FOUR CORNERS POWER PLANT

Lined Ash Impoundment, Lined Decant Water Pond, Combined Waste Treatment Pond, Upper Retention Sump, and Dry Fly Ash Disposal Area

Annual CCR Impoundment and Landfill Inspection Report

2015

aps

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1/14/2016

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1.0 INTRODUCTION

AECOM prepared this report for Arizona Public Service Company (APS) 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*" (CFR 257.83(b)(1) for CCR surface impoundments and CFR 257.84(b)(1) for CCR landfills.)

The preparation of this report has included a review of relevant data in the operating record and visual inspections of the Fly Ash Pond Dam, Bottom Ash Pond Dam, Sedimentation Pond Dam, and the Bottom Ash Monofill. The Fly Ash Pond Dam and Bottom Ash Pond Dam are instrumented with piezometers, settlement monuments, and wells that are measured at intervals no greater than 30 days.

Inspection Conducted by

Byron R. Conrad, P.E.
Consulting Geological Engineer
Design Engineering
Generation Engineering
Arizona Public Service Company

and

Alexander W. Gourlay, P.E.
Principal Geotechnical Engineer
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7720 North 16th Street, Suite 100
Phoenix, Arizona

2.0 SITE BACKGROUND AND INSPECTION CONDITIONS

The Four Corners Power Plant (FCPP) is located in Fruitland, New Mexico, approximately 20 miles west of Farmington, New Mexico, and 13 miles southeast of Shiprock, New Mexico. The plant is located immediately south of Morgan Lake and primarily in Section 36, Township 29 North, Range 16 West on the Navajo Indian Reservation in San Juan County. The plant burns low sulfur coal in two units (Units 4 and 5) having a total net generating capacity of 1,540 megawatts.

The coal combustion process produces bottom ash (silty sand, SM) and fly ash (low plasticity silt, ML). The plant is operated as a low volume water usage system and has four coal combustion waste impoundments. The Lined Ash Impoundment (LAI) is used for ash disposal and the Lined Decant Water Pond (LDWP) provides temporary storage of water drained from the LAI. The Upper Retention Sump (URS) collects water from drains located on the plant site and receives minimal amounts of coal combustion byproducts in storm water, process water, and plant washdown from several sources within the plant. The water then flows by gravity out of the URS and to the Combined Waste Treatment Pond (CWTP). The Dry Fly Ash Disposal Area is a coal combustion waste landfill used for disposal of dry ash from Units 4 and 5. These coal combustion waste facilities are the subject of this inspection report.

The inspection was conducted on Wednesday, October 14, 2015. Conditions were warm (60-80 degrees Fahrenheit) with clear skies. Winds were light in the morning before increasing mid-afternoon. Approximately 7 inches of precipitation had fallen since the start of the year.

Instrumentation at the LAI and LDWP generally consists of open standpipe PVC piezometers, vibrating wire piezometers, inclinometers, settlement monuments, and settlement rods measured using a Global Positioning Survey (GPS) System. Water levels in the open standpipe piezometers are measured with an electronic water level indicator attached to a cable stamped with one-foot increments. Water level data for the vibrating wire piezometers are downloaded at a central readout box and processed by Plant personnel. Inclinometers, settlement monuments, and settlement rods are also read and processed by Plant personnel. Data collected from all the dam instrumentation are evaluated jointly by APS Generation Engineering and uploaded to the EPA Sharepoint site.

The benchmarks for the elevations reported for GPS surveys of the settlement monuments at the Four Corners Power Plant are based on one of three survey monuments: EMMA, an aluminum cap and two Southern California Edison (SCE) brass caps – HV-53, and HV-61. The latitude and longitude of the monuments are based on the NAD83 datum. The elevations of EMMA, HV-53, and HV-61 are 5382.251, 5331.214, and 5085.898 feet, respectively.

3.0 IMPOUNDMENT DESCRIPTIONS

3.1 LINED ASH IMPOUNDMENT (LAI)

The LAI is represented on Figure 1 – Lined Ash Impoundment (LAI) Site Map.

The LAI was constructed between 2003 and 2014, has a capacity of 2,400 acre-feet, is approximately 83 feet high. The embankment is approximately 4,534 feet long and is classified under the New Mexico Administrative Code (NMAC) as "intermediate" size and "significant" hazard potential. The maximum operating water level is 5275.2 feet above mean sea level (MSL) and the water level was observed to be at elevation (EL) 5272.2 feet during the inspection.

3.2 LINED DECANT WATER POND (LDWP)

The LDWP is represented on Figure 2 – Lined Decant Water Pond (LDWP) Site Map.

The LDWP was constructed in 2003, has a capacity of 435 acre-feet, is approximately 90 feet high. The embankment is approximately 5,488 feet long and is classified under the New Mexico Administrative Code (NMAC) as "intermediate" size and "significant" hazard. The maximum operating reservoir level is 5213.2 feet above mean sea level and the reservoir level was observed to be at approximate EL 5207.5 feet during the inspection.

3.3 COMBINED WASTE TREATMENT POND (CWTP)

The CWTP is represented on Figure 3 – Combined Waste Treatment Pond (CWTP) Site Map.

The CWTP is an approximately 13-acre detention pond located adjacent to Morgan Lake. The pond is used as a settling basin for ash-impacted wastewater prior to discharge to Morgan Lake through a monitored National Pollutant Discharge Elimination System (NPDES) permitted discharge point. The primary source of water entering the pond is from bottom ash recovery and transport processes at Units 4 and 5 (U45). Bottom ash is hydraulically transported to the U45 hydrobins where the transport water is separated and conveyed to the CWTP. Ash and other sediment settle in separate earthen settling basins within the CWTP footprint prior to the water overflowing into the main CWTP.

3.4 UPPER RETENTION SUMP (URS)

The URS is represented on Figure 4 – Upper Retention Sump (URS) Site Map.

The URS is an approximately 2-acre, unlined surge pond associated with operation of the flue gas desulfurization (FGD) systems for treatment of flue gas from Units 4 and 5. Lime slurry is transferred to from the URS into various FGD absorber vessels as needed to operate and maintain the overall FGD system.

3.5 DRY FLY ASH DISPOSAL AREA (DFADA)

The DFADA is represented on Figure 5 – Dry Fly Ash Disposal Area (DFADA) Site Map.

The DFADA is a lined landfill dry fly ash disposal facility. The DFADA currently consists of three conjoined cells: Sites 1, 2, and 3. Site 1 was constructed in 2007, Site 2 was constructed in 2012, and Site 3 was constructed in 2014. The DFADA has a capacity of 3,125 acre-feet and is approximately 105 feet high. DFADA 1 was constructed with a HDPE geomembrane overlaying a compacted clay sub grade material. DFADA 2 and 3 cells are constructed with a composite liner system selected for general compliance with the EPA's *Guide for Industrial Waste Management*. The composite liner system consists of a geosynthetic clay liner (GCL) overlain by an HDPE geomembrane. A drainage layer was installed over the HDPE geomembrane as recommended in the EPA guidance. Each cell is connected to a leachate collection system designed to remove water from the storage area. The leachate collection system typically consists of a drainage layer, collection piping, a removal system, and a protective filter layer.

4.0 FIELD INSPECTIONS

This section contains the 2015 annual field inspections conducted by APS and accompanied by a representative from AECOM at the LAI (Section 4.1), the LDWP (Section 4.2), the CWTP (Section 4.3), the URS (Section 4.4), and the DFADA (Section 4.5). The results are reprinted and formatted to fit this report.

4.1 APS FIELD INSPECTION – LINED ASH IMPOUNDMENT (LAI)

<table>
<tr><td colspan="3">Lined Ash Impoundment (LIA)</td><td colspan="2">SID: D-634</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: D-634</td><td>Dam Name: Four Corners Lined Ash Impoundment (LAI)</td><td>Type: Zoned Earth and Ash Fill with Geomembrane</td><td>Purpose: Fly ash and FGD Sludge disposal</td></tr>
<tr><td colspan="2">Contact(s): Byron Conrad, P.E. (APS)</td><td colspan="2">Report Date: January 4, 2016</td></tr>
<tr><td colspan="2">Inspected by: Alexander W. Gourlay, P.E. (AECOM)
Byron Conrad, P.E. (APS)</td><td colspan="2">Inspection Date: October 14, 2015</td></tr>
<tr><td colspan="2">Reviewed by: Byron Conrad, P.E. (APS)</td><td colspan="2">Date: January 11, 2016</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5,280</td><td colspan="2">Design Spillway Crest Elevation: 5277.84 ft (rim of 8-foot-diameter riser (see Photo LAI 30). No Spillway.</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 4.8</td><td colspan="2">Measured Total Freeboard (ft): 7.5</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 107 (South Emb.)</td><td colspan="2">Structural Height (ft): 107 (South Emb.)</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): 6,600</td><td>Upstream Slope: 3:1 West Emb., 2:1 South Emb.</td><td>Downstream Slope: 3:1 West Emb., 2:1 South Emb.</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): 30 (West Emb.), 20 (South Emb.)</td><td>Lat: 36° 41' 05" (per NMOSE permit)</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 108° 30' 26" (per NMOSE permit)</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 129.16 (at el. 5280 ft)</td><td colspan="2">Reservoir Storage (ac-ft): 5,364 (max normal operating)</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): 5272.2 (see Photo LAI 26)</td><td>Photos: Yes</td><td>Page: 1 of 5</td></tr>
</table>

Lined Ash Impoundment (LIA)	SID: **D-634**	N/A	No	Yes	Mon	Rep	Inv

COMPLIANCE CHECKLIST

1	***CONDITION SUMMARY/LICENSE/EAP/NEXT INSPECTION***								
a	Recorded downstream hazard:	**Significant**	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:	**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:	**5,275.2 feet**	Should level be revised:		**X**				
g	Any License violations?	**No**	Describe and list required action:		**X**				
h	Date of current License:	**October 27, 2015 for el 5280' Raise**	Should new License be issued?		**X**				
i	Date of last Emergency Action Plan revision: **12/2014**		Should EAP be revised?			**X**			
j	Any Agency actions?	**No**	Describe and list required action:		**X**				
k	Normal inspection frequency:	**Annually**	Should inspection frequency be revised?		**X**				
l	Recommended date for next inspection:	**October 2016 for next annual inspection**							

MONITORING CHECKLIST

2	***INSTRUMENTATION AND MONITORING***								
a	Describe:	**West Embankment:** **1) 6 clusters of 3 vibrating wire piezometers each (varying elevations),** **2) 4 buried rods to measure settlement at depth,** **3) 2 inclinometers, and** **4) 2 crest survey/settlement monuments.** **North Toe Buttress** **1) 11 clusters of 3 vibrating wire piezometers each (varying elevations),** **2) 8 buried rods to measure settlement at depth, and** **3) 3 inclinometers.** **Other** **1) Permanent water elevation markers on geomembrane liner at three locations within impoundment.** **2) No inflow or outflow measurement devices.**							
b	Any repair or replacement required? **Yes.**		Describe: **Wash off ash covering impoundment elevation marker at drop inlet riser location adjacent to crest of West Embankment (e.g. see Photo LAI 26).**			**X**	**X**		
c	Date of last monitoring report:	**December 2015 (monthly post-construction report for 5280 Raise)**	Should new readings be taken and new report provided? **Monthly measurement and 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?	**Upstream slope is covered by geomembrane. See Photo LAI 22.**			**X**				
b	Inadequate ground cover?				**X**				
c	Adverse vegetation?	**None.**			**X**				

Lined Ash Impoundment (LIA)	SID: **D-634**	N/A	No	Yes	Mon	Rep	Inv
d	Longitudinal/Transverse cracking?		X				
e	Inadequate riprap?	X					
f	Stone deterioration?	X					
g	Settlements, slides, depressions, bulges?		X				
h	Animal burrows?		X				
5	***DOWNSTREAM SLOPE***						
a	Erosion? **Minor rilling. Slope change between north (recently regraded for Pond 6 closure, 4:1) and South (3:1) segments of West Embankment should be monitored and maintained as necessary. See Photo LAI 32 and 35.**			X	X		
b	Inadequate ground cover? **LAI West and South Embankment slopes are faced with bottom ash that does not generally support vegetation. See Photo LAI 36. A lime-based, white- and turquoise-colored, dust suppression agent is applied in accordance with the Plant's Dust Control Plan. When no longer operational, at closure, APS plans to cover the slopes with a permanent soil cover that will support natural vegetation.**		X				
c	Adverse vegetation? **Occasional shrubs and other vegetation observed.**		X				
d	Longitudinal/Transverse cracking?		X				
e	Inadequate riprap?		X				
f	Stone deterioration?		X				
g	Settlements, slides, depressions, bulges? **Minor slope deviations observed at raise/lift horizons.**		X				
h	Soft spots or boggy areas? **Historic seepage at downstream toe of South Embankment now captured using French drain beneath toe. No flow from outlet at time of inspection.**		X		X		
i	Movement at or beyond toe?		X				
j	Animal burrows?		X				
6	***ABUTMENT CONTACTS***						
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: **1) Historic seepage at downstream toe of South Embankment now captured using French drain beneath toe. No flow from outlet at time of inspection.**						
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? **Suspended FGD solids and fly ash settle in the impoundment.**			X			
d	Floating debris present? **Minor tumbleweeds. Minor cenosphere accumulations in the northwest corner that are recovered from the dirface of the impoundment periodically by a vendor under contract to APS.**		X				
e	Depressions, sinkholes, or vortices?		X				
f	Low ridges/saddles allowing overflow?		X				

Lined Ash Impoundment (LIA)		SID: **D-634**	N/A	No	Yes	Mon	Rep	Inv
g	Structures below dam crest elevation?	**1) Primary outlet of LAI is the 8-foot diameter perforated solid wall HDPE vertical riser. See discussion following. 2) Secondary outlet is an 8 inch diameter internal drain (known as the "dead pool sump") at the inside toe of the West Embankment that drains to a pump station located at the outside intersection of the West and South Embankments (see Photo LAI IMG_2118). Operation of the dead pool sump is intended to assist dewatering and consolidation of LAI impounded solids. The dead pool sump pump was pressurized but not operational at the time of the inspection.**			**X**	**X**		

Additional comments and recommendations:

- The North Toe Buttress (NTB) was constructed to provide additional stability to the elevation 5280 feet Raise of the LAI West Embankment. The NTB is shown in Photo LAI NTB 2. The physical configuration of the NTB was observed during the inspection to be good. The NTB foundation instrumentation are reviewed monthly and indicate that the NTB is functioning as intended.
- The west end of the NTB is formed by the crest embankment of former Ash Pond 3. The storage provided by the crest is required to contain runoff from portions of the LAI and NTB. Maintenance of this embankment is required to comply with State of New Mexico dam permit for the LDWP. Erosion on the inside of the embankment (see Photo LAI NTB 1) was identified. Recommend crest road maintenance to minimize concentrated runoff flows and to maintain the width and physical structure of the crest in this area.
- Accumulated ash covering elevation markers at each of 3 locations within the LAI. With current FGD-only discharge to the LAI, only the marker adjacent to the Drop Inlet Riser is maintained and measured as part of the weekly inspection.
- The primary outlet from LAI to LDWP is an 8-foot vertical, perforated HDPE riser (see Photo LAI 30) connected at the bottom to 8-inch and 16-inch diameter HDPE gravity pipe outlets to the LDWP (see Photo LAI 39). The riser was constructed in segments by adding rings with each sequential embankment raise. The riser is surrounded by a select, graded gravel fill zone to allow water, but not solids, to drain from the impounded ash. At the time of inspection, the sound of falling water within the riser could be heard but not observed using flashlight or reflected sunlight. The performance of the riser appeared to be similar to that observed during prior inspections.
- At the downstream (LDWP) side of the decant structure, discharge flow was observed from both the 8-inch and 16-inch outlet pipes (see Photo LAI 39). Based on the observed low flow from the 8-inch pipe and his prior experience with the engineering and operation of the decant system, Mr. Byron Conrad, P.E., commented that the 8-inch line was probably partially blocked with sediment. A past attempt, in approximately 2013, to clear by "surging" with a water lance was not wholly successful. A subsequent attempt to raise the driving head in the 8-foot diameter riser by raising the discharge end of the 16-inch outlet pipe was partially successful at dislodging accumulated sediment in the 8-inch outlet. We recommend continued monitoring of flow from the 8-inch pipe and, if

warranted, repeating the earlier successful dislodging effort if inadequate flow is reporting to the LDWP from the LAI. The interconnection is not required for flood management purposes since the minimum freeboard of the LAI is sufficient to store the directly-incident PMP

- The LDWP pump station is located on the crest of the LDWP, adjacent to on inset within the toe of the West Embankment of the LAI (see Photo LAI 40). The pump station was designed with a sump and gravity drain to allow leaks and other nuisance flows to drain through a pipe to the LDWP rather than flowing in an uncontrolled manner across the crest of the LDWP embankment. At the time of the inspection, it appeared that sufficient dust and sediment had accumulated in the pump station to prevent gravity drainage. See Photo LAI 42. Recommend that sediment and debris be cleaned
- The Dead Pool Sump and internal toe drain is a means of dewatering impounded ash within the LAI. It is drained by gravity and pumped (see Photo LAI IMG_2118) with a discharge to the LDWP. Its operation is not a requirement for safe operation of the LAI but is encouraged because it assists with dewatering, consolidation, and strengthening of the impounded solids. At the time of inspection, the system was pressurized (see Photo LAI IMG_2119) but not operational. Recommend that a Corrective Action Request (CAR) be issued to re-activate and/or repair the pump system.
- Update Emergency Action Plan before 04/17/2017 to comply with initial plan requirement of CFR 257.73

4.2 APS FIELD INSPECTION – LINED DECANT WATER POND (LDWP)

<table>
<tr><td colspan="3">Lined Decant Water Pond (LDWP)</td><td colspan="2">SID: D-635</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: D-635</td><td>Dam Name: Four Corners Lined Decant Water Pond (LDWP)</td><td>Type: Zoned Earth and Ash Fill with Double-Liner Geomembrane and Leak Detection</td><td>Purpose: Storage for recycle of LAI decant water LAI and collected groundwater</td></tr>
<tr><td colspan="2">Contact(s): Byron Conrad, P.E. (APS)</td><td colspan="2">Report Date: December 15, 2015</td></tr>
<tr><td colspan="2">Inspected by: Alexander W. Gourlay, P.E. (AECOM)
Byron Conrad, P.E. (APS)</td><td colspan="2">Inspection Date: October 14, 2015</td></tr>
<tr><td colspan="2">Reviewed by: Byron Conrad, P.E. (APS)</td><td colspan="2">Date: January 11, 2016</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5,216</td><td colspan="2">Design Spillway Crest Elevation: No Spillway. 5,216 feet</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 2.8</td><td colspan="2">Measured Total Freeboard (ft): 7.5</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 16</td><td colspan="2">Structural Height (ft): 16</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): 5,488</td><td>Upstream Slope: 2:1</td><td>Downstream Slope: 1.5:1</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): 20</td><td>Lat: 36° 41' 00" (per NMOSE permit)</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 108° 30' 45" (per NMOSE permit)</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 46 (at el. 5216 ft)</td><td colspan="2">Reservoir Storage (ac-ft): 435 (max normal operating)</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): 5207.5</td><td>Photos: Yes</td><td>Page: 1 of 4</td></tr>
</table>

Lined Decant Water Pond (LDWP)	SID: **D-635**	N/A	No	Yes	Mon	Rep	Inv

	COMPLIANCE CHECKLIST								
1	***CONDITION SUMMARY/LICENSE/EAP/NEXT INSPECTION***								
a	Recorded downstream hazard: **Significant**	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: **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: **5,213.2 feet**	Should level be revised:		**X**				
g	Any License violations? **No**	Describe and list required action:		**X**				
h	Date of current License: **February 7, 2008**	Should new License be issued?		**X**				
i	Date of last Emergency Action Plan revision: **12/2010**	Should EAP be revised?			**X**			
j	Any Agency actions? **No**	Describe and list required action:		**X**				
k	Normal inspection frequency: **Annually**	Should inspection frequency be revised?		**X**				
l	Recommended date for next inspection: **October 2016 for next annual inspection**							

	MONITORING CHECKLIST								
2	***INSTRUMENTATION AND MONITORING***								
a	Describe:	**Instrumentation:** **1) 8 standpipe piezometers, and** **2) 2 crest survey/settlement monuments.** **Other** **1) Interstitial geomembrane leak detection and evacuation pump. No pump in place, see Photo LDWP 11,** **2) Surveyed level markings on geomembrane liner in southeast corner.** **3) No inflow measurement devices.** **4) Outflow estimation by LDWP pump rating/hours of operation, if needed.**							
b	Any repair or replacement required? **Yes.**	Describe: **Reinstall leak evacuation pump in leak detection port (SW corner of crest). See Photo LDWP 11).**			**X**			**X**	
c	Date of last monitoring report: **December 2015 (monthly post-construction report for 5280 Raise)**	Should new readings be taken and new report provided? **Monthly measurement and 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? **Upstream slope is covered by geomembrane. See Photo LDWP 2.**		**X**				
b	Inadequate ground cover?		**X**				
c	Adverse vegetation? **None.**		**X**				
d	Longitudinal/Transverse cracking?		**X**				
e	Inadequate riprap?	**X**					
f	Stone deterioration?	**X**					
g	Settlements, slides, depressions, bulges?		**X**				

Lined Decant Water Pond (LDWP)		SID: **D-635**	N/A	No	Yes	Mon	Rep	Inv
h	Animal burrows?			**X**				
5	***DOWNSTREAM SLOPE***							
a	Erosion?	**Minor to significant rilling, particularly on the West Embankment. Evidence of ongoing, as-needed repair work to regrade and recompact eroded areas. See Photos LDWP Set 2 8 and LDWP Set 2 12.**			**X**	**X**	**X**	
b	Inadequate ground cover?	**LDWP West and South Embankment slopes are faced with bottom ash that supports only sporadic and uneven vegetation. See Photos LDWP 7, LDWP Set 2 3, and LDWP Set 2 7. In general, vegetation coverage is more extensive that for the LAI embankments because there has been less disturbance since the LDWP was constructed in 2003. A lime-based, white- and turquoise-colored, dust suppression agent is applied in accordance with the Plant's Dust Control Plan. When no longer operational, at closure, APS plans to cover the slopes with a permanent soil cover that will support natural vegetation.**		**X**				
c	Adverse vegetation?	**Occasional shrubs and other vegetation observed.**		**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***							
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:	**1) Interstitial geomembrane leak detection and evacuation pump. No pump in place, see Photo LDWP 11, 2) Pumpback from South and North Intercept System, via Sump 3, appeared to be functioning normally.**						
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?	**Several areas of accumulated bottom ash on reservoir side slopes.**		**X**				
c	Sediment accumulation?	**Minor amounts of suspended FGD solids and fly ash may settle in the impoundment. Would require bathymetric survey to verify but not believed to represent more than a minor loss of operational capacity.**			**X**			
d	Floating debris present?	**Minor tumbleweeds. Minor cenosphere accumulations; no longer skimmed from LDWP since fly ash no longer deposited in LAI volume of cenosphere addition has decreased.**		**X**				
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?	**Possibility of "whale backs" if interstitial leak evacuation pumping capacity not restored.**		**X**		**X**		

Lined Decant Water Pond (LDWP)		SID: **D-635**	N/A	No	Yes	Mon	Rep	Inv
g	Structures below dam crest elevation?	**1) LAI Dead Pool Pump Station on slope below southeast corner of LDWP. Single-wall pipe, over the crest into the LDWP.** **2) Pump back from Sump 3. Double-wall pipe up west embankment of LDWP, over the crest into the LDWP.**			**X**	**X**		

Additional comments and recommendations:

- The LDWP evacuation pumps should be capable of functioning at all times to maintain the pond level below operating maximum elevation, which it was at the time of this inspection, in order to accommodate a surge flow from the LAI in the event of a heavy precipitation event.
- The LDWP interstitial geomembrane leak detection and evacuation pump was not present in the access port at the time of inspection. The purpose of the pump is to evacuate any leakage through the upper geomembrane liner and to reduce the hydraulic head on the lower geomembrane liner. Absent an operable pump, it is possible that "whale backing", a condition in which the upper liner floats to the surface of the pond due to the presence of accumulated water in the interstitial space, and increased infiltration to the Old Pond 3 foundation may occur. Prior investigations (see URS (Mitchell) memorandum October 24, 2013) have revealed that the primary large-diameter access port is blocked and that the type of commercially-available submersible pumps that can be inserted into the secondary small-diameter access port do not last for more than a couple of months in these operating conditions. Regular replacement of the pump was assessed to be more economical and feasible than the alternative: temporary decommissioning of the entire pond and construction of a different access port configuration. Recommend that a Corrective Action Request (CAR) be issued to replace and re-activate the pumping system, as well as planning and budgeting for regular procurement and installation of replacement pumps.
- The external slopes of the embankments show evidence of minor to significant erosion rilling, presumably caused by rainfall runoff. APS has been maintaining affected areas by regrading and recompacting eroded areas. See Photos LDWP Set 2 8 and LDWP Set 2 12. Recommend that program be continued and that rills be repaired if the depth exceeds one foot.
- Update Emergency Action Plan before 04/17/2017 to comply with initial plan requirement of CFR 257.73

4.3 APS FIELD INSPECTION –COMBINED WASTE TREATMENT POND (CWTP)

<table>
<tr><td colspan="3">Combined Waste Treatment Pond (CWTP)</td><td colspan="3">SID: N/A</td></tr>
<tr><td>SID: N/A</td><td>Dam Name: Four Corners Combined Waste Treatment Pond (CWTP)</td><td colspan="2">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="3">Report Date: December 30, 2015</td></tr>
<tr><td colspan="2">Inspected by: Alexander W. Gourlay, P.E. (AECOM)
Byron Conrad, P.E. (APS)</td><td colspan="3">Inspection Date: October 14, 2015</td></tr>
<tr><td colspan="2">Reviewed by: Byron Conrad, P.E. (APS)</td><td colspan="3">Date: January 13, 2016</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5335 (Drwg G-67227.1)</td><td colspan="3">Design Spillway Crest Elevation: 5328.77 feet. Twin barrel RCP pipes, gated, northeast corner. (Drwg G-67227.3)</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 7 (Drwg G-67227.1)</td><td colspan="3">Measured Total Freeboard (ft): Not measured</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 22.81 (Drwg G-67227.1)</td><td colspan="3">Structural Height (ft): 22.81 (Drwg G-67227.1)</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): 1,800 (Drwg G-67227.2)</td><td colspan="2">Upstream Slope: 2:1 (Drwg G-67227.1)</td><td>Downstream Slope: 2:1 (Drwg G-67227.1)</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): 30 (Drwg G-67227.1)</td><td colspan="2">Lat: 34° 41′ 29.19″N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td colspan="2">Long: 108° 28′ 28.73″W</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 13.7 (2010 EPA ICR)</td><td colspan="3">Reservoir Storage (ac-ft): 137 (2010 EPA ICR)</td></tr>
<tr><td colspan="5">Inflow Design Flood/Safe Flood-Passing Capacity: Not Calculated</td></tr>
<tr><td colspan="2">Reservoir Level During Inspection (ft): 5330 (by observation)</td><td colspan="2">Photos: Yes</td><td>Page: 1 of 4</td></tr>
</table>

Not Applicable | No | Yes | Monitor | Repair | Investigate

Combined Waste Treatment Pond (CWTP)			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:	**Annually**	Should inspection frequency be revised?		**X**				
l	Recommended date for next inspection:	**October 2016 for next annual inspection**							

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe:	**1) There exist no instruments or other monitoring devices for this structure due to small size.** **2) Piezometers to be installed in February 2016.**							
b	Any repair or replacement required? **N/A**		Describe: **N/A**		**X**				
c	Date of last monitoring report:	**None**	Should new readings be taken and new report provided? **N/A**		**X**				

DAM EMBANKMENT CHECKLIST									
3	***DAM CREST***								
a	Longitudinal/Transverse cracking?	**Possible depression in vicinity of yellow bollard (see Photo CWTP 22). Recommend survey of crest to ensure no low spots and restoration of design elevation of 5335 ft as required.**			**X**			**X**
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking?			**X**				
d	Animal burrows?	**None observed. Road is graded regularly. Continue to monitor.**		**X**		**X**		
e	Adverse vegetation?	**None observed. Road is graded regularly**		**X**				
f	Erosion?			**X**				
4	***UPSTREAM SLOPE***								
a	Erosion?	**Water level is approximately 5 feet below embankment, by visual observation.**		**X**				
b	Inadequate ground cover?	**Ground cover is sparse but no observed sign of slope erosion or steepening.**		**X**				
c	Adverse vegetation?	**None observed. Appears to have been cleared. See Photos CWTP 13 and 21.**		**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**		

Combined Waste Treatment Pond (CWTP)		SID: **N/A**	N/A	No	Yes	Mon	Rep	Inv
5	***DOWNSTREAM SLOPE***							
a	Erosion?	**Water level is approximately 7 to 8 feet below embankment, by visual observation. Possible over-steepening of original 2:1 slope by flow in cooling water return flow channel or by over-building/grading of crest access road. Recommend cross-section survey after clearance of excessive vegetation.**			**X**	**X**		**X**
b	Inadequate ground cover?	**Re-inspect after removal of excessive vegetation.**		**X**		**X**		**X**
c	Adverse vegetation?	**Yes, presence of large shrubs and trees on downstream slope adjacent to cooling water return channel. See Photos CWTP 14, 19, and 20. See recommendation at the end of this form.**			**X**		**X**	
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?	**Not Observed. Re-inspect after removal of excessive vegetation.**		**X**				**X**
f	Stone deterioration?			**X**				
g	Settlements, slides, depressions, bulges?	**Not Observed. Re-inspect after removal of excessive vegetation.**		**X**				**X**
h	Soft spots or boggy areas?			**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?			**X**				
f	Animal burrows?	**None observed. Continue to monitor.**		**X**		**X**		
7	***SEEPAGE/PIPING CONTROL DESIGN FEATURE(S)***							
a	Describe: **None.**							
b	Internal drains flowing?		**X**					
c	Seepage at or beyond toe?	**Not observable due to presence of water in cooling water return channel.**	**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 facility includes 7 decant cells located at the west end of the CWTP. Flow from the collection distribution vault is directed to the selected settling cells. See Photos CWTP 6, 7, and 9. Settled solids are removed periodically. Decanted water flows to the CWTP free water pond. See Photo CWTP 12. Suspended sediment and CCR settle in the two chambers of the impoundment.**			**X**			
d	Floating debris present?	**Retained and recovered with floating booms. See Photos CWTP 9 and 23.**			**X**			
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?			**X**				
g	Structures below dam crest elevation?	**Yes, twin 30-inch reinforced concrete pipe outlets located at northeast corner of CWTP. See outlet gate control box in foreground of Photo CWTP 23 and flow recording device in Photo CWTP 28.**			**X**			

Additional comments and recommendations:

- Vegetation, including shrubs and trees, on the downstream slope of the CWTP embankment, adjacent to the cooling water return channel is excessive. Recommend maintenance of all vegetation sufficient to allow thorough inspection of the soil and rip rap conditions on the faces and crests of the embankments. Vegetation removal should be performed in accordance with the NMOSE vegetation maintenance guidelines "*Vegetation Management on Dams*" (2011) reference. This will likely be an ongoing maintenance requirement. We understand that a Corrective Action request was written and that the removal may have occurred shortly after the October 14 inspection.
- Possible depression in vicinity of yellow bollard (see Photo CWTP 22). Observed by apparent lesser depth to water level in pond. Recommend survey of crest to ensure no low spots and restoration of design elevation of 5335 ft as required.
- Possible over-steepening of original 2:1 downstream slope by flow in cooling water return flow channel. Recommend cross-section survey to verify after clearance of excessive vegetation.

4.4 APS FIELD INSPECTION – FOUR CORNERS UPPER RETENTION SUMP (URS)

<table>
<tr><td colspan="3">Four Corners Upper Retention Sump (URS)</td><td colspan="3">SID: N/A</td></tr>
<tr><td>SID: N/A</td><td>Dam Name: Four Corners Upper Retention Sump (URS)</td><td>Type: Earth</td><td>Purpose: CCR-Impacted Surface Water Collection</td><td rowspan="15">Not Applicable
No
Yes
Monitor
Repair
Investigate</td></tr>
<tr><td colspan="2">Contact(s): Byron Conrad, P.E. (APS)</td><td colspan="2">Report Date: December 30, 2015</td></tr>
<tr><td colspan="2">Inspected by: Alexander W. Gourlay, P.E. (AECOM)
Byron Conrad, P.E. (APS)</td><td colspan="2">Inspection Date: October 14, 2015</td></tr>
<tr><td colspan="2">Reviewed by: Byron Conrad, P.E. (APS)</td><td colspan="2">Date: January 13, 2016</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5350.5 (2010 EPA ICR)</td><td colspan="2">Design Spillway Crest Elevation: None</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 6.5 (2010 EPA ICR)</td><td colspan="2">Measured Total Freeboard (ft): Not measured</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 0 (2010 EPA ICR)</td><td colspan="2">Structural Height (ft): 0</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): 900 (approx.)</td><td>Upstream Slope: 2:1</td><td>Downstream Slope: N/A</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): Varies. Minimum of 12 feet on SE side, adjacent to railroad embankment. See Photo URS 6 for north side and URS 10 for SE side, and URS 16 for west side.</td><td>Lat: 36°41'14.26"N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 108°28'37.91"W</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 1.07 (2010 EPA ICR)</td><td colspan="2">Reservoir Storage (ac-ft): 10.7 (2010 EPA ICR)</td></tr>
<tr><td colspan="3">Inflow Design Flood/Safe Flood-Passing Capacity: Not Calculated</td></tr>
<tr><td colspan="2">Reservoir Level During Inspection (ft): Approx. 5344 (by observation, approximately 6 to 7 feet below crest.) See Photos URS 1 and 14.</td><td>Photos: Yes</td><td>Page: 1 of 4</td></tr>
</table>

Four Corners Upper Retention Sump (URS)			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:	**Annually**	Should inspection frequency be revised?		**X**				
l	Recommended date for next inspection:	**October 2016 for next annual inspection**							

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe:	**1) There exist no instruments or other monitoring devices for this structure due to small size.**							
b	Any repair or replacement required? **N/A**		Describe: **N/A**		**X**				
c	Date of last monitoring report:	**None**	Should new readings be taken and new report provided? **N/A**		**X**				

DAM EMBANKMENT CHECKLIST								
3	***DAM CREST***							
a	Settlements, slides, depressions?			**X**				
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking?			**X**				
d	Animal burrows?	**None observed. Continue to monitor.**		**X**		**X**		
e	Adverse vegetation?	**Minor tumbleweed accumulation on north side. See Photo URS 6. Also note accumulation of apparently unused pipe debris on north crest. Recommend inventory of whether pipes are required and removal to appropriate storage or disposal location.**		**X**				
f	Erosion?			**X**				
4	***UPSTREAM SLOPE***							
a	Erosion?	**Minor erosion noted due to surface water inflow at northeast corner of Pond. Monitor for worsening during next annual inspection.**			**X**	**X**		
b	Inadequate ground cover?	**Inside slope of pond is faced with 18 inches of compacted soil cement. See Photos URS 13 and 14. The soil cement provides adequate surface protection. On the west side, signs of sediment accumulation on the soil cement facing that supports minor vegetation (see Photos URS 16 and 17.)**		**X**				
c	Adverse vegetation?	**Minor vegetation on west inside slope (see Photos URS 16 and 17.)**		**X**				
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?			**X**				
f	Stone deterioration?	**No sign of deterioration of soil cement facing.**		**X**				

Four Corners Upper Retention Sump (URS)		SID: **N/A**	N/A	No	Yes	Mon	Rep	Inv
g	Settlements, slides, depressions, bulges?	**No sign of undermining or cracking of soil cement facing.**		**X**				
h	Animal burrows?	**None observed. Continue to monitor.**		**X**		**X**		
5	***DOWNSTREAM SLOPE***							
a	Erosion?	**There is no downstream slope.**	**X**					
b	Inadequate ground cover?							
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***							
a	Erosion?	**Abutments non-existent or not defined due to general plant grading.**		**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?	**There is no downstream 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?	**Suspended sediment and FGD solids settle in the pond and are removed periodically from a dewatered pond using excavation equipment.**			**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?	**Yes, at least one RCP pipe inlet was evident (see Photo URS 1). The evacuation pump system and pump chamber located at the south end of the pond are also located below the dam crest elevation but discharge to above ground lines.**			**X**			

Additional comments and recommendations:

- The Upper Retention Sump (URS) is located in a depression formed by excavation to the east of the adjacent FGD treatment system (see Photo URS 1) and is bounded by a haul road embankment to the north (see Photo URS 6) and a railroad embankment to the east (see Photo URS 6 and IMG_2092).

- The URS is filled by more than ten controlled and monitored discharge lines of various size and type from the FGD Treatment System unit. The contents of the pond are evacuated and reused in the FGD process through a pump chamber located at the south end of the pond (see mid ground in Photo URS 14).
- The original construction detail for the pond base and inside slope liner system is three 6-inch lifts of compacted soil cement placed over a proof-rolled subgrade. No subsequent modifications have been identified.
- Accumulated solids in the URS can be removed periodically by dewatering the pond and accessing the bottom of the pond via a provided ramp (see Photo URS IMG_2092) using excavation and haulage equipment.
- The URS does not have a spillway, per se, and would simply overflow into the general plant area and NPDES sumps system.
- There appeared to an accumulation of apparently unused pipe debris on north crest. See Photo URS 6. Recommend inventory of whether pipes are required and removal to appropriate storage or disposal location to allow full access for inspection or other purposes to the north crest.

4.5 APS FIELD INSPECTION – FOUR CORNERS DRY FLY ASH DISPOSAL AREA (DFADA)

<table>
<tr><td colspan="3">Four Corners Dry Fly Ash Disposal Area (DFADA)</td><td colspan="2">SID: N/A</td><td rowspan="14">Not Applicable</td><td rowspan="14">No</td><td rowspan="14">Yes</td><td rowspan="14">Monitor</td><td rowspan="14">Repair</td><td rowspan="14">Investigate</td></tr>
<tr><td>SID: N/A</td><td>Landfill Name: Dry Fly Ash Disposal Area (Cells 1, 2, and 3)</td><td>Type: Lined Landfill</td><td>Purpose: Permanent Storage of dry CCR (fly ash, bottom ash, dry FGD solids) and select (e.g. concrete and wood) construction debris</td></tr>
<tr><td colspan="2">Contact(s): Byron Conrad, P.E. (APS)</td><td colspan="2">Report Date: December 30, 2015</td></tr>
<tr><td colspan="2">Inspected by: Alexander W. Gourlay, P.E. (AECOM)
Byron Conrad, P.E. (APS)</td><td colspan="2">Inspection Date: October 14, 2015</td></tr>
<tr><td colspan="2">Reviewed by: Byron Conrad, P.E. (APS)</td><td colspan="2">Date: January 12, 2016</td></tr>
<tr><td colspan="2">Design Maximum Ash Elevation (ft): 5295 (DFADA 3 stacking plan)</td><td colspan="2">Current Ash Elevation: Not surveyed. Cell 1 top elevation approximately 5260 feet by visual comparison to known crest elevation (5280 feet) of adjacent LAI.</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Length (ft): Not a dam, not applicable.</td><td>Design Side Slope:
Varies. 4:1 on final outside slopes, 2:1 on internal slopes.</td><td>Observed Side Slope:
Varies. 4:1 on final outside slopes, 2:1 on internal slopes.</td></tr>
<tr><td colspan="2">Dam Crest Width (ft): Not a dam, not applicable.</td><td>Lat: 36°40'43.27"N
Long: 108°30'12.2 W</td><td>Water Rights: N/A</td></tr>
<tr><td colspan="2">Landfill Area (acres): 94.8 (Current, Cells 1, 2, and 3)</td><td colspan="2">Landfill Capacity (ac-ft): 3,125 for Cells 1,2, and 3 (Stacking and Sequencing Plan, 2015)</td></tr>
<tr><td colspan="4">Inflow Design Flood/Safe Flood-Passing Capacity: Diversion of 100-year, 24-hour run-on storm. Storage of impacted run-off from 25-year, 24 hour storm, spillway passage of impacted run-off from 100-year, 24-hour storm.</td></tr>
<tr><td colspan="2">Reservoir Level During Inspection (ft): There was a minor accumulation of water in a detention basin located at the east end of DFADA 2. The Leachate/Runoff ponds for Cells 1 and 2 both contained water at levels assessed visually to be between 2 and 3 feet below spillway elevations. The reservoirs are not jurisdictional. In an extreme event (exceeding 25-year, 24-hour precipitation), Cell 1 Pond initially overflows to Cell 2 Pond before Cell 1 Pond overflows to an adjacent natural wash.</td><td>Photos: Yes</td><td>Page: 1 of 3</td></tr>
</table>

Four Corners Dry Fly Ash Disposal Area (DFADA)	SID: **N/A**	N/A	No	Yes	Mon	Rep	Inv

MONITORING CHECKLIST

1	***INSTRUMENTATION AND MONITORING***								
a	Describe: **1) There exist 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 monitoring report: **None**	Should new readings be taken and new report provided? **N/A**		**X**					

2	***CONDITION SUMMARY***	***Comments*** Not Applicable, No, Yes, Monitor, Repair, Investigate							
a	Waste placed in good practices?	**Moist fly and bottom ash are hauled from the Plant hoppers and placed on the landfill by a contractor, FHI Services. Waste can be placed in more than one shift per day depending on Plant operation. At the time of the inspection, the east of Cell 2 was being graded to a final 4:1 slope angle (see Photos DFADA 20 and 21). Other slopes that will be internal to the final DFADA configuration were being constructed at approximately 2:1. Ash placement (see Photos DFADA 14 and 17) was occurring on the crest of Cell 1 (see Photo DFADA 44). Cells 1 and 2 were at approximately the same elevation. Cell 3, completed in late 2014, did not yet appear to have received significant ash placement (see Photo DFADA 11, with Cell 1 in for foreground, Cell 2 on the right far ground, and Cell 3 on the left far ground).** **Ash placement and compaction is in accordance with an agreed method specification. Ash was being deposited in approximately 6-inch thick lifts (see Photo DFADA 17) by heavy haulers and then compacted by tractor-pulled smooth, static drum. Ash waste appeared to have been placed in accordance with good practice.**			**X**				
b									
3	***LANDFILL CONFIGURATION***	***Comments*** Not Applicable, No, Yes, Monitor, Repair, Investigate							
a	Settlements, slides, slope stability?	**No, none apparent**		**X**					
b	Cracking?	**No, None apparent**							
c	Run on control?	**Yes. Generally is very good condition.** **Upstream, not affecting landfill cell, evidence of erosion on steep inlet channel from road cut that should be repaired (see Photos DFADA 5 and 2).Debris accumulates only in detention basin so does not affect peak discharge capacity of system.** **On south side of Cell 2, run on channel completed in 2014 appeared to be in excellent condition. See Photo DFADA 25. Evidence of minor head-cutting at downstream end of channel that can be corrected during the next phase of construction in 2017.**			**X**	**X**	**X**	
d	Run off control?	**Yes. Base of the three lined cells are graded towards internal drain systems There are no external runoff collection ditches (see Photos DFADA 20 and 34.)** **Internal drain systems report to two separate lined leachate cell collection ponds for Cells 1 and 2. Cell 3 will report to the Cell 1 Pond. See Photo DFADA 40 for Cell 1 and Photo DFADA 39 for Cell 2 Pond. Ponds are drained by mobile suction pump and water is used for dust control in approved locations.** **System appears to being operated and functioning as designed. No evidence of any issues of concern.**			**X**			

Four Corners Dry Fly Ash Disposal Area (DFADA)		SID: **N/A**	N/A	No	Yes	Mon	Rep	Inv
e	Erosion?	**No significant water-caused erosion. Application of dust-suppressant on all long-term exposed slopes. Installation of "Pyramat" geosynthetic, anchored covering on west face and corners to minimizes wind erosion.**		**X**		**X**		
f	Dust control issues	**No dust control issues evident during inspection. Application of dust-suppressant on all long-term exposed slopes in accordance with Site Plan for dust control. Installation of "Pyramat" geosynthetic, anchored covering on west face and corners (see Photos DFADA 38 and 44) minimizes dust erosion from these exposed corners and faces.**		**X**		**X**		

Additional comments and recommendations:

- Evidence of head-cutting in inlet channel from haul road cut to off-site diversion channel. Sediment accumulating in detention basin. Given steep channel section, actual performance should be re-evaluated by engineer to understand of run off pattern has changed or whether a different erosion control method should be applied. Work can be incorporated in 2017 DFADA Cell 4 construction project.

5.0 BASIC DATA REPORT REVIEW

5.1 LINED ASH IMPOUNDMENT

5.1.1 Geometry Changes Since Last Inspection

No significant changes in the geometry of the unit have occurred since the last inspection in 2014.

5.1.2 Instrumentation

The location of geotechnical and other related instrumentation in the vicinity of the LAI are shown on Figure 6 – Lined Ash Impoundment (LAI) Instrumentation Map.

The minimum and maximum readings recorded for each instrument between July 2015 and the inspection date are reported in the following Table. Future instrument readings will be reported for the time period between annual inspections.

Instrument Name	Maximum	Minimum	Unit
LAI Piezometers			
P-7.1	5196.87[1]	5196.87[1]	elevation head
P-7.2	5191.35[1]	5191.35[1]	elevation head
P-7.3	5184.75[1]	5184.75[1]	elevation head
P-8.1	5196.60[1]	5196.60[1]	elevation head
P-8.2	5182.10[1]	5182.10[1]	elevation head
P-8.3	5174.10[1]	5174.10[1]	elevation head
P-9.1	5196.87[1]	5196.87[1]	elevation head
P-9.2	5183.97[1]	5183.97[1]	elevation head
P-9.3	5170.87[1]	5170.87[1]	elevation head
P-10.1	5198.22[1]	5198.22[1]	elevation head
P-10.2	5184.22[1]	5184.22[1]	elevation head
P-10.3	5173.72[1]	5173.72[1]	elevation head
P-11.1	5201.61	5200.76	elevation head
P-11.2	5189.65[1]	5189.65[1]	elevation head
P-11.3	5174.65[1]	5174.65[1]	elevation head
P-12.1	5202.54[1]	5202.54[1]	elevation head
P-12.2	5186.54[1]	5186.54[1]	elevation head
P-12.3	5176.70	5176.54	elevation head
[1] Porewater pressure measurements are negative (draining condition)			

Instrument Name	Maximum	Minimum	Unit
NTB Piezometers			
P-100.1	5202.06[1]	5202.06[1]	elevation head
P-100.2	5190.17	5190.06	elevation head
P-100.3	5183.23[1]	5183.23[1]	elevation head
P-101.1	5185.93[1]	5185.93[1]	elevation head
P-101.2	5183.95	5181.51	elevation head
P-101.3	5177.88[1]	5175.88[1]	elevation head
P-102.1	5188.85[1]	5188.85[1]	elevation head
P-102.2	5176.01	5175.24	elevation head
P-102.3	5172.25	5170.94	elevation head
P-103.1	5185.91[1]	5185.91[1]	elevation head
P-103.2	5170.91[1]	5170.91[1]	elevation head
P-103.3	5161.92	5161.50	elevation head
P-104.1	5198.72[1]	5198.72[1]	elevation head
P-104.2	5185.47[1]	5185.47[1]	elevation head
P-104.3	5178.47[1]	5178.47[1]	elevation head
P-105.1	5185.05	5184.82	elevation head
P-105.2	5174.16[1]	5174.16[1]	elevation head
P-105.3	5166.24	5164.37	elevation head
P-106.1	5186.17	5186.09	elevation head
P-106.2	5165.51[1]	5165.51[1]	elevation head
P-106.3	5159.47	5159.01	elevation head
P-107.1	5197.71	5197.27	elevation head
P-107.3	5173.44[1]	5173.44[1]	elevation head
P-108.1	5184.26[1]	5184.26[1]	elevation head
P-108.2	5176.28	5174.39	elevation head
P-108.3	5178.51	5176.63	elevation head
P-109.1	5188.76[1]	5188.76[1]	elevation head
P-109.2	5172.51[1]	5172.51[1]	elevation head
P-109.3	5168.72	5166.97	elevation head
P-110.1	5184.73	5184.28	elevation head
P-110.2	5171.86[1]	5171.86[1]	elevation head
P-110.3	5163.44[1]	5163.44[1]	elevation head
P-111.1	5187.65	5187.29	elevation head
P-111.2	5172.33[1]	5172.33[1]	elevation head
P-111.3	5161.14	5161.03	elevation head
[1] Porewater pressure measurements are negative (draining condition)			

Instrument Name	Maximum	Minimum	Unit
Survey Monuments			
SM7	5215.946	5215.889	EL (ft)
SM9	5217.145	5217.123	EL (ft)
Settlement Rods			
SR-7	5251.254	5250.822	EL (ft)
SR-8	5256.901	5256.257	EL (ft)
SR-9	5248.781	5248.617	EL (ft)
SR-10	5248.996	5248.869	EL (ft)
SR-100	5222.321	5222.234	EL (ft)
SR-101	5205.635	5205.476	EL (ft)
SR-102	5205.364	5205.279	EL (ft)
SR-104	5219.486	5219.344	EL (ft)
SR-105	5205.201	5204.987	EL (ft)
SR-106	5205.446	5205.368	EL (ft)
SR-109	5206.721	5206.495	EL (ft)
SR-110	5205.935	5205.830	EL (ft)
Inclinometers			
I-1	0.0882	0	in
I-2	0.0504	0	in
I-103	0.0822	0.0006	in
I-107	0.1140	0	in
I-111	0.0594	0.0000	in
Open Standpipe Piezometers			
P-18	Dry	Dry	
P-19	Dry	Dry	
P-20	Dry	Dry	
P-21	Dry	Dry	
P-22	Dry	Dry	
P-23	5157.56	5157.17	Elevation head
P-24	Dry	Dry	
P-25	Dry	Dry	

The 2015 data for the piezometers indicate no significant elevation changes or trends related to the performance of the dam.

The 2015 data for the settlement rods and inclinometers indicate no significant elevation changes or trends related to the performance of the dam.

5.1.3 CCR and Water Elevations

The depth of CCR in the LAI at the time of the inspection was 67.2 feet, which corresponds to an elevation of 5272.2 feet. The LAI contains a minimal amount of water.

5.1.4 Storage Capacity

The estimated remaining maximum storage capacity of the LAI at the time of the inspection was 491.33 ac-ft.

5.1.5 Approximate Impounded Volume at Time of Inspection

The approximate volume of impounded CCR in the LAI at the time of the inspection was 5838.67 ac-ft.

5.1.6 Structural Weakness or Operational Change/Disruption

No conditions that could be 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 changes of significance since the last 2014 inspection.

5.2 LINED DECANT WATER POND

5.2.1 Geometry Changes Since Last Inspection

No significant changes in the geometry of the unit have occurred since the last inspection in 2014.

5.2.2 Instrumentation

The location of geotechnical and other related instrumentation in the vicinity of the LDWP are shown on Figure 7 – Lined Decant Water Pond (LDWP) Instrumentation Map.

The minimum and maximum readings recorded for each instrument between July 2015 and the inspection date are reported in the following Table. Future instrument readings will be reported for the time period between annual inspections.

Survey Monuments			
SM7	5215.941	5215.889	EL
SM9	5217.143	5217.128	EL

Open Standpipe Piezometers			
P-18	Dry	Dry	-
P-19	Dry	Dry	-
P-20	Dry	Dry	-
P-21	Dry	Dry	-
P-22	Dry	Dry	-
P-23	5157.43	5157.23	ft
P-24	Dry	Dry	-
P-25	Dry	Dry	-

The 2015 data for the survey monuments indicate no significant elevation changes or trends related to the performance of the dam.

The 2015 data for the piezometers indicate no significant elevation changes or trends related to the performance of the dam.

5.2.3 CCR and Water Elevations

The depth of water in the LDWP at the time of the inspection was 8.5 feet, which corresponds to a water surface elevation of 5207.5 feet. The LDWP does not impound a significant quantity of solids.

5.2.4 Storage Capacity

The estimated maximum remaining storage capacity of the LDWP at the time of the inspection was 346.1 ac-ft.

5.2.5 Approximate Impounded Volume at Time of Inspection

The approximate volume of impounded water in the LDWP at the time of the inspection was 162.3 ac-ft.

5.2.6 Structural Weakness or Operational Change/Disruption

No conditions that could be 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 changes of significance since the last 2014 inspection.

5.3 COMBINED WASTE TREATMENT POND

5.3.1 Geometry Changes Since Last Inspection

No significant changes in the geometry of the unit have occurred since the last inspection.

5.3.2 Instrumentation

There are no instruments associated with the CWTP.

5.3.3 CCR and Water Elevations

The depth to water in the CWTP at the time of the inspection was observed to be approximately 5 feet, which corresponds to a water surface elevation of approximately 5330 feet. The solids captured in the CWTP are removed by long reach excavator or dredged as needed.

5.3.4 Storage Capacity

The estimated maximum remaining storage capacity of the CWTP at the time of the inspection was 21.4 ac-ft.

5.3.5 Approximate Impounded Volume at Time of Inspection

The approximate volume of impounded water in the CWTP at the time of the inspection was 115.6 ac-ft.

5.3.6 Structural Weakness or Operational Change/Disruption

No conditions that could be 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 changes of significance since the last 2014 inspection.

5.4 UPPER RETENTION SUMP

5.4.1 Geometry Changes Since Last Inspection

No significant changes in the geometry of the unit have occurred since the last inspection.

5.4.2 Instrumentation

There are no instruments associated with the URS.

5.4.3 CCR and Water Elevations

The depth of water in the URS at the time of the inspection was 1.5 feet, which corresponds to a water surface elevation of 5340.5 feet. Sediment can accumulate in the URS and is removed when required by earthwork equipment. The depth/quantity of solids could not be estimated during the inspection but was assessed as insignificant.

5.4.4 Storage Capacity

The estimated maximum remaining storage capacity of URS at the time of the inspection was 9.3 ac-ft.

5.4.5 Approximate Impounded Volume at Time of Inspection

The approximate volume of impounded water in the URS at the time of the inspection was 1.4 ac-ft.

5.4.6 Structural Weakness or Operational Change/Disruption

No conditions that could be 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 changes of significance since the last 2014 inspection.

5.5 DRY FLY ASH DISPOSAL AREA

5.5.1 Geometry Changes Since Last Inspection

Cell (Site) 3 was completed at the end of 2014 and started to receive significant ash loading after the October, 2015 inspection. When filled, Cell 3 will merge with Cells 1 and 2 and will buttress the South Embankment of LAI. Since the last inspection, Cells 1 and 2 have continue to be filled and raised are currently at approximately the same crest elevation. No other significant changes in the geometry of the unit have occurred since the last inspection.

5.5.2 Instrumentation

There are no instruments associated with the DFADA.

5.5.3 CCR Volume

The approximate volume of CCR in the DFADA at the time of the inspection was estimated to be between 1,750 and 2,000 ac-ft. based estimated production rates since the time of the aerial survey (2014), compared to a combined capacity for Cells 1, 2, and 3 of 3,125 ac-ft.

5.5.4 Structural Weakness or Operational Change/Disruption

No conditions that could be 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 changes of significance since the last 2014 inspection.

6.0 OPERATION AND MAINTENANCE RECOMMENDATIONS

The following items were noted during inspections as requiring attention.

6.1 LINED ASH IMPOUNDMENT

Action Item	Action Status
1) Elevation markers covered by accumulated ash.	Wash off ash covering impoundment elevation marker adjacent to Drop Inlet Riser adjacent to crest of West Embankment; measure and maintain as part of weekly inspection.
2) Minor erosion rilling observed on downstream slope.	Monitor and maintain downstream slope erosion as necessary.
3) Erosion caused by road maintenance on downstream berm of North Toe Buttress.	Perform crest road maintenance to minimize concentrated runoff flows and to maintain the width and physical structure of the crest in this area.
4) 8-inch LDWP outlet pipe may be partially blocked with sediment.	Continued monitoring of flow from the 8-inch pipe and, if warranted, repeating the earlier effort to dislodge accumulated sediment if inadequate flow is reporting to the LDWP from the LAI.
5) Sediment accumulation in the LDWP pump station.	Clean sediment and debris that has accumulated in the LDWP pump station.
6) Dead Pool Sump system was pressurized but not operational at the time of the inspection.	Issue a Corrective Action Request (CAR) to re-activate and/or repair the pump system.
7) Prepare budget, plan, and scope work to update the Emergency Action Plan.	EAP under CRF 257373 due 4/17/2017.

6.2 LINED DECANT WATER POND

Action Item	Action Status
1) LDWP interstitial geomembrane leak detection and evacuation pump not present at the time of inspection.	a) Issue a Corrective Action Request (CAR) to replace and re-activate the pumping system; b) Initiate planning and budgeting for regular procurement and installation of replacement pumps.
2) Minor to significant erosion rilling, presumably caused by rainfall runoff, was observed on the external slopes of the LDWP at the time of inspection.	Continue ongoing repair program for repairing rills if the depth exceeds one foot.
3) Prepare budget, plan, and scope work to update the Emergency Action Plan.	EAP under CFR 257373 due 4/17/2017.

6.3 COMBINED WASTE TREATMENT POND

Action Item	Action Status
1) Recommend maintenance of all vegetation sufficient to allow thorough inspection of the soil and rip rap conditions on the faces and crests of the embankments. Vegetation removal should be performed in accordance with the NMOSE vegetation maintenance guidelines "*Vegetation Management on Dams*" (2011) reference.	This will likely be an ongoing maintenance requirement. We understand that a Corrective Action Request was written and that the removal may have occurred shortly after the October 14 inspection.
2) Possible depression as observed in vicinity of yellow bollard	a) Perform embankment crest survey to ensure no low spots; b) Perform embankment cross-section survey at 5 or more representative locations to verify width and measure current slope of side slopes. b) Restore crest to design elevation of 5335, as required.

6.4 UPPER RETENTION SUMP

Action Item	Action Status
1) An accumulation of apparently unused pipe debris was observed on the north crest during the inspection.	Inventory pipes and remove to appropriate storage or disposal location to allow full access to the crest for inspection or other purposes.

6.5 DRY FLY ASH DISPOSAL AREA

Action Item	Action Status
1) Headcutting in inlet channel from haul road cut to off-site diversion channel observed during inspection with sediment accumulating in detention basin.	Perform an engineering re-evaluation to understand whether the run off pattern has changed or whether a different erosion control method should be applied. Work can be incorporated in 2017 DFADA Cell 4 construction project.

REFERENCES

Federal Emergency Management Agency. 2005. *Technical Manual for Dam Owners, Impacts of Plants on Earthen Dams, FEMA Manual 534*. September.

New Mexico Office of the State Engineer (NMOSE). Dam Safety Bureau. 2011. *Vegetation Management on Dams*. 3 pgs. August 15.

United States Environmental Protection Agency (EPA), 2015. *40 CFR Parts 257 and 261 – Hazardous and Solid Waste Management System; Disposal of Coal Combustion Residuals from Electric Utilities; Final Rule*. Federal Register Vol. 80, No. 74. April 17.

FIGURES

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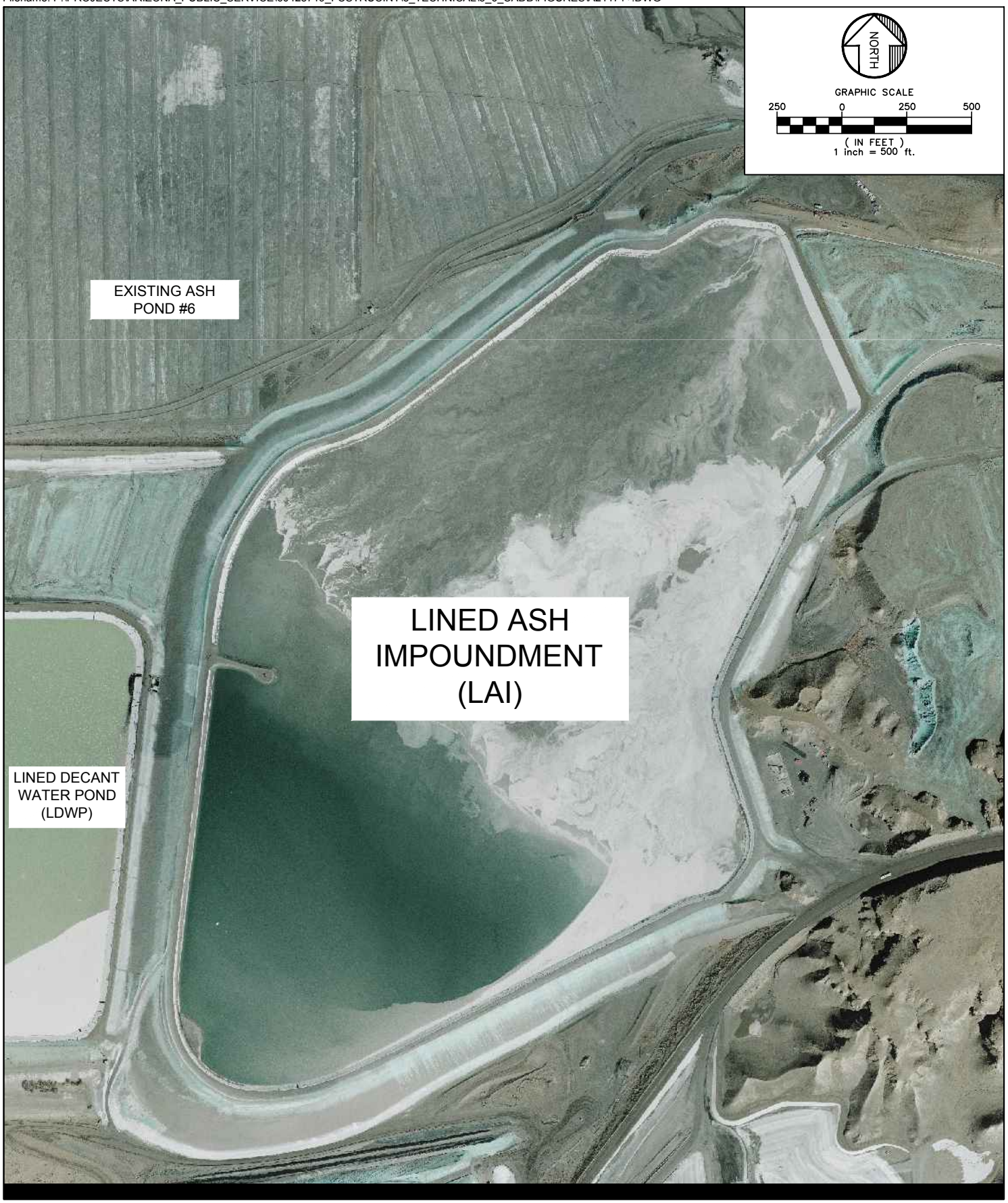

FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE
Project No. 60445844: 2015-01-11

LINED ASH IMPOUNDMENT (LAI)

AECOM

FIGURE 1

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FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE
Project No. 60445844: 2015-01-11

LINED DECANT WATER POND (LDWP)

AECOM

FIGURE 2

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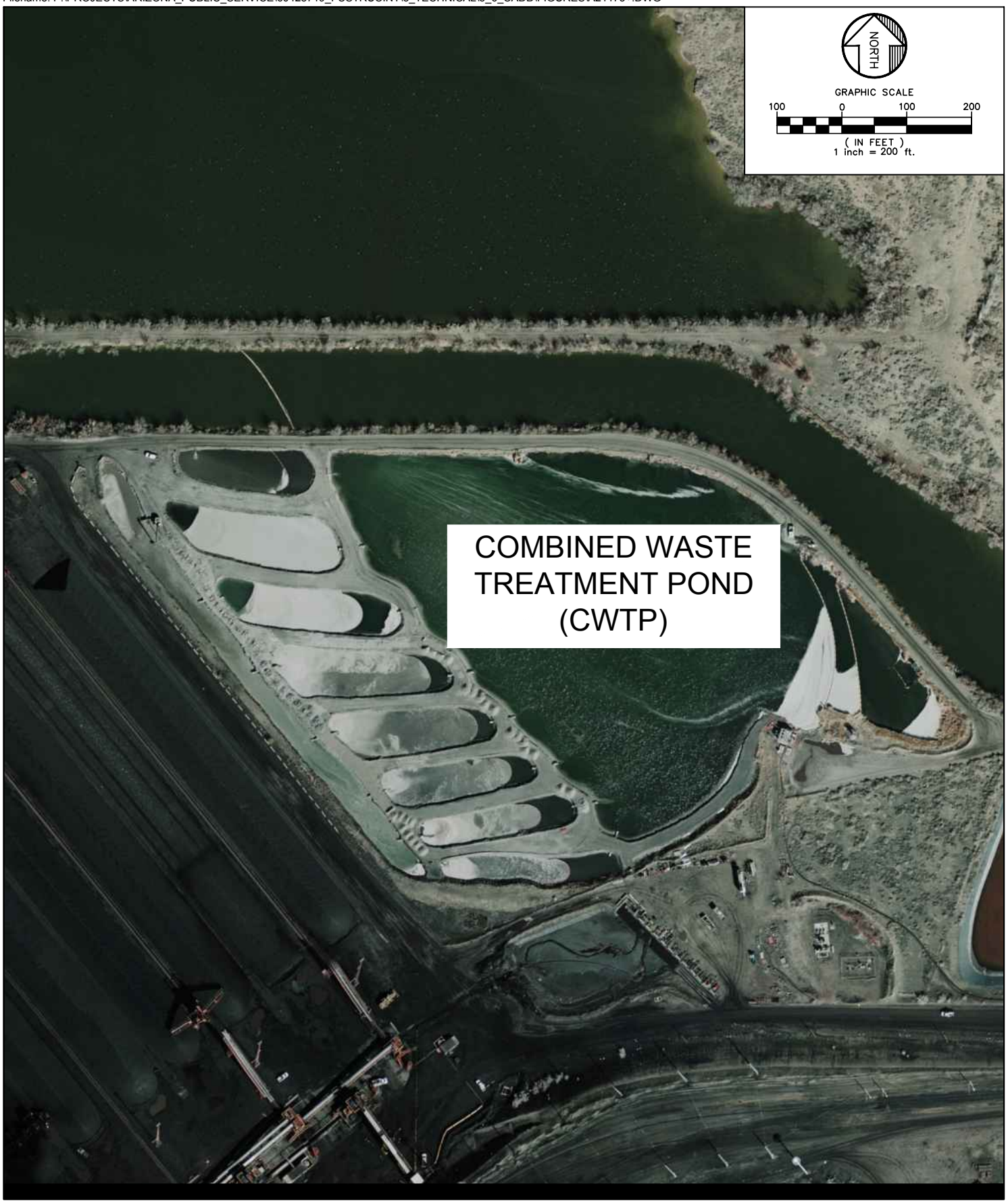

FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE
Project No. 60445844: 2015-01-11

COMBINED WASTE TREATMENT POND (CWTP)

AECOM

FIGURE 3

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ANSI A 8.5" x 11"

FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE
Project No. 60445844: 2015-01-11

UPPER
RETENTION SUMP
(URS)

AECOM

FIGURE 4

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ANSI A 8.5" x 11"

FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE
Project No. 60445844: 2015-01-11

DRY FLY ASH
DISPOSAL AREA
(DFADA)

AECOM

FIGURE 5

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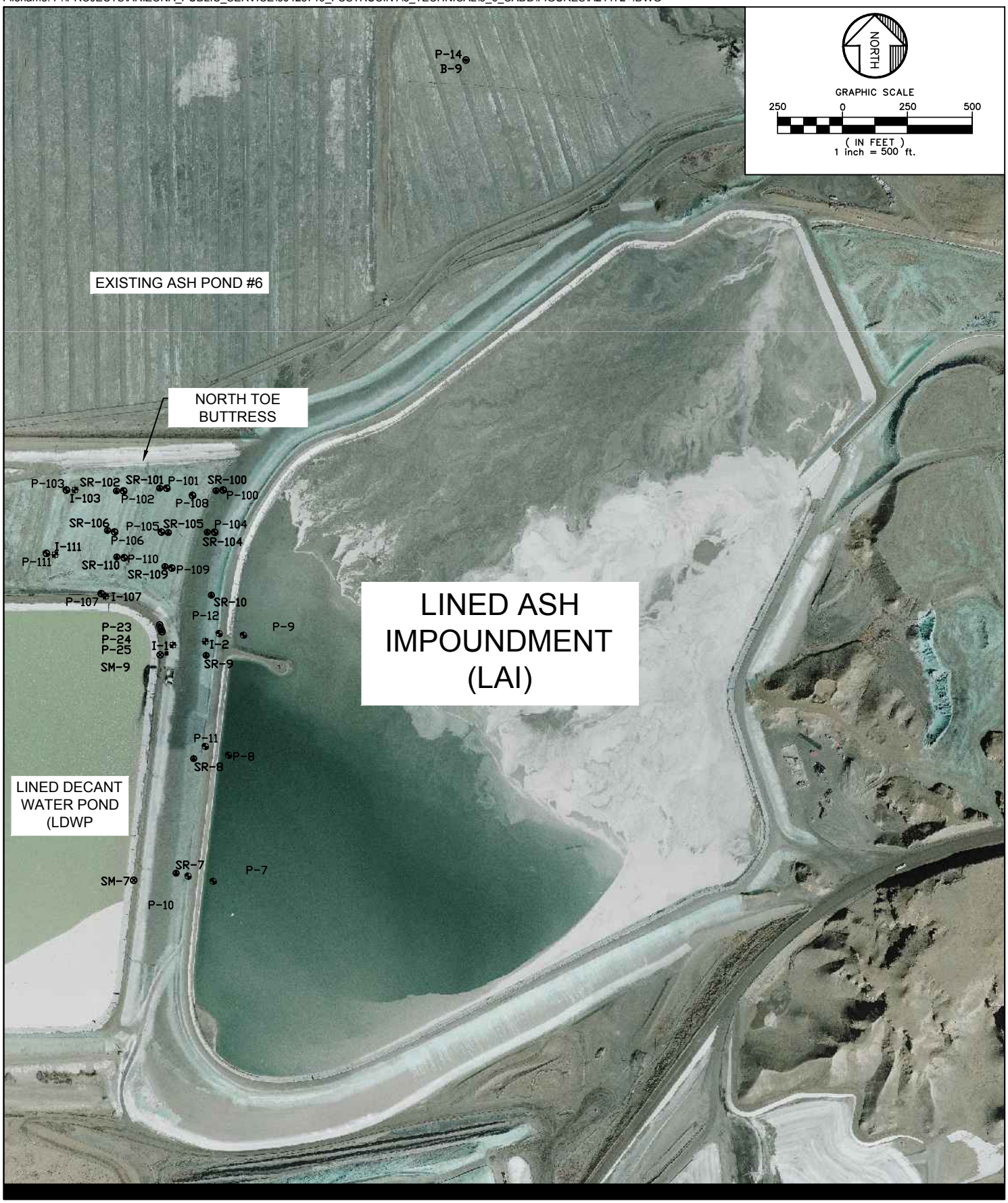

FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE
Project No. 60445844: 2015-01-11

LINED ASH IMPOUNDMENT (LAI) INSTRUMENTATION MAP

AECOM

FIGURE 6

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ANSI A 8.5" x 11"

FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE
Project No. 60445844: 2015-01-11

LINED DECANT WATER POND (LDWP) INSTRUMENTATION MAP

AECOM

FIGURE 7

APPENDIX A

LINED ASH IMPOUNDMENT (LAI) PHOTO LOG

20151014 – Photo 1
Downstream berm of North Toe Buttress (NTB). Erosion caused by road maintenance.

20151014 – Photo 2
NTB. View from west. White color is sprayed dust suppression covering.

20151014 – Photo 4
LAI. Inflow of FGD waste flow into north side of impoundment.

20151014 – Photo 5
LAI. Channel carrying FGD waste flow to impoundment.

20151014 – Photo 8
Southeast corner of LAI. Impounded ash and FGD waste.

20151014 – Photo 10
Crest. LAI South Embankment. Road maintenance activity ongoing.

20151014 – Photo 12
LAI South Embankment. White-colored dust suppression covering in foreground. DFADA Cell 3, under construction, in background.

20151014 – Photo 21
Dead Pool Sump Pump Station and LDWP (right). View looking west from southwest corner of LAI crest.

20151014 – Photo 22
LAI. View from crest of South Embankment.

20151014 – Photo 24
LAI West Embankment. View from crest looking west toward LDWP. Note dust suppression coverage on face of West Embankment.

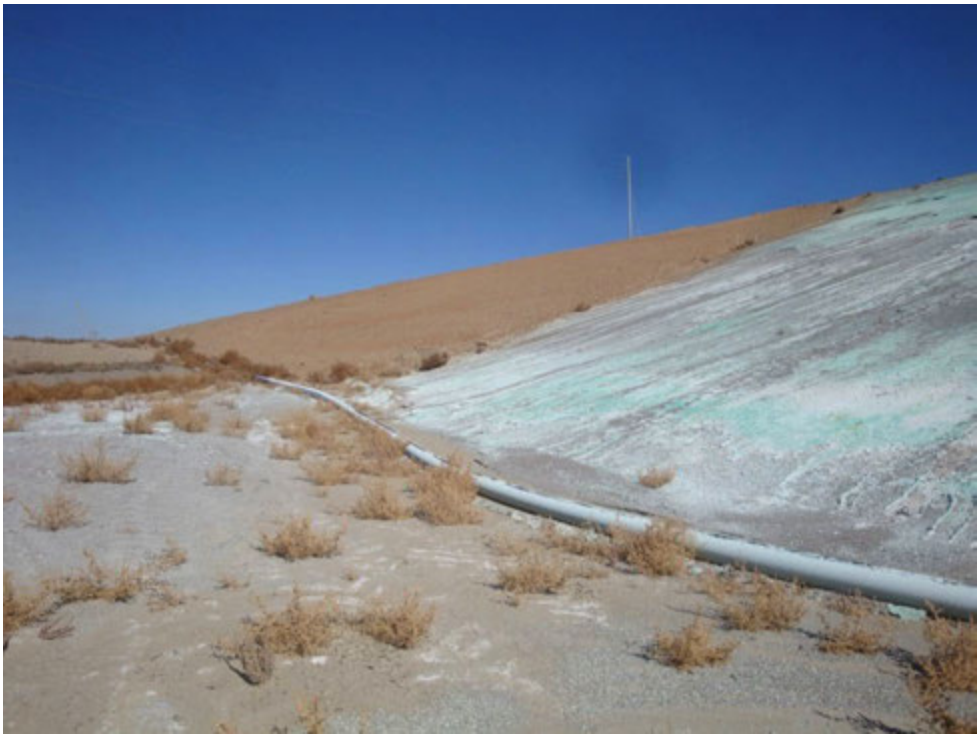
20151014 – Photo 26
LAI. Permanently-installed elevation marker on west side of impoundment.

20151014 – Photo 27
LAI. Permanently-installed elevation marker on west side of impoundment.

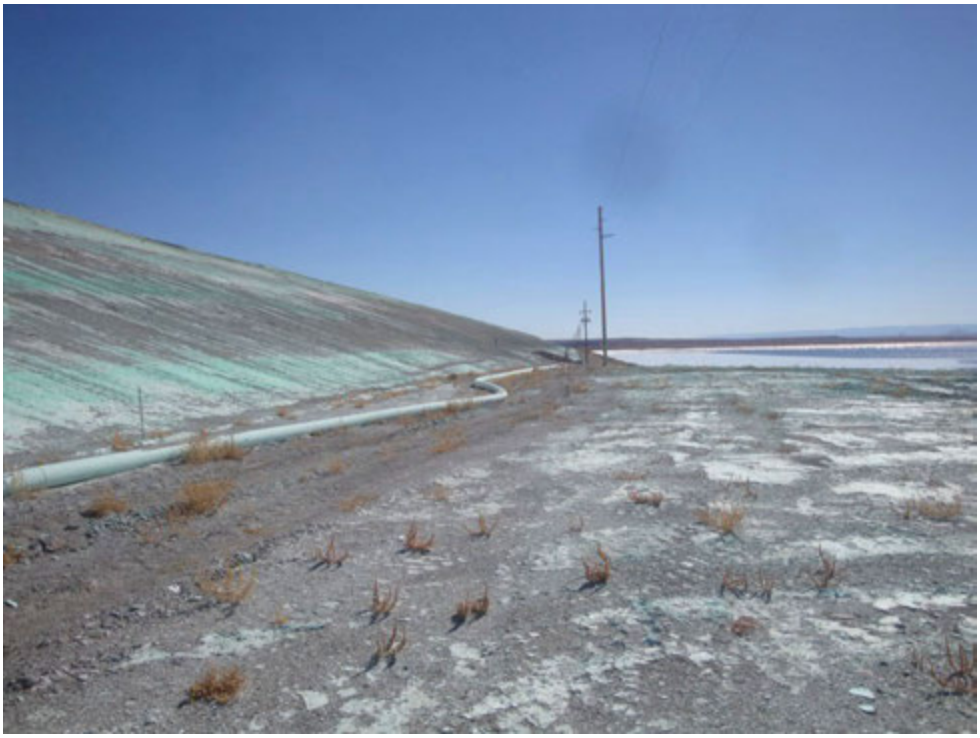
20151014 – Photo 30
Exposed top of LAI Discharge Riser. Insufficient impounded water to inundate.

20151014 – Photo 32
West Embankment. Downstream slope. Interface between 3:1 "final constructed" slope of Pond 4 segment and 4:1 "closed" slope of Pond 5 segment.

20151014 – Photo 33
West Embankment. Downstream slope. Interface between 3:1 "final constructed" slope of Pond 4 segment and 4:1 "closed" slope of Pond 5 segment.



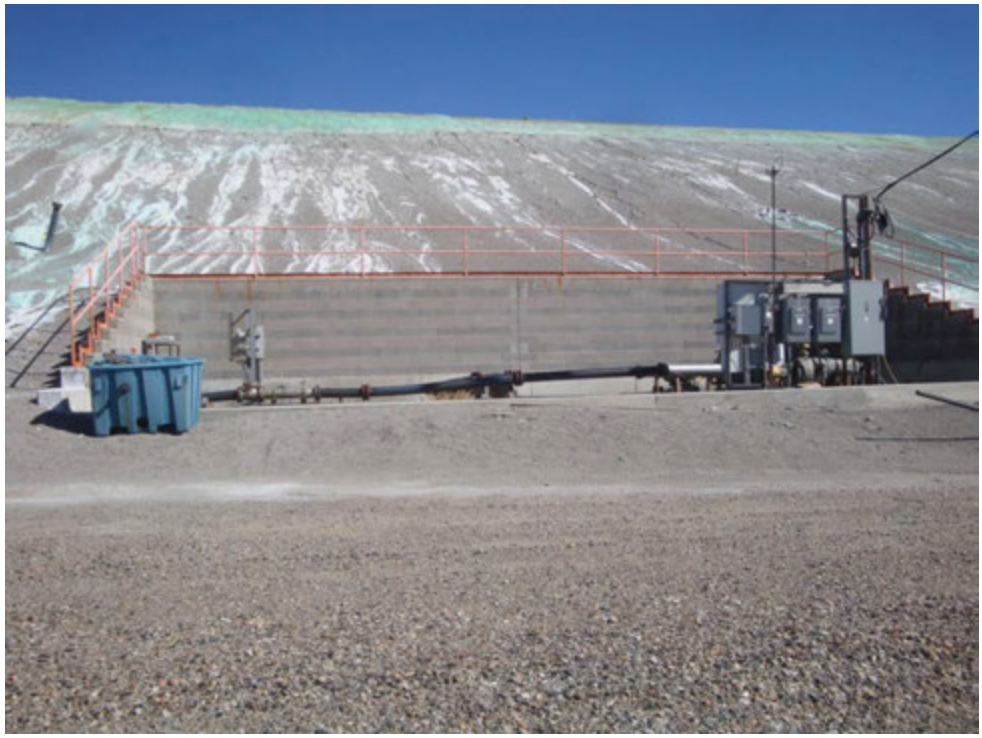
20151014 – Photo 35
West Embankment. Downstream slope. Interface between 3:1 "final constructed" slope of Pond 4 segment and 4:1 "closed" slope of Pond 5 segment.



20151014 – Photo 36
West Embankment. Downstream slope. Interface with North Toe Buttress. LDWP in far ground.

20151014 – Photo 37
West Embankment. Downstream slope. LDWP pump station and double-walled pressure line in foreground.

20151014 – Photo 39
Discharge by gravity from LAI Riser to LDWP.



20151014 – Photo 40
West Embankment. LDWP Pump Station.

20151014 – Photo 42
West Embankment. LDWP Pump Station. View of accumulated sediment.

20151014 – IMG_2118
Dead Pool Sump Pump Station. Non-operational but pressurized.

20151014 – IMG_2119
Dead Pool Sump Pump Station. Non-operational but pressurized.

APPENDIX B

LINED DECANT WATER POND (LDWP) PHOTO LOG

20151014 – Photo 2, Set 1
Impoundment. Northwest corner.

20151014 – Photo 7, Set 1
West Embankment. Erosion rills.

20151014 – Photo 11, Set 1
Crest, southwest corner. Double-liner interstitial pump-out system. Larger pipe abandoned due to subsurface collapse. No pump installed in smaller pipe.

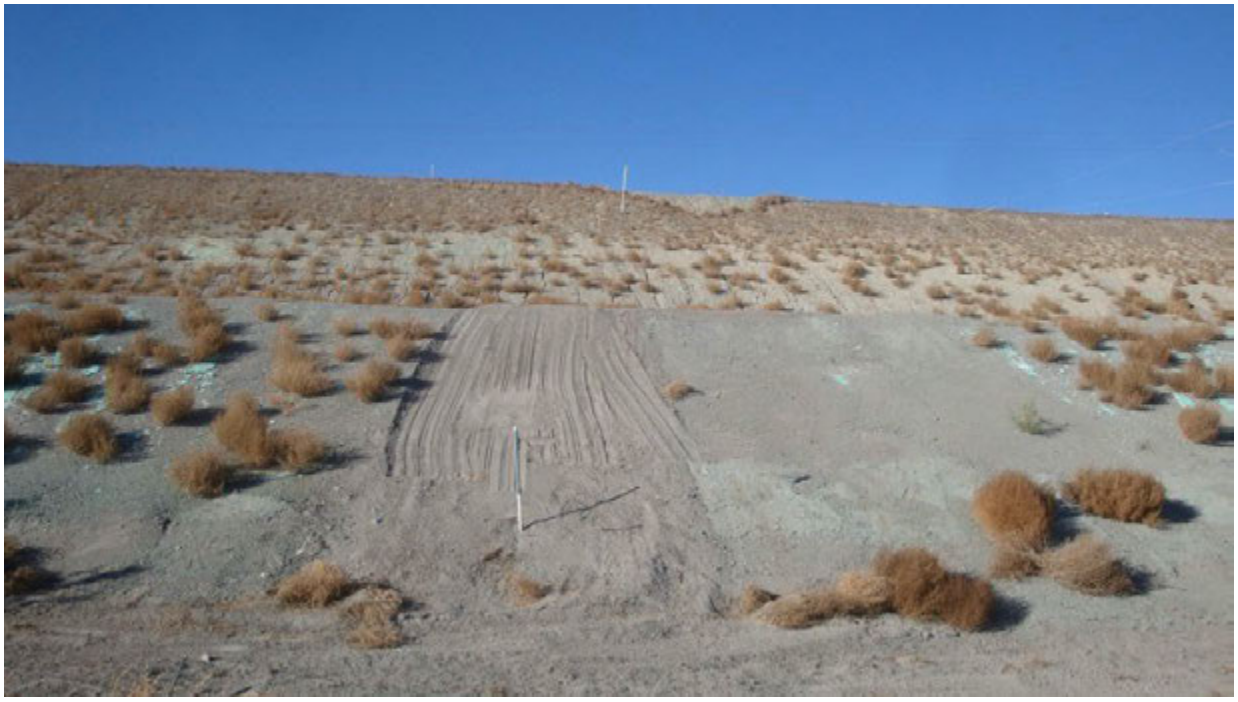
20151014 – Photo 14, Set 1
Downstream Slope. West Embankment.

20151014 – Photo 15, Set 1
Crest. West Embankment. Survey monument.

20151014 – Photo 3, Set 2
West Embankment. Note varied, sparse vegetation.

20151014 – Photo 4, Set 2
West Embankment. Note double-walled pumpback line from Sump 3.

20151014 – Photo 8, Set 2
West Embankment. Note widely-spaced erosion rills and equipment for ongoing maintenance.



20151014 – Photo 12, Set 2
West Embankment. Note recently-completed erosion maintenance.

20151014 – Photo 15, Set 2
West Embankment. Note varied, sparse vegetation.

APPENDIX C

COMBINED WASTE TREATMENT POND (CWTP) PHOTO LOG

20151014 – Photo 1
Signage for the CWTP, previously also known as Low Volume Waste Water Pond (LVWWP).

20151014 – Photo 2
Sediment decant cell. Filled.

20151014 – Photo 6
Typical sediment decant cell. Seven total.

20151014 – Photo 7
Decant cell outlet CMP. Temporarily blocked to increase residence time in decant cell.

20151014 – Photo 9
Retained floating debris. To be removed before discharge.

20151014 – Photo 10
Crest of typical interior decant cell divider dike.

20151014 – Photo 12
Outlet from decant cell to CWTP.

20151014 – Photo 13
Upstream slope of CWTP. Looking east. Note only light vegetation on upstream slope.

20151014 – Photo 14
Downstream slope of CWTP. Looking east. Note heavy vegetation, including trees, on downstream slope.

20151014 – Photo 19
Downstream slope of CWTP. Looking west. Note heavy vegetation, including trees, on downstream slope.

20151014 – Photo 20
Downstream slope of CWTP. Looking east. Note heavy vegetation, including trees, on downstream slope.

20151014 – Photo 21
Upstream slope of CWTP. Looking west. Note only light vegetation on upstream slope.

20151014 – Photo 22
Uneven crest elevation in location of yellow bollard. Evidenced by approximately 1 foot apparent reduction in depth to the CWTP water surface.

20151014 – Photo 23
Structure to control and measure water flow from the CWTP to the cooling water return channel and then to Morgan Lake.

20151014 – Photo 28
Discharge flow measurement and recording instruments.

APPENDIX D

UPPER RETENTION SUMP (URS) PHOTO LOG

20151014 – Photo 1
Upper Retention Sump. West side. Overflow channel from adjacent FGD vessels and system.

20151014 – Photo 5
Fabriform bank protection. Northwest crest. Ash haul road on other side of fence.

20151014 – Photo 6
Northwest crest. Note possibly pressurized pipes on crest.

20151014 – Photo 10
Southeast crest. Concrete slab. Railroad on other side of fence.

20151014 – Photo 13
Upper Retention Sump. View looking north. Clean out ramp for sump in far ground.

20151014 – Photo 14
Upstream slope. South Embankment.

20151014 – Photo 16
Upstream slope. West Embankment. View to the south.

20151014 – Photo 17
Upstream slope. West Embankment. View to the north.

20151014 – IMG_2092
Clean out ramp on upstream slope of northwest embankment.

APPENDIX E

DRY FLY ASH DISPOSAL AREA (DFADA) PHOTO LOG

20151014 – Photo 2
Inlet to Storm Water Diversion Channel from ash haul cut. Note minor erosion on steep sections.

20151014 – Photo 5
Inlet to Storm Water Diversion Channel from ash haul cut. Good condition in this section. Note CCR Rule-required signage for DFADA.

20151014 – Photo 11
View from current crest of DFADA complex. Looking east towards Plant. Standing on Unit 1 with filled Unit 2 on right side and unfilled Unit 3 on left side of view.

20151014 – Photo 14
DFADA Unit 1. Recently placed ash being compacted in accordance with method specification.

20151014 – Photo 17
DFADA Unit 1. Recently placed ash before compaction.

20151014 – Photo 20
DFADA Unit 2. Slope construction of southeast corner of Unit. Adjacent to storm water diversion channel.

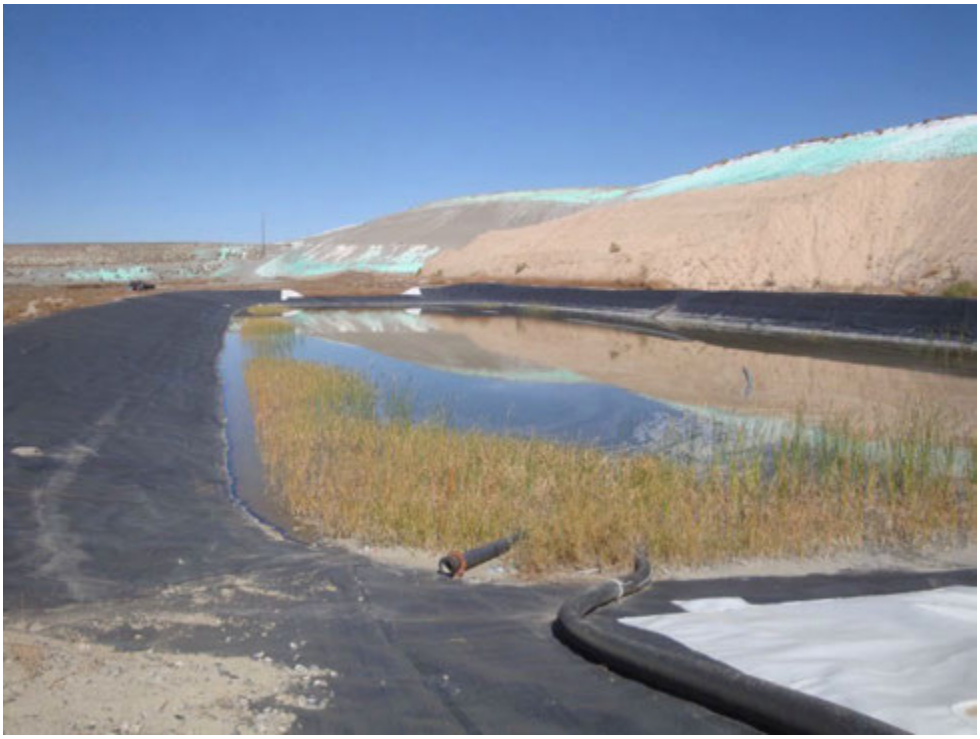
20151014 – Photo 21
DFADA Unit 2. Partially-filled portion of Unit 2.

20151014 – Photo 25
Storm water diversion channel. South side of Unit 2.

20151014 – Photo 34
South Slope of Units 1 and 2. Note sparse vegetation in foreground and Pyramat-covered slope in far ground.

20151014 – Photo 38
Southwest corner of Unit 1. Slope covered with anchored geosynthetic and Pyramat to control dust generation.

20151014 – Photo 39
Unit 2 leachate and rain runoff collection pond.



20151014 – Photo 40
Unit 1 leachate and rain runoff collection pond.

20151014 – Photo 44

Northwest corner of Unit 1. Pyramat on the lower slope portions. Lime-based sprayed dust suppressant on the upper slope portions. Unit 1 and 2 leachate and rain runoff collection ponds at downgradient toe of Unit 1.