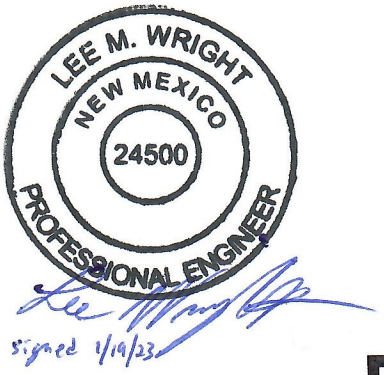
FOUR CORNERS POWER PLANT
Lined Ash Impoundment,
Lined Decant Water Pond,
Combined Waste Treatment Pond,
Dry Fly Ash Disposal Area,
and Return Water Pond

Annual
CCR Impoundment and
Landfill Inspection Report

2022

GENERATION ENGINEERING
Design Engineering
P.O. BOX 53999
PHOENIX, ARIZONA 85072



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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 as well as visual inspections of the Lined Ash Impoundment, the Lined Decant Water Pond, the Combined Waste Treatment Pond, the Dry Fly Ash Disposal Area, and the Return Water Pond. The Lined Ash Impoundment and Lined Decant Water Pond are instrumented with piezometers, inclinometers, settlement monuments, and settlement rods.

Inspection Conducted by

Ray Markley, P.E. (Arizona)
Senior Geotechnical Engineer
APS Generation, Fossil Projects Coal
Arizona Public Service Company

Lee M. Wright, P.E.
Geotechnical Engineer
AECOM
7720 North 16th Street, Suite 100
Phoenix, Arizona

2.0 SITE BACKGROUND AND INSPECTION CONDITIONS

The Four Corners Power Plant (FCPP, the Plant) 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 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. Units 1, 2, and 3 ceased generation in 2013 and were then decommissioned. Units 4 and 5 burn low sulfur coal and have a total net generating capacity of 1,540 megawatts. Unit 4 was running at the time of the inspection.

The coal combustion process produces Coal Combustion Residuals (CCR) consisting of bottom ash (silty sand, Unified Soil Classification System SM), fly ash (low plasticity silt, Unified Soil Classification System ML), and flue gas desulfurization (FGD) sludge. The Plant is operated as a low volume water usage system. The Dry Fly Ash Disposal Area (DFADA) is a CCR landfill used to dispose of dry CCR from Units 4 and 5. The Return Water Pond (RWP) is an impoundment facility for temporary storage of Lined Ash Impoundment (LAI), Lined Decant Water Pond (LDWP), and Pond 3 pump house discharges; it consists of two cells – the Return Water Pond cell and the FGD Pond cell, collectively designated as the "RWP." The LAI was previously used for CCR disposal and the LDWP is used to store water drained from the LAI. The Combined Waste Treatment Pond (CWTP) is a former settling pond for bottom ash sluice water and various storm water, process water, and Plant washdown streams. The LAI, LDWP, CWTP, DFADA, and RWP are the subjects of this inspection report.

The field inspection was conducted on Wednesday, October 19, 2022 and Thursday, October 20, 2022. Conditions were cool (36-73 degrees Fahrenheit) with clear skies. Winds were light, averaging 6 miles per hour (mph) with gusts up to 17 mph. Approximately 6.08 inches of precipitation had fallen since the start of the year based on data recorded at the Four Corners Regional Airport in Farmington, New Mexico (NOAA 2022).

Instrumentation at the LAI and LDWP consists of open standpipe PVC piezometers, vibrating wire piezometers, inclinometers, settlement monuments, and settlement rods. Water levels in the open standpipe piezometers are measured with an electronic water level indicator attached to a cable stamped with increments of 0.01 feet. Water level data for the vibrating wire piezometers are downloaded at a central readout box and processed by Plant personnel. Data for the inclinometers are manually gathered and processed by Plant personnel. The settlement monuments and settlement rods are measured using a Global Positioning System (GPS) survey. Data for the settlement monuments and settlement rods are gathered and processed by a third-party Professional Surveyor under contract with APS. APS personnel review the third-party survey data.

The benchmarks for the elevations reported for GPS surveys of the settlement monuments at the Four Corners Power Plant are based on 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 UNIT DESCRIPTIONS

3.1 LINED ASH IMPOUNDMENT (LAI)

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

The LAI (listed by the New Mexico Office of the State Engineer (NMOSE) Dam Safety Bureau as dam number D-634) was constructed between 2003 and 2014, has a reservoir storage capacity of 5,346 acre-feet, and is approximately 107 feet high. The embankment is approximately 6,600 feet long and is classified under the New Mexico Administrative Code (NMAC) as "intermediate" size and "significant" hazard potential. The impoundment is lined with a single HDPE geomembrane. The nominal (lowest) design crest elevation (EL) is 5280.0 feet. The maximum operating water level is EL 5275.2 feet. APS stopped discharging to the LAI on April 2, 2021. At the time of the October 2022 inspection, the reservoir pool had been removed, leaving only interstitial water within the impounded ash to drain into the LDWP via the Drop Inlet Structure and the Deadpool Sump.

3.2 LINED DECANT WATER POND (LDWP)

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

The LDWP (NMOSE dam number D-635) was constructed in 2003, has a maximum storage capacity of 435 acre-feet, and has a statutory height of approximately 16 feet (the LDWP was constructed on top of Ash Pond 3 and is 90 feet above the original ground surface along the South and West Embankments). The embankment is approximately 5,488 feet long and is classified under the NMAC as "intermediate" size and "significant" hazard. The impoundment is lined with two HDPE geomembranes and a leak detection layer. The maximum surcharge reservoir level is EL 5213.2 feet. The reservoir level was observed to be at approximate EL 5203.25 feet during the inspection.

3.3 COMBINED WASTE TREATMENT POND (CWTP)

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

The CWTP is an approximately 13.4-acre unlined detention pond located adjacent to Morgan Lake. The CWTP is not regulated by NMOSE. It was constructed in 1978 and has a maximum storage capacity of 137 acre-feet. The embankment is approximately 32 feet high (maximum) and approximately 1,800 feet long. The embankment is classified under the NMAC as "small" size and "low" hazard. Until 2020, the CWTP was used as a settling basin for ash-transport wastewater prior to discharge to Morgan Lake through a monitored National Pollutant Discharge Elimination System (NPDES) permitted discharge point. Ash and other sediment settled in separate earthen settling basins within the CWTP footprint prior to the water overflowing into the main CWTP.

APS constructed the Bottom Ash Sluice Water Recycle (BASWR) Tank to replace the CWTP in 2020. The BASWR Tank is a concrete sedimentation tank constructed above grade that provides water quality treatment of bottom ash sluice water and low volume waste flows from the Plant before discharge through a dedicated NPDES outfall to the cooling water canal. The BASWR Tank is not a CCR unit under 40 CFR § 257.53 and is not a part of this inspection.

APS ceased discharging to the CWTP by November 23, 2020. To maintain the current phreatic regime in the embankment between the reservoir and the canal, and to continue providing water to the Navajo Mine, APS added a dual-walled 18-inch pressure pipe to pump water from the discharge canal into the CWTP reservoir. The pump system has level controls to keep the reservoir consistent. Based on the 2021 IDF update (AECOM 2021), the normal operating level is now at EL 5329.5 feet (NAVD88; EL 5326.488 feet NGVD29). The water in the CWTP was observed to be at EL 5326.35 feet (NGVD29) during the inspection, corresponding to 2′-5″ below the top of the stop logs at the spillway.

3.4 DRY FLY ASH DISPOSAL AREA (DFADA)

The DFADA is represented on Figure 4 – Dry Fly Ash Disposal Area (DFADA) (attached).

The DFADA is a lined landfill and dry fly ash disposal facility. The DFADA currently consists of four conjoined cells: Cells 1, 2, 3, and 4. Construction at the four Cells has been ongoing since 2007. The four DFADA cells have a maximum capacity of 10,153 acre-feet and an ultimate maximum height of approximately 105 feet. Cell 1 is constructed with an HDPE geomembrane overlying a compacted clay subgrade. Cells 2 and 3 are constructed with a geosynthetic clay liner (GCL) overlain by an HDPE geomembrane selected for general compliance with the EPA's *Guide for Industrial Waste Management* (EPA 2003). A drainage layer was installed over the HDPE geomembrane in all three cells as recommended in the EPA guidance. Cell 4 is underlain with an alternative composite liner that meets the requirements of 40 CFR § 257.70(c) and a leachate collection and removal system that meets the requirements of 40 CFR § 257.70(d). Each cell is connected to a leachate collection system designed to remove water from the storage area. The leachate collection system generally consists of a drainage layer, collection piping, a removal system, and a protective filter layer. Cell 4 is currently the primary ash disposal location.

3.5 RETURN WATER POND (RWP)

The RWP is represented on Figure 5 – Return Water Pond (RWP) (attached).

The RWP is an approximately 5.13-acre lined impoundment facility for the temporary storage of LAI/LDWP and Pond 3 pump house discharges. The RWP was constructed in 2019 and was placed into service as a CCR unit on October 20, 2020. It has a maximum storage capacity of 38.6 acre-feet (at EL 5379 feet). The CCR unit consists of two cells – the RWP cell and the FGD cell. The RWP piping allows the function of the two cells to be reversed based on operational requirements. The two cells are connected by an overflow weir in the Internal Embankment.

The pond is incised on the southwest and part of the southeast sides, while the remaining portion consists of a dike. The maximum free-standing embankment height is approximately 12 feet (in the north corner). The crest width is 20 feet and the crest length is approximately 2,067 feet. The embankment does not meet the criteria of a "jurisdictional dam" under 19.25.12.7D.(1) of the NMAC and is not regulated by NMOSE, but is classified as a "Low Hazard Potential CCR Surface Impoundment" under 40 CFR § 257.53. Inflow to the RWP is managed by four distinct pumping stations, which are manually operated by Plant personnel. Outflow from the RWP is managed by a dedicated pumping station, which is manually operated by Plant personnel. Water in the RWP is pumped back to the Plant and used as process make up water.

4.0 FIELD INSPECTIONS

This section contains the 2022 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 DFADA (Section 4.4), and the RWP (Section 4.5).

4.1 APS FIELD INSPECTION – LINED ASH IMPOUNDMENT (LAI)

<table>
<tr><td colspan="2">Lined Ash Impoundment (LAI)</td><td colspan="3">State Identification Number (SID): D-634</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: D-634</td><td>Dam Name: Lined Ash Impoundment (LAI)</td><td>Type: Zoned earth and ash fill with geomembrane</td><td colspan="2">Purpose: Fly ash and FGD sludge disposal</td></tr>
<tr><td colspan="2">Contact(s): Ray Markley, P.E. (Arizona) (APS)</td><td colspan="3">Report Date: January 19, 2023</td></tr>
<tr><td colspan="2">Inspected by: Ray Markley, P.E. (Arizona) (APS), Devin Flaherty (APS), Lee Wright, P.E. (AECOM)</td><td colspan="3">Inspection Date: October 20, 2022</td></tr>
<tr><td colspan="2">Reviewed by: Ray Markley, P.E. (Arizona) (APS) Alexander Gourlay, P.E. (AECOM)</td><td colspan="3">Review Date: January 18, 2023</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5,280 (West Embankment)</td><td colspan="3">Design Spillway Crest Elevation (ft): 5,277.84 (rim of 8-foot-diameter riser; no spillway)</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 4.8 (West Embankment)</td><td colspan="3">Measured Total Freeboard (ft): 17 (in the Southwest Corner)
0 (along parts of the Northwest and East Embankments)</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 107 (South Embankment)</td><td colspan="3">Structural Height (ft): 107 (South Embankment)</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Length (ft): 6,600</td><td rowspan="2">Upstream Slope:
3:1 (West Embankment)
2:1 (South Embankment)</td><td rowspan="2">Downstream Slope:
3:1 (West Embankment)
2:1 (South Embankment)</td></tr>
<tr></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Width (ft): 30 (West Embankment)
20 (South Embankment)</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): 126.8 (high water line)</td><td colspan="2">Reservoir Storage (ac-ft): 5,346 (high water line)
5,986 (maximum)</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): No water impounded</td><td rowspan="2">Photos: Yes. See Appendix A.</td><td rowspan="2">Pages: 5</td></tr>
<tr><td colspan="2">Estimated Solids Level (ft): EL 5263 (Southwest Corner)
EL 5288 (north V-ditch)
EL 5295 (old V-ditch)</td></tr>
</table>

Lined Ash Impoundment (LAI)			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: **See comment i.**		**X**		**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: **See comment i.**		**X**		**X**		
h	Date of current License:	**October 27, 2015**	Should new License be issued?		**X**				
i	Date of last Emergency Action Plan revision: **1/2020**		Should EAP be revised? **See comment ii.**		**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: **October 2023**								

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe:	**West Embankment** **1) Six clusters of three vibrating wire piezometers each (varying elevations),** **2) Four buried settlement rods to measure settlement at depth,** **3) Two inclinometers, and** **4) Two crest survey/settlement monuments.** **North Toe Buttress** **1) Eleven clusters of three vibrating wire piezometers and one cluster of two vibrating wire piezometers (varying elevations),** **2) Eight buried settlement rods to measure settlement at depth, and** **3) Three inclinometers.** **Other** **1) Permanent water elevation markers on the geomembrane liner at three locations within the impoundment.** **2) No inflow or outflow measurement devices.**							
b	Any repair or replacement required?	**Yes.**	Describe: **See comment iii.**			**X**		**X**	
c	Date of last monitoring report:	**January 2022 (for 2021)**	Should new readings be taken and new report provided? **Monthly measurement and annual reporting are required.**			**X**			

DAM EMBANKMENT CHECKLIST									
3	***DAM CREST***								
a	Settlements, slides, depressions?	**Ruts observed during the previous inspection in the South and East Embankment crests were not observed during this inspection, nor was the depression in the South Embankment crest. Shallow ruts were observed on the Northwest Embankment crest during this inspection (Photo IMG_4507). Drivers should be instructed to avoid traversing through muddy areas.**				**X**	**X**		
b	Misalignment?				**X**				
c	Longitudinal/Transverse cracking?	**Shallow holes were observed along the anchor trench on the East Embankment crest (Photos IMG_4559, IMG_4560, and IMG_4567).**				**X**	**X**		
d	Animal burrows?				**X**				
e	Adverse vegetation?				**X**				
f	Erosion?				**X**				

Lined Ash Impoundment (LAI)		SID: **D-634**	N/A	No	Yes	Mon	Rep	Inv
4	***UPSTREAM SLOPE***							
a	Erosion?			**X**				
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?			**X**				
d	Longitudinal/Transverse cracking?	**Could not observe due to the presence of the geomembrane liner.**	**X**					
e	Inadequate riprap?	**The upstream slope is covered with a geomembrane liner.**	**X**					
f	Liner damage?	**See comment iv.**			**X**		**X**	
g	Settlements, slides, depressions, bulges?	**See comment iv.**			**X**		**X**	
h	Animal burrows?			**X**				
5	***DOWNSTREAM SLOPE***							
a	Erosion?	**See comment v.**			**X**		**X**	
b	Inadequate ground cover?	**The LAI embankment slopes are faced with bottom ash that supports only sporadic and uneven vegetation. A lime-based, white- and turquoise-colored dust suppression agent is applied in accordance with the Plant's Dust Control Plan.**		**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?	**The DFADA Cell 3 lateral expansion has reached the same elevation as the South Embankment crest (See IMG_4412 and IMG_4436 in Appendix D).**		**X**				
j	Animal burrows?			**X**				
6	***ABUTMENT CONTACTS***							
a	Erosion?	**There is an erosion rill at the junction of the Northwest Embankment and the West Embankment (Photo IMG_4907).**			**X**		**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:	**A French drain, now buried, captured seepage from beneath the south toe. Except when bottom ash was being placed as the South Embankment was being raised, the French drain has rarely produced any measurable flow. There was no flow from the outlet at the time of inspection (Photo IMG_4709).**						
b	Internal drains flowing?	**See comment viii.**			**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?	**Sparse debris on top of the impounded ash.**		**X**				
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?			**X**				
g	Structures below dam crest elevation?	**Yes. See comment viii.**			**X**			

Additional comments and recommendations for the LAI:

i. APS reinstated the West Embankment crest to the design crest elevation (EL 5280 feet) in 2022 using bottom ash to ensure the LAI has sufficient capacity to retain the 72-hour PMP with 2.8 feet of residual freeboard as designed, Survey data from 2021 had indicated that the West Embankment crest settled and was approximately one foot lower than the design value of EL 5280 feet. Continue to monitor the embankments for settlement.

   CCR is impounded nearly up to the crest along some portions of the Northwest Embankment. APS has a diversion channel along the northern half of the Northwest Embankment (the Northwest Embankment crest elevation increases from southwest to northeast) to keep stormwater away from the crest. The LAI is sloped from the northeast to the southwest such that surface water should flow to the Southwest Corner where there is available capacity. The design surface flow regime should be maintained at all times.

ii. The EAP shall be reviewed annually as required under Section 19.25.12.18 of the New Mexico Administrative Code (NMAC). The EAP must be amended whenever there is a change in conditions that would substantially affect the EAP as required by 40 CFR § 257.73(a)(3)(ii)(A).

iii. In mid-September 2022, the vibrating wire piezometer data collection electronics began failing intermittently. As a result, no data was recorded during 20 of the 32 predetermined reading times between 9/14/2022 and 9/29/2022. APS is currently investigating the cause of the unrecorded data.

iv. There are several tears, cuts, and torn seams in the liner along the upstream slope. Two tears and all of the torn seams are on the South Embankment near the Southwest Corner (Photos IMG_4427, IMG_4429, IMG_4443, IMG_4444, IMG_4449, IMG_4450) appear to be due to tension in the liner as they occur along the horizontal seams associated with the last embankment raise. The torn seams were leaking water at the time of the inspection. This is likely the water trapped under the liner observed during previous inspections. The water should be removed and the tension tears should be repaired under the direction of the APS Geotechnical Engineer.

   One puncture in the liner was observed on the West Embankment (Photo IMG_4469) and additional tears were observed on the Northwest Embankment along the crest where temporary ash berms were placed to divert flow from the V-ditch (Photo IMG_4518). Repair documentation should be maintained with the operating record.

   There are tears in the exposed liner at the former cenosphere mining area. The working area for the cenosphere mining operation is built into the reservoir area and the mechanical damage is not affecting the integrity of the embankment (Photo IMG_4461). The area should be monitored.

   The protrusions in the liner observed during the 2021 inspection were not observed during this inspection. It was not clear if these had been repaired, covered with ash, or if the protrusions had sunk into the clay core. Ensure all repairs are documented and included in the operating record. Continue to monitor the liner for abnormalities and repair them under the direction of the APS geotechnical engineer.

v. Erosion on the West and Northwest Embankments observed during the 2021 inspection has been repaired. Additional erosion was observed on the East Embankment (Photos

IMG_4533 and IMG_4568) and along the downstream toe of the West Embankment (Photos IMG_4821, IMG_4822, IMG_4874, and IMG_4876). At the toe of the West Embankment, erosion tunnels were forming beneath the dust suppression agent applied on the slope. Repair all erosion that extends deeper than 1 foot.

vi. The North Toe Buttress (NTB) was constructed as part of the 5280 Lift of the LAI to provide additional stability in the northern portion of the West Embankment (Photo IMG_4489). The NTB did not have erosion rills deeper than 1 foot, a multitude of erosion rills or gullies, and no evidence of sloughs or slides were observed during the inspection. The NTB foundation instruments are discussed in Section 5.1.

vii. FGD, process water, and other CCR waste had been deposited into the LAI via a V-ditch on the north side of the CCR unit. APS ceased deposition in 2021 and has been draining the LAI by pumping water from the Southwest Corner (Photo IMG_4453) to the Drop Inlet Structure (Photo IMG_4477), which discharges the water into the LDWP.

During the final years of operation at the LAI, the properties of the FGD slurry being discharged caused the solids to drop out of suspension faster, creating a steeper beach slope than earlier fly ash/FGD mixtures. As a result, the northern portion of the reservoir filled faster than the southern portion. The ash level along the East Embankment near the old V-ditch (Photo IMG_4541) is higher than the East Embankment and APS constructed a bottom ash berm to keep the CCR waste inside the impoundment (Photos IMG_4534, IMG_4535, and IMG_4547). The ash level along the Northwest Embankment is at the crest elevation (Photos IMG_4490, IMG_4491, IMG_4505, IMG_4506, IMG_4507, IMG_4512, IMG_4517, IMG_4524, and IMG_4526); however, APS ceased discharge to the LAI on April 12, 2021.

viii. The primary outlet from the LAI is an 8-foot diameter vertical, perforated HDPE riser, referred to as the Drop Inlet Structure (Photo IMG_4477), connected at the bottom to 16-inch and 8-inch diameter HDPE gravity pipe outlets that drain into the LDWP. The Deadpool Sump, an 8-inch diameter HDPE perforated drain pipe, penetrates the Southwest Corner of the LAI embankment and discharges into the southeast corner of the LDWP.

Water was observed discharging into the LDWP from the LAI via the 8-inch pipe (Appendix B – LDWP Photo IMG_4830). The inspectors estimated approximately 23.5 gpm was flowing through the 8-inch pipe at the time of the inspection. The Deadpool Sump was discharging intermittently during the inspection.

ix. The weekly inspection reports for the period between October 1, 2021 and September 30, 2022 were reviewed and indicate the following:

a. Beginning with the September 7, 2021 inspection, APS indicated that there were signs of erosion on the downstream slope that required monitoring due to rainfall over the summer. These notations continued until November 12, 2021. During the annual inspection in October 2022, there was evidence that erosion had been repaired.

b. No weekly CCR inspection reports are available between 6/17/22 and 6/28/22.

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

<table>
<tr><td colspan="4">Lined Decant Water Pond (LDWP)</td><td colspan="4">State Identification Number (SID): D-635</td></tr>
<tr><td colspan="2">SID: D-635</td><td>Dam Name: Lined Decant Water Pond (LDWP)</td><td>Type: Zoned earth and ash fill with double-liner geomembrane and leak detection</td><td>Purpose: Store recycled LAI decant water and collected groundwater</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 colspan="3">Contact(s): Ray Markley, P.E. (Arizona) (APS)</td><td colspan="2">Report Date: January 19, 2023</td></tr>
<tr><td colspan="3">Inspected by: Ray Markley, P.E. (Arizona) (APS), Devin Flaherty (APS), Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: October 20, 2022</td></tr>
<tr><td colspan="3">Reviewed by: Ray Markley, P.E. (Arizona) (APS) Alexander Gourlay, P.E. (AECOM)</td><td colspan="2">Review Date: January 18, 2023</td></tr>
<tr><td colspan="3">Design Dam Crest Elevation (ft): 5,216</td><td colspan="2">Design Spillway Crest Elevation: No spillway</td></tr>
<tr><td colspan="3">Design Total Freeboard (ft): 2.8 (above the maximum surcharge level, EL 5213.2)</td><td colspan="2">Measured Total Freeboard (ft): 12.75</td></tr>
<tr><td colspan="3">Statutory Dam Height (ft): 16</td><td colspan="2">Structural Height (ft): 16</td></tr>
<tr><td colspan="3">Dam Crest Length (ft): 5,488</td><td>Upstream Slope: 3:1</td><td>Downstream Slope: 2:1</td></tr>
<tr><td colspan="3" rowspan="2">Dam Crest Width (ft): 30 feet (North, East Embankments) 20 feet (West, South Embankments)</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="3">Reservoir Area (acres): 45.4 (at EL 5213.2 ft) per APS drawing 150793.2.1</td><td colspan="2">Reservoir Storage (ac-ft): 435 (normal operating capacity)</td></tr>
<tr><td colspan="5">Inflow Design Flood/Safe Flood-Passing Capacity: PMF – fully contained</td></tr>
<tr><td colspan="3">Reservoir Level During Inspection (ft): EL 5203.25</td><td rowspan="2">Photos: Yes. See Appendix B.</td><td rowspan="2">Pages: 4</td></tr>
<tr><td colspan="3">Estimated Solids Level (ft): N/A (the LDWP does not impound a significant volume of solids)</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: **1/2020**		Should EAP be revised? **See comment i.**		**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: **October 2023**								

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe:	**Instrumentation:** **1) Eight standpipe piezometers.** **2) Two crest survey/settlement monuments.** **Other** **1) Interstitial geomembrane leak detection and evacuation pump.** **2) Surveyed level markings on geomembrane liner.** **3) No inflow measurement devices.** **4) Outflow estimation by LDWP pump rating/hours of operation, if needed.**						
b	Any repair or replacement required?	**No.**	Describe:		**X**				
c	Date of last monitoring report:	**January 2022 (for 2021)**	Should new readings be taken and new report provided? **Monthly measurement and annual reporting are required.**			**X**			

DAM EMBANKMENT CHECKLIST								
3	***DAM CREST***							
a	Settlements, slides, depressions?	**See comment ii.**			**X**		**X**	
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking?			**X**				
d	Animal burrows?			**X**				
e	Adverse vegetation?			**X**				
f	Erosion?	**The erosion observed on the East Embankment crest near the suction intake lines observed during the 2021 inspection was not present during this inspection.**		**X**				
4	***UPSTREAM SLOPE***							
a	Erosion?	**The upstream slope is covered with geomembrane.**		**X**				
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?			**X**				
d	Longitudinal/Transverse cracking?	**Could not observe due to the presence of the geomembrane liner.**	**X**					
e	Inadequate riprap?		**X**					
f	Liner damage?	**See comment iii.**			**X**		**X**	
g	Settlements, slides, depressions, bulges?			**X**				
h	Animal burrows?			**X**				

Lined Decant Water Pond (LDWP)		SID: **D-635**	N/A	No	Yes	Mon	Rep	Inv
5	***DOWNSTREAM SLOPE***							
a	Erosion?	**Minor erosion rills were observed on downstream slopes of the North, South, and West Embankments (Photos IMG_4751, IMG_4760, IMG_4772, IMG_4888). These should be repaired when they exceed 1 foot in depth.**			**X**	**X**		
b	Inadequate ground cover?	**The downstream embankment slopes are faced with bottom ash that supports only sporadic and uneven vegetation. A lime-based, white- and turquoise-colored dust suppression agent is applied in accordance with the Plant's Dust Control Plan.**		**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***							
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:	**The 8-inch inflow pipe through the East Embankment was conveying water from the LAI to the LDWP at the time of the inspection. Water was not flowing in the 16-inch pipe at the time of the inspection. The Deadpool Sump was flowing intermittently at the time of the inspection.**			**X**	**X**		
b	Internal drains flowing?	**The leakage collection and evacuation system Interstitial Evacuation Pump was operating intermittently during the inspection (Photo IMG_4766). The pump is susceptible to corrosion due to the chemical makeup of the impounded water; the auxiliary operators monitor this pump as part of their daily inspection and replace it when necessary.**			**X**	**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?	**Minor amounts of suspended FGD solids and fly ash settle in the impoundment. These have become more prominent as the reservoir level has declined.**			**X**			
d	Floating debris present?	**Two whalebacks observed on the north side of the reservoir during the 2021 inspection were present during this inspection, but were deflated (Photos IMG_4816 and IMG_4817).**			**X**			
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?			**X**				
g	Structures below dam crest elevation?	**The interstitial geomembrane leak detection and evacuation pump system includes a pump situated between the two geomembrane liners. See comment iv.**			**X**			

Additional comments and recommendations for the LDWP:

i. The EAP shall be reviewed annually as required under Section 19.25.12.18 of the New Mexico Administrative Code (NMAC). The EAP must be amended whenever there is a change in conditions that would substantially affect the EAP as required by 40 CFR § 257.73(a)(3)(ii)(A).

ii. A rut was observed on the upstream half of the South Embankment crest (Photo IMG_4752). The area should be repaired before the liner is damaged or the rut extends further.

iii. The two sheets of liner observed to be separated along the North Embankment during the 2020 inspection (2020 Photo IMG_3619) and 2021 inspection were present during this inspection. In addition, the hole in the liner observed during the 2019 inspection is still present (Photo IMG_4810).

iv. The LDWP interstitial geomembrane leak detection and evacuation pump was powered, but not observed to be pumping water at the time of the inspection. Commercially available submersible pumps break down on a regular basis due to the water chemistry in the LDWP. APS has determined that regularly replacing the pumps is more economical and feasible than temporarily decommissioning the entire pond and constructing a different access port configuration. Since the pump is replaced on a regular basis, the Plant should maintain an inventory of spares, monitor the system, and replace the pump when it is degraded.

v. The liner was observed to be pulling out of the anchor trench in isolated areas along the West and East Embankments (Photo IMG_4790). The magnitude of pullout does not appear to have changed compared to the 2017, 2018, 2019, 2020, and 2021 inspections. Continue to monitor.

vi. Portions of the outer pipes for the siphon lines are exposed along the East Embankment crest (Photo IMG_4861). Additional fill should be placed and compacted in these areas to prevent damage to the pipes.

The exposed liner at the edge of the anchor trench near the midpoint of the East Embankment observed during the 2021 inspection was not observed during this inspection.

vii. With the RWP now operational, APS has primarily used the LDWP to store and evaporate water decanted from the LAI throughout the current review period. Since the LAI no longer receives inflow from the Plant, the LDWP is nearly empty.

viii. The sign identifying the CCR unit fell down (Photo IMG_4805). The sign should be re-erected.

ix. The weekly inspection reports for the period between October 1, 2021 and September 30, 2022 were reviewed and indicate the following:

a. Beginning with the September 3, 2021 inspection, APS indicated that there were signs of erosion on the downstream slope that required monitoring due to rainfall over the summer. These notations continued until November 12, 2021. During the annual inspection in October 2022, there was evidence that erosion had been repaired.

b. No weekly CCR inspection reports are available between 6/17/22 and 6/28/22.

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

<table>
<tr><td colspan="3">Combined Waste Treatment Pond (CWTP)</td><td colspan="2">State Identification Number (SID): N/A</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: N/A</td><td>Dam Name: Combined Waste Treatment Pond (CWTP)</td><td>Type: Earth</td><td>Purpose: CCR-transport surface water collection</td></tr>
<tr><td colspan="2">Contact(s): Ray Markley, P.E. (Arizona) (APS)</td><td colspan="2">Report Date: January 19, 2023</td></tr>
<tr><td colspan="2">Inspected by: Ray Markley, P.E. (Arizona) (APS), Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: October 19, 2022</td></tr>
<tr><td colspan="2">Reviewed by: Ray Markley, P.E. (Arizona) (APS) Alexander Gourlay, P.E. (AECOM)</td><td colspan="2">Review Date: January 18, 2023</td></tr>
<tr><td colspan="2">Design Dam Crest Elevation (ft): 5,335</td><td colspan="2">Design Spillway Crest Elevation (ft): 5,328.77</td></tr>
<tr><td colspan="2">Design Total Freeboard (ft): 7</td><td colspan="2">Measured Total Freeboard (ft): 8.65</td></tr>
<tr><td colspan="2">Statutory Dam Height (ft): 32 (max), 22.81 (avg)</td><td colspan="2">Structural Height (ft): 32 (max), 22.81 (avg)</td></tr>
<tr><td colspan="2">Dam Crest Length (ft): 1,800</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): 24-30</td><td>Lat: 34° 41′ 29.19″N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 108° 28′ 28.73″W</td></tr>
<tr><td colspan="2">Reservoir Area (acres): 13.4 (7.5 acres for reservoir, 5.9 acres for decant cells)</td><td colspan="2">Reservoir Storage (ac-ft): 137 (27 additional ac-ft for stormwater storage)</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): EL 5326.35 (NGVD29) (currently level-controlled)</td><td rowspan="2">Photos: Yes. See Appendix C.</td><td rowspan="2">Pages: 5</td></tr>
<tr><td colspan="2">Estimated Solids Level (ft): Variable (below EL 5325.22)</td></tr>
</table>

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: **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: **See comment i.**		**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: **October 2023**							

		MONITORING CHECKLIST						
2	***INSTRUMENTATION AND MONITORING***							
a	Describe: **There are four monitoring wells for this structure to comply with groundwater monitoring requirements.**							
b	Any repair or replacement required? **N/A**	Describe: **N/A**	**X**					
c	Date of last monitoring report: **January 2022 (for 2021)**	Should new readings be taken and new report provided? **Annual reporting is required.**			**X**			

		DAM EMBANKMENT CHECKLIST						
3	***DAM CREST***							
a	Settlements, slides, depressions? **See comment ii.**				**X**		**X**	**X**
b	Misalignment?			**X**				
c	Longitudinal/Transverse cracking? **See comment iii.**			**X**		**X**		
d	Animal burrows? **Ant hills were observed (example Photos IMG_4001 and IMG_4045).**				**X**	**X**		
e	Adverse vegetation?			**X**				
f	Erosion? **Two small erosion holes (Photo IMG_4021) were observed on the downstream shoulder of the East Embankment crest in separate locations. Loose soil (IMG_4030) was observed in the vicinity of the 7-inch-deep erosion hole observed during the 2021 inspection (2021 Photo IMG_8359).**				**X**	**X**		
4	***UPSTREAM SLOPE***							
a	Erosion? **See comment iv.**				**X**	**X**		
b	Inadequate ground cover?			**X**				
c	Adverse vegetation? **See comment v.**				**X**		**X**	
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap? **No riprap was observed above the water line on the upstream slope.**				**X**			
f	Stone deterioration?		**X**					
g	Settlements, slides, depressions, bulges? **Portions of the slope are steeper than others.**				**X**	**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?	**See comment vi.**			**X**	**X**	**X**	
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?	**See comment v.**			**X**	**X**		
d	Longitudinal/Transverse cracking?	**See comment vii.**			**X**	**X**	**X**	**X**
e	Inadequate riprap?	**See comment viii.**		**X**				
f	Stone deterioration?			**X**				
g	Settlements, slides, depressions, bulges?	**Portions of the downstream slope are uneven (Photo IMG_4008).**			**X**	**X**		
h	Soft spots or boggy areas?	**There is water on both sides of the embankment.**	**X**					
i	Movement at or beyond toe?	**Cannot observe.**	**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?	**Cannot observe.**	**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?	**See comment ix.**			**X**			
d	Floating debris present?			**X**				
e	Depressions, sinkholes, or vortices?			**X**				
f	Low ridges/saddles allowing overflow?	**A weir allowed overflow into the NPDES outlet.**			**X**			
g	Structures below dam crest elevation?	**Twin 30-inch reinforced concrete pipe outlets are located at the eastern side of the CWTP.**			**X**			

Additional comments and recommendations for the CWTP:

i. As part of the 2021 IDF update (AECOM 2021), the normal operating level was revised and is now at EL 5329.5 feet (NAVD88; EL 5326.488 feet NGVD29). The water in the CWTP was observed to be at EL 5326.35 feet (NGVD29) during the inspection, approximately 0.138 feet below the new normal operating level. The purpose of reducing the normal operating level was to prevent discharge from the CWTP through the NPDES discharge point without the stop logs in place. APS has installed blockages (e.g., "pigs") in each conduit to prevent flow into the canal in the event the stop logs are overtopped.

ii. The upstream edge of the crest near where the tension crack observed during the 2020 inspection appeared to be loose and weak over a distance of approximately 6 feet (Photo IMG_4030); however, no crack was observed during this inspection (Photo IMG_4056). Investigate the cause of the weak soil on the crest and repair this section of the crest.

    A set of shallow holes was observed on the downstream shoulder of the North Embankment near the 18-inch pipe that transfers water from the canal to the CWTP (Photos IMG_3998 and IMG_4002) in the vicinity of a set of shallow depressions observed during the 2021 inspection (2021 Photo IMG_8448). This area should be regraded and repaired.

    Two erosion holes up to 9 inches deep were observed on the crest along the curved section of the embankment (Photo IMG_4016). These should be monitored and repaired if they are observed to expand.

iii. A zone of loose material was observed on the upstream half of the crest near the historic location of an 11.5-foot-long tension crack (Photo IMG_4056). The tension crack was not observed during this inspection, but it is likely related to the presence of the loose material. This area should be regraded and repaired.

iv. Erosion rills were observed at various locations along the upstream slope (Photos IMG_3997 and IMG_4091). Repair erosion when it exceeds 1 foot in depth.

v. Vegetation (grass, small trees, and shrubs) was observed on portions of the upstream (Photos IMG_4015, IMG_4018, IMG_4041) and downstream (Photos IMG_3994, IMG_4009, IMG_4085, and IMG_4087) slopes during this inspection. These grasses have grown substantially over the last few years and the upstream slope is obscured in these areas. The grasses should be cut. The woody vegetation on the upstream slope should be removed using the NMOSE vegetation management guidelines (NMOSE 2011); roots should be removed in their entirety and the area should be backfilled with compacted structural fill under the supervision of a geotechnical engineer.

vi. Instances of minor erosion were observed on the downstream slope (Photos IMG_4006, IMG_4007, IMG_4017, IMG_4061, IMG_4080, and IMG_4087). Some of the erosion is undermining riprap boulders, which could accelerate the erosion process if the boulders fall off the slope. Continue to monitor the shallow erosion and repair erosion rills if they exceed 1 foot in depth. Erosion under the riprap boulders should be repaired.

vii. The 1-foot-deep longitudinal crack where a riprap boulder was separating from the rest of the slope (2021 Photo IMG_3258) was not observed during this inspection. The slope in the vicinity of the 2021 picture appeared to be more eroded than previous years (Photo IMG_4072). It is possible that the riprap boulder has been dislodged.

The 11.5-foot-long crack first observed on the downstream slope during the 2018 and 2020 inspections (2018 Photo IMG_0933; 2020 Photo IMG_3272) was not observed during this inspection (Photo IMG_4030). Soil in the area near the crack was observed to be loose during this inspection.

viii. APS installed additional riprap on the downstream slope of the embankment in August 2017 to prevent wave erosion along the slope. The additional riprap was placed from approximately 5 feet below the canal water surface to approximately 2 feet above the canal water surface.

ix. The facility includes seven decant cells and one forebay cell in the western half of the CWTP. When the CWTP was in use, flow from the collection distribution vault was directed to the selected cells. Settled solids were periodically removed and decanted water flowed to the CWTP free water pond. Suspended sediment and CCR settled in the decant cells in the western half of the impoundment. During 2022, APS has been preparing the CWTP for closure. The water levels in the decant cells are receding and the corrugated metal pipes (CMPs) formerly used to transfer water from the decant cells to the CWTP reservoir have been removed (Photo IMG_4106). APS intends to begin dredging CCR from the CWTP in late 2022, continuing through 2023.

x. In 2020, APS installed a new 18-inch dual-wall pressure pipe to pump water from the discharge canal to the CWTP. The pipe allows APS to maintain the phreatic level in the embankment and reservoir as the CWTP no longer receives inflow from the Plant, but some water from the reservoir is provided to the nearby Navajo Mine. The pipe is located on the downstream edge of the embankment and is buried where it crosses the crest and enters the reservoir (Photos IMG_3990, IMG_3993, and IMG_3997). The pipe is surrounded with controlled low strength material (CLSM) flowable fill where it is buried in the embankment.

xi. As part of the closure-by-removal (40 C.F.R. § 257.102(c)) activities, APS's dredging contractor performed a bathymetry survey in the CWTP. The preliminary results of this survey dated November 15, 2022 indicate the bottom of the CWTP reservoir varied between EL 5319 feet and EL 5328 feet (NAVD88; EL 5315.988 feet and EL 5324.988 feet NGVD29).

xii. The weekly inspection reports for the period between October 1, 2021 and September 30, 2022 were reviewed and indicate the following:

    a. The October 5, 2021 inspection indicated that there were signs of erosion on the downstream slope that required monitoring. During the 2021 annual inspection, APS personnel reported that there was a storm event in September 2021 that resulted in areas of new erosion throughout the Plant site.

    b. No weekly CCR inspection reports are available between 6/17/22 and 6/28/22.

4.4 APS FIELD INSPECTION – DRY FLY ASH DISPOSAL AREA (DFADA)

<table>
<tr><td colspan="3">Dry Fly Ash Disposal Area (DFADA)</td><td colspan="3">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: Dry Fly Ash Disposal Area (Cells 1, 2, 3, and 4)</td><td>Type: Lined Landfill</td><td colspan="2">Purpose: Permanent storage of dry CCR (fly ash, bottom ash, dry FGD solids) and select construction debris (e.g. concrete and wood)</td></tr>
<tr><td colspan="2">Contact(s): Ray Markley, P.E. (Arizona) (APS)</td><td colspan="3">Report Date: January 19, 2023</td></tr>
<tr><td colspan="2">Inspected by: Ray Markley, P.E. (Arizona) (APS), Devin Flaherty (APS), Lee Wright, P.E. (AECOM)</td><td colspan="3">Inspection Date: October 20, 2022</td></tr>
<tr><td colspan="2">Reviewed by: Ray Markley, P.E. (Arizona) (APS) Alexander Gourlay, P.E. (AECOM)</td><td colspan="3">Review Date: January 18, 2023</td></tr>
<tr><td colspan="2">Design Maximum Ash Elevation (ft): 5,295</td><td colspan="3">Current Maximum Ash Elevation (ft):
Based on survey data from FHI:
Cell 1 is EL 5291 feet (October 2022)
Cell 2 is EL 5280.5 feet (October 2022)
Cell 3 is EL 5282 feet (October 2022)
Cell 4 is EL 5200 feet (October 2022)</td></tr>
<tr><td colspan="2" rowspan="2">Dam Crest Length (ft): Not applicable</td><td>Design Side Slope: Varies. 4:1 on final outside slopes, 2:1 on internal slopes.</td><td colspan="2">Observed Side Slope: Varies. 4:1 on final outside slopes, 2:1 on internal slopes.</td></tr>
<tr><td rowspan="2">Lat: 36°40'43.27"N
Long: 108°30'12.2"W</td><td colspan="2" rowspan="2">Water Rights: N/A</td></tr>
<tr><td colspan="2">Dam Crest Width (ft): Not applicable</td></tr>
<tr><td colspan="2">Landfill Area (acres): 135 (Current, Cells 1, 2, 3, and 4)</td><td colspan="3">Landfill Capacity (ac-ft): 10,153 for Cells 1, 2, 3, and 4</td></tr>
<tr><td colspan="5">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">Photos: Yes. See Appendix D.</td><td colspan="3">Pages: 3</td></tr>
</table>

Dry Fly Ash Disposal Area (DFADA)		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 monitoring report:	**January 2022 (for 2021)**	Should new readings be taken and new report provided? **Annual reporting is required.**			**X**			
2	***CONDITION SUMMARY***								
a	Waste placed in good practices?	**See comment i.**				**X**			
3	***LANDFILL CONFIGURATION***								
a	Settlements, slides, slope instability?				**X**				
b	Cracking?				**X**				
c	Run on control?	**See comment ii.**				**X**	**X**	**X**	
d	Run off control?					**X**			
e	Erosion?	**See comment ii.**				**X**	**X**		
f	Dust control issues?	**See comment iii.**				**X**			

Additional comments and recommendations for the DFADA:

i. Filter bags and other CCR-related debris are disposed of in Cell 2. Non-ash material should be separated from ash material as best as possible and placed in a designated location within the CCR unit.

ii. There is erosion in the Stormwater Diversion Channel extension constructed as part of the Cell 4 expansion where the previous alignment terminated (Photo IMG_4587). This area should be monitored and repaired as needed before sediment builds up in the new stilling basin (Photo IMG_4603). Additional erosion (headcutting) in the Stormwater Diversion Channel was observed at the entrance near the ash haul road (Photo IMG_4735) and the new outlet (Photos IMG_4631 and IMG_4636). Repair erosion gullies when they exceed 1 foot in depth.

iii. A dust cloud was observed emanating from the DFADA during the LAI inspection (Photo IMG_4523). It was not clear how the dust cloud was generated or where it originated within the DFADA. Equipment operators should be instructed to ensure the materials are being placed in compliance with APS's CCR Dust Control Plan.

iv. APS has brought the height of Cell 3 to approximately the same elevation as the South Embankment of the LAI and Cell 1 (Photos IMG_4412, IMG_4436, IMG_4456, and IMG_4755). Currently, the primary ash placement location is in Cell 4 (Photo IMG_4625). APS places CCR in the cell, spreads it into thin lifts, and compacts it using a smooth-drum roller pulled behind a tractor.

v. There are no external runoff collection ditches. Internal drain systems report to one of three separate lined leachate collection ponds for Cells 1, 2, and 4 (Photo IMG_4456). Cell 3 drains to the Cell 1 collection pond. The water levels in these three ponds are maintained by the ash haul contractor by use of a mobile suction pump. This water is used for dust control on site.

vi. Reeds and grasses have colonized the DFADA Cell 1 leachate collection pond (Photos IMG_4661, IMG_4674, and IMG_4687) and the western toe of Cell 1 (Photos IMG_4656,

IMG_4658, and IMG_4662). The drainage channel to the Cell 1 leachate collection pond has become clogged with sediment and vegetation to the point that leachate drains into the pond from Cell 1 in other locations (Photo IMG_4664). The leachate collection ponds are designed to contain the 25-year, 24-hour design storm event (URS 2015). The reeds should be removed to ensure the pond has sufficient capacity.

vii. The Cell 4 leachate collection pond was empty at the time of the inspection. FCPP personnel reported that the pond was typically empty. The pond accumulated stormwater runoff *before* the Cell had started to receive CCR. The presence or absence of water, and the water level in the leachate collection pond, should be monitored as part of the weekly inspections. Any unusual occurrences (i.e., a sudden increase in flow) should be reported to the APS Geotechnical Engineer immediately.

viii. The weekly inspection reports for the period between October 1, 2021 and September 30, 2022 were reviewed and indicate the following:

   a. No weekly CCR inspection reports are available between 6/17/22 and 6/28/22.

   b. There were no indications of any actual or potential structural weakness, nor other conditions which have the potential to disrupt the operation or safety of the CCR unit.

4.5 APS FIELD INSPECTION – RETURN WATER POND (RWP)

<table>
<tr><td colspan="4">Return Water Pond (RWP)</td><td colspan="4">State Identification Number (SID): N/A</td></tr>
<tr><td colspan="2">SID: N/A</td><td>Dam Name: Return Water Pond (RWP)</td><td>Type: Earth</td><td>Purpose: Temporary water storage</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 colspan="3">Contact(s): Ray Markley, P.E. (Arizona) (APS)</td><td colspan="2">Report Date: January 19, 2023</td></tr>
<tr><td colspan="3">Inspected by: Ray Markley, P.E. (Arizona) (APS), Lee Wright, P.E. (AECOM)</td><td colspan="2">Inspection Date: October 19, 2022</td></tr>
<tr><td colspan="3">Reviewed by: Ray Markley, P.E. (Arizona) (APS) Alexander Gourlay, P.E. (AECOM)</td><td colspan="2">Review Date: January 18, 2023</td></tr>
<tr><td colspan="3">Design Dam Crest Elevation (ft): 5,381.1</td><td colspan="2">Design Spillway Crest Elevation (ft): None</td></tr>
<tr><td colspan="3">Design Total Freeboard (ft): 2.1</td><td colspan="2">Measured Total Freeboard (ft): 8.42 feet (RWP cell); 5.54 feet (FGD cell)</td></tr>
<tr><td colspan="3">Statutory Dam Height (ft): 12 (max)</td><td colspan="2">Structural Height (ft): 12 (max, north side)</td></tr>
<tr><td colspan="3">Dam Crest Length (ft): 2,067</td><td>Upstream Slope: 3:1</td><td>Downstream Slope: 3:1</td></tr>
<tr><td colspan="3" rowspan="2">Dam Crest Width (ft): 20</td><td>Lat: 36° 41′ 04.35″N</td><td rowspan="2">Water Rights: N/A</td></tr>
<tr><td>Long: 108° 29′ 30.09″W</td></tr>
<tr><td colspan="3">Reservoir Area (acres): 5.13</td><td colspan="2">Reservoir Storage (ac-ft): 38.6 (maximum storage capacity at EL 5379 feet)</td></tr>
<tr><td colspan="5">Inflow Design Flood/Safe Flood-Passing Capacity: Not Calculated</td></tr>
<tr><td colspan="3">Reservoir Level During Inspection (ft): EL 5372.68 (RWP cell); EL 5375.56 (FGD cell)</td><td rowspan="2">Photos: Yes. See Appendix E.</td><td rowspan="2">Pages: 5</td></tr>
<tr><td colspan="3">Estimated Solids Level (ft): The RWP is designed to impound water and does not specifically receive solid waste streams.</td></tr>
</table>

Return Water Pond (RWP)			SID: N/A	N/A	No	Yes	Mon	Rep	Inv
COMPLIANCE CHECKLIST									
1	***CONDITION SUMMARY, LICENSE, EAP, NEXT INSPECTION***								
a	Recorded downstream hazard:	**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:	**Non-Jurisdictional**	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: **October 2023**								

MONITORING CHECKLIST									
2	***INSTRUMENTATION AND MONITORING***								
a	Describe: **There are three monitoring wells on the northern side of this structure to comply with groundwater monitoring requirements.**								
b	Any repair or replacement required? **N/A**		Describe: **N/A**	**X**					
c	Date of last monitoring report:	**January 2022 (for 2021)**	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?	**Some vegetation is beginning to grow in the anchor trenches and near bollards. Continue to monitor.**		**X**		**X**		
f	Erosion?	**See comment i.**			**X**	**X**		
4	***UPSTREAM SLOPE***							
a	Erosion?	**The upstream slope is covered with geomembrane.**		**X**				
b	Inadequate ground cover?			**X**				
c	Adverse vegetation?			**X**				
d	Longitudinal/Transverse cracking?			**X**				
e	Inadequate riprap?			**X**				
f	Liner damage?			**X**				
g	Settlements, slides, depressions, bulges?	**The liner anchor trench appeared to be disturbed in the north corner (Photo IMG_4315) and along the Northeast Embankment (Photo IMG_4324). Continue to monitor these areas and repair the liner/trench if the disturbance begins to affect the embankment.**			**X**	**X**		
h	Animal burrows?			**X**				

Return Water Pond (RWP)	SID: N/A	N/A	No	Yes	Mon	Rep	Inv
5	***DOWNSTREAM SLOPE***						
a	Erosion?		**X**				
b	Inadequate ground cover?		**X**				
c	Adverse vegetation? **Some vegetation is beginning to grow on the slope. Continue to monitor.**		**X**		**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? **See comment ii.**			**X**	**X**		
d	Settlements, slides, depressions, bulges?		**X**				
e	Seepage?		**X**				
f	Animal burrows?		**X**				
7	***SEEPAGE/PIPING CONTROL DESIGN FEATURE(S)***						
a	Describe: **The RWP features a leachate collection and recovery system (LCRS) between the primary and secondary 60 mil HDPE liners designed to collect impounded water that leaks through the primary HDPE liner before it leaks through the secondary HDPE liner and into the ground. The LCRS riser pipes are positioned at the lowest points of the RWP and FGD cells. RWP Pump 001 was not on during the inspection. RWP Pump 002 was set to "hand operation" during the inspection. RWP Pumps 003 and 004 were not on during the 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? **The majority of sediment in the pond appears to consist of organic debris blown into the cells by the wind.**			**X**			
d	Floating debris present?		**X**				
e	Depressions, sinkholes, or vortices?		**X**				
f	Low ridges/saddles allowing overflow? **An overflow weir at EL 5379 feet along the crest of the Internal Embankment connects the RWP cell to the FGD cell.**			**X**			
g	Structures below dam crest elevation?		**X**				

Additional comments and recommendations for the RWP:

i. The shallow holes observed in the anchor trench along the Northeast Embankment during the 2021 inspection appear to have developed into a shallow erosion feature (Photo IMG_4323). Continue to monitor and repair erosion if it exceeds 1 foot in depth.

ii. Tension cracks were observed on the slope of the incised drainage ditch along the western corner of the pond downstream of the FGD cell during the 2021 inspection. Smaller cracks were observed in the same general area during the 2022 inspection (Photo IMG_4356). The cracks are not in the RWP embankment, but this area should be monitored for sloughs that could impede the drainage characteristics in the western corner (see comment iii below).

iii. The downstream drainage ditch on the western corner of the RWP appears to be filling with sediment to the extent that the drain pipe under the entrance road is almost completely blocked (Photos IMG_4357 and IMG_4358). The drainage characteristics of the RWP are designed such that all runoff from upstream tributary basins is diverted around the surface impoundment (APS 2020b). The drainage ditch should be cleared so that the design run-on cannot overtop the ditch and enter the RWP.

iv. The bottom of the RWP and FGD cells is below the original ground surface. The RWP consists of a homogenous, rectangular, diked embankment constructed using weathered shale and sandstone excavated from the site's footprint and broken down into sand and clay.

v. The RWP liner system consists of a primary 60-mil HDPE geomembrane liner, a drainage geonet, a secondary 60-mil HDPE geomembrane liner, a geosynthetic clay liner (GCL), and a prepared subgrade that was scarified, proof-rolled, and compacted prior to construction (AECOM 2020).

vi. The RWP is sized to contain the 100-year, 24-hour rain event. It has 4.6 acre-feet of deadpool storage to EL 5370.55 feet and 28.1 acre-feet of operational and outage storage to EL 5379.00 feet. The remaining 2.1 feet (to the crest at EL 5381.10 feet) is reserved for storage of the 100-year, 24-hour rainfall event. There are no water bodies directly downstream of the RWP (AECOM 2020).

vii. The two Flowserve horizontal base-mounted pumps at the downstream toe of the Northwest Embankment were both subject to work requests at the time of the 2021 inspection. The pumps appeared to have been repaired and were functioning properly during the 2022 inspection.

viii. The access gate at the southern entrance to the RWP has been repaired (Photo IMG_4345). The gate was closed at the time of the 2022 inspection.

ix. The volume of impounded water in the RWP and FGD cells has decreased significantly since the 2021 inspection when both cells were observed to be near full capacity. The impounded water level in both cells should be kept below EL 5372.2 feet to provide sufficient volume for outage storage up to EL 5379 feet as designed.

x. The weekly inspection reports for the period between October 1, 2021 and September 30, 2022 were reviewed and indicate the following:

   a. Water levels were noted as being "excessive" and requiring monitoring on October 1, 2021. Subsequent weekly inspections did not indicate action was required to be taken. The RWP was observed to be near full capacity during the 2021 inspection. APS began reducing the impounded volume in late 2021 and the water levels in both cells were significantly lower during the 2022 inspection.

   b. The October 5, 2021 inspection indicated that there were signs of erosion on the downstream slope that required monitoring. During the 2021 annual inspection, APS personnel reported that there was a storm event in September 2021 that resulted in areas of new erosion throughout the Plant site. Subsequent weekly inspections did not indicate action was required to be taken. During the 2022 annual inspection, there did not appear to be instances of erosion that would disrupt the operation or safety of the CCR unit.

   c. No weekly CCR inspection reports are available between 6/17/22 and 6/28/22.

   d. There were no indications of any actual or potential structural weakness, nor other conditions which have the potential to disrupt the operation or safety of the CCR unit.

5.0 DATA REVIEW

5.1 LINED ASH IMPOUNDMENT

5.1.1 Geometry Changes Since Last Inspection

APS placed approximately 1 foot of bottom ash fill on the West Embankment crest to bring it to EL 5280 feet after a 2021 topographic survey indicated that the West Embankment had settled approximately one foot. The configuration of the LAI embankment is unchanged.

During the 2021 inspection, APS was in the process of removing water impounded in the Southwest Corner via a pump and piping system that was discharging to the Drop Inlet Structure. The impounded water had been removed by February 2022 and the only discharge observed from the Drop Inlet Structure into the LDWP was from interstitial water within the impounded ash.

5.1.2 Instrumentation

The locations 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 recorded readings for each instrument over the October 1, 2021 – September 30, 2022 (current) review period are reported in the following table:

Instrument Name	Minimum	Maximum	Unit
LAI Piezometers (10/1/21 to 9/30/22)			
P-7.1	5196.87[1]	5196.87[1]	Water Elevation (ft)
P-7.2	5191.35[1]	5191.35[1]	Water Elevation (ft)
P-7.3	5184.75[1]	5184.75[1]	Water Elevation (ft)
P-8.1	5196.60[1]	5196.60[1]	Water Elevation (ft)
P-8.2	5182.10[1]	5182.10[1]	Water Elevation (ft)
P-8.3	5174.10[1]	5174.10[1]	Water Elevation (ft)
P-9.1	5196.87[1]	5196.87[1]	Water Elevation (ft)
P-9.2	5183.97[1]	5183.97[1]	Water Elevation (ft)
P-9.3	5170.87[1]	5170.87[1]	Water Elevation (ft)
P-10.1	5198.22[1]	5198.22[1]	Water Elevation (ft)
P-10.2	5184.22[1]	5184.22[1]	Water Elevation (ft)
P-10.3	5173.72[1]	5173.72[1]	Water Elevation (ft)
P-11.1	5200.89	5201.95	Water Elevation (ft)
P-11.2	5189.65[1]	5189.65[1]	Water Elevation (ft)
P-11.3	5174.65[1]	5174.65[1]	Water Elevation (ft)
P-12.1	5202.54[1]	5202.54[1]	Water Elevation (ft)
P-12.2	5186.54[1]	5186.54[1]	Water Elevation (ft)
P-12.3	5176.54[1]	5176.54[1]	Water Elevation (ft)
[1] Porewater pressure measurements are negative (draining condition). The reported elevation is for the tip of the instrument.			

Instrument Name	Minimum	Maximum	Unit
NTB Piezometers (10/1/21 to 9/30/22)			
P-100.1	5202.06[1]	5202.06[1]	Water Elevation (ft)
P-100.2	5190.06[1]	5190.06[1]	Water Elevation (ft)
P-100.3	5183.23[1]	5183.23[1]	Water Elevation (ft)
P-101.1	5185.93[1]	5186.19	Water Elevation (ft)
P-101.2	5178.32	5179.36	Water Elevation (ft)
P-101.3	5166.61	5168.02	Water Elevation (ft)
P-102.1	5188.85[1]	5188.85[1]	Water Elevation (ft)
P-102.2	5174.60[1]	5174.60[1]	Water Elevation (ft)
P-102.3	5169.25	5169.70	Water Elevation (ft)
P-103.1	5185.91[1]	5185.91[1]	Water Elevation (ft)
P-103.2	5170.91[1]	5170.91[1]	Water Elevation (ft)
P-103.3	5160.24[1]	5160.24[1]	Water Elevation (ft)
P-104.1	5198.72[1]	5198.72[1]	Water Elevation (ft)
P-104.2	5185.47[1]	5185.47[1]	Water Elevation (ft)
P-104.3	5178.47[1]	5178.47[1]	Water Elevation (ft)
P-105.1	5184.82[1]	5184.82[1]	Water Elevation (ft)
P-105.2	5174.16[1]	5174.16[1]	Water Elevation (ft)
P-105.3	5162.16[1]	5162.16[1]	Water Elevation (ft)
P-106.1	5186.09[1]	5186.09[1]	Water Elevation (ft)
P-106.2	5165.51[1]	5165.51[1]	Water Elevation (ft)
P-106.3	5159.01[1]	5159.11	Water Elevation (ft)
P-107.1	5197.27[1]	5197.27[1]	Water Elevation (ft)
P-107.3	5173.44[1]	5173.44[1]	Water Elevation (ft)
P-108.1	5184.26[1]	5184.26[1]	Water Elevation (ft)
P-108.2	5173.59[1]	5173.59[1]	Water Elevation (ft)
P-108.3	5171.95	5173.06	Water Elevation (ft)
P-109.1	5188.76[1]	5188.76[1]	Water Elevation (ft)
P-109.2	5172.51[1]	5172.51[1]	Water Elevation (ft)
P-109.3	5164.93[1]	5164.93[1]	Water Elevation (ft)
P-110.1	5184.28[1]	5184.74	Water Elevation (ft)
P-110.2	5171.86[1]	5171.86[1]	Water Elevation (ft)
P-110.3	5163.44[1]	5163.44[1]	Water Elevation (ft)
P-111.1	5187.29[1]	5187.29[1]	Water Elevation (ft)
P-111.2	5172.33[1]	5173.31	Water Elevation (ft)
P-111.3	5160.04[1]	5160.08	Water Elevation (ft)

[1] Porewater pressure measurements are negative (draining condition). The reported elevation is for the tip of the instrument.

Instrument Name	Minimum	Maximum	Unit
Survey Monuments (10/1/21 to 9/30/22)			
SM7[2]	5215.683	5215.740	Monument Elevation (ft)
SM9[2]	5216.935	5216.992	Monument Elevation (ft)
Settlement Rods (10/1/21 to 9/30/22)			
SR-7[2]	5250.585	5250.637	Monument Elevation (ft)
SR-8[2]	5256.082	5256.112	Monument Elevation (ft)
SR-9[2]	5248.485	5248.537	Monument Elevation (ft)
SR-10[2]	5248.789	5248.896	Monument Elevation (ft)
SR-100[2]	5222.100	5222.178	Monument Elevation (ft)
SR-101[2]	5205.341	5205.401	Monument Elevation (ft)
SR-102[2]	5205.121	5205.198	Monument Elevation (ft)
SR-104[2]	5219.207	5219.240	Monument Elevation (ft)
SR-105[2]	5204.870	5204.897	Monument Elevation (ft)
SR-106[2]	5205.258	5205.294	Monument Elevation (ft)
SR-109[2]	5206.397	5206.440	Monument Elevation (ft)
SR-110[2]	5205.748	5205.944	Monument Elevation (ft)
Inclinometers (10/1/21 to 9/30/22)			
I-1	0	0.2448	in
I-2	0	0.1050	in
I-103	0	0.1728	in
I-107	0	0.1218	in
I-111	0	0.0906	in
Open Standpipe Piezometers (10/1/21 to 9/30/22)			
P-23	5156.48	5156.81	Water Elevation (ft)
P-24	Dry	Dry	Water Elevation (ft)
P-25	Dry	Dry	Water Elevation (ft)

2) Starting in March 2019, a third-party surveyor began collecting the monthly survey monument and settlement rod data instead of APS personnel. The third-party surveyor uses a different post-processing technique than APS personnel, resulting in relatively more variability between measurements than in previous years.

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

After several years of consistent, declining phreatic level readings, piezometer P-102.3 began increasing at a rate of 0.08 feet of head per month starting in mid-2019. The trend has continued throughout the current review period, reaching approximately 1 foot of pressure head by September 30, 2020, approximately 1.8 feet of pressure head by September 30, 2021, and slowing to approximately 2.25 feet of pressure head by September 29, 2022. Piezometer P-102.3 is the deepest instrument in the P-102 cluster. If the phreatic level indicated by P-102.3 begins to increase more rapidly, the cause of the increase should be investigated and the data download frequency should increase to twice per month.

Following several years of consistent, negative phreatic level readings, piezometer P-111.2 began increasing at a rate of 0.028 feet of head per month starting in May 2020 after displaying approximately 10 months of barometric variability. The increase at P-111.2 did not coincide with a similar increase at P-111.3, located approximately 12.29 feet deeper at the same location, nor did it coincide with a discernable change in tilt at inclinometer I-111. The variability of the P-111.2 data indicate the instrument is responding to changes in barometric pressure and is not submerged below the phreatic surface. P-111.2 may be partially saturated in combination with salt buildup in the instrument that could be affecting its accuracy. The piezometric head indicated by this instrument has remained near 0.5 feet in late 2020 and has appeared to remain relatively constant since while following fluctuations in barometric pressure. APS will continue to monitor this instrument and the nearby instruments for changes in the phreatic level. The data for the remaining vibrating wire piezometers indicates the phreatic level at these instruments is either declining, stabilizing, or remains negative (a draining condition).

The data for the survey monuments and settlement rods during the current review period were recorded by a third-party Professional Surveyor. The third-party survey data typically indicates a wider range of settlement values over the course of the year compared to the APS survey data collected prior to 2019, but do not suggest a significant change or a negative trend related to the performance of the dam.

The data for inclinometer I-103 indicate the instrument has exhibited minimal lateral movement between depths of approximately 10 feet to 24 feet in the downslope direction (0.37 inches) and toward the north (0.71 inches) since the baseline survey on August 31, 2013. This movement does not appear to be related to an adverse condition in the embankment. The data for the remaining inclinometers over the current review period indicate no significant changes or trends related to the performance of the dam.

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 is presented in the following table:

Water in LAI	Depth of Water (ft) (calculated)	Water Elevation (ft) (estimated)	Measurement Location
Minimum	(No water)	(No water)	Southwest Corner (STA 36+00)
Maximum	6	5269	Southwest Corner (STA 36+00)
Present (this inspection)	(No water)	(No water)	Southwest Corner (STA 36+00)
CCR	**Depth of CCR (ft) (calculated)**	**CCR Elevation (ft) (measured)**	**Measurement Location**
Minimum (North Corner)	14	5288[1]	V-ditch inlet on the north end of the LAI (STA 87+04)
Maximum (West Embankment)	73	5278	The West Embankment near the Drop Inlet Structure (STA 57+00)
Present (this inspection)	73	5278	The West Embankment near the Drop Inlet Structure (STA 57+00)

1) At the time of the 2022 inspection, the CCR elevation along the Northwest Embankment was at the crest elevation. This elevation does not include the dry-stacked CCR pushed into berms to contain the inflow.

APS continued to remove water from the LAI since the 2021 inspection by pumping the remaining reservoir to the Drop Inlet Structure so it could drain to the LDWP. The impounded water removal activities were completed in February 2022. The CCR impounded in the LAI continues to drain to the LDWP via the Drop Inlet Structure and the Deadpool Sump.

As the LAI began to reach capacity, CCR deposition moved from the old V-ditch on the north end of the East Embankment to the northeast corner of the LAI. Deposited material slopes from northeast (at the north V-ditch) to southwest (at the Southwest Corner). The elevation of the CCR is estimated during the inspection by recording where it is impounded against the slope at the emergency ladders and the distance from the crest to the ash. The depth (thickness) of the CCR at the time of the inspection is estimated by subtracting the bottom of the LAI (EL 5205 feet) from the estimated average ash elevation (the average ash elevation is assumed to be near the Drop Inlet Structure at STA 57+00).

The CCR depths and elevations presented in the above table are assumed to be similar to the 2021 CCR depths and elevations since the LAI no longer receives inflow from the Plant.

5.1.4 Storage Capacity

The maximum storage capacity of the LAI is 5,986 acre-feet (ac-ft) based on the 2012 elevation-area-capacity curve (EAC) (URS 2012). The 2012 EAC is based on a maximum reservoir elevation at 5280 feet, therefore the EAC is unchanged after APS completed the 2022 crest elevation remediation work.

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 5,732 ac-ft based on the average impounded volume at EL 5278 feet from the 2012 EAC (URS 2012).

5.1.6 Structural Weakness or Operational Change/Disruption

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

As discussed in Section 5.1.1, the West Embankment crest was restored to EL 5280 feet and the LAI has sufficient capacity to retain the 72-hour PMP with 2.8 feet of residual freeboard in the area of ponding. In the northern portions of the reservoir where water is not expected to pond, CCR is impounded nearly up to the crest.

5.2 LINED DECANT WATER POND

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 2021.

5.2.2 Instrumentation

The locations 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 recorded readings for each instrument over the October 1, 2021 – September 30, 2022 (current) review period are reported in the following table:

Instrument Name	Minimum	Maximum	Unit
Survey Monuments (10/1/21 to 9/30/22)			
SM7[1]	5215.683	5215.740	Monument Elevation (ft)
SM9[1]	5216.935	5216.992	Monument Elevation (ft)
Open Standpipe Piezometers (10/1/21to 9/30/22)			
P-18	Dry	Dry	Water Elevation (ft)
P-19	Dry	5132.06	Water Elevation (ft)
P-20	Dry	Dry	Water Elevation (ft)
P-21	5134.09	5134.24	Water Elevation (ft)
P-22	5151.66	5151.75	Water Elevation (ft)
P-23	5156.48	5156.81	Water Elevation (ft)
P-24	Dry	Dry	Water Elevation (ft)
P-25	Dry	Dry	Water Elevation (ft)

1) Starting in March 2019, a third-party surveyor began collecting the monthly survey monument and settlement rod data instead of APS personnel. The third-party surveyor uses a different post-processing technique than APS personnel, resulting in relatively more variability between measurements than in previous years.

The data for the survey monuments during the current review period were recorded by a third-party Professional Surveyor. The third-party survey data typically indicates a wider range of settlement values over the course of the year compared to the APS survey data collected prior to 2019, but do not suggest a significant change or a negative trend related to the performance of the dam.

The data for the piezometers over the current review period indicate no significant elevation changes or trends related to the performance of the dam. Water levels recorded in piezometers P-19, P-21, and P-22 varied between 1.44 inches, 1.8 inches, and 1.08 inches, respectively, throughout the review period. All values were within two feet of the approximate bottom of the piezometers. APS believes these values represent run-on that has infiltrated the piezometer from the surface and has not drained, rather than water at the bottom of the Pond 3/native soil interface. APS intends to continue monitoring these piezometers.

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 in LDWP	Depth of Water (ft) (observed)	Water Elevation (ft) (measured)	Measurement Location
Minimum	0.4	5204.4	Staff gauge near the East Embankment
Maximum	0.9	5205.3	Staff gauge near the East Embankment
Present (this inspection)	1.25	5203.25	Staff gauge near the East Embankment
CCR	**Depth of CCR (ft)**	**CCR Elevation (ft)**	**Measurement Location**
Minimum	Not applicable	Not applicable	Not applicable
Maximum	Not applicable	Not applicable	Not applicable
Present (this inspection)	Not applicable	Not applicable	Not applicable

The LDWP does not impound a significant quantity of solids. It is used to impound CCR transport water decanted from the LAI. Therefore, the CCR depth (thickness) is minimal and not normally measured.

With the end of deposition in the LAI, the water elevation in the LDWP has fallen below the elevation of the staff gauge along the East Embankment (Appendix B Photo IMG_4872). The water elevation during the inspection is approximated using the original Ash Pond 3 surface topography and the current water extent. The minimum elevation of the LDWP (top of Ash Pond 3) is EL 5202 feet (in the southwest corner) based on Sections D and E in APS Drawing FC-C-17-ADS-150793-4 (APS 2004).

5.2.4 Storage Capacity

The storage capacity of the LDWP is 435 ac-ft at EL 5213.2 feet. The maximum storage capacity of the LDWP is 517 ac-ft at EL 5216 feet based on the 2012 EAC (URS 2012).

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 37.5 ac-ft.

5.2.6 Structural Weakness or Operational Change/Disruption

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

APS has been drawing down the reservoir level in the LDWP since 2019. A review of the operating record indicated the LDWP was operated as intended over the previous year.

There are no significant changes to the structural integrity of the dam since the 2021 inspection.

5.3 COMBINED WASTE TREATMENT POND

5.3.1 Geometry Changes Since Last Inspection

There have not been any significant changes to the geometry of the unit since the last inspection in 2021.

5.3.2 Instrumentation

There are no instruments associated with the CWTP.

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 in CWTP	Depth of Water (ft) (calculated)	Water Elevation (ft) (measured)	Measurement Location
Minimum	Not available	Not available	APS does not regularly record the water elevation.
Maximum	Not available	Not available	
Present (this inspection)	7.35	5326.35 (NGVD29)	Spillway Crest
CCR	**Depth of CCR (ft) (estimated)**	**CCR Elevation (ft) (estimated)**	**Measurement Location**
Minimum	8	5329	East side of CWTP
Maximum	27	5333	Northern decant cell/staging area. *Based on 2022 bathymetry.
Present (this inspection)	8 to 26	5329 to 5332	Northern decant cell/staging area. *Based on 2022 bathymetry.

*The majority of the solids are caught in the decant cells on the west side of the CWTP.

CCR solids in the CWTP reservoir are typically submerged; the CCR elevations in the table above are based on a bathymetric survey conducted approximately one month after the 2022 annual inspection in advance of dredging for Closure by Removal activities. The maximum, minimum, and present CCR depth (thickness) in the table above reflect the variable subsurface at the CWTP. The maximum CCR thickness is in the northwest corner of the CWTP footprint in the filled decant cell currently being used as a staging area (Photo IMG_4106). The minimum CCR thickness is on the eastern side of the CWTP reservoir near the outfall to Morgan Lake.

APS does not regularly record or track the water elevation in the CWTP. With the construction of the BASWR Tank, the CWTP no longer receives inflow from the Plant. A water level transducer installed in the reservoir adjacent to the pipe that conveys inflow from the discharge canal to the CWTP keeps the reservoir level relatively constant (Photo IMG_3997).

5.3.4 Storage Capacity

The estimated storage capacity of the CWTP reservoir is 164 ac-ft.

5.3.5 Approximate Impounded Volume at Time of Inspection

The volume of impounded water and solids in the CWTP reservoir at the time of the inspection was calculated to be 138.46 ac-ft based on the impounded water elevation and the 2022 bathymetry. Unlike previous estimates, this value incorporates the proposed 2022 CCR subsurface contours for dredging developed in advance of closure-by-removal.

5.3.6 Structural Weakness or Operational Change/Disruption

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

APS ceased discharging to the CWTP by November 23, 2020. The current water level is maintained by pumping water from the discharge canal into the reservoir as the Navajo Mine continues to use the CWTP as a water source for its ongoing operations. The CWTP reservoir elevation is currently level-controlled via automated sensors. At the time of the inspection, APS was preparing to begin dredging in December 2022.

5.4 DRY FLY ASH DISPOSAL AREA

5.4.1 Geometry Changes Since Last Inspection

Cell 3 has reached approximately the same elevation as the South Embankment of the LAI. Some CCR and CCR-impacted material has been placed in Cell 2; however, APS began placing ash in Cell 4 after the 2021 inspection and has primarily placed ash in Cell 4 throughout 2022.

5.4.2 Instrumentation

There are no instruments associated with the DFADA.

5.4.3 CCR Volume

The approximate volume of CCR in the DFADA at the time of the inspection was estimated to be 6,729.5 ac-ft in the four DFADA cells based on the October 2022 survey performed by the ash placement contractor (FHI).

5.4.4 Structural Weakness or Operational Change/Disruption

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

The Cell 4 leachate collection pond was empty at the time of the inspection. FCPP personnel reported that the pond was typically empty. The pond had previously accumulated stormwater runoff before the Cell had started to receive CCR. The presence or absence of water, and the water level in the leachate collection pond, should be monitored as part of the weekly inspections.

During the summer of 2020, APS began to landfill a pugmill-blended mixture of thickened FGD slurry and dry fly ash. After October 31, 2020, all FGD produced by the Plant is blended by pugmill with fly ash, and then placed and compacted in the landfill. The strength of the compacted, pugmill-blended mixture is sufficiently similar to those of fly ash and bottom ash so as to not produce a structural weakness within the planned dimensions of the DFADA landfill.

5.5 RETURN WATER POND

5.5.1 Geometry Changes Since Last Inspection

There have not been any significant changes to the geometry of the unit since the last inspection in 2021.

5.5.2 Instrumentation

There are no instruments associated with the RWP.

5.5.3 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 in RWP	Depth of Water (ft) (observed)	Water Elevation (ft) (measured)	Measurement Location
Minimum (RWP Cell)	4.63	5372.68	Southwest corner of the cell.
Minimum (FGD Cell)	7.83	5375.56	South corner of the cell.
Maximum (RWP Cell)	10.2	5378.25	Southwest corner of the cell.
Maximum (FGD Cell)	10.95	5379	Northwest corner of the cell.
Present (this inspection, RWP Cell)	4.63	5372.68	Southwest corner of the cell.
Present (this inspection, FGD Cell)	7.83	5375.56	South corner of the cell.
CCR	**Depth of CCR (ft)**	**CCR Elevation (ft)**	**Measurement Location**
Minimum	Not applicable	Not applicable	Not applicable
Maximum	Not applicable	Not applicable	Not applicable
Present (this inspection)	Not applicable	Not applicable	Not applicable

Based on as-built drawing FC45CM-C-65-WP-AP-200485-13 (APS 2019), the bottom of the RWP is at EL 5368.05 feet. Water depths are estimated relative to this value. The maximum and minimum water values are based on the water depths observed during the 2021 inspection and this inspection. The RWP was assumed to be at its maximum impounded volume within the last year during the 2021 inspection and reduced to the current (minimum) impounded volume during this inspection. APS does not regularly record the water level of the RWP.

The RWP was designed to provide temporary storage of LAI/LDWP and Pond 3 pumphouse (liquid) discharges, thus, it does not impound a significant quantity of solids. Therefore, the CCR depth is minimal and not normally measured.

5.5.4 Storage Capacity

The estimated storage capacity of the RWP is 38.6 ac-ft at EL 5379 feet.

5.5.5 Approximate Impounded Volume at Time of Inspection

The approximate impounded volume in the RWP cell at the time of the inspection was 11.4 ac-ft. The approximate impounded volume in the FGD cell at the time of the inspection was 1.63 ac-ft.

5.5.6 Structural Weakness or Operational Change/Disruption

APS installed a new pipe connecting the RWP and FGD Pond cells. The new pipe allows APS to switch the functions of the two cells, if desired.

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.

6.0 OPERATION AND MAINTENANCE RECOMMENDATIONS

6.1 LINED ASH IMPOUNDMENT

6.1.1 Current Lined Ash Impoundment Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) Ruts were observed on the Northwest Embankment crest.	Regrade the crest to repair the ruts. Drivers should be instructed to avoid traversing through muddy areas.
2) Shallow holes along the East Embankment crest were observed along the anchor trench.	Monitor the holes. Repair any cracks in the embankment that extend deeper than 1 foot. Repair any cracks in the anchor trench that extend below the anchor trench excavation or begin to manifest in other parts of the crest.
3) In mid-September 2022, the vibrating wire piezometer data collection electronics began failing intermittently.	Investigate the cause of the unrecorded data and reinstate the twice-daily vibrating wire piezometer data collection.
4) There are bulges and depressions along the upstream slope in the Southwest Corner of the LAI.	The presence and identified causes of the bulges and depression should be recorded and the geotechnical engineer should be consulted. Repair documentation should be recorded.
5) There is an erosion gully on the downstream slope of the East Embankment.	Repair the slope.
6) Erosion rills and gullies on the downstream slope of the West and Northwest Embankments, including an erosion rill at the junction of the Northwest Embankment and the West Embankment.	Continue ongoing repair program for repairing rills if the erosion depth exceeds 1 foot.
7) The phreatic level indicated by piezometer P-102.3 is increasing, but more slowly than in previous years (since late 2019). The phreatic level indicated by piezometer P-111.2 has leveled and is no longer increasing at the same rate it was during most of 2020.	Continue to monitor these and all the piezometers, reviewing the data for signs of increased phreatic levels. The APS geotechnical engineer should be consulted during these reviews.
8) There are several tears in the liner along the upstream slope on the South and Northwest Embankments.	Repair the tears under the direction of the APS geotechnical engineer.

9) There are several cuts and torn horizontal seams in the liner along the upstream slope on the South Embankment, primarily near the Southwest Corner. The torn seams are leaking water.	Remove the water from beneath the liner and repair the cuts and torn seams under the direction of the APS geotechnical engineer.
10) There are tears in the exposed liner at the cenosphere mining area in the Southwest Corner.	The working area for the cenosphere mining operation is built into the reservoir area and the liner damage is not affecting the integrity of the embankment. The area should be monitored.

6.1.2 Previous Lined Ash Impoundment Action Items

The following items were noted during the three previous annual inspections and have been addressed.

Action Item and First Instance of Observation	Resolution
1) The LAI does not have sufficient capacity to retain the 72-hour PMP with 2.8 feet of residual freeboard as designed. The West Embankment crest is at approximate EL 5279 feet instead of the design value at EL 5280 feet. There is approximately 1.33 feet of freeboard at the West Embankment. In addition, the freeboard designated along the Northwest and East Embankments is not available due to the presence of ash up to the embankment crest (2021 inspection).	Raise the West Embankment crest to its design elevation and excavate a ditch around the perimeter of the embankment to divert stormwater to the Southwest Corner. Pump the free-standing water in the Southwest Corner of the pond down to allow sufficient capacity to retain the 72-hour PMP.
2) Ruts were observed on the downstream side of the South Embankment crest and the downstream side of the East Embankment crest (2021 inspection).	The ruts were not observed during the 2022 inspection.
3) There is a small hole in the crest of the LDWP along the toe of the LAI West Embankment (2019, 2020 inspections).	The hole appeared to be partially filled during the 2020 inspection and was not observed during the 2021 inspection.
4) Inflow from the northernmost leg of the V-ditch has nearly spilled onto the crest, resulting in the addition of temporary berms to control the flow path (2020 inspection).	APS constructed temporary diversion berms to keep inflows to the LAI from reaching the crest. APS ultimately closed the V-ditch and stopped depositing CCR into the LAI in 2021.

Action Item and First Instance of Observation	Resolution
5) Two protrusions were observed beneath the liner on the upstream slope near the midpoint of the South Embankment (2021 inspection).	The protrusions in the liner observed during the 2021 inspection were not observed during the 2022 inspection. It was not clear if these had been repaired, covered with ash, or if the protrusions had sunk into the clay core. Continue to monitor the liner for abnormalities and repair them under the direction of the APS geotechnical engineer.
6) Minor erosion rills on the downstream slope of the West Embankment (various locations observed during the 2015, 2017, 2018, and 2020 inspections).	The erosion rills were repaired.
7) Two holes were observed in the geomembrane liner along western portion of the South Embankment. These holes were near the area where previous holes were observed to have been cut in the liner. One of the new holes appears to be a cut and the other may be due to the liner separating at a seam from a previous repair (2019 inspection).	The liner was repaired.
8) The survey monument and settlement rod data indicate settlement of several inches over the course of the 1-year data gap when surveyors changed (2019 inspection).	The difference in values recorded between the surveys was a result of differences between post-processing techniques used for the data. The areas around the instruments did not exhibit indications of vertical movement commensurate with the implied settlement.
9) Cracks were observed in the anchor trench in the Northwest Embankment (2019 inspection).	The cracks were not observed during subsequent inspections.

6.2 LINED DECANT WATER POND

6.2.1 Current Lined Decant Water Pond Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) The liner in the anchor trench in the central portion of the West Embankment appeared to be pulling out of the trench.	Continue to monitor the liner in the anchor trench. Re-anchor the liner if the liner continues to pull out of the trench.
2) Minor erosion rilling was observed on the West, and South downstream slopes of the LDWP at the time of the inspection.	Continue the ongoing repair program for repairing rills when the erosion depth exceeds 1 foot.
3) There is a small hole in the liner at the crest elevation along the North Embankment.	Repair the hole.
4) The seam connecting two adjacent sheets of liner has failed along approximately 10 inches at the North Embankment.	Repair the liner.
5) There is a rut along the upstream half of the South Embankment crest. Ponded rainwater was observed in the southwest corner near the Interstitial Evacuation Pump during the 2019 inspection and it appears there is still a low spot in this area.	Repair the ruts. Regrade the low spot.
6) Portions of the outer pipes for the siphon lines are exposed along the East Embankment crest.	Place and compact additional fill in these areas to prevent damage to the pipes.
7) The sign identifying the CCR unit fell down.	Re-erect the sign.

6.2.2 Previous Lined Decant Water Pond Action Items

The following items were noted during the three previous annual inspections and have been addressed.

Action Item and First Instance of Observation	Resolution
1) Minor erosion rilling was observed on the North, West, and South downstream slopes of the LDWP at the time of the inspection (2015, 2016, 2017, 2018, 2019, and 2020 inspections).	The erosion rills observed during the previous inspections were repaired after the inspection concluded and additional rainfall at the site created new rills. This is an ongoing maintenance requirement.
2) There is a small hole in the crest of the LDWP along the toe of the LAI West Embankment (2019 and 2020 inspections).	The hole was not observed during the 2021 inspection and may have been filled with ash via erosion.
3) An ant hill was observed in the crest (2020 inspection).	The ant hill was removed.
4) The impounded water level in the LDWP was at or above the safe storage level on the operating license and above the maximum operating elevation for several months during 2019 (2019 inspection).	APS reduced the impounded water elevation to a level below the safe storage level on the operating license.
5) The survey monument data indicate settlement of several inches over the course of the 1-year data gap when surveyors changed (2019 inspection).	The third-party surveyor who began collecting the survey data uses a different post-processing technique than APS personnel had, resulting in more data variability and perceived settlement when compared to the data collected by APS personnel.

6.3 COMBINED WASTE TREATMENT POND

6.3.1 Current Combined Waste Treatment Pond Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) Vegetation (grass, small trees, and shrubs) was observed on the upstream and downstream slopes during this inspection.	This is an ongoing maintenance requirement. The grasses should be cut and vegetation removal along the upstream and downstream slopes should be performed in accordance with the NMOSE vegetation maintenance guidelines "*Vegetation Management on Dams*" (2011) reference.
2) Instances of erosion, including one location with 14 inches of erosion, were observed along the upstream and downstream slopes.	Continue to monitor these areas and repair erosion if it exceeds 1 foot in depth.
3) The soil along the upstream edge of the crest was observed to be loose and weak over a distance of approximately 6 feet near the longitudinal crack observed in 2020.	Investigate the cause of the weak soil and repair the crest.
4) Erosion along the upstream slope resulting in an irregular face.	Continue to monitor the area repair the area if required to bring it to the design slope (2H:1V).
5) Ant hills were observed along the embankment crest and animals have been known to burrow in the area.	This is an ongoing maintenance requirement. Repair ant hills and animal burrows as needed.
6) Two small erosion holes were observed on the downstream shoulder of the East Embankment crest.	Repair the holes.
7) A set of shallow holes was observed on the downstream shoulder of the North Embankment near the 18-inch pipe that transfers water from the canal to the CWTP.	Regrade this area and repair the holes.
8) A zone of loose material was observed on the upstream half of the crest near the historic location of an 11.5-foot-long tension crack.	This area should be regraded and repaired.
9) Two erosion holes up to 9 inches deep were observed on the crest along the curved section of the embankment.	Monitor the erosion holes and repair them if they are observed to expand.

6.3.2 Previous Combined Waste Treatment Pond Action Items

The following items were noted during the three previous annual inspections and have been addressed.

Action Item and First Instance of Observation	Resolution
1) A 6-foot-long longitudinal crack was observed on the downstream slope where a piece of riprap is separating from the soil (2020 and 2021 inspections).	The crack was not observed during the 2022 inspection. It is possible that the riprap boulder has been dislodged.
2) A 7-inch-deep erosion hole was observed on the downstream shoulder of the East Embankment crest (2021 inspection).	The erosion hole was not observed during the 2022 inspection.
3) A series of aligned holes, up to 2 feet deep and across a length of approximately 4 feet, was observed on the downstream slope where the embankment transitions from west-east to northwest-southeast (2019 inspection).	The holes were not observed during subsequent inspections.
4) An 11.5-foot-long longitudinal crack was observed on the downstream slope near the weak crest soil (2018 and 2020 inspections).	The crack was not observed during the 2021 inspection.

6.4 DRY FLY ASH DISPOSAL AREA

6.4.1 Current Dry Fly Ash Disposal Area Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) There is erosion at the Stormwater Diversion Channel inlet and outlet.	Monitor erosion and repair the area. Alternately, place additional sandstone riprap in the eroded area.
2) The stilling basin constructed as part of the Cell 4 Stormwater Diversion Channel extension is filled with sediment on the upstream side of the weir wall.	Remove the sediment.
3) Several plants are growing through the Pyramat geosynthetic along the western toe of Cell 1.	Remove the vegetation.
4) A colony of reeds is growing in the Cell 1 leachate collection pond.	The reeds should be monitored and removed.
5) The Cell 4 leachate collection pond was empty at the time of the inspection.	The water level in the leachate collection pond should be monitored as part of the weekly inspections and the leachate collection system components (e.g., pipes, drains) should be investigated for clogs, leaks, and other impediments.

6.4.1 Previous Dry Fly Ash Disposal Area Action Items

The following items were noted during the three previous annual inspections and have been addressed.

Action Item and First Instance of Observation	Resolution
1) There is erosion at the inlet and outlet of the Stormwater Diversion Channel (2015, 2016, 2017, 2018, and 2019 inspections).	The Stormwater Diversion Channel was extended as part of the Cell 4 construction; however, the erosion at the inlet remains (see Action Item 1 in the previous section).

6.5 RETURN WATER POND

6.5.1 Current Return Water Pond Action Items

The following items were noted during inspections as requiring attention.

Action Item	Action Status
1) Some vegetation is beginning to grow in the anchor trenches on the crest and the downstream slopes.	Vegetation removal should be performed in accordance with the NMOSE vegetation maintenance guidelines "*Vegetation Management on Dams*" (2011) reference.
2) Shallow holes observed along the Northeast Embankment during the 2021 inspection appear to have developed into a shallow erosion feature.	Repair erosion if it exceeds 1 foot in depth.
3) The liner appeared to be disturbed along the Northeast Embankment.	Monitor this area and repair the liner/trench if the disturbance begins to affect the embankment or the structural integrity of the CCR unit.
4) The downstream drainage ditch on the western corner of the RWP appears to be filling with sediment to the extent that the drain pipe under the entrance road is almost completely blocked.	The drainage ditch should be cleared so that the design run-on cannot overtop the ditch and enter the RWP.
5) Tension cracks were observed on the slope of the incised drainage ditch along the western corner of the pond, downstream of the FGD cell.	This area should be monitored for sloughs that could impede the drainage characteristics in the western corner.

6.5.2 Previous Return Water Pond Action Items

The following items were noted during the two previous annual inspections and have been addressed. The RWP was placed into service in October 2020.

Action Item	Action Status
1) The two Flowserve horizontal base-mounted pumps at the downstream toe of the Northwest Embankment were both subject to work requests at the time of the inspection (2021 inspection).	The pumps were repaired.
2) The hinge for the access gate at the southern entrance to the RWP is broken (2021 inspection).	The gate was repaired.
3) The FGD Pond was observed to be at "full capacity" during a series of weekly inspections in December 2020 and January 2021. In addition, the RWP and FGD cells were near full capacity during the 2021 inspection.	Both cells were several feet lower during the 2022 inspection.

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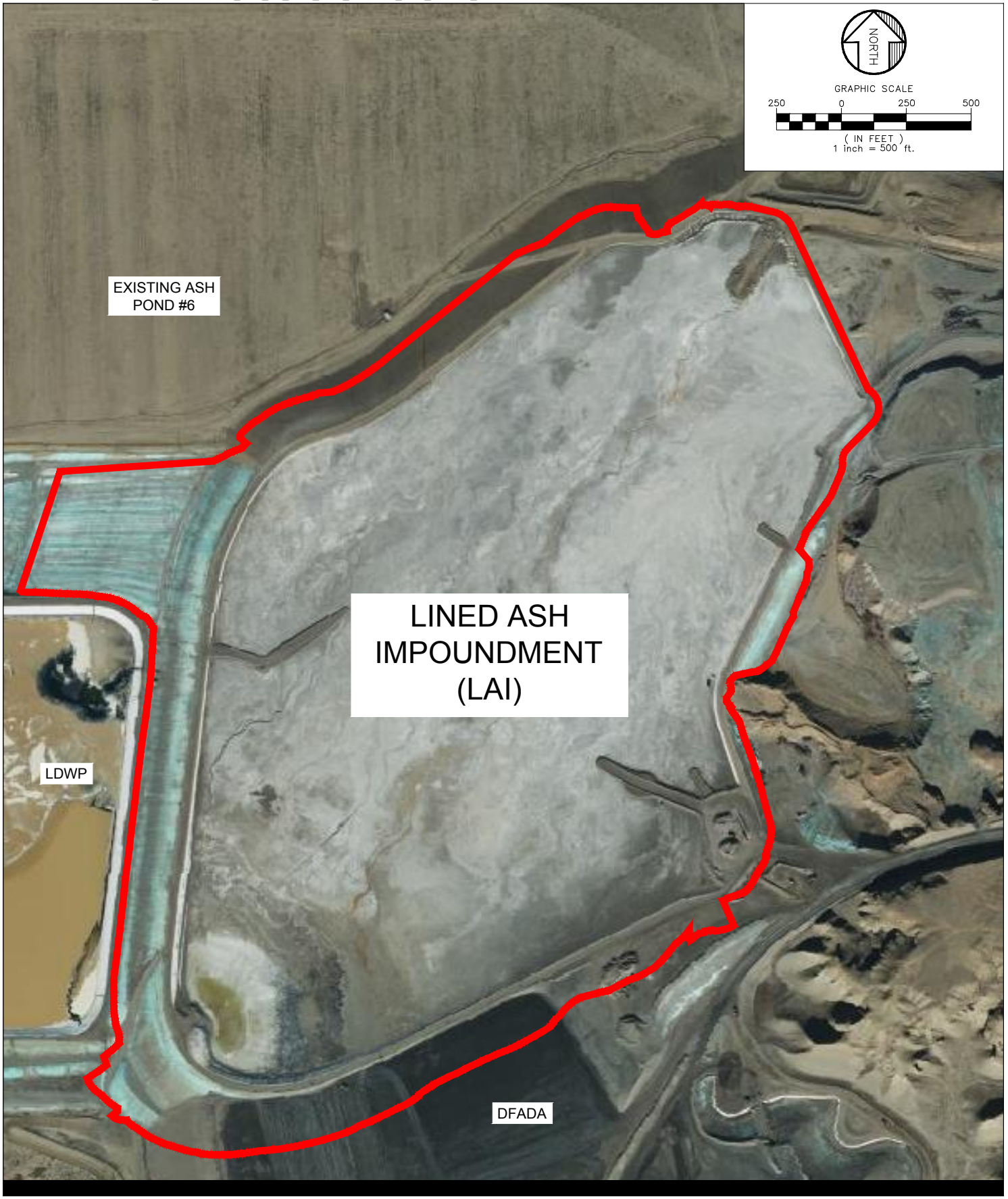
FIGURES

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 1 - LAI.DWG
ANSI A 8.5" x 11"



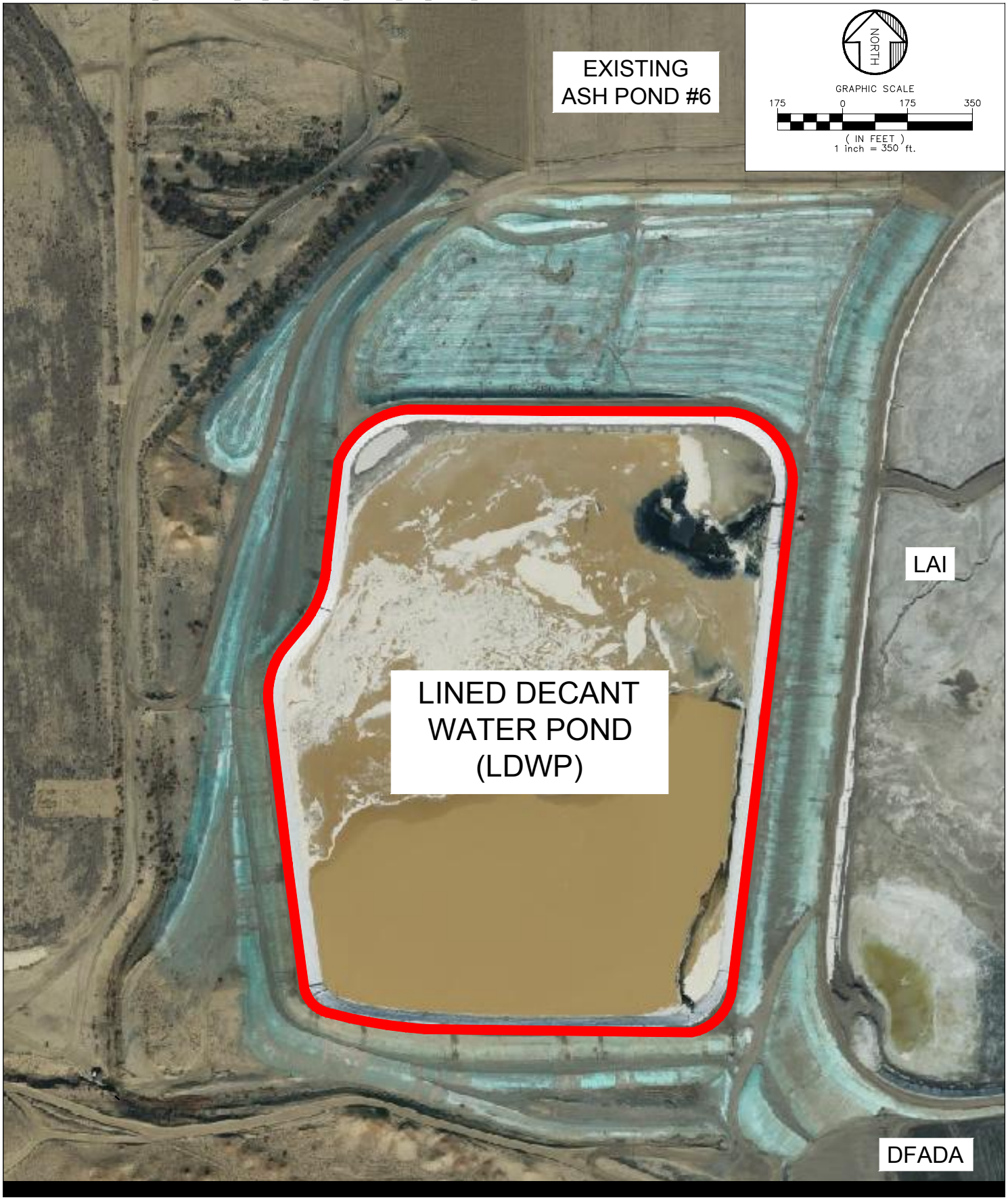
FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

LINED ASH IMPOUNDMENT (LAI)

AECOM

FIGURE 1

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 2 - LDWP.DWG
ANSI A 8.5" x 11"



FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

LINED DECANT WATER POND (LDWP)

AECOM

FIGURE 2

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 3 - CWTP.DWG

ANSI A 8.5" x 11"

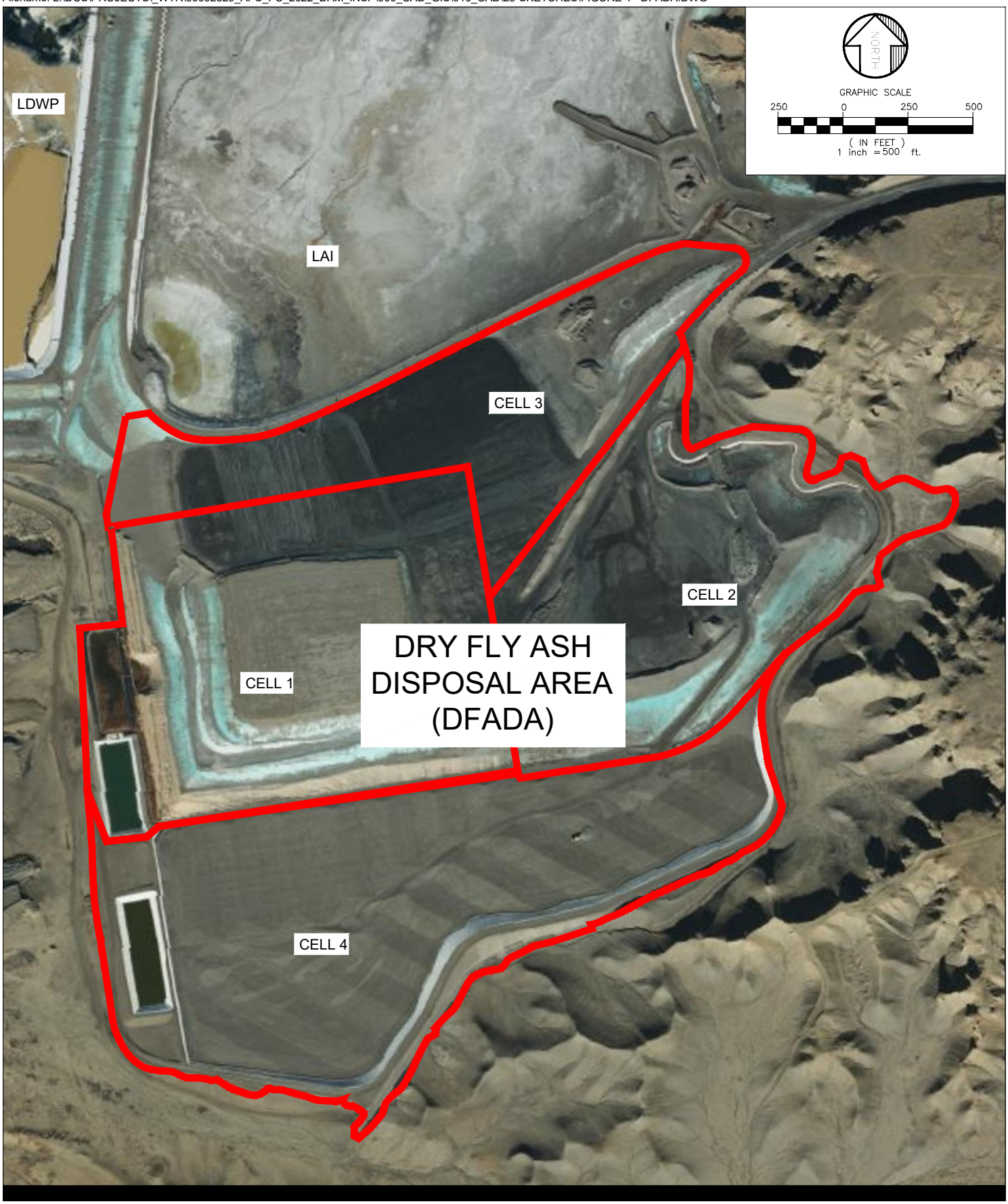
FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

COMBINED WASTE TREATMENT POND (CWTP)

AECOM

FIGURE 3

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 4 - DFADA.DWG
ANSI A 8.5" x 11"



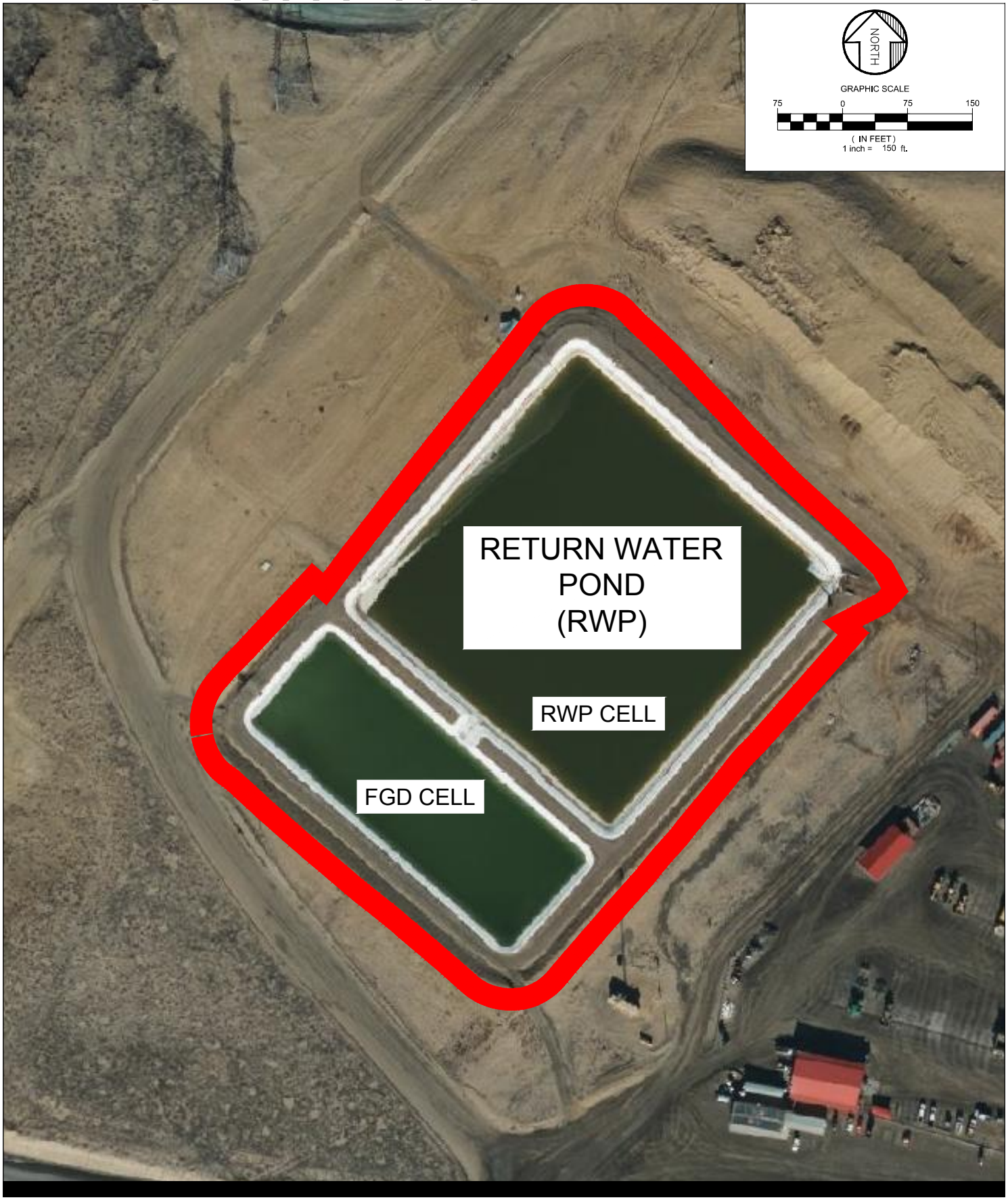
FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

DRY FLY ASH
DISPOSAL AREA
(DFADA)

AECOM

FIGURE 4

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 5 - RWP.DWG
ANSI A 8.5" x 11"



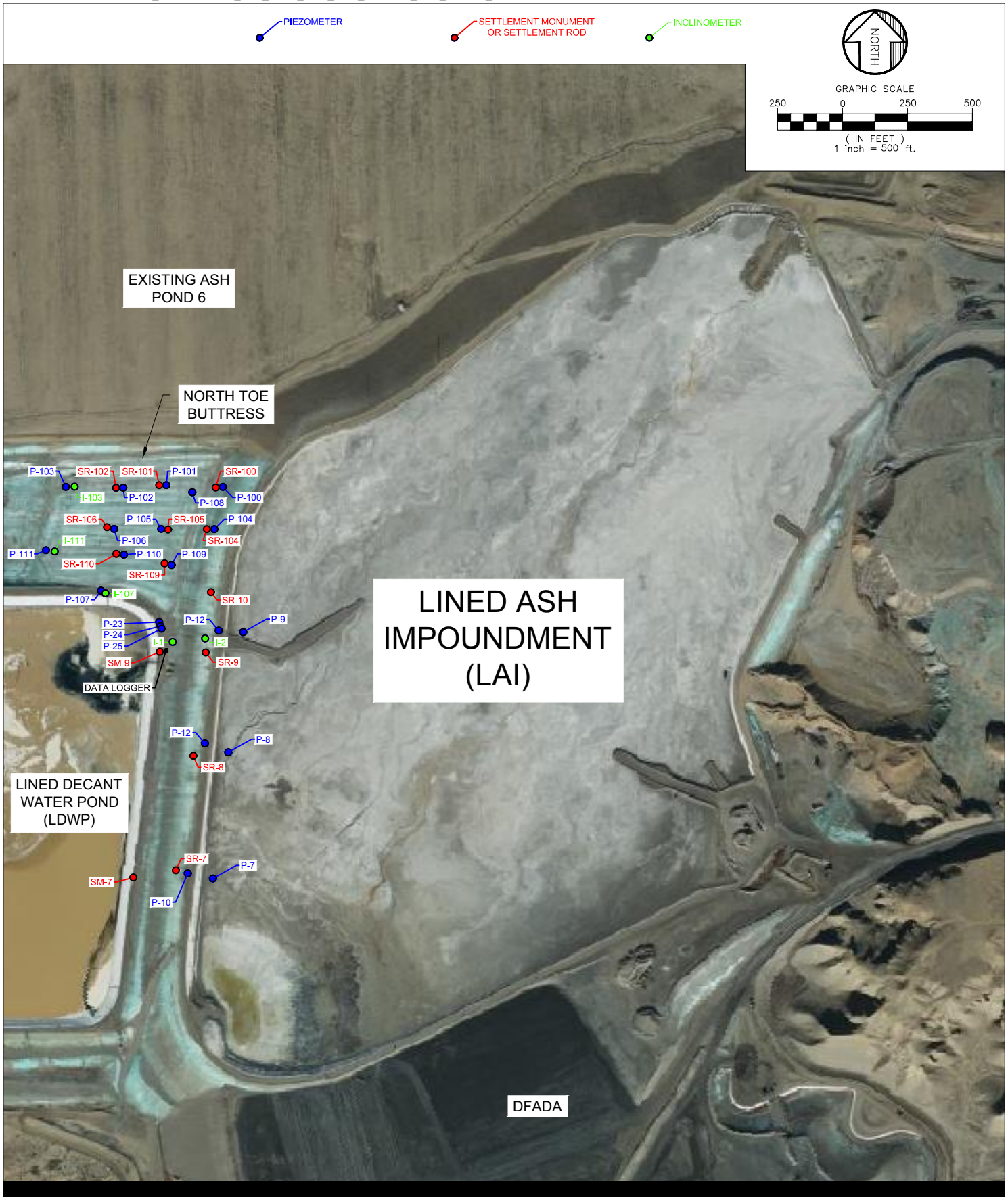
FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

RETURN WATER POND (RWP)

AECOM

FIGURE 5

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60670439_APS_FCPP_2021_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 6 - LAI INSTRUMENTATION MAP.DWG
ANSI A 8.5" x 11"



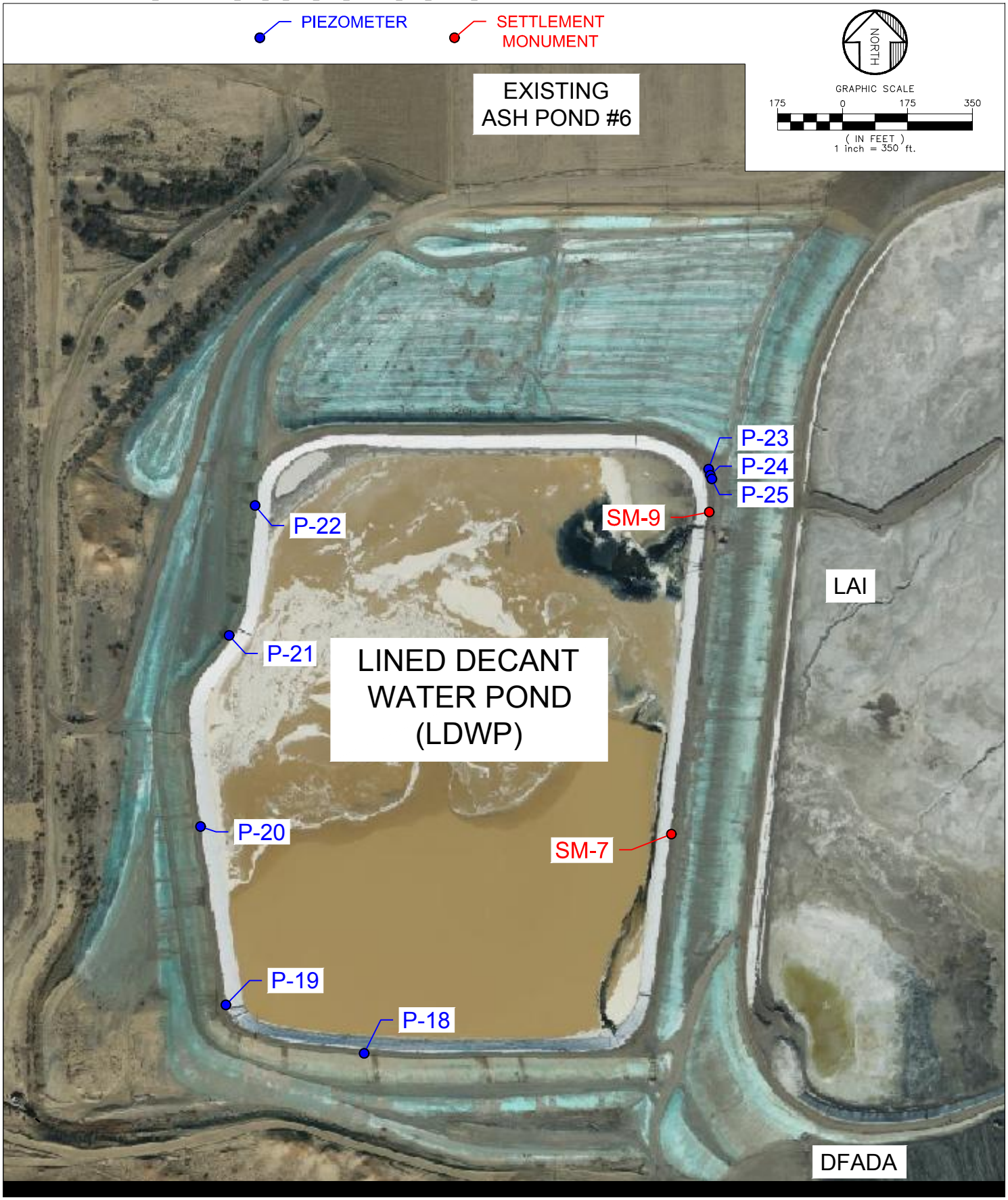
FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

LINED ASH IMPOUNDMENT (LAI) INSTRUMENTATION MAP

AECOM

FIGURE 6

Last saved by: LEE.WRIGHT(2022-11-28) Last Plotted: 2022-11-28
Filename: L:\DCS\PROJECTS_WTR\60692529_APS_FC_2022_DAM_INSP\900_CAD_GIS\910_CAD\25-SKETCHES\FIGURE 7 - LDWP INSTRUMENTATION MAP.DWG
ANSI A 8.5" x 11"



FOUR CORNERS POWER PLANT
CCR IMPOUNDMENT AND LANDFILL INSPECTION REPORT
ARIZONA PUBLIC SERVICE

LINED DECANT WATER POND (LDWP) INSTRUMENTATION MAP

AECOM

FIGURE 7

APPENDIX A

LINED ASH IMPOUNDMENT (LAI) PHOTO LOG

20221020 – IMG_4409
The South Embankment crest and upstream slope, facing southwest from the eastern end.

20221020 – IMG_4416
The South Embankment upstream slope, facing southwest from the middle of the embankment.

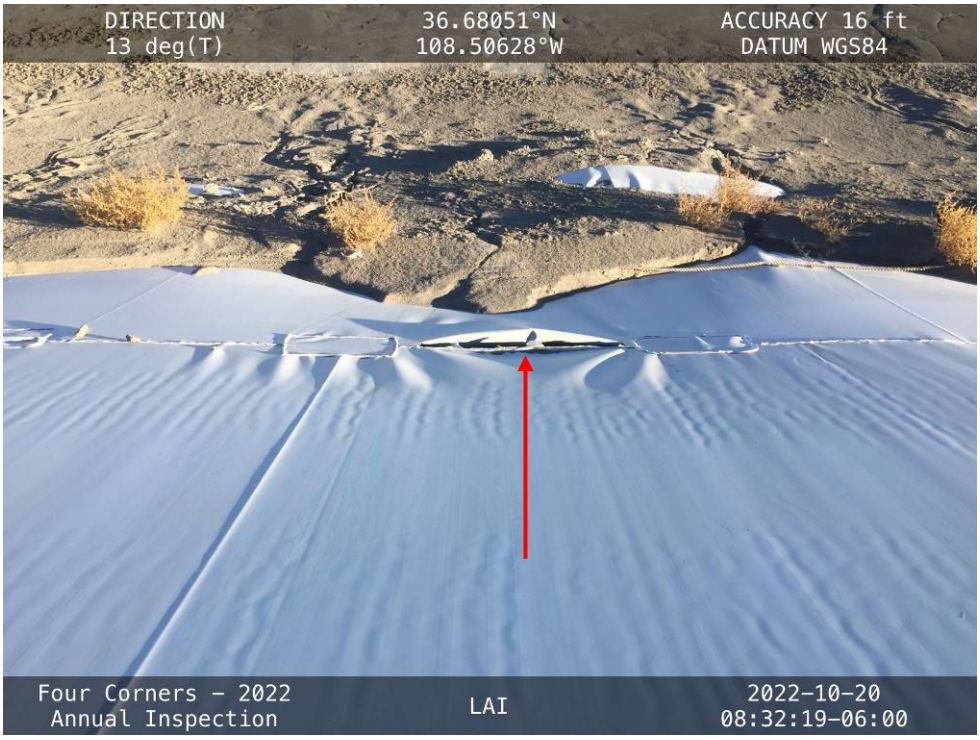
20221020 – IMG_4426
The upstream slope of the South Embankment, facing west toward the Southwest Corner.

20221020 – IMG_4427
Two tears in the liner in the Southwest Corner, near the staff gauge.

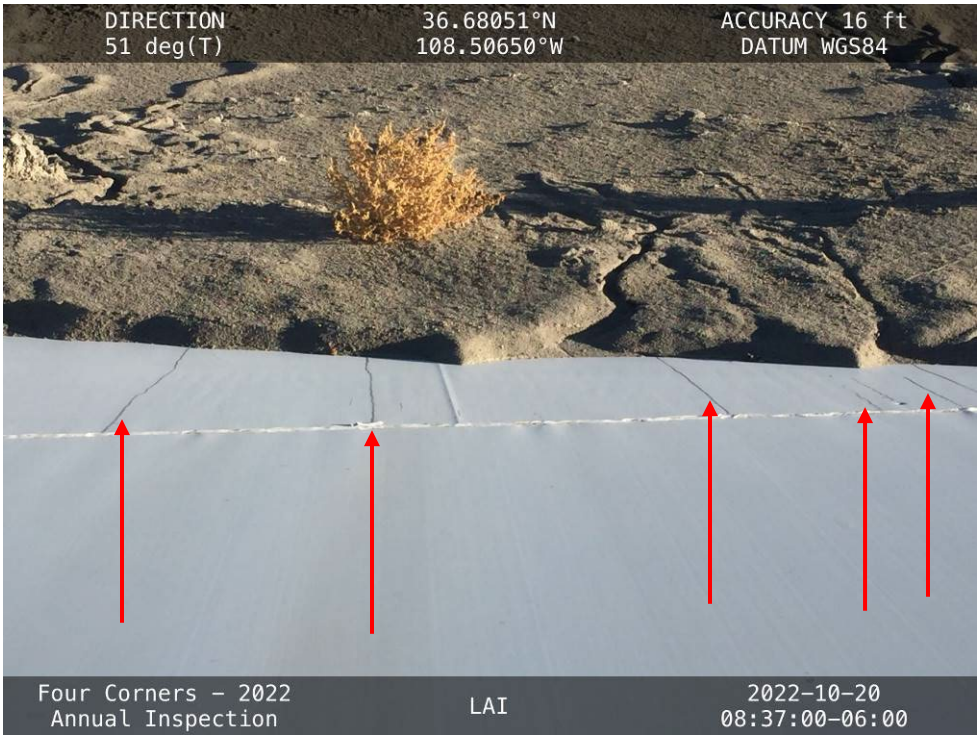
20221020 – IMG_4429
A tear along the horizontal seam in the liner.

20221020 – IMG_4430
The LAI staff gage at STA 36+00 at the time of the inspection.

20221020 – IMG_4443
Undulations in the liner and tears along the horizontal seam in the Southwest Corner.



20221020 – IMG_4444
A tear along the horizontal seam in the Southwest Corner.



20221020 – IMG_4449
Water seeping from the horizontal seam in the liner in the Southwest Corner.

20221020 – IMG_4450
Water seeping from the horizontal seam in the liner in the Southwest Corner.

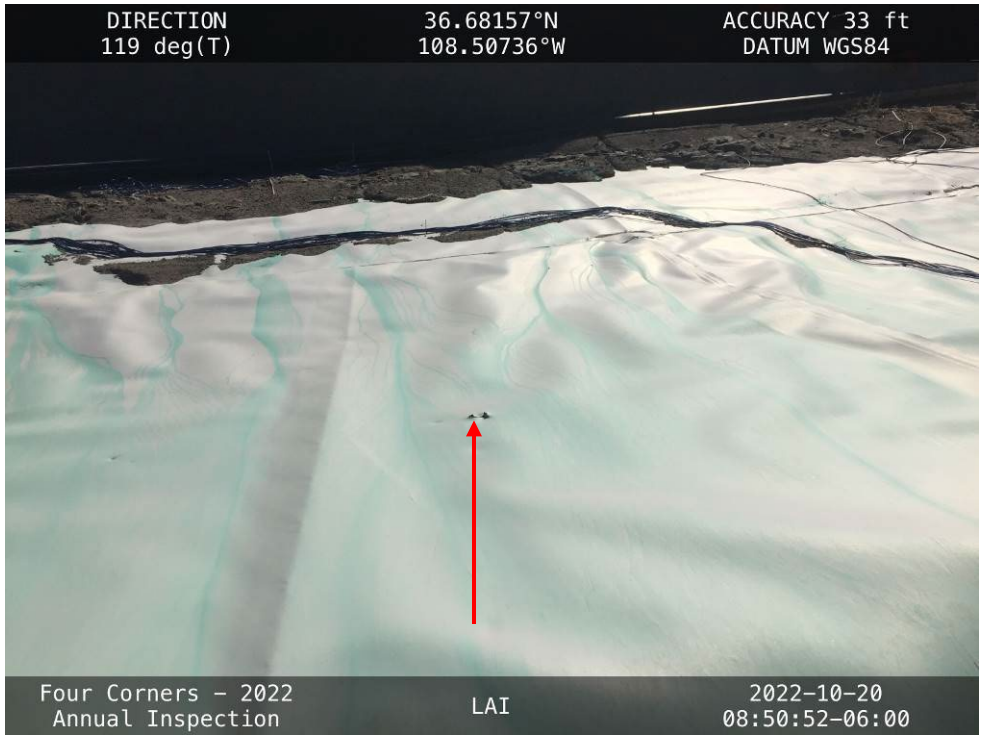
20221020 – IMG_4451
The upstream slope of the South Embankment, facing east from the Southwest Corner.

20221020 – IMG_4453
The Southwest Corner of the LAI with no water impounded in the reservoir.

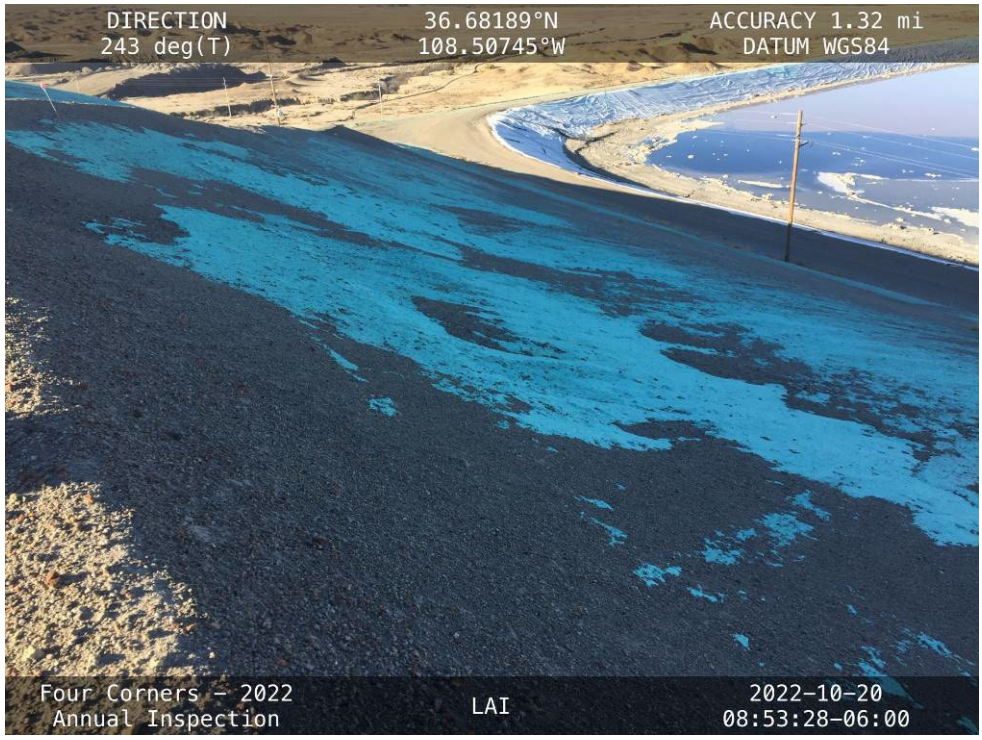
20221020 – IMG_4461
The cenosphere mining area in the Southwest Corner, facing north.

20221020 – IMG_4464
The upstream slope of the West Embankment, facing north from the Southwest Corner.

20221020 – IMG_4468
The crest of the West Embankment, facing north from the Southwest Corner.



20221020 – IMG_4469
A hole in the liner on the south end of the West Embankment.



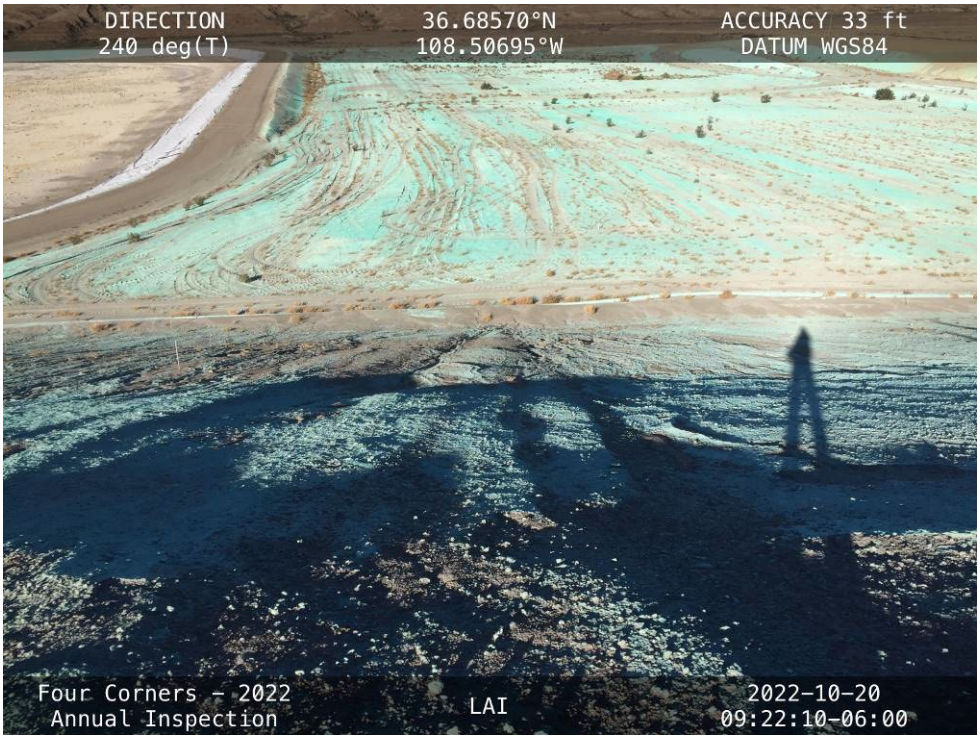
20221020 – IMG_4471
The downstream slope of the West Embankment, facing southwest from the crest.

20221020 – IMG_4474
The downstream slope of the West Embankment, facing north from the crest.

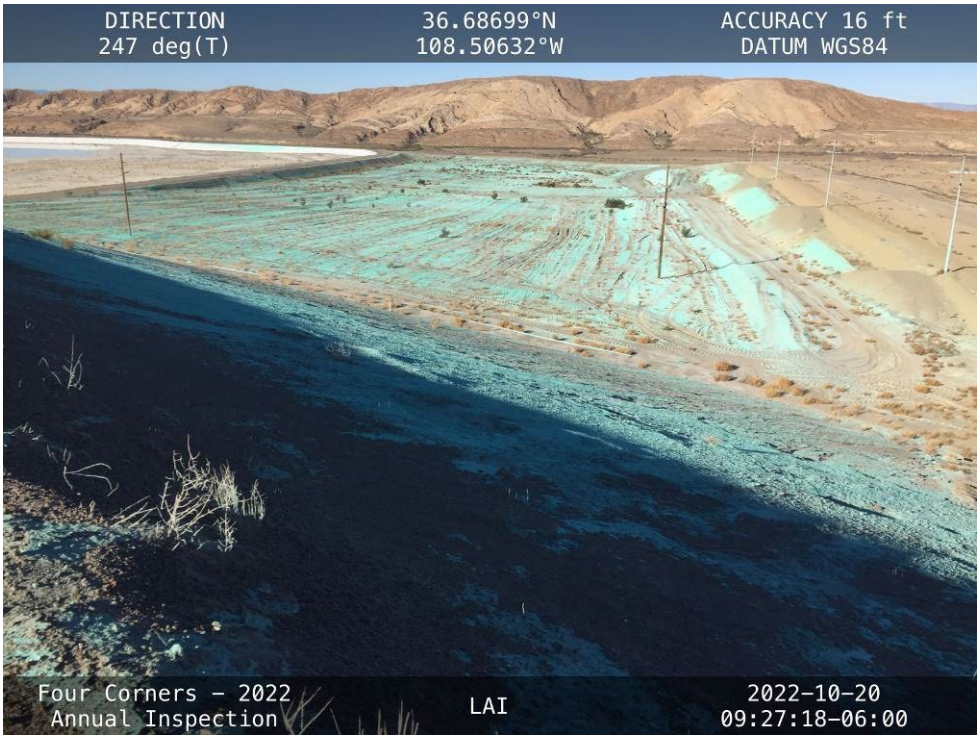
20221020 – IMG_4477
The Drop Inlet Structure, facing west from inside the LAI reservoir.

20221020 – IMG_4484
The upstream slope of the West Embankment, facing south from the Drop Inlet Structure ramp.

20221020 – IMG_4485
The upstream slope of the West Embankment, facing north from the Drop Inlet Structure ramp.



20221020 – IMG_4486
The downstream slope of the West Embankment at the North Toe Buttress with shallow rills.



20221020 – IMG_4489
The North Toe Buttress, facing west from the crest of the West Embankment.

20221020 – IMG_4490
The impounded ash level along the north side of the West Embankment, facing south.

20221020 – IMG_4491
The impounded ash level nearly at the crest of the Northwest Embankment, facing northeast.

20221020 – IMG_4499
The downstream slope of the Northwest Embankment, facing northeast toward Pond 6.

20221020 – IMG_4505

A diversion channel along the Northwest Embankment to keep stormwater away from the crest, facing northeast.

20221020 – IMG_4506

The impounded ash along the Northwest Embankment, facing southwest.

20221020 – IMG_4507
Ruts on the upstream side of the Northwest Embankment crest.

20221020 – IMG_4509
The downstream slope of the Northwest Embankment, facing west.

20221020 – IMG_4510
The downstream slope of the Northwest Embankment, facing northeast.

20221020 – IMG_4512
Ash and the CCR berm constructed to keep stormwater off the crest at the north V-ditch, facing northeast.

20221020 – IMG_4517
The CCR berm constructed to keep stormwater off the crest at the north V-ditch, facing northeast.

20221020 – IMG_4518
Tears in the liner near the north V-ditch where the ash berm was constructed.

20221020 – IMG_4524
The CCR berm constructed to keep stormwater off the crest at the north V-ditch, facing south.

20221020 – IMG_4526
The CCR berm constructed to keep stormwater off the crest at the north V-ditch, facing west.

20221020 – IMG_4527
The upstream slope of the East Embankment, facing south near the north V-ditch.

20221020 – IMG_4528
The CCR berm constructed to keep stormwater off the crest at the north V-ditch, facing northwest.

20221020 – IMG_4530
The crest of the East Embankment, facing south near the north V-ditch.

20221020 – IMG_4533
Erosion on the downstream slope of the East Embankment, facing south.

20221020 – IMG_4534
The East Embankment, regraded north of the old V-ditch, facing north.

20221020 – IMG_4535
Bottom ash built up on the north side of the old V-ditch to contain stormwater run-on.

20221020 – IMG_4537
The downstream slope of the East Embankment, facing northwest.

20221020 – IMG_4541
The old V-ditch and containment berm, facing southwest toward the reservoir.

20221020 – IMG_4547
Bottom ash built up near the old V-ditch to contain the stormwater run-on.

20221020 – IMG_4552
Access ramp to the old V-ditch on the East Embankment.

20221020 – IMG_4555
The downstream slope of the East Embankment, facing south from the middle section.

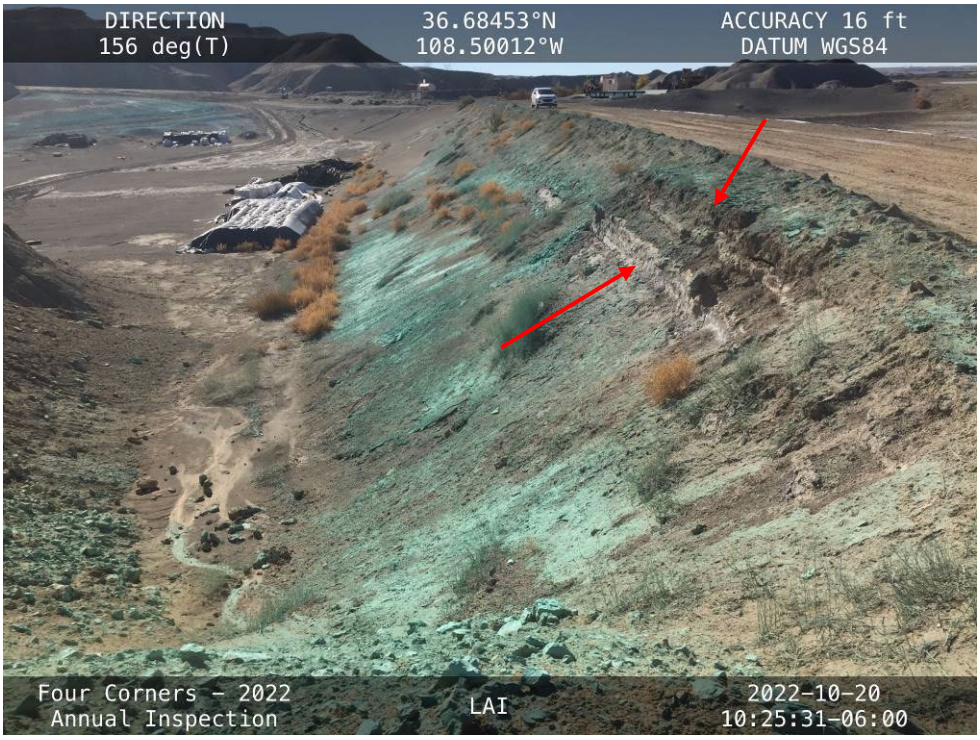
20221020 – IMG_4559
The upstream slope of the East Embankment, facing north from the middle section.

20221020 – IMG_4560
A series of shallow holes in the East Embankment anchor trench, facing south.

20221020 – IMG_4565
The upstream slope of the East Embankment facing southeast.

20221020 – IMG_4566
The upstream slope of the East Embankment facing northeast.

20221020 – IMG_4567
A series of shallow holes in the East Embankment anchor trench, facing south.



20221020 – IMG_4568
The downstream slope at the southern end of the East Embankment, with vertical scarps.

20221020 – IMG_4745
The downstream slope of the West Embankment, facing north from the toe.

20221020 – IMG_4796
The downstream slope of the West Embankment, facing east from the LDWP.

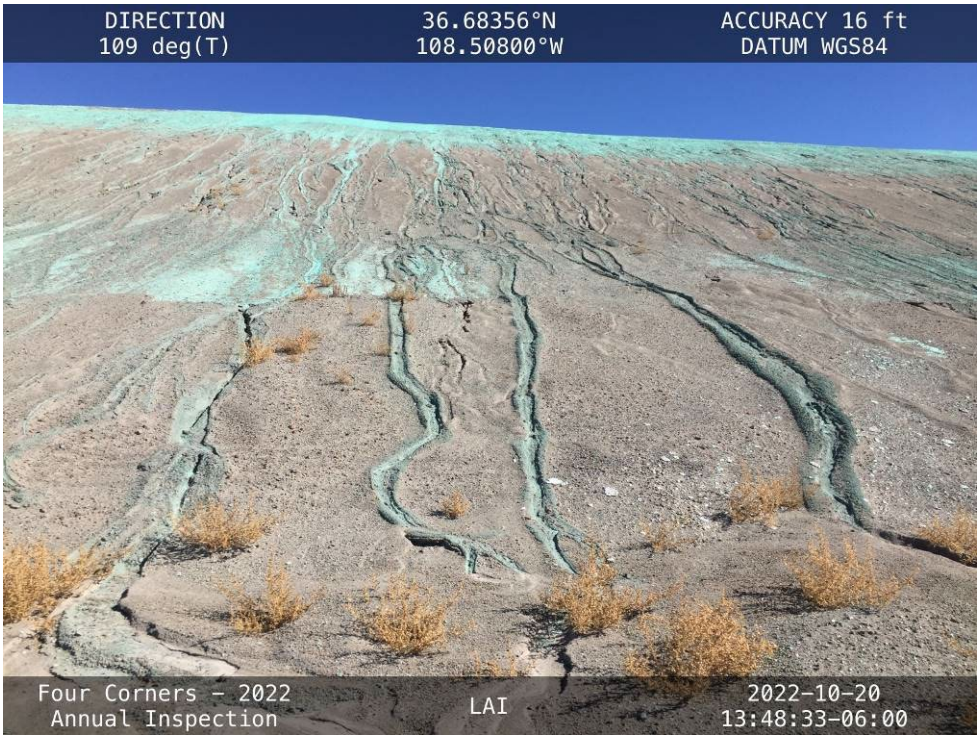
20221020 – IMG_4797
The downstream slope of the West Embankment, facing east from the LDWP.

20221020 – IMG_4798
The downstream slope of the West Embankment, facing east from the LDWP.

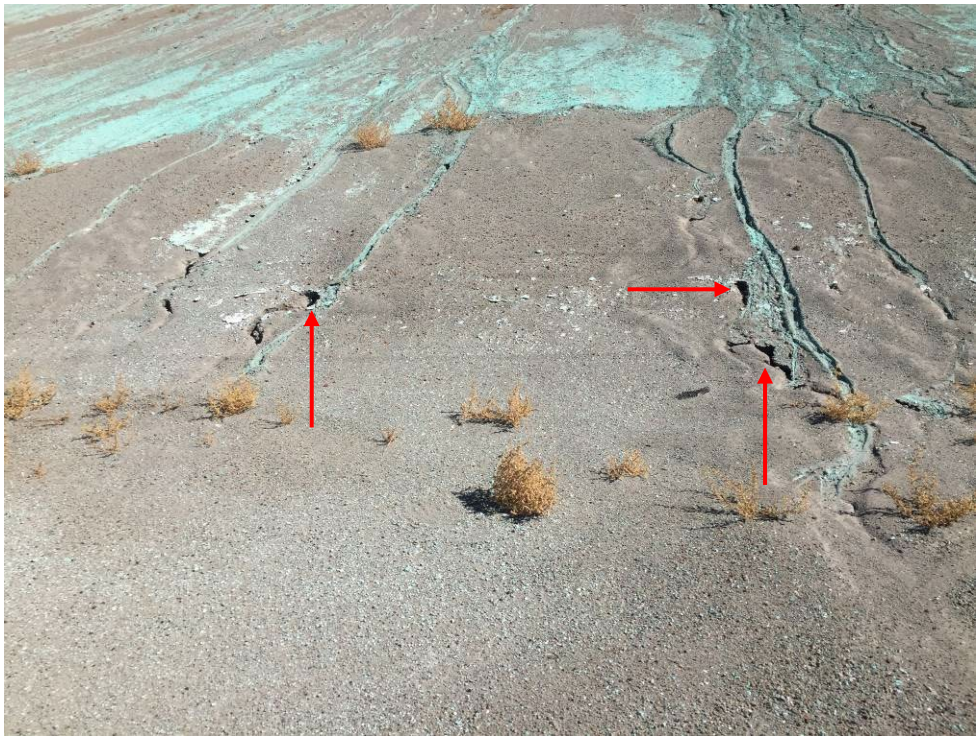
20221020 – IMG_4800
The downstream slope of the West Embankment, facing east from the LDWP.

20221020 – IMG_4821
Erosion gullies at the toe of the West Embankment near the south end of the North Toe Buttress.

20221020 – IMG_4822
Erosion gullies at the toe of the West Embankment around the return water pipe from the LAI/LDWP pump station.



20221020 – IMG_4874
Erosion rills on the West Embankment covered with dust suppressant.



20221020 – IMG_4876
Erosion rills on the West Embankment, undermined beneath the dust suppressant.

20221020 – IMG_4907
An erosion rill at the junction of the Northwest Embankment (soil) and the West Embankment (ash).

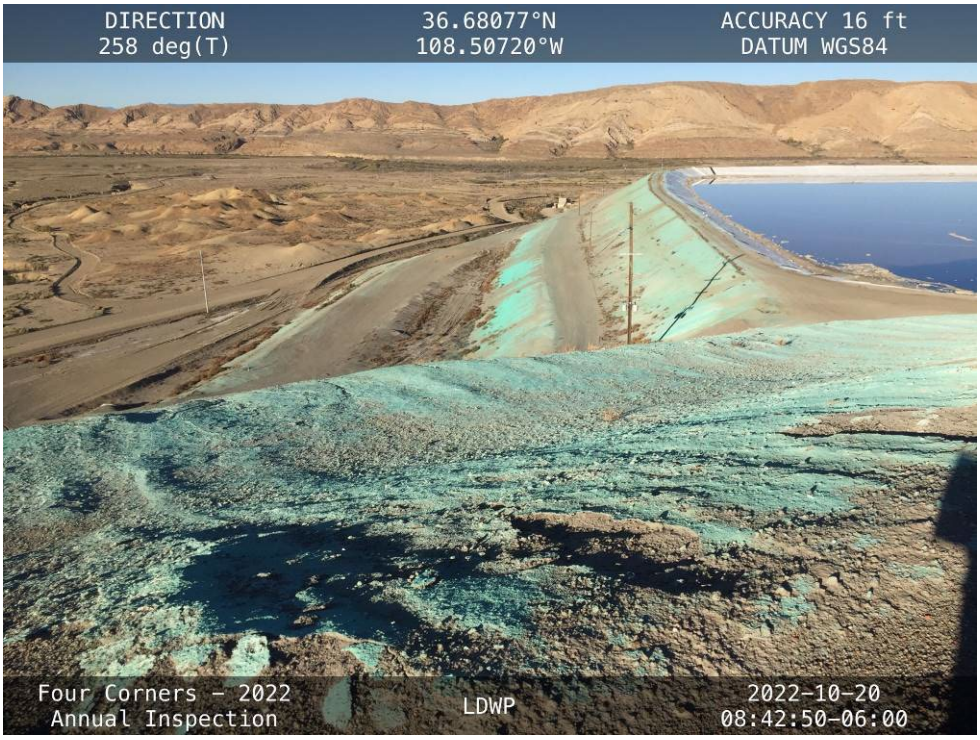
20221020 – IMG_4909
The downstream slope of the Northwest Embankment, looking northeast along the toe.

20221020 – IMG_4913
The downstream slope of the Northwest Embankment, looking northeast along the toe.

20221020 – IMG_4709
The South Embankment toe drain in a dry condition.

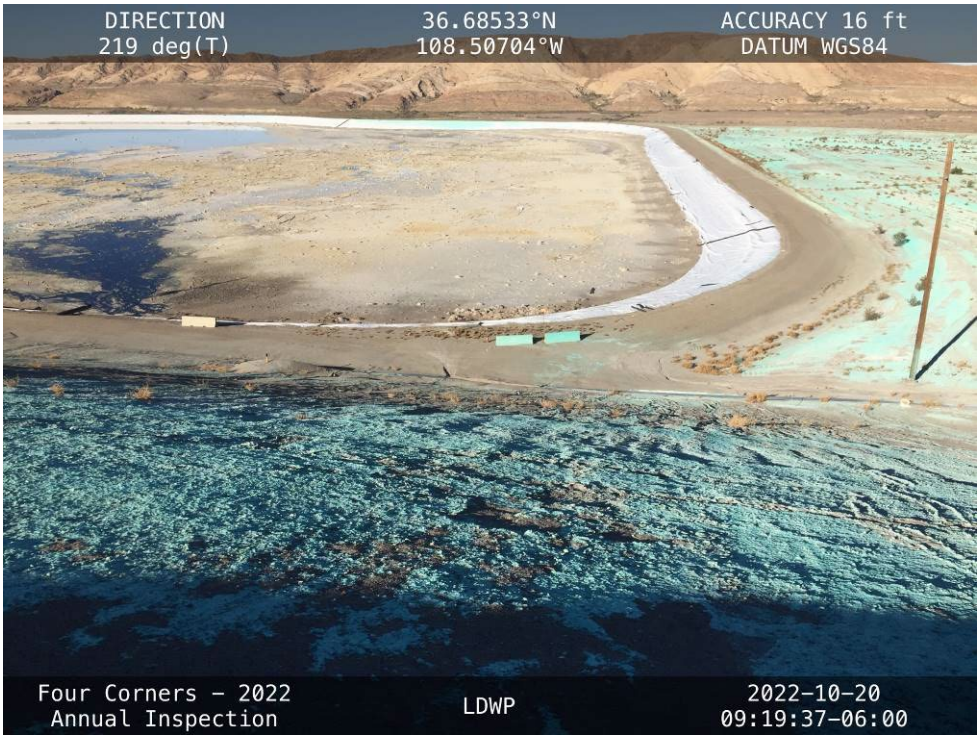
APPENDIX B

LINED DECANT WATER POND (LDWP) PHOTO LOG

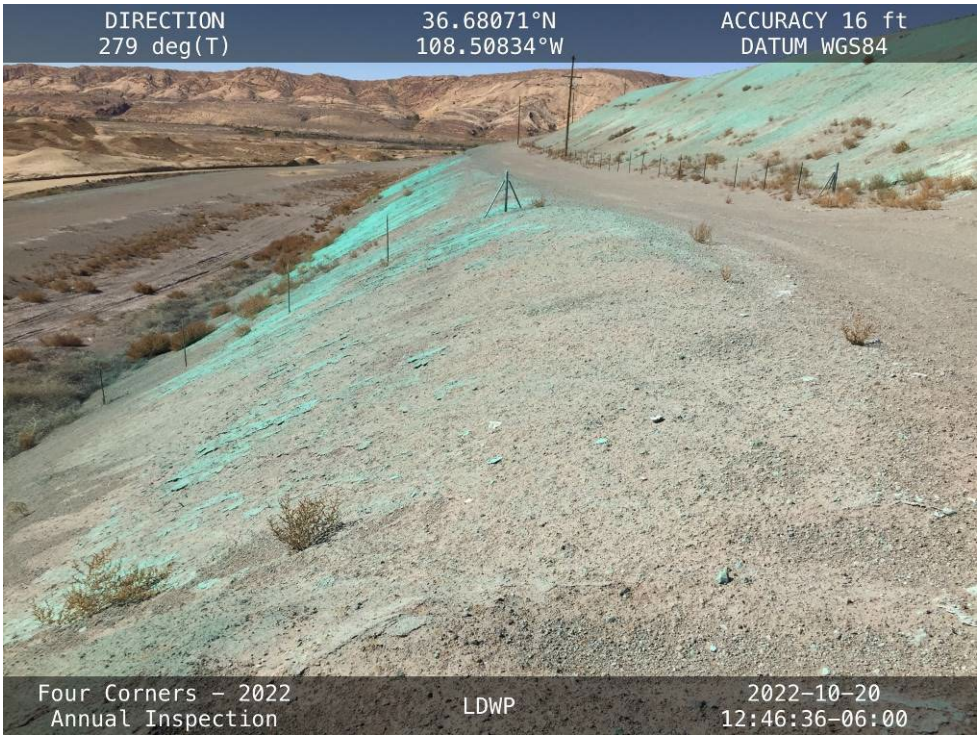


20221020 – IMG_4457
The downstream slope of the South Embankment, facing west from the LAI crest.

20221020 – IMG_4465
The upstream slope of the South Embankment, facing west from the LAI crest.



20221020 – IMG_4482
The north side of the LDWP reservoir, facing west from the crest of the LAI.



20221020 – IMG_4738
The downstream slope of the South Embankment, facing west along the lower half.

20221020 – IMG_4739
The downstream slope of the South Embankment, facing west along the upper half.

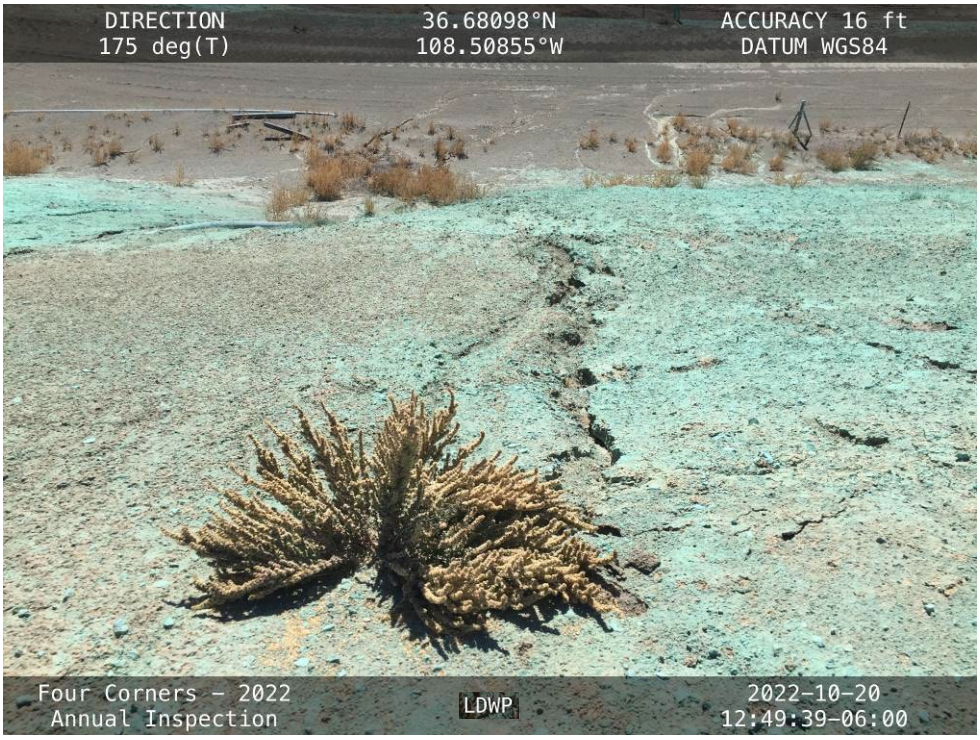
20221020 – IMG_4741
The crest of the East Embankment, facing north from the south end.

20221020 – IMG_4742
The upstream slope of the East Embankment, facing north from the south end.

20221020 – IMG_4748
The upstream slope of the South Embankment, facing west from the southeast corner.

20221020 – IMG_4749
The crest of the South Embankment, facing west from the southeast corner.

20221020 – IMG_4750
The downstream slope of the South Embankment, facing west from the southeast corner.



20221020 – IMG_4751
Erosion rills forming on the downstream slope in the upper half of the South Embankment.

20221020 – IMG_4752
A rut in the crest of the South Embankment.

20221020 – IMG_4759
The crest of the South Embankment, facing east from the southwest corner.

20221020 – IMG_4760
Minor erosion on the downstream slope of the South Embankment, facing west toward the Pond 3 Pump House.

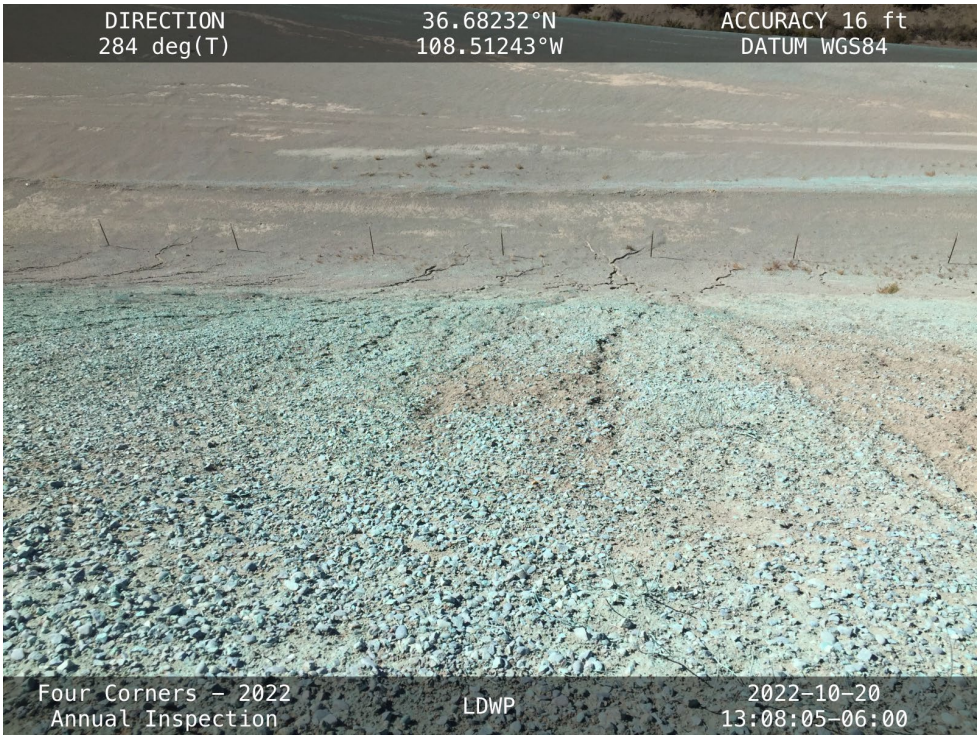
20221020 – IMG_4763
The upstream slope of the West Embankment, facing north from the southwest corner.

20221020 – IMG_4764
The upstream slope of the South Embankment, facing east from the West Embankment.

20221020 – IMG_4766
The Interstitial Evacuation Pump access pipes in the southwest corner of the LDWP.

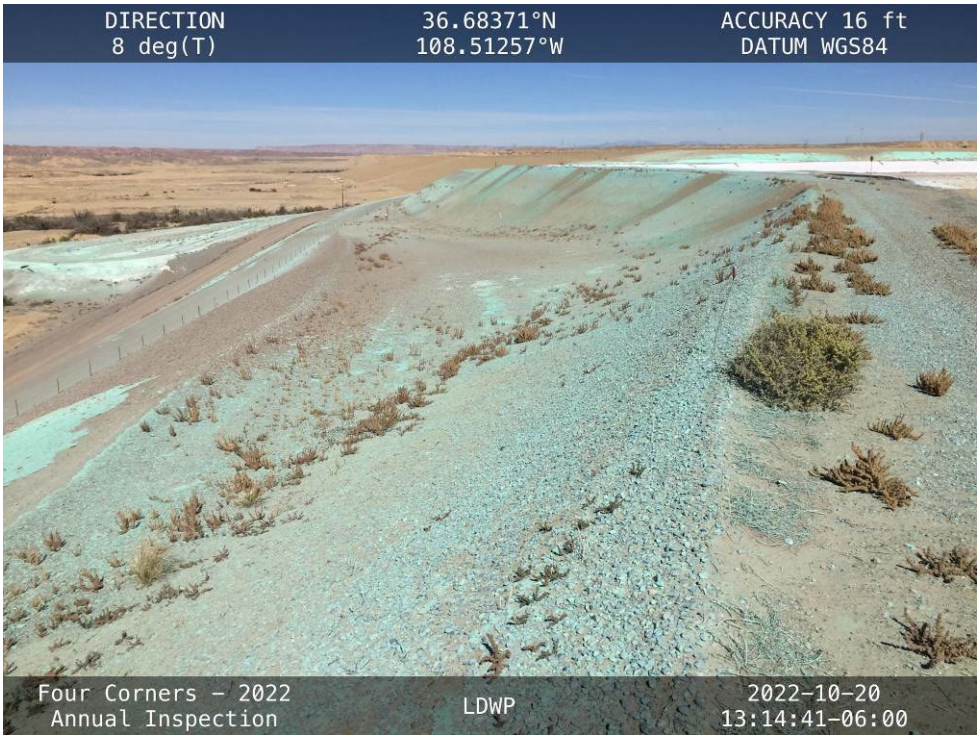
20221020 – IMG_4770
The downstream slope of the West Embankment, facing north from the south end.

20221020 – IMG_4771
The crest of the West Embankment, facing north from the south end.



20221020 – IMG_4772
Minor erosion on the downstream slope of the West Embankment, facing west.

20221020 – IMG_4781
The inlet pipe on the West Embankment, facing west from the crest.

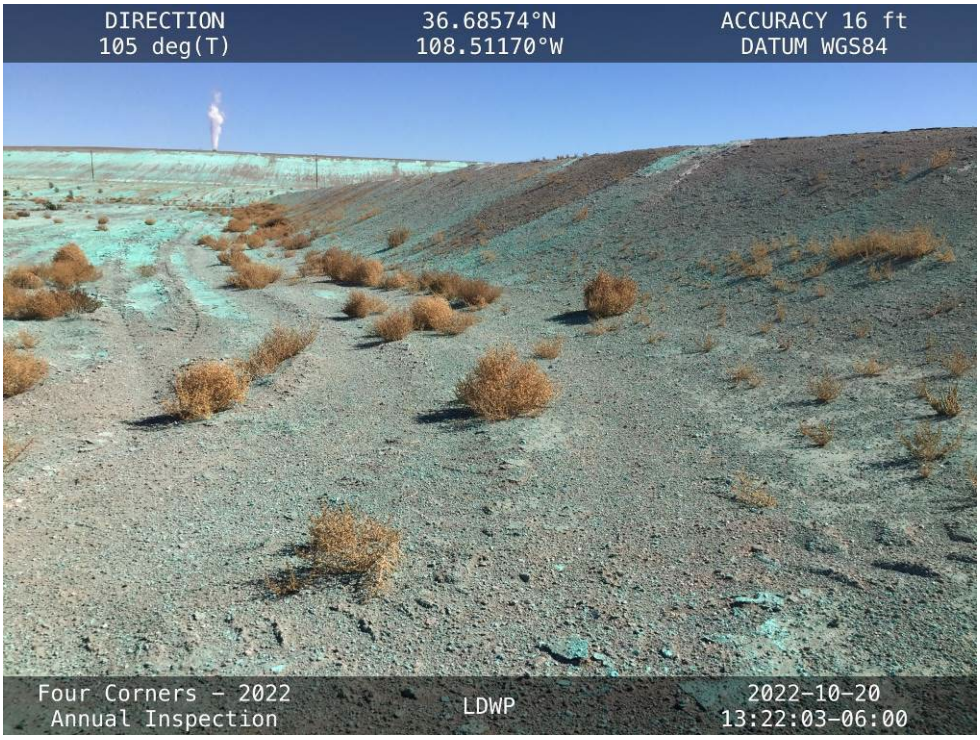


20221020 – IMG_4787
The northern half of the West Embankment downstream slope, facing north.

20221020 – IMG_4790
The liner pulling out of the anchor trench in the northern portion of the West Embankment.

20221020 – IMG_4793
The northwest corner of the LDWP, facing north from the West Embankment.

20221020 – IMG_4803
The upstream slope of the West Embankment, facing south.



20221020 – IMG_4804
The downstream slope of the North Embankment, facing east from the northwest corner.

20221020 – IMG_4805
The sign for the CCR unit, to be re-erected.

20221020 – IMG_4807
The crest of the North Embankment, facing east from the West Embankment.

20221020 – IMG_4810
A hole in the liner along the North Embankment marked with a pin flag.

20221020 – IMG_4816
The north side of the reservoir, facing south from the North Embankment crest.

20221020 – IMG_4817
The north side of the reservoir, facing east from the North Embankment crest.

20221020 – IMG_4818
The surface monuments for piezometers P-23, P-24, and P-25.

20221020 – IMG_4819
The crest and upstream slope of the East Embankment, facing south from the northeast corner.

20221020 – IMG_4824
The upstream slope of the North Embankment, facing west from the East Embankment.

20221020 – IMG_4826
The LAI/LDWP pump station.

20221020 – IMG_4828
The LAI/LDWP pump station.

20221020 – IMG_4829
The suction intake lines in the northeast corner of the LDWP.

20221020 – IMG_4830
The 8-inch and 16-inch HDPE outlet pipes used to convey decant water from the LAI.

20221020 – IMG_4861
Portions of the outer pipes for the suction intake lines exposed across the East Embankment crest.

20221020 – IMG_4867
The upstream slope of the East Embankment, facing south from the northern half of the LDWP.

20221020 – IMG_4868
The crest of the East Embankment, facing south from the northern end of the LDWP.

20221020 – IMG_4865
The crest and upstream slope of the East Embankment, facing north.

20221020 – IMG_4872
The reservoir staff gage and the elevation gage marked on the liner along the East Embankment.

20221020 – IMG_4879
The downstream slope of the South Embankment, facing north from the toe.

20221020 – IMG_4739
The downstream slope of the South Embankment, facing north from the toe.

20221020 – IMG_4884
Erosion repaired on the western half of the South Embankment downstream slope, facing north from the toe.

20221020 – IMG_4888
New and repaired erosion on the downstream slope at the western end of the South Embankment.

20221020 – IMG_4893
The West Embankment slope, facing north from the toe road near the Pond 3 Pump House.

APPENDIX C

COMBINED WASTE TREATMENT POND (CWTP) PHOTO LOG

20221019 – IMG_3990
The crest of the North Embankment, facing east from the Left Abutment with the 18-inch pipe installed to transfer water from the canal to the CWTP.

20221019 – IMG_3993
The 18-inch pipe installed to transfer water from the canal to the CWTP.

20221019 – IMG_3994
Vegetation on the downstream slope along the northern embankment, facing east.

20221019 – IMG_3997
Erosion around the water level transducer and the 18-inch pipe that transfers water from the canal to the CWTP.

20221019 – IMG_3998
Shallow holes on the downstream shoulder of the North Embankment where there were depressions in 2021 (2021 IMG_8448).

20221019 – IMG_4001
An ant hill on the downstream shoulder of the North Embankment.

20221019 – IMG_4002
Loose soil and a 6-inch deep erosion hole on the downstream shoulder of the North Embankment.

20221019 – IMG_4006
Erosion rills on the downstream slope of the North Embankment.

20221019 – IMG_4007
Erosion undermining a riprap boulder on the downstream slope of the North Embankment.

20221019 – IMG_4008
The downstream slope along the North Embankment, facing west.

20221019 – IMG_4009
Vegetation to be removed from the downstream slope of the North Embankment.

20221019 – IMG_4014
The crest of the North Embankment, facing east from the curved section of the CWTP.

20221019 – IMG_4015

The upstream slope of the North Embankment, facing east from the curved section of the embankment.

20221019 – IMG_4016

Two erosion holes up to 9 inches deep on the crest along the curved section of the embankment.

20221019 – IMG_4017
Erosion beneath a riprap boulder on the downstream slope.

20221019 – IMG_4018
The reservoir and vegetation along the upstream slope of the embankment, facing northwest.

20221019 – IMG_4021

Two small erosion holes on the downstream shoulder of the East Embankment crest. These erosion holes were also observed during the 2021 inspection (2021 Photo IMG_8375).

20221019 – IMG_4030

A stretch of loose soil near the 7-inch-deep erosion hole observed in 2021 (2021 IMG_8359) and a previous 11.5-foot-long crack observed in 2018 and 2020.

20221019 – IMG_4037
The inactive 30-inch RCP outfall from the CWTP to the discharge canal.

20221019 – IMG_4040
The crest of the CWTP, facing north from the south end of the East Embankment.

20221019 – IMG_4041
The upstream slope and the CWTP flow monitoring structure on the East Embankment.

20221019 – IMG_4042
Water impounded approximately 2′-5″ below the top stop log at the overflow weir.

20221019 – IMG_4045
An ant hill on the downstream shoulder of the embankment.

20221019 – IMG_4044
The reservoir and vegetation along the upstream slope of the embankment, facing northwest.

20221019 – IMG_4049
A zone of loose material on the upstream half of the crest also observed during the 2020 and 2021 inspections.

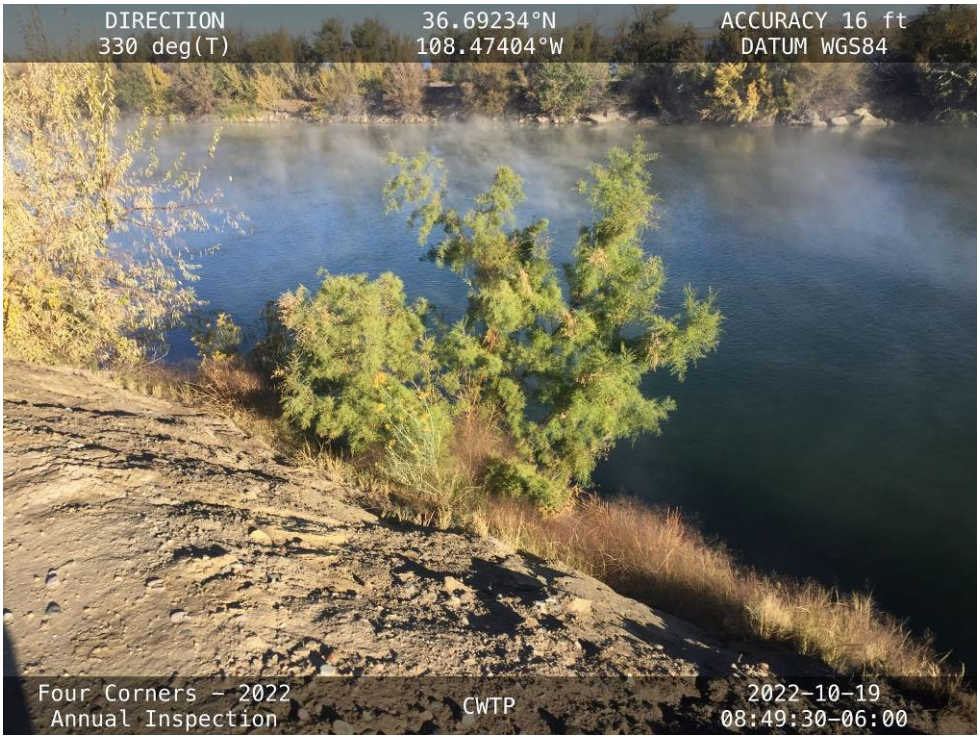
20221019 – IMG_4056
A zone of loose material on the upstream half of the crest also observed during the 2020 and 2021 inspections near the location of the 11.5-foot long tension crack observed during the 2020 and 2018 inspections.

20221019 – IMG_4061
Erosion around riprap boulders along the downstream slope of the East Embankment.

20221019 – IMG_4072
Area where a riprap boulder was separating from the rest of the slope during the 2021 inspection.

20221019 – IMG_4078
The crest along the eastern portion of the embankment, facing northwest.

20221019 – IMG_4080
Erosion under riprap along the downstream slope.



20221019 – IMG_4085
Vegetation to be removed from the downstream slope.

20221019 – IMG_4087
Erosion and vegetation to be removed from the downstream slope.

20221019 – IMG_4091
Approximately 14 inches of erosion along the upstream slope of the North Embankment.

20221019 – IMG_4096 **20221019 – IMG_4097**
Water in the decant cells.

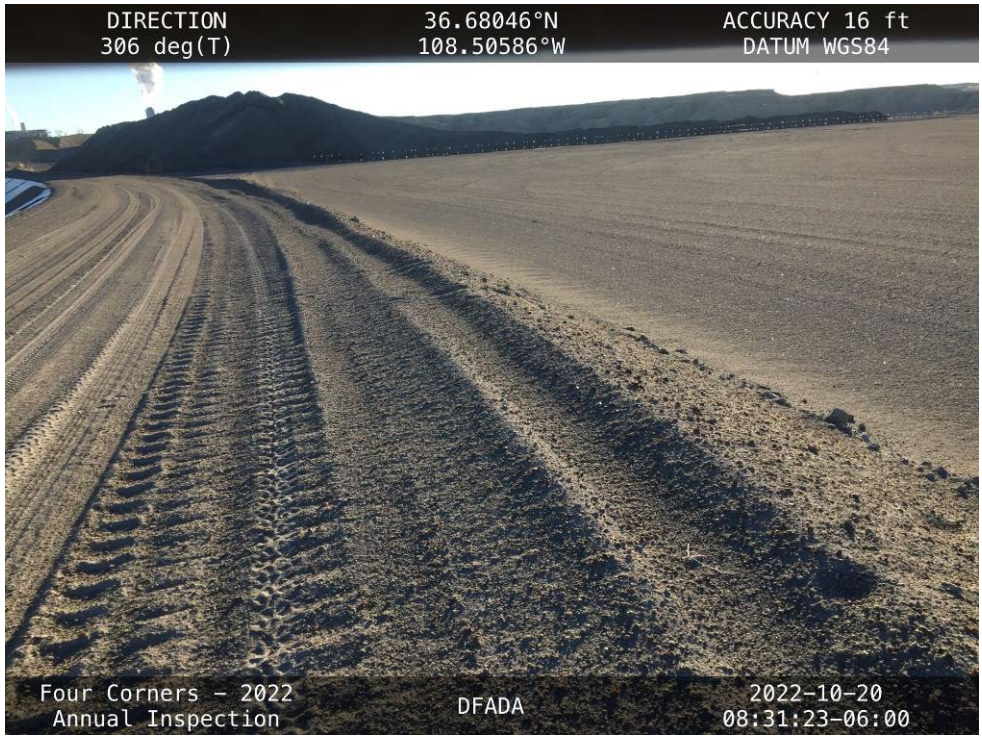
20221019 – IMG_4105
The west side of the CWTP reservoir with the decant cells on the left, facing north.

20221019 – IMG_4106
The CMPs formerly used to transfer water from the decant cells to the CWTP reservoir.

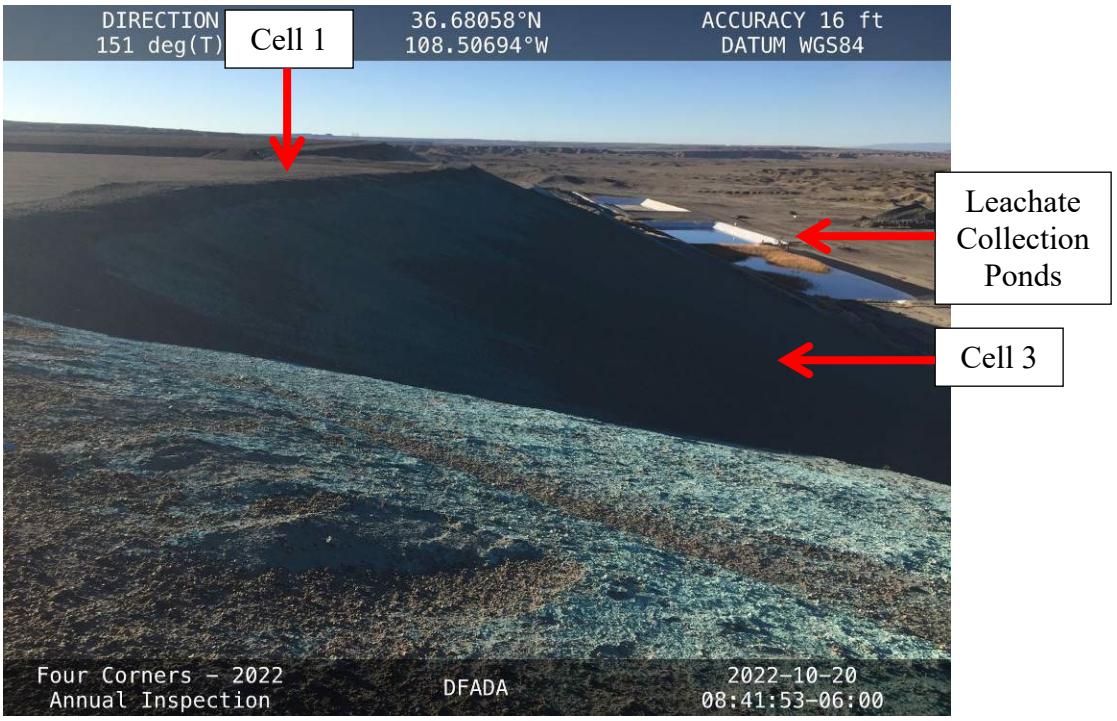
APPENDIX D

DRY FLY ASH DISPOSAL AREA (DFADA) PHOTO LOG

20221020 – IMG_4412
Cell 3, facing southwest from the South Embankment of the LAI.



20221020 – IMG_4436
The top of the eastern portion of Cell 1, facing east from the LAI crest.



20221020 – IMG_4456
The leachate collection ponds and the western portion of DFADA Cells 1 and 3, facing south from the LAI crest.

20221020 – IMG_4523
A dust cloud being generated in the DFADA, as seen from the north side of the LAI.

20221020 – IMG_4576
MW-55R and the east side of Cell 2, facing south from the northeast side.

20221020 – IMG_4578
The slope on the southeast side of Cell 2, facing southwest from the east side.

20221020 – IMG_4585

The south slope of Cell 2 and the surface of Cell 4, facing north from the southeast side of Cell 4.

20221020 – IMG_4587

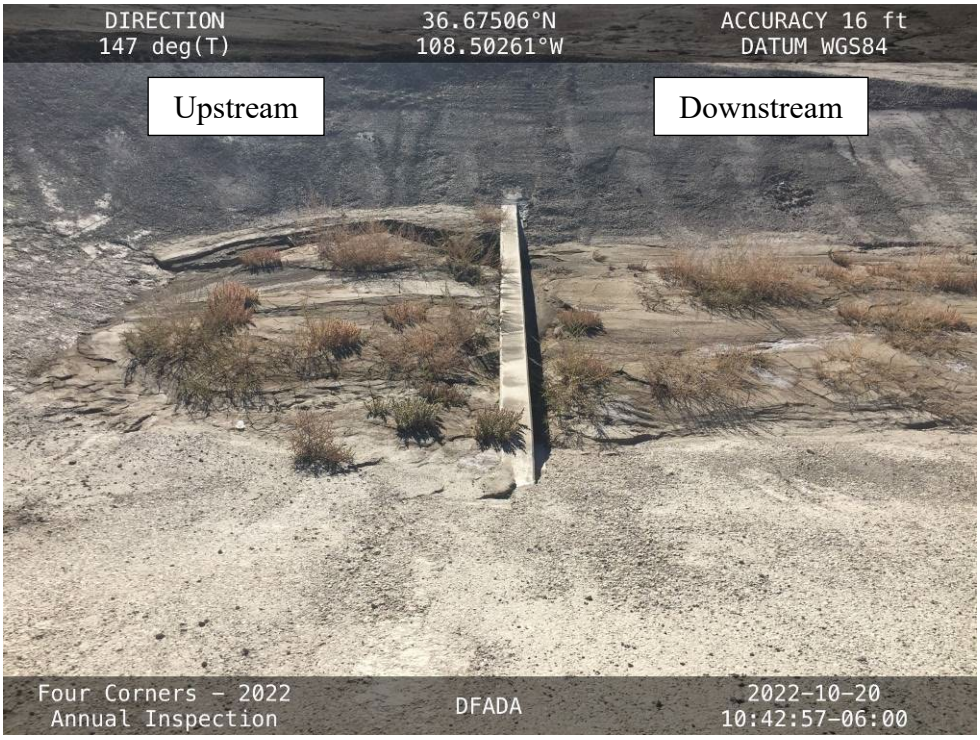
An erosion gully where the Stormwater Diversion Channel previously terminated, immediately upstream of the section lined with cement-treated base.

20221020 – IMG_4591
The crest road along the south side of Cell 4, facing west.

20221020 – IMG_4593
Cell 4 with the downstream slope of Cell 1 in the background, facing west.

20221020 – IMG_4597
The surface of Cell 4 with the downstream slopes of Cells 1 and 2 in the background, facing northwest from the south side of Cell 4.

20221020 – IMG_4596
Ash placed in Cell 4, facing east toward the Plant.

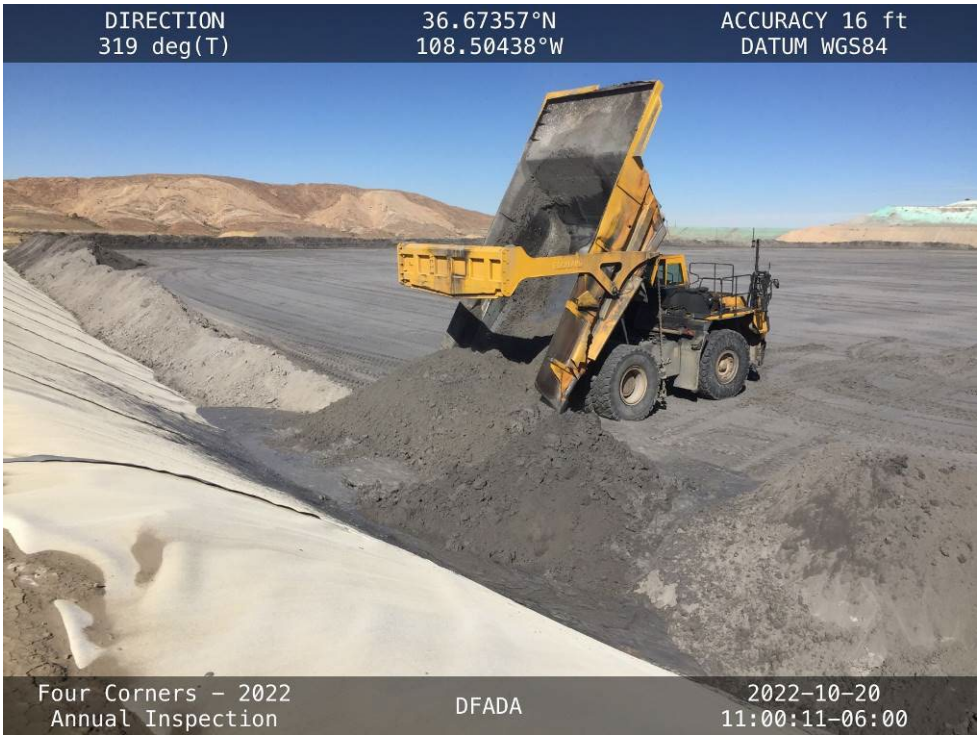


20221020 – IMG_4603

The new concrete weir wall in the new stilling basin with sediment on both sides.

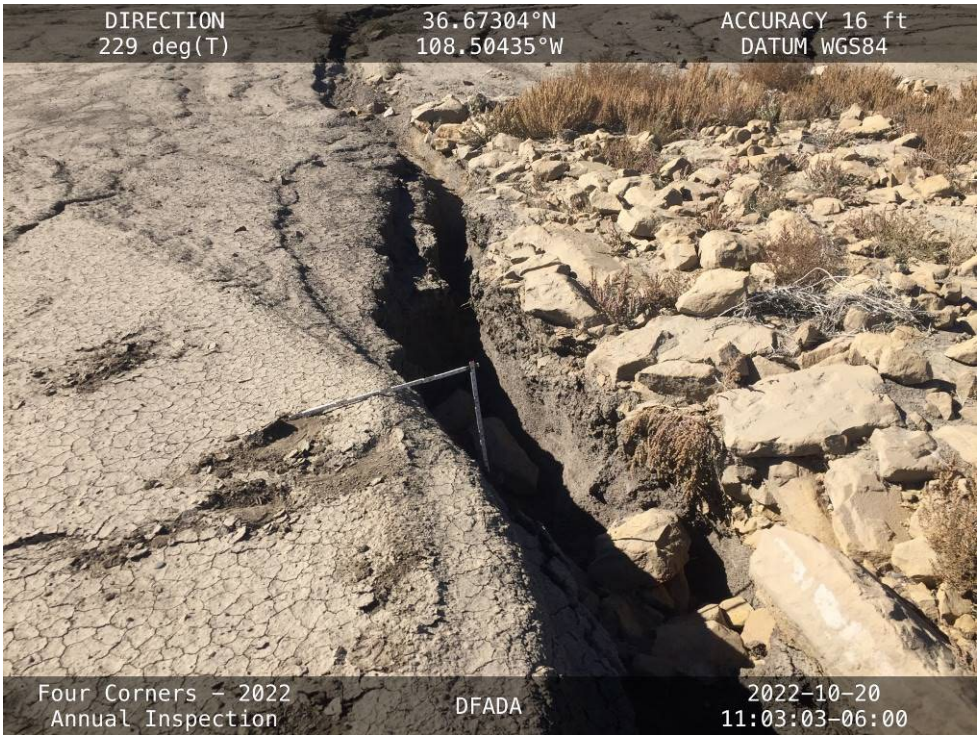
20221020 – IMG_4604

The new diversion channel downstream of the stilling basin along the south side of Cell 4.



20221020 – IMG_4625
APS placing ash in Cell 4.

20221020 – IMG_4628
The headwall at the new outlet for the Stormwater Diversion Channel, buried in sediment.



20221020 – IMG_4631
3.5 feet of erosion at the new outlet for the Stormwater Diversion Channel.

20221020 – IMG_4636
Erosion around the new outlet for the Stormwater Diversion Channel.

20221020 – IMG_4641
The Cell 4 leachate collection pond, as seen from the northwest corner.

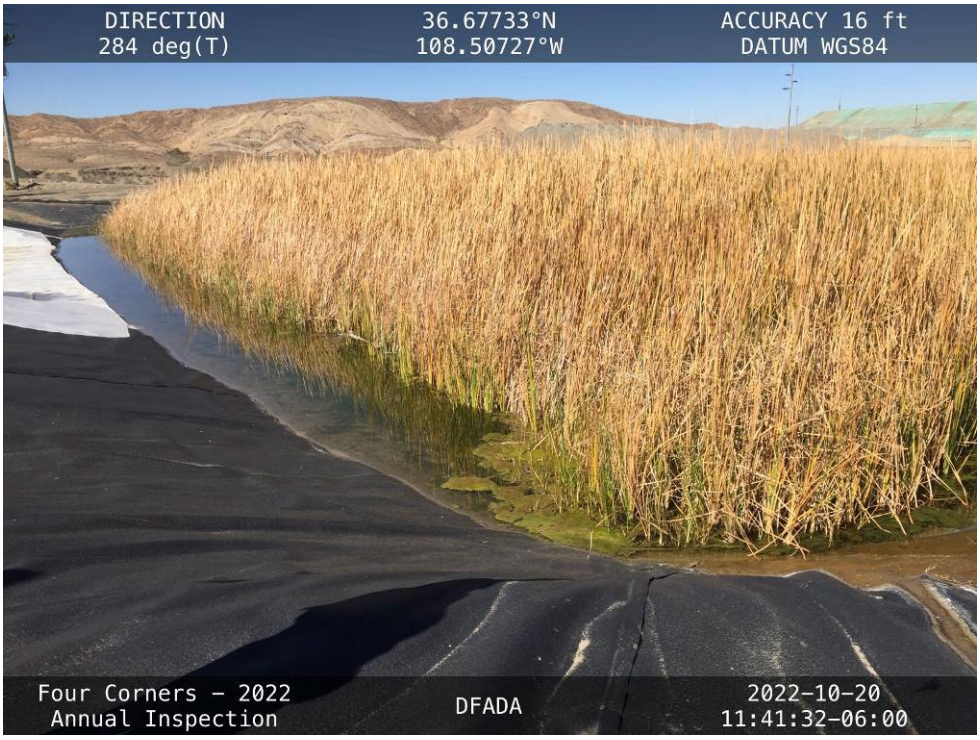
20221020 – IMG_4648
The western toe of Cell 4, facing north from the south end.

20221020 – IMG_4649
The junction of Cell 1 and Cell 4, facing northeast from the western toe.

20221020 – IMG_4653
The DFADA Cell 2 leachate collection pond, facing north from the southwest corner of Cell 1.

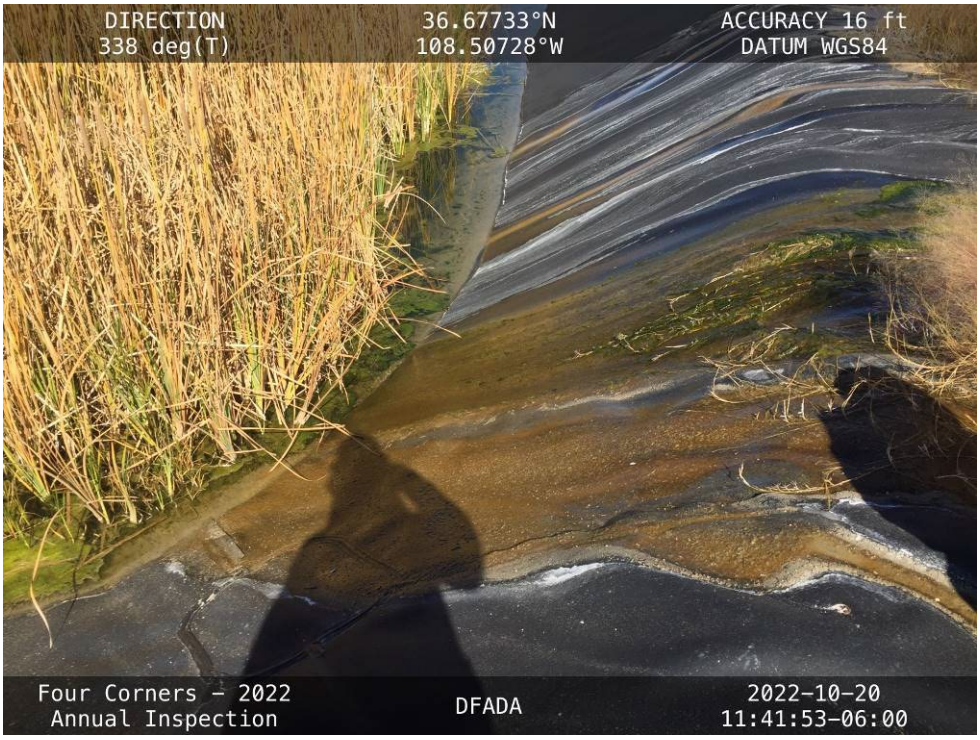
20221020 – IMG_4656
Reeds along the western toe of Cell 1, facing north from the southwest corner.

20221020 – IMG_4658
The western slope and toe of Cell 1, facing south from the leachate collection pond.



20221020 – IMG_4661
The DFADA Cell 1 leachate collection pond, facing west from the western toe of Cell 1.

20221020 – IMG_4662
Vegetation to be removed from the western toe of Cell 1.



20221020 – IMG_4664
Water draining from Cell 1 and seeping directly over the liner into the leachate collection pond.

20221020 – IMG_4674
The drainage channel to the Cell 1 leachate collection pond, filled with sediment and grasses.

20221020 – IMG_4687
The Cell 1 leachate collection pond and western slope.

20221020 – IMG_4689
The Cell 1 leachate collection pond and western slope.

20221020 – IMG_4702
The Cell 3/Cell 1 junction, facing east from the toe.

20221020 – IMG_4707
The junction of the LAI and Cell 3, facing east.

20221020 – IMG_4708
The downstream toe of the Cell 3 West Embankment, facing south.

20221020 – IMG_4712
The DFADA Cell 2/4 access road, facing northeast from the Cell 2/3 junction.

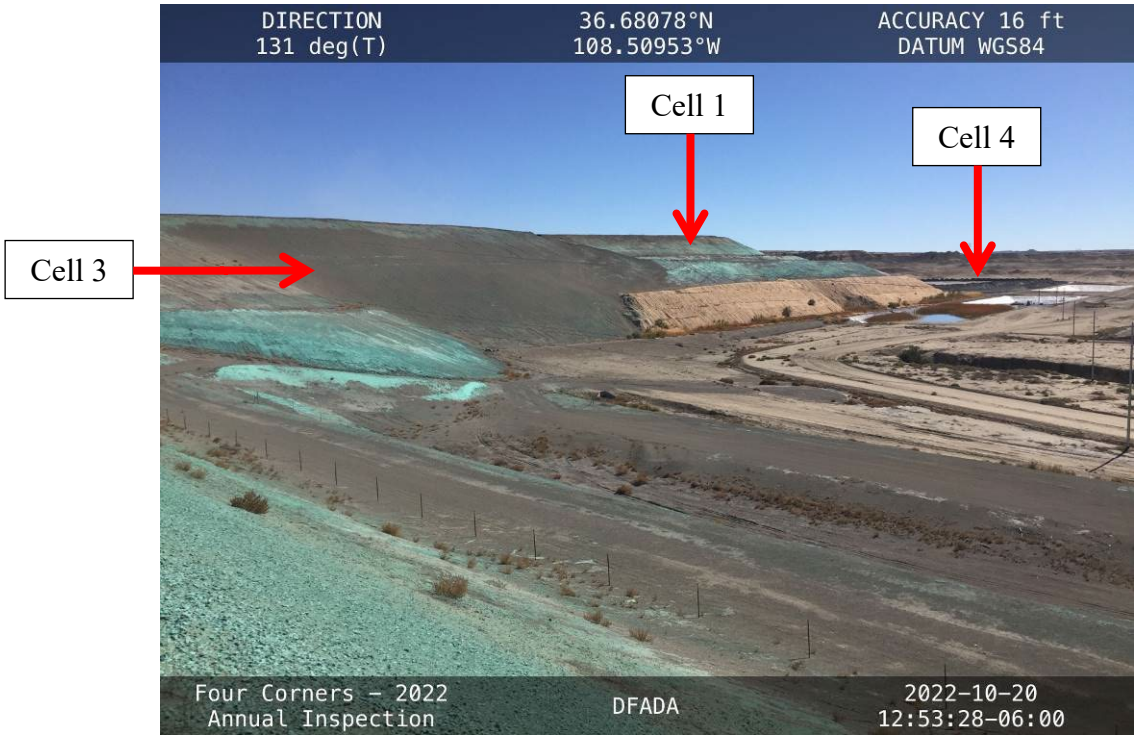
20221020 – IMG_4721
Cell 4, facing east from the southwest corner of Cell 1.

20221020 – IMG_4724
Cell 4, facing south from the southwest corner of Cell 1.

20221020 – IMG_4727
Cells 1 and 3, facing north from the southwest corner of Cell 1.

20221020 – IMG_4730
The top of Cell 2, facing east from the southwest corner of Cell 1.

20221020 – IMG_4735
The inlet to the Stormwater Diversion Channel, facing north from the ash haul road.



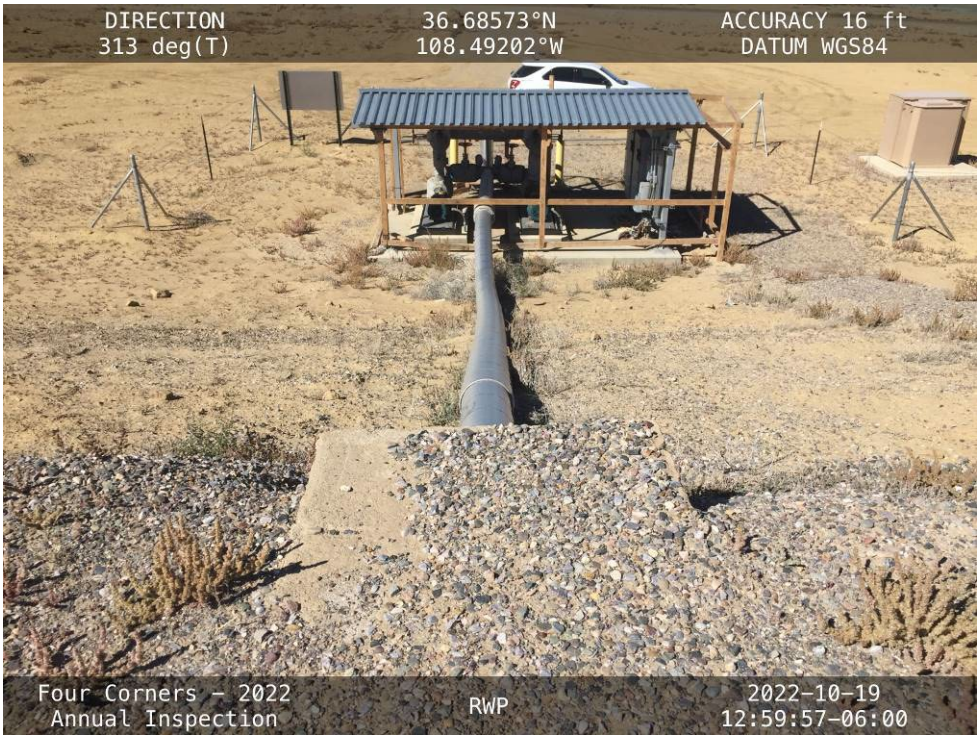
20221020 – IMG_4755
The downstream slope of DFADA Cells 1, 3, and 4, facing south from the LDWP crest.

APPENDIX E

RETURN WATER POND (RWP) PHOTO LOG

20221019 – IMG_4297
The RWP pumps.

20221019 – IMG_4300
The RWP pumps, no longer leaking.



20221019 – IMG_4309
The return water pipe and pumps along the downstream slope of the Northwest Embankment.

20221019 – IMG_4311
The upstream slope of the Northeast Embankment, facing southeast from the north corner.

20221019 – IMG_4312
The upstream slope of the Northwest Embankment, facing southwest from the north corner.

20221019 – IMG_4313
The crest of the Northwest Embankment, facing southwest from the north corner.

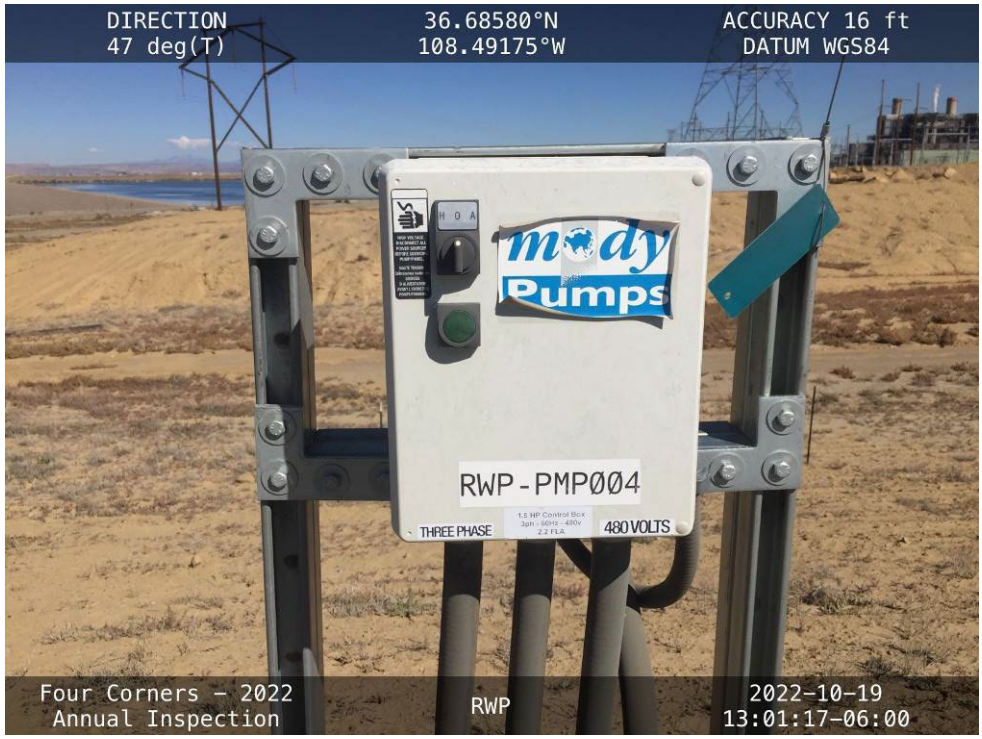
20221019 – IMG_4314
The downstream slope of the Northwest Embankment, facing southwest from the north corner.

20221019 – IMG_4315
The liner at the north corner.

20221019 – IMG_4316
The crest of the Northeast Embankment, facing southeast from the north corner.

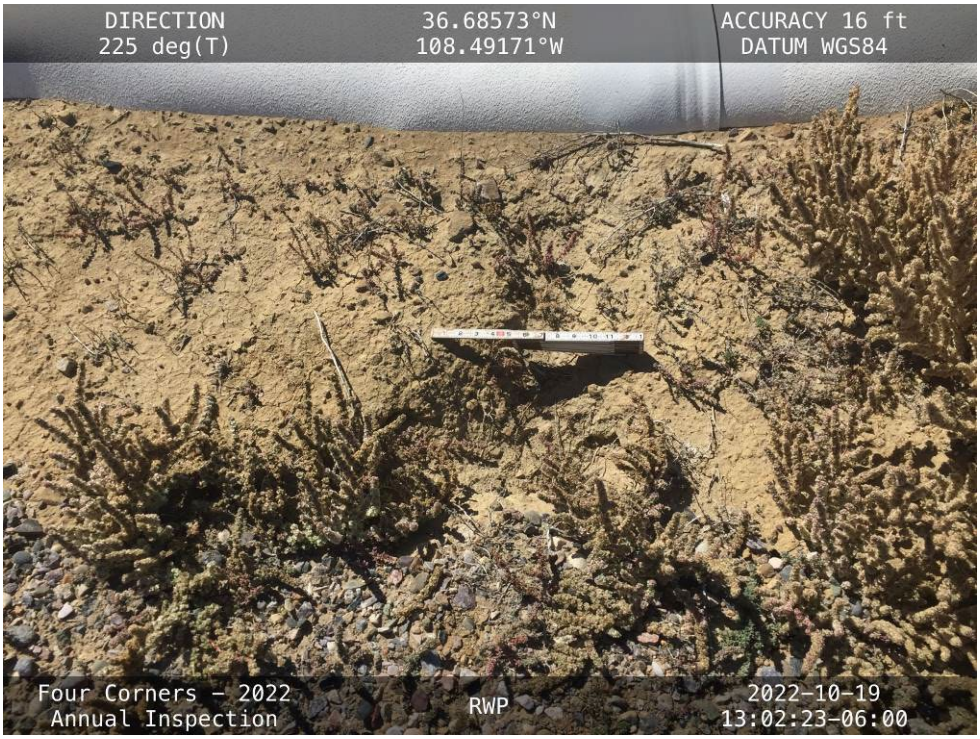
20221019 – IMG_4317
The downstream slope of the Northeast Embankment, facing southeast from the north corner.

20221019 – IMG_4318
A monitoring well installed at the toe of the Northeast Embankment.

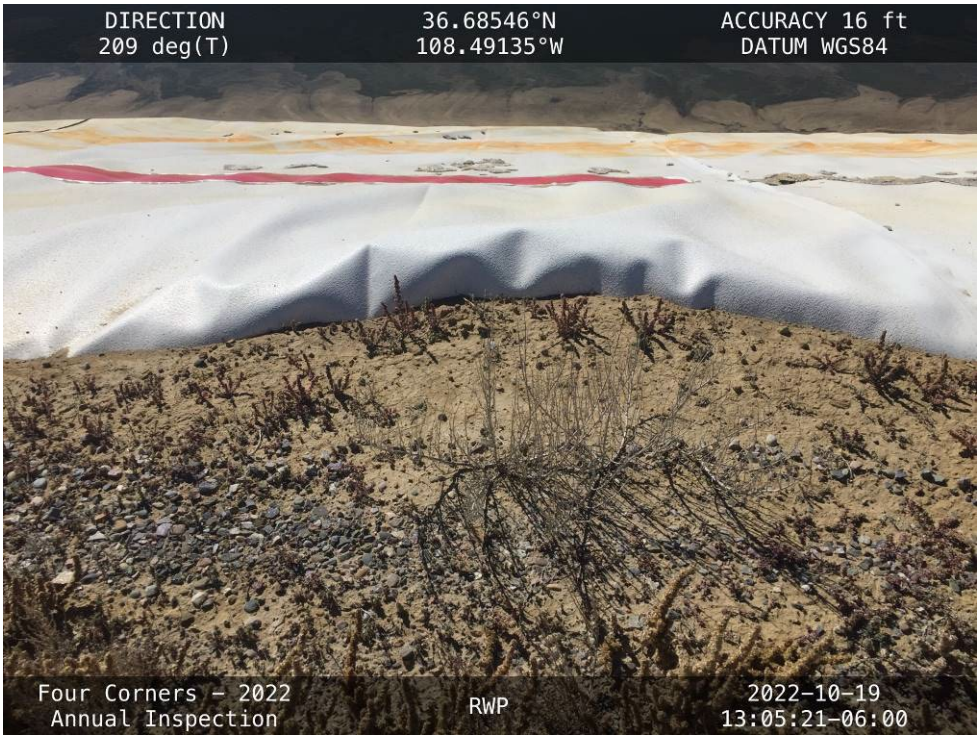


20221019 – IMG_4319
The LCRS pump control for RWP Pump 004 on the north side of the RWP.

20221019 – IMG_4320
The LCRS riser pipes and crane on the north side of the RWP.



20221019 – IMG_4323
Shallow erosion in the anchor trench on the Northeast Embankment.



20221019 – IMG_4324
The liner pulling out of the anchor trench along the Northeast Embankment.

20221019 – IMG_4325
The upstream slope of the Southeast Embankment, facing southwest from the northeast corner.

20221019 – IMG_4329
The drainage ditch along the downstream slope of the Southeast Embankment, facing southwest.

20221019 – IMG_4330
The crest of the Southeast Embankment, facing southwest from the northeast corner.

20221019 – IMG_4335
The crest of the FGD Pond cell Southeast Embankment, facing southwest.

20221019 – IMG_4337
The upstream slope of the FGD Pond cell Internal Embankment, facing northwest.

20221019 – IMG_4338
The crest of the FGD Pond cell Internal Embankment, facing northwest.

20221019 – IMG_4339
The upstream slope of the RWP Internal Embankment, facing northwest.

20221019 – IMG_4341
The water in the FGD Pond cell and the RWP cell, facing northwest.

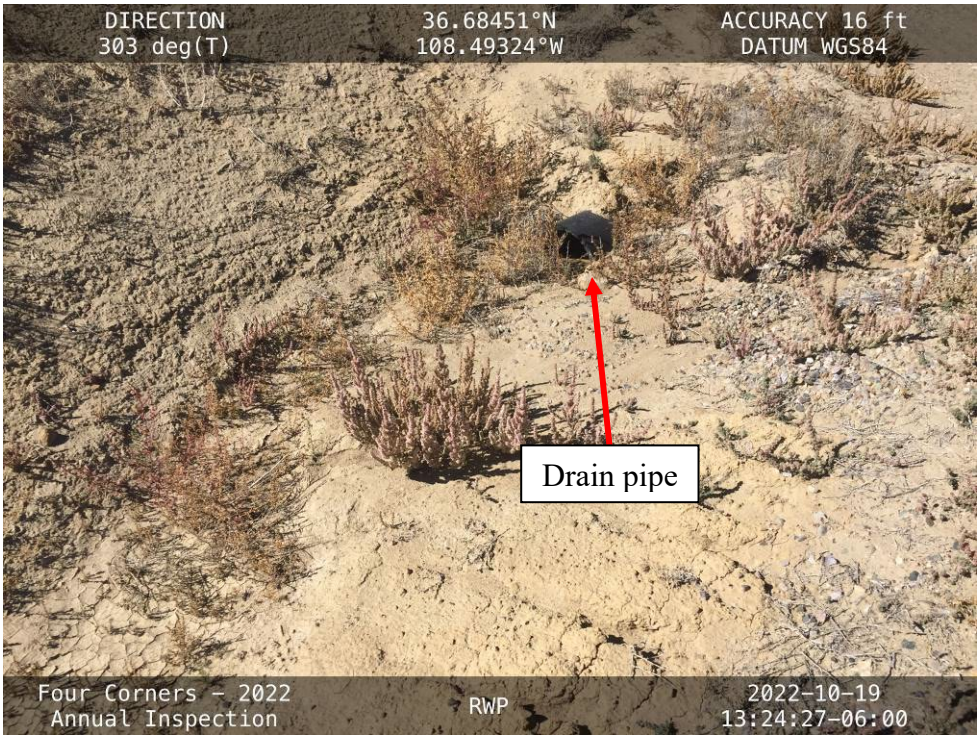
20221019 – IMG_4345
The gate at the southern entrance to the RWP, repaired.

20221019 – IMG_4349
The upstream slope of the FGD Pond cell Southwest Embankment, facing northwest.

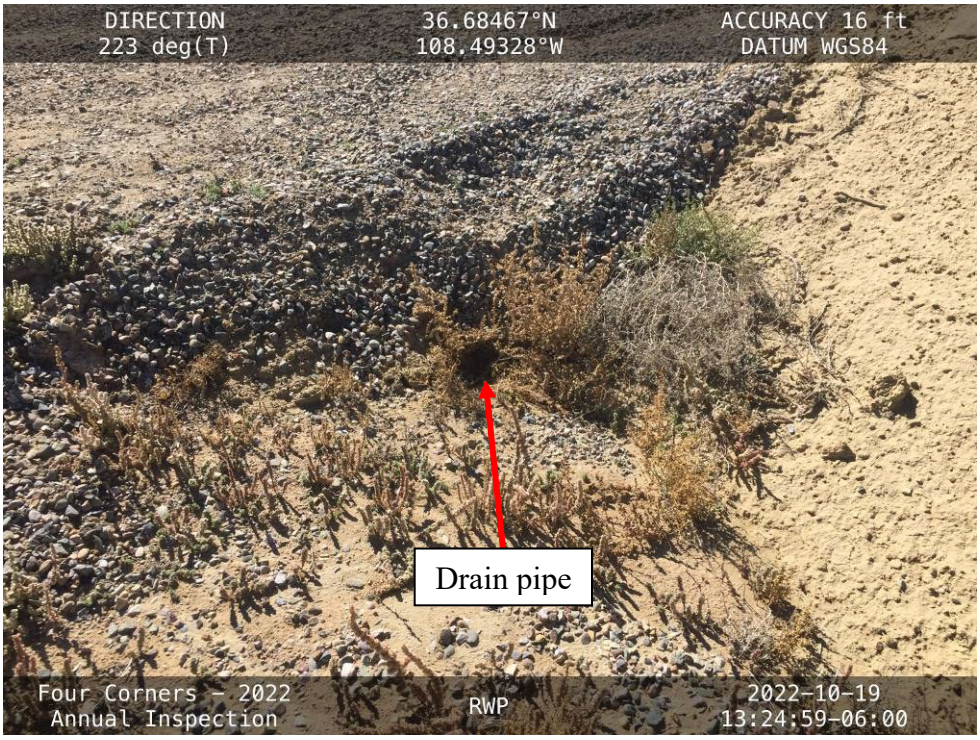
20221019 – IMG_4350
The crest of the FGD Pond cell South Embankment, facing northwest.

20221019 – IMG_4351
The downstream slope of the FGD Pond cell Southwest Embankment, facing northwest.

20221019 – IMG_4356
Smaller tension cracks on the slope of the drainage ditch along the western corner of the pond compared to the 2021 inspection.



20221019 – IMG_4357
Sediment filling the drainage ditch on the western corner of the RWP.



20221019 – IMG_4358
Sediment and brush filling the drainage ditch on the western corner of the RWP.

20221019 – IMG_4359
The downstream slope of the FGD Pond cell Northwest Embankment, facing northeast.

20221019 – IMG_4360
The crest of the FGD Pond cell Northwest Embankment, facing northeast.

20221019 – IMG_4361
The upstream slope of the FGD Pond cell Northwest Embankment, facing northeast.

20221019 – IMG_4366
The FGD Pond cell Inlet Pipes.

20221019 – IMG_4368
The downstream slope of RWP Cell Northwest Embankment, facing northeast.

20221019 – IMG_4369
The new pipe between the RWP and FGD Pond cells.

20221019 – IMG_4372
The upstream slope of the FGD Pond cell Internal Embankment, facing southeast.

20221019 – IMG_4373
The crest of the FGD Pond cell Internal Embankment, facing southeast.

20221019 – IMG_4374
The upstream slope of the RWP Internal Embankment, facing southeast.

20221019 – IMG_4375
The RWP cell inlet along the upstream slope of the Northwest Embankment, facing northeast.

20221019 – IMG_4376
The crest of the RWP Cell Northwest Embankment, facing northeast.

20221019 – IMG_4377
Connections for the new pipes between the RWP and FGD Pond cells.

20221019 – IMG_4378
The new pipes between the RWP and FGD Pond cells at the crossing into the RWP cell.

20221019 – IMG_4381
The RWP cell inlet pipes.