



**NRG TEXAS POWER, LLC
LIMESTONE STATION, UNITS 1 & 2**

ANNUAL INSPECTION OF CCR IMPOUNDMENTS AND LANDFILL

SL Report No.: SL-013201
Revision 0
Date: January 15, 2016
Project No.: 12661-042

Prepared by



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NRG TEXAS POWER, LLC
LIMESTONE STATION, UNITS 1 & 2
ANNUAL INSPECTION OF CCR IMPOUNDMENTS AND LANDFILL

ISSUE SUMMARY AND APPROVAL PAGE

This is to certify that this report has been prepared, reviewed and approved in accordance with Sargent & Lundy's Standard Operating Procedure SOP-0405, which is based on ANSI/ISO/ASSQC Q9001 Quality Management Systems.

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LIMESTONE STATION, UNITS 1 & 2
ANNUAL INSPECTION OF CCR IMPOUNDMENTS AND LANDFILL

CERTIFICATION PAGE

I certify that this report was prepared by me or under my supervision and that I am a registered professional engineer under the laws of the State of Texas.

This document is released for use under the authority of Vasudev B. Patel, Texas PE #117708 on January 15, 2016. Sargent & Lundy, LLC Texas Registered Engineering Firm # F-2202.

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1 EXECUTIVE SUMMARY

On November 11, 2015, Sargent & Lundy, LLC (S&L) inspected the CCR impoundments (ponds) and landfill at the Limestone Station, near Jewett, Texas. Specifically, this work was performed to satisfy the requirement for an annual inspection by a qualified professional engineer, as required by 40 CFR part 257, the US Environmental Protection Agency rule on Disposal of Coal Combustion Residuals From Electric Utilities.

This inspection included two licensed professional engineers (one licensed in Texas and one in Illinois) performing a visual inspection of the applicable ponds and landfill to identify areas requiring maintenance, signs of distress or malfunction of the CCR ponds and landfill. S&L also reviewed the available documentation related to the CCR disposal facilities at the Limestone Station.

This inspection evaluated:

- Pond K,
- Pond E,
- Pond ST-18,
- Secondary E Pond,
- Pond 002, and
- The Landfill.

S&L did not observe any evidence of ongoing or imminent failure of these ponds or landfill.

It is the opinion of S&L that Pond K does not require an annual inspection since it is fully incised.

Several relatively high priority improvements were discussed at the time of the inspection, including a steep section of Pond ST-18 and an erosional feature noted in the dike of Pond E. After S&L's site visit, NRG completed improvements to correct the observed conditions, and provided photographic evidence of the corrections.

Several maintenance recommendations are presented in Section 10 of this report that should be implemented in addition to the ongoing maintenance program.

Based on review of available documents and the visual inspection, it S&L's opinion that Pond E, Pond ST-18, the Secondary E Pond, Pond 002 and the Landfill have been designed, constructed, are currently operated, and maintained in a manner that is consistent with and in accordance with recognized and generally accepted good engineering standards.



2 INTRODUCTION

This report presents the observations and findings of the first annual inspection at the Limestone Generating Station. The Limestone Station is located near Jewett, Texas. Specifically, the majority of the generating station is in Limestone County, while most of the CCR units are in Freestone County. The power station is owned and operated by NRG Texas Power, LLC.

The Limestone Generating Station includes 2 coal fired generating units with a total rated net capacity of 1689 MW. The station is fueled by a mix of locally mined lignite and coal imported from the Powder River Basin in Wyoming.

The general arrangement of the station is depicted in Figure 1.

3 PURPOSE/OBJECTIVE

This report is prepared to provide compliance with the annual inspection requirements for CCR units as required by 40 CFR Part 257, the US Environmental Protection Agency rule on Disposal of Coal Combustion Residuals From Electric Utilities (Reference 1), which is referred to as the Federal CCR Rule in this report. Specifically, Sections 257.83(b) and 257.84(b) of the Federal CCR Rule pertain to the annual inspection requirements for CCR Surface Impoundments and CCR Landfills, respectively.

4 SCOPE OF WORK

This report documents the annual inspection by a qualified professional engineer for all existing landfills and surface impoundments that have either:

- A height of 5 feet or more **and** a storage volume of 20 acre feet or more; **or**
- A height of 20 feet or more.

This work includes:

- Annual inspections by a qualified professional engineer to evaluate if the design, construction, operation, and maintenance of the CCR units are consistent with recognized and generally accepted good engineering standards.
- A review of available information regarding the status and condition of the CCR unit, including, but not limited to, files available in the operating record, previous periodic structural stability assessments, and the results of “weekly” inspections by a qualified person;
- A visual inspection of the CCR unit to identify signs of distress or malfunction of the CCR unit and appurtenant structures; and 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.

- Preparation of this inspection report which, as required by the CCR rule, addresses the following:
 - Any changes in geometry of the impounding structure since the previous annual inspection;
 - The location and type of existing instrumentation and the maximum recorded readings of each instrument since the previous annual inspection;
 - The approximate minimum, maximum, and present depth and elevation of the impounded water and CCR since the previous annual inspection;
 - The storage capacity of the impounding structure at the time of the inspection;
 - The approximate volume of the impounded water and CCR at the time of the inspection;
 - 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
 - Any other change(s) which may have affected the stability or operation of the impounding structure since the previous annual inspection.

Since this is the first annual inspection under the federal CCR Rule, the rule requirements of comparison since the prior annual inspection are not included herein.

5 ASSUMPTIONS/INPUTS

There are no assumptions that require verification for this work.

NRG provided prior reports, design drawings, groundwater elevation data, and follow-up photographs (to document maintenance work performed after the inspection) as inputs to this inspection.

6 CCR IMPOUNDMENTS & LANDFILL DESIGN & BACKGROUND

The following CCR units are considered in this annual inspection:

- Pond K (Bottom Ash Cooling Pond)
- Pond E
- Pond ST-18
- Secondary E Pond
- Pond 002
- The Landfill

The following paragraphs summarize the design and construction of these CCR units and evaluate the applicability of the Federal CCR rule to each CCR unit.

6.1 POND K

The Bottom Ash Cooling Pond (Pond K) is located west of Farm to Market Highway 39 (FM 39) and southwest of the power block as shown in Figure 1. Pond K is approximately 435 ft. wide with an average length of 765 ft. The pond was constructed by excavating the entire pond below the surrounding ground surface without any dikes elevated above the surrounding land.

NRG reported that Pond K has a working capacity of 55 acre-ft. with approximately 44 acre-ft. of water and CCR material impounded at the time of the S&L inspection.

The Federal CCR Rule (Reference 1 §257.53) states:

“Incised CCR surface impoundment means a CCR surface impoundment which is constructed by excavating entirely below the natural ground surface, holds an accumulation of CCR entirely below the adjacent natural ground surface, and does not consist of any constructed diked portion.”

Moreover, the preamble to the Federal CCR Rule (Reference 1, Page 21395) states:

“Incised CCR surface impoundments, as defined in § 257.53 are not subject to the annual inspection requirements.”

Since Pond K is fully incised, annual inspections are not required and it is not fully inspected nor fully evaluated in subsequent sections of this annual inspection report.

6.2 POND E

Pond E, which is located east of FM 39, receives water from FGD decanting/settling operations and excess flow from Pond ST-18 and Pond 002. Pond E is approximately 380 ft. by 380 ft. in plan. The south and west sides of Pond E are incised, while the north and east sides generally range from incised to a dike height of approximately 8 feet.

Pond E is constructed with a 3 ft. thick clay liner with a 1 ft. thick protective cover over the clay liner. The outlet structure includes a valved discharge pipe.

NRG reported that construction quality control testing was performed.

NRG reported that Pond E has a working capacity of 45 acre-ft. with approximately 41 acre-ft. of water and CCR material impounded at the time of the S&L inspection.

Since Pond E is not fully incised, an annual inspection is required as documented in the subsequent sections of this report.

6.3 POND ST-18

Pond ST-18 receives stormwater from the gypsum stack out area and is located east of Highway 39. The ST-18 Pond bottom elevation is 424 ft. and the perimeter berm elevation is 445 ft. \pm . The pond was constructed on a hillside such that the northern and western portions of the pond have dikes that are in excess of 20 ft. high when considering the elevation of the dike crest and the dike toe in the northern most area. The eastern and western sections are cut into the hillside. ST-18 was constructed with a 3 ft. thick clay liner with a 1 ft. thick protective cover over the clay liner. The outlet structure includes a valved discharge pipe line.

NRG reported that construction quality control testing was performed.

NRG reported that Pond ST-18 has a working capacity of 8 acre-ft. with approximately 5 acre-ft. of water and CCR material impounded at the time of the S&L inspection.

Since Pond E is not fully incised, an annual inspection is required as documented in the subsequent sections of this report.

6.4 SECONDARY E POND

The Dewatered Sludge Disposal Area (Secondary E) Pond is also east of Highway 39 and is used as a treatment pond to stabilize the blowdown from the FGD system. Specifically, a fly ash product, Stable Mix D, is mixed with wastewater from the FGD sludge thickener overflow to allow a chemical reaction to stabilize the FGD blowdown. The solidified material is then excavated from the pond, dewatered and transported to the landfill for disposal.

The Secondary E Pond is approximately 645 ft. by 374 ft. and is bisected by an interior berm. The pond bottom is at elevation 476 ft. and the perimeter berm height elevation is 485 ft. The dike toe on the northern most point is at elevation 460 ft. \pm .

A portion of the western and southern dikes have wider than typical dike crests. Portions of the southern and western dikes are 50 ft. to 80 ft. wide at the crest. The Secondary E Pond has a random fill (unclassified material) embankment with a 3 ft. thick clay liner, for which construction quality control testing was performed.

NRG reported that the Secondary E Pond has a working capacity of 45 acre-ft. with approximately 41 acre-ft. of water and CCR material impounded at the time of the S&L inspection.

Since the Secondary E Pond is not fully incised, an annual inspection is required as documented in the subsequent sections of this report.

6.5 POND 002

Pond 002 is located east of FM 39 and functions as a runoff pond to collect and detain stormwater from the uncapped portions of the landfill. Since the runoff contains significant suspended solids during extreme storm events, Pond 002 also serves as a sedimentation pond. A vertical expansion of Pond 002 has been initiated since the field inspection was performed. This expansion was designed under the direction of an NRG professional engineer. This expansion is further discussed in Section 8.5 of this report.

NRG reported that construction quality control testing was performed.

NRG reported that Pond 002 has a working capacity of 87 acre-ft. with approximately 15 acre-ft. of water and CCR material impounded at the time of the S&L inspection.

Since Pond 002 is not incised, an annual inspection is required as documented in the subsequent sections of this report.

6.6 LANDFILL

The landfill is located east of FM 39. The landfill areas are designed as Class II Industrial Waste Landfill under the criteria of the Texas Commission on Environmental Quality (TCEQ). The landfill is managed using tracking areas indicated on Photograph P-53. These areas have no physical boundaries in the landfill and are hydraulically connected. The areas are considered to be in one of three stages. The stages for the tracking areas are capped, uncapped, and areas under construction.

The landfill is constructed with a compacted clay liner with a minimum thickness of 2 ft. Areas that are capped are capped with a compacted clay cover that is at least 3 ft. thick. The landfill cap is then covered with a minimum of 1 ft. of topsoil to aid in proper vegetation protection for the cover. NRG reports that quality control and assurance testing was performed on the liner and cover.

Stormwater runoff is collected from capped areas with a perimeter ditch, while an interceptor ditch surrounds the uncapped areas that contain CCR materials to intercept the stormwater runoff and any CCR material that is eroded from the uncapped areas. This interceptor ditch drains into Pond 002.

NRG observed seepage from the toe of the southwestern portion of Area 9 in 2003. NRG then investigated the seepage, designed and installed a French drain system below the cover and above the liner to intercept the seepage and prevent softening of the stored CCR material and cover system. Thus, the structural stability of the capped slope was improved through preventing saturation and uncontrolled release of water that had contacted CCR material. The French drains gravity drain into a sump that then discharges the water into Pond 002.

The landfill is one continuous operation such that the tracking areas are not physically or hydraulically isolated. Therefore, it is the opinion of S&L that the entire landfill requires an annual inspection and the landfill was inspected as documented herein.

7 SUMMARY OF CCR UNIT CHANGES/ REPAIRS SINCE PRIOR ANNUAL INSPECTION

Since this is the first annual report, there is not a prior annual report to perform the required comparative evaluation.

8 CCR IMPOUNDMENTS & LANDFILL INSPECTION OBSERVATIONS & FINDINGS

On November 11, 2015 Mr. Vasudev Patel, PE (TX, WI) and Mr. David Nielson, PE (WA, IN, MI, IL, NV) of S&L along with Charles Little and Robert Eyeington, both of NRG, visually inspected the CCR impoundments and the landfill at the Limestone Generating Station. This visual inspection was performed to evaluate if the design, construction, operation, and maintenance of each applicable CCR unit is consistent with recognized and generally accepted good engineering standards.

8.1 POND K

The location and general arrangement of Pond K are depicted on Figure 1 and also Photograph P-1, which were both obtained from Google Earth Pro®. This Google Earth Pro image appears to accurately represent the conditions observed at Pond K by S&L on November 11, 2015.

Although the Federal CCR Rule requirement for annual inspection does not apply to Pond K as discussed in Section 6.1, Photographs P-1 through P-4 (found in Appendix A) are presented to validate the fully incised condition.

8.2 POND E

The location and general arrangement of Pond E are depicted on Figure 1 and also on Photograph P-5, which were both obtained from Google Earth Pro®. This Google Earth Pro image appears to accurately represent the conditions observed at Pond E by S&L on November 11, 2015.

Pond E was partially filled with water with no significant CCR material exposed above the water surface at the time of the inspection. The freeboard of Pond E was estimated to be 3 ft. ± at the time of the inspection.

The south and west sides of Pond E are incised as shown on Photographs P-6 and P-8. The risk of catastrophic failure in these areas is minimal since the surface of the water and CCR materials is lower than the surrounding ground surface. A fabriform concrete splash pad was present in the southern portion

of the western wall as depicted in Photograph P-7. Although this splash pad exhibited some cracking, it appeared to be functioning as intended to prevent erosion from the overhead pipe discharge.

The east dike is shown in Photographs P-9 and P-10. This dike is in good condition with good grass vegetation. Photograph P-10 shows some minor slope irregularity, which is manifest by the slightly meandering shoreline. Careful evaluation of this area indicates this is most likely the result of pond cleaning activity and not slope instability. No slope instability was observed.

The crest of the north dike is relatively wide and the outside slope (downstream slope) is relatively gentle as shown on Photograph P-11. The inside slope (upstream slope) of the north dike is generally well sloped, with some localized exceptions of steep areas. These steep areas are shown in Photographs P-12 and P-13. This appears to be the result of incomplete cleaning of the CCR material, not a misalignment from the initial construction nor a deformation of the dike slope. Photograph P-13 also shows the stump of a former tree that had been cut. A small erosional feature was noted in the inside slope of the north dike near the valve and pump hose installation as shown of Photograph P-14.

At the request of S&L, NRG excavated to determine if the feature was the result of erodible CCR material that had been placed over the discharge of a small stormwater inlet into the pond. NRG excavated and exposed a pipe discharge that had been buried by CCR. Thus the erosional feature was in CCR material and not in the dike. NRG also reseeded the area as shown on Photograph P-15, which was taken by NRG on November 16, 2015.

Our inspection of the outlet pipe area did not indicate evidence of seepage or other adverse conditions.

Pond E was found to be in good condition as observed, without observed indications of risk of catastrophic or operational failure. Following the regrading of the north dike and a more complete vegetation cover is established, the pond will be considered to be in excellent condition.

8.3 POND ST-18

The location and general arrangement of Pond ST-18 are depicted on Figure 1 and also Photograph P-16, which were both obtained from Google Earth Pro®. This Google Earth Pro image appears to accurately represent the conditions observed at Pond ST-18 by S&L on November 11, 2015, with the exception that brush and other vegetation on the outside slopes of the north and west dikes had been cut.

At the time of the inspection, Pond ST-18 was partially filled with water and several piles of CCR materials were present in anticipation of the clean-out which will occur when weather permits. The freeboard of Pond ST-18 was estimated to be 10 ft. ± at the time of the inspection.

The south and east sides of Pond ST-18 are incised as shown on Photographs P-17 and P-18. The risk of catastrophic failure in these areas is minimal since the surface of the water and CCR materials is lower than the surrounding ground surface. Moreover, since the slopes up to other areas are well vegetated and reasonably graded, the risk of upslope areas exhibiting instability and deforming into Pond ST-18 visually appears to be quite low.

The inside slope of the north dike looked to be constructed and maintained in a reasonable manner as shown in Photograph P-19. The outside slope of the north dike exhibited a section near the outlet structure manhole that was steeper than the industry standard as shown in Photographs P-20 and P-21. Although this area does not exhibit evidence of instability, placement of additional fill is recommended to match the slopes of the other dikes.

The inside face of the west dike was found to be in good to excellent condition without any visual evidence of instability. However, CCR material piled inside the pond is very steep (Photograph P-23) with evidence of instability of the CCR piles as shown in Photograph P-17. The outside side slope of the western dike was generally in good condition as shown in Photographs P-24 and P-26. However, based on the Google Earth photograph (Photograph P-16) and based on the significant woody vegetation debris observed (Photographs P-24 through P-26) it appears the slope was overgrown with larger vegetation that prevented a good grass cover. Since the woody vegetation has been cut, this and other areas that exhibit sparse grass should be seeded to establish a grass cover for erosion control. Inactive rodent burrows were also observed on the outside slope of the western dike as shown in Photograph P-25. Probing these burrows indicated they are less than 18 in. deep. These burrows should be filled with soil and if rodent populations return and new burrows are found, the rodents should be relocated to protect the dike from future burrows.

The inspection of the outlet pipe area did not indicate evidence of seepage or other adverse conditions.

NRG has filled the outside slope of the northern dike to flatten the slope. This work was performed after the S&L inspection and is documented by Photograph P-22, which was taken by NRG on December 9, 2015.

Pond ST-18 was found to be in good condition as observed without indications of risk of catastrophic or operational failure. Following the regrading of the north dike to establish grass cover and filling the inactive rodent burrows, the pond will be considered to be in excellent condition.

8.4 SECONDARY E POND

The location and general arrangement of the Secondary E Pond are depicted on Figure 1 and also Photograph P-27, which were both obtained from Google Earth Pro®. This Google Earth Pro image appears to accurately represent the condition of the dikes observed at the Secondary E Pond by S&L on November 11, 2015.

At the time of the S&L inspection, The Secondary E Pond was partially filled with water with piles of stabilized CCR material extending above the dike crest. The exposed CCR material, including excavated material that projects above the dike crest (Photographs P-28, P-29, P-40 and P-41) appears to be well stabilized rigid material.

At the time of the S&L inspection, the freeboard appeared to be less than two feet. The Secondary E Pond should be operated to allow the pond to operate with more freeboard.

The crest of the dikes around the Secondary E Pond exhibit significant rutting and some ponding of water (Photographs P-28 through 31 and P-34). To prevent future water penetration into the core of the dikes, which could result in softening and possibly some instability, these ruts should be graded to prevent ponding of water. Areas of the dike crest that were not rutted (Photographs P-36, P-37 and P-40) typically did not have a crushed stone or gravel surfacing to prevent future rutting. The surface of the dike crest roadway should be covered with gravel, crushed stone or should be stabilized to prevent future rutting of the dike crest under truck traffic.

The outside slope of the south dike exhibited significant woody vegetation as shown in Photographs P-28 through P-31. However, since the dike crest in this area is 80 ft. \pm wide, the risk to the dike stability from the roots of the trees is very low and not considered to be of concern.

The outside slopes of the Secondary E Pond dikes are generally appropriately sloped and well vegetated with grass as shown in Photographs P-35, P-38, P-39 and P-42. Several localized small areas of disturbed grass were observed (Photograph P-38). However, it is estimated that in the spring growing season these areas will fill in with grass from the surrounding turf.

The majority of the inside slopes of the Secondary E Pond dikes was not observable due to the high water and CCR material level in the ponds (Photographs P-28, P-29, P-32, P-33, P-34, P-36, P-40 and P-41). Although the shoreline is not linear in Photograph P-33, it appears to be the result of dredging activities and not dike instability.

The dividing dike as shown in Photograph P-43 is balanced with free water on both sides and is not considered for stability of the pond system.

The Secondary E Pond was found to be in good condition as observed, without indications of risk of catastrophic or operational failure. Following the regrading of the dike crest and establishment of a more reasonable freeboard, the pond will be considered to be in excellent condition.

8.5 POND 002

The location and general arrangement of Pond 002 are depicted on Figure 1 and also Photograph P-44, which were both obtained Google Earth Pro®. This Google Earth Pro image appears to accurately represent the condition of the dikes observed at Pond 002 by S&L on November 11, 2015. However, the CCR materials present in the Google Earth photographs have been excavated and the pond contained very little visible CCR material at the time of the S&L inspection.

At the time of the S&L inspection, Pond 002 was partially filled with water without visible CCR material as shown in Photographs P-45, P-48 and P-72. The freeboard of Pond 002 was estimated to be 6 ft. \pm at the time of the inspection.

The crest of the dikes around Pond 002 are covered with granular road base type material and appeared to be rut free as shown in Photographs P-46 and P-49.

The outside slopes of Pond 002 dikes are generally appropriately sloped as shown on Photographs P-47 and P-50. Numerous areas of insufficient vegetation are noted in these photographs as well as the Google Earth Photograph P-44. A more substantial vegetative cover should be established around the outside slopes of Pond 002.

The inside slope of the Pond 002 dikes was observed to be appropriately graded as shown in Photographs P-45 and P-48.

NRG has initiated plans to vertically raise the crest of the dikes around Pond 002. This work will include placing and compacting fill to raise the crest 4 ft. \pm and extend the outside slopes outward while maintaining the approximate 3H:1V slopes that were present at the time of the S&L inspection. The vertical expansion is accomplished through placement and compaction of 6 in. thick lifts of low permeability clay topped with a lift of crushed limestone to protect the dike crest from vehicular traffic. This work is under way as depicted in Photograph P-51. It should be noted that following earthwork operations, the area will require revegetation.

Pond 002 was found to be in good condition as observed without indications of risk of catastrophic or operational failure. Following establishment of grass cover on the slopes, the pond will be considered to be in excellent condition.

8.6 LANDFILL

The location and general arrangement of the landfill is depicted on Figure 1 and also Photographs P-52 and P-53, which were obtained from Google Earth Pro®. The individual areas discussed in this report are depicted on Photograph P-53. The Google Earth Pro image (Photograph P-52) appears to accurately represent the condition of the landfill as observed by S&L on November 11, 2015, except for the construction work for new areas to prepare for and place the new compacted clay liner as discussed in Section 8.6.3 of this report.

The landfill at the Limestone Station is a single CCR unit that has distinct areas for waste storage. For this report, the landfill is considered in three distinct life cycle stages:

- Landfill areas that have been filled, capped and vegetated are considered as “capped areas”,
- Landfill areas that currently receive CCR waste are considered “uncapped areas”, and
- Landfill areas where construction tasks are underway to place the clay liner for future CCR material storage are considered to be “areas under construction”.

8.6.1 CAPPED AREAS

Although landfill Areas 1, 2, 3, 5, 6, 9 and 10 are considered to be capped areas, exposed slopes of CCR material are present in areas 1, 3, 6, and 10, where uncapped and areas under construction will abut the existing CCR material.

The plateaued portion of the capped areas is well vegetated and generally well graded to prevent the impoundment of stormwater as depicted in Photographs P-59, P-60, P-73, P-74, P-75 and P-76. The minor ponding shown is due to a recent storm event and is considered to be minor.

Drainage structures constructed to transfer stormwater from the top of the capped areas down to the perimeter ditch consist of concrete lined rundown channels. One rundown channel is present in Area 1 and a second in Area 5. These channels do exhibit some cracks but are considered to be in good condition as shown in Photographs P-54, P-55, P-56, P-59, P-61 and P-65. NRG had noted some undermining of the rundown channel in Area 1 and grouted beneath the slab as shown in Photograph P-57.

The rundown channels drain into a perimeter drainage ditch as shown in Photographs P-56, P-66 and P-67. Since the flow in these channels is stormwater off the capped section of the landfill and have not contacted with CCR materials, this flow is separated from the perimeter interceptor ditch that collects contact water from uncapped areas of the landfill.

The side slopes of the capped landfill areas are well vegetated and have appropriate interceptor ditches as depicted in Photographs P-58, P-60, P-61, P-62, P-63, P-64, P-68, P-69 and P-72.

Historical reports indicate that some water seepage was observed at the landfill toe near the southern corner of Area 9. A series of French drains were installed with drainage into a sump as shown in Photograph P-70. S&L did not observe any evidence of ongoing seepage.

Photograph P-71 shows an area of disturbed vegetation to the right of the sump shown in Photograph P-70. This vegetation disturbance is a result of feral hogs and is relatively shallow. S&L anticipates that vegetation will naturally be reestablished in this area given apparent minimal disturbance of the root zone.

S&L did not observe visual evidence of slope instability in the capped portions of the landfill.

8.6.2 UNCAPPED LANDFILL AREAS

Areas 4, 7, 8 and 11 are considered to be uncapped areas.

Given the dynamic nature of active landfill areas, the comments presented herein represent the S&L observations made on November 11, 2015 and may or may not represent the conditions present at other times.

The “work in progress” nature of active landfill areas result in exposed slopes of CCR material that will either be capped, or where areas under construction will be filled and the existing CCR material slope will be abutted by material placed in the new area. These exposed CCR slopes are encompassed by the interceptor ditch that collects stormwater runoff from uncapped areas and collects any CCR material that erodes or sloughs off the exposed CCR material slopes.

Photograph P-78 is of a slope that will be capped when Area 11 is capped. This slope of exposed CCR material appears to be stable with little significant evidence of erosion. Uncapped area slopes that will abut future fill areas are shown in Photographs P-81, P-84, P-88 and P-89. Photograph P-81 depicts an area of erosion of the CCR material that is shown in greater detail in Photograph P-82. This appears to be erosion from a concentrated stream of stormwater flowing down the slope. NRG identified this problem and placed additional material to create a dike crest to prevent stormwater from flowing down the slope as shown in Photograph P-83.

These uncapped CCR slopes drain down into the interceptor ditch as shown in Photographs P-77, P-81, P-84, P-88 and P-89. The interceptor ditch directs the stormwater runoff and any eroded CCR material to Pond 002.

The haul road used to transport CCR materials to the top of the landfill is shown in Photograph P-79. This photograph demonstrates that the CCR materials can be placed in a relatively stable condition since ruts were not observed.

A typical view on the upper plateau level of the uncapped portion of the landfill is shown in Photograph P-80.

Since this area is a work in progress and since the interceptor ditch is functioning to collect contact water and eroded CCR materials, it is S&L’s opinion that this area is operated in accordance with generally accepted industry standards.

8.6.3 AREAS UNDER CONSTRUCTION

Areas 12 through 20 are areas under construction.

The earthwork activities to install the compacted clay liner in these areas is in various stages of construction. Photographs P-86, P-87 and P-88 show Area 20 as the partial clearing and grubbing is underway to prepare the area for the liner. Photographs P-88 and P-89 show Areas 13 and 19 that have partially completed clay liners. Photograph P-85 shows Area 12 where the clay liner protective cover is in place and a more distant area of partially lined landfill area under construction.

9 REVIEW OF WEEKLY INSPECTIONS & AVAILABLE INSTRUMENTATION

The weekly inspections by a qualified person have been performed and S&L has reviewed the reports. The inspections appear to be thorough and appropriately executed. The minor items noted such as vegetation removal have been implemented.

The monthly monitoring of instrumentation has been implemented since the effective date of the Federal CCR Rule. The piezometers in the vicinity of the French drain in landfill Area 9 are generally constant and demonstrate the effectiveness of the drainage system.

10 RECOMMENDATIONS

At the time of this inspection, there are no repairs needed that pose immediate operational or safety concerns for the CCR units inspected. However, based on the observations made by S&L on November 11, 2015, the following recommendations are made regarding future maintenance of the CCR impoundments and landfill.

10.1 RECOMMENDATIONS THAT HAVE BEEN IMPLEMENTED

During the site visit, S&L reviewed the following recommendations with NRG. NRG has addressed the following items since the inspection was completed.

10.1.1 POND ST-18 GRADING OF STEEP SLOPES

Steep slopes were noted on the outside face of the northern dike of Pond ST-18 (Photographs P-20 and P-21). This area warranted regrading to lessen the slope in the vicinity of the manhole. NRG has completed the regrading in this area as shown in Photograph P-22. Moreover, topsoil has been placed and seeding of the disturbed slope has been completed. Based on S&L's conversations with NRG and the photograph provided, this recommendation is considered to be complete.

10.1.2 POND E EVALUATION & REPAIR OF EROSIONAL FEATURE

An erosional feature was noted in the inside face of the north dike of Pond E (Photograph P-14). NRG excavated to locate a discharge of stormwater outlet that had been buried by CCR material. NRG also

reseeded the disturbed area as shown in Photograph P-15. Based on S&L's conversations with NRG and the photograph provided, this recommendation is considered to be complete, with no further actions recommended.

10.2 FUTURE MAINTENANCE ACTIVITIES

10.2.1 RODENT AND FERAL HOG CONTROL AND REPAIR

Ongoing control of feral hogs (Photograph P-71) and rodents (Photograph P-25) in the vicinity of the CCR ponds and landfill should be continued. Reseeding of areas damaged by feral hogs may be required, if the root structure is damaged sufficiently to inhibit the growth of new grass vegetation. In areas of rodent burrows in dikes and landfill slopes, such as Pond ST-18, the rodents should be controlled and all burrows should be filled with soil or cementitious grout.

10.2.2 GRASS VEGETATION

Since a well-established grass cover is easy to maintain and an excellent erosion protection layer, all dike slopes should be well vegetated with appropriate grass species. This maintenance item should be performed at:

- Pond ST -18, where woody vegetation removed (Photographs P-24 through P-26) should be seeded to aid in the establishment of a grass protective cover;
- Pond 002, where recent earthwork for the vertical expansion (Photograph P-51) should be seeded to aid in the establishment of a grass protective cover and
- other areas that do not have substantial grass cover should be seeded to establish an appropriate grass cover.

10.2.3 SECONDARY E POND DIKE CREST MAINTENANCE

The crest of the Secondary E Pond exhibited significant rutting and ponding of water as shown in Photographs P-28 through P-31 and P-34. Since ponded water on the crest of dikes can soften and weaken the core of the dikes, potholes and ruts in roads along the Secondary E Pond dike crests should be graded and filled to promote drainage off the dike crest. Additionally, placement of crushed stone should be considered to prevent future rutting on the heavily used dike crest roads.



10.2.4 SECONDARY E POND DIKE FREEBOARD

At the time of the S&L inspection, the freeboard in the Secondary E Pond was less than 2 ft. as shown in Photographs P-33, P-34, P-36, P-37, P-38 and P-41. The operation of the Secondary E Pond should be modified to allow a more appropriate freeboard of at least 3 ft. or an engineered design should be developed to raise the crest of the dike to allow a more appropriate freeboard.

10.2.5 PERIMETER DITCH – REMOVAL OF TREES AND BRUSH

Significant trees and brush were present in the stormwater collection ditch that collects runoff from the capped areas of the landfill (runoff ditch adjacent to Areas 1, 2, 5, and 9) as shown in Photograph P-66. At this time this vegetation does not appear to jeopardize the effectiveness of the landfill. However, as additional landfill areas are capped and the stormwater is directed to this ditch instead of to the perimeter interceptor ditch (which collects stormwater and CCR from the uncapped areas of the landfill), significant increased flows could be adversely impacted by the current vegetation. S&L recommends removal of woody vegetation in the stormwater collection ditch before any additional areas are capped or additional flow is directed to this ditch system.

11 CRITERIA

This report has been developed in accordance with the inspection requirements of the Federal CCR Rule (Reference 1) and generally accepted engineering practice. The Texas Commission on Environmental Quality Guidelines for Operation and Maintenance of Dams in Texas (Reference 2) is considered to represent generally accepted practices and is considered to be an applicable criterion.

12 LIMITATIONS

Given the visual nature of this inspection it must be recognized that latent conditions may be present that are not visually observable.

Given the work in progress nature of active pond and landfiling operations, this report only considers the conditions present at the time of the S&L field inspection and the photographs provided by NRG since the inspection.

13 REFERENCES

- 1) 40 CFR Part 257, Hazardous and Solid Waste Management System: Disposal of Coal Combustion Residuals From Electric Utilities; Final Rule, April 17, 2015.
- 2) Texas Commission on Environmental Quality, Guidelines for Operation and Maintenance of Dams in Texas, November 2006.



14 CONCLUSIONS

This annual inspection considered the following CCR Units:

- Pond K,
- Pond E,
- Pond ST-18,
- Secondary E Pond,
- Pond 002, and
- The Landfill.

S&L did not identify any evidence of ongoing or imminent failure of these ponds or landfill.

It is the opinion of S&L that Pond K does not require an annual inspection since it is fully incised.

Based on the review of available documents and the visual inspection, it is S&L's opinion that Pond E, Pond ST-18, the Secondary E Pond, Pond 002 and the landfill have been designed, constructed, are currently operated, and maintained in a manner that is consistent with recognized and generally accepted good engineering standards.

Several maintenance recommendations are presented in Section 10 of this report that should be implemented in addition to the ongoing maintenance program that has been implemented.



Limestone Station, Units 1 & 2
Annual Inspection of CCR
Impoundments and Landfill
SL Project No.: 12661-042



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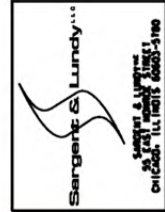
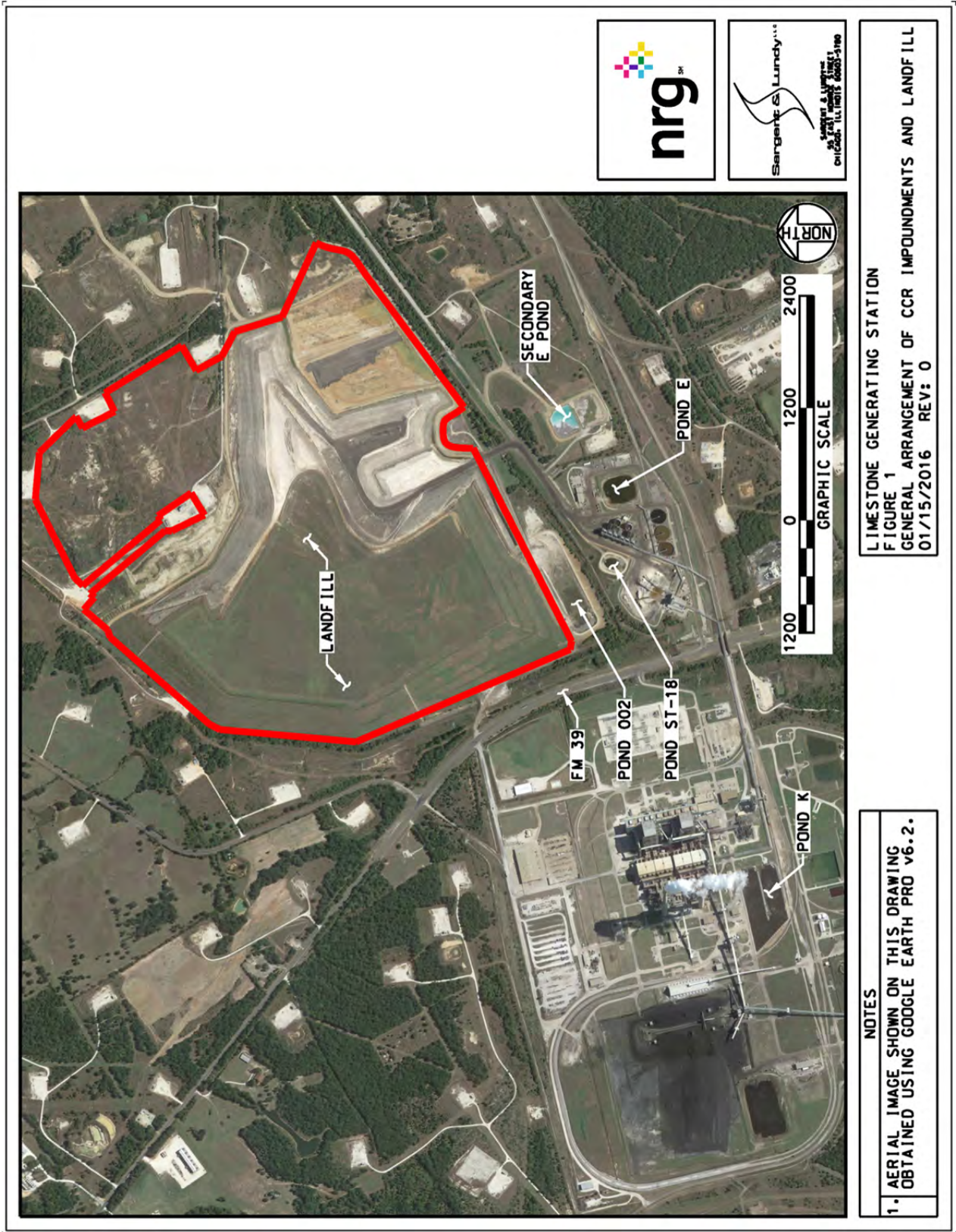
FIGURES



Limestone Station, Units 1 & 2
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LIMESTONE GENERATING STATION
 FIGURE 1
 GENERAL ARRANGEMENT OF CCR IMPOUNDMENTS AND LANDFILL
 01/15/2016 REV: 0

NOTES
 1. AERIAL IMAGE SHOWN ON THIS DRAWING
 OBTAINED USING GOOGLE EARTH PRO V6.2.



Limestone Station, Units 1 & 2
Annual Inspection of CCR
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APPENDIX A – SITE PHOTOGRAPHS



Photograph P-1 – From Google Earth Pro Downloaded December 31, 2015
Pond K: Aerial view of incised Pond K.



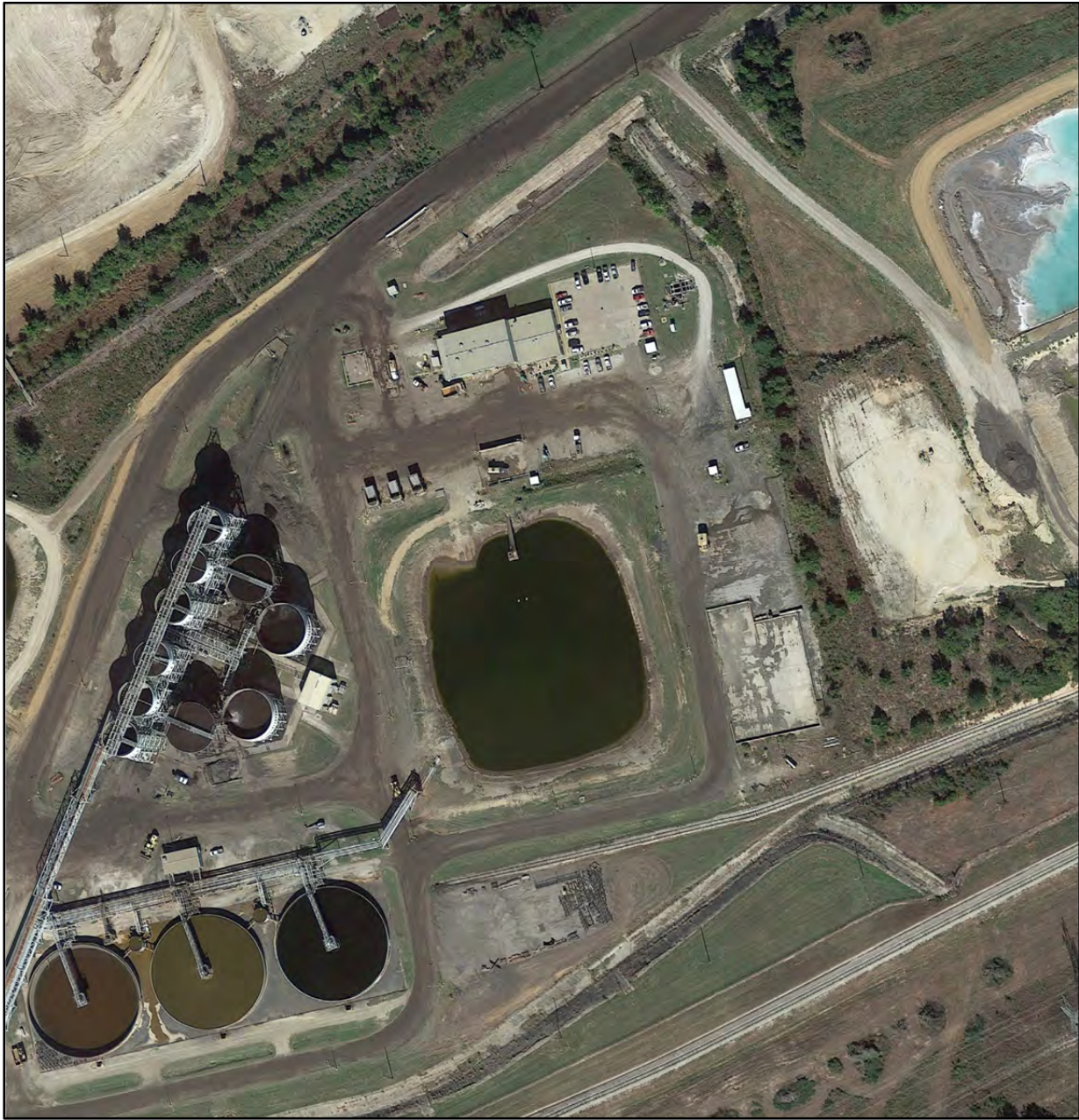
Photograph P-2 – Taken November 11, 2015 by David E. Nielson
Pond K: Looking north-northeast at the eastern bank, which is incised.
This verifies that the Federal CCR Rule regarding inspections is not applicable to Pond K.



Photograph P-3 – Taken November 11, 2015 by David E. Nielson
Pond K: Looking west along the northern bank, which is incised.
This verifies that the Federal CCR Rule regarding inspections does not apply to Pond K.



Photograph P-4 – Taken November 11, 2015 by David E. Nielson
Pond K: Looking west at the southern pond edge, which is incised.
This verifies that the Federal CCR Rule regarding inspections does not apply to Pond K.



Photograph P-5 – From Google Earth Pro Downloaded January 1, 2016
Pond E: Aerial view of partially incised Pond E.



Photograph P-6 – Taken November 11, 2015 by David E. Nielson
Pond E: Looking south along west pond interior slope of western edge, which is incised. Note minor vegetation deficiencies, which do not result in significant risk due to incised condition.



Photograph P-7 – Taken November 11, 2015 by David E. Nielson
Pond E: Looking west at the fabriform erosion protection blanket on the southern bank at the pipe discharge. Although cracks are present, it is functional in preventing erosion.



Photograph P-8 – Taken November 11, 2015 by David E. Nielson
Pond E: Looking east at southern bank, which is incised.



Photograph P-9 – Taken November 11, 2015 by David E. Nielson
Pond E: Looking north at the outside slope of the eastern dike.



Photograph P-10 – Taken November 11, 2015 by David E. Nielson
Pond E: Looking north at the inside slope of the eastern dike.
Although, some minor slope irregularity was noted,
there was no evidence of structural instability observed.



Photograph P-11 – Taken November 11, 2015 by David E. Nielson
Pond E: Looking east at the outside slope of the north dike.



Photograph P-12 – Taken November 11, 2015 by David E. Nielson
Pond E: Looking west at the inside slope of the north dike.
Note the slope appears to be steeper than typical. The steep slope appears to be the result of excavations to remove collected solids from inside the pond.



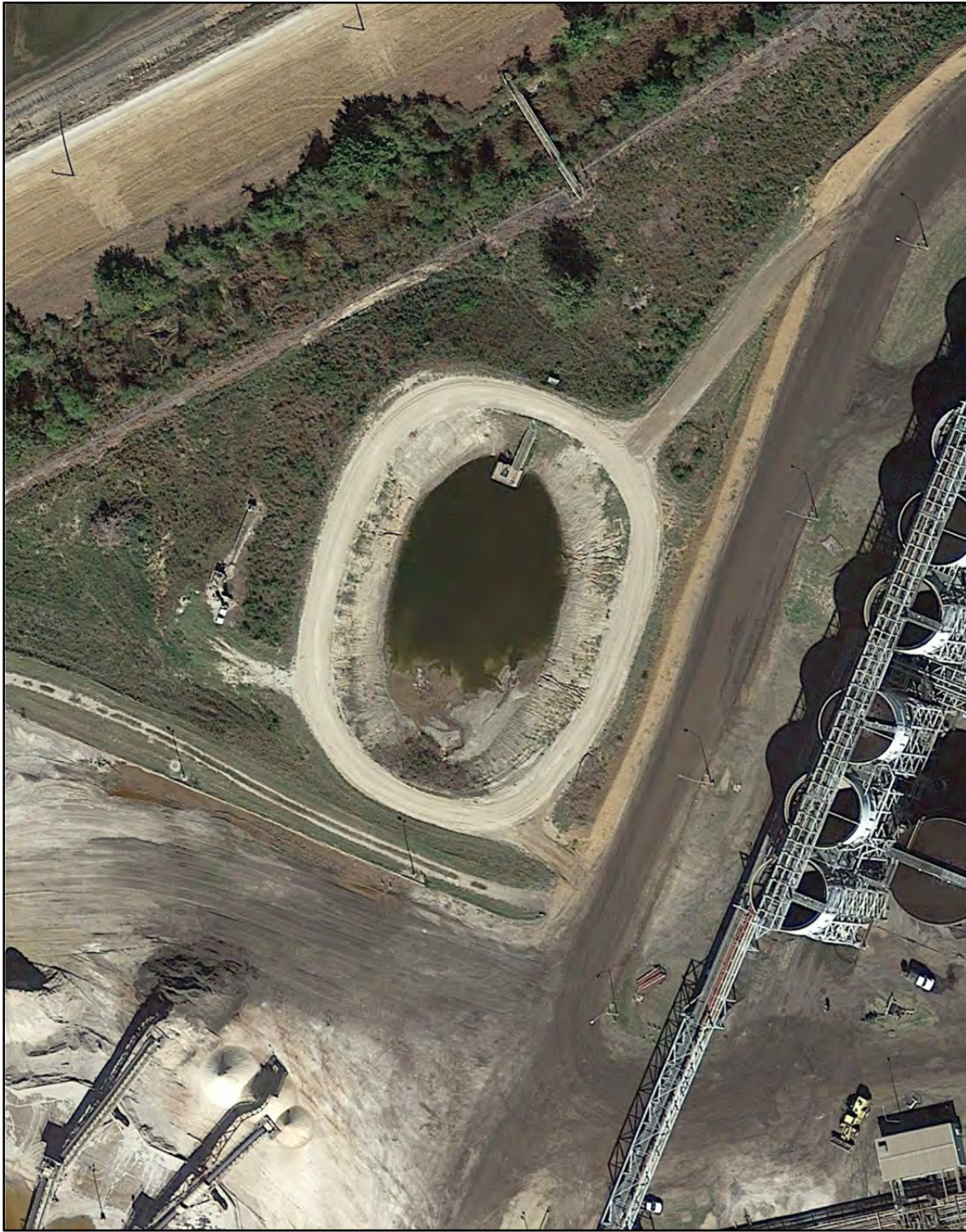
Photograph P-13 – Taken November 11, 2015 by David E. Nielson
Pond E: Looking west at the inside slope of the north dike at the discharge piping equipment.
Note evidence of recent tree removal and sparse grass.



Photograph P-14 – Taken November 11, 2015 by David E. Nielson
Pond E: Looking at the inside slope of the north dike where an erosional feature
in slope appears to be a broken stormwater pipe discharging into pond.



Photograph P-15 – Taken November 16, 2015 by NRG
Pond E: Looking north at the inside slope of the north dike
(the area of Photographs P-13 and P-14). Note pipe discharge has been exposed.
The valve and hose area has been cleaned up and the area has been seeded.



Photograph P-16 – From Google Earth Pro Downloaded January 1, 2016
Pond ST-18: Aerial view of partially incised Pond ST-18.



Photograph P-17 – Taken November 11, 2015 by David E. Nielson
Pond ST-18: Looking west at inside slope of southern edge of incised portion of pond.
Tension crack (circled in red) was in loose CCR material that is to be removed from the pond.
No instability of the pond dikes was observed.



Photograph P-18 – Taken November 11, 2015 by David E. Nielson
Pond ST-18: Looking north at inside slope of eastern edge of incised portion of pond.



Photograph P-19 – Taken November 11, 2015 by David E. Nielson
Pond ST-18: Looking west at inside slope of north dike of pond and outlet structure.



Photograph P-20 – Taken November 11, 2015 by David E. Nielson
Pond ST-18: Looking west at outside slope of northern edge of pond.
Note the steep dike section in the vicinity of the outlet structure manhole. This dike is steeper than typical. Additional fill should be placed and compacted to lessen the steepness of the slope and increase the dike stability. No evidence of dike instability was noted.



Photograph P-21 – Taken November 11, 2015 by David E. Nielson
Pond ST-18: Looking east at outside slope of northern edge of pond.
Note the steep dike section in the vicinity of the outlet structure manhole.
This dike is steeper than typical. Additional fill should be placed and compacted to lessen the steepness of the slope and increase the dike stability.
No evidence of dike instability was noted.



Photograph P-22 – Taken December 9, 2015 by NRG
Pond ST-18: Looking east at outside slope of northern edge of pond.
Note the steep dike section depicted in Photographs P-20 and P-21
has been corrected with the addition of compacted fill.
Grass cover should be established over new fill.



Photograph P-23 – Taken November 11, 2015 by David E. Nielson
Pond ST-18: Looking south at inside slope of western dike.



Photograph P-24 – Taken November 11, 2015 by David E. Nielson
Pond ST-18: Looking south at outside slope western dike.
Evidence of recent vegetation cutting was observed.
Grass should be reestablished to reduce the risk of erosion of the outside slope.



Photograph P-25 – Taken November 11, 2015 by David E. Nielson

Pond ST-18: Looking at outside slope of the western dike.

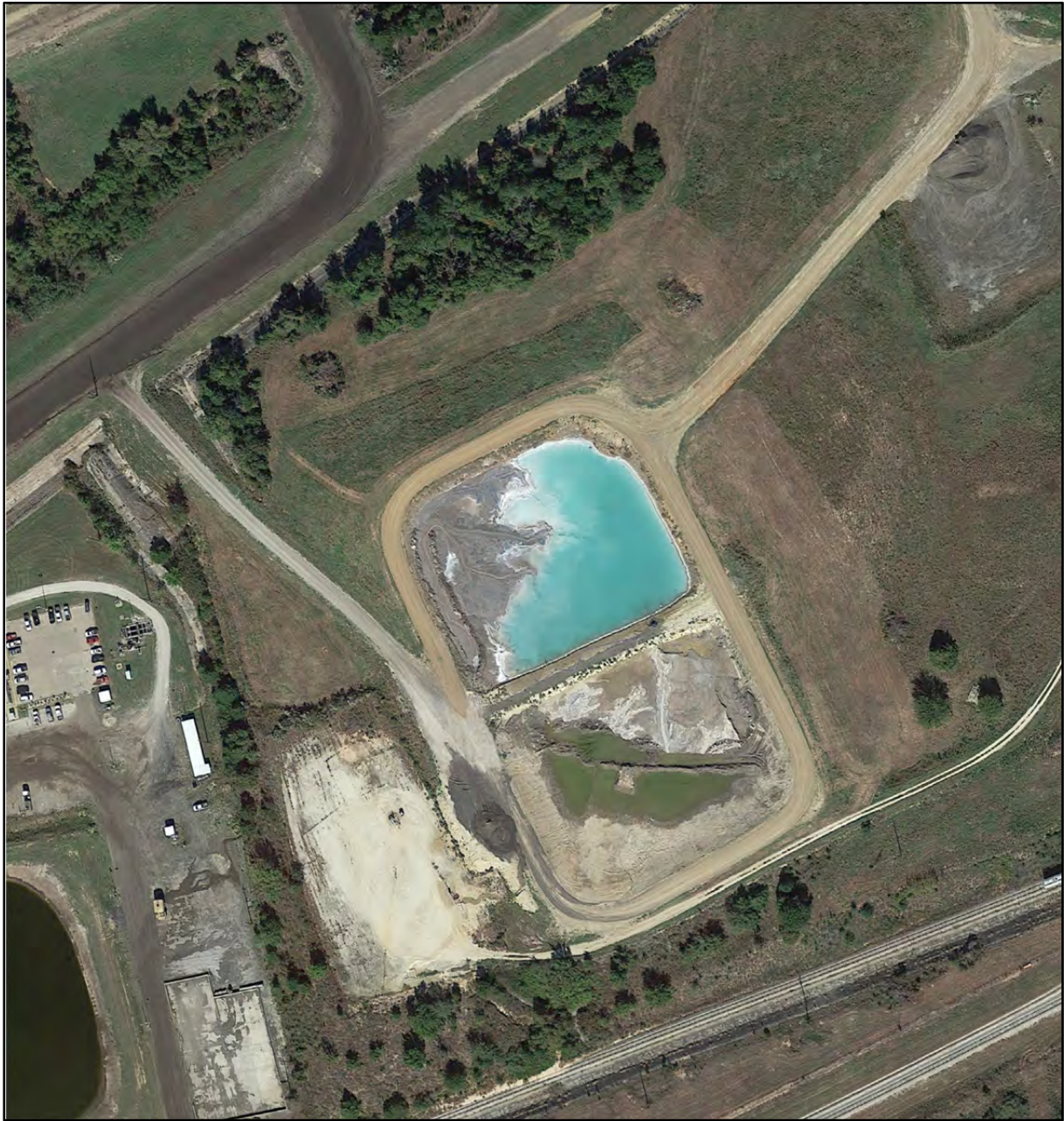
Evidence of recent vegetation cutting and an inactive rodent burrow was observed. The burrow was probed and was less than 18 inches deep. Grass should be reestablished. The rodent population should be controlled and rodent holes filled.



Photograph P-26 – Taken November 11, 2015 by David E. Nielson

Pond ST-18: Looking north at outside slope of western dike.

Grass vegetation should be reestablished.



Photograph P-27 – From Google Earth Pro Downloaded January 1, 2016
Secondary E Pond: Aerial view.



Photograph P-28 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking east at inside slope of the southern dike.
Note rigid consistency of excavated stabilized sludge. The Secondary E Pond has significant accumulations of stabilized sludge that promotes stability of the dike system.
Also note traffic rutting of top of dike in truck access area.



Photograph P-29 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking west along the southern dike crest and inside slope.
Note rutting of dike crest.



Photograph P-30 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking east along the wide crest of southern dike.
Note water ponding in ruts along roadway.



Photograph P-31 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking east at outside slope of southern dike.
Note the rutting and ponded water in the roadway.
Also note excessive vegetation a significant distance from pond.
Given this distance, roots of woody vegetation have little impact on pond performance.



Photograph P-32 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking north along the inside slope of the eastern dike.



Photograph P-33 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking north from central dike along the inside slope of the eastern dike.
The non-linear shoreline is likely a result of dredging activity and not dike instability.



Photograph P-34 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking north along the eastern dike crest.



Photograph P-35 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking north at outside slope of eastern dike.
Note good grass vegetation.



Photograph P-36 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking west at inside slope of the northern dike.
Note traffic rutting of top of dike.



Photograph P-37 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking west along the northern dike crest.



Photograph P-38 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking west along the outside slope of the northern dike.
Note good grass vegetation in most areas, with some bare areas.



Photograph P-39 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking west along the outside slope and toe of slope of the northern dike.
Note good grass vegetation in most areas. Note good slope and alignment.



Photograph P-40 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking south at inside slope of the western dike.



Photograph P-41 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking south at inside slope of western dike and dike crest.
Note rigid consistency of excavated stabilized sludge. The Secondary E Pond has significant accumulations of stabilized sludge that promotes stability of the dike system.



Photograph P-42 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking south along the outside slope of the western dike and the dike toe.
Note good grass vegetation in most areas. Note good slope and alignment.



Photograph P-43 – Taken November 11, 2015 by David E. Nielson
Secondary E Pond: Looking east at central dividing dike.



Photograph P-44 – From Google Earth Pro Downloaded January 1, 2016
Pond 002: Aerial view.



Photograph P-45 – Taken November 11, 2015 by David E. Nielson
Pond 002: Looking north along the inside slope of the western dike.



Photograph P-46 – Taken November 11, 2015 by David E. Nielson
Pond 002: Looking north along the crest and outside slope of the western dike.



Photograph P-47 – Taken November 11, 2015 by David E. Nielson
Pond 002: Looking north at outside slope and toe of slope of the western dike.



Photograph P-48 – Taken November 11, 2015 by David E. Nielson
Pond 002: Looking east along the inside slope of the southern dike.



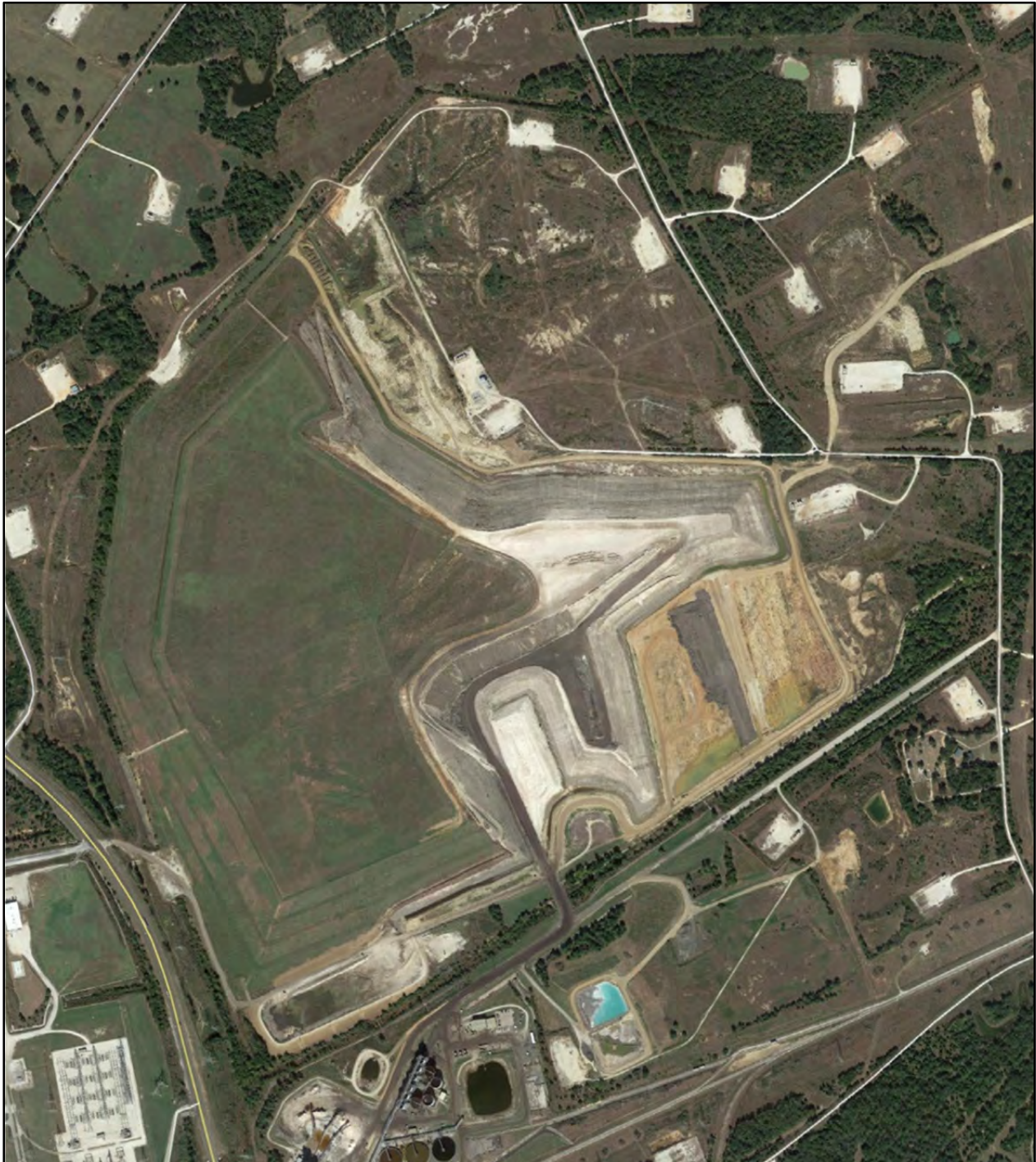
Photograph P-49 – Taken November 11, 2015 by David E. Nielson
Pond 002: Looking east along the crest of the southern dike.



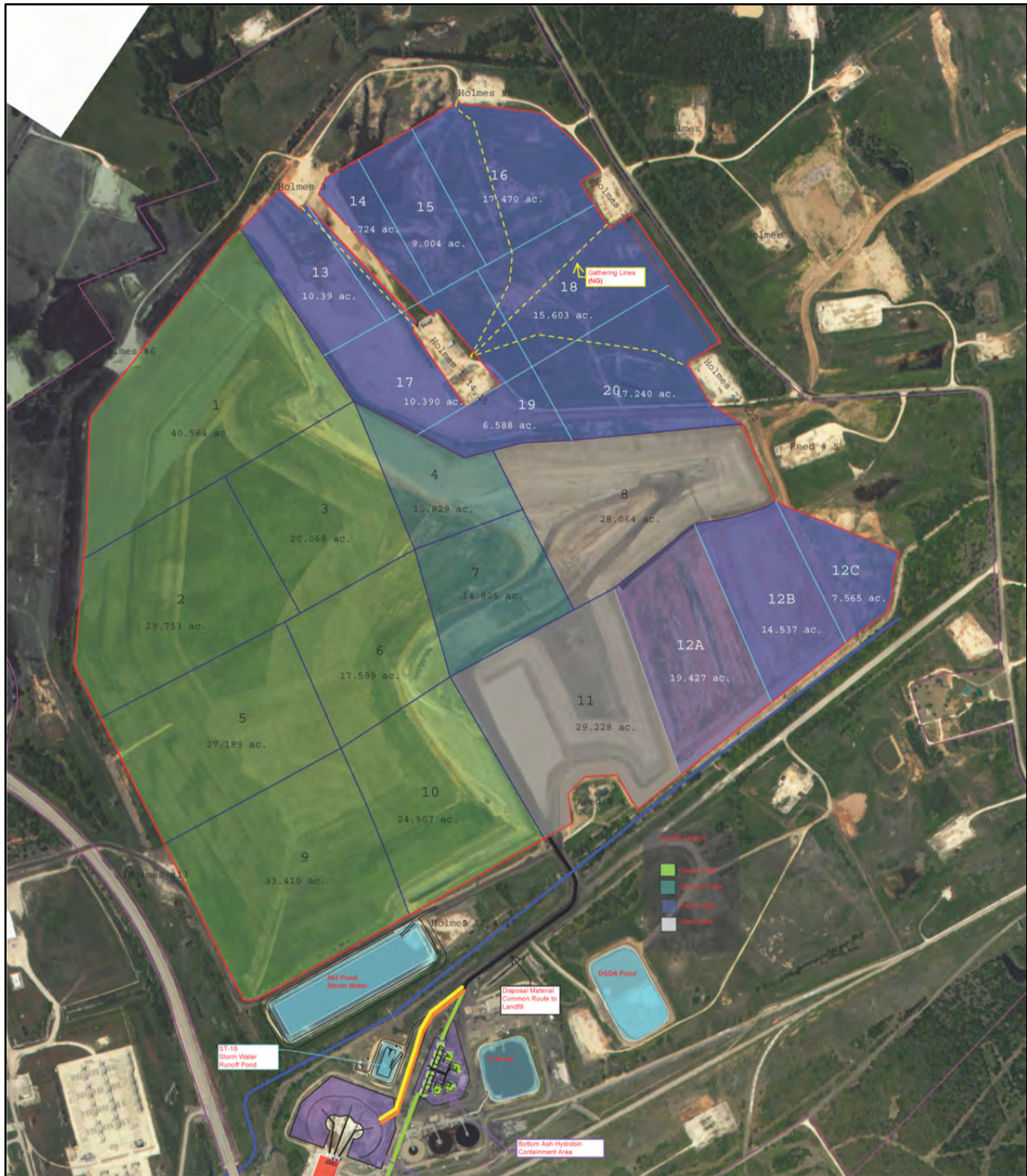
Photograph P-50 – Taken November 11, 2015 by David E. Nielson
Pond 002: Looking east along the outside slope and toe of slope of the southern dike.



Photograph P-51 – Taken November 11, 2015 by NRG
Pond 002: Looking north at partially raised dike, with Area 9 of the landfill in the background.
Work initiated after S&L Field Inspection.



Photograph P-52 – From Google Earth Pro Downloaded January 1, 2016
Landfill: Aerial view.



Photograph P-53 – From Google Earth
 Landfill: Aerial view with individual landfill areas noted.



Photograph P-54 – Taken November 11, 2015 by David E. Nielson
Landfill Area 1: Looking northeast at mid-slope bench and stormwater inlet into rundown channel. Note good vegetation on landfill cover (cap).



Photograph P-55 – Taken November 11, 2015 by David E. Nielson
Landfill Area 1: Looking southeast and up at flow line of stormwater rundown channel.



Photograph P-56 – Taken November 11, 2015 by David E. Nielson
Landfill Area 1: Looking northwest at stormwater rundown channel discharge into perimeter ditch. Note energy dissipation pit and riprap at mouth of discharge. Also note vegetation in perimeter ditch, which indicates sufficient velocity control of stormwater.



Photograph P-57 – Taken November 11, 2015 by David E. Nielson
Landfill Area 1: Looking at grouted repair of an area of stormwater concrete lined rundown channel that was previously undermined.



Photograph P-58 – Taken November 11, 2015 by David E. Nielson
Landfill Area 1: Looking southwest along the toe of the capped landfill slope.
Note good vegetation cover and lack of erosion of slope.



Photograph P-59 – Taken November 11, 2015 by David E. Nielson
Landfill Area 5: Looking northwest at stormwater collection ditch at crest of landfill slope
where it discharges into concrete lined rundown channel.
Note cracks in channel concrete and good vegetation cover.
Ponded water is from recent precipitation and not of concern.



Photograph P-60 – Taken November 11, 2015 by David E. Nielson
Landfill Area 5: Looking southeast along the stormwater collection ditch at the crest of landfill slope, near where it discharges into concrete lined rundown channel. Note slope uniformity and good vegetation cover and good downslope profile.



Photograph P-61 – Taken November 11, 2015 by David E. Nielson
Landfill Area 5: Looking northwest along the mid-slope bench. Note good slope uniformity and good vegetation cover.



Photograph P-62 – Taken November 11, 2015 by David E. Nielson
Landfill Area 5: Looking southeast along the mid-slope bench.
Note good slope uniformity and good vegetation cover.



Photograph P-63 – Taken November 11, 2015 by David E. Nielson
Landfill Area 5: Looking northwest at toe of side slope of capped landfill
with concrete rundown channel.
Note good vegetation cover, landfill slopes and absence of erosion.



Photograph P-64 – Taken November 11, 2015 by David E. Nielson
Landfill Area 5: Looking southeast along the toe of side slope of capped landfill.
Note slope uniformity and absence of erosion.



Photograph P-65 – Taken November 11, 2015 by David E. Nielson
Landfill Area 5: Looking northeast at concrete lined stormwater rundown channel.
Note generally good condition of the concrete lining, energy dissipation blocks and vegetation.
Several minor areas of sparse grass are noted.



Photograph P-66 – Taken November 11, 2015 by David E. Nielson
Landfill Area 5: Looking northwest at perimeter ditch upstream from discharge of concrete lined stormwater runoff channel. Note significant vegetation in upstream ditch, which should be removed before additional stormwater flows from upstream landfill areas are diverted into this ditch.



Photograph P-67 – Taken November 11, 2015 by David E. Nielson
Landfill Area 5: Looking southeast along the perimeter ditch downstream from the discharge of concrete lined stormwater runoff channel. Note good condition of fabric form concrete lining.



Photograph P-68 – Taken November 11, 2015 by David E. Nielson
Landfill Area 9: Looking northwest along the mid-slope bench in the capped landfill slope.
Note good vegetation cover and lack of erosion of slope.



Photograph P-69 – Taken November 11, 2015 by David E. Nielson
Landfill Area 9: Looking southeast along the mid-slope bench in the capped landfill slope.
Note good vegetation cover and lack of erosion of slope.



Photograph P-70 – Taken November 11, 2015 by David E. Nielson
Landfill Area 9: Looking south at pump station for French drains
located at toe of capped landfill slope.
Note disturbed vegetation right of pump station (see Photograph P-71).



Photograph P-71 – Taken November 11, 2015 by David E. Nielson
Landfill Area 9: Looking at damage to vegetation shown in Photograph P-70, which was
caused by feral hogs. Some areas damaged by feral hogs included holes less than 4 inches
deep. Note shallow depth of disturbance and likelihood of re-vegetation
due to intact grass roots.



Photograph P-72 – Taken November 11, 2015 by David E. Nielson
Landfill Area 9: Looking southeast and down slope to where landfill drains into Pond 002.
Note good vegetation and lack of erosion.



Photograph P-73 – Taken November 11, 2015 by David E. Nielson
Landfill Area 3: Looking northwest at top of capped landfill area.
Note good vegetation and the absence of ponded water.



Photograph P-74 – Taken November 11, 2015 by David E. Nielson
Landfill Area 3: Looking southwest at top of capped landfill area.
Note good vegetation and the absence of ponded water.



Photograph P-75 – Taken November 11, 2015 by David E. Nielson
Landfill Area 3: Looking southeast at top of capped landfill area.
Note good vegetation and the absence of ponded water.



Photograph P-76 – Taken November 11, 2015 by David E. Nielson
Landfill Area 3: Looking northeast at top of capped landfill area.
Note good vegetation and the absence of ponded water.



Photograph P-77 – Taken November 11, 2015 by David E. Nielson
Landfill Area 11 (uncapped area): Looking north at uncapped fill area and marketable gypsum
stored inside landfill Area 11.
Note perimeter ditch is between roadway and white gypsum pile in landfill area.



Photograph P-78 – Taken November 11, 2015 by David E. Nielson
Landfill Area 11(uncapped area): Looking northeast at an uncapped CCR material slope
that will be capped when Area 11 is capped.
Note eroded material is intercepted in perimeter ditch that drains to Pond 002.



Photograph P-79 – Taken November 11, 2015 by David E. Nielson
Landfill Area 11 (uncapped area): Looking north at active haul road to top of uncapped area.
Note absence or rutting of CCR material under heavy haul truck traffic,
which implies stability of material.



Photograph P-80 – Taken November 11, 2015 by David E. Nielson
Landfill Area 11(uncapped area): Looking southwest at active disposal area.



Photograph P-81 – Taken November 11, 2015 by David E. Nielson
Landfill Area 8 (uncapped area): Looking northeast at temporary face of uncapped area where it will abut landfill Area 12. Note perimeter interceptor ditch to collect contact water and eroded CCR. This ditch drains to Pond 002.
Also note erosion of CCR material and steep slopes.



Photograph P-82 – Taken November 11, 2015 by David E. Nielson
Landfill Area 8 (uncapped area): An alternate view of slope shown in Photograph P-81.
Looking northwest at temporary face of uncapped area where it will abut landfill Area 12.
Note erosion of CCR material and steep slopes.



Photograph P-83 – Taken November 11, 2015 by David E. Nielson
Landfill Area 8 (uncapped area): Looking east at crest of temporary slope shown in
Photographs P-81 and P-82. Note uncapped placement of CCR material to prevent further
erosion of temporary slope face.



Photograph P-84 – Taken November 11, 2015 by David E. Nielson
Landfill Area 8 (uncapped area): Looking south along the temporary slope of Area 8 that will about landfill Area 20. Also looking along the perimeter interceptor ditch that collects contact water and eroded CCR material. Note minor erosion of CCR material is evident.



Photograph P-85 – Taken November 11, 2015 by David E. Nielson
Landfill Area 12 (area under construction): Looking southeast from top of uncapped landfill at landfill Area 12. Note clay liner (reddish tan in background), protective layer over liner (gray material) and construction of new perimeter interceptor ditch in distant background, with interceptor ditch in foreground.



Photograph P-86 – Taken November 11, 2015 by David E. Nielson
Landfill Area 20 (area under construction): Looking northeast at area that has been partially cleared and grubbed in preparation for placement of clay liner for landfill Area 20.



Photograph P-87 – Taken November 11, 2015 by David E. Nielson
Landfill Area 20 (area under construction): Looking northwest at area that has been partially cleared and grubbed in preparation for placement of clay liner for Area 20.



Photograph P-88 – Taken November 11, 2015 by David E. Nielson
Landfill Area 20 in background and landfill Area 19 in foreground: Looking northeast from top of landfill Area 7. Note Area 20 ongoing construction tasks to clear and grub in preparation for placement of clay liner, while Area 19 has been cleared and grubbed except along perimeter interceptor ditch, which will be relocated. Some reddish brown clay liner has been placed in Area 19.



Photograph P-89 – Taken November 11, 2015 by David E. Nielson
Landfill Area 13 (area under construction): Looking north at area that has been cleared and grubbed, with partial placement of clay liner (reddish brown material).