

REPORT

Quinquennial Structural Stability Assessment and Annual Engineering Inspection, Ponds M5 and M7, Reid Gardner Generating Station

PREPARED FOR: File
PREPARED BY: NV Energy, Jacobs
DATE: June 28, 2021

This periodic inspection report documents the first quinquennial structural stability assessment for Ponds M5 and M7, existing coal combustion residuals (CCR) surface impoundments at the Reid Gardner Generating Station (Station) as required by §257.73(d) of the U.S. Environmental Protection Agency's CCR Rule. As allowed by §257.83(b)(4)(ii), this report also serves as the seventh annual professional engineer's impoundment inspection. This report was prepared by a qualified professional engineer as required by §257.73(d)(3) of the CCR Rule. This report contains the technical elements required by §257.73(d) of the CCR Rule and must be placed in the Station's operating record within 5 years of completing the previous assessment, per §257.73(f)(3) and §257.105(f)(10) of the CCR Rule. The previous structural stability assessment is dated October 12, 2016 and was placed in the operating record on October 12, 2016. The previous annual inspection report is dated June 30, 2020 and was placed in the operating record on July 2, 2020.

1.0 INTRODUCTION

The CCR Rule sets forth requirements for the periodic and annual inspection of CCR surface impoundments by qualified professional engineers. Published April 17, 2015, the CCR Rule regulates the disposal of CCR as solid waste under Subtitle D of the Resource Conservation and Recovery Act.¹ The CCR Rule also establishes national minimum criteria for other CCR units to include new and existing CCR landfills, new CCR surface impoundments, and lateral expansions to landfills and impoundments.

Ponds M5 and M7 are existing CCR surface impoundments at NV Energy's Reid Gardner Generating Station (Station) near Moapa, Nevada. The Station was retired in 2017 with decommissioning and demolition completed in July 2020. The two impoundments contain CCR waste and other plant wastewater streams produced during past operations. In accordance with §257.101(a)(1), NV Energy ceased placing CCR waste and other plant wastewater streams into M5 and M7, and initiated closure of the two impoundments prior to April 11, 2021.

The M5 and M7 surface impoundments are located on a mesa approximately 3,600 feet south of where the former power generating units were located. The surface impoundments were constructed by excavating into the existing ground along the southern and western sides of the

¹ Per a July 2, 2015, revision, the CCR Rule took effect on October 19, 2015.

impoundments and building earthen embankments along the northern and eastern sides. The surface impoundments were constructed to include a two-layer geomembrane liner with interstitial leak detection and collection systems. Refer to “The Construction History for Ponds M5 and M7” for a more detailed description of the surface impoundments (CH2M, 2016).

The surface impoundments were designed, permitted, constructed, and placed into service prior to the publication of the CCR Rule, and in conformance with applicable State regulations. The applicable regulations included water pollution control regulations (Nevada Administrative Code [NAC] 445A), dam safety regulations (NAC 535), and the Nevada Division of Environmental Protection- Bureau of Water Pollution Control’s (NDEP-BWPC) Water Technical Sheet 37 (WTS-37). WTS-37 is a guidance document for the design of lined wastewater holding ponds that contains minimum requirements for pond liner systems. The surface impoundments are classified as existing unlined CCR surface impoundments under the CCR Rule per §257.71(a)(3)(i).

Surface impoundments M5 and M7 were inspected on May 12, 2021 by Ralph Dresel of Jacobs, acting on behalf of the certifying engineer. The inspection included a review of available information, a visual inspection of the impoundments, a visual inspection of hydraulic structures underlying the impoundments, and discussions with Station personnel. This report is organized to be consistent with §257.73 of the CCR Rule.

2.0 APPLICABLE REGULATORY REQUIREMENTS

This section summarizes the major requirements for periodic structural stability assessments of existing CCR surface impoundments. The complete requirements are in §257.73 of the CCR Rule.

- §257.73(d)(1): “The owner or operator of the CCR unit must conduct initial and periodic structural stability assessments and document whether the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein. The assessment must, at a minimum, document whether the CCR unit has been designed, constructed, operated, and maintained with:
 - §257.73(d)(1)(i) Stable foundations and abutments;
 - §257.73(d)(1)(ii) Adequate slope protection to protect against surface erosion, wave action, and adverse effects of sudden drawdown;
 - §257.73(d)(1)(iii) Dikes mechanically compacted to a density sufficient to withstand the range of loading conditions in the CCR unit;
 - §257.73(d)(1)(iv) Vegetated slopes of dikes and surrounding areas not to exceed a height of six inches above the slope of the dike, except for slopes which have an alternate form or forms of slope protection;
 - §257.73(d)(1)(v) A single spillway or a combination of spillways configured as specified in paragraph (d)(1)(v)(A) of this section. The combined capacity of all spillways must be designed, constructed, operated, and maintained to adequately manage flow during and following the peak discharge from the event specified in paragraph (d)(1)(v)(B) of this section.
 - §257.73(d)(1)(vi) Hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit that maintain structural integrity and are free of significant

deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation of the hydraulic structure; and

- §257.73(d)(1)(vii) For CCR units with downstream slopes which can be inundated by the pool of an adjacent water body, such as a river, stream or lake, downstream slopes that maintain structural stability during low pool of the adjacent water body or sudden drawdown of the adjacent water body.
- §257.73(d)(2) The periodic assessment described in paragraph (d)(1) of this section must identify any structural stability deficiencies associated with the CCR unit in addition to recommending corrective measures. If a deficiency or a release is identified during the periodic assessment, the owner or operator unit must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.
- §257.73(d)(3) The owner or operator of the CCR unit must obtain a certification from a qualified professional engineer stating that the initial assessment and each subsequent periodic assessment was conducted in accordance with the requirements of this section.”

Other requirements referenced in this report include:

- §257.83(a)(1) All CCR surface impoundments and any lateral expansion of a CCR surface impoundment must be examined by a qualified person as follows:
 - §257.83(a)(1)(i) At intervals not exceeding seven days, inspect for any appearances of actual or potential structural weakness and other conditions which are disrupting or have the potential to disrupt the operation or safety of the CCR unit;
 - §257.83(a)(1)(ii) At intervals not exceeding seven days, inspect the discharge of all outlets of hydraulic structures which pass underneath the base of the surface impoundment or through the dike of the CCR unit for abnormal discoloration, flow or discharge of debris or sediment; and
 - §257.83(a)(1)(iii) At intervals not exceeding 30 days, monitor all CCR unit instrumentation.
- §257.83(b)(1): “If the existing or new CCR surface impoundment ... is subject to the periodic structural stability assessment requirements under §257.73(d) ... the CCR unit must additionally be inspected on a periodic basis by a qualified professional engineer to ensure that the design, construction, operation, and maintenance of the CCR unit is consistent with recognized and generally accepted good engineering standards. The inspection must, at a minimum, include:
 - §257.83(b)(1)(i): A review of available information regarding status and condition of the CCR unit, including but not limited to, files available in the operating record (e.g., CCR unit design and construction information ...) ... the results of inspections by a qualified person, and results of previous annual inspections ...;
 - §257.83(b)(1)(ii): A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and
 - §257.83(b)(1)(iii): A visual inspection of any hydraulic structures underlying the base of the CCR unit or passing through the dike of the CCR unit for structural integrity and continued safe and reliable operation.”

- §257.83(b)(2): “The qualified professional engineer must prepare a report following each inspection that addresses the following:
 - §257.83(b)(2)(i): Any changes in geometry of the impounding structure since the previous annual inspection;
 - §257.83(b)(2)(ii): The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;
 - §257.83(b)(2)(iii): The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;
 - §257.83(b)(2)(iv): The storage capacity of the impounding structure at the time of the inspection;
 - §257.83(b)(2)(v): The approximate volume of impounded water and CCR at the time of the inspection;
 - §257.83(b)(2)(vi): Any appearances of an actual or potential structural weakness of the CCR unit, in addition to any existing conditions that are disrupting or have the potential to disrupt the operation and safety of the CCR unit and appurtenant structures; and
 - §257.83(b)(2)(vii): Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.”
- §257.83(b)(4)(i): “Except as provided in paragraph (b)(4)(ii) of this section, the owner or operator of the CCR unit must conduct the inspection ... on an annual basis. The date of completing the initial inspection report is the basis for establishing the deadline to complete the first subsequent inspection ... In all cases the deadline for completing subsequent inspection reports is based on the date of completing the previous inspection report. For purposes of this section, the owner or operator has completed an inspection when the inspection report has been placed in the facility’s operating record ...”
- §257.83(b)(4)(ii): “In any calendar year in which both the periodic inspection by a qualified professional engineer and the quinquennial (occurring every five years) structural stability assessment by a qualified professional engineer required by §257.73(d) ... are required to be completed, the annual inspection is not required, provided that the structural stability assessment is completed during the calendar year. If the annual inspection is not conducted in a year the next annual inspection is one year from the date of completing the quinquennial structural stability assessment.”
- §257.83(b)(5): “If a deficiency or release is identified during an inspection, the owner or operator must remedy the deficiency or release as soon as feasible and prepare documentation detailing the corrective measures taken.”

3.0 AVAILABLE INFORMATION

The information available regarding the status and condition of surface impoundments M5 and M7 was reviewed on May 12, 2021. Information from the operating record and other sources reviewed as part of this inspection included the following items:

- The previous structural stability assessment (dated October 12, 2016).

- Forms documenting the 7-day impoundment inspections by qualified persons (as required by §257.83(a)).
- The previous annual inspection report (dated June 30, 2020).
- Pond operation records showing historical instrument readings and water levels.
- The Construction History for Ponds M5 and M7 (CH2M, 2016).

4.0 VISUAL INSPECTION OF CCR UNIT

Surface impoundments M5 and M7 were visually inspected on the morning of May 12, 2021. The inspection occurred in clear conditions with temperatures between 74- and 76-degrees Fahrenheit, 12 percent humidity, calm winds, and an approximate barometric pressure of 29.8 inches.

No signs of distress or malfunctions were observed during the visual inspection of surface impoundments M5 and M7. Results of the visual inspection are documented on the attached CCR Impoundment Annual Inspection Forms.

5.0 VISUAL INSPECTION OF HYDRAULIC STRUCTURES

Visible portions of the hydraulic structures associated with surface impoundments M5 and M7 were visually inspected on May 12, 2021. These are underground high-density polyethylene (HDPE) pipelines that prior to April 11, 2021, carried wastewater into the southwest corner of surface impoundment M5 and into the northwest corner of surface impoundment M7, and a partially completed underground HDPE pipeline in the western embankment of surface impoundment M7 (see discussion below) and the southern embankments of both surface impoundments. The pipelines were used on an intermittent frequency since 2017 when the station ceased operations. There are no hydraulic structures underlying the base of the surface impoundments.

The inactive, partially completed underground HDPE pipeline in the western embankment of surface impoundment M7 was built to convey wastewater to future surface impoundments. Operation of the RGS ceased before future surface impoundments were needed, and hence the partially completed pipeline has never been used and cannot carry wastewater because it is hydraulically isolated from the conveyance system at an upstream valve station.

Visual inspection of the surface impoundments M5 and M7 hydraulic structures revealed no indications that the structural integrity or continued safe and reliable operation of the surface impoundments has been adversely affected. The surface impoundments have been hydraulically isolated from the conveyance pipeline system leading from the Station and can no longer receive wastewater. Results of the visual inspection are documented on the attached CCR Impoundment Annual Inspection Forms.

6.0 CHANGES IN GEOMETRY

This section describes the observations supporting the finding that no changes in geometry of surface impoundments M5 and M7 have occurred since the previous structural stability assessment and annual inspection. Visual inspection and comparisons with the record drawings and the

previous structural stability assessment and annual impoundment inspection indicates that the surface impoundments' geometries have not been altered since they were constructed.

As referenced in the previous annual report, data from the 2018 annual level loop survey, performed by Forsgren Associates, Inc., show vertical variations of the ten settlement monuments around surface impoundments M5 and M7 ranging from 0.008 feet downward to 0.014 feet upward relative to the 2014 baseline survey elevations. These measurements corroborate that the surface impoundments geometries have not changed significantly over time. A level loop survey has not been performed since 2018.

Minor, localized settlement (observed and noted in previous reports) in the asphalt paving at three areas around the northwest corner of surface impoundment M7 that appears to be related to anchor trench backfill, pipe trench backfill, and other minor surface conditions, is still present but no additional settlement is apparent. Minor, localized cracking of the pavement has also been previously noted around surface impoundment M7 and appears to be related to pipe trench backfill, influence from a former surface-laid process water pipe, pavement construction joints, and weathering of the asphalt. Similar cracking conditions were noted around surface impoundment M5. Though the cracking of the asphalt pavement has continued to worsen, no additional settlement has been observed. The settlement and cracking of the pavement around M5 and M7 have existed for years without additional settlement and have not resulted in changes to the overall embankment geometry or integrity. Results of the visual inspection are documented on the attached CCR Impoundment Annual Inspection Forms.

7.0 INSTRUMENTATION

This section describes the existing instrumentation in surface impoundments M5 and M7 and the maximum instrument readings since the previous annual inspection. Each pond is instrumented with a liquid level sensor that measures the depth (in inches) of liquid in the interstitial leak detection and collection systems, and a flowmeter that measures the volume (in gallons) of liquid pumped from the interstitial leak detection and collection system back into the respective surface impoundment.

In surface impoundment M5, the maximum liquid level reading since the last annual inspection was 7.7 inches above the sensor (recorded March 17, 2021), and the cumulative flowmeter totalizer reading was 1,954 gallons. The flowmeter totalizer reading from the previous annual inspection of M5 was 1,954 gallons (same value), indicating that since that inspection, no liquid had been collected and pumped by the system. The interstitial pump and level sensor were replaced in December 2020, after the 2020 annual inspection.

In surface impoundment M7, the maximum liquid level value was 9.2 inches above the sensor (recorded June 22, 2020) and a maximum totalizer reading of 2,245 gallons (recorded May 12, 2020). The flowmeter totalizer reading from the previous annual inspection of M7 was 4 gallons, indicating that since the last annual inspection, approximately 2,241 gallons of liquid was collected by the leak detection and collection system, and pumped back into the surface impoundment M7.

There are apparent discrepancies in the instrument readings for both ponds. Water levels recorded for the M5 interstitial sump listed a level of 7.7 inches on March 17, 2021 and a level of 0.4 inches on May 12, 2021. The difference in readings indicates water was removed from the sump during that period; however, the cumulative reading from the totalizer did not change over the same

period. NV Energy performed maintenance on the system during the week of May 17 and subsequently confirmed proper operation.

A similar discrepancy was also noted in the M7 readings. A level of 7.9 inches was recorded on January 19, 2021 and a level of 4.8 inches on March 15, 2021 indicating water was removed; however, there was no corresponding increase in the totalizer reading. During the week of June 21, 2021, NV Energy performed maintenance on the M7 system and subsequently confirmed proper operation.

Historical liquid level sensor and totalizer values were taken from records provided by NV Energy.

8.0 APPROXIMATE IMPOUNDED WATER LEVELS

The approximate depths and elevations of water in surface impoundments M5 and M7 at the time of inspection, and the maximum and minimum depths and elevations since the previous annual inspection are shown below in Table 1.

Table 1. Approximate Impounded Water Levels ^a

Annual Coal Combustion Residuals Surface Impoundment Inspection Report, for M5 & M7, Reid Gardner Generating Station

| Impoundment | Description | Water Surface Elevation (feet ^a) | Pond Bottom Elevation _b (feet ^a) | Depth of Water (feet) | Available Storage Capacity ^c (gallons) | Impounded CCR and Water ^c (gallons) | Data Date |
|-------------|------------------------------------|---|---|--------------------------|--|---|---------------|
| M5 | Maximum ^c | 1,700.7 | 1,697.0 | 3.7 | Not required | Not required | June 16, 2020 |
| M5 | Minimum ^c | 1,700.5 | 1,697.0 | 3.5 | Not required | Not required | May 12, 2021 |
| M5 | At time of inspection ^d | 1,700.5 | 1,697.0 | 3.5 | 56,100,000 | 10,040,000 | May 12, 2021 |
| M7 | Maximum ^c | 1,703.0 | 1,700.0 | 3.0 | Not required | Not required | June 16, 2020 |
| M7 | Minimum ^c | 1,702.7 | 1,700.0 | 2.7 | Not required | Not required | May 12, 2021 |
| M7 | At time of inspection ^d | 1,702.7 | 1,700.0 | 2.7 | 57,790,000 | 9,470,000 | May 12, 2021 |

^a Elevations based on North American Vertical Datum of 1988.

^b Data source: Record drawing D-1, created by CH2M HILL, dated July 14, 2011.

^c Data source for water surface elevations is station records provided by NV Energy. Volumes and capacities for surface impoundment M5 are based on an approximate impoundment capacity of 66,140,000 gallons, or 202.99 acre-feet, at the permitted maximum operational water level, and 67,260,000 gallons, or 206.42 acre-feet, at the permitted maximum operational water level for surface impoundment M7.

^d Data source: Visual staff gauge reading for surface impoundment M5 of approximately 15.3 at time of annual impoundment inspection. Visual staff gauge reading for surface impoundment M7 of approximately 16.0 at time of annual impoundment inspection. The station records provided by NV Energy were used to convert staff gauge readings to water surface elevations.

9.0 STORAGE CAPACITY

The approximate available storage capacity of surface impoundments M5 and M7 at the time of inspection is shown in Table 1.

10.0 APPROXIMATE VOLUME OF CCR

The approximate volume of water and CCR in surface impoundments M5 and M7 at the time of inspection is shown in Table 1.

11.0 STRUCTURAL WEAKNESS

No actual or potential structural weaknesses were observed during the visual inspection of surface impoundments M5 and M7. Also, no conditions were observed that were disrupting or have the potential to disrupt the operation and safety of the surface impoundment and appurtenant structures. The visual inspection is documented on the attached CCR Impoundment Annual Inspection Form.

12.0 CHANGES

This section describes changes to surface impoundments M5 and M7 since the previous annual inspection.

There is apparently an increase in the number of minor cracks in the asphalt paving around both impoundments which appear to result from thermal expansion and contraction and aging of the asphalt. The pattern of cracking does not suggest that there is settlement or displacement of the embankments. There is no evidence of vertical displacement across the cracks or other indication of adverse effects to stability or operation of the surface impoundments.

Solids, resulting from evaporation of the water have appeared over most of the area of both impoundments with only small areas of open water showing. This is a result of normal operating conditions and is not considered an impact to either stability or operation of the impoundments.

Otherwise, no significant changes were observed, and no changes were identified that may affect the stability or operation of the surface impoundments.

13.0 STRUCTURAL DEFICIENCIES AND CORRECTIVE MEASURES

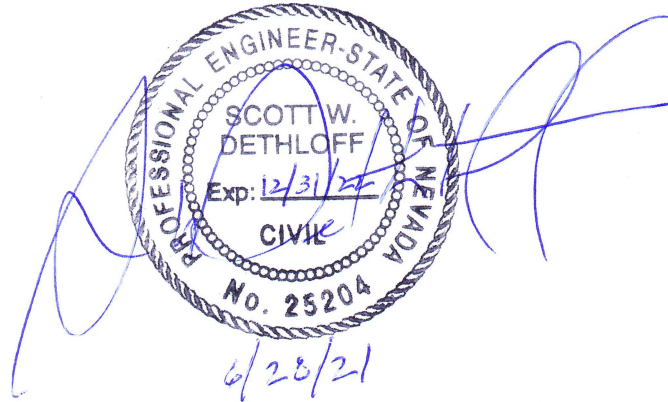
This section describes structural stability deficiencies and recommended corrective measures as required by §257.73(d)(2). No structural stability deficiencies were identified as part of this assessment.

14.0 CONCLUSION

Based on the records review and observations made during the inspection, the design, construction, operations, and maintenance of the ponds is “consistent with generally accepted good engineering practices for the maximum volume of CCR and CCR wastewater which can be impounded therein” (§257.73(d)(1)). The operation and maintenance are also consistent with the original pond design. No signs of “significant deterioration, deformation, distortion, bedding deficiencies, sedimentation, and debris which may negatively affect the operation” of hydraulic structures was observed ((§257.73(d)(1)(vi)). In addition, no signs of distress or malfunctions were observed during the site visit. No corrective actions are recommended at this time. Observations made during the inspection are documented on the attached CCR Impoundment Annual Inspection Forms.

15.0 CERTIFICATION

This quinquennial structural stability assessment was conducted in accordance with the requirements of §257.73(d) of the CCR Rule.



Jacobs
1301 N. Green Valley Parkway, Suite 200
Henderson, NV 89074
702-369-6175

16.0 ATTACHMENT: CCR IMPOUNDMENT ANNUAL INSPECTION FORMS



Reid Gardner Generating Station CCR Impoundment Annual Inspection Form (Reference: 40 CFR 257.83)

| General Information | | | | | |
|--|-------------|-----------------|---------------------|--------------|----|
| Date of Inspection: | 12-May-2021 | Start/End Time: | 0830 / 0945 | Impoundment: | M5 |
| Name/Company of Qualified Prof. Engr. Conducting Inspection (Print): | | | Ralph Dresel/Jacobs | | |

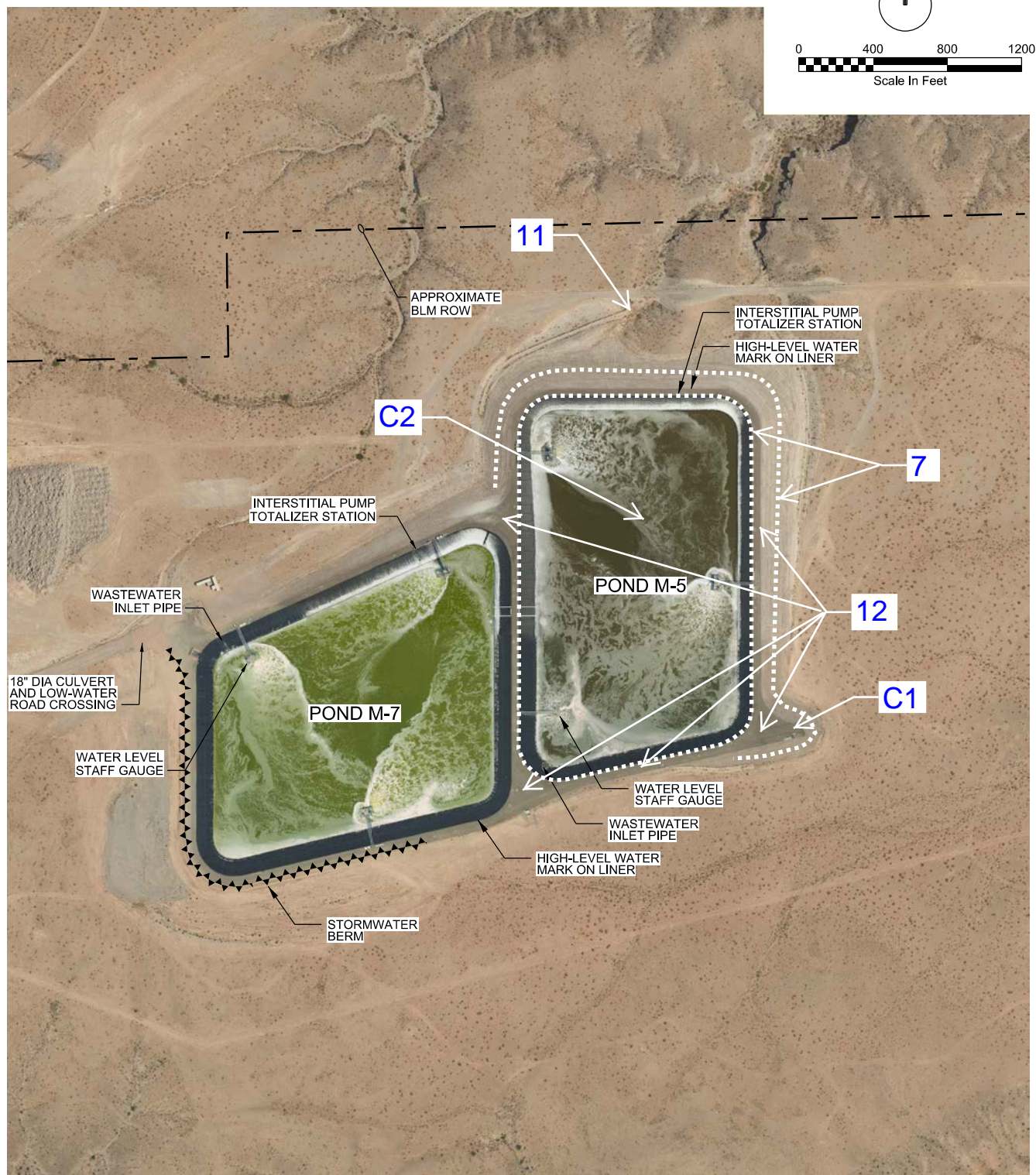
| Sec | # | Inspected Item | Inspection Result |
|---------------------------------------|----|---|---|
| | 1 | Has the previous seven-day inspection form been reviewed and is a copy on-hand? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| | 2 | Has the previous annual inspection report been reviewed and is a copy on-hand? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| OUTSIDE BERM FACE, TOE, AND PERIMETER | 3 | Does the outside berm face or toe have wet spots, seepage, salt, or other indicators of leakage? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 4 | Does the outside berm face or toe have boils, sediment piles or other indications of piping and internal erosion? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 5 | Does the outside berm face have depressions, slides, bulges, sloughs or other signs of slope movement? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 6 | Does the outside berm face exhibit signs of burrowing animals or other animal traffic? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 7 | Is there vegetation that extends more than 6 inches above the outside berm face over a significant portion of the face? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 8 | Does the outside berm face exhibit runnels or other signs of erosion? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 9 | Does the outside berm face exhibit transverse, longitudinal, or desiccation cracking? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 10 | Is the 18 in dia. drainage culvert near Pond M7 clogged, deteriorated, or otherwise abnormal? NA | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| | 11 | Are the perimeter storm water ditches showing signs or erosion being filled with sediment? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 12 | Does the crest/road exhibit transverse, longitudinal, or desiccation cracking? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| CREST | 13 | Does the crest/road have any depressions indicating settlement or subsidence? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 14 | Does the liner anchor trench have signs of tearing, high tension, or being pulled out? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 15 | Do dam survey monuments appear to be damaged? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| INSIDE BERM | 16 | Are there cuts, punctures, tears, or other defects visible in the liner? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 17 | Does the inside (lined) berm face have depressions, slides, bulges, sloughs or other signs of slope movement? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 18 | Is the water level in Pond M5 above the max permitted water surface level? Staff gauge = 15.25 | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 19 | Is the water level in Pond M7 above the max permitted water surface level? - NA | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| | 20 | Does the wastewater inlet pipe in Pond M5 appear to be clogged or abnormal? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 21 | Does the wastewater inlet pipe in Pond M7 appear to be clogged or abnormal? - NA | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| CCR RULE | 22 | Based on the items above, are there any visible signs of actual or potential structural weakness? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 23 | Are there visible conditions which are or have the potential to disrupt operations? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 24 | Are there visible conditions which are or have the potential to disrupt safety? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| INS TR. | 25 | Record the Pond M5 interstitial pump totalizer reading. (Level = .4") | Reading: 1953.9 gal |
| | 26 | Record the Pond M7 interstitial pump totalizer reading. - NA | Reading: NA |

Explanations and Notes

Except for items #s 1 and 2, explain and describe any "Yes" responses. Reference the item #, note the location and extent, and mark the location on the included site plan. NA = Not applicable.

7. Small annual weeds are growing sparsely along the embankment edge and in the joint between liner and asphalt. Generally, up to 12 inches high and spaced every few feet to few inches.
11. Lower reach of riprap ditch is partially covered at extreme lower end. No apparent change from previous annual inspection.
12. Small pieces of asphalt have broken away from road on the east side (previously noted). Age cracking of the asphalt pavement is present in many locations, especially at construction joints. There are no vertical offsets or other evidence of failure of the earth structure.
20. The pond has been removed from service and is completely isolated from the influent system feeding the impoundment.
- C1. Stubbed-out and blind-flanged end HDPE pipe near the southeast corner of Pond M5 has been gouged. The pipe has never been used and is hydraulically isolated. No change from previous annual inspection.
- C2. Solids are evident over the entire pond, few areas of open water, no impact.

-----END OF FORM-----



LEGEND

— — — — — APPROXIMATE BLM ROW

▲▲▲▲▲ STORMWATER BERM

POND M5 CCR IMPOUNDMENT INSPECTION FIGURE

ch2m.

REID GARDNER STATION

NOTES:

Inspection Date- May 12, 2021
See Inspection report form for references

REV02 DATE: 11/08/17



Reid Gardner Generating Station
CCR Impoundment Annual Inspection Form (Reference: 40 CFR 257.83)

| General Information | | | | | |
|--|-----------|-----------------|---------------------|--------------|----|
| Date of Inspection: | 12May2021 | Start/End Time: | 0830 / 0945 | Impoundment: | M7 |
| Name/Company of Qualified Prof. Engr. Conducting Inspection (Print): | | | Ralph Dresel/Jacobs | | |

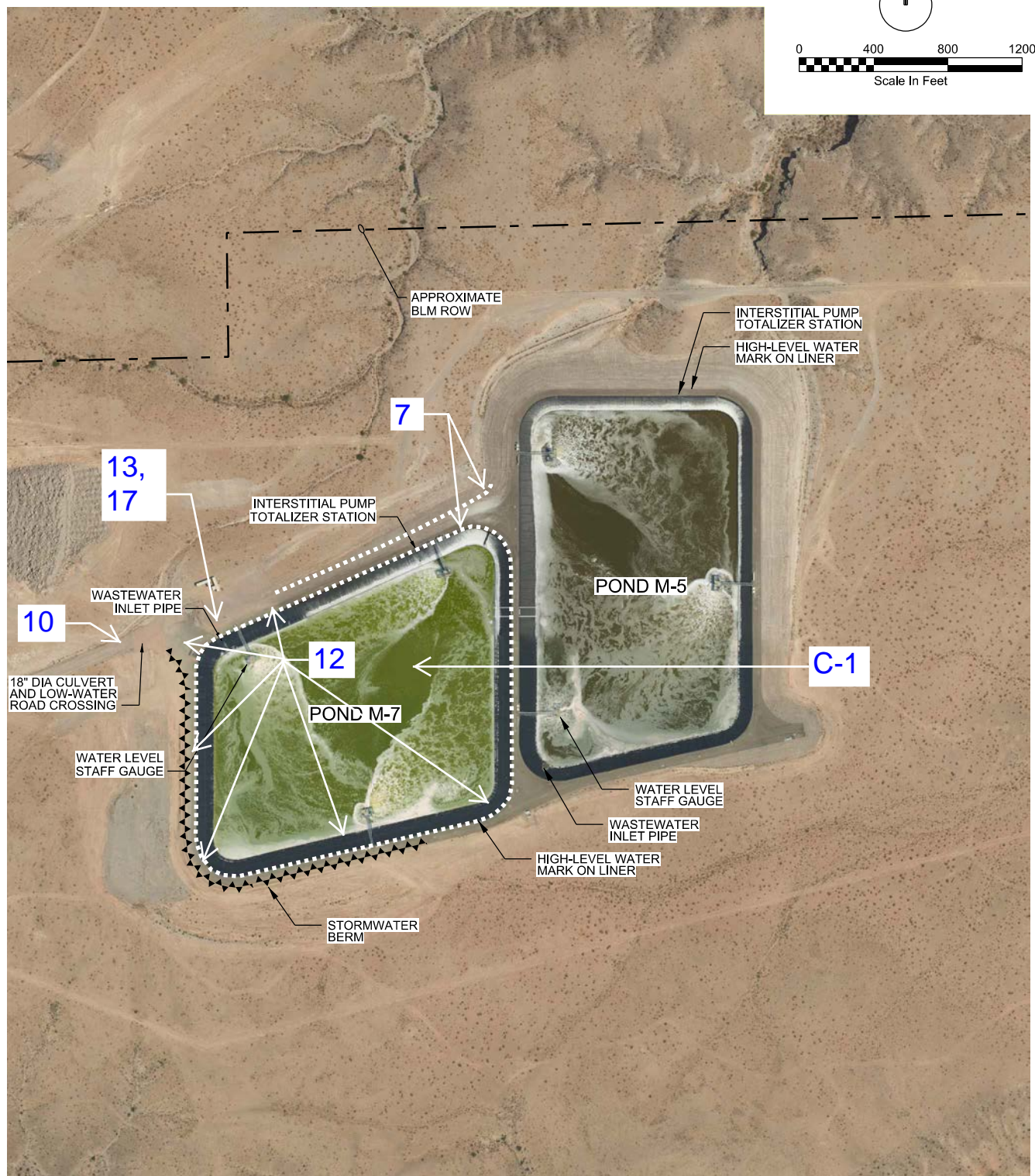
| Sec | # | Inspected Item | Inspection Result |
|---------------------------------------|----|---|---|
| | 1 | Has the previous seven-day inspection form been reviewed and is a copy on-hand? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| | 2 | Has the previous annual inspection report been reviewed and is a copy on-hand? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| OUTSIDE BERM FACE, TOE, AND PERIMETER | 3 | Does the outside berm face or toe have wet spots, seepage, salt, or other indicators of leakage? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 4 | Does the outside berm face or toe have boils, sediment piles or other indications of piping and internal erosion? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 5 | Does the outside berm face have depressions, slides, bulges, sloughs or other signs of slope movement? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 6 | Does the outside berm face exhibit signs of burrowing animals or other animal traffic? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 7 | Is there vegetation that extends more than 6 inches above the outside berm face over a significant portion of the face? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 8 | Does the outside berm face exhibit runnels or other signs of erosion? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 9 | Does the outside berm face exhibit transverse, longitudinal, or desiccation cracking? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 10 | Is the 18-in-dia drainage culvert near Pond M7 clogged, deteriorated, or otherwise abnormal? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 11 | Are the perimeter storm water ditches showing signs or erosion being filled with sediment? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 12 | Does the crest/road exhibit transverse, longitudinal, or desiccation cracking? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| CREST | 13 | Does the crest/road have any depressions indicating settlement or subsidence? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| | 14 | Does the liner anchor trench have signs of tearing, high tension, or being pulled out? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 15 | Do dam survey monuments appear to be damaged? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| INSIDE BERM | 16 | Are there cuts, punctures, tears, or other defects visible in the liner? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 17 | Does the inside (lined) berm face have depressions, slides, bulges, sloughs or other signs of slope movement? | <input checked="" type="checkbox"/> YES <input type="checkbox"/> NO |
| | 18 | Is the water level in Pond M5 above the max permitted water surface level? -NA | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| | 19 | Is the water level in Pond M7 above the max permitted water surface level? Staff gauge = 16 | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 20 | Does the wastewater inlet pipe in Pond M5 appear to be clogged or abnormal? - NA | <input type="checkbox"/> YES <input type="checkbox"/> NO |
| | 21 | Does the wastewater inlet pipe in Pond M7 appear to be clogged or abnormal? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| CCR RULE | 22 | Based on the items above, are there any visible signs of actual or potential structural weakness? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 23 | Are there visible conditions which are or have the potential to disrupt operations? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| | 24 | Are there visible conditions which are or have the potential to disrupt safety? | <input type="checkbox"/> YES <input checked="" type="checkbox"/> NO |
| INS TR. | 25 | Record the Pond M5 interstitial pump totalizer reading. - NA | Reading: NA |
| | 26 | Record the Pond M7 interstitial pump totalizer reading. (Level reading = 8.1") | Reading: 2245 gal |

Explanations and Notes

Except for items #s 1 and 2, explain and describe any "Yes" responses. Reference the item #, note the location and extent, and mark the location on the included site plan. NA = Not applicable.

7. Small annual weeds are growing sparsely along the embankment edge and in the joint between liner and asphalt. Generally, up to 12 inches high and spaced every few feet to few inches.
10. Small number of tumbleweeds are present at both inlet and outlet of the culvert, otherwise the culvert is clear.
12. Age cracking of the asphalt pavement is present in many locations, especially at construction joints. There are no vertical offsets or other evidence of failure of the earth structure. No significant change from previous annual inspection.
13. Small portion of the anchor trench along the northwest corner of pond near the aeration equipment has settled, no apparent change from previous annual inspection.
17. The lined surface over the down slope trenches for the two cleanout pipes in the NW corner appear to have settled 2-3 inches. No sign of liner tension or movement. No apparent change from previous annual report.
21. The pond has been removed from service and is completely isolated from the influent system feeding the impoundment.
- C1. Solids are present over the entire impoundment, only small areas of open water showing, no impact.

-----END OF FORM-----



LEGEND

APPROXIMATE BLM ROW
 STORMWATER BERM

POND M7 CCR IMPOUNDMENT INSPECTION FIGURE

REID GARDNER STATION

ch2m.

NOTES:

Inspection Date- May 12, 2021

See Inspection report form for references

REV02 DATE: 11/08/17