection

The approximate volume of impounded water and CCR at the time of the inspection was 7,400 ac-ft.

5.1.6 Structural Weakness or Operational Change/Disruption

No conditions associated with structural weakness were identified during the field inspection.

No conditions that are or could be disruptive to the operation and safety of the CCR unit and appurtenant structures were identified during the field inspection.

There are no significant changes to the structural integrity or operation of the impoundment since the 2019 inspection.

5.2 BOTTOM ASH DAM

5.2.1 Geometry Changes Since Last Inspection

There have not been any significant changes to the geometry of the unit since the last inspection in 2019.

5.2.2 Instrumentation

The locations of geotechnical and other related instrumentation in the vicinity of the Bottom Ash Dam are shown on Figure 6 – Bottom Ash Dam Instrumentation Map.

The minimum and maximum recorded readings for each instrument over the October 1, 2019 – September 30, 2020 (current) review period are reported in the following table:

Instrument Name	Minimum	Maximum	Unit
Open Standpipe Piezometers (10/1/19 to 9/30/20)			
B-200	5046.36	5049.69	EL (ft)
B-201	5043.16	5046.14	EL (ft)
B-202	5040.49	5042.30	EL (ft)
B-204	5096.13	5103.47	EL (ft)
B-206	5027.92	5030.93	EL (ft)
B-207	5030.38	5032.63	EL (ft)
B-208B	Dry	Dry	EL (ft)
B-209	5071.54	5073.43	EL (ft)
B-210	5066.30	5066.83	EL (ft)
B-211	Dry	Dry	EL (ft)
B-212	5089.48	5092.85	EL (ft)
B-213	5079.40	5080.88	EL (ft)
B-214	5078.71	5079.98	EL (ft)
B-215	5078.45	5079.74	EL (ft)
B-216	5071.26	5073.19	EL (ft)
B-217	5100.10	5102.70	EL (ft)
B-218	5093.67	5097.15	EL (ft)
B-225	5058.43	5060.28	EL (ft)
W-227	5090.16	5094.16	EL (ft)
Settlement Monuments (10/1/19 to 9/30/20)			
M-11	(not available)	(not available)	EL (ft)
M-12	(not available)	(not available)	EL (ft)
M-13	(not available)	(not available)	EL (ft)
M-14	(not available)	(not available)	EL (ft)
M-15	(not available)	(not available)	EL (ft)

Instrument Name	Minimum	Maximum	Unit
M-16	(not available)	(not available)	EL (ft)
M-17	(not available)	(not available)	EL (ft)
M-18	(not available)	(not available)	EL (ft)
M-19	(not available)	(not available)	EL (ft)
PI	(not available)	(not available)	EL (ft)
Totalizers (10/1/18 to 9/30/19)			
West Abutment Totalizer	4.91	10.73	gpm
West Abutment Weir	0.50	2.50	gpm
P-226	20.26	26.45	gpm
Tanner Wash Totalizer	2.03	6.65	gpm
Petroglyph	2.99	11.86	gpm

The data for the piezometers during the current review period indicate no significant elevation changes or trends related to the performance of the dam.

APS continued to collect settlement data as part of the 30-day instrumentation monitoring throughout 2020, but the data were not available for review at the time this report was published due to logistical issues related to COVID-19. This data will be included in a separate section in the 2021 CCR Inspection Report.

The data for the totalizers and seeps during the current review period indicates that the seepage flow rates appear to be directly proportional to the Bottom Ash Pond elevation and have not significantly increased compared to the October 1, 2018 – September 30, 2019 review period.

5.2.3 CCR and Water Elevations

The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection is presented in the following table:

Water	Depth of Water (ft) (calculated)	Water Elevation (ft) (measured)	Measurement Location
Minimum	5.0	5105.0 (8/6-8/7/2020)	Upstream slope at the staff gauge
Maximum	15.2	5115.2 (2/12-2/13/2020)	Upstream slope at the staff gauge
Present (this inspection)	9.2	5109.2 (NGVD29)	Upstream slope at the staff gauge
CCR	**Depth of CCR (ft) (calculated)**	**CCR Elevation (ft) (estimated)**	**Measurement Location**
Minimum	30-45	5115-5130 (NGVD29)	Visual observation in the north end of the impoundment and around the divider dikes
Maximum	~45	~5100 (NGVD29)	Upstream slope at the staff gauge
Present (this inspection)	30-45	5100-5115 (NGVD29)	Visual observation in the East Decant Cell

Water elevation measurements are made by Plant personnel on a daily basis by reading the staff gauge on the upstream slope along the South Embankment of the dam. APS constructed divider dikes in 2009 to create the East and West Decant Cells in the northern half of the reservoir. The divider dikes were constructed on top of the existing impounded ash and currently prevent most of the newly deposited ash from reaching the South Embankment. Since the water elevation is measured against the South Embankment, the resulting water depth is calculated based on the depth of impounded water to the top of previously deposited bottom ash.

The CCR elevation varies throughout the year based on the volume of ash discharged to the reservoir and the volume of ash taken to the Bottom Ash Monofill. The CCR elevation and depth of CCR are estimated based on observations of ash levels around the divider dikes, ash levels in the East Decant Cell, recent ash excavation activity, and preconstruction topography. CCR depths are based on a minimum original ground surface elevation of 5055 feet along the upstream toe of the South Embankment near the current staff gauge location (APS Drawing #G-44556). The maximum CCR depth is typically along the southeast side of the East Decent Cell divider dike where the original topography is lowest and the minimum CCR depth is typically in the north half of the reservoir where the original topography is relatively higher.

APS normally excavates bottom ash from the Bottom Ash Pond at various times throughout the year and places it in the Bottom Ash Monofill. APS removed approximately 150,000 cubic yards from the Bottom Ash Pond during 2020. This is assumed to be the approximate volume of CCR that was placed in the reservoir during the year.

5.2.4 Storage Capacity

The estimated storage capacity of the CCR unit at the time of the inspection was 2,300 ac-ft.

5.2.5 Approximate Impounded Volume at Time of Inspection

The approximate volume of impounded water and CCR at the time of the inspection was 1,843 ac-ft.

5.2.6 Structural Weakness or Operational Change/Disruption

No conditions associated with structural weakness were identified during the field inspection.

No conditions that are or could be disruptive to the operation and safety of the CCR unit and appurtenant structures were identified during the field inspection.

There are no significant changes to the structural integrity or operation of the impoundment since the 2019 inspection.

5.3 SEDIMENTATION POND

5.3.1 Geometry Changes Since Last Inspection

APS is in the process of replacing the existing Sedimentation Pond with a concrete tank (the Sedi Tank) and will remove the existing Sedimentation Pond from service when construction is complete. To proceed with the construction activities, the Sedimentation Pond has been drained and most of the CCR at the bottom of the reservoir has been removed or stockpiled. Flows into the Sedimentation Pond have been cut off and APS filed a Notification of Intent to Close the CCR unit on October 30, 2020.

5.3.2 Instrumentation

There are no instruments associated with the Sedimentation Pond.

5.3.3 CCR and Water Elevations

The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection is presented in the following table:

Water	Depth of Water (ft) (calculated)	Water Elevation (ft) (measured)	Measurement Location
Minimum	0	Not Applicable	APS does not regularly record the water elevation, but the pond was drained during the year.
Maximum	8.44 (2019 inspection) 7.04 (2019 inspection)	5015.44 (South Cell) 5014.04 (North Cell)	
Present (this inspection)	0	Not Applicable	
CCR	**Depth of CCR (ft) (estimated)**	**CCR Elevation (ft) (estimated)**	**Measurement Location**
Minimum	0	Not Applicable	CCR is stockpiled in the North Cell.
Maximum	< 8.44 (2019 inspection) ~7.5 (2019 inspection)	Below EL 5015.44 (South Cell) ~5014.5 (max, North Cell)	Concrete weir at the outlet structure Western half of the North Cell
Present (this inspection)	0	Not Applicable	CCR is stockpiled in the North Cell.

Water and CCR depths are based on original topography presented on APS Drawing #G-44573.

Since the CCR unit has been emptied for construction, the impounded CCR elevation varied throughout the year.

5.3.4 Storage Capacity

The estimated storage capacity of the Sedimentation Pond at the time of the inspection was 10.29 ac-ft.

5.3.5 Approximate Impounded Volume at Time of Inspection

The approximate volume of impounded CCR in the Sedimentation Pond at the time of the inspection was 342 cubic feet (Photo IMG_2933). The Sedi Tank construction contractor had

stockpiled the impounded CCR it removed from the bottom of the CCR unit in the North Cell as construction progressed.

5.3.6 Structural Weakness or Operational Change/Disruption

No conditions associated with structural weakness were identified during the field inspection.

No conditions that are or could be disruptive to the operation and safety of the CCR unit and appurtenant structures were identified during the field inspection.

APS has significantly changed the operation of the CCR unit since the 2019 inspection. The Sedimentation Pond has been dewatered, most of the impounded CCR has been removed (the remaining CCR has been stockpiled), and a new concrete tank has been constructed within the pond footprint. To proceed with this construction, most of the inflow to the Sedimentation Pond was reduced or temporarily rerouted at various times during the year.

5.4 BOTTOM ASH MONOFILL

5.4.1 Geometry Changes Since Last Inspection

There have not been any significant changes to the geometry of the embankments since the last inspection in 2019. APS normally excavates bottom ash from the Bottom Ash Pond and places it in the Bottom Ash Monofill. In addition, APS placed CCR excavated from the Sedimentation Pond in the Bottom Ash Monofill earlier in the year.

5.4.2 Instrumentation

There are no instruments associated with the Bottom Ash Monofill.

5.4.3 CCR Volume

Based on the planned fill rate and the volume of CCR excavated from the Sedimentation Pond, the CCR unit is estimated to contain approximately 1,107.6 ac-ft at the time of the inspection. The estimated maximum storage capacity is 2,417 ac-ft.

5.4.4 Structural Weakness or Operational Change/Disruption

No conditions associated with structural weakness were identified during the field inspection.

Areas of historic erosion, including erosion in the Stormwater Detention Basin observed during previous inspections have been repaired, but additional erosion is occurring in the repaired areas. The additional erosion was not observed to be detrimental to the operation of the CCR unit, but should be monitored and repaired if it is deeper than 1 foot. No other conditions that are or could be disruptive to the operation and safety of the CCR unit and appurtenant structures were identified during the field inspection.

There are no significant changes to the structural integrity or operation of the impoundment since the 2019 inspection.

6.0 OPERATION AND MAINTENANCE RECOMMENDATIONS

The following items were noted during inspections as requiring attention.

6.1 FLY ASH DAM

Action Item	Action Status
1) Continue identifying and remediating scattered animal burrows and ant hills.	1) Mark ant hills and animal burrows identified during weekly inspections. 2) Continue remediating identified ant hills and animal burrows. NOTE: This will always be an ongoing maintenance activity.
2) Continue monitoring the groin of the Northwest Abutment and the access road near the Geronimo sumps for erosion.	Repair the erosion at the Northwest Abutment and continue to repair other areas if the eroded depth exceeds 1 foot.
3) Continue to maintain, treat, and remove excessive vegetation.	Remove trees, shrubs, and other deleterious vegetation on the dam as per NMOSE (2011). Large stumps should be removed, and the resulting void should be filled with compacted soil. NOTE: This will always be an ongoing maintenance activity.
4) Continue monitoring the riprap for additional signs of deterioration.	Replace riprap as needed.
5) Monitor erosion and soil wasting along the upstream slope.	Repair if the eroded depth exceeds 1 foot or if erosion reaches the original 24-foot wide dam crest.
6) Continue to monitor seepage through the embankment.	NOTE: This will always be an ongoing maintenance activity.
7) Monitor the 20-foot long, discontinuous, longitudinal crack on the upstream half of the crest near Settlement Monument M-5B.	Repair the crack if it grows or gets deeper.
8) Monitor the 6-foot long longitudinal crack on the upstream shoulder of the crest south of Piezometer F-124.	Monitor the crack and repair it if it begins to extend into the upstream slope or if it begins to affect the original dam crest.

6.2 BOTTOM ASH DAM

Action Item	Action Status
1) Monitor the crest for erosion holes during weekly inspections. Record the location and sizes of erosion holes during the weekly inspections.	Establish a regular schedule (e.g. semi-annually) to remediate holes identified in the crest. NOTE: This will always be an ongoing maintenance activity.
2) Monitor the erosion gullies at the downstream slope of the East Embankment.	Repair erosion if it exceeds 1 foot in depth.
3) Continue identifying and remediating scattered animal burrows and ant hills.	1) Mark ant hills and animal burrows identified during weekly inspections. 2) Continue remediating identified ant hills and animal burrows. NOTE: This will always be an ongoing maintenance activity.
4) Continue to maintain, treat, and remove excessive vegetation, including vegetation on the upstream and downstream slopes.	Remove trees, shrubs, and other deleterious vegetation on the dam as per NMOSE (2011). Large stumps should be removed, and the resulting void should be filled with compacted soil. NOTE: This will always be an ongoing maintenance activity.
5) Continue monitoring the riprap for additional signs of deterioration.	Replace riprap as needed.
6) Continue to monitor seepage through the embankment.	Sumps should be clear of algae and other obstructions to facilitate observations of clear or cloudy seepage. NOTE: This will always be an ongoing maintenance activity.
7) Continue to monitor seepage areas for excessive vegetation.	Woody vegetation rooted in the embankment should be removed and the resulting disturbed area should be replaced with compacted material similar to the embankment material per NMOSE (2011).
8) Remove vegetation from the upstream slope at the West Abutment.	Woody vegetation rooted in the embankment should be removed and the resulting disturbed area should be replaced with compacted material similar to the embankment material per NMOSE (2011).
9) Continue to monitor the erosion around the siphon line encasements along the South Embankment crest.	Repair erosion if the eroded depth exceeds 1 foot.

10) Continue to monitor the soil wasting observed along the downstream slope of the East Embankment near the North Abutment access road.	Investigate the source of sediment collecting in the diversion ditch between the East Embankment access road and the East Embankment.
11) The downstream section of support material is separating from the concrete at Settlement Monument M-13.	Monitor M-13 and repair the section of support material that is separating from the concrete. Record the position of M-13 via GPS immediately before and after any repairs.

6.3 SEDIMENTATION POND

Action Item	Action Status
1) Monitor the erosion around the outfall structure and the surface of the CCR unit.	Repair as needed.

6.4 BOTTOM ASH MONOFILL

Action Item	Action Status
1) Minor erosion throughout the CCR unit.	Repair erosion if it exceeds 1 foot in depth. NOTE: This will always be an ongoing maintenance activity.

7.0 REFERENCES

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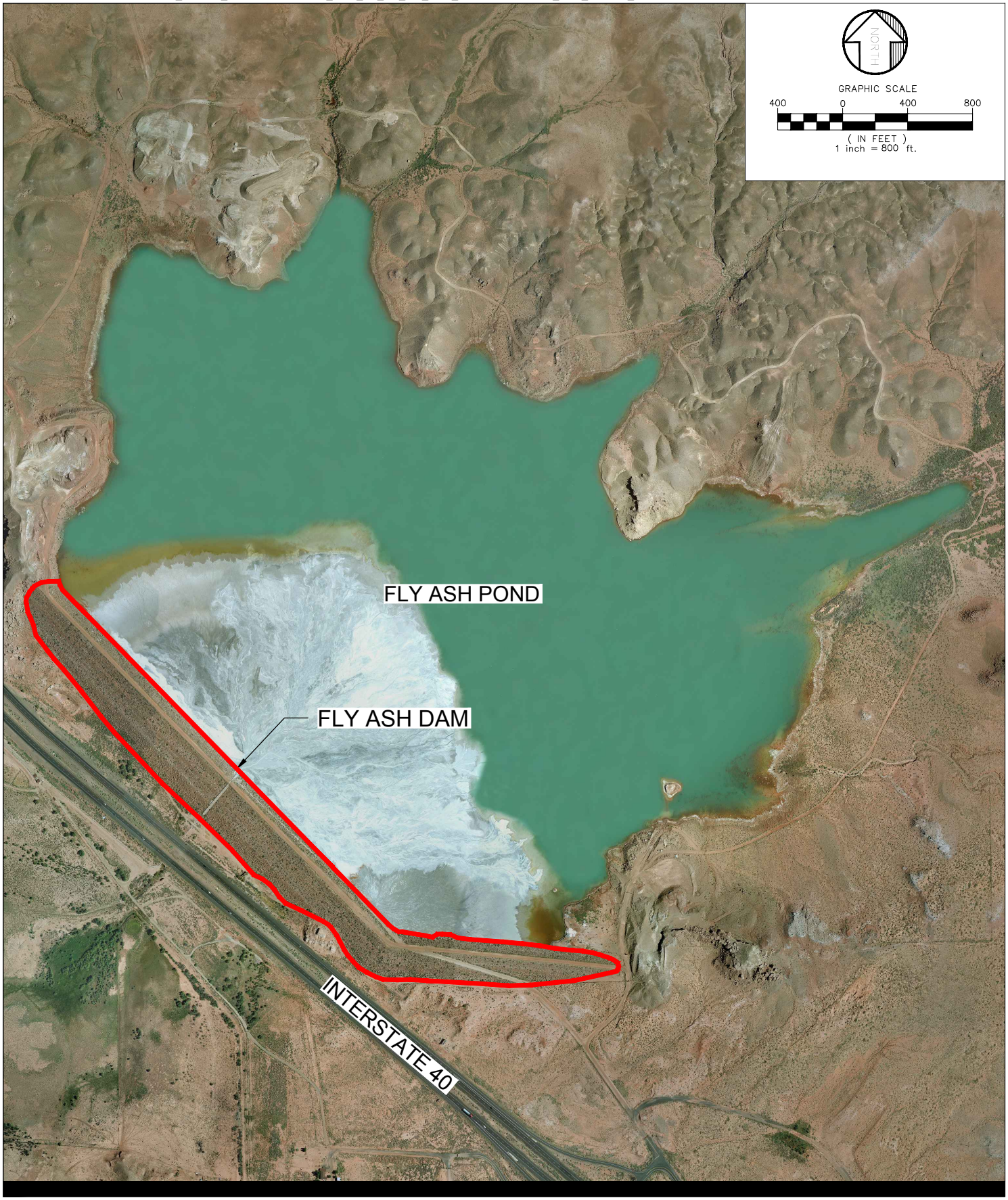
FIGURES

Last saved by: LEE.WRIGHT(2018-11-27) Last Plotted: 2018-11-27
Filename: P:\PROJECTS\ARIZONA_PUBLIC_SERVICE\60589229_2018_FC_CH_MD_CCR_INSPECTIONS\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 1 - FLY ASH POND.DWG
ANSI A 8.5" x 11"



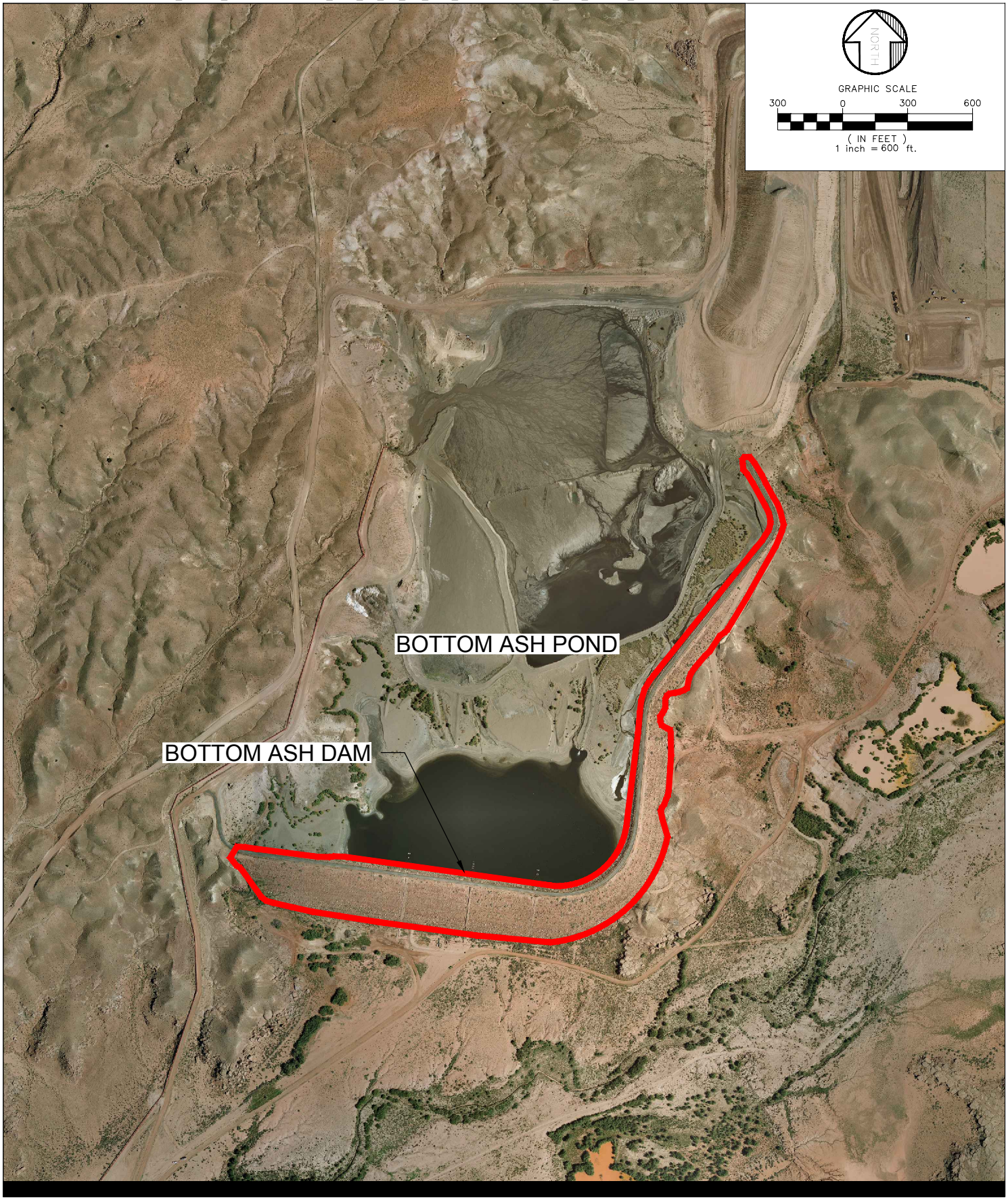
CHOLLA POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

FLY ASH POND
SITE MAP

AECOM

FIGURE 1

Last saved by: LEE.WRIGHT(2018-11-27) Last Plotted: 2018-11-27 ANSI A 8.5" x 11"
Filename: P:\PROJECTS\ARIZONA_PUBLIC_SERVICE\60589229_2018_FC_CH_MD_CCR_INSPECTIONS\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 2 - BOTTOM ASH POND.DWG



CHOLLA POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

BOTTOM ASH POND
SITE MAP

AECOM

FIGURE 2

Last saved by: LEE.WRIGHT(2018-11-27) Last Plotted: 2018-11-27 ANSI A 8.5" x 11"
Filename: P:\PROJECTS\ARIZONA_PUBLIC_SERVICE\60589229_2018_FC_CH_MD_CCR_INSPECTIONS\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 3 - SEDIMENTATION POND.DWG

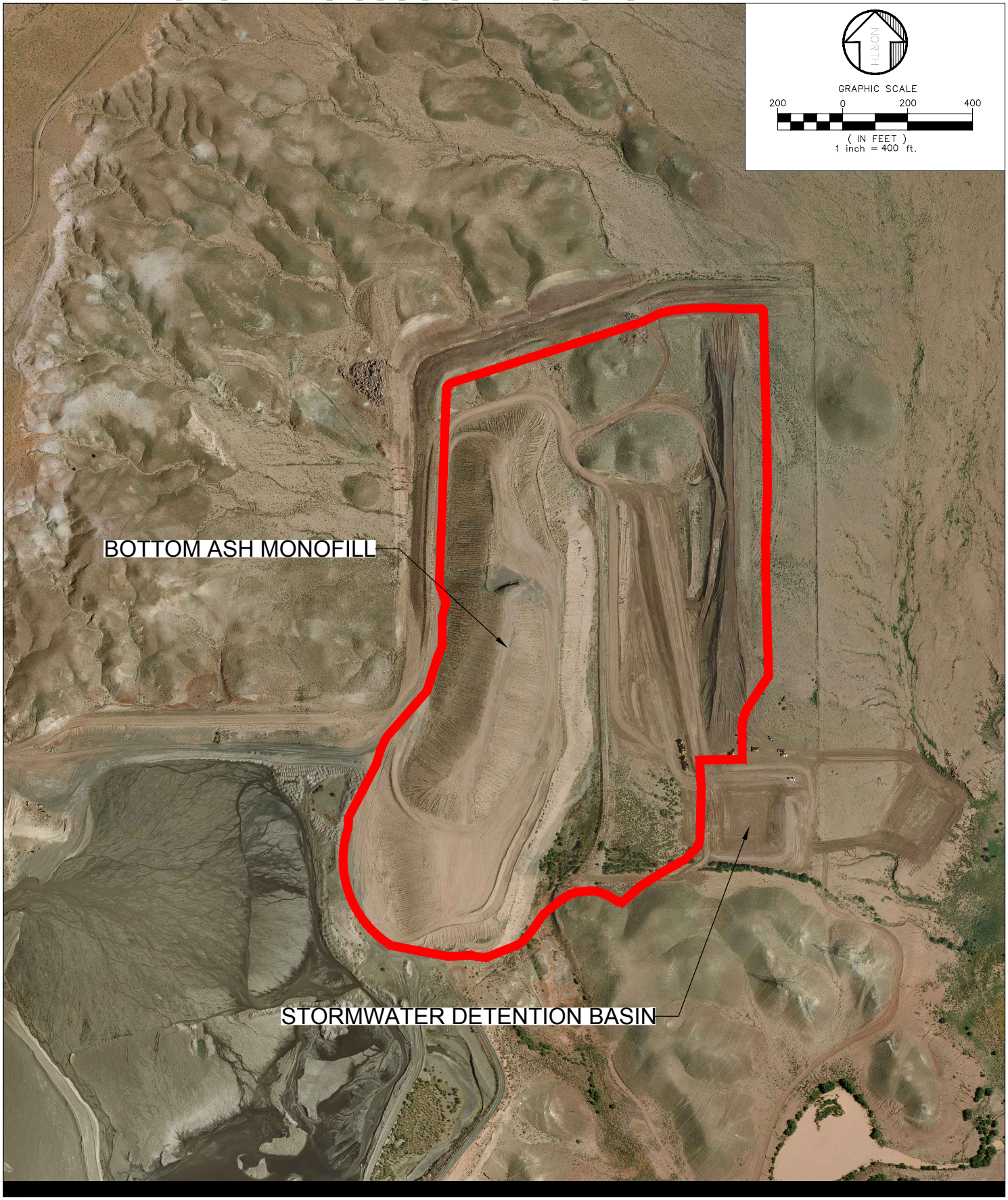
CHOLLA POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

SEDIMENTATION POND
SITE MAP

AECOM

FIGURE 3

Last saved by: LEE.WRIGHT(2018-11-27) Last Plotted: 2018-11-27 ANSI A 8.5" x 11"
Filename: P:\PROJECTS\ARIZONA_PUBLIC_SERVICE\60589229_2018_FC_CH_MD_CCR_INSPECTIONS\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 4 - BOTTOM ASH MONOFILL.DWG



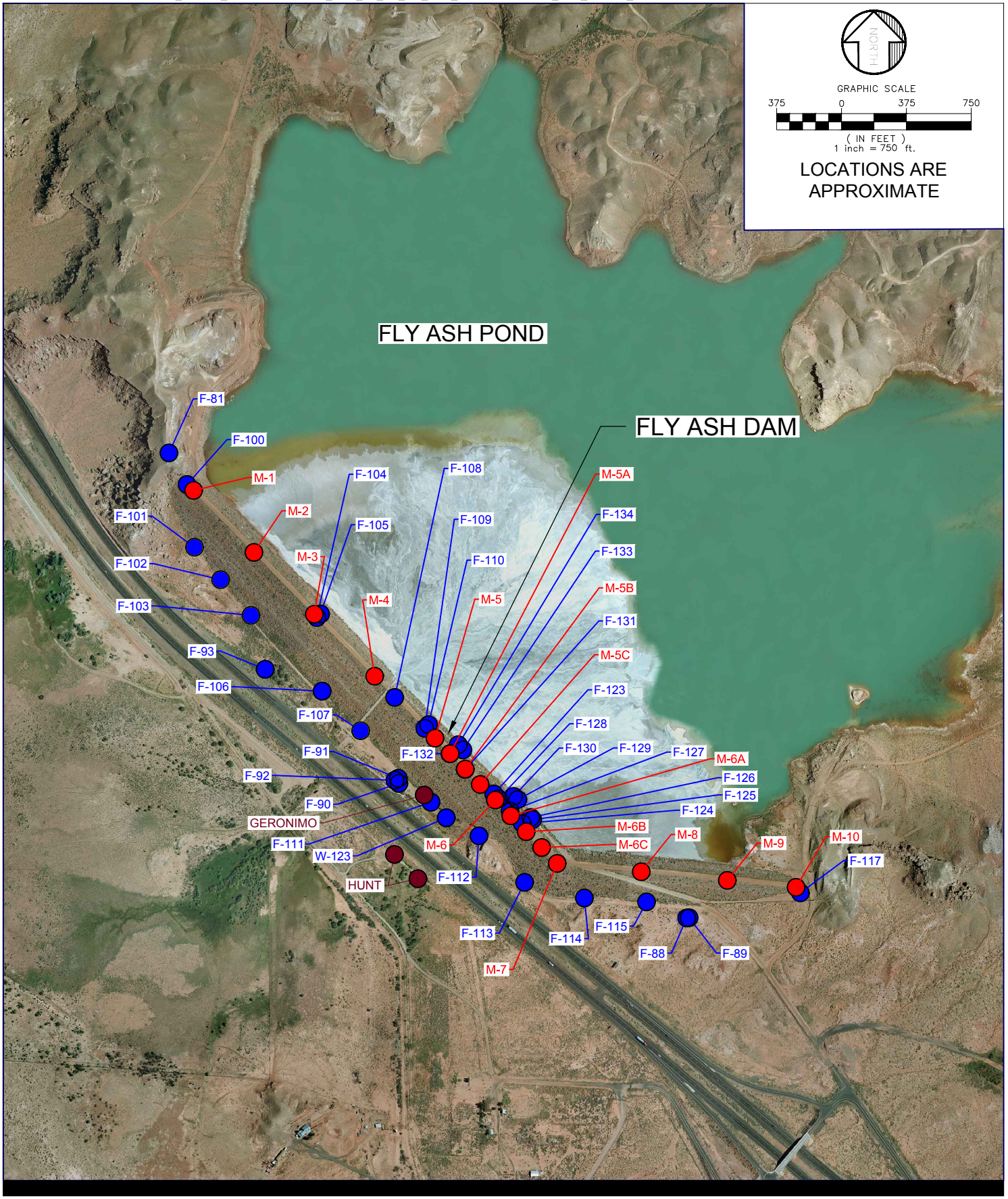
CHOLLA POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

BOTTOM ASH MONOFILL
SITE MAP

AECOM

FIGURE 4

Last saved by: LEE.WRIGHT(2018-12-07) Last Plotted: 2018-12-07 ANSI A 8.5" x 11"
Filename: P:\PROJECTS\ARIZONA_PUBLIC_SERVICE\60589229_2018_FC_CH_MD_CCR_INSPECTIONS\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 5 - FLY ASH DAM INSTRUMENTS.DWG



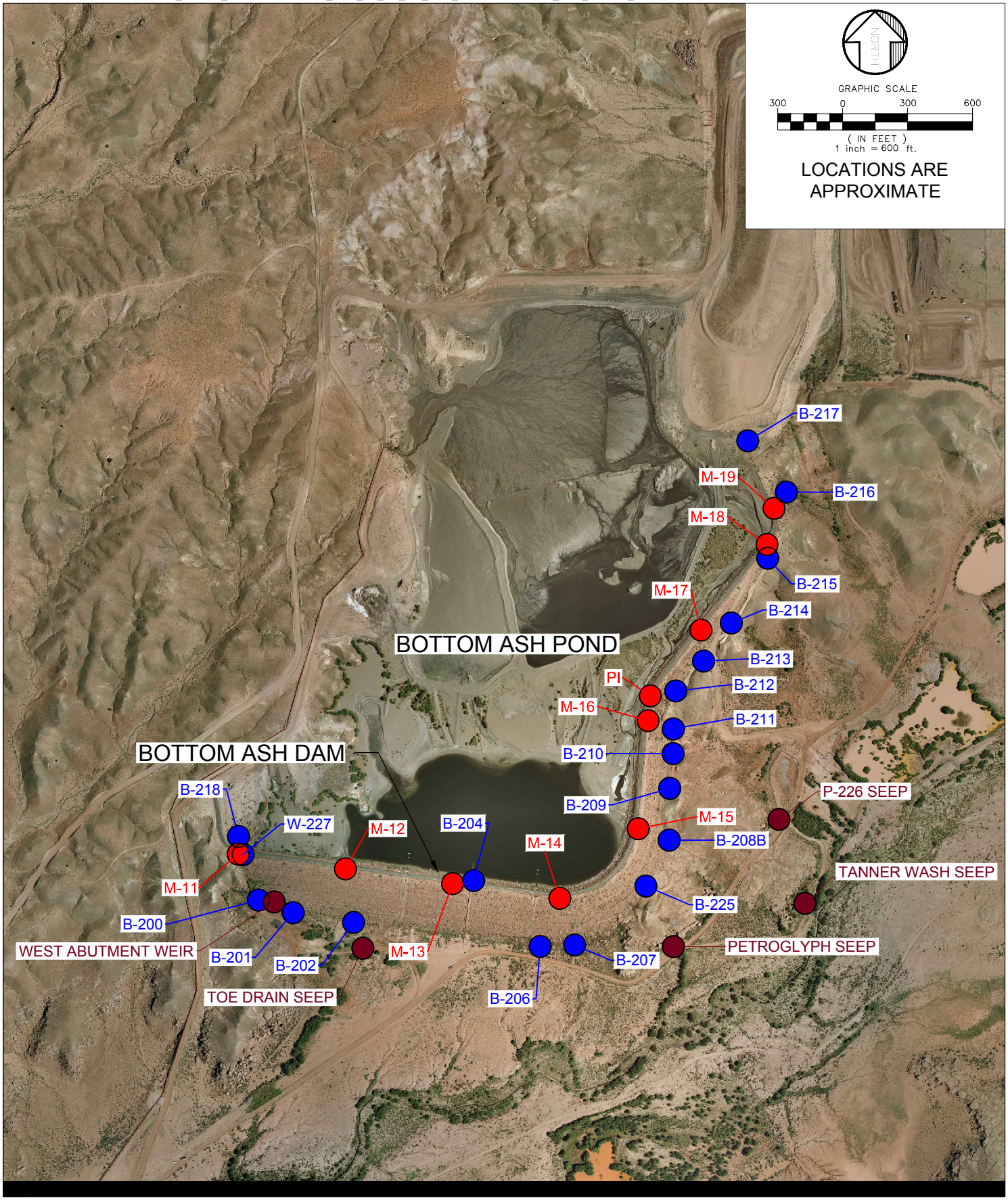
CHOLLA POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

FLY ASH DAM
INSTRUMENTATION MAP

AECOM

FIGURE 5

Last saved by: LEE.WRIGHT(2018-12-03) Last Plotted: 2018-12-07 ANSI A 8.5" x 11"
Filename: P:\PROJECTS\ARIZONA_PUBLIC_SERVICE\60589229_2018_FC_CH_MD_CCR_INSPECTIONS\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 6 - BOTTOM ASH DAM INSTRUMENTS.DWG



CHOLLA POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

BOTTOM ASH DAM
INSTRUMENTATION MAP

AECOM

FIGURE 6

APPENDIX A

FLY ASH DAM PHOTO LOG

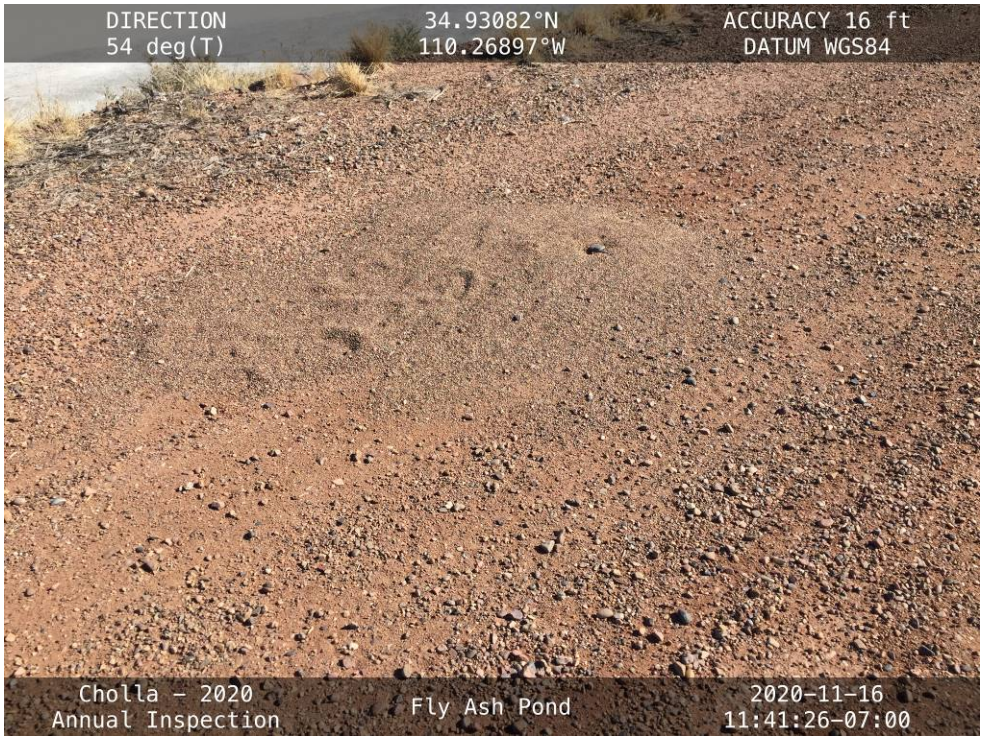
20201116 – IMG_2209
The downstream side of the Northwest Abutment contact.

20201116 – IMG_2219
The downstream slope of the Fly Ash Dam, facing southeast from the Northwest Abutment.

20201116 – IMG_2226
The crest of the Fly Ash Dam, facing southeast from the Northwest Abutment.

20201116 – IMG_2227
The upstream slope of the Fly Ash Dam, facing southeast from the Northwest Abutment.

20201116 – IMG_2233
An ant hill in the crest of the embankment near the Northwest Abutment.



20201116 – IMG_2273
An ant hill in the crest of the embankment along the West Embankment.

20201116 – IMG_2274

The crest of the Fly Ash Dam, facing southeast near the midpoint of the West Embankment.

20201116 – IMG_2275

The crest of the Fly Ash Dam, facing northwest near the midpoint of the West Embankment.

20201116 – IMG_2282
The inlet pipes along the downstream slope.

20201116 – IMG_2284
The inlet pipes along the upstream slope.

20201116 – IMG_2299
The inlet pipe depositing CCR into the impoundment.

20201116 – IMG_2303
The downstream slope, facing southeast from the Northwest Abutment.

20201116 – IMG_2317
The upstream slope, facing southeast from the middle of the West Embankment.

20201116 – IMG_2328
Part of a 20-foot long discontinuous crack near the upstream shoulder on the West Embankment.

20201116 – IMG_2331

The 20-foot long discontinuous crack near the upstream shoulder on the West Embankment.

20201116 – IMG_2344

Minor erosion on the upstream side of the crest in an area where the crest is wider.

20201116 – IMG_2351 – see IMG_5729 from 2019

Minor erosion on the upstream side of the crest in an area where the crest is wider.

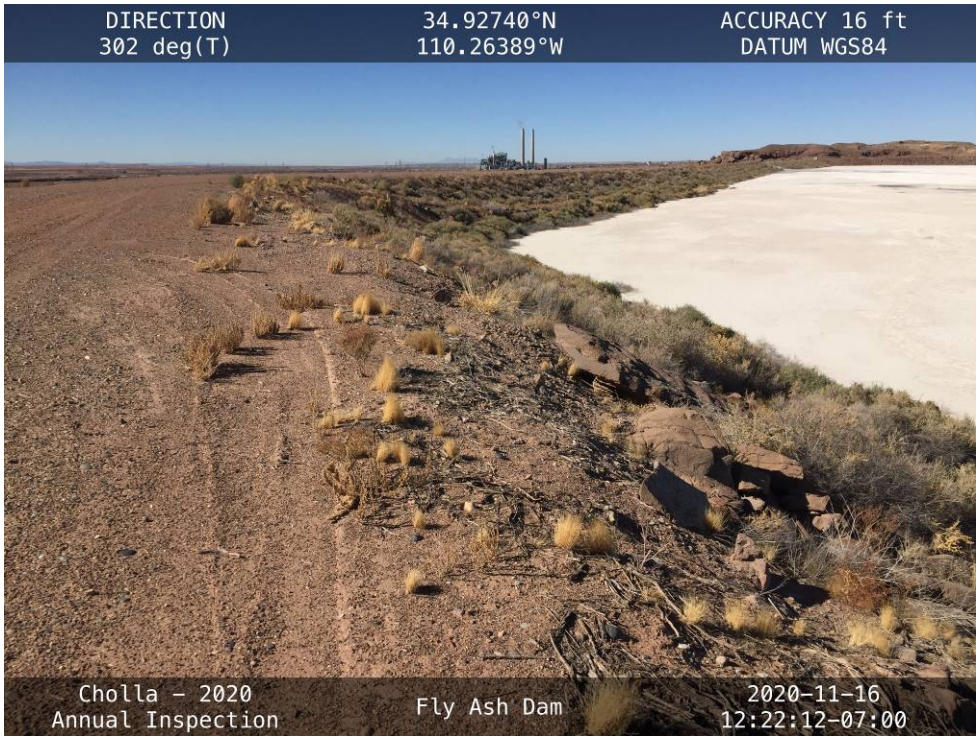
20201116 – IMG_2353

A 6-foot long crack along the upstream shoulder on the West Embankment near F-124.

20201116 – IMG_2359
The piezometers in the crest of the West Embankment, facing northwest.

20201116 – IMG_2366
The upstream slope of the South Embankment, facing east.

20201116 – IMG_2367
The upstream slope of the West Embankment, facing northwest.

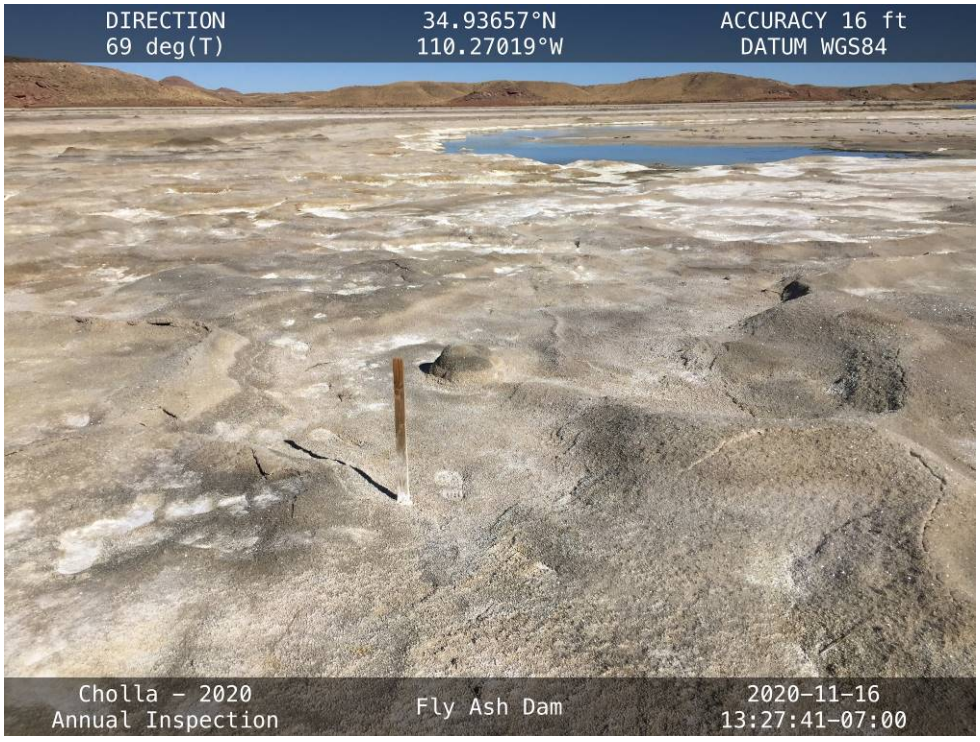


20201116 – IMG_2378
The upstream slope of the West Embankment, facing northwest.

20201116 – IMG_2402
The downstream slope of the South Embankment, facing west from the East abutment.

20201116 – IMG_2428
Erosion around a monitoring well on the downstream shoulder of the West Embankment crest.

20201116 – IMG_2447
Minor erosion along downstream side of the Northwest Abutment contact.



20201116 – IMG_2449
The 2019 lathe marking the location where the Fly Ash Pond elevation had been measured.

20201116 – IMG_2497
The downstream slope of the South Embankment, facing west from the East Abutment.

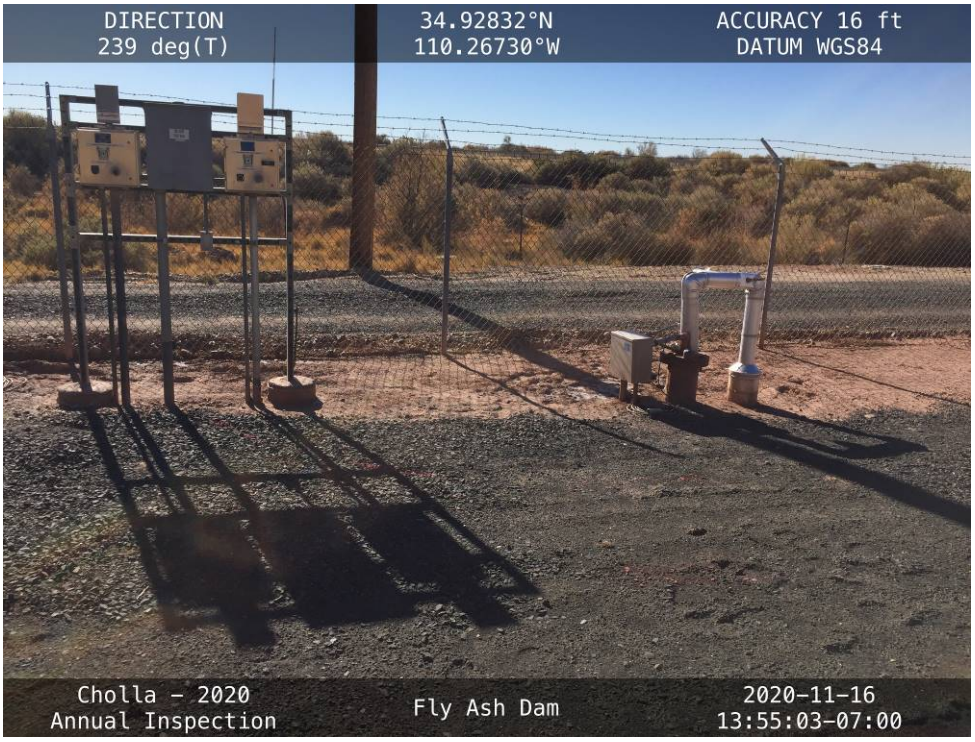
20201116 – IMG_2508
Deteriorating riprap along the downstream toe of the South Emankment.

20201116 – IMG_2518

Area of historic erosion along the downstream toe of the West Embankment.

20201116 – IMG_2524

A new monitoring well installed at the toe of the West Embankment near the Geronimo Sump.



20201116 – IMG_2536

The controls for Pump A and Pump B and one of the pumps at the Geronimo Sump.

20201116 – IMG_2541

The downstream toe of the West Embankment, facing northwest from the Geronimo Sump.

20201116 – IMG_2556
New bolts installed on the return water line pipe.

20201116 – IMG_2560
The Northwest Abutment contact and area of historic erosion, facing north from the toe.

20201116 – IMG_2568

The downstream toe of the West Embankment and historic erosion near the Northwest Abutment.

20201116 – IMG_2574

The downstream toe of the West Embankment near the Northwest Abutment contact.

20201116 – IMG_2580
The I-40 seep.

20201116 – IMG_2584
The I-40 seep.

APPENDIX B

BOTTOM ASH DAM PHOTO LOG

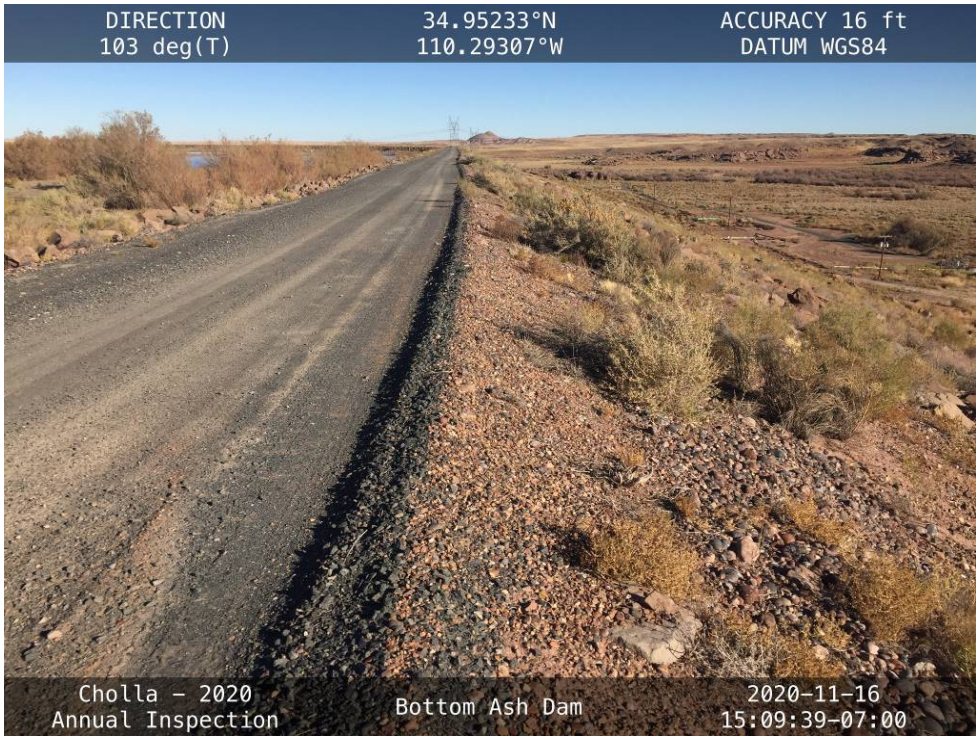
20201116 – IMG_2593

Trees and other woody vegetation to be removed from the South Embankment upstream slope.

20201116 – IMG_2594

The South Embankment crest, facing east from the West Abutment.

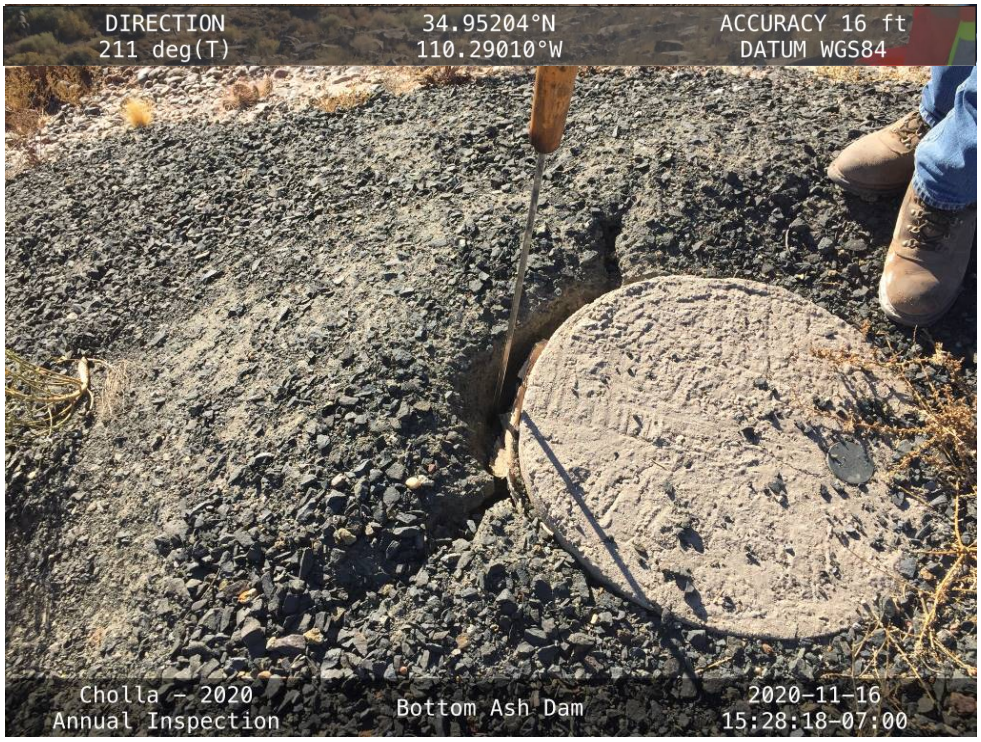
20201116 – IMG_2597
Well W-227 and Monument M-11 near the West Abutment.



20201116 – IMG_2598
The downstream slope along the South Embankment, facing east from the West Abutment.

20201116 – IMG_2627
The western siphon line along the upstream slope of the South Embankment.

20201116 – IMG_2628
The western siphon line along the downstream slope of the South Embankment.



20201116 – IMG_2642

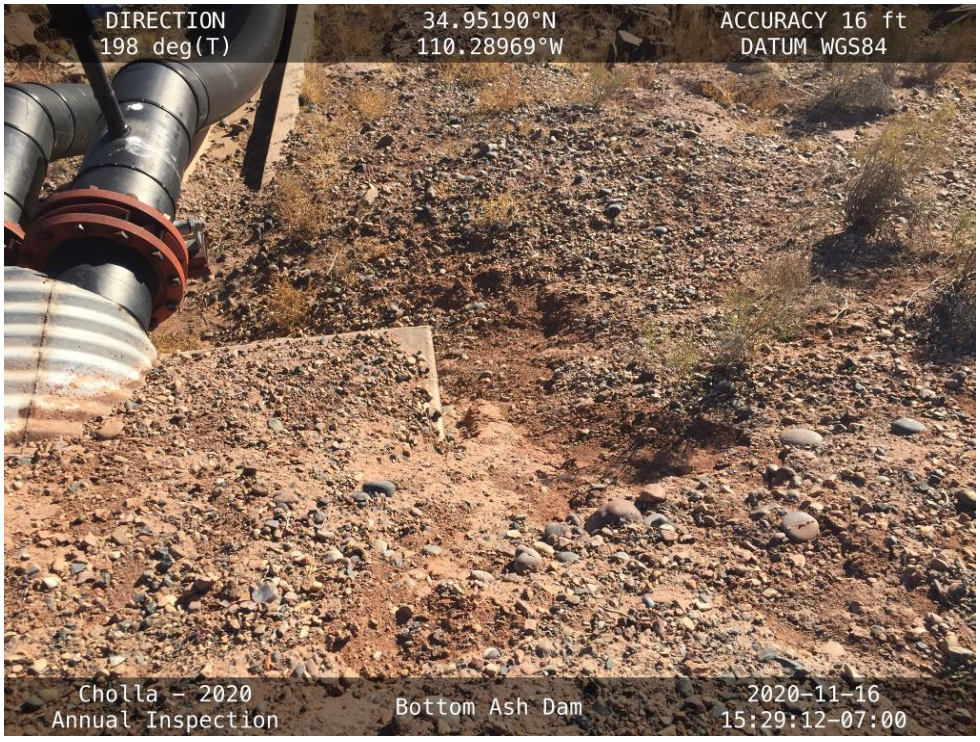
The support material on the downstream side of M-13 starting to separate from the concrete.

20201116 – IMG_2643

The central siphon lines along the upstream slope of the South Embankment.

20201116 – IMG_2645

The central siphon lines along the downstream slope of the South Embankment.



20201116 – IMG_2646

Minor erosion around the concrete encasement for the central siphon lines, facing downstream.

20201116 – IMG_2650
The reservoir level staff gauge adjacent to the central siphon lines.

20201116 – IMG_2651
The upstream slope along the western half of the South Embankment, facing west.

20201116 – IMG_2654
The upstream slope along the eastern half of the South Embankment, facing east.

20201116 – IMG_2656
The eastern siphon lines along the upstream slope of the South Embankment.

20201116 – IMG_2659
The eastern siphon line along the downstream slope of the South Embankment.

20201116 – IMG_2661
The downstream slope and crest of the South Embankment, facing west.

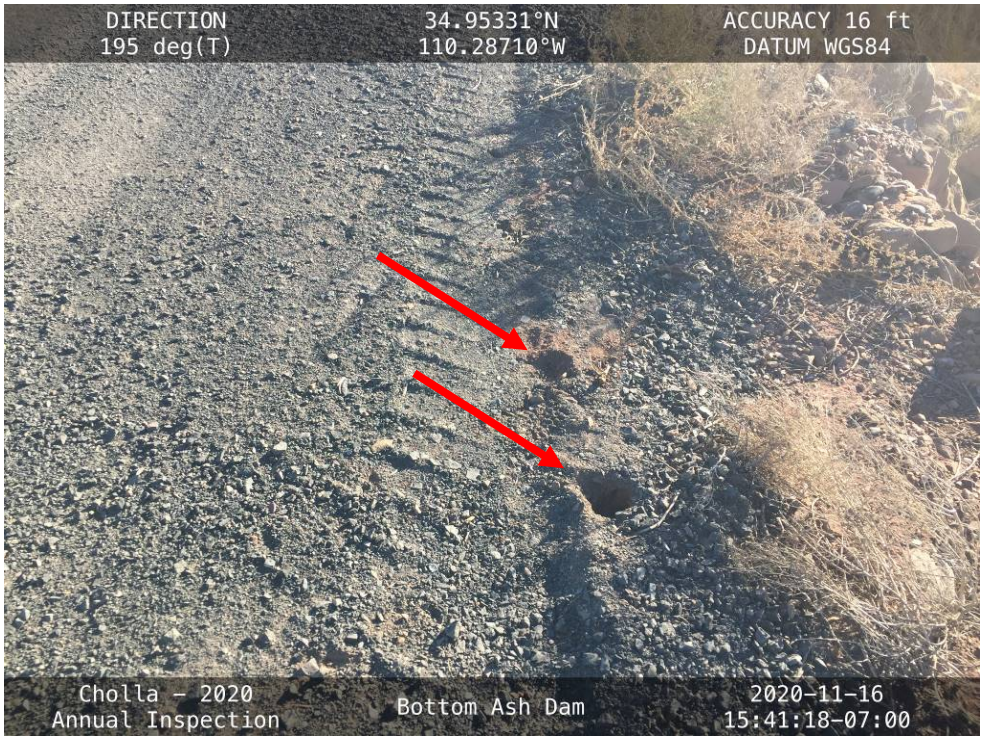
20201116 – IMG_2666
The upstream slope at the southern end of the East Embankment, facing east.

20201116 – IMG_2678
The upstream slope at the eastern end of the South Embankment, facing west.

20201116 – IMG_2683
The upstream slope of the East Embankment, facing north from the southern end.

20201116 – IMG_2685
The downstream slope of the East Embankment, facing north from the southern end.

20201116 – IMG_2689
Vegetation to be removed from the upstream slope of the East Embankment.



20201116 – IMG_2694
Two shallow holes along the upstream shoulder of the East Embankment.

20201116 – IMG_2695
A shallow hole along the upstream shoulder of the East Embankment.

20201116 – IMG_2696
The Divider Dike in the reservoir and vegetation on the upstream side of the East Embankment.

20201116 – IMG_2700
A series of holes on the downstream shoulder of the East Embankment.

20201116 – IMG_2701
The downstream slope of the East Embankment, facing south.

20201116 – IMG_2703
The downstream slope of the East Embankment, facing north.

20201116 – IMG_2704
A hole on the upstream shoulder of the East Embankment.

20201116 – IMG_2718
A hole on the upstream shoulder of the East Embankment.

20201116 – IMG_2748
An erosion gully on the downstream slope along the northern half of the East Embankment.

20201116 – IMG_2759

An erosion gully on the downstream slope along the northern half of the East Embankment.

20201116 – IMG_2764

The downstream toe of the East Embankment, facing south from the northern half.

20201116 – IMG_2771

The downstream slope of the East Embankment, facing from the middle of the embankment.

20201116 – IMG_2790

Ash and water being deposited into the Bottom Ash Pond.

20201116 – IMG_2793
The P-232 seepage intercept area, facing north from the south end.

20201116 – IMG_2802
The Petroglyph seep, cleared of dense vegetation.

20201116 – IMG_2813

The toe and downstream slope of the South Embankment near the western siphon line facing east.

20201116 – IMG_2820

The toe and downstream slope of the South Embankment near the eastern siphon line, facing west.

20201116 – IMG_2823
The West Abutment Weir at the downstream toe near the West Abutment.

20201116 – IMG_2825
Grassy vegetation removed from the area near the West Abutment Weir.

20201116 – IMG_2835

The downstream slope of the South Embankment, facing east from the Toe Drain Seep.

APPENDIX C

SEDIMENTATION POND PHOTO LOG

20201117 – IMG_2914
The western half of the South Cell, facing west from the south embankment crest.

20201117 – IMG_2918
The concrete spillway on the downstream side of the south embankment.

20201117 – IMG_2920

The downstream toe of the south embankment, facing southwest from the concrete spillway.

20201117 – IMG_2925

The upstream slope and toe of the south embankment, facing southwest from the east side.

20201117 – IMG_2926
The South Cell, facing southwest from the east side.

20201117 – IMG_2933
The North Cell, facing southwest from the east side. CCR stockpiled on the right side of the image.

20201117 – IMG_2936

The upstream slope and toe of the north embankment, facing southwest from the east side.

20201117 – IMG_2941

The Divider Wall being removed and the resulting filled with compacted structural fill.

20201117 – IMG_2944
The new Sedi Tank being constructed in the North Cell to replace the function of the Sedimentation Pond.

20201117 – IMG_2959
The temporary access ramp in the South Cell (foreground) and the upstream slope of the south embankment (background), facing east from the west side.

20201117 – IMG_2961
The western end of the South Cell.

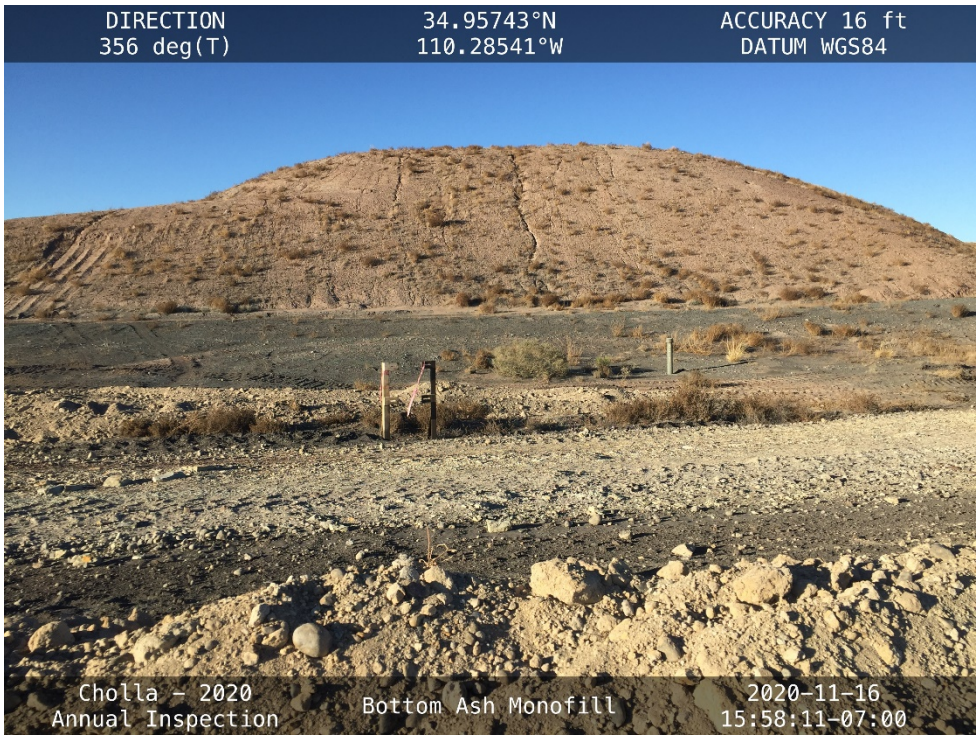
20201117 – IMG_2967
The Sedi Tank contractor removing the Divider Wall and compacting structural fill in the void.

20201117 – IMG_2978
The Divider Wall in a partially demolished condition, facing northeast.

20201117 – IMG_2996
The abandoned pump house and Outlet Structure on the east side of the Sedimentation Pond.

APPENDIX D

BOTTOM ASH MONOFILL PHOTO LOG



20201116 – IMG_2724
The south end of the Bottom Ash Monofill, facing north from the Bottom Ash Dam.

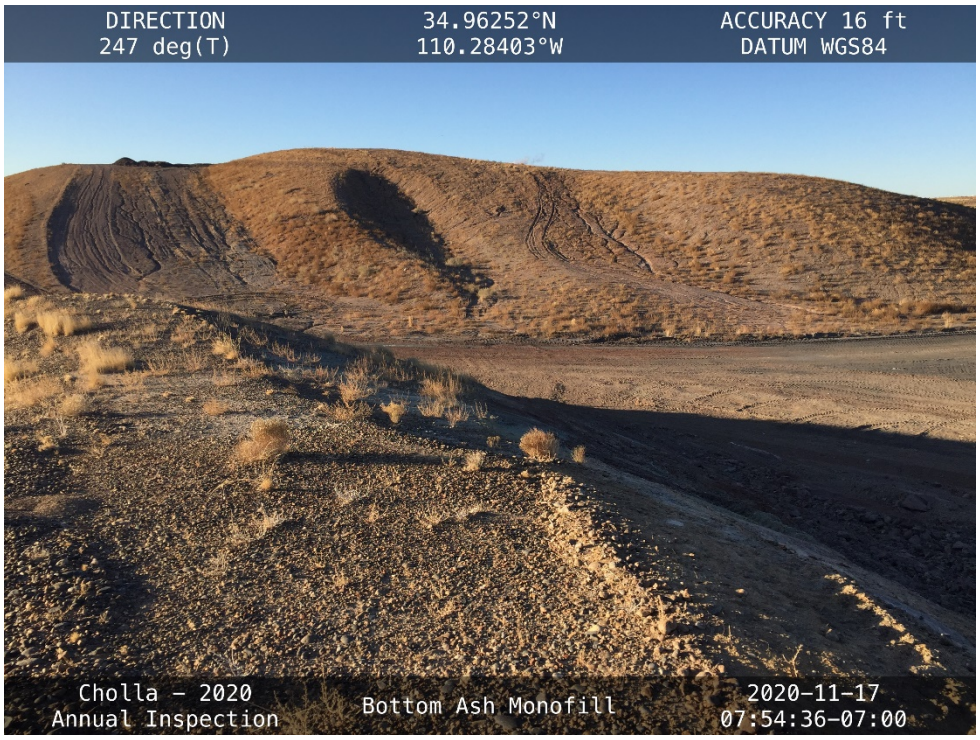
20201117 – IMG_2839
Erosion gullies along the eastern slope of the Bottom Ash Monofill, facing west.

20201117 – IMG_2846

The Stormwater Detention Basin, as seen from the eastern side of the Bottom Ash Monofill.

20201117 – IMG_2847

A section through the eastern ramp showing the soil cap overlying the landfilled ash.



20201117 – IMG_2850
The north side of the Bottom Ash Monofill.

20201117 – IMG_2866
An incipient erosion rill where erosion was previously repaired in the northeast corner of the Stormwater Detention Basin.

20201117 – IMG_2868
The eastern side of the Bottom Ash Monofill, facing west from the Stormwater Detention Basin.

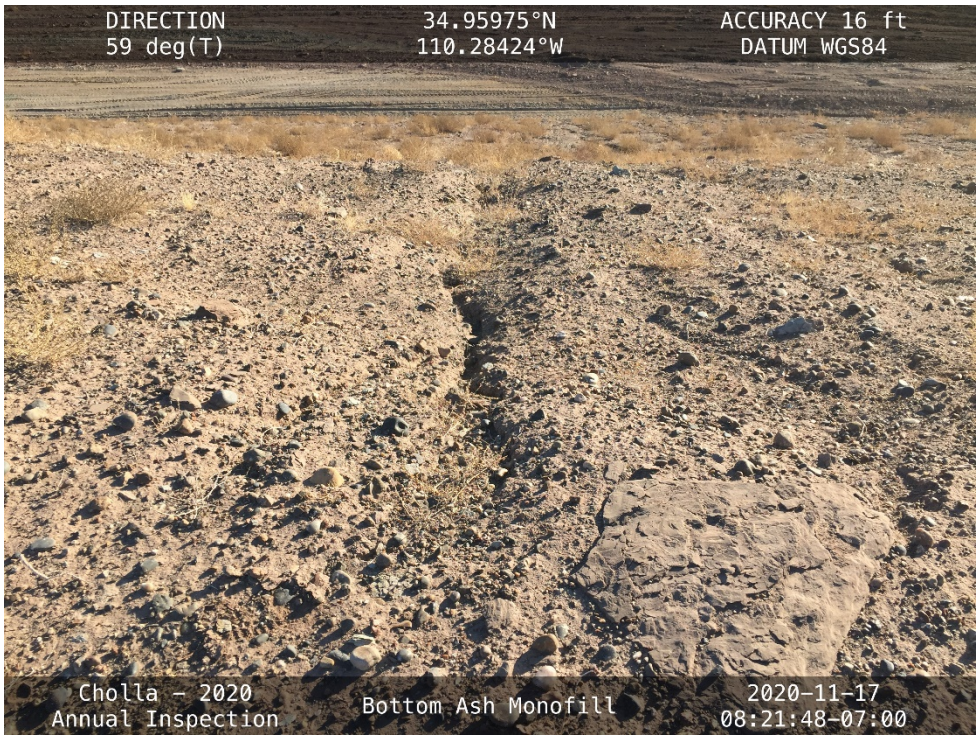
20201117 – IMG_2870
Incipient erosion rills where erosion was previously repaired in the northeast corner of the Stormwater Detention Basin.

20201117 – IMG_2875
Erosion rills where erosion was previously repaired in the northwest corner of the Stormwater Detention Basin.

20201117 – IMG_2883
The toe of the western slope, facing south from the north access ramp.

20201117 – IMG_2884
Erosion on the north side of the western slope, facing east.

20201117 – IMG_2886
The diversion ditch on the west side of the Bottom Ash Monofill, facing south.



20201117 – IMG_2894

An incipient erosion rill on the eastern slope near the top of the Bottom Ash Monofill.

20201117 – IMG_2898

Cover soil on the surface of the Bottom Ash Monofill, facing west along the top.

20201117 – IMG_2902

An area of a repaired erosion gully from 2018 on the east side of the Bottom Ash Monofill.

20201117 – IMG_2903

The eastern portion of the Bottom Ash Monofill, facing north from the top of the Monofill.