APPLICATION FOR PERMIT

TYPE I MUNICIPAL SOLID WASTE FACILITY

MSW PERMIT NO. 2374

PESCADITO ENVIRONMENTAL RESOURCE CENTER

RANCHO VIEJO WASTE MANAGEMENT, LLC

SOLID WASTE DISPOSAL FACILTY

LAREDO, WEBB COUNTY, TEXAS

March 28, 2011
Revised September 14, 2011

Prepared By:

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September 15, 2011

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Texas Commission on Environmental Quality
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Reference: Pescadito Environmental Resource Center – Webb County
Municipal Solid Waste (MSW) – Proposed Permit No. 2374
Response to First Notice of Deficiency (NOD)
Tracking No. 14710139; CN603835489/RN106119639

Dear Ms. McCaine:

On behalf of Rancho Viejo Waste Management, LLC, I am pleased to submit an original and three copies of the permit application revisions in response to your technical review of the referenced MSW permit application. Comments summarizing our individual revisions follow in the order listed in your July 26, 2011 letter. We are enclosing new signature pages that are signed, dated, and notarized. Individual pages are hole-punched for insertion into three-ring binders. To facilitate review, we have repeated TCEQ's NOD comments in italicized font and employed a standard font for our responses.

1. *Please review your response to the Administrative Review NOD and submit an original set of non-redline-strike-out (clean) replacement pages along with three copies of the clean replacement pages. For all NOD responses, only one copy of the redline strike out version is needed along with an original clean set of replacement pages and three sets of clean copies.*

   We are submitting an original set and three copies of non-redline-strike-out replacement pages for our response to the Administrative Review NOD. For the First Technical NOD response, we are enclosing one redline-strike-out copy and an original plus three sets of clean copy replacement pages.

2. *Please ensure that the footers throughout all of the application are correct and consistent. Currently, the various footers that are used include Rancho Viejo Waste Management, LLC, Yugo Ranch Waste Management, LLC, and Rancho Viejo Cattle Co., Ltd.*

We have corrected the footers throughout the application.

3. *Please review language throughout the application stating that certain requirements will not be addressed until Parts III and IV are submitted. Generally, if a requirement is stated in the rules to be submitted for Parts I and II, it must be addressed in the Land Use Application. Therefore in most cases, this language should be removed. (Title 30 Texas Administrative Code (30 TAC) Section (§)330.57(a)).*

   We have removed statements from Parts I and II that say certain requirements will not be be addressed until Parts III and IV are submitted.

4. *Item 16. The instructions for the Core Data Form indicate that all businesses, except some small sole proprietors and individuals, should have a federal taxpayer identification number (FTIN). You have provided "N/A" for this item. Please provide the FTIN for Item 16 of the Core Data Form or provide a brief explanation in your response letter why this LLC is not required to have a FTIN.*

   We added the FTIN to the Core Data Form. The use of the acronym N/A was intended to mean "not available," which was the case earlier.

5. *Item 24. The TCEQ identifies a facility at its location as a "Regulated Entity." Therefore, Item 24 on the Core Data Form should be the address where the facility will be located rather than the mailing address that you have provided. If an actual address does not exist for the location at this time, please provide an approximate, likely address for the proposed facility location. Please update the location when the address becomes official.*

   We have provided the physical address for the proposed facility in the Core Data Form. This physical address was provided to us by the Webb County Planning Department and therefore we believe this to be the official physical address for the facility.

6. *Item 36. The zip code provided for this item is for Laredo proper. However, instructions for the Core Data Form clearly indicate that the zip code for the Regulated Entity should be provided here. Please enter the zip code for the area that includes this Regulated Entity.*

   We have corrected the zip code to 78043 on both the Core Data and Part I forms.

7. *Item 39. Please include permit numbers for the programs that you have identified as being affected by the submittal of this Core Data Form. The MSW permit number 2374 should be stated here. Please include other known permit numbers that you determine will be affected.*

   We have included the proposed MSW permit number 2374 on the Core Data Form. No other programs and permits or registrations are currently affected by the submittal of this Core Data Form.

8. *Form Section A, Facility Zip Code. The zip code that you have provided is for the mailing address for the facility, within the Laredo city limits. Please provide the zip code for the facility location.*

   We have corrected the zip code as noted in Item 6 above.

9. *Form Section A, Application Type. You have marked "w/Public Notice" which is an option under "Modification." Since this application is for a new Permit rather than a modification, please remove the mark next to Modification so that there is only a mark next to Permit.*

   We have removed this mark.

10. *Form Section B, State Representative. It appears that the facility is located in State District 31 rather than 42. Please correct the district number and identify the appropriate State Representative.*

    We have corrected the identification, contact information and State District number.

11. *Form Section B, River Basin Information. Your response to request for River Basin Information ("None") indicates that no river authority has jurisdiction at the facility location. The Rio Grande Regional Water Authority (RGRWA) covers six counties in the Middle and Lower Rio Grande Valley: Willacy, Cameron, Hidalgo, Starr, Zapata, and Webb (excluding the City of Laredo). Since this facility is in Webb County and not within the city limits of Laredo, please provide supporting documentation that this site is not within the RGRWA's jurisdiction.*

    We have inserted information on the RGRWA in place of "none" in the Part I form. Please note that we have been informed in writing that RGRWA has not established a watershed sub-basin in the area of the proposed facility.

12. *Form Section C, Maps. Please identify where intake and discharge structures exist or are proposed, discuss these features, and identify their locations on one of the maps. Please note that the latitude and longitude provided in the Part I Form and the Core Data Form are not consistent with that on Figure I of Part II. Please correct this discrepancy.*

    There are no intake or discharge structures, as those terms are generally used or understood, for the proposed facility. We inserted the identical figures for the latitude and longitude in the Part I Form, the Core Data Form, and Figure 1 of Part II to make them consistent.

13. *The Land Ownership Map (Figure 3, Part I). Please identify easement locations on the Land Ownership Map.*

    Easement locations were determined by Mejia Engineering Company (MEC) and are shown on Part I, Figure 4. Figure 4 consists of Sheet 1 of 2 and 2 of 2, and these have been signed and sealed by a MEC registered professional surveyor. Because MEC prepared, signed and sealed the easement information, not TRC, we believe it is appropriate to show these easements on the signed and sealed MEC drawings rather than on a drawing signed and sealed by a TRC engineer. We also believe this approach shows the easements with greater clarity.

14. *Form Section D, Property Owner Information / Application Part I Section 4.1. In order to complete the legal description of the facility, please address the requirement stated on the Part I Form to provide the abstract number as maintained by the Texas General Land Office for the surveyed tract of land.*

The abstract number has been added in Part I, Section 4.1.

15. *Form Section D, Property Owner Information / Application Part I Section 4.1. The boundary survey description that is provided identifies the volume and page in the county records where the property description is recorded. However, it is not clear if the recording is for the 12,193.84 acre tract or for the proposed permit boundary, 1,109.48 acres which is within the larger tract. Please clarify which description is covered by the identified recording. (30 TAC §330.59(d)(1)(A)).*

    The boundary survey description has been clarified in Part I, Section 4.1.

16. *Form Section D, Property Owner Information / Application Part I Section 4.1.* Please identify whether or not the property for the permit boundary is platted. If it is platted, provide the identifying reference of the final plat record in the county files. (30 TAC §330.59(d)(1)(B)).

    The property for the permit boundary has not been platted, and this statement of fact was added to Part I, Section 4.1.

17. *Form Section E, Legal Authority. You have selected "Corporation" on the form as the ownership status of the facility. However, the supporting documentation issued by the Secretary of State indicates that the owner is a Limited Liability Company. General information from the Secretary of State's website indicates that a LLC is not considered a corporation. Therefore, please correct this information, marking "Other" and specifying "Limited Liability Company."*

    We have corrected the reference to the ownership status of the facility as requested.

18. *Form Section E, Legal Authority. Please also mark the appropriate box to indicate whether this entity is a private entity, public entity, etc. (30 TAC §305.45(a)(2)).*

    The applicant is a private entity, and the form has been so noted.

19. *Form Section F, Evidence of Competency. Your response in the table where you are asked to provide principals and supervisors is, "None." Please replace this response with statements indicating that the appropriate personnel with required qualifications will be in place prior to opening. Similarly, the table for Landfilling/Earthmoving Equipment Types and Personnel Experience or Licenses has been left blank. Please provide a brief, general response. (30 TAC §330.59(f)(3), (4), & (5)).*

    We have provided the requested information to affirm that appropriate personnel with required qualifications will be in place prior to opening the proposed facility. We also added typical equipment. Furthermore, we addressed this in Part I, Section 6.0.

20. *Waste Acceptance Plan, Section 2.0. Because grease and grit trap wastes are proposed to be accepted for processing, please state in Section 2.0 that design considerations will be made to ensure that storm water and wastewater management is in compliance with the regulations of the commission. Please also see item 28 below. (30 TAC §§330.61(a) & 330.55(b)).*

    We have included the statement in Section 2.1 that design considerations will be in compliance with the TCEQ's regulations.

21. *Waste Acceptance Plan, Section 2.0. Please state in Section 2.0 that special design considerations will be made to properly manage the Class I waste that is proposed to be accepted for disposal at the landfill. (30 TAC §330.61(a)).*

    We have included the special design considerations in Section 2.1.

22. *Waste Acceptance Plan, Section 2.0 and Part I, Section 1.4.2. In accordance with the requirements of 30 TAC §335.582, please revise Part I Section 1.4.2 to include the required 20 per cent limitation on the total receipt of industrial waste. Please add language to Part II Section 2.0 to discuss the 20 per cent limitation on the receipt of industrial waste. (30 TAC §330.61(a)).*

    The 20 per cent limitation has been added to Part I Section 1.4.2. We also added language discussing the 20 percent limitation in Part II Section 2.1.

23. *Waste Acceptance Plan, Section 2.0. With regard to identifying the sources of wastes, this section clearly indicates that the intent is to accept waste from industrial sources. However, while the facility is proposed as a municipal solid waste Type I landfill, this section of the application does not specifically identify the various sources of non-industrial wastes that are intended to be managed. Please identify the non-industrial sources in terms of municipal (residential and other non-commercial entities), community, commercial, institutional, recreational activities, and other municipal solid wastes. (30 TAC §330.61(b)(1)).*

    The non-industrial waste sources have been identified in Section 2.1.

24. *Waste Acceptance Plan, Section 2.0. As part of the discussion in Section 2.1 on the characteristics of wastes to be accepted, there is a statement that grease and grit trap wastes will be accepted for processing. Please specify the sources (commercial, industrial, institutional, etc.) from which you intend to accept these wastes.* (30 TAC §330.61(b)(1)).

    We have specified the sources of grease and grit trap wastes in Section 2.1.

25. *Waste Acceptance Plan, Section 2.0. Please revise Section 2.0 to add to the discussion on waste characteristics for wastes other than industrial waste. For example, a description identifying garbage, rubbish, ashes, street cleanings, dead animals, abandoned automobiles and all other solid waste other than industrial solid waste would be appropriate to characterize the standard waste disposed in a Type I landfill, if that is the intent. In addition, this discussion should identify solids from the grease and grit trap processing operation if the intent is to dispose of them in the Type I landfill. (30 TAC §330.61(b)(1)).*

    We have included additional waste characteristics to Section 2.2.

26. *Waste Acceptance Plan, Section 2.0. Please provide a general discussion to address any parameter limitations for wastes to be managed at the facility. Parameter limitations may include pH, fats, oil and grease concentrations, total suspended solids, chemical oxygen demand, biochemical oxygen demand, organic and metal constituent concentrations, water content, or other constituents. You may wish to preview 30 TAC* §330.207(g) *pertaining to Contaminated Water Management for additional information.*

Please also see item 28 below. (30 TAC §330.61(b)(1)).

We have addressed the parameter limitations in Section 2.1.

27. *Waste Acceptance Plan, Section 2.0.* For residential customers, please provide an estimate of the population or population equivalent to be served by the facility. The estimate may be made in terms of the areas and the market share proposed to be served. (30 TAC §330.61(b)(1)(A)).

    We have included in Section 2.3 a population estimate to be served by the facility.

28. *Waste Acceptance Plan, Section 2.0. For the Type V grease and grit trap operation, please provide the maximum amount of solid waste to be received daily and annually projected for five years, the maximum amount of solid waste to be stored, the maximum and average lengths of time that solid waste is to remain at the facility, and the intended destination of the solid waste received at this facility. (30 TAC §§330.61(b)(1)(B) & 305.62(j)(1)(C)).*

    For the grease and grit trap operation, we have provided the amounts of solid waste to be received daily and annually for the initial five years, and the maximum amount to be stored in Section 2.3. We have also included the estimated maximum and average lengths of time this waste will remain at the facility and its intended destination.

29. *Waste Acceptance Plan, Section 2.0. In addition to the discussion that is included in Section 2.1 about not accepting regulated hazardous waste, please address additional waste acceptance prohibitions found in 30 TAC §§330.15(e)(1,2,4-6, 8, & 9).*

    We have addressed these additional waste acceptance prohibitions in Section 2.1.

30. *General Location Maps, Section 3.0. For drainage, pipeline, and utility easements within or adjacent to the facility, paragraph ten of this section refers to Application Part I, Figure 4. However, Figure 4 is not identified in the Figures section of Application Part I. Please correct this discrepancy.* (30 TAC §330.61(c)(10)).

    Figure 4, Sheets 1 of 2 and 2 of 2, is now identified in the Figures section of Application Part I. This figure shows the only known easements on or adjacent to the facility, all of which are for either pipelines or access rights-of-way to facilitate oil and gas production. These easements are subject to revision when they are no longer needed for their intended purpose. As gas production plays out, these easements will be removed as the pipelines and access roads are no longer needed.

31. *General Location Maps, Section 3.0. Paragraph ten of this section states that all easements are shown on Figure 4 of Part I. However, Survey Note 3 on Page 2 of the Boundary Survey states that since no title company research was conducted to prepare the survey, there may be easements of record not included. Please revise the wording in Section 3.0 for consistency with the Boundary Survey. (30 TAC §330.61(c)(10)).*

    We have changed the wording in Section 3.0 to be consistent with the Boundary Survey.

32. *General Location Maps, Section 3.0. Please remove the language in paragraph eleven of this section which indicates that facility access control features will be addressed in Application Part III as access control features must be identified in Part II of the*

application. Please identify access control features in Section 3.0 and on the General Location Map. (30 TAC §330.61(c)(11)).

We have removed the language in paragraph eleven of Section 3.0 that refers to Part III. We have also discussed the access control features in Section 3.0 and identified them on the General Location Map.

33. *Facility Layout Maps, Section 4.0. For a Land Use Only Application, all of the details in 30 TAC §330.61 must be addressed. Therefore, please delete language within Section 4.0 indicating that site features have not been developed and will not be addressed until Application Parts III and IV are prepared and submitted. (30 TAC §330.61(d)).*

The specified language in Section 4.0 has been deleted.

34. *Facility Layout Maps, Section 4.0. For the outline of units to be permitted, both drawings that you have provided depict the landfill footprint. However, the proposed Type V grease and grit trap operation is not shown nor are the recycling operation and Class I waste cell shown. Please identify the locations of these two units and the specialized cell on the facility layout maps. (30 TAC §330.61(d)(1)).*

We have identified the proposed general locations of these two units and the specialized cell on the facility layout maps.

35. *Facility Layout Maps, Section 4.0. Please identify roads to be associated with the Type V grease and grit trap operation, the recycling operation, and the Class I cell. Please provide a note on Figure 4 or in Section 4.0 indicating that the landfill interior road will vary as each cell is filled and each new cell is constructed. (30 TAC §330.61(d)(2)).*

We have identified the roads to be associated with the Type V grease and grit trap operation, the recycling operation, and the Class I cell. We have also provided a note indicating that the road will vary as each cell is filled and each new cell is constructed.

36. *Facility Layout Maps, Section 4.0. Please provide proposed locations for groundwater and gas monitor wells. If site specific data is not available, please base initial proposed locations on regulatory requirements and published or generally accepted regional data. In addition, please replace the language in Section 4.0 stating that* no monitoring wells are shown as none are proposed at this time *with language addressing where the proposed groundwater and landfill gas monitoring locations may be found. (30 TAC §330.61(d)(3)).*

As required, we have provided initial proposed locations for groundwater and gas monitor wells. The language in Section 4.0 has been replaced and now addresses where the proposed groundwater and landfill gas monitoring locations may be found.

37. *Facility Layout Maps, Section 4.0. As part of the land use application, a fence along the permit boundary must be shown on the Facility Layout Maps. Please revise Figures 3 and 4 to identify where the fence will be located. Please also delete the wording in Section 4.0 about not showing the location of the fence until Parts III and IV are submitted. (30 TAC §330.61(d)(6)).*

We have added a fence to the Facility Layout Maps. Figures 3 and 4 now reflect where

the fence will be located. We have also removed the wording in Section 4.0 about not showing the location of the fence.

38. *Facility Layout Maps, Section 4.0. Please identify in Section 4.0 the features that are proposed as natural windbreaks and visual screens and show them on the Facility Layout Map. (30 TAC §330.61(d)(7))*

39. Natural vegetation consisting of trees and brush extends for many miles in all directions across the slightly hilly terrain. The nearest public access to the facility is more than 2 miles to the southeast and 4 miles to the northwest. These features provide windbreaks and visual screens. The applicant owns property extending at least ¼ of a mile in all directions, and will maintain natural vegetation in these areas (see Figure 4, Part II). In addition, the owner or operator will provide and maintain portable litter fences in locations adjacent to and downwind of the working face to trap and contain windblown litter. *Facility Layout Maps, Section 4.0. Please devise a means for showing the location of all landfill sectors on Figure 4. Due to the size of the landfill, this may be done by showing for example, the area to be used for the Type I landfill as a shaded area and adding an insert with approximate cell dimensions and total number of cells in north-south and east-west directions. (30 TAC §330.61(d)(9)(A)).*

    We have provided the general location of all landfill sectors in Figure 4.

40. *Facility Layout Maps, Section 4.0. Please identify the easements and provide a note that locations for waste placement will adhere to regulatory limits (30 TAC §330.61(a)) within and around easements. If the intent is to move all lines and have no easements, please include that information here. Please address all easements identified on Boundary Survey Page 2 (Part I Figures). (30 TAC §330.61(d)(9)(A)).*

    We have identified the easements on Figure 4, Part I.. We have also provided a statement in Section 4.0 that locations for waste placement will adhere to regulatory limits within and around easements.

41. *Facility Layout Maps, Section 4.0. In addition, identify the location of the sector(s) proposed to accept Class I waste. (30 TAC §330.61(d)(9)(A)).*

    With the exception of the first Class I landfill cell to be developed, we have not identified the location of other sectors proposed to accept Class I waste. The location of every cell that will accept Class I will meet TCEQ criteria.

42. *Facility Layout Maps, Section 4.0. Please identify dimensions of landfill sectors on Figure 4. The figure provided to show general cell construction (northwest corner of the landfill) would be adequate for this purpose if it were an inset to Figure 4 or an additional drawing, not within the landfill boundary, and using typical cell dimensions or a range of cell dimensions, etc. (30 TAC §330.61(d)(9)(D)).*

    We have added proposed dimensions of landfill sectors in Figure 4.

43. *Facility Layout Maps, Section 4.0. Please provide on a facility layout map, the maximum waste elevations and final cover elevations. (30 TAC §330.61(d)(9)(E)).*

    The proposed maximum final cover elevations have been provided on Figure 5, Part II.

The proposed final cover thickness is also shown, so the proposed maximum waste elevations can be determined by subtracting the proposed final cover thickness. These proposed final cover elevations on Figure 5 are shown for a cross-section identified on the plan view as Section A-A'. This cross section was selected because it is expected to represent the maximum final cover and side slope break point (location where top slopes and side slopes converge) elevations, according to our current preliminary design.

44. *Aerial photograph, Section 6.0. Please revise the aerial photograph to include the proposed fill areas, (the proposed landfill boundary or footprint). While the photograph includes the area for the one-mile radius, you may wish to delineate it to provide clarity. (30 TAC §330.61(f)(1)).*

    We have revised the aerial photograph as requested.

45. *Land-Use Map, Section 7.0. Note 5 of Figure 8 Land Use Map, states that easements are shown on Part II, Figure 9. Please note, the easements that may be discerned from Figure 9 do not appear to include all those identified on the Boundary Survey found in the Figures section of Part I. Please address this discrepancy. (30 TAC §330.61(g)).*

    We have revised Note 5 on Figure 8. Easements are shown on Figure 4, Sheets 1 of 2 and 2 of 2 in Part I.

46. *Impact on Surrounding Area, Section 8.0. The discussion on population increase states that the increase from 2000 to 2009 was approximately 33 percent. Based on the population numbers provided the increase appears to be approximately 25 percent. Please review the numbers and make needed corrections. (30 TAC §330.61(h)(4)).*

    We have corrected the population increase numbers.

47. *Impact on Surrounding Area, Section 8.0. The discussion on all known wells within 500 feet of the facility (Page 19) addresses water wells. The Supplemental Land Use Map, Figure 9 indicates that there are oil and gas wells near the facility. Please enhance the Section 8.0 discussion to address the known oil and gas wells within 500 feet. (30 TAC §330.61(h)(5)).*

    We have included the known oil and gas wells within 500 feet of the facility.

48. *Transportation, Section 9.0. For State Highway (SH) 359, please provide data on existing traffic volumes and projected traffic volumes during the life of the facility. (30 TAC §330.61(i)(2)).*

    We have included data on existing and projected traffic volumes.

49. *Transportation, Section 9.0. Please provide the response to the letter of coordination with the Federal Aviation Administration, if available. Please update the Table of Contents for Part II to include Attachment F, FAA Coordination. (30 TAC §330.61(i)(5)).*

    We have provided a response to the letter of coordination with the FAA. The Table of Contents has been updated to include the new attachment.

50. *General Geology and Soils Statement, Section 10.0. Section 10.0 must be sealed by a*

Professional Geoscientist, in accordance with rules of the Texas Board of Professional Geoscientists. (30 TAC §§330.61(j) & 330.57(f)(2)).

Section 10.0 has been sealed by a Professional Geoscientist.

51. *General Geology and Soils Statement, Section 10.0. Please individually address the factors that may create unstable conditions, listed in 30 TAC §§330.557(1),(2), & (3). (30 TAC §330.61(j)(3)).*

    We have addressed these individual factors from 30 TAC 330 § 559 (1), (2), and (3) in Section 10.5 [for subsection (1)], Section 10.0 generally and Section 10.5 [(for subsection (2)] and Section 10.5 [for Subsection (3)].

52. *General Geology and Soils Statement, Section 10.0. The Internet address provided for the Seismic Hazard Map does not link to an appropriate map. Please remove this address from the application and provide the applicable seismic impact map identified in 30 TAC§330.557. (30 TAC §330.61(j)(4).*

    We have corrected the internet address and provided the correct seismic map

53. *Groundwater and Surface Water, Section 11.0. Section 11.0 must be sealed by a Professional Geoscientist, in accordance with rules of the Texas Board of Professional Geoscientists. (30 TAC §§330.61(k) & 330.57(f)(2)).*

    Section 11.0 has been sealed by a Professional Geoscientist.

54. *Groundwater and Surface Water, Section 11.0. Please address site specific groundwater conditions. (30 TAC §330.61(k)(1)).*

    We have addressed site specific groundwater conditions.

55. *Groundwater and Surface Water, Section 11.0. A discussion on surface water at the site is included in the application. Please add to the discussion to include surface water conditions* near *the site. (30 TAC §330.61(k)(2)).*

    We have added discussion including surface water conditions near the site.

56. *Groundwater and Surface Water, Section 11.0. The application indicates that the facility will operate under the TPDES general permit. Please provide a certification statement which includes an authorized signature indicating that the general permit will be obtained when required. (30 TAC §330.61(k)(3)(A)).*

    We have included a certification statement in Part I, Section 7.0, which includes an authorized signature indicating that the general permit will be obtained when required.

57. *Groundwater and Surface Water, Section 11.0. For the proposed Class I waste cell, please address the location restrictions in 30 TAC §§335.584(b)(1)&(2).* (30 TAC §§281.5(7) & 330.549(b)).

    We have addressed the location restrictions for the proposed Class I waste cell in Section 11.1. In addition, a significant body of site-specific subsurface data has been collected that will document compliance with the location restrictions cited above.

58. *Floodplains and Wetlands Statement, Section 13.0. The drawing provided is labeled*

Figure 10. However, the text in Section 13.0 identifies the drawing as Figure 9. Please correct this discrepancy. (30 TAC §330.61(m)(1)).

We have corrected the figure identification to be Figure 11 in both Section 13.0 and in the Table of Contents.

59. *Floodplains and Wetlands Statement, Section 13.0. For the floodplains statement, please provide data on floodplains listed below in accordance with Title 30 Chapter 301 (relating to Approval of Levees and Other Improvements). (30 TAC §330.61(m)(1))*

    a.) *Please identify the name of the watercourse associated with the proposed project and the flow direction. (30 TAC §301.33(a)(2)).* We have provided the name of the main watercourse associated with the proposed project and the flow direction on Figure 6, Part II.

    b.) *Please identify all existing reservoirs, etc., that may be affected by the proposed landfill construction, including ownership information for the features identified. (30 TAC §301.33(a)(3)).* We have identified all existing reservoirs that may reasonably be affected by the proposed landfill construction. These include the Burrito Tank and several smaller unnamed livestock tanks that exist on the site. These are owned by the applicant or its parent company, Rancho Viejo Cattle Company, Ltd. These reservoirs are shown on several maps in the application. Those reservoirs located within the site will be removed during the course of developing the site. We have also included ownership information for those reservoirs in Section 13.0. The facility construction, operation and closure will not significantly impact either surface water peak discharge rates and/or discharge volumes, nor significantly alter natural drainage patterns. Downstream receiving waters will not be significantly impacted by the facility; however, it should be noted that the nearest downstream reservoir is Falcon Lake, an impoundment of the Rio Grande River created by Falcon Dam, located over 60 miles south of the site.

    c.) *Please provide preliminary plans that show the pre- and post-project design floodwater surface-elevation profiles and the design-flood delineations of the floodplain. (30 TAC §301.33(b)(2)).* We have included preliminary plans that show the post-project design floodwater surface-elevation profile and the design-flood delineations of the floodplain. There is no pre-project floodwater surface-elevation profile because the site is currently delineated as a FEMA Zone A. No previous modeling has been performed at this location.

    d.) *Please address whether an adjustment to the location of the landfill is plausible, in accordance with 30 TAC §301.33(b)(3).* We have addressed whether an adjustment to the location of the landfill is plausible in Section 13..

60. *Floodplains and Wetlands Statement, Section 13.0. Because the area is in part designated as a floodplain, the application must demonstrate how the requirements of 30 TAC §330.547 (relating to Floodplains) will be met. Since the application is for disposal activity, the facility is a new facility, and the application includes a processing facility, all items in 30 TAC §330.547 must be addressed. (30 TAC §330.547)).*

    We have demonstrated how the requirements relating to floodplains will be met in

Section 13.0 and in discussion above. We have also addressed the items in 30 TAC §330.547. In summary, we have performed engineering analysis and design along with an application for a Conditional Letter of Map Revision (CLOMR), and have submitted this to the Webb County Planning Department as the first step in obtaining the CLOMR. With concurrence from Webb County Planning Department, the CLOMR application will be submitted to FEMA for review and approval. When issued, the CLOMR will verify that the proposed site drainage plans will remove areas of the site proposed for the landfill, waste processing and storage areas and related development from the 100-year floodplain.

61. *Floodplains and Wetlands Statement, Section 13.0. Section 13.0 indicates that there may be wetlands that are regulated under applicable federal, state, and local laws within the proposed permit boundary, in particular, within the proposed landfill footprint. A final determination is required for Part II of the MSW Permit Application. Therefore, please either address the requirements in 30 TAC §330.553(b) or provide documentation of authorization under a Corps of Engineers permit for the use of any wetlands area. In addition, please strike the language that indicates that the information will be submitted with Parts III and IV of the Application. (30 TAC §330.61(m)(2)).*

    TRC has submitted the Waters of the US Delineation Report to the USACE. The USACE agrees with our determination that the listed streams, wetlands and waterbodies are under the jurisdiction of the USACE and subject to permitting requirements. See attached transmittal letter and USACE-signed Preliminary Jurisdictional Determination Forms. Any proposed effects to wetlands will be analyzed in conjunction with the facility design. TRC will initiate the Individual Permit process with the USACE once the facility design is more advanced than it is currently. No destruction of jurisdictional waters will occur without a permit. Mitigation will occur as required by the Permit.

62. *Floodplains and Wetlands Statement, Section 13.0. If it is determined that wetlands are present at an area that will be used for storage and processing of waste, those areas must also be addressed in accordance with 30 TAC §330.553(a). (30 TAC §330.61(m)(2)).*

    TRC has determined that Waters of the US are present at the site, and received USACE concurrence (see response #61). Any proposed effects to wetlands will be analyzed in conjunction with the facility design. Mitigation will occur as required by the Permit. Storage and processing of waste will not be located in wetlands, in accordance with 30 TAC Section 330.553(a).

63. *Endangered or Threatened Species, Section 14.0. The result of an evaluation conducted to determine the potential of the property as a critical habitat for endangered or threatened species indicates that endangered or threatened species may occur at the property. However, a more detailed study is planned. Please note that the determination regarding endangered or threatened species must be provided as part of Application Part II. Therefore, please submit the resulting determination. (30 TAC §330.61(n)).*

    Qualified TRC biologists have completed a Biological Evaluation of the site, which was submitted to both Texas Parks and Wildlife Department (TPWD) and US Fish and Wildlife Service (USFWS). See attached transmittal letters. TRC awaits response from

the agencies and will supplement this permit submittal with information once received.

64. *Endangered or Threatened Species, Section 14.0. If the property is determined to be a critical habitat for endangered or threatened species, a biological assessment prepared by a qualified biologist in accordance with standard procedures of the United States Fish and Wildlife Service and the Texas Parks and Wildlife Department to determine the effect of the facility on the identified species must be provided as part of Application Part II. As such, if the property is determined to be a critical habitat, please provide the biological assessment at this time. Please strike the language indicating that the information will be submitted with Application Parts III and IV. (30 TAC §330.61(n)).*

    Qualified TRC biologists have completed a Biological Evaluation of the site to determine the effect of the facility on identified species. The Biological Evaluation was submitted to both TPWD and USFWS. See attached transmittal letters. TRC awaits response from the agencies and will supplement this permit submittal with information once received.

65. *Air Pollution Control. Please describe the considerations that are being made to construct and operate the waste management facilities at the proposed site in compliance with 30 TAC Subchapter U (relating to Standard Air Permits for Municipal Solid Waste Landfill Facilities and Transfer Stations) or other approved air authorizations. (30 TAC §330.55(a)).*

    We have described the considerations that are being made to construct and operate the waste management facilities at the proposed site in compliance with 30 TAC Subchapter U.

66. *General Operational Considerations. Please address the prohibitions regarding items in 30 TAC §330.15 that have not been addressed in the application. Please include as a minimum, 30 TAC §330.15(a, d, & f–h).*

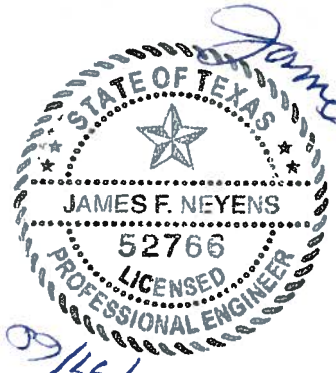
    We have addressed the prohibitions regarding items 30 TAC §330.15 that have not been addressed in the application.

We believe this response and the revisions to the referenced permit application are fully responsive to your request for addition information dated July 26, 2011. We further believe this response is consistent with the applicable rules. We have noted that some aspects of the application are necessarily works in progress, such as the work leading up to the submission of the CLOMR. We are attaching documentation of this to this letter, and respectfully request the opportunity to supplement this NOD response in the near future with additional information that will provide evidence of progress in addressing the floodplain matter.

Please contact me if you have any questions.

Very truly yours,

James F. Neyens, P.E.



TRC

cc: TCEQ-Laredo Region Office

Enclosures:
1. MSW Permit Application 2374, Revised September 14, 2011
2. MSW Permit Application 2374, Revised May 20, 2011
3. Submittal to Webb County Planning Department (partial) Sept. 9, 2011

TRC

505 East Huntland Drive
Suite 250
Austin, TX 78752

512.329.6080 PHONE
512.329.8750 FAX

www.TRCsolutions.com

September 9, 2011

Rhonda Tiffin
Director of Planning
Webb County
1110 Washington St., Suite 302
Laredo, TX 78040

Re: Conditional Letter of Map Revision for San Juanito Creek Tributary
Communities: Webb County
Community No.: 481059

Dear Ms. Tiffin:

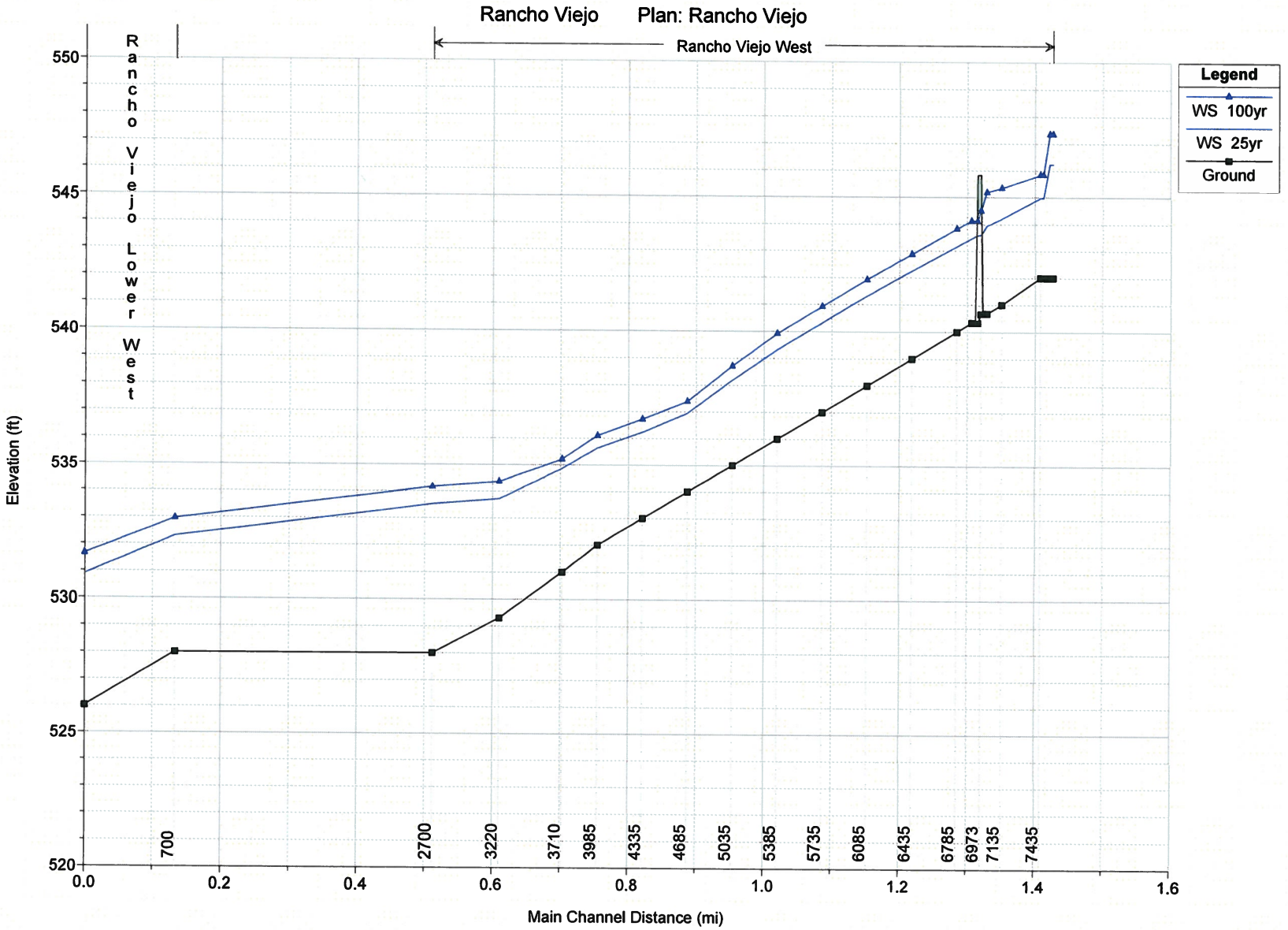
Please find enclosed one draft copy of the Conditional Letter of Map Revision submission for the Pescadito Environmental Resource Center. We are still working on a few items that will be required for the actual submission to FEMA. However, the lack of those items in this draft should not affect your ability to properly perform your review. For example, we are waiting for the final ESA Compliance Determination for the site. This document is required by FEMA for them to initiate their review. We would like to work with you in the interim to address any concerns you have with our analyses. The goal is to have all issues addressed by the time the final clearance is received for the project.

Please do not hesitate to contact me should you or your staff have any questions regarding the draft submission. I may be reached at either my office at (512) 684-3346 or by cell phone at (512) 497-9166. I look forward to working with you on this project.

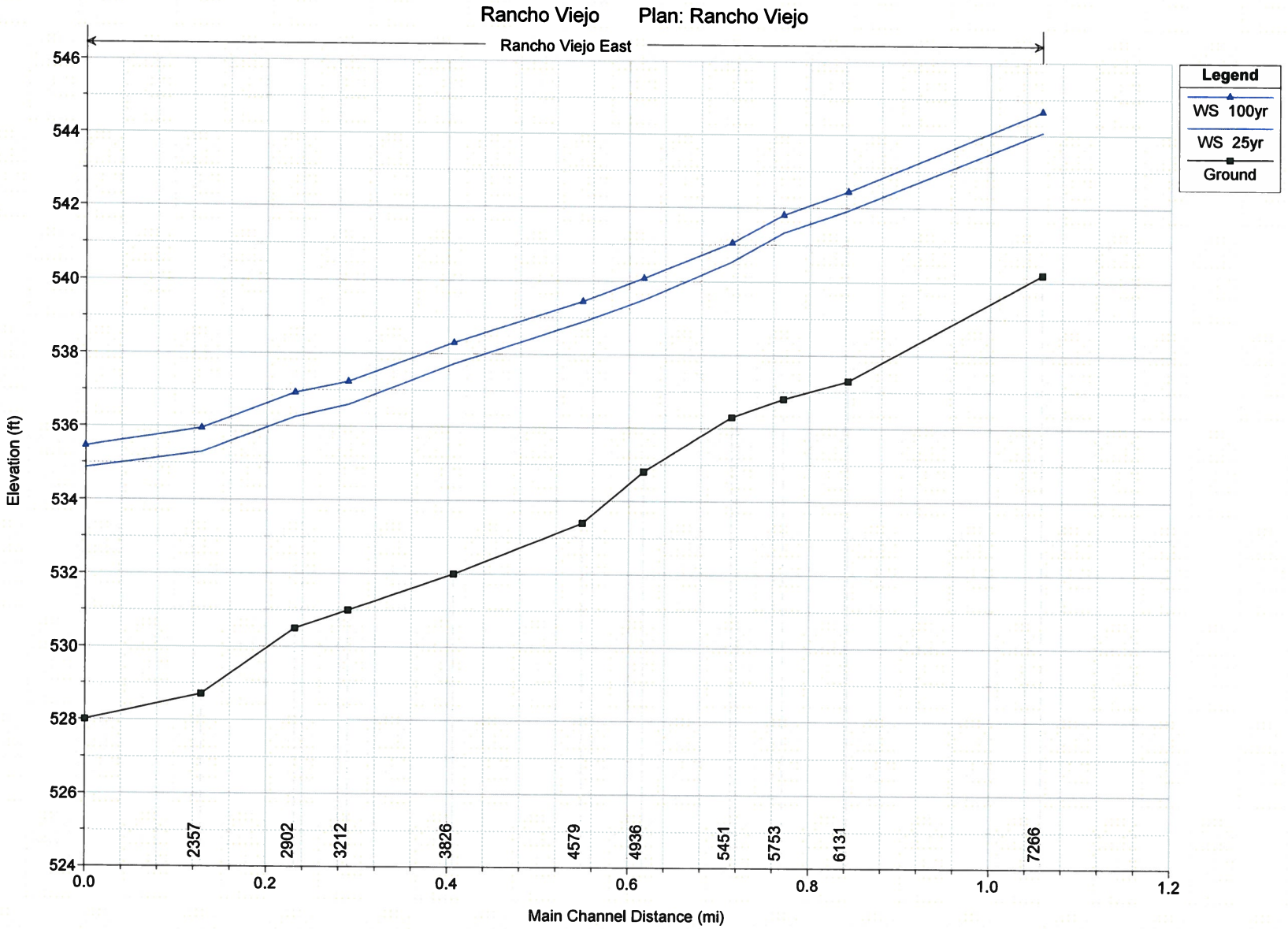
Sincerely,

Richard K. Frithiof, P.E., CFM
TRC Environmental Corp.

Profile for Rancho Viejo West



Profile for Rancho Viejo East



WEBB COUNTY
NCORPORATED AREAS
481059

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET

300 0 600 1200 M

17100000 F

17095000 F

17090000 F

17085000 F

EL 1300

ZONE A

ZONE X

ZONE X

RANCH ROAD 1300

Burro Tank

PANEL 1275C

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

WEBB COUNTY, TEXAS AND INCORPORATED AREAS

PANEL 1275 OF 1700

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WEBB COUNTY	481059	1275	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
48479C1275C

EFFECTIVE DATE
APRIL 2, 2008

Federal Emergency Management Agency

Proposed 100yr FP Line

Facility Boundary

Landfill Boundary

N

0 187.5 375 750 1,125 1,500

Feet

Model Cross Sections

Existing 100-Year Floodplain

Facility Boundary

Landfill Boundary

100-Year Flood Map

Elevation Contours

West 7535

West 7435

West 7135

West 7020

West 6900

West 6785

West 6435

West 6085

West 5735

West 5385

West 5035

West 4685

West 4335

West 3985

West 3710

West 3220

West 2700

East 7266

East 6131

East 5753

East 4936

East 4579

East 3826

East 5451

East 3212

East 2902

East 2357

East 1700

Lower West 700

Lower West 0

TABLE OF CONTENTS

TCEQ

TCEQ Core Data Form

TCEQ Use Only

For detailed instructions regarding completion of this form, please read the Core Data Form Instructions or call 512-239-5175.

SECTION I: General Information

1. Reason for Submission *(If other is checked please describe in space provided)*

☐ New Permit, Registration or Authorization *(Core Data Form should be submitted with the program application)*

☐ Renewal *(Core Data Form should be submitted with the renewal form)* ☒ Other **Updating Customer Information**

2. Attachments **Describe Any Attachments:** *(ex. Title V Application, Waste Transporter Application, etc.)*

☒ Yes ☐ No — Municipal Solid Waste Permit Application Part I Form and Parts I & II

3. Customer Reference Number *(if issued)*	Follow this link to search for CN or RN numbers in Central Registry**	4. Regulated Entity Reference Number *(if issued)*
CN 603835489		RN 106119639

SECTION II: Customer Information

5. Effective Date for Customer Information Updates (mm/dd/yyyy) 9/14/2011

6. Customer Role (Proposed or Actual) – *as it relates to the Regulated Entity listed on this form. Please check only one of the following:*

☐ Owner ☐ Operator ☒ Owner & Operator
☐ Occupational Licensee ☐ Responsible Party ☐ Voluntary Cleanup Applicant ☐ Other: _____

7. General Customer Information

☐ New Customer ☒ Update to Customer Information ☐ Change in Regulated Entity Ownership
☐ Change in Legal Name (Verifiable with the Texas Secretary of State) ☐ No Change**

If "No Change" and Section I is complete, skip to Section III – Regulated Entity Information.

8. Type of Customer:			
☐ Corporation	☐ Individual	☐ Sole Proprietorship- D.B.A	
☐ City Government	☐ County Government	☐ Federal Government	☐ State Government
☐ Other Government	☐ General Partnership	☐ Limited Partnership	☒ Other: Limited Liability Company

9. Customer Legal Name *(If an individual, print last name first: ex: Doe, John)*	*If new Customer, enter previous Customer below*	*End Date:*
Rancho Viejo Waste Management, LLC		

10. Mailing Address: 1116 Calle del Norte

City	Laredo	State	TX	ZIP	78041	ZIP + 4	

11. Country Mailing Information *(if outside USA)*	12. E-Mail Address *(if applicable)*
	ccitollroad@aim.com

13. Telephone Number	14. Extension or Code	15. Fax Number *(if applicable)*
(956) 523-1400	0	(956) 523-1401

16. Federal Tax ID *(9 digits)*	17. TX State Franchise Tax ID *(11 digits)*	18. DUNS Number *(if applicable)*	19. TX SOS Filing Number *(if applicable)*
27-450625	32042449358	N/A	801306787

20. Number of Employees

☒ 0-20 ☐ 21-100 ☐ 101-250 ☐ 251-500 ☐ 501 and higher

21. Independently Owned and Operated?

☒ Yes ☐ No

SECTION III: Regulated Entity Information

22. General Regulated Entity Information *(If 'New Regulated Entity' is selected below this form should be accompanied by a permit application)*

☐ New Regulated Entity ☐ Update to Regulated Entity Name ☒ Update to Regulated Entity Information ☐ No Change** *(See below)*

**If "NO CHANGE" is checked and Section I is complete, skip to Section IV, Preparer Information.

23. Regulated Entity Name *(name of the site where the regulated action is taking place)*

Pescadito Environmetal Resource Center

24. Street Address of the Regulated Entity: *(No P.O. Boxes)*	Pescadito Environmental Resource Center							
	2864 Jordan Road							
	City	Laredo	**State**	TX	**ZIP**	78043	**ZIP + 4**	
25. Mailing Address:	Rancho Viejo Waste Management, LLC							
	1116 Calle del Norte							
	City	Laredo	**State**	TX	**ZIP**	78041	**ZIP + 4**	

26. E-Mail Address:	cba@stx.rr.com	
27. Telephone Number	**28. Extension or Code**	**29. Fax Number** *(if applicable)*
(956) 523-1400		(956) 523-1401

30. Primary SIC Code (4 digits)	**31. Secondary SIC Code** (4 digits)	**32. Primary NAICS Code** (5 or 6 digits)	**33. Secondary NAICS Code** (5 or 6 digits)
4953		562212	562920

34. What is the Primary Business of this entity? *(Please do not repeat the SIC or NAICS description.)*

Solid Waste Recycling and Disposal

Questions 34 – 37 address geographic location. Please refer to the instructions for applicability.

35. Description to Physical Location:	From Loop Hwy 20, go east on SH 359 approximately 15 miles to Jordan Road; go north approx. 5.1 miles to entrance to Yugo Ranch, go approx. 2 miles northward on ranch road.

36. Nearest City	**County**	**State**	**Nearest ZIP Code**
Laredo	Webb	TX	78043

37. Latitude (N) In Decimal:	27.559 N		**38. Longitude (W) In Decimal:**	99.160 W	
Degrees	Minutes	Seconds	Degrees	Minutes	Seconds
27	33	32.4	99	9	35.9994

39. TCEQ Programs and ID Numbers Check all Programs and write in the permits/registration numbers that will be affected by the updates submitted on this form or the updates may not be made. If your Program is not listed, check other and write it in. See the Core Data Form instructions for additional guidance.

☐ Dam Safety	☐ Districts	☐ Edwards Aquifer	☐ Industrial Hazardous Waste	☒ Municipal Solid Waste
				2374
☐ New Source Review – Air	☐ OSSF	☐ Petroleum Storage Tank	☐ PWS	☐ Sludge
☐ Stormwater	☐ Title V – Air	☐ Tires	☐ Used Oil	☐ Utilities
☐ Voluntary Cleanup	☐ Waste Water	☐ Wastewater Agriculture	☐ Water Rights	☐ Other:

SECTION IV: Preparer Information

40. Name:	James F. Neyens, P.E.	**41. Title:**	Consulting Engineer

42. Telephone Number	**43. Ext./Code**	**44. Fax Number**	**45. E-Mail Address**
(512) 684-3156	N/A	(512) 329-8750	jneyens@trcsolutions.com

SECTION V: Authorized Signature

46. By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 9 and/or as required for the updates to the ID numbers identified in field 39.

(See the Core Data Form instructions for more information on who should sign this form.)

Company:	Rancho Viejo Waste Management LLC	**Job Title:**	Manager
Name *(In Print)* :	C. Y. Benavides, III	**Phone:**	(956) 523-1400
Signature:		**Date:**	Sept 12, 2011

Texas Commission on Environmental Quality

Permit or Registration Application for Municipal Solid Waste Facility

Part I

A. General Information

Facility Name:	Pescadito Environmental Resource Center			
Physical or Street Address (if available):	2864 Jordan Road			
(City) (County)(State)(Zip Code):	Laredo	Webb	TX	78043
(Area Code) Telephone Number:	(956) 523-1400			
Charter Number:	801306787			

If the application is submitted on behalf of a corporation, provide the Charter Number as recorded with the Office of the Secretary of State for Texas.

Operator Name[1]:	Rancho Viejo Waste Management, LLC			
Mailing Address:	1116 Calle del Norte			
(City) (County)(State)(Zip Code):	Laredo	Webb	TX	78041
(Area Code) Telephone Number:	(956) 523-1400			
(Area Code) FAX Number:	(956) 523-1401			
Charter Number:	801306787			

If the permittee is the same as the operator, type "Same as Operator".

Permittee Name:	Same as Operator			
Physical or Street Address (if available):				
(City) (County)(State)(Zip Code):			TX	
(Area Code) Telephone Number:				
Charter Number:				

If the application is submitted by a corporation or by a person residing out of state, the applicant must register an Agent in Service or Agent of Service with the Texas Secretary of State's office and provide a complete mailing address for the agent. The agent must be a Texas resident.

Agent Name:	N/A			
Mailing Address:				
(City) (County)(State)(Zip Code):				
(Area Code) Telephone Number:				
(Area Code) FAX Number:				

Application Type:

☒	Permit	☐	Major Amendment	☐	Minor Amendment
☐	Registration	☐	Modification	☐	Temporary Authorization
			w/Public Notice		
		☐	w/out Public Notice	☐	Notice of Deficiency Response

[1] The operator has the duty to submit an application if the facility is owned by one person and operated by another [30 TAC 305.43(b)]. The permit will specify the operator and the owner who is listed on this application [Section 361.087 Texas Health and Safety Code].

Facility Classification:

X	Type I	☐	Type IV	X	Type V	☐	Type IX
☐	Type I AE	☐	Type IV AE	☐	Type VI		

Activities covered by this application (check all that apply):

☒	Storage	☒	Processing	☒	Disposal

Waste management units covered by this application (check all that apply):

☒	Containers	X	Tanks	☐	Surface Impoundments	☒	Landfills
☐	Incinerators	☐	Composting	☐	Type IV Demonstration Unit	☐	Type IX Energy/Material Recovery
☐	Other (Specify)			☐	Other (Specify)		
☐	Other (Specify)			☐	Other (Specify)		

Is this submittal part of a Consolidated Permit Processing request, in accordance with 30 TAC Chapter 33?

☐ Yes ☒ No

If yes, state the other TCEQ program authorizations requested.

Provide a brief description of the portion of the facility covered by this application. For amendments, modifications, and temporary authorizations, provide a brief description of the exact changes to the permit or registration conditions and supporting documents referenced by the permit or registration. Also, provide an explanation of why the amendment, modification, or temporary authorization is requested.

Type I MSW landfill, Type V grease and grit trap waste processing, and processing of recyclables.

Does the application contain confidential Material? ☐ Yes ☒ No

If yes, cross-reference the confidential material *throughout the application* and submit as a separate document or binder conspicuously marked "CONFIDENTIAL."

Alternative Language Notice Instructions

For certain permit applications, public notice in an alternate language is required. If an elementary school or middle school nearest to the facility offers a bilingual program, notice may be required to be published in an alternative language. The Texas Education Code, upon which the TCEQ alternative language notice requirements are based, trigger a bilingual education program to apply to an entire school district should the requisite alternative language speaking student population exist. However, there may not exist any bilingual students at a particular school within a district which is required to offer the bilingual education program. For this reason, the requirement to publish notice in an alternative language is triggered if the nearest elementary or middle school, as a part of a larger school district, is required to make a bilingual education program available to qualifying students and either the school has students enrolled at such a program on-site, or has students who attend such a program at another location in satisfaction of the school's obligation to provide such a program as a member of a triggered district.

If it is determined that an alternative language notice is required, the applicant is responsible for ensuring that the publication in the alternate language is complete and accurate in that language. Electronic versions of the Spanish template examples are available from the TCEQ to help the applicant complete

the publication in the alternative language.

Alternative Language Notice Application Form:

Alternative language notice confirmation for this application:

1. Is a bilingual program required by the Texas Education Code in the school district where the facility is located? ☒ YES ☐ NO

   (If NO, alternative language notice publication not required)

2. If YES to question 1, are students enrolled in a bilingual education program at either the elementary school or the middle school nearest to the facility? ☒ YES ☐ NO

(IF YES to questions 1 and 2, alternative language publication is required; If NO to question 2, then consider the next question)

3. If YES to question 1, are there students enrolled at either the elementary school or the middle school nearest to the facility who attend a bilingual education program at another location? ☐ YES ☐ NO

(If Yes to questions 1 and 3, alternative language publication is required; If NO to question 3, then consider the next question)

4. If YES to question 1, would either the elementary school or the middle school nearest to the facility be required to provide a bilingual education program but for the fact that it secured a waiver from this requirement, as available under 19 TAC '89.1205(g)? ☐ YES ☐ NO

(If Yes to questions 1 and 4, alternative language publication is required; If NO to question 4, alternative language notice publication not required)

If a bilingual education program(s) is provided by either the elementary school or the middle school nearest to the facility, which language(s) is required by the bilingual program? Spanish and English

Note: Applicants for new permits and major amendments must make a copy of the administratively complete application available at a public place in the county where the facility is, or will be, located for review and copying by the public.

Public place where administratively complete permit application will be located.				
Public Place (e.g., public library, county court house, city hall, etc.):	Laredo Public Library			
Mailing Address:	1120 East Calton Road			
(City) (County)(State)(Zip Code):	Laredo	Webb	TX	78041
(Area Code) Telephone Number:	(956) 789-2400			

B. Facility Location

Except for Type I AE and Type IV AE landfill facilities, for permits, registrations, amendments, and modifications requiring public notice, provide the URL address of a publicly accessible internet web site where the application and all revisions to that application will be posted.
www.pescaditoerc.com

Local Government Jurisdiction:	Webb County
Within City Limits of:	N/A
Within Extraterritorial Jurisdiction of City of:	N/A

Is the proposed municipal or industrial solid waste disposal or processing facility located in an area in which the governing body of the municipality or county has prohibited the disposal or processing of municipal or industrial solid waste? (If YES, provide a copy of the ordinance or order):
☐ YES ☒ NO

Provide a description of the location of the facility with respect to known or easily identifiable landmarks.
Approximately 5 miles southeast of U.S. Hwy 59 at Ranchitos Las Lomas

Detail the access routes from the nearest United States or state highway to the facility.
From SH 359, go northward on Jordan Road approx. 5.1 miles to entrance of Yugo Ranch, then approx. 2 miles on privately-owned ranch road to facility entrance.

Provide the latitudinal and longitudinal geographic coordinates of the facility.

Latitude	N 27.559
Longitude	W 99.160
Elevation (above msl)	564.67

Is the facility within the Coastal Management Program boundary?	☐ Yes ☒ No

Texas Department of Transportation District Location:

TXDOT District Name & Number:	Laredo District			
District Engineer's Name:	Albert Quintanilla, P.E.			
Street or P. O. Box:	1817 Bob Bullock Loop			
(City) (County)(State)(Zip Code):	Laredo	Webb	TX	78043
(Area Code) Telephone Number:	(956) 712-7405			
(Area Code) FAX Number:	(956) 712-7401			

The local governmental authority or agency responsible for road maintenance:

Agency Name	Webb County Road and Bridge Department			
Contact Person's Name:	Jose Luis Ramos			
Street or P. O. Box:	1817 Bob Bullock Loop			
(City) (County)(State)(Zip Code):	Laredo	Webb	TX	78043
(Area Code) Telephone Number:	(956) 712-7714			
(Area Code) FAX Number:	(956) 727-5867			

State Representative:

District Number:	31			
State Representative's Name:	Ryan Guillen			
District Office Address:	100 North FM 3167, Suite 212			
(City) (County)(State)(Zip Code):	Rio Grande City	Starr	TX	78582

(Area Code) Telephone Number:	(956) 716-4838
(Area Code) FAX Number:	(956) 716-8219

State Senator:

District Number:	21			
State Senator's Name:	Judith Zaffirini			
District Office Address:	P.O. Box 627			
(City) (County)(State)(Zip Code):	Laredo	Webb	TX	78042
(Area Code) Telephone Number:	(956) 722-2293			
(Area Code) FAX Number:	(956) 722-8586			

Council of Government (COG) Information:

COG Name:	South Texas Development Council			
COG Representative's Name:	Amando Garza, Jr.			
COG Representative's Title:	Executive Director			
Street or P. O. Box:	1002 Dicky Lane			
(City) (County)(State)(Zip Code):	Laredo	Webb	TX	78043
(Area Code) Telephone Number:	(956) 722-3995			
(Area Code) FAX Number:	(956) 722-2670			

River Basin Information:

River Authority:	Rio Grande Regional Water Authority			
Contact Person's Name:	Kenneth N. Jones, Jr.			
Watershed Sub-Basin Name:	(RGRWA has not created watershed sub-basins)			
Street or P. O. Box:	301 West Railroad			
(City) (County)(State)(Zip Code):	Weslaco	Hidalgo	TX	78596
(Area Code) Telephone Number:	(956) 682-3481			
(Area Code) FAX Number:	(956) 631-4670			

This site is located in the following District of the U.S. Army Corps of Engineers:			
☐ Albuquerque, NM	☒ Ft. Worth, TX	☐ Galveston, TX	☐ Tulsa, OK

C. Maps

General

For permits, registrations, and amendments only, submit a topographic map, ownership map, county highway map, or a map prepared by a registered professional engineer or a registered surveyor which shows the facility and each of its intake and discharge structures and any other structure or location regarding the regulated facility and associated activities. Maps must be of material suitable for a permanent record, and shall be on sheets 8-1/2 inches by 14 inches or folded to that size, and shall be on a scale of not less than one inch equals one mile. The map shall depict the approximate boundaries of the tract of land owned or to be used by the applicant and shall extend at least one mile beyond the tract boundaries sufficient to show the following:

each well, spring, and surface water body or other water in the state within the map area;

the general character of the areas adjacent to the facility, including public roads, towns and the nature of development of adjacent lands such as residential, commercial, agricultural, recreational, undeveloped, etc;

the location of any waste disposal activities conducted on the tract not included in the application; and

the ownership of tracts of land adjacent to the facility and within a reasonable distance from the proposed point or points of discharge, deposit, injection, or other place of disposal or activity.

General location maps

For permits, registrations, and amendments only, submit at least one general location map at a scale of one-half inch equals one mile. This map shall be all or a portion of a county map prepared by Texas Department of Transportation (TxDOT). If TxDOT publishes more detailed maps of the proposed facility area, the more detailed maps shall also be included in Part I. Use the latest revision of all maps.

Land ownership map

Provide a map that locates the property owned by adjacent and potentially affected landowners. The maps should show all property ownership within 1/4 mile of the facility, on-site facility easement holders, and all mineral interest ownership under the facility.

Landowners list

Provide the adjacent and potentially affected landowners' list, keyed to the land ownership map with each property owner's name and mailing address. The list shall include all property owners within 1/4 mile of the facility, easement holders, and all mineral interest ownership under the facility. Provide the property, easement holders', and mineral interest owners' names and mailing addresses derived from the real property appraisal records as listed on the date that the application is filed. Provide the list in electronic form, as well.

D. Property owner information

For permits, registrations, amendments, and modifications that change the legal description, a change in owner, or a change in operator only, provide the following:

(1) the legal description of the facility;

(A) the abstract number as maintained by the Texas General Land Office for the surveyed tract of land;

(B) the legal description of the property and the county, book, and page number or other generally accepted identifying reference of the current ownership record;

(C) for property that is platted, the county, book, and page number or other generally accepted identifying reference of the final plat record that includes the acreage encompassed in the application and a copy of the final plat, in addition to a written legal description;

(D) a boundary metes and bounds description of the facility signed and sealed by a registered professional land surveyor;

(E) on-site easements at the facility, and

(F) drawings of the boundary metes and bounds description; and

(2) a property owner affidavit signed by the owner.

E. Legal authority

Provide verification of the legal status of the owner and operator, such as a one-page certificate of incorporation issued by the secretary of state. List all persons having over a 20% ownership in the proposed facility.

Indicate Ownership status of the facility:									
X	Private	☐	Corporation	☐	Partnership	☐	Proprietorship	☐	Non-Profit Organization
☐	Public	☐	Federal	☐	Military	☐	State	☐	Regional
☐	County	☐	Municipal	X	Other (Specify)	Limited Liability Company			

Does the operator own the facility units and the facility property?	☒ Yes	☐ No

If "No," for permits, registrations, amendments, and modifications that changes the legal description, a change in owner, or a change in operators submit a copy of the lease for the use of or the option to buy the facility units or facility property, as appropriate, and identify:				
Owner Name:				
Street or P. O. Box:				
(City) (County)(State)(Zip Code):				
(Area Code) Telephone Number:				
(Area Code) FAX Number:				
Charter Number:				

F. Evidence of competency

For permits, registrations, amendments, and modifications that change the legal description, a change in owner, or a change in operators submit a list of all Texas solid waste sites that the owner and operator have owned or operated within the last ten years.				
Site Name	Site Type	Permit/Reg. No.	County	Dates of Operation
None				

Submit a list of all solid waste sites in all states, territories, or countries in which the owner and operator have a direct financial interest.			
Site Name	Location	Dates of Operation	Regulatory Agency (Name & Address)
None			

A licensed solid waste facility supervisor, as defined in 30 TAC Chapter 30, Occupational Licenses and Registrations will be employed before commencing facility operation.

Provide the names of the principals and supervisors of the owner's and operator's organization, together with previous affiliations with other organizations engaged in solid waste activities.		
Name	Previous Affiliation	Other Organization
Appropriate personnel with required qualifications will be in place prior to opening.	Personnel who have relevant experience with other solid waste companies will be in place prior to opening.	Personnel who have relevant experience in solid waste management will be in place prior to opening.

For landfill permit applications only, evidence of competency to operate the facility shall also include landfilling and earthmoving experience if applicable, and other pertinent experience, or licenses as described in 30 TAC Chapter 30 possessed by key personnel. The number and size of each type of equipment to be dedicated to facility operation will be specified in greater detail on Part IV of the application within the site operating plan.

Landfilling/Earthmoving Equipment Types	Personnel Experience or Licenses
Landfill compactor, Cat 836G or equal (minimum of one)	Landfill Manager – Five years related experience and a Class A MSW Facility Supervisor License, or equivalent.
Bulldozer, Cat D-9R or equal (min. of one)	Assistant Manager/Supervisor – Three years related experience and Class B License, or equivalent.
Hydraulic excavator (Cat 330B); Truck (Cat 730) or equal (min. of one each)	Equipment Operator – Three years equivalent experience, no license required

For mobile liquid waste processing units, submit a list of all solid waste, liquid waste, or mobile waste units that the owner and operator have owned or operated within the past five years. Submit a list of any final enforcement orders, court judgments, consent decrees, and criminal convictions of this state and the federal government within the last five years relating to compliance with applicable legal requirements relating to the handling of solid or liquid waste under the jurisdiction of the commission or the United States Environmental Protection Agency. Applicable legal requirement means an environmental law, regulation, permit, order, consent decree, or other requirement.

Solid waste, liquid waste, or mobile waste units owned or operated within past 5 years	Texas and federal final enforcement orders, court judgments, consent decrees, and criminal convictions
N/A	

G. Appointments

Provide documentation that the person signing the application meets the requirements of 30 TAC §305.44, Signatories to Applications. If the authority has been delegated, provide a copy of the document issued by the governing body of the owner or operator authorizing the person that signed the application to act as agent for the owner or operator.

H. Application Fees

For a new permit, registration, amendment, modification, or temporary authorization, submit a $150 application fee.

For authorization to construct an enclosed structure over an old, closed municipal solid waste landfill in accordance with 30 TAC 330 Subchapter T, submit a $2,500 application fee.

If paying by check, send payment to:

Texas Commission on Environmental Quality
Financial Administration Division, MC 214
P. O. Box 13087
Austin, Texas 78711-3087

Payment maybe made online using TCEQ e-pay at www.tceq.state.tx.us/e-services/	
E-pay confirmation number	

PROPERTY OWNER AFFIDAVIT

"I, Carlos Y. BENAVIDES III,
(property owner)
acknowledge that the State of Texas may hold me either jointly or severally responsible for the operation, maintenance, and closure and post-closure care of the facility. For a facility where waste will remain after closure, I acknowledge that I have a responsibility to file with the county deed records an affidavit to the public advising that the land will be used for a solid waste facility prior to the time that the facility actually begins operating as a municipal solid waste landfill facility, and to file a final recording upon completion of disposal operations and closure of the landfill units in accordance with Title 30 Texas Administrative Code §330.19, Deed Recordation. I further acknowledge that I or the operator and the State of Texas shall have access to the property during the active life and post-closure care period, if required, after closure for the purpose of inspection and maintenance."

[signature] Sept 12, 2011
(Owner signature) (Date)

Signature Page

I, Carlos Y. Benavides, III (Operator), Manager (Title),

certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system, or those persons directly responsible for gathering the information, the information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations.

Signature: _____ Date: Sept 12 2011

TO BE COMPLETED BY THE OPERATOR IF THE APPLICATION IS SIGNED BY AN AUTHORIZED REPRESENTATIVE FOR THE OPERATOR

I, _____ (Print or Type Operator Name), hereby designate _____ (Print or Type Representative Name)

as my representative and hereby authorize said representative to sign any application, submit additional information as may be requested by the Commission; and/or appear for me at any hearing or before the Texas Commission on Environmental Quality in conjunction with this request for a Texas Water Code or Texas Solid Waste Disposal Act permit. I further understand that I am responsible for the contents of this application, for oral statements given by my authorized representative in support of the application, and for compliance with the terms and conditions of any permit which might be issued based upon this application.

_____
Printed or Typed Name of Operator or Principal Executive Officer

_____
Signature

SUBSCRIBED AND SWORN to before me by the said CARLOS Y. BENAVIDES III

On this 12th day of SEPTEMBER, 2011

My commission expires on the 29th day of JUNE, 2014

MARTHA SALINAS
MY COMMISSION EXPIRES
June 29, 2014

_____
Notary Public in and for

WEBB County, Texas

(Note: Application Must Bear Signature & Seal of Notary Public)

PART I

APPLICATION FOR PERMIT

TYPE I MUNICIPAL SOLID WASTE FACILITY

MSW PERMIT NO. 2374

PESCADITO ENVIRONMENTAL RESOURCE CENTER

SOLID WASTE MANAGEMENT AND DISPOSAL FACILITY

RANCHO VIEJO WASTE MANAGEMENT, LLC LAREDO, WEBB COUNTY, TEXAS

March 28, 2011
Revised May 20, 2011
Revised September 14, 2011
Prepared By:

505 East Huntland Drive, Suite 250
Austin, Texas 78752
(512) 329-6080

TRC Environmental Corporation
TBPE Firm Registration No. 3775

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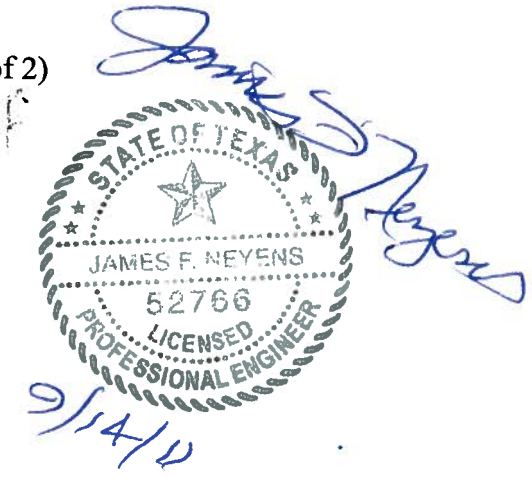


1.0 REQUIREMENTS OF §305.45 [330.59(a)]

1.1 Form TCEQ-0650 [305.45(a)(1)-(5)]

Form TCEQ-0650 provides names, addresses, locations, contact information, and other required information for the facility, owner, and applicant. It also contains a brief description of the nature of the business and activities to be conducted by the applicant that require a permit. Additional information on these activities may be found in Section 1.4.1 below.

1.2 Maps [305.45(a)(6)]

A topographical map is provided as Figure 6, Part II. The landowner's map is provided as Figure 3, Part I. County highway maps were used to prepare Figures 1 and 2, Part I. The Facility Layout Map and Operations Area Layout Map, Figures 3 and 4 in Part II, portray the location of regulated facilities and associated activities to the extent currently known. Locations of specific facilities may change somewhat during the detailed design of the facility, but will remain in the same general location presently shown.

Existing wells and surface water bodies are shown by the Land Use Map, Figure 8, Part II. There are no springs. This figure, the Supplemental Land Use Map, and the Aerial Photograph, collectively Figures 7, 8, and 9, Part II, show the general character of areas adjacent to the Facility. There are no existing waste disposal activities at or near the facility, so none can be shown. The ownership of all tracts of land adjacent to and within ¼ mile of the Facility is shown on the Land Ownership Map, Figure 3, Part I.

1.3 Permits or Construction Approvals [305.4(a)(7)]

Following is the status of permits or construction approvals received, applied for (or anticipated to be applied for):

Hazardous Waste Management Program under the Texas Solid Waste Disposal Act – not applicable to proposed facility,

Underground Injection Control Program under the Texas Injection Well Act – an application for a Class 2 injection well permit will be submitted in the future, for disposal of oil field wastewater,

National Pollutant Discharge Elimination System Program under the Clean Water Act and Waste Discharge Program under the Texas Water Code, Chapter 26 – an NOI will be submitted to TCEQ for coverage by a storm water discharge general permit,

Prevention of Significant Deterioration Program under the Federal Clean Air Act (FCAA) – not applicable to proposed facility,

Nonattainment Program under the FCAA - not applicable to proposed facility,

National emission standards for hazardous air pollutants preconstruction approval under the FCAA - not applicable to proposed facility,

Ocean dumping permits under the Marine Protection Research and Sanctuaries Act - not applicable to proposed facility,

Dredge or fill permits under the FCWA – an application for a permit under Section 404 of the FCWA will be filed, as necessary, in the future,

Licenses under the Texas Radiation Control Act - not applicable to proposed facility,

Subsurface area drip dispersal system permits under Texas Water Code, Chapter 32 - not applicable to proposed facility, and

Other environmental permits –a permit will be obtained for an on-site sewage facility (OSSF) if required by Webb County rules.

1.4 Supplementary Technical Report [305.45 (a) (8)]

1.4.1 General Description of the Facilities

Rancho Viejo Waste Management, LLC (RVWM) owns a 1,110 acre tract of land (site) about 20 miles east of Laredo in Webb County, Texas and proposes to establish a solid waste management facility on this site. The proposed facility is known as Pescadito Environmental Resource Center (PERC). The site is ideally located for such a facility because of the favorable soil and geological conditions, its isolation from groundwater, absence of neighbors or potentially conflicting land uses, and transportation access. The site is located entirely within the 12,194 acre Yugo Ranch that is owned by Rancho Viejo Cattle Company, Ltd. and has been family-owned for generations, and has been used for cattle ranching and oil and gas production for many years. The owners of the Yugo Ranch support the development of PERC. They view the proposed solid waste management and landfill disposal as the next stage in land use at the site, one that is fully compatible with historic and ongoing extraction of oil and gas, as well as cattle ranching.

PERC will be a comprehensive waste management facility that will provide municipal and industrial solid waste landfill disposal, processing of recyclable materials to extract reusable commodities, processing of liquid wastes from grease and grit traps, and disposal of liquid waste from the oilfield in an injection well. The largest part of the site will be devoted to a landfill up to as much as 800-850 acres. The landfill will be designed and permitted as a Type I municipal solid waste (MSW) landfill that will accept essentially all categories of MSW, Class 2 and 3 industrial solid waste, and certain types of Class 1 non-hazardous wastes. The landfill will be designed for recirculation of

leachate and for recovery of landfill gas for beneficial use. Because the site area already contains many natural gas wells, it is expected that landfill gas will be processed and/or scrubbed as it is generated to produce gas of marketable quality, which will then be metered and introduced into the nearby existing natural gas gathering system. Other facilities planned for the site include a material recovery facility (known in the waste industry as a "clean MRF") to process co-mingled recyclables, such as those collected in the single-stream curbside collection programs that have become popular in many cities in the U.S. The clean MRF will process these recyclable materials to separate them into various commodities for sale. Potentially, a MRF for electronic waste (e-waste) may also be established at the site.

Transportation Access - One characteristic of the site that is favorable for the development of PERC is the site's access to a relatively inexpensive bulk transportation system, a nearby railroad. The majority of the waste and recyclable materials to be brought to PERC will be hauled by rail, and this waste and material will not travel on public roads in any highly populated area in or near Laredo. The site is accessible for waste hauled by truck, as it is located about four miles from U.S. Highway 59 (Hwy 59) and about five miles from Texas Highway 359 (SH 359), and about 25 miles from Interstate 35 (I-35) in Laredo. Both highways provide suitable access to the site from Laredo, Corpus Christi (110 miles), San Antonio (130 miles), Austin (250 miles) and Houston (325 miles). The access route to the site from Laredo will be SH 359 via Jordan Road, which is an all-weather surface roadway managed by Webb County. Jordan Road "dead ends" at Yugo Ranch about 5.1 miles north of SH 359. There is no vehicle weight limits posted on this road. The access road from Hwy 59 will be used only in case of emergency, not for the routine traffic by trucks hauling solid waste. The owners of Yugo Ranch will convey an easement generally along existing all-weather ranch roads to RVWM, as necessary to ensure access to the landfill site, and RVWM will improve and maintain this road as its main access route. The existing all-weather access roadway between PERC and Hwy 59 is proposed to be maintained strictly as a secondary, emergency use only, access route into the facility. In the event that road maintenance is being performed on the primary access road, or unusual weather has disrupted access, the secondary access road could be used temporarily to keep the facility in service.

The main line of the Kansas City Southern Railway Co. (KCS) between the United States and Mexico passes through Yugo Ranch about two miles from the site. KCS acquired this portion of its rail system from the Texas Mexican Railway Company (Tex Mex) through a merger in 1995. Through this and other mergers and acquisitions over the years, KCS now owns or has direct access to rail lines in the United States that extend from Chicago and the Twin Cities in the north, through Illinois and Missouri south to Texas, east into Tennessee and Alabama, and throughout Louisiana. Significantly, the KCS rail lines also

extend throughout the industrialized portions of Mexico. Additionally, KCS has established formal marketing agreements with Norfolk Southern RR in the northeast U.S., CSX in the southeast, Union Pacific in the Midwest to the West Coast, and BNSF in the Midwest, northwest, and southwest. KCS marketing agreements also include the Canadian Pacific RR and Canadian National RR. Having these partnership agreements in addition to its owned tracks gives KCS access to all population and industrial centers in North America, allowing it to benefit from international trade and shipping under the North American Free Trade Agreement (NAFTA).

The rail network of KCS and the presence of the KCS main line within two miles of the site provide a significant advantage to this facility. Railroads have re-established a prominent role in the U.S. shipping industry, particularly for long-distance and bulky or heavy commodity shipping. High diesel fuel costs in recent years redefined shipping in the U.S. High fuel costs have adversely impacted the profitability of the trucking industry and made railroads much more economical than trucks hauling heavy loads long distances. Marketing agreements between railroads, such as those put in place by KCS, and computerized programming of routes and rail car shipments have helped railroads become much more cost effective than in the past. There is probably no better endorsement of the renewed viability of railroads than the purchase of the Burlington Northern and Santa Fe RR (BNSF) by Warren Buffet in November 2009. Mr. Buffet is traditionally ranked as one of the two or three wealthiest persons in the world by Forbes Magazine. Many investors believe Mr. Buffet is wealthy because of his sound investments.

Favorable Site Conditions - A second characteristic that is favorable for the development of PERC is the suitability of the site. The site offers excellent land use compatibility, highly favorable soil, groundwater and climatological conditions, and absence of any other potentially detrimental environmental issues. Conditions at the site are either highly favorable or capable of being properly addressed through appropriate facility design or other reasonable precautions. Only two permanent residential structures, including one house and one mobile home, are located within a one-mile radius of the site. These are located at the headquarters of Yugo Ranch, the host ranch. The human population within a five-mile radius of the site is estimated to be about 350 persons, essentially all living in the small community of Ranchitos Las Lomas located along Hwy 59 about four miles northwest of the site.

Soil in the upper 160 feet at the site was found to be predominantly clay, occasionally interbedded with claystone, sandstone and shale, and these soil types are believed to extend much deeper. The soils exist in nearly horizontal beds that exhibit very low vertical permeability. These soil conditions provide a naturally favorable site setting, and

the clay will provide excellent material for construction of liners, caps and cover systems. Surficial soils are stable and resist erosion, as evidenced by the absence of stream beds or other drainage features cut into the surface topography.

While groundwater is encountered in thin layers of sandy or silty material within otherwise highly impermeable clay, this groundwater is essentially not usable due to its very low production potential and poor water quality. The uppermost aquifer beneath the site that is capable of producing water in potentially useful quantities to wells is the Jackson-Yegua Aquifer, which is expected to be encountered in the upper 750 feet below ground surface at the facility area. Water in this aquifer is poor to very poor in quality, due to concentrations of total dissolved solids, chloride and sulfate that exceed Federal drinking water standards. The Jackson-Yegua Aquifer is classified as a minor aquifer, because it produces relatively low yields of highly mineralized water. These water quanitiy and quality issues limit the usefulness of Jackson-Yegua Aquifer water for human consumption and agricultural uses such as livestock watering or crop irrigation. The site area is geologically stable, with no evidence of faults and a historical earthquake incidence rate significantly below the Texas state average. Rainfall averages about 20 inches per year, and will favor a water balance final cover system. Historically for this area, 3.1 inches of rain falls in May and 3 inches in September, the two wettest periods of the year. Some rainfalls are relatively intense, and this combines with the very low permeability of the site's soils and very flat slopes to produce relatively broad areas that are subject to inundation during the 100-year frequency rainfall event. However, the site is situated in a mostly upland area near the top of the watershed, and existing or proposed livestock watering tanks capture and store a portion of the area's storm water runoff. As a result, the quantity of storm water runoff that will flow across the site is relatively low. Such runoff volumes can be readily contained in the perimeter drainage system that will be designed to remove the entire landfill footprint from the 100-year flood plain.

National Trend for Regional Landfills and Longer Hauling Distances- A third factor that supports the proposed facility is the national trend to fewer but larger landfills that serve more distant waste generators through long hauling. This trend is not nearly as evident in Texas as it is in other areas of the country such as the Northeast, the Northwest and California. For years many landfills in these parts of the country have been reaching capacity and closing. Conflicting land use and too many nearby neighbors made expanding many existing landfills uneconomical or virtually impossible. In many areas of the country there is also a scarcity of potential new landfill sites that meet all the necessary criteria, including: sufficiently large land area; suitable soil, geology, and groundwater conditions; acceptable neighboring land use; and access to economical transportation.

Description of Facilities and Systems – PERC will be designed and permitted to accept a variety of waste types. However, regulated hazardous waste and regulated radioactive wastes will not be accepted. Types of wastes that will be accepted for landfill disposal include:

Municipal solid waste,

Non-hazardous industrial waste,

Construction and demolition waste,

Coal combustion ash and pollution control sludges,

Filter cake and process sludge from industrial and municipal water and wastewater treatment plants,

Non-hazardous industrial waste from maquiladora industries in Mexico, and

Event-type waste from disaster clean-ups.

Materials that will be received for processing may include:

Unsorted or mixed recyclables for processing and recovery of commodities,

Scrap tires for processing and beneficial reuse,

Electronic waste for processing and beneficial reuse, and

Grease trap and grit trap wastes for processing and potentially beneficial reuse.

Materials that will be received for deep well injection include liquids from oil and gas exploration and production under the regulatory jurisdiction of the Railroad Commission of Texas (RCT).

Waste for landfill disposal at PERC is anticipated to be between 1,000,000 and 2,000,000 tons per year (tpy) in the first few years after the landfill is permitted and constructed. This is between about 2,750 and 5,500 tons per day (tpd), based on receiving waste seven days per week. Going forward, the facility might receive a higher rate of waste, and will have ample capacity to accept larger quantities, but it is difficult to estimate what the future quantity may be. It is expected that almost all incoming waste will be received based on multi-year contracts with generating sources, which will be a combination of local governmental entities, private waste companies with local hauling contracts but no local landfill, and industries. Waste sources are not yet completely determined, as the facility will need to be much closer to being ready to operate before contracts for waste disposal can be put into effect. Consequently, the points of origin of incoming waste have not yet been determined. It is anticipated that PERC will receive solid waste

generated in the City of Laredo, as that city's existing landfill is reported to have less than 10 years of remaining capacity and is not likely to be expanded. The City of Laredo landfill received 378,000 tons of solid waste in FY 2008, and waste receipts should increase over the near future as the Laredo population continues to grow. For planning purposes, it is assumed that PERC will receive approximately half of Laredo's solid waste when its landfill closes in the future, and that the amount of future waste will be about 235,000 tpy, or about 750 tpd (six days per week basis). This waste will be brought to the site by trucks. PERC intends to offer the City of Laredo the opportunity to deliver its solid waste to a proposed transfer station that PREC would construct and operate in or near the city, to facilitate transportation of the City's waste to the facility. Additionally, municipal solid waste, construction and demolition (C&D) waste, and water and wastewater treatment sludge are expected to be between 1,250 and 4,000 tpd, and various industrial wastes are estimated to average about 750 tpd, all transported by rail. Industrial waste from the maquiladora industries in Mexico will also be rail-hauled to the site. KCS owns and operates the rail line on the International Bridge between Laredo and Nuevo Laredo, Tamaulipas.

Waste from Laredo will be trucked to the site via Hwy 359. It is anticipated that a waste transfer station will be established in the city, so that the city waste collection trucks will not need to drive to and from the facility. Instead, waste will be hauled by semi-tractor trailer units dedicated to the transfer station operation. About 30 to 35 transfer truck trips per day are anticipated to carry the 750 tpd to the site.

Rail-hauled waste will be transported by several methods. The most common transportation method for the municipal solid waste will involve loading the waste into intermodal shipping containers at the waste generators' transfer stations. Once they are filled, either the containers will be directly loaded onto flat-bed rail cars if the transfer station has rail access, or they will be transported on flatbed trucks to an intermodal rail yard for loading onto rail cars. This method of shipment is commonly used for shipping a wide variety of commodities across the country and internationally, and is also used in most waste-by-rail operations. Some bulk-type industrial wastes, coal combustion waste, most municipal and industrial sludges, and many C&D waste streams may be hauled by gondola cars, provided the particular waste is not subject to odors, wind-blown release of waste, or has similar restrictions. Some generators may establish waste transfer stations that employ balers. Baled waste is readily transportable, as a baler produces a cube of highly compressed waste wrapped in wires. Baled waste is quite stable, and can be moved and stacked inside intermodal containers by conventional fork-lifts, in the same manner as many commodities. Some waste baling operations include wrapping the bale in polyethylene film which seals in odors and any liquids that might be present, and keeps

out rainwater and insects, making shipping the waste to the landfill very secure and unobjectionable.

Initially, PERC may receive waste in intermodal shipping containers at the new KCS container facility east of Laredo. If this option is employed, the intermodal containers with waste will be off-loaded from rail cars to flatbed tractor trailers that will be driver to the landfill. As the volume of waste received increases over time, PERC will construct a rail siding along the KCS main line on Yugo Ranch. The facility will employ a container moving equipment to off-load the intermodal containers from rail cars to flat bed tractor-trailer units which will haul the containers to the working face area of the landfill. A long boom crane with a container lifting mechanism will remove each container from the truck and place it near the working face, where a worker will unseal and open the doors. The crane operator will then tip the container to dump the waste into the working face, where the waste will be compacted into the landfill. The crane operator will remove the container for cleaning, and then replace the empty container on the truck bed so it can be returned to the rail car and eventually returned to a waste generator for re-use. As waste volume increases, a rail spur may be constructed into the landfill area to eliminate the step of off-loading containers onto flat-bed trailers. Also, if the disposal market offers sufficient opportunity for accepting waste in gondola cars, a rail car tipper will be added to the rail siding or spur. Car tippers are commonly used to unload coal at power plants, and are also used for waste transfer at waste-by-rail landfill sites, such as at the ECDC landfill near East Carbon, Utah.

The landfill will include a conventional RCRA Subtitle D design with a composite liner and leachate collection system. Provisions will be made for leachate recirculation, to create a bioreactor that will speed the decomposition of organics in the waste and encourage the production of landfill gas. The landfill gas will be collected and treated to the degree necessary for sale of the gas into one of the natural gas collection systems that exist in the general area of the site. Gas treatment is anticipated to include drying to remove excessive water vapor and treatment to remove carbon dioxide to increase its BTU content.

Ancillary facilities proposed for PERC may include a processing facility for recyclable materials, often called a clean materials recovery facility or "clean MRF", and a processing facility for electronic waste. Both facilities will function to separate and recover all re-usable or recyclable components that have economic value from their respective source streams. The source stream for the clean MRF will be materials collected in curbside recycling programs and citizen drop-off centers offered in most cities. The MRF will use a combination of manual picking and mechanical sorting to produce as many recyclable commodities as possible. The recovered commodities will be

baled or containerized and shipped to markets for these commodities. The site's rail access will provide economical transport of the incoming recyclables and shipment of the recovered commodities to their markets. The electronic waste processing will follow essentially the same process. Unrecoverable materials, or materials that have no use or value as recycled commodities will be landfilled. In addition, it is anticipated that scrap tires will be accepted and processed for refuse derived fuel (RDF) or pyrolysis, and grease and grit wastes from the Laredo area will be processed to reduce the water content and then either landfilled, with the expectation that recovered grease may used for energy recovery or methane gas production, depending on volumes and the availability of suitable equipment or technology.

PERC will seek a permit from the Railroad Commission of Texas (RRC) to construct and operate a Class 2 underground injection well at the site. This type of injection well is limited to the injection of liquids originating in oil and gas exploration and production, which basically is limited to condensate, produced water and brine. Plans for this facility are still being formed, but the injection facility is expected to include one or more above-grade storage tanks, a pre-injection filter system to remove solid matter, an injection pump, and the well itself. The application for this injection well permit, and further details of the plans and specifications for the system, are being prepared as a separate regulatory process through the RRC. Discussion of this aspect of PERC is included here in the interests of providing a complete picture of the total anticipated development of the site. The Class 2 well, or a separate Class 5 well may also be used for the disposal by underground injection of shallow groundwater produced during the construction and initial operation of the landfill.

1.4.2 Volumes, Rates and Characteristics of Wastes

Types of wastes that will be accepted for landfill disposal, along with their volume or rate include:

Municipal solid waste by rail – estimated to be between 1,250 and 4,000 tpd,

Municipal solid waste by truck – estimated to be 750 tpd,

Non-hazardous industrial waste – estimated to be 750 tpd,

Construction and demolition waste – included with municipal solid waste,

Coal combustion ash and pollution control sludges – included with industrial waste,

Filter cake and process sludge from industrial and municipal water and wastewater treatment plants – included with municipal solid waste,

Non-hazardous industrial waste from maquiladora industries in Mexico – included with industrial waste, and

Event-type waste from disaster clean-ups – varies from none to occasionally up to 2,000 tpd.

The types of materials that will be received for processing, along with their volume or rate, may include:

Unsorted or mixed recyclables for processing and recovery of commodities – up to 500 tpd,

Scrap tires for processing and beneficial reuse – up to 100 tpd,

Electronic waste for processing and beneficial reuse – up to 100 tpd, and

Grease trap and grit trap wastes for processing and beneficial reuse – up to 100,000 gallons per day.

The characteristics of these wastes and materials are provided in the definitions found at 30 TAC §330.3 (1) through (181). No regulated hazardous wastes will be accepted. Special wastes as defined by 30 TAC §330.3 (148) and Class 2 and Class 3 industrial wastes will be accepted, except for any such wastes that cannot be effectively processed, handled or disposed at this facility. Class 1 non-hazardous wastes will also be accepted, to the extent allowed by then-current TCEQ rules that may limit certain wastes and provide where such wastes may be placed in the landfill. Class I Industrial Waste amounts will not exceed 20 percent of the total amount of all other waste accepted for disposal.

Materials the will be received for deep well injection include liquids from oil and gas exploration and production under the regulatory jurisdiction of the RRC.

Waste for landfill disposal at PERC is anticipated to be between 1,000,000 and 2,000,000 tons per year (tpy) in the first few years after the landfill is permitted and constructed. This is between about 2,750 and 5,500 tons per day (tpd), based on receiving waste seven days per week. The facility expects to receive a higher rate of waste, and will have ample capacity to accept larger quantities. The landfill has a total disposal capacity currently estimated to be about 300-350,000,000 tons, and have a capacity to receive and dispose of as much as 10,000 tpd.

The above volumes and rates are estimates, and it should be understood that it is difficult to accurately estimate what the future volumes and rates of waste receipts may be. Almost all incoming waste will be received based on multi-year contracts with various

waste generators, which will be a combination of local governmental entities, private waste companies with local hauling contracts but no local landfill, and industries.

1.4.3 Other Information

This permit application has been prepared to demonstrate compliance with the requirements established in 30 TAC 330.57 through 330.65, and related or referenced rules that are in effect as of the date of this application. The application is formatted to be in general conformance with these rules.

2.0 FACILITY LOCATION [330.59(b)]

The location of the facility with respect to known or identifiable landmarks can be determined by Figures 1 and 2 in Part I. These figures also show the access routes to the facility from United States and state highways. The location of the site is at North 27.559 degrees latitude and West 99.160 degrees longitude.

3.0 MAPS [330.59 (c)]

The maps presented as figures in Parts I and II show the elements required by §305.45, as discussed in Section 1.2 above. The General and Detailed Location Maps, the Land Ownership Map, and the Metes and Bounds drawing are presented in Figures 1, 2, 3, and 4 of Part I, respectively. The landowners' list corresponding to Figure 3 is presented below.

Following is a list of all owners of record of real property located within ¼ mile of the proposed facility site boundary, along with a numeric key that identifies the property they own. This key is the same as shown on the Land Ownership Map, Figure 3. This list of landowners and those shown on the Land Ownership Map were obtained from the Webb County Appraisal District deed records, and are the most current available records as of the date of this registration application. Parcel 1 is the proposed PERC site. This parcel is owned by the Applicant, Rancho Viejo Waste Management, LLC.

Parcel 1 - Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, TX 78041

Parcel 2 - Rancho Viejo Cattle Company, LTD
1116 Called del Norte
Laredo, TX 78041

Parcel 3 - Volz Arthur C. Jr.
4072 Sucia Dr.
Ferndale, WA 98248-9506

Volz James Richard
310 Westmont Dr.
Laredo TX 78041-2745

Zuck Sally Ann Volz
1609 Matamoros St.
Laredo, TX 78040-7714

Martin Margaret Lucille
215 W. Bandera Rd. Ste 114-619
Boerne, TX 78006-2820

Dammier Martin Catherine
2901 Teckla Blvd.
Amarillo, TX 79106-6137

Martin Robert Henry
3005 Wincrest Cir.
Laredo, TX 78045-8149

Martin Thomas Frederick
P.O. Box 430184
Laredo, TX 78043-0184

Dammier Jordan Trust
2901 Teckla Blvd.
Amarillo, TX 79106-6137

Martin John M. III
414 Plymouth Ln.
Laredo, TX 78041-2735

Martin Kristell L. Trust
3005 Wincrest Cir.
Laredo, TX 78045-8149

Martin Catherine Marie Trust
1301 Kimberly Dr.
Laredo, TX 78045-7558

Martin Michael Trust
414 Plymouth Ln.
Laredo, TX 78041-2735

Martin John M IV Trust
414 Plymouth Ln.
Laredo, TX 78041-2735

Martin Matthew Trust
P.O. Box 430184
Laredo, TX 78043-184

Martin Melissa Marie Trust
P.O. Box 430184
Laredo, TX 78043-0184

Martin Thomas F. Jr.
P.O. Box 430184
Laredo, TX 78043-184

Following are owners of the mineral interest beneath the facilty:

Amcon Resources
P.O. Box 3025
Oklahoma City, OK 73101-3025

Benavides Family Mineral Trust
Arturo Benavides
P.O. Box 217
Laredo, TX 78042-0217

Hausser, Robert
405 Terrell Rd.
San Antonio, TX 78209-5919

Horvet, Elizabeth Ann Sentz
125 Bridgeway Cir.
Longwood, FL 32779-4902

Hurd Enterprises Ltd.
% L B Walker & Associates
13111 NW Frwy. Ste. 125
Houston, TX 77040

Killiam Oil Company, Ltd.
Royalty Accounts
% L B Walker & Associates
13111 NW Frwy. Ste. 125
Houston, TX 77040

Mitchell Minerals, LLC
P.O. Box 448
Henryetta, OK 74437

Sentz, Charles Christopher
P.O. Box 160548
Altamonte Springs, FL 32716

Sentz, James N.L. Trust
FBO S L Sentz, Robert W. Sentz, Trustee
5501 Wayne Ave. Apt. 201
Philadelphia, PA 19144-3326

Sentz, John Thomas
234 Rainbow Dr. Ste. 13420
Livingston, TX 77399-2034

Sentz, Robert Winston
5501 Wayne Ave. Apt. 201
Philadelphia, PA 19144-3326

Sentz, Suzanne Louise
22156 NW 9th Pl.
Gainesville, FL 32605-5201

Warren, Andrea R. Trust
J.P. Bradley & David Purdy Co-Trustee
2490 Black Rock Tpke. #307
Fairfield, CT 06825-2400

Warren, Wendy U. Trust
James P Bradley, Trustee
% David E. Purdy CPA
2490 Black Rock Tpke. #307
Fairfield, CT 06825-2400

ConocoPhillips Company
Property Tax Division – Mineral
% Rpa-Ptrrc Dept.
P.O. Box 2197, 2 WL 8024F
Houston, TX 77252

Following are the easement holders of record for the facility according to Webb County Appraisal District (WCAD):

United Texas Transmission Co.
NO ADDRESS AVAILABLE AT WCAD

Conoco, Inc.
NO ADDRESS AVAILABLE AT WCAD

Conoco-Phillips Co.
NO ADDRESS AVAILABLE AT WCAD

However, United Texas Transmission Co. has been acquired by Kinder Morgan Energy Partners, L.P. and Conoco, Inc. merged with Phillip Petroleum to form Conoco-Phillips Inc. These two remaining easement holders may be contacted as follows:

Conoco-Phillips Inc.
4298 Mangana Hein Road
Laredo, TX 78043

Kinder Morgan Pipeline Co.
1902 Bob Bullock Loop
Laredo, TX 78043

4.0 PROPERTY OWNER INFORMATION [330.59 (d)]

4.1 Legal Description

The legal description of the PERC site is a tract of land containing 1,109.48 acres, more or less, out of and being a part of a 12,193.84 acre tract as described and depicted as Tract 2 on a Survey Plat by John E. Foster, R.P.L.S. on a Stipulation Conforming Surface Ownership, Agreed Boundary Line and Roadway Access instrument, as recorded in Volume 704, Pages 827 – 852, of the Plat Records of Webb County, Texas.

The 1,109.48 acre tract is situated in Webb County, Texas and is a part of Survey 373, Abstract 1718; Survey 2366, Abstract 3182; Survey 111, Abstract 1616; Survey 112, Abstract 2835; and Survey 1654, Abstract 3104. The boundary metes and bounds description of the property and a drawing of the property description are shown on Figure 4 titled Boundary Survey (Sheets 1 of 2 and 2 of 2). This legal description is also provided in Attachment A. The record information for the 1,109.48 acre tract is Volume 3071 Pages 426-432, Official Public Records, Webb County Texas.

The 1,109.48 acre tract is not platted.

4.2 Property Owner Affidavit

The signed property owner affidavit for this application is provided on Page 9 of the Part I Application Form (Form TCEQ – 0650) contained in this permit application.

5.0 LEGAL AUTHORITY [330.59 (e)]

The applicant, Rancho Viejo Waste Management, LLC., is a Texas limited liability company. It will own and operate the proposed municipal solid waste landfill and related facilities under the name of Pescadito Environmental Resource Center. A copy of the certificate of formation issued to Rancho Viejo Waste Management, LLC., by the Secretary of State is provided as Attachment B. As a manager of, Rancho Viejo Waste Management, LLC., Mr. C.Y. Benavides, III has authority to sign documents on behalf of the company. No person has over a twenty percent (20%) ownership in the proposed facility. Rancho Viejo Waste Management, LLC. is owned by Rancho Viejo Cattle Company, Ltd.

6.0 EVIDENCE OF COMPETENCY [330.59 (f)]

The owner or operator of the proposed MSW facility currently does not own or operate any other solid waste facilities in Texas or elsewhere.

Either a properly licensed solid waste facility supervisor will be hired or an existing officer, partner, or employee of PERC will become licensed as a solid waste facility supervisor prior to commencing the operation of the proposed facility, in accordance with Title 30 of the Texas Administrative Code Chapter 330.59(f) [30 TAC 330.59(f)].

A preliminary schedule of construction and operating equipment that is currently proposed to conduct the operations proposed in this permit application is as follows: Landfill Compactor – Cat 836G or equivalent (minimum one), Bulldozer – Cat D-9R or equivalent (minimum one), Hydraulic Excavator – Cat 330B or equivalent (minimum one), Articulated Dump Truck – Cat 730 or equivalent (minimum one). Additional equipment for construction and operation will be added as necessary.

The owner or operator has the financial means to purchase or lease all of the equipment necessary to construct and operate all of the waste management units covered by this permit application. Prior to the commencement of operations, the owner or operator will acquire all such equipment and have it on site. Likewise, the owner or operator will hire a trained and experienced staff of supervisors, equipment operators, technicians, laborers and other categories of employees as needed to construct and operate the facility in accordance with this permit application and the applicable TCEQ rules. At a minimum class the facility will be operated under the supervision of a landfill manager who holds a Class A municipal solid waste facility supervisor license.

7.0 APPOINTMENTS [330.59 (g)]

The following documentation demonstrates that the permit application for the Pescadito Environmental Resource Center by has been signed by a person having authority to do so as required by 30 TAC §305.44.

I, C.Y. Benavides, III, certify under penalty of law that I am a manager of the Applicant Rancho Viejo Waste Management, LLC, and that I am a responsible corporate officer of the Applicant, and as such that I have the authority to sign this permit application on behalf of Rancho Viejo Waste Management, LLC.

This will further certify that I have the authority to state that Rancho Viejo Waste Management, LLC will operate the proposed facility under the TPDES general permit, and that this permit will be obtained when required.

Name

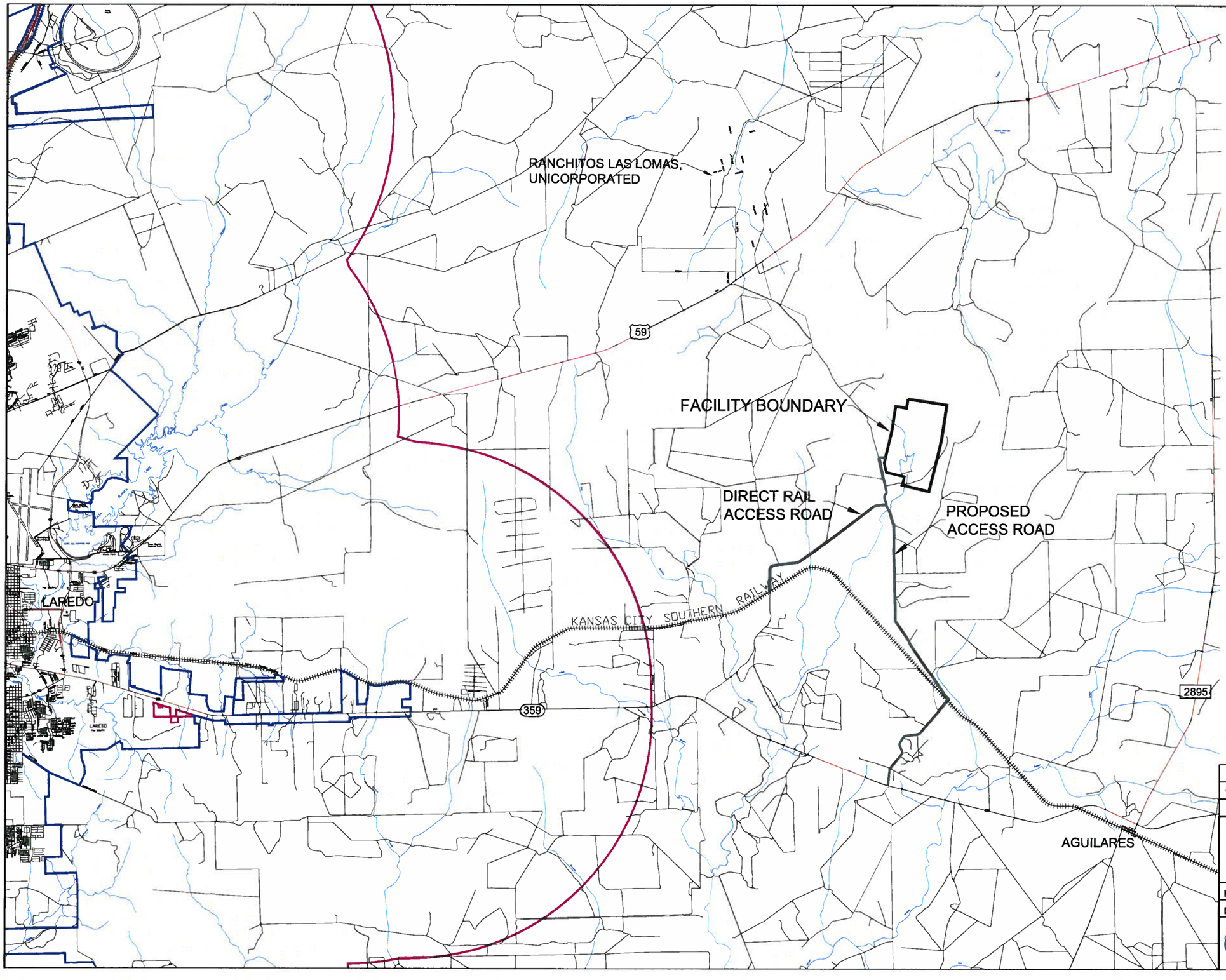
Sept 12, 2011

Date

8.0 APPLICATION FEE [330.59 (h)]

The application fee for this registration application was submitted separately to the TCEQ Office of Finance and Administration. A copy of the payment documentation is provided as Attachment C.

FIGURES



LEGEND

- PRIMARY HIGHWAY
- SECONDARY OR RANCH ROAD
- ALL-WEATHER ACCESS ROAD
- RIVER OR STREAM
- RAILROAD TRACK
- PROPERTY BOUNDARY OF THE FACILITY
- LAREDO CITY LIMITS
- LAREDO EXTRA TERRITORIAL JURISDICTION (ETJ)

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER
09/13/11

NOTES:

1. SOURCE: TXDOT URBAN FILES FOR WEBB COUNTY (2003).
2. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.

N

0 1 2 4

SCALE IN MILES
1/2" = 1 mile

REVISIONS			
1	ADDED LAREDO CITY LIMITS AND ETJ	04/21/11	CL

GENERAL LOCATION MAP

PESCADITO ENVIRONMENTAL RESOURCE CENTER
MSW PERMIT NO. 2374
WEBB COUNTY, TEXAS

PROJECT NO.	170401	DWG FILE	170401-MSW-I-1
DRAWN BY.	CL	DATE	02/14/11

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 1
PART I
PAGE XX

59

REFERENCED POINT: EXISTING FENCE POST. SOUTHEAST CORNER OF SURVEY 1935, SOUTHWEST CORNER OF SURVEY 1648

Survey 1935 South Line
Survey 1935 North Line
Survey 1648
N89°32'37"E - 6,240.01'
Survey 1653 North Line
Survey 1653 East Line
N45°48'0"E 1,761.06'
S89°0'34"E - 2,638.27'
S89°32'32"E - 6,455.97'
Survey 373 North Line
N09°25'32"E 1,000.00'
S80°34'28"E 1,300.00'
S80°34'28"E - 4,300.00'
1350'
1350'
N09°25'32"E - 3,499.04'
S89°32'32"E - 5,181.62'
Survey 373 East Line
1,110 Acre Tract
N14°24'42"E 2,186.98'
N14°24'42"E 1,788.92'
S68°26'01"W 126.93'
1350'
S81°20'49"E - 3,361.15'
Survey 1935 North Line
12,193.84 Acre Tract
depicted as Tract 2 on a Survey Plat on a Stipulation Concerning Surface Ownership, Agreed Boundary Line and Roadway Access Instrument recorded in v. 764, p. 827–852, R.P.R.W.C.T.

SITE LOCATION

ALL-WEATHER ACCESS ROADS

OHPL

FACILITY BOUNDARY LINE
PROPERTY BOUNDARY (FENCE LINE)
FACILITY ACCESS ROAD EASEMENT
ALL-WEATHER ACCESS ROAD
DIRT ROAD
OVERHEAD ELECTRICAL POWER LINE
8' HOG FENCE LINE
4' HOG FENCE LINE
4' BARB WIRE FENCE LINE
DUAL FENCE LINE
POND
FOUND FENCE CORNER
SET 1/2" IRON ROD
BENCHMARK
POWER POLE

NOTES:
1. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEJIA ENGINEERING COMPANY (8/15/2011).
2. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER
9/13/11

N

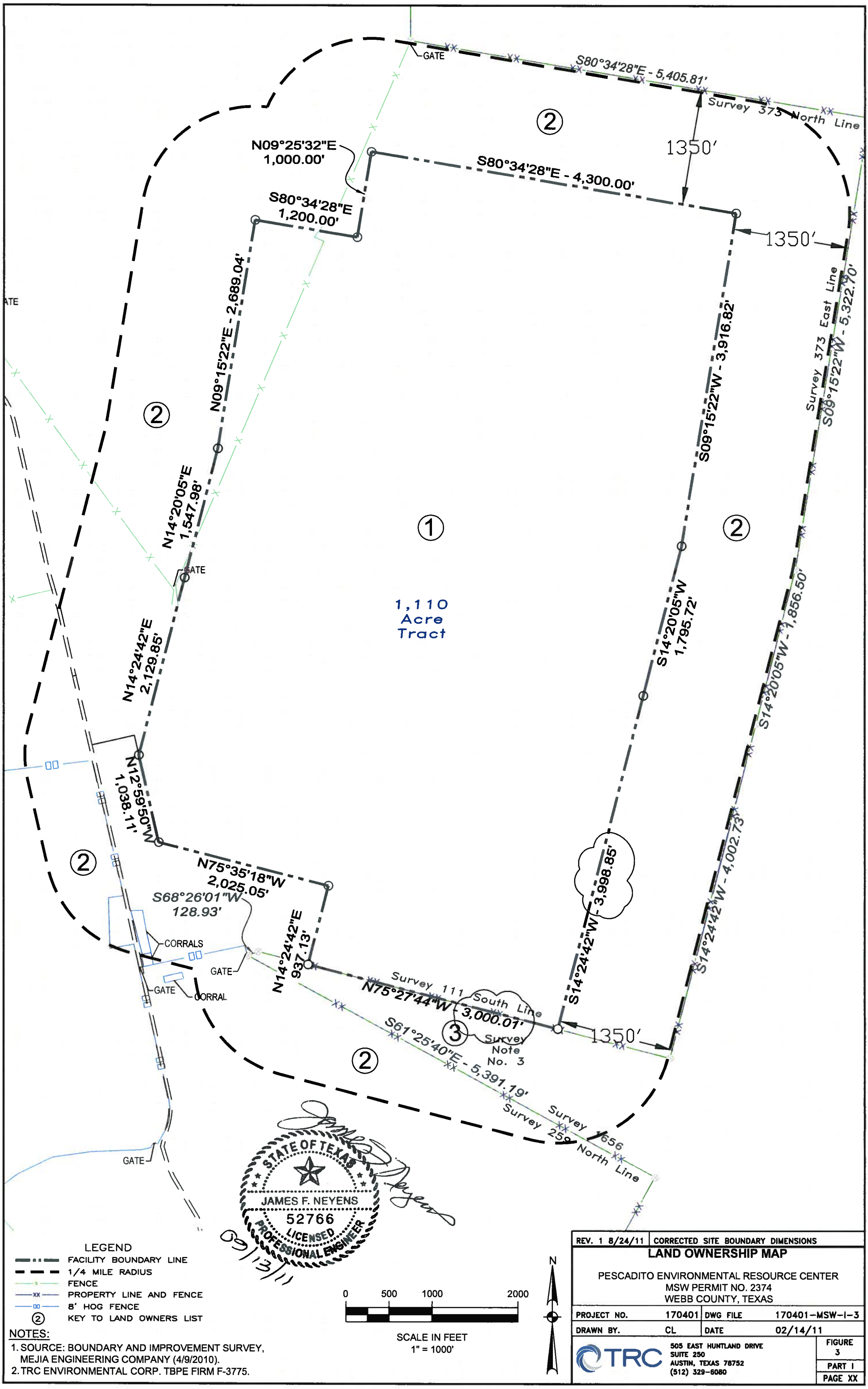
0 1500 3000 6000

SCALE IN FEET
1" = 3000'

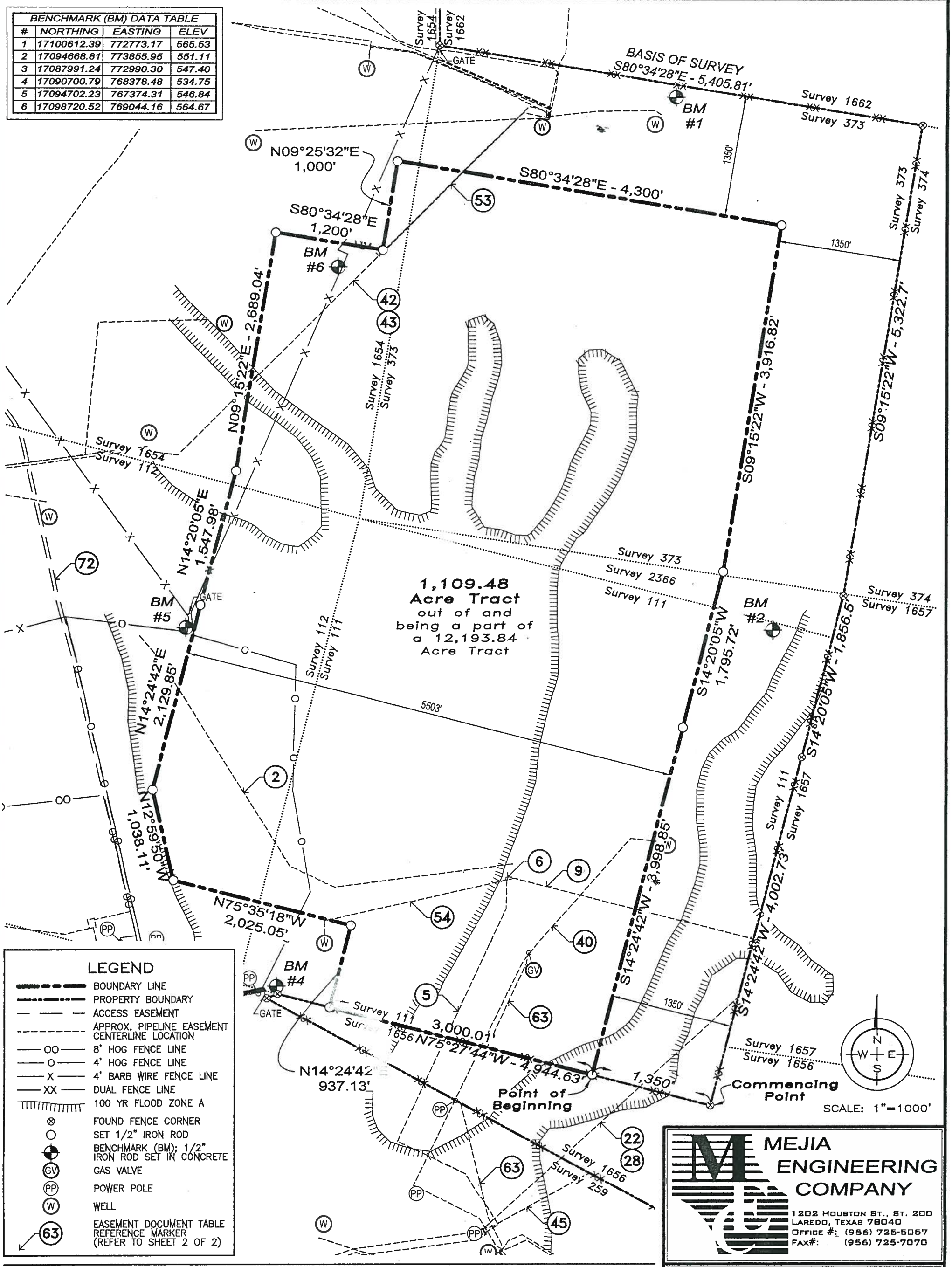
REV. 1 8/24/11	CORRECTED SITE BOUNDARY DIMENSIONS		
DETAILED LOCATION MAP			
PESCADITO ENVIRONMENTAL RESOURCE CENTER MSW PERMIT NO. 2374 WEBB COUNTY, TEXAS			
PROJECT NO.	170401	DWG FILE	170401-MSW-I-2
DRAWN BY.	CL	DATE 02/14/11	

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 2
PART I
PAGE XX


GATE
S80°34'28"E - 5,405.81'
Survey 373 North Line
2
N09°25'32"E
1,000.00'
S80°34'28"E - 4,300.00'
1350'
S80°34'28"E
1,200.00'
1350'
N09°15'22"E - 2,689.04'
S09°15'22"W - 3,916.82'
Survey 373 East Line
S09°15'22"W - 5,322.70'
2
N14°20'05"E
1,547.98'
GATE
1
1,110
Acre
Tract
2
S14°20'05"W
1,795.72'
N14°24'42"E
2,129.85'
S14°20'05"W - 1,856.50'
N12°59'50"W
1,038.11'
2
N75°35'18"W
2,025.05'
S68°26'01"W
128.93'
S14°24'42"W - 3,998.85'
S14°24'42"W - 4,002.73'
N14°24'42"E
937.13'
CORRALS
GATE
GATE
CORRAL
Survey 111 South Line
N75°27'44"W - 3,000.01'
3
Survey Note No. 3
S61°25'40"E - 5,391.19'
1350'
2
Survey 1656
Survey 259 North Line
GATE
STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER
9/13/11
LEGEND
FACILITY BOUNDARY LINE
1/4 MILE RADIUS
FENCE
PROPERTY LINE AND FENCE
8' HOG FENCE
② KEY TO LAND OWNERS LIST
NOTES:
1. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEJIA ENGINEERING COMPANY (4/9/2010).
2. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.
0 500 1000 2000
SCALE IN FEET
1" = 1000'
N
REV. 1 8/24/11 CORRECTED SITE BOUNDARY DIMENSIONS
LAND OWNERSHIP MAP
PESCADITO ENVIRONMENTAL RESOURCE CENTER
MSW PERMIT NO. 2374
WEBB COUNTY, TEXAS
PROJECT NO. 170401
DWG FILE 170401-MSW-I-3
DRAWN BY. CL
DATE 02/14/11
TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080
FIGURE 3
PART I
PAGE XX

BENCHMARK (BM) DATA TABLE			
#	NORTHING	EASTING	ELEV
1	17100612.39	772773.17	565.53
2	17094668.81	773855.95	551.11
3	17087991.24	772990.30	547.40
4	17090700.79	768378.48	534.75
5	17094702.23	767374.31	546.84
6	17098720.52	769044.16	564.67



SCALE: 1"=1000'

LEGEND

- BOUNDARY LINE
- PROPERTY BOUNDARY
- ACCESS EASEMENT
- APPROX. PIPELINE EASEMENT CENTERLINE LOCATION
- 8' HOG FENCE LINE
- 4' HOG FENCE LINE
- 4' BARB WIRE FENCE LINE
- DUAL FENCE LINE
- 100 YR FLOOD ZONE A
- FOUND FENCE CORNER
- SET 1/2" IRON ROD
- BENCHMARK (BM); 1/2" IRON ROD SET IN CONCRETE
- GAS VALVE
- POWER POLE
- WELL
- EASEMENT DOCUMENT TABLE REFERENCE MARKER (REFER TO SHEET 2 OF 2)

MEJIA ENGINEERING COMPANY
1202 HOUSTON ST., ST. 200
LAREDO, TEXAS 78040
OFFICE #: (956) 725-5057
FAX#: (956) 725-7070

CERTIFICATE OF SURVEYOR

STATE OF TEXAS
COUNTY OF WEBB

I, GILBERT L. CADE III, A REGISTERED PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE FOREGOING SURVEY WAS PREPARED FROM MAPS, DEEDS AND OTHER DOCUMENTS OF RECORD MADE AVAILABLE AND IS CORRECT TO MY KNOWLEDGE AND WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND UNDER MY DIRECTION.

STATE OF TEXAS
REGISTERED
GILBERT L. CADE III
5060
PROFESSIONAL
LAND SURVEYOR

GILBERT L. CADE III, R.P.L.S. No. 5060

08/15/2011
DATE

FIGURE 4

BOUNDARY SURVEY

of a tract of land containing 1,109.48 acres, more or less, within Surveys 373, 111, 112, and 1654 and being out of and a part of a 12,193.84 acre tract as described and depicted as Tract 2 on a Survey Plat by John E. Foster, R.P.L.S. on a *Stipulation Conforming Surface Ownership, Agreed* Boundary Line and Roadway Access instrument recorded in v. 704, p. 827–852, R.P.R.W.C.T. Webb County, Texas

F:\SURVEYS\Benavides Ranch\dwg\Base-Survey3.dwg - 8/15/2011

DRAWN BY: E.S.	SHEET 1 OF 2
CHECKED BY: A.A.	
APPROVED BY: G.C.	

Legal Description
1,109.48 Acre Tract

A tract of land containing 1,109.48 acres, more or less, situated within Surveys 373, 111, 112, and 1654 and being out of and a part of a 12,193.84 acre tract as described and depicted as Tract 2 on a Survey Plat by John E. Foster, R.P.L.S. on a Stipulation Conforming Surface Ownership, Agreed Boundary Line and Roadway Access instrument recorded in Volume 704, Page 827–852, R.P.R.W.C.T, Webb County, Texas. Said 1,109.48 acre tract being more particularly described as follows:

Commencing at an existing fence post being an exterior corner on the east boundary line of said 12,193.84 acre tract, fence corner being the southeast corner of Survey 111 and an interior corner of Survey 1656; Thence, N 75°27'44" W, along the boundary line of said 12,193.84 acre tract and the common line of Survey 111 and Survey 1656, a distance of 1,350 feet to a set ½ inch iron rod being the southeast corner and POINT OF BEGINNING of this 1,109.48 acre tract;

Thence, N 75°27'44" W, continuing along the boundary line of said 12,193.84 acre tract and the common line of Survey 111 and Survey 1656, a distance of 3,000.01 feet to a set ½ inch iron rod being and exterior corner hereof;

Thence, the following courses:

N 14°24'42" E, a distance of 937.13 feet to a set ½ inch iron rod for an interior corner of this tract;

N 75°35'18" W, a distance of 2,025.05 feet to a set ½ inch iron rod for the southwest corner of this tract;

N 12°59'50" W, a distance of 1,038.11 feet to a set ½ inch iron rod for a point of deflection to the right;

N 14°24'42" E, a distance of 2,129.85 feet to a set ½ inch iron rod for a point of deflection to the left;

N 14°20'05" E, a distance of 1,547.98 feet to a set ½ inch iron rod for a point of deflection to the left;

N 09°15'22" E, a distance of 2,689.04 feet to a set ½ inch iron rod for an exterior corner of this tract;

S 80°34'28" E, a distance of 1,200 feet to a set ½ inch iron rod for an interior corner of this tract;

N 09°25'32" E, a distance of 1,000 feet to a set ½ inch iron rod for the northwest corner hereof;

S 80°34'28" E, parallel approximately 1,350 feet from northeast line of said 12,193.84 tract and the common line of Survey 373 and Survey 1662, a distance of 4,300 feet to a set ½ inch iron rod for the northeast corner of this tract;

S 09°15'22" W, parallel approximately 1,350 feet from the east line of said 12,193.84 acre tract and the common line of Survey 373 and Survey 374, a distance of 3,916.82 feet to a set ½ inch iron rod for a point of deflection to the right;

S 14°20'05" W, parallel approximately 1,350 feet from the east line of said 12,193.84 acre tract and the common line of Survey 2366, Survey 111, and Survey 1657, a distance of 1,795.72 feet to a set ½ inch iron rod for a point of deflection to the right;

Thence, S 14°24'42" W, parallel approximately 1,350 feet from the east line of said 12,193.84 acre tract and common line of Survey 111 and Surveys 1656 and 1657, a distance of 3,998.85 feet to the POINT OF BEGINNING of this 1,109.48 acre tract of land, more or less.

Basis of Bearing: Boundary Data on State Plane NAD 83 4206 Texas South

Note: This survey was done without the benefit of a Title Company Research. There may be Easements of Record not shown on this Survey of which Surveyor is unaware of and as such assumes no liability herein.

Easement Document Table (Provided by Others)	
2	30' Right of Way Easement, Carlos Y Benavides Sr to United Texas Transmission Co, v. 695, p. 329–334, May 21, 1982
5	30' Right of Way Easement, Carlos Y Benavides Sr to United Texas Transmission Co, v. 696, p. 140–144, May 26, 1982
6	Surface Site Easements and a 12' Access Road Easement, Carlos Y Benavides Sr to United Texas Transmission Co, v. 696, p. 145–156, May 26, 1982
9	30' Easement and Right of Way Agreement, Carlos Y Benavides Sr to United Texas Transmission Co, v. 1039, p. 343–347, Nov 21, 1983
22	30' Easement and Right of Way Agreement, Carlos Y Benavides Sr to Kosh Gathering Systems Inc, v. 1220, p. 374–382, Feb 23, 1987
28	Cathodic Protection Facility Easement, Carlos Y Benavides Sr to Kosh Gathering Systems Inc, v. 1438, p. 47–49, Aug 08, 1990
40	50' Right of Way Easement, Rancho Viejo Cattle Co to Conoco Inc, v. 348, p. 798–804, Sep 20, 1995
42	50' Right of Way Easement, Rancho Viejo Cattle Co to Conoco Inc, v. 357, p. 480–485, Oct 26, 1995
43	50' Right of Way Easement, Rancho Viejo Cattle Co to Conoco Inc, v. 392, p. 96–101, Mar 19, 1996
45	30' Right of Way, Carlos Y Benavides Jr to Chevron USA Inc, v. 421, p. 530–534, Jul 08, 1996
53	50' Right of Way Easement, Rancho Viejo Cattle Co to Conoco Inc, v. 485, p. 812–816, Mar 14, 1997
54	50' Right of Way Easement, Rancho Viejo Cattle Co to Conoco Inc, v. 517, p. 32–36, Jun 03, 1997
63	50' Right of Way Easement, Rancho Viejo Cattle Co to Conoco–Phillips Co, v. 2343, p. 271–277, Apr 24, 2007
72	40' Road Easement, v. 704, p. 848–852, O.P.R.W.C.T.; MAY OR MAY NOT BE ALL EASEMENT DOCUMENTS THAT AFFECTS THIS TRACT

SURVEY NOTES

1. BASIS OF BEARING: BOUNDARY DATA ON STATE PLANE NAD 83, NAVD 88 4205 TEXAS SOUTH

2. BY GRAPHICAL PLOTTING ONLY, PARTS OF THIS TRACT ARE LOCATED WITHIN ZONE A AS DEFINED BY THE FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANEL 48479C 1275C WITH AN EFFECTIVE DATE OF APRIL 2, 2008.

3. THIS SURVEY WAS DONE WITHOUT THE BENEFIT OF TITLE COMPANY RESEARCH. THERE MAY BE EASEMENTS OF RECORD NOT SHOWN ON THIS SURVEY OF WHICH THE SURVEYOR IS UNAWARE OF AND AS SUCH ASSUMES NO LIABILITY HEREIN.

4. USGS BENCHMARK REFERENCE CONTROL DATA: NO. 526, N 17081242.78, E 758021.71, ELEV. 526.28

CERTIFICATE OF SURVEYOR

STATE OF TEXAS
COUNTY OF WEBB

I, GILBERT L. CADE III, A REGISTERED PROFESSIONAL LAND SURVEYOR, DO HEREBY CERTIFY THAT THE FOREGOING SURVEY WAS PREPARED FROM MAPS, DEEDS AND OTHER DOCUMENTS OF RECORD MADE AVAILABLE AND IS CORRECT TO MY KNOWLEDGE AND WAS PREPARED FROM AN ACTUAL SURVEY MADE ON THE GROUND UNDER MY DIRECTION.

STATE OF TEXAS · REGISTERED · GILBERT L. CADE III · 5060 · PROFESSIONAL · LAND SURVEYOR

GILBERT L. CADE III, R.P.L.S. No. 5060

08/15/2011
DATE

FIGURE 4

MEJIA ENGINEERING COMPANY
1202 Houston St., St. 200
Laredo, Texas 78040
Office #: (956) 725-5057
Fax#: (956) 725-7070

BOUNDARY SURVEY

of a tract of land containing 1,109.48 acres, more or less, within Surveys 373, 111, 112, and 1654 and being out of and a part of a 12,193.84 acre tract as described and depicted as Tract 2 on a Survey Plat by John E. Foster, R.P.L.S. on a Stipulation Conforming Surface Ownership, Agreed Boundary Line and Roadway Access instrument recorded in v. 704, p. 827–852, R.P.R.W.C.T. Webb County, Texas

F:\SURVEYS\Benavides Ranch\dwg\Base-Survey3.dwg - 8/15/2011

Drawn By: E.S.	Sheet 2 of 2
Checked By: A.A.	
Approved By: G.C.	

Attachment A

Legal Description

Attachment B

Certificate of Formation

Attachment C

Payment Demonstration

PART II

APPLICATION FOR PERMIT

TYPE I MUNICIPAL SOLID WASTE FACILITY

MSW PERMIT NO. 2374

PESCADITO ENVIRONMENTAL RESOURCE CENTER

SOLID WASTE MANAGEMENT AND DISPOSAL FACILITY

RANCHO VIEJO WASTE MANAGEMENT, LLC
LAREDO, WEBB COUNTY, TEXAS

March 28, 2011
Revised May 20, 2011
Revised September 14, 2011

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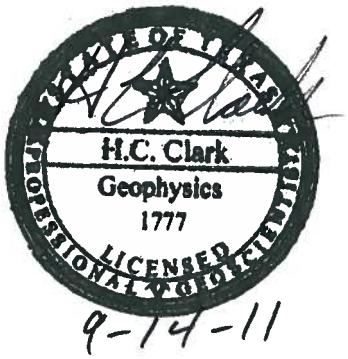

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LICENSED
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STATE OF TEXAS
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1.0 EXISTING CONDITIONS SUMMARY – [330.61 (a)]

This section discusses site-specific conditions that require special design considerations and mitigation of conditions that exist at the site of the proposed 1,110-acre Pescadito Environmental Resource Center (PERC), located about 20 miles east of Laredo in Webb County, Texas (see Figure 1, Part I and Figure 1, Part II).

Soils and Geology – A series of 26 soil borings were completed to evaluate the characteristics of soil encountered in the upper 160 feet at the site. These soils are predominantly clays, with some interbedded sand, sandstone, and claystone or shale. Based on review of published reports, these or similar soils are believed to extend to much greater depths. Laboratory testing of these soils confirms that they are well suited for the location of a solid waste landfill and to be used for the construction of the proposed landfill's liners and cover systems, and for storm water management structures such as channels, detention ponds and dikes. These soils have very low permeability characteristics, both in the natural or *in situ* condition and when constructed into compacted clay liner systems. These soils also are resistant to erosion.

The geology of the site area is also suitable for landfill development, as the soil strata are laterally very extensive with relatively thick layers of very low permeability soils that prevent vertical migration of water. Consequently, the area geology is very protective of the quality of water in the aquifers that lie below the proposed facility. There are no recognized geological hazards at the site, as there are no geologic faults in the immediate area, the risk of seismic activity is extremely low, and there is no incidence of instability due to subsidence, poor foundation conditions, or karst terrains.

Groundwater – Groundwater was encountered beneath the site within soils of the Jackson and Yegua Groups. These soils are part of the Jackson-Yegua Aquifer, which is classified as a minor aquifer by the Texas Water Development Board (TWDB). This classification is due to the relatively low yield and marginal quality of water in the aquifer. The ground water below the site was encountered in several water-bearing zones or layers that are generally characterized by gradational changes to sandy or silty soil classifications. These water-bearing zones are generally on the order of several feet thick and are found at several depth intervals across the site. These water-bearing zones may also be found layered as a transition between two highly impermeable layers of clay soil or at the top of a relatively impermeable layer of rock-like indurate material, and may also be associated with secondary porosity in the over-consolidated clay soils. These water bearing zones exhibit the characteristics of a confined aquifer. However, the hydraulic characteristics or relative thinness of these zones severely limit their ability to produce water in potentially useful quantities. The quality of this water is very poor to unacceptable for most domestic or agricultural uses. Regional aquifers exist beneath the

site, but at significant depth. The Laredo Aquifer is expected to occur at a depth of about 1,000 feet or more below the ground surface. Water in this aquifer is generally slightly saline, with total dissolved solids in the range of 1,000-2,500 milligrams per liter (mg/l), about two to five times the U.S. EPA's secondary drinking water regulation (SDWR) standard of 500 mg/l. Published reports indicate the groundwater produced by some wells contain some metals and trace elements in excess of SDWR limits. This and other deeper aquifers in south central Webb County dip towards the southeast towards the Gulf of Mexico and generally crop out in relatively narrow bands that trend northeast-southwest.

Groundwater usage in the general area of the site is very limited. Only one water well is known to exist within a one-mile radius of the facility boundary. This is the private water well that is located near the Yugo Ranch headquarters buildings and serves the general needs of the ranch. This well is located roughly 900 feet southwest of the proposed facility. According to TWDB records, there are only 5 water wells within a five-mile radius of the facility. As mentioned, the closest of these is about 900 feet (0.2 miles) southwest of the facility. The other four wells are located between 4.3 and 5 miles northwest of the facility, in the community of Ranchitos Las Lomas. One of these is a well located nearly 5 miles away that is owned and operated by Webb County. This well was intended as a public water supply well to make dispensed water available to the residents of Ranchitos Las Lomas. Water quality from this well is so poor that the majority of the water dispensed at this site is hauled by tanker trucks from the Webb County maintenance facility near U.S. Highway 59 and Loop 20 in Laredo. The source of this hauled water is the Laredo public water system. Of the total quantity of water Webb County dispenses at this location, relatively little water comes from this well, following extensive treatment.

TRC was informed by a local well driller that a new water well was constructed in mid-2011 about 2.5 miles northwest of the PERC facility. To date, TRC has been unable to obtain any additional information about this well.

Site Size and Topography – The site contains approximately 1,110 acres and is roughly rectangular in shape, as shown on Figure 3, Part II. It is nearly one mile measured east to west and less than two miles measured north to south. For the most part, the site topography is gently sloped from north to south at about 0.5 to 1 percent. Several shallow swales gather storm water runoff and convey it southward. Several stock tanks have been constructed within the site to collect and store runoff for livestock watering. The relative uniformity of the terrain will facilitate design and construction of the landfill and supporting features, particularly management of storm water.

Rainfall, Hydrology and Storm Water Runoff – According to the *Soil Survey of Webb County, Texas,* published by the U.S. Department of Agriculture, Soil Conservation

Service (1985), rainfall at Laredo averaged 19.8 inches per year between 1931 and 1979. Monthly averages ranged from 3.2 inches in September to 0.5 inches in March. An average of 13.9 inches, or 70 percent of the annual amount, fell in the 6 month period from May through October. Since Laredo is only about 20 miles west of the site, it is believed this rainfall data is also representative of the site.

Because the site slopes rather gently from north to south at about 0.5 to 1 percent, near-surface soils have very low permeability, and the site is uniformly covered with native vegetation consisting of brush, forbs and grass, surface water hydrology is relatively consistent. Storm water runoff historically has not eroded bed-and-bank features into the shallow swales that covey drainage from the site. In recent times, several impoundments have been created on site by shallow excavation and embankment construction across the swales to create livestock watering tanks. Patterns of storm water runoff have thus been significantly altered by the capture of rainfall by these tanks.

Floodplains – Because the swales that convey drainage across the site are so wide and shallow, they are quite inefficient at conveying runoff. As a result, relatively wide areas of the site are inundated by runoff from the 100-year rainfall event. The flood insurance rate map (FIRM) for the site, as prepared by the Federal Emergency Planning Agency (FEMA), indicates a significant portion of the site to be within Zone A, the 100-year floodplain. This floodplain is depicted in Figure 10, Part II. However, it is important to realize that the surface topography used to create the FIRM does not appear to include the existing dikes and surface impoundments at the site and in the watershed upslope from the site. TRC is engaged in engineering studies of the actual surface topography as it currently exists. TRC is also performing an engineering analysis of drainage at the site and all watersheds above and immediately below the site. TRC will design a series of drainage channels and detention structures that will result in the removal of the proposed landfill area from the 100-year floodplain. Furthermore, TRC will submit to FEMA a Conditional Letter of Map Revision (CLOMR), requesting correction of the existing FIRM to take into account the related drainage and floodplain improvements. We expect this action will result in documentation that construction of the proposed watershed improvements at and adjacent to the site will remove the landfill from the 100-year floodplain.

Threatened and Endangered Species – TRC has performed an initial assessment of threatened and endangered (T&E) species at the site, and subsequently conducted a more detailed biological evaluation. These studies will assure compliance with federal and state requirements for the protection of T&E species and their habitats. These studies have been submitted to the Texas Parks and Wildlife Department (TPWD) and the U.S. Fish and Wildlife Survey (USFWS), as discussed in Section 4.0.

Land Use – Land use at and within one mile of the facility is exclusively devoted to cattle ranching and oil and gas exploration and production. This same land use extends generally for many miles in every direction. The only exceptions are an area of residential land use about four miles to the northwest and two transportation corridors. The residential land use is in the community of Ranchitos Las Lomas, which is located along Highway 59 and had a population of 334 in the 2000 census. The transportation corridors include U.S. Highway 59, which passes through Ranchitos Las Lomas four miles to the northwest, and the Kansas City Southern Railroad about two miles to the south of the facility, which will provide rail service to the site.

Oil and Gas Production – While some oil but mostly gas production has been prevalent in the area, very little has actually occurred on the proposed site of the facility. Several wells were attempted on or adjacent to the site, but have been sealed and abandoned. The width of the landfill was selected to allow possible future development of gas reserves beneath the landfill by using directional drilling methods. Existing practices employed by energy companies in this area of Webb County were reviewed to identify the appropriate well spacing and horizontal departure allowances.

Recovery of landfill-generated gas is planned for the facility. The existing infrastructure of gathering pipelines, valves, and separators is expected to be useful to or at least compatible with the landfill gas recovery. The landfill gas will be processes on-site, to the degree necessary to make this gas marketable. Processing may include drying and/or removal of carbon dioxide or trace gases. The landfill gas will then be metered and pumped into the existing natural gas delivery system.

The oil and gas production at and around the site has resulted in a number of wells and pipelines being installed. Every production well has a certain useful or productive life, which ends when the oil or gas reserves it tapped is no longer recoverable. Some wells and pipelines in the site area are no longer active and have been abandoned in place, while others continue in service. Many of these pipelines exist within easements. The easement agreements allow the landowner (the Applicant for this permit) to reroute the pipelines as may become necessary in the future, as long as the replacement pipelines meet industry standards. Also, ownership of the easement and pipelines typically reverts to the landowner if the pipeline operator abandons the line. Similarly, ownership of abandoned wells reverts to the landowner. For these reasons, the proposed landfill is fully compatible with the existing oil and gas production. As the landfill grows in size over several decades in the future, the existing active oil and gas wells will transition into abandonment. New wells can be drilled if desired, because they can be located where they can access hydrocarbons beneath the landfill with directional drilling, and not interfere with the construction and operation of the landfill.

2.0 WASTE ACCEPTANCE PLAN [330.61 (b)]

2.1 General

Type of Facility and Wastes to be Accepted – The facility will be a Type I municipal solid waste landfill, with several additional waste management units. As a Type I landfill, the facility will be designed for and will accept certain types of non-hazardous industrial wastes that are compatible with landfill disposal, and may accept liquid industrial wastes in the future. Waste management units for liquid industrial wastes may include solidification (prior to landfill disposal) or underground injection by means of a Class 1 injection well. Design considerations will be made to ensure that storm water and wastewater management are in compliance with TCEQ regulations. All contaminated liquids resulting from the operation of the facility will be disposed of in a manner that will not cause surface water or groundwater pollution. Grease trap and grit trap wastes will be accepted for processing. Processing of recyclables, such as those collected by residential curbside collection programs, may be provided. This process will seek to recover all recyclable commodities that have a market or reuse value, coupled with landfill disposal of non-recyclable residuals.

General Prohibitions- The following wastes will not be accepted for landfill disposal at this facility:

(1) Lead acid storage batteries.

(2) Do-it-yourself used motor vehicle oil

(3) Used oil filters from internal combustion engines.

(4) Whole used or scrap tires, unless processed prior to disposal in a manner acceptable to the executive director.

(5) Refrigerators, freezers, air conditioners, and any other items containing chlorinated fluorocarbon (CFC).

(6) Liquid waste, except as allowed in 30 TAC §330.177 (relating to Leachate and Gas Condensate Recirculation), and/or except household liquid waste as allowed by30 TAC §330.15(e)(6) will not be accepted for disposal in any MSW landfill unit.

(7) Regulated hazardous waste as defined in 30 TAC §330.3.

(8) Polychlorinated biphenyls (PCB) wastes, as defined under 40 Code of Federal Regulations Part 761, unless authorized by the United States Environmental Protection Agency and the MSW permit.

(9) Radioactive materials as defined in 30 TAC Chapter 336 (relating to Radioactive Substance Rules), except as authorized in Chapter 336 or that are subject to an exemption of the Department of State Health Services.

Management of Industrial and Special Wastes – The facility will accept certain Class 1 non-hazardous, Class 2 and Class 3 industrial wastes, as well as many special wastes

that are regulated as municipal solid waste (MSW). Only those Class 1 non-hazardous wastes that are allowed to be disposed into Type I MSW landfills in restricted locations will be accepted, with the understanding that the facility may in the future provide on-site stabilization or solidification of certain types of industrial sludge to render these wastes suitable for landfill disposal. Grease and grit trap wastes will be accepted for processing from commercial sources (restaurants, fast food facilities, car wash and vehicle maintenance facilities), industrial sources (food processing plants, manufacturing plants) and institutional sources (hospitals, schools, prisons). Class I Industrial Waste amounts will not exceed 20 percent of the total amount of all other waste accepted for disposal. Special design considerations will be made in accordance with 30 TAC §330.173 to properly manage any Class I waste that is proposed to be accepted for disposal at the landfill. Before accepting wastes that require stabilization, the facility will obtain a permit modification or amendment to add an on-site solidification facility. Special wastes will be accepted only to the extent that any given category or type of special waste can be properly managed by the facility and/or readily disposed into the landfill.

2.2 Sources and Characteristics of Waste

The proposed facility will be a comprehensive waste treatment and disposal facility that serves municipal and industrial customers by means of truck and rail transportation. Municipal solid wastes transported by truck are expected to originate in Webb and nearby counties. The use of tractor-trailers loaded at transfer stations could extend the service area to more distant areas of South Texas such as Corpus Christi and San Antonio. Grease trap and grit trap wastes processed at this facility are expected to be generated in the same service area. Industrial wastes are expected to be generated from this service area plus the industries in the Houston-Beaumont region. Wastes transported by rail can be economically shipped from greater distances, because the transportation cost per ton-mile is much less by rail than by truck. In regions of the country where the cost of landfill disposal is relatively high and landfills are some distance away and served by trucks, the cost of solid waste disposal by rail-hauling to this facility could be less. Thus, the service area for rail-hauled waste may essentially be unlimited.

Sources of non-industrial waste that are intended to be managed at the proposed facility include local governmental entities (cities, towns, waste management districts or authorities, and counties), state institutions, federal agencies that generate waste from disaster response, commercial solid waste collection companies, and similar generators of municipal solid waste. Wastes to be received other than industrial waste can be characterized as garbage, rubbish, ashes, street sweepings, incidental dead animals, and non-recyclable residuals following the removal of recyclables from source-separated

recyclable materials. Solids resulting from processing grease and grit trap wastes may also be disposed in the landfill.

A main line of the Kansas City Southern Railroad (KCS) passes within about two miles of the landfill facility and is accessible by all-weather roads on private property. Rail service to the site can be accomplished without having to transport waste over public roads. However, in the initial period of operation, waste may be transported in sealed, steel containers through the KCS intermodal shipping yard in Laredo.

KCS is an international railroad company with extensive track mileage and service in Mexico. The facility intends to provide waste disposal services to industrial generators in Mexico. Both the *maquiladora* industries along the U.S. border and other industries in Mexico will be served by the facility.

2.3 Quantity of Waste

Estimated Maximum Annual Waste Acceptance Rate - The facility estimates that it will receive the following maximum annual quantities of waste for landfill disposal during the first five years of its operation, and the population equivalent represented by these quantities:

Year 1 – 1,000,000 tons	(1.1 million)
Year 2 – 1,200,000 tons	(1.3 million)
Year 3 – 1,400,000 tons	(1.6 million)
Year 4 – 1,600,000 tons	(1.75 million)
Year 5 – 1,800,000 tons	(2.0 million)

It must be noted that these figures are estimates only at this time, and should not be considered either as a firm commitment of quantities to be received or as a limitation on the amount of waste to be received in any of the years shown. The actual quantities to be received are expected to be determined by contracts the owner or operator anticipates securing from waste generators after the facility is closer to being in operation. The facility will be constructed to have sufficient processing and disposal capacity available and sufficient numbers of personnel and equipment, to properly manage the waste streams that are brought to the facility.

The grease and grit trap (G&G) waste processing facility is expected to receive an average of 30,000 gallons per day, or an average of 125 tons per day, in the first year of operation. The maximum amount of this waste to be stored, as well as the maximum and average lengths of time this waste will remain at the facility prior to disposal, are summarized in the following table. G&G waste will typically be delivered in commercial

vacuum trucks and off-loaded into a series of storage tanks. This waste will be transferred to mixing tanks for processing, where treatment chemicals (typically polymers and flocculating agents) and possibly compressed air will be added. Following the reaction time in the mixing tanks, the G&G waste will be transferred to separation tanks, where the grease will float and the grit will settle. Grease may be shipped off-site for processing for energy recovery or dewatered on-site and landfilled. Grease decomposes to produce landfill gas, which will be recovered. Grit will be dewatered and landfilled. Remaining water will be managed as contaminated water and treated on site by solar evaporation, solidification, or land application (in accordance with TCEQ rules). This water may also be used for dust control on the working face of the landfill, or hauled off-site for disposal at a wastewater treatment plant under authorization of the plant owner. All aspects of the management of G&G waste will be in accordance with TCEQ rules (and U.S. EPA rules if offsite disposal is employed).

Grease and Grit Trap Waste

Year after opening	Maximum Receipts, tons per day	Maximum Receipts, tons per year	Maximum Storage, days	Average Storage, days
1	125	45,000	5	3
2	137.5	49,500	5	3
3	150	54,000	5	3
4	162.5	58,500	5	3
5	175	63,000	5	3

3.0 GENERAL LOCATION MAPS [330.61 (c)]

The General Location Map is presented as Figure 1 in Part II. This map is used to present the following described features, to the extent they exist within the distances from the proposed facility as defined by 30 TAC 330.61(c). For clarity, certain of these features are presented elsewhere in this registration application. The prevailing wind direction with a wind rose is presented on Figure 2 of Part II.

There are no water wells on the proposed site or within 500 feet of the proposed permit boundary, except for temporary piezometers and / or groundwater monitoring wells that were installed as part of the development of this permit application. There is one water well within two miles of the proposed site, located about 900 feet southwest of the site. This is the water supply well for the ranch. Its location is shown on Figure 1 in Part II.

There are no structures and inhabitable buildings within 500 feet of the proposed facility. There are several structures and inhabitable buildings about 2,100 feet from the facility; these are shown on Figure 1 of Part II. These include one house, one mobile home, and several ranch buildings (one machine storage building and two sheds used as stables).On occasion, one travel trailer may also be temporarily parked in this area. All residents of these structures are ranch workers employed by Yugo Ranch.

There are no schools, licensed day-care facilities, churches, or cemeteries within one mile of the facility. Several man-made ponds (stock tanks) exist within one mile of the site, and these are shown on the map. There are no other residential, commercial or recreational areas within one mile of the facility, so none are shown; there also are no hospitals in this area. The nearest known airport used for commercial or general aviation is the Laredo International Airport, located more than 20 miles west of the facility.

The location and surface type of roads that will be used to access the facility are shown.

The latitude and longitude of the facility is shown.

Area streams are shown.

There are no airports within six miles of the facility, so none can be shown.

The property boundary of the facility is shown.

Easements within or adjacent to the facility cannot be clearly shown on Figure 1 of Part II. Consequently, for the sake of clarity, all known easements are shown on Figure 4 of Part I. Figure 4 was prepared by Mejia Engineering Company, and consists of Sheet 1 of 2 and Sheet 2 of 2.

Facility access control features, including a perimeter security fence located along the facility boundary line and at least one lockable gate, are shown of Figure 4, Part II.

There are no recorded archeological, historical or aesthetic sites within one mile of the facility, so none can be shown.

4.0 FACILITY LAYOUT MAPS [330.61 (d)]

A Facility Layout Map and an Operations Area Layout Map are provided as Figures 3 and 4 of Part II. These maps provide:

The maximum outline of the landfill unit(s);

General locations of main facility access roadways;

General locations of buildings;

Explanatory notes;

Fencing and lockable gates will be provided along the facility boundary, as shown on Figure 4, Part II.

Natural amenities and plans for screening the facility from public view; and

Easements are shown on Figure 4, Sheets 1 and 2, in Part I. These easements will be protected in accordance with TCEQ rules until such time as they may be voided or relocated outside the waste fill area.

Site entrance road can be accessed from public access roads.

An initial Class I waste cell location is shown on Figure 4. Additional Class I waste cells may be designated and constructed throughout the landfill as future landfill cells are designed. All Class I waste cells will be designed, constructed, and operated in accordance with TCEQ rules.

Locations of monitoring wells are generally shown on the Monitoring System and Cell Layout Plan, Figure 5. In accordance with 30 TAC §330.403(a)(2), default spacing for groundwater monitoring wells is a maximum of 600 feet. Figure 5 shows a proposed facility perimeter of approximately 28,000 feet. On this default spacing basis, 48 wells are proposed at an average spacing of 600 feet.

Locations of gas monitoring probes are generally shown on Figure 5. In accordance with 30 TAC §330.371(h)(2), permanent gas monitoring probes are required to monitor for subsurface migration of landfill gas. Although, 1,000-foot spacing is typical, 600-foot spacing is recommended along the southwest corner of the perimeter due to habitable structures within 3,000 feet. This spacing can be accommodated at the location shown on Figure 5.

The proposed facility is completely isolated from all land use except cattle ranching and oil and gas production, and is provided with an effective buffer of more than one-quarter mile on three sides and 300 feet on the fourth side.

5.0 GENERAL TOPOGRAPHIC MAPS [330.61 (e)]

The General Topographic Map is presented as Figure 6. It was derived from the United States Geological Survey 7 ½ minute quadrangle map for the site area, identified as the Burrito Tank map. This map is the most recent such map of the site area and was prepared in 1980. It is at a scale of one inch equals 2,000 feet.

6.0 AERIAL PHOTOGRAPH [330.61 (f)]

An aerial photograph of the required size and scale is provided as Figure 7, Part II. The facility boundary is marked and an area within at least a one-mile radius beyond that boundary is shown. The scale of the aerial photograph is one inch equals 2,000 feet, which is within the required range. This photo shows the facility (or site) boundaries and the area within a one-mile radius of the boundary. No actual fill areas exist, so none can be shown or marked. There has been no growth for many years in the area covered by the aerial photograph, so a series of photographs to show growth trends is not needed because there are no growth trends to show.

7.0 LAND-USE MAP [330.61 (g)]

The Land-Use Map is presented as Figure 8, and shows the existing land uses within one mile of the facility. The land usage presented on this map was obtained by personal observation and examination of recent aerial photographs, and is believed to be accurate as of the date of this photograph, which was taken in 2008. This land use information was checked by visual observation in June 2010. The current land use is shown on Figure 8, and is as described in the Land Use Map Legend.

Current, recent and historic land use within the facility boundary is the same; cattle ranching and production of natural gas. Figure 9 is provided to show oil and gas wells in the area of the facility. Numerous roads, ranging from all-weather gravel surfaced roads to unimproved lanes, exist in the area, primarily to serve oil and gas exploration and production. This very same land use extends for at least 3 to 5 miles in all directions from the facility.

8.0 IMPACT ON SURROUNDING AREA [330.61 (h)]

The proposed addition of the landfill and related facilities at this site will not have an adverse impact on human health or the environment in the area surrounding the facility. There is no existing zoning that would prohibit this proposed use, and no approval or special permit is required from any local government. There is no existing zoning map of the site or surrounding area, so none can be provided herein.

8.1 Potential Impact on Human Health

The following discussion assesses potential human health impacts on cities, communities, groups of property owners and individuals. Due to demographic factors associated with this particular site, and the nature of the proposed landfill and waste processing operations and type of materials to be processed, the only potentially affected category that should be considered is individuals. This is because the site area has a very low population density, with no residential dwelling units within 500 feet of the proposed facility. Fewer than 10 persons live within a one-mile radius of the facility. The closest residential dwelling units are two structures at the Yugo Ranch headquarters about 2,100 feet southwest of the facility boundary. The next closest residential structures are at another ranch headquarters located approximately 2 miles away to the northwest.

There is no city, community, or group of property owners that are potential target receptors that might be subjected to adverse human health impacts from the proposed facility. This is because of the separation distances that will exist and because of the virtual lack of etiological agents or disease vectors that might result in such impacts. The individuals to be considered in the evaluation of health impacts include nearby residents, facility employees, and visitors. This evaluation will consider the potential modes of transmission of etiological agents or disease vectors that might impact human health. The modes are transport by air, surface water and ground water. Transmission by vectors, such as insects (particularly flies) and rodents (particularly rats and mice), are not being considered any further in this analysis because the waste storage and processing methods to be employed at this facility will prevent the propagation or reproduction of these species in or near the waste, and will essentially deny access to the waste to any existing members of these species. Basically, waste will be in closed containers until placed into the landfill, at which time the waste will be covered with additional waste or cover soil. Transmission by dermal contact or ingestion are not realistic modes because all persons who may come in direct contact with waste will be required to wear gloves and will be specifically trained to avoid dermal contact or ingestion of waste or waste materials.

Air Mode - The two nearby houses and one mobile home in the facility area are located to the southwest of the landfill, as shown on the Aerial Photograph, Figure 7. The prevailing wind direction, as shown by the Wind Rose in Figure 2, is not in this direction. In fact, Figure 2 shows that wind blows from the facility towards these two residences only about 5 percent of the time. The three factors of low incidence of wind blowing towards these residences, lack of etiological agents or vectors, and the separation distance of over 2,100 feet, combine to produce a negligible chance of adverse health effects to these residents due to the facility.

The individuals to be considered with respect to potential human health impacts due to inhalation or ingestion are employees of facility and visitors to the facility.

Potential exposure to employees varies by job assignment. Persons who work in the close proximity to waste or waste processing will be provided with National Institute for Occupational Safety and Health (NIOSH)-approved dust masks and will be required to wear them during operations that expose them to dust. Such employees will also be required to wear hard hats, safety glasses, gloves and protective boots while working in this operation. A water truck will be available as needed throughout the facility and will provide water that will be spray-applied when needed to control dust.

Office workers will not be exposed to materials of concern. A supply of hard hats, safety glasses and dust masks will be maintained at the facility for use by visitors or employees who may occasionally enter the waste processing or disposal areas.

Surface Water – The facility will be designed to contain and properly manage all water that has come into contact with waste, including leachate, clean-up water, and rainfall that comes in contact with exposed waste. All such water will be treated or managed on-site, and will not be discharged off-site. Workers who manage this water will be trained and provided with appropriate personal protection equipment to prevent ingestion or dermal contact with this water.

Groundwater – The landfill will be designed and constructed with a liner and leachate collection system that will act in tandem to prevent the migration of waste or waste constituents to groundwater. An array of groundwater monitoring wells will be designed and installed to check groundwater quality and to make sure the liner and leachate collection system is working to prevent release of contaminants to the groundwater. Should such a release occur, it can be detected and corrective measures can be taken before any adverse health impact can occur.

The facility's geological and hydrogeological setting also provide protection of public health, as water quality in the upper aquifer at the facility is too poor to be used for

human consumption. Deeper aquifers are protected from possible site-related contamination by hundreds of feet of intervening very low permeability soil intervals.

8.2 Potential Impact on the Environment

No adverse impacts on the environment of the area are anticipated from the proposed landfill operation. Debris barriers will be employed to reduce the potential for wind-blown dispersal of debris and litter.

Some noise will be generated by the periodic operation of the motorized equipment including waste compactors, bull dozers, hydraulic backhoes and the trucks used to bring and remove waste containers. The frequency and the intensity of the equipment noise generated on-site will be quite low in all off-site directions. This is due to the buffer zone width and the operation of most equipment within a building. Except for trucks entering and leaving, all on-site noise generation will be limited to areas of the facility that are located on private property at least ¼ mile from neighboring property.

8.3 Compatibility with the Surrounding Area

Zoning - The facility is located more than 5 miles east of the City of Laredo and the area surrounding the site within two miles extends into unincorporated Webb County. No specific approval is required from the City of Laredo or Webb County for the proposed facility. The facility is well beyond the extra-territorial jurisdiction (ETJ) of the City of Laredo. Accordingly, the City of Laredo has no authority to establish zoning, land use planning, or other restrictions on development in the area. Similarly, the facility is not within the extra-territorial jurisdiction (ETJ) of any other incorporated city. Webb County has enacted no zoning or similar restriction on land use at the facility or surrounding area.

Character of Surrounding Land Uses - This facility location and the area extending for many miles in all direction are obviously suitable for oil and gas production and cattle ranching. This is the current and historic land use status of the property on which the facility is proposed, and has been for many years. No other residential, recreational, commercial, agricultural or industrial land uses exist for several miles in the site area.

The site is about two miles north of the north end of Jordan Road. This is the closest area to the site that is accessible to the general public, as the access road into the site from Jordan Road is privately owned. Existing residential and several commercial properties are located at Ranchitos los Lomas, about 3.5 to 4.5 miles northwest of the proposed facility. The proposed facility is more than adequately screened from view from both of these areas by a distance of about two to four miles. The intervening areas consist of heavily wooded or brushy vegetation and rolling topography.

Commercial development within one mile of the site is non-existent. Land use is exclusively devoted to the exploration and production of oil and gas and cattle ranching, both of which are commercial ventures, but are not normally considered to be described as commercial development. Oil and gas activity occurs somewhat randomly, but extensively, throughout the general area of the site. One feature of this commercial use is that it requires frequent access to well sites by large, heavy vehicles, such as well drilling rigs, work-over trucks, and tank trucks that haul produced liquids. These heavy vehicles regularly traverse the roads in the site area, and testify to the adequacy of these all-weather surfaced roads to support such truck traffic. Landfill-related traffic will employ vehicles that are similar in many respects to this existing traffic. A second commercial type of land use near the site it the KCS railroad, whose tracks are located within one to two miles of the site.

In addition to the residential, commercial and industrial land use described above, land use within a five-mile radius of the facility is divided between agricultural (essentially all pasture land used for cattle ranching) and dispersed oil and gas well sites.

The closest population center and only concentrated residential land use within five miles of the facility is Ranchitos Las Lomas, a community or subdivision located along Hwy 59 about 3.5 to 4.5 miles northwest of the site. This is a community of about 334 persons, according to the 2000 census. Widely scattered residences are found at several ranch headquarters in the area, but these are typically separated from each other by several miles, due to the large size of the ranches, which appear to be on the order of 10,000 acres each. Typical of these is the Yugo Ranch, within which the proposed facility is located. There are an estimated two or three active residences within one mile of the facility, all located at the headquarters of Yugo Ranch. This includes two houses, one mobile home, and occasionally one travel trailer. These nearest occupied residences house ranch hands that are employed by Yugo Ranch.

Vehicle or equipment noise that will be generated by the proposed solid waste activities may not be discernable and should not be objectionable to occupants of the residences at Yugo Ranch because of the low speeds and separation distance. Prevailing winds, which tend to carry noise in its direction of movement, should carry noise away from these residences. Noise resulting from the operation of the facility will not cause any impact to the community of Ranchitos Las Lomas, located about 4 miles northwest of the facility, due primarily to the separation distance. Also, any noise that could be perceived within a limited distance from the facility will be engine noise associated with heavy equipment. Noise generated by truck traffic travelling to and from the facility will be similar to the noise from oil-field trucks and equipment that already travel along area roads many times a day. Truck traffic noise related to accessing the facility will be indistinguishable from

the noise of truck and automobile traffic along U.S. Highway 59, which bisects this community. This highway traffic consists of many trucks and tractor-trailer units traveling at up to 70 miles per hour, 24 hours per day.

Growth Trends - The population of Webb County (2000 Census) was 193,117, and the population estimate for 2009 is 241,438, an increase of about 25 percent in 9 years. Within a one-mile radius of the facility, the long-term population is estimated to be fewer than 10 persons, and this population has no growth or growth trend. The 2000 population for Ranchitos Las Lomas was 334, which had 148 housing units and a population density is calculated to be 15.3 persons per square mile. According to www.bestplaces.net, the population of Ranchitos Las Lomas was 409 in 2011, an increase of 22 percent in 11 years. Historic population data indicates the population of Ranchitos Las Lomas has been about 300 to 400 persons for many years. Visual observation of this community shows no evidence of recent growth, such as new homes or commercial buildings.

Proximity to Residences and Other Uses – The proximity of the facility to residences is discussed above. There are no schools, churches, cemeteries, historic structures or sites, archaeologically significant sites, or sites having exceptional aesthetic quality within one mile of the facility. The lack of some of these sites or features has been verified. According to Texas Historical Commission (THC) records, there are no archeological or historic sites in the area of the proposed facility. There are no recreational areas within one mile. There are three residences within one mile of the facility, all located at Yugo Ranch headquarters about 2,100 feet southwest of the facility, and no commercial establishments. The estimated population density within a one-mile radius of the facility is less than one person per square mile.

Wells - There are no known or recorded water supply wells, either active or abandoned, within 500 feet of the proposed facility. According to records obtained from the Railroad Commission of Texas, there are no active oil or gas wells on the facility, and one abandoned gas well. Within 500 feet of the facility boundary, there are two active gas wells, three plugged gas wells, and two wells classified as "dry holes".

9.0 TRANSPORTATION [330.61 (i)]

Vehicular traffic associated with the proposed landfill will primarily approach and leave the general area of the facility on State Highway 359, a two lane asphalt-paved road with paved shoulders. Between SH 359 and the site, traffic will travel about 5 miles on Jordan Road, which is a Webb County road, to within about two miles of the site. There is no posted vehicle weight limitation on Jordan Road. The final road leading into the site is an all-weather surfaced private road on Yugo Ranch.

Webb County was given information about the proposed Pescadito Environmental Resource Center, and has expressed support for the project. A copy of a letter from Webb County Judge Danny Valdez stating the county's support is presented in Part II, Attachment E.

Existing and future estimated traffic volumes on SH 359 were not studied in connection with this application. SH 359 is estimated to be a minimum of 5.9 miles from the proposed facility. A review of publicly-available data on Webb County traffic did not produce existing traffic counts or future traffic projections for Jordan Road, which is about 1.1 mile from the closest portion of the proposed facility.

At the initial expected rate of 1,000,000 tons per year (tpy), the expected volume of traffic associated with the proposed landfill is expected to be approximately 260 trips per day (130 vehicles entering and leaving, including 10 passenger vehicles and 120 trucks). Ultimately for 2,000,000tpy, the facility traffic is expected to be 520 trips per day (260 vehicles entering and leaving, including 20 passenger vehicles and 240 trucks). At this ultimate volume, truck traffic will average about 10 vehicles per hour or one every 6 minutes. This volume of site-related traffic will have no significant adverse impact on the capacity of SH 359. Because of the relatively low volume of site traffic, along with the favorable geometry, reduced speed limit and long sight distance, no turning or storage lanes would be needed to safely accommodate the proposed facility.

The applicant proposes that all site-related traffic will approach the site from the south, via SH 359 and Jordan Road.

TxDOT was provided information about the proposed facility, and has concurred that there will be no adverse impacts from the proposed facility on the State highway system. A letter expressing this conclusion from Albert Quintinella, P.E., TxDOT's Laredo District Engineer, is presented in Part II, Attachment B.

TRC obtained traffic count data from TxDOT for a location on State Highway 359 (SH 359) approximately 3 miles east of Loop 20. This is the location closest to the intersection of SH 359 and Jordon Road for which traffic count data was available. For

the five-year period from 1995 through 1999, the average daily traffic count was 6,080 vehicles per day. The average daily traffic count at this location in 2009 was 8,800 vehicles per day. This is an increase of 2,720 vehicles per day or about 45 percent over an average period of 12 years. Assuming a similar increase will occur over 12-year periods in the future, the 2021 average daily traffic will be 12,760 vehicles per day and the 2033 average daily traffic will be 18,500 vehicles per day. The anticipated site related traffic will not significantly impact the estimated future traffic conditions. This conclusion is shared by TxDOT's District Engineer (see Attachment B, Part II).

Documentation of coordination with the Federal Aviation Administration regarding airport location restrictions is presented in Attachment F.

10.0 GENERAL GEOLOGY AND SOILS STATEMENT [330.61 (j)]

10.1 General Geology [330.61(j)(1)]

The geology of the area is described, in part, by the Laredo Sheet (Barnes, 1976) of the Geologic Atlas of Texas; it shows the site located on the contact between the Eocene Yegua Formation and Jackson Group [of formations in other places where defining characteristics make discrimination relevant]. Other mapping and subsurface research place the contact between the Yegua and Jackson somewhat to the west of the site [for example: Lonsdale, 1937; Baker, 1995; Lambert, 2004]. The differences in interpretation between researchers are likely because the depositional environments and the resulting sediments are similar, leading to different choices of boundaries. Both the Yegua and Jackson are made of clays, clayey sands, and sands, and include, at different locations: limestone concretions, lignite, volcanic ash, uranium, and fossil plants. Beneath the Yegua and Jackson is the Laredo Formation, similar to the Jackson and Yegua, but containing more sand, particularly near its base.

The regional geology dips gently toward the coast and this attitude is reflected in the regional topographic surface; but locally, and at the site, the topography is influenced by streams draining toward the Rio Grande to the south. Elevations, as a result of this influence, range from about 570 feet [msl] on the north end of the site to about 540 feet [msl] on the south. Kier and others (1977) rate the site as naturally suitable for solid waste disposal with proper monitoring.

10.2 General Soils [330.61(j)(1)]

The soils on the site are developed from the underlying geology and active surface processes, primarily related to stream drainage. The USDA's NRCS Soil Map (Sanders, 1985) for the site area describes the soils as generally clay to clay loam and sandy clay loam; this description is confirmed by the site soil borings to date. The soils are generally deep, well developed, saline at shallow depth, and differences leading to designations are largely due to geomorphology. The landscape of the site area consists of broad plains cut by broad valleys. The soils that dominate the site include the Aguilares sandy clay loam, Brundage sandy loam, Catarina clay, and Montell clay. Each of these soils is capable of supporting vegetation suited to ranching.

10.3 Fault Areas [330.61(j)(2) and 330.555]

The site region, dominated by Eocene and older sediments, is not known as an active fault area; active fault causal mechanisms such as heavy groundwater and/or petroleum withdrawal are absent. Area gas wells, while many, are not known to have experienced or generated problems that might be related to faulting. The topographic map and aerial photography do not show linear features characteristic of faulting. There are inactive

faults nearby and at depth as shown on geologic maps and cross-sections; these are more than a mile from the site and not expected to become active. The Wilcox and Vicksburg Fault Zones are generally downdip of the site and are quiescent. The area Geomap (Geomap, 2004) shows two northeast-southwest trending normal faults cutting the Queen City at about -2000 feet [msl], one about 3 miles northwest, and the other about 3 miles southeast of the site, both Wilcox related. A site area cross-section based on geophysical logs interprets a normal fault with fifty feet of normal offset cutting the Carrizo at about -6000 feet [msl]; it is about 2 miles east of the site. Deformation related to the Lower Wilcox Lobo gravity slide is contained within the Lobo Formation (Long, 1985) at a depth of several thousand feet beneath the site. The Pescadito Dome, a deep-seated salt diapir, is located approximately 5 miles west-northwest of the proposed PERC landfill site. It is marked by radial faulting limited to the area of the diapirism. The Moca Salt diapir is located about 28 miles northeast of the proposed landfill site in the northeastern part of Webb County along the boundary with Duval County and it too is marked by radial faulting (Barnes, 1976). The proposed PERC landfill site is located more than two miles from the closest, regionally extensive inactive fault that reaches the surface (Barnes, 1976); this faulting is an upward and inland extension of the Eocene Wilcox Fault Zone. In summary, there are no known active or inactive faults within 200 ft of the proposed landfill site.

10.4 Seismic Impact Zones [330.61(j)(3) and 330.557]

Potential earthquake sources are far away from the PERC site and this distance is reflected in the anticipated low seismic impact risk for the region; that is, the site is in an area of minimal expected peak horizontal acceleration and thus not in a seismic impact zone. The 1931 Valentine Earthquake with a magnitude of 5.8 is perhaps the nearest significant historical event; additional, small events related to hydraulic fracturing are expected as oil and gas exploration continues, particularly with the development of the Eagle Ford shale play. The USGS Seismic Hazard Map(U.S. Geological Survey, 2008) [Figure 10] shows the site location, and contoured values of maximum peak acceleration as a percent of the earth's gravity field, or g, with a 2 percent probability of exceedance in 50 years. The site location between the 2 and 4 percent (g) contours places it well below the threshold for a seismic impact zone. This USGS Seismic Hazard Map is the most current and is widely accepted as the official seismic risk map for this portion of the U.S.

10.5 Unstable Areas [330.61(j)(4) and 330.559]

There appears to be no natural unstable areas, such as karst terrains, landslide areas (the site is essentially flat), subsidence areas, and/or active faults in the area of the PERC site. However, like most landfills located in "good locations", the predominance of subsurface clay materials indicates that the facility location is a potentially "unstable area" due to the properties of the clay materials. At this site, the clays are both expansive and potentially low strength with respect to sliding as a consequence of the clay plasticity ranging from moderate to very high. As demonstrated numerous times at other similar sites, the clay material properties can be readily accommodated in the design and operation of the landfill.

In their present state, the subsurface soils at depth are relatively strong and incompressible due to previous consolidation history over geologic time. No significant differential settling will occur as a result of landfill construction. Proposed excavations, "landfill structural components", and proposed operation/sequencing of landfilling will be designed in recognition of the subsurface materials and conditions. Investigation and geotechnical evaluations are being performed in conjunction with the engineering design of the facility. Stability analyses will be conducted as a normal consideration of facility design with respect to human-induced slope instability. The results of these evaluations will show that engineering measures have been incorporated into the landfill design to ensure that the integrity of the structural components of the landfill will not be disrupted.

Selected references for Section 10.0 include:

Baker, E. (1995). *Stratigraphic Nomenclature and Geologic Sections of the Gulf Coastal Plain of Texas: U.S. Geological Survey Open-File Rept. 94-461.* Reston: U.S. Geological Survey.

Barnes, V. P. (1976). *Laredo Sheet: Geologic Atlas of Texas.* Austin, Texas: University of Texas, Bureau of Economic Geology.

Kier, R. S., L. E. Garner, and L. F. Brown, Jr. 1977. Land Resources of Texas – A map of Texas lands classified according to natural suitability and use considerations. Bureau of Economic Geology, University of Texas at Austin.

Lambert, R. (2004). *Hydrogeology of Webb County, Texas: U.S. Geological Survey Scientific Investigations Report 2004-5022.* Reston: U.S. Geological Survey.

Long, J. (1985). *The Eocene Lobo Gravity Slide, Webb and Zapata Counties, Texas: Contributions to the geology of South Texas.* San Antonio: South Texas Geological Society.

Lonsdale, J. D. (1937). *Geology and Ground-water Resources of Webb County, Texas: USGS Water Supply Paper 778.* Reston: U.S. Geological Survey.

Sanders, R. G. (1985). *Soil Survey of Webb County, Texas.* Washington: U.S. Department of Agriculture, NRCS.

U.S. Geological Survey. (2008). National Seismic Hazard Map: Peak Horizontal Acceleration[%g] 2% probability exceedance in 50 years. Reston: USGS Interactive Mapping.

11.0 GROUNDWATER AND SURFACE WATER [330.61 (k)]

11.1 Groundwater [330.61(k)(1)]

Groundwater conditions at the site are known from a combination of on-site soil boring data and the published literature. Groundwater is localized in sandier sediments encountered, but these sediments, as expected from the nature of the depositional environment, are not necessarily continuous across the site. There appears to be enough ultimate connectivity between water bearing materials, however, to allow this shallow groundwater to approach an equilibrium, or coherent potentiometric surface across the site. Water levels range from about 550 feet [msl] in the north part of the proposed landfill footprint to about 530 feet [msl] in the south--and generally follow the area slope, and consequently the drainage as well.

The near surface sediments at the site are part of the Yegua-Jackson Aquifer, a TWDB designated Minor Aquifer, and named for the geology involved. Parts of this Eocene aquifer, one that serpentines from Webb County and the Mexico border to Louisiana, are productive of freshwater, but that is apparently not the case near the surface at the Pescadito site. Water quality tests on ground water samples from six site borings were analyzed for constituents that include the maximum contaminant levels (MCLs) as established in the national primary drinking water regulations by U.S. EPA. All these ground water samples exceeded the secondary MCLs for total dissolved solids (TDS) and chloride by orders of magnitude. The Yegua-Jackson dips gently toward the coast, is about 1,000 to 1500 feet thick according to a nearby cross-section (Baker, 1995), and is recharged along its outcrop. There are six water wells within about five miles of the site. The geophysical log of the Yugo Ranch well, about 900 feet from the site, indicates clays and some sands continuing to its total depth of about 1100 feet [bgs], where it is screened in the lower part of the Yegua. This well, sampled as part of the site study, also showed TDS and chloride values somewhat above the secondary MCLs. The site is a part of this Yegua-Jackson recharge zone and is situated on or near the contact between its elements. However, soil characteristics and groundwater chemistry at the site indicate groundwater recharge in the area is limited.

The Laredo Aquifer underlies the Yegua-Jackson. It too, dips coastward and consists of sands and clays. Its recharge zone that is outcroped, trends in a generally north-south direction, inland of and parallel to the Yegua-Jackson outcrop. This aquifer is an important part of Webb County, for it is capable of producing significant quantities of freshwater, particularly for the sandier lower portion of the Laredo Formation. The Laredo Aquifer provides a portion of Laredo's water supply and has been the subject of Aquifer Storage and Recovery research (Lambert, 2004). The Laredo Formation is about

1,000 feet thick in the area according to the same nearby cross-section (Baker, 1995). It is underlain by the Pico Clay, the ultimate confining unit beneath the site.

Selected references for Section 11.1 include:

Baker, E. (1995). *Stratigraphic Nomenclature and Geologic Sections of the Gulf Coastal Plain of Texas: U.S. Geological Survey Open-File Rept. 94-461.* Reston: U.S. Geological Survey.

Barnes, V. P. (1976). *Laredo Sheet: Geologic Atlas of Texas.* Austin, Texas: University of Texas, Bureau of Economic Geology.

Lambert, R. (2004). *Hydrogeology of Webb County, Texas: U.S. Geological Survey Scientific Investigations Report 2004-5022.* Reston: U.S. Geological Survey.

Long, J. (1985). *The Eocene Lobo Gravity Slide, Webb and Zapata Counties, Texas: Contributions to the geology of South Texas.* San Antonio: South Texas Geological Society.

Lonsdale, J. D. (1937). *Geology and Ground-water Resources of Webb County, Texas: USGS Water Supply Paper 778.* Reston: U.S. Geological Survey.

Sanders, R. G. (1985). *Soil Survey of Webb County, Texas.* Washington: U.S. Department of Agriculture, NRCS.

U.S. Geological Survey. (2008). National Seismic Hazard Map: Peak Horizontal Acceleration[%g] 2% probability exceedance in 50 years. Reston: USGS Interactive Mapping.

11.2 Surface Water [330.61(k)(2)]

There are two large surface water impoundments on the proposed PERC landfill site and several smaller impoundments. For the most part surface water flow occurs as overland flow and flow in dry washes whose course is difficult to identify on available aerial photos. A few of the dry swales on or near the southern end of the proposed PERC landfill site do not have defined bed and banks. This was determined based on onsite inspection by the design engineer who will incorporate appropriate drainage controls into the facility design that comply with all regulations including the Texas Pollution Discharge Elimination System (TPDES) and allow obtaining appropriate TPDES permits.

The proposed facility will operate under TPDES General Permit No. TXR050000. A signed certification to this effect is contained in Section 7.0 of Part I. It will also operate in accordance with a Storm Water Pollution Prevention Plan (SWPPP). The SWPPP will be prepared as the actual design of the landfill and related facilities is completed during the preparation of Parts III and IV of this permit application. The SWPPP will be updated

as necessary to reflect site modifications proposed by the operator subsequent to receiving a MSW permit.

The facility will comply with the requirements of the TPDES storm water permitting requirements by continuous operation and monitoring of its SWPPP throughout the active life of the facility. The SWPPP will be developed specifically for the proposed facilities and operations, and will include both ongoing inspection of storm water pollution prevention systems and practices, and periodic sampling and analysis of storm water discharges. Should the results of the SWPPP monitoring indicate a need for revisions, or should the facility and its operation change in the future, the SWPPP will be revised as needed. A Notice of Intent (NOI) to obtain coverage under TPDES General Permit No. TXR050000 (or its successor) will be submitted to TCEQ. Filing the NOI will initiate coverage of this facility under the General Permit and is one of the criteria for compliance with the TPDES and Section 402 of the CWA. Operation of the SWPPP is the other criteria for compliance with the TPDES requirements.

Surface water conditions near the site are very similar to those at the site. Due to the generally flat surface topography and low runoff, combined with the tight, cohesive surficial soils, natural drainage systems exhibit very little erosion. Relatively small artificial dams exist in the area to create "stock tanks" for livestock watering.

12.0 ABANDONED OIL AND WATER WELLS [330.61 (l)]

Abandoned Oil Wells - The area around the proposed landfill site on the Yugo Ranch has been drilled for oil and gas. However, there are no active wells within the proposed landfill footprint or facility site and only one abandoned and plugged gas well. Records of the oil and gas wells were obtained from the Railroad Commission of Texas (RRT). A map of the active and plugged wells was obtained and used as a reference. These records in conjunction with an onsite inspection before and during excavation will allow determination of whether this one well, or any others discovered onsite, need to be capped, plugged, and closed in accordance with applicable rules and regulations of TCEQ or the RRT. As required, within 30 days prior to construction, written certification will be provided to executive director of TCEQ that the gas well, and any others encountered, have been properly capped, plugged, and closed. Gathering lines do crisscross the proposed landfill site; thus, if a waste disposal permit is received, these lines will have to be abandoned and relocated as necessary. Future drilling for mineral resources beneath the landfill will use deviated drilling techniques from surface locations outside the footprint of the proposed landfill.

Abandoned Water Wells – There are no abandoned water wells at the facility.

13.0 FLOODPLAINS AND WETLANDS STATEMENT [330.61 (m)]

Portions of the proposed facility are currently located within the 100-year floodplain, as indicated on the replication of the most current available floodplain map, or Flood Insurance Rate Map (FIRM), presented in Figure 11. However, several man-made livestock watering tanks were constructed many years ago, and the existence of the dams that form these tanks was not considered when the floodplain map was compiled. Regardless, the design of the proposed landfill and related facilities will include design of a comprehensive storm water management system of dikes, drainage channels and detention ponds. Collectively, this system will remove the area of the landfill from the 100-year floodplain. TRC has performed all the necessary hydrological and hydraulic engineering analysis and design to accomplish this. The results of this engineering design along with an application for a Conditional Letter of Map Revision (CLOMR) have been submitted to the Webb County Planning Department (WCPD) for review and approval. WCPD is the local agency responsible for floodplain management. With concurrence from WCPD, the CLOMR application will be submitted to the Federal Emergency Management Agency (FEMA) for review and approval. The CLOMR when issued will verify that the proposed site drainage plans will, in fact, remove areas of the site proposed for the landfill, processing and storage areas and related development from the 100-year floodplain.

Construction of the landfill will impact a named reservoir, Burrito Tank, and possibly several smaller stock tanks. All affected reservoirs are owned by the applicant or by its parent, Rancho Viejo Cattle Company, Ltd.

The proposed landfill is located in an ideal location considering soil, groundwater, land use, and oil and gas activities (past, present, and future). No other location is equally plausible. It is difficult to find an area of appropriate size in Eastern Webb County that does not have floodplain issues due to the prevailing flat topography and rapid runoff soil conditions. Applicant endeavored to find an upland location that was reasonably close to the headwater conditions to minimize any impacts to floodplains and/or wetlands.

TRC performed a wetland evaluation at the facility site in 2009 (see Attachment A). The results of this evaluation indicate jurisdictional wetlands in and near the livestock watering tanks discussed in the preceding paragraph. TRC then performed a wetland determination in 2011. The results of this determination were evaluated in accordance with current Federal rules and guidelines for the protection of jurisdictional waters, and found certain areas that met these criteria. TRC then submitted its findings to the U.S. Army Corps of Engineers (USACE).The USACE concurred that jurisdictional waters exist on site. Therefore, TRC intends to prepare an application of a Section 404 permit once the facility design is more advanced than it is currently. An application for a Section 404 permit will be prepared and submitted to the USACE. No construction or development in jurisdictional wetland areas will be undertaken without appropriate authorization from the USACE.

No Jurisdictional waters at the location of the proposed facility will be disturbed by the proposed construction or operation of the facility without prior authorization under a permit.

14.0 ENDANGERED OR THREATENED SPECIES [330.61 (n)]

A site reconnaissance and evaluation was performed by TRC in 2009 to assess the potential for the facility to harbor endangered and threatened species, or to provide critical habitat for such species. This evaluation included obtaining current lists of both federal- and state-listed species for Webb County and identifying the habitat and range or occurrence characteristics of all such listed species. TRC's report of this assessment is presented in Part II, Attachment A.

Based on the result of this evaluation, TRC has concluded that the site of the proposed facility may contain habitat or range conditions that may result in the occurrence of endangered or threatened species. By comparing the characteristics of the site to surrounding areas, it is clear that habitat and environmental conditions of the site are not significantly different from conditions for many miles surrounding the site. No unique or critical habitat conditions were observed. A Biological evaluation was completed and provided to TPWD and USFWS. TRC awaits response from the agencies.

15.0 TEXAS HISTORICAL COMMISSION REVIEW [330.61 (o)]

The Texas Historical Commission (THC) was asked to review the proposed project in the context of the Natural Resources Code, Chapter 191, and Texas Administrative Code. THC notified TRC that the proposed project may proceed (see Attachment C). Additionally, TRC searched on-line data sources and found that the project does not appear to affect any known cultural resources sites or historic properties (see Attachment D).

16.0 COUNCIL OF GOVERNMENTS AND LOCAL GOVERNMENT REVIEW [330.61 (p)]

Part I and Part II of this permit application were submitted to the South Texas Development Council (STDC) for review for compliance with the regional solid waste plan. Furthermore, TRC completed the STDC *Checklist for Review* to describe the proposed PERC facility and discuss ways this facility will conform to the regional plan (see Part II, Attachment E).

Also, information letters about the proposed project were submitted to Webb County and the City of Laredo, and review letters are being requested from each entity regarding compliance with any local solid waste plans for their jurisdictions (see Part II, Attachment E).

Information about the Pescadito Environmental Resource Center was presented to Webb County Commissioners Court. The Webb County Judge and all four County Commissioners expressed support for the project. A copy of a letter from Webb County Judge Danny Valdez affirms the support of Webb County (see Part II, Attachment E).

17.0 AIR POLLUTION CONTROL [330.371]

The proposed landfill will have a design capacity greater than 2.5 million megagrams (2.76 million tons) and 2.5 million cubic meters (3.27 million cubic yards). Air emissions from the landfill facility will be controlled, to the extent necessary, to qualify for a standard permit.

The owner/operator of the landfill facility will submit a certification for the initial construction of the landfill at least 120 days prior to building or installation of any equipment or structure that may emit air contaminants. The certification will be based on the capacity of the landfill for a minimum ten-year period. The certification will include supporting documentation to demonstrate compliance with TCEQ air permitting requirements and any other applicable federal and state requirements and at a minimum will include the following:

(1) The basis and quantification of emission estimates;

(2) Sufficient information to demonstrate that the facility will comply with all applicable TCEQ air permitting requirements; and

(3) A description of any equipment and related processes.

18.0 GENERAL OPERATIONAL CONSIDERATIONS [330.15]

The PERC landfill facility will not operate in violation of the Texas Health and Safety Code, or any regulations, rules, permit, license, order of the commission, or in such a manner that causes:

(1) The discharge or imminent threat of discharge of MSW into or adjacent to the waters in the state without obtaining specific authorization for the discharge from the commission;

(2) The creation and maintenance of a nuisance; or

(3) The endangerment of the human health and welfare or the environment.

The open burning of solid waste, except for the infrequent burning of waste generated by land-clearing operations, agricultural waste, silvicultural waste, diseased trees, emergency cleanup operations as authorized by the commission or executive director as appropriate, is prohibited. The operation of an air curtain incinerator other than for the exceptions noted above is prohibited.

The following wastes will not be accepted at this facility:

(1) Lead acid storage batteries;

(2) Do-it-yourself used motor vehicle oil;

(3) Used oil filters from internal combustion engines;

(4) Whole used or scrap tires, unless processed prior to disposal in a manner acceptable to the executive director;

(5) Refrigerators, freezers, air conditioners, and any other items containing chlorinated fluorocarbon (CFC);

(6) Liquid waste, except as allowed in 30 TAC §330.177 (relating to Leachate and Gas Condensate Recirculation), and/or except household liquid waste as allowed by30 TAC §330.15(e)(6) will not be accepted for disposal in any MSW landfill unit;

(7) Regulated hazardous waste as defined in 30 TAC §330.3;

(8) Polychlorinated biphenyls (PCB) wastes, as defined under 40 Code of Federal Regulations Part 761, unless authorized by the United States Environmental Protection Agency and the MSW permit; and

(9) Radioactive materials as defined in 30 TAC Chapter 336 (relating to Radioactive Substance Rules), except as authorized in Chapter 336 or that are subject to an exemption of the Department of State Health Services.

The facility will receive sewage sludge only in compliance with commission requirements and the requirements of the Federal Clean Water Act, §309 and §405(e).

The drilling of any test borings, for any reason, through previously deposited waste or cover material without prior written authorization from the executive director is prohibited.

The facility will neither be designed nor operated to cause:

(1) A discharge of solid wastes or pollutants adjacent to or into waters of the state, including wetlands, that is in violation of the requirements of Texas Water Code, §26.121;

(2) A discharge of pollutants into waters of the United States, including wetlands, that violates any requirements of the Federal Clean Water Act, including, but not limited to, the National Pollutant Discharge Elimination System requirements, under §402, as amended, or Texas Pollutant Discharge Elimination System requirements;

(3) A discharge of dredged or fill material to waters of the United States, including wetlands, that is in violation of the requirements under Federal Clean Water Act, §404, as amended; and

(4) A discharge of a nonpoint source pollution into waters of the United States, including wetlands, that violates any requirement of an area-wide or state-wide water quality management plan that has been approved under Federal Clean Water Act, §208 or §319, as amended."

FIGURES

1 MILE RADIUS

FACILITY BOUNDARY

WATER WELL

900'

2100'

TWO RESIDENTIAL AND ONE BARN — STRUCTURES; ONE MOBILE HOME

PROPOSED ALL-WEATHER ACCESS ROAD TO SR 359

Purrito Tank

NOTES:
1. SEE WIND ROSE ON FIGURE 2, PART II
2. NO HOSPITALS WITHIN ONE MILE
3. SITE IS LOCATED AT (27.559°N, 99.160°W)
4. ROADS USED TO ACCESS THE FACILITY ARE EITHER CONCRETE–PAVED, INCLUDING HWY 59, OR ALL WEATHER CRUSHED ROCK.
5. NO AIRPORTS WITHIN 6 MILES
6. SEE FIGURE 4, PART I FOR EASEMENTS
7. SEE FIGURE 1, PART III FOR ACCESS CONTROL FEATURES

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER
8/24/11

LEGEND
- WATER WELL (NONE WITHIN 500')
- STRUCTURE OR INHABITABLE BUILDING (NONE WITHIN 500')
- SCHOOL (NONE WITHIN ONE MILE)
- CHURCH (NONE WITHIN ONE MILE)
- CEMETERY (NONE WITHIN ONE MILE)
- ARCHAEOLOGICAL OR HISTORICAL SITE (NONE)

SOURCE
U.S.G.S. 7.5-MINUTE SERIES TOPOGRAPHIC MAP, BURRITO TANK (1980), TEXAS.

0 1000 2000 4000

SCALE IN FEET
1" = 2000'

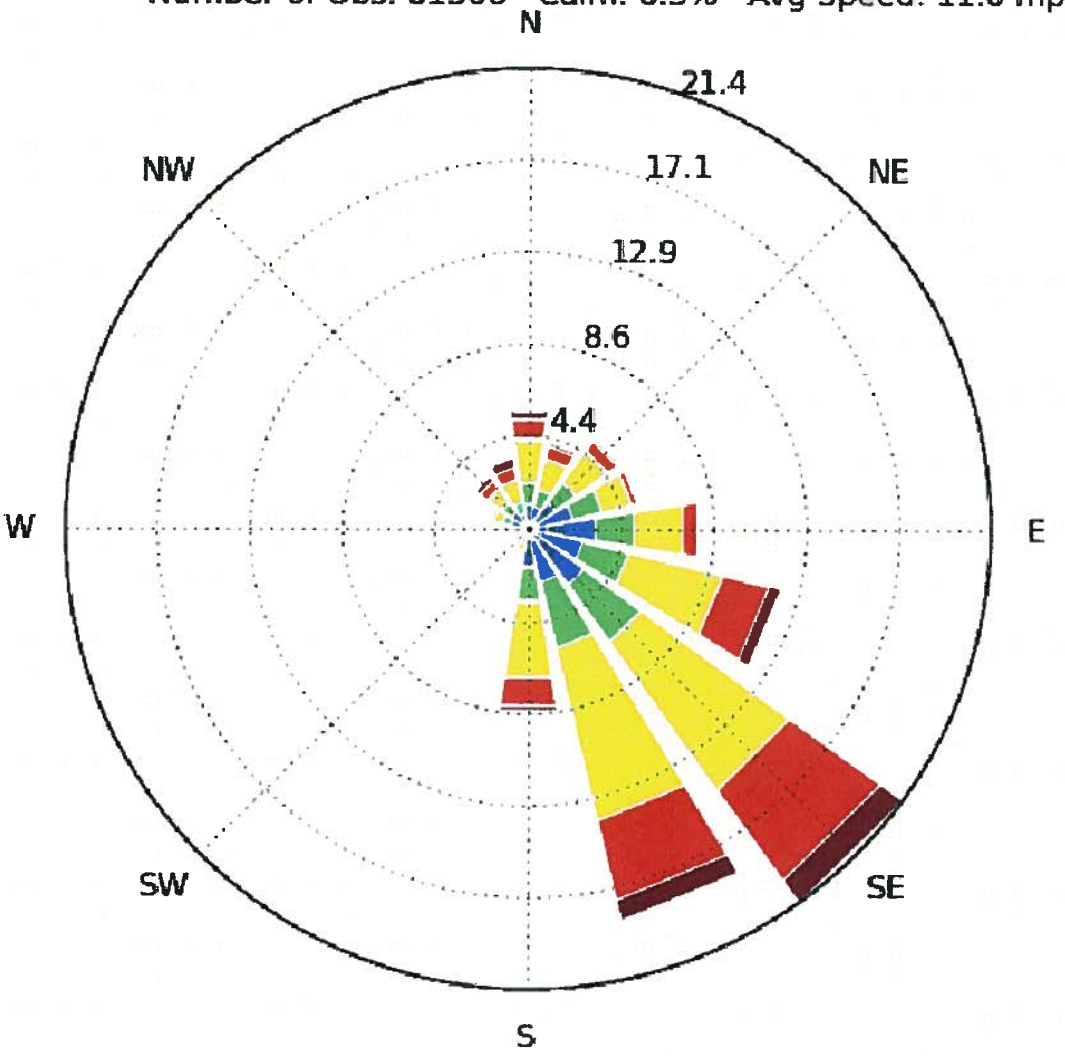
N

REV. 1 8/24/11	REVISED LATITUDE AND LONGITUDE		
GENERAL LOCATION MAP			
PESCADITO ENVIRONMENTAL RESOURCE CENTER MSW PERMIT NO. 2374 WEBB COUNTY, TEXAS			
PROJECT NO.	170401	DWG FILE	170401–MSW–II–1
DRAWN BY.	CL	DATE	02/14/11

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329–6080

FIGURE 1
PART II
PAGE XX

LAREDO INTL AIRPORT [LRD] Windrose Plot
[All Year]
Period of Record: 01 Nov 2000 - 01 Nov 2010
Number of Obs: 81308 Calm: 6.3% Avg Speed: 11.0 mph



STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER
9/13/11

WIND ROSE

PESCADITO ENVIRONMENTAL RESOURCE CENTER
MSW PERMIT NO. 2374
WEBB COUNTY, TEXAS

PROJECT NO.	170401	DWG FILE	170401-MSW-II-2
DRAWN BY: WCD	DATE 02/14/11	REVISED	

SOURCE
IOWA ENVIRONMENTAL MESONET, IOWA STATE UNIVERSITY DEPARTMENT OF AGRONOMY

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 2
PART II
PAGE XX

GATE

S80°34'28"E - 5,405.81'

Survey 373 North Line

FACILITY BOUNDARY

150'

1350'

N09°25'32"E
1,000.00'

S80°34'28"E - 4,300.00'

S80°34'28"E
1,200.00'

APPROX. LANDFILL
BOUNDARY

1350'

4200'

N09°15'22"E - 2,689.04'

S09°15'22"W - 3,916.82'

Survey 373 East Line

S09°15'22"W - 5,322.10'

LOCATED DRAINAGE DITCHES,
DETENTION PONDS AND
PERIMETER MAINTENANCE ROAD
IN LANDFILL BUFFER ZONE

150'

N14°20'05"E
1,547.98'

GATE

S14°20'05"W
1,795.72'

S14°20'05"W - 1,856.50'

N14°24'42"E
2,129.85'

PROPOSED ALL-WEATHER
FACILITY ENTRANCE ROAD

N12°39'50"W
1,038.11'

4200'

150'

N75°35'18"W
2,025.05'

S14°24'42"W
3,998.85'

S14°24'42"W - 4,002.73'

N14°24'42"E
937.13'

300'

CORRALS

GATE

GATE

CORRAL

N75°27'44"W - 3,000.01'

S14°24'42"W

1350'

ALL-WEATHER SURFACE
ACCESS ROAD TO SR 359

GATE

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER

LEGEND

- FACILITY BOUNDARY LINE
- APPROXIMATE LANDFILL LIMIT
- FENCE
- PROPERTY LINE AND FENCE
- 8' HOG FENCE

NOTES:

1. FACILITY AREA APPROXIMATELY 1,110 ACRES.
2. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEJIA ENGINEERING COMPANY (4/9/2010).
3. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.

0 500 1000 2000

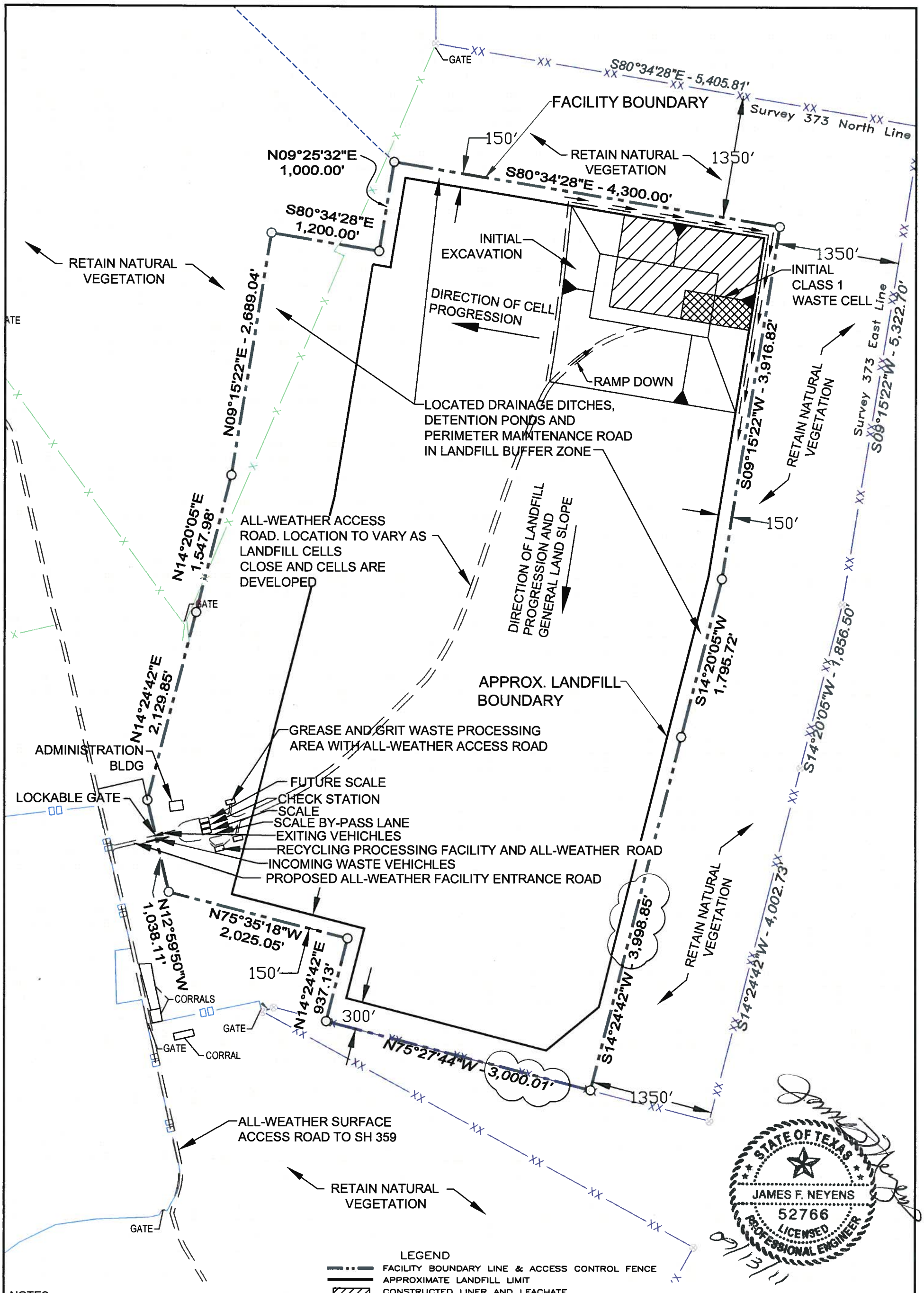
SCALE IN FEET
1" = 1000'

N

REV. 1 8/24/11	CORRECTED SITE BOUNDARY DIMENSIONS		
FACILITY LAYOUT MAP			
PESCADITO ENVIRONMENTAL RESOURCE CENTER MSW PERMIT NO. 2374 WEBB COUNTY, TEXAS			
PROJECT NO.	170401	DWG FILE	170401-MSW-II-3
DRAWN BY.	CL	DATE 02/14/11	

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 3
PART II
PAGE XX



LEGEND

- FACILITY BOUNDARY LINE & ACCESS CONTROL FENCE
- APPROXIMATE LANDFILL LIMIT
- CONSTRUCTED LINER AND LEACHATE COLLECTION SYSTEM
- RUN–ON AND RUN–OFF CONTROL BERM
- DRAINAGE STRUCTURE
- FENCE

0 500 1000 2000

SCALE IN FEET
1" = 1000'

N

NOTES:

1. FACILITY AREA APPROXIMATELY 1,110 ACRES.
2. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEJIA ENGINEERING COMPANY (4/9/2010).
3. ACTUAL SIZE OF LANDFILL EXCAVATION TO BE DETERMINED BY INCOMING WASTE QUANTITY.
4. SOME FACILITIES MAYBE SHOWN LARGER THAN TRUE SCALE FOR CLARITY.
5. CONSTRUCT PERIMETER SECURITY FENCE AND LOCKABLE GATES AT FACILITY BOUNDARY TO SURROUND FACILITY.
6. NATURAL VEGETATION WILL BE RETAINED FOR AT LEAST 1/4 MILE IN ALL DIRECTIONS FOR VISUAL SCREEN, WINDBREAK, AND WIND-BLOWN LITTER CONTROL.
7. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER
9/13/11

REV. 1 8/24/11 ADDED CLASS 1 CELL, GREASE AND GRIT AREA, RECYCLING AREA AND FENCE

OPERATIONS AREA LAYOUT MAP

EL PESCADITO
MSW PERMIT NO. 2374
WEBB COUNTY, TEXAS

PROJECT NO.	170401	DWG FILE	170401-MSW-II-4
DRAWN BY.	CL	DATE	10/29/10

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 4
PART II
PAGE XX

LOCATE DRAINAGE DITCHES, DETENTION PONDS AND PERIMETER MAINTENANCE ROAD IN LANDFILL BUFFER ZONE

GATE

S80°34'28"E - 5,405.81'

Survey 373 North Line

FACILITY BOUNDARY

150'

APPROX. LANDFILL BOUNDARY

1350'

N09°25'32"E 1,000.00'

S80°34'28"E - 4,300.00'

600' (TYP.)

S80°34'28"E 1,200.00'

A

1350'

700' (TYP.)

A-6 A-5 A-4 A-3 A-2 A-1

B-6 B-5 B-4 B-3 B-2 B-1

C-6 C-5 C-4 C-3 C-2 C-1

4200'

D-6 D-5 D-4 D-3 D-2 D-1

E-6 E-5 E-4 E-3 E-2 E-1

F-6 F-5 F-4 F-3 F-2 F-1

150'

G-6 G-5 G-4 G-3 G-2 G-1

H-6 H-5 H-4 H-3 H-2 H-1

I-6 I-5 I-4 I-3 I-2 I-1

J-6 J-5 J-4 J-3 J-2 J-1

K-6 K-5 K-4 K-3 K-2 K-1

L-6 L-5 L-4 L-3 L-2 L-1

4200'

M-6 M-5 M-4 M-3 M-2 M-1

N-6 N-5 N-4 N-3 N-2 N-1

150'

O-4 O-3 O-2 O-1

300'

A

N09°15'22"E - 2,689.04'

N14°20'05"E 1,547.98'

N14°24'42"E 2,129.85'

N12°39'50"W 1,088.11'

N75°35'18"W 2,025.05'

N14°24'42"E 937.13'

N75°27'44"W - 3,000.01'

S09°15'22"W - 3,916.82'

S14°20'05"W 1,795.72'

S14°24'42"W - 3,998.85'

1350'

Survey 373 East Line

S09°15'22"W - 5,322.10'

S14°20'05"W - 1,856.50'

S14°24'42"W - 4,002.73'

GATE

CORRALS

GATE

GATE

CORRAL

ALL-WEATHER SURFACE ACCESS ROAD TO SH 359

APPROX. EL = 935'

APPROX. EL = 907'

APPROX. EL = 907'

4% TYP.

EXIST GRADE

1

4

TOP OF FINAL COVER

APPROX. EL = 565'

TOP OF WASTE

SECTION A - A

N.T.S.

LEGEND

A-1 LANDFILL CELL DESIGNATION

GROUNDWATER MONITORING ZONE LOCATION

LANDFILL GAS MONITORING ZONE LOCATION

TYP. LANDFILL CELL BOUNDARY

FACILITY BOUNDARY LINE

APPROXIMATE LANDFILL LIMIT

FENCE

PROPERTY LINE AND FENCE

8' HOG FENCE

NOTES:

1. FACILITY AREA APPROXIMATELY 1,110 ACRES.
2. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEJIA ENGINEERING COMPANY (4/9/2010).
3. CONSTRUCT SECURITY FENCE AND GATES ALONG FACILITY BOUNDARY.
4. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.
5. LANDFILL ELEVATIONS ARE PRELIMINARY FOR TOP OF FINAL COVER. SUBTRACT 2.5' FOR TOP OF WASTE ELEVATION.

0 500 1000 2000

SCALE IN FEET
1" = 1000'

N

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER
09/14/11

REV.	DATE	DESCRIPTION
1	8/31/11	ADDED TYP. LANDFILL CELLS, FENCE, GROUNDWATER AND GAS MONITORING ZONES, CORRECTED BOUNDARY DIMENSIONS.

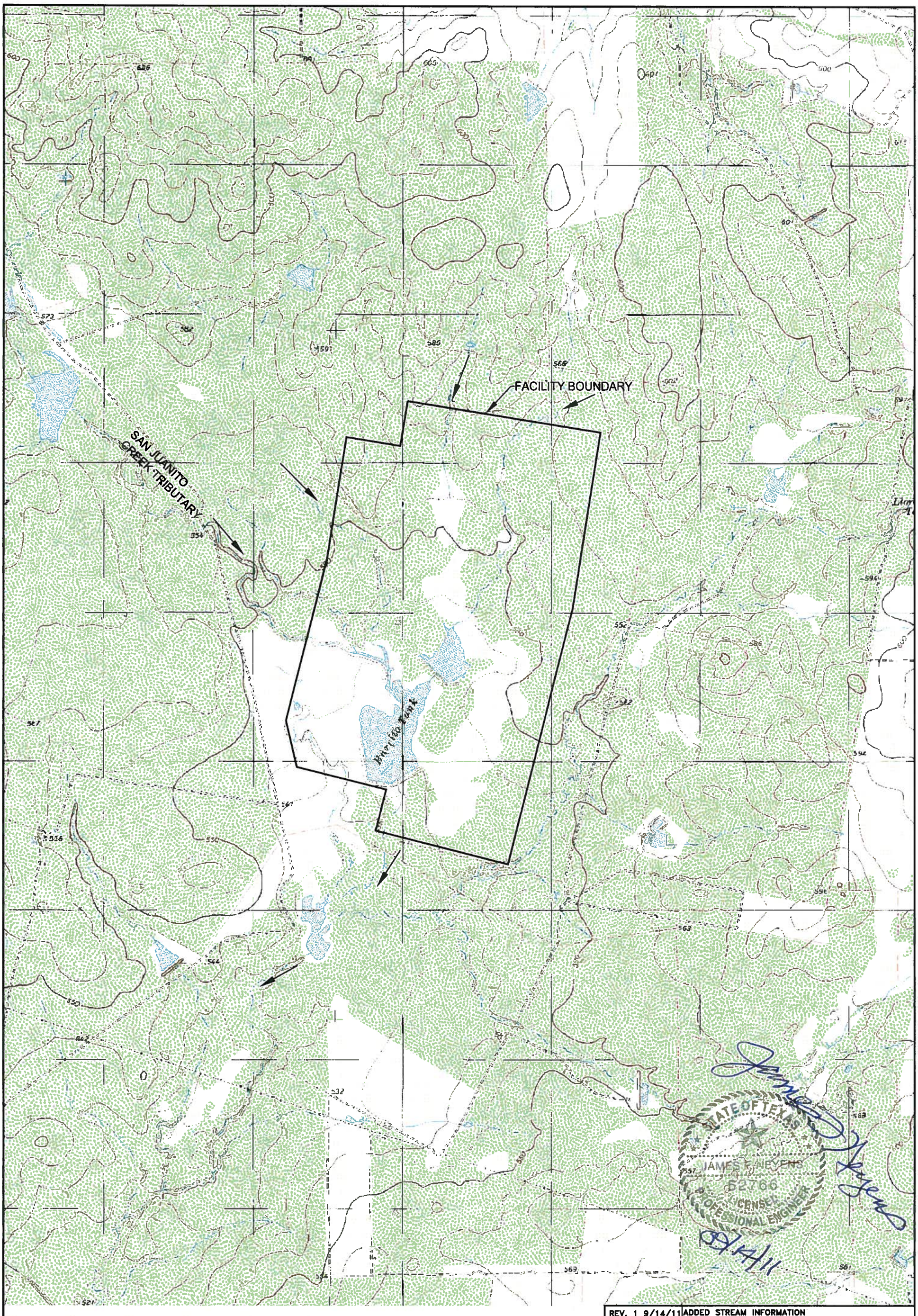
MONITORING SYSTEM & CELL LAYOUT PLAN

PESCADITO ENVIRONMENTAL RESOURCE CENTER
MSW PERMIT NO. 2374
WEBB COUNTY, TEXAS

PROJECT NO.	170401	DWG FILE	170401-MSW-II-3
DRAWN BY.	CL	DATE	02/14/11

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 5
PART II
PAGE XX



NOTES:
1. FLOW DIRECTION INDICATED BY ARROWS.
2. NO NAMED STREAMS SHOWN ON MAP.

SOURCE
U.S.G.S. 7.5-MINUTE SERIES TOPOGRAPHIC MAP, BURRITO TANK (1980), TEXAS.

0 1000 2000 4000
SCALE IN FEET
1" = 2000'

N

REV. 1 9/14/11	ADDED STREAM INFORMATION		

GENERAL TOPOGRAPHIC MAP

PESCADITO ENVIRONMENTAL RESOURCE CENTER
MSW PERMIT NO. 2374
WEBB COUNTY, TEXAS

PROJECT NO.	170401	DWG FILE	170401-MSW-II-6
DRAWN BY.	CL	DATE	02/14/11

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 6
PART II
PAGE XX

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER
8/24/11

0 1000 2000 4000

SCALE IN FEET
1" = 2000'

N

SOURCE

SOURCE: TEXAS ORTHOIMAGERY PROGRAM (TOP), 2008.

REV. 1 8/24/11	APPROX. LANDFILL BOUNDARY AND ONE-MILE RADIUS

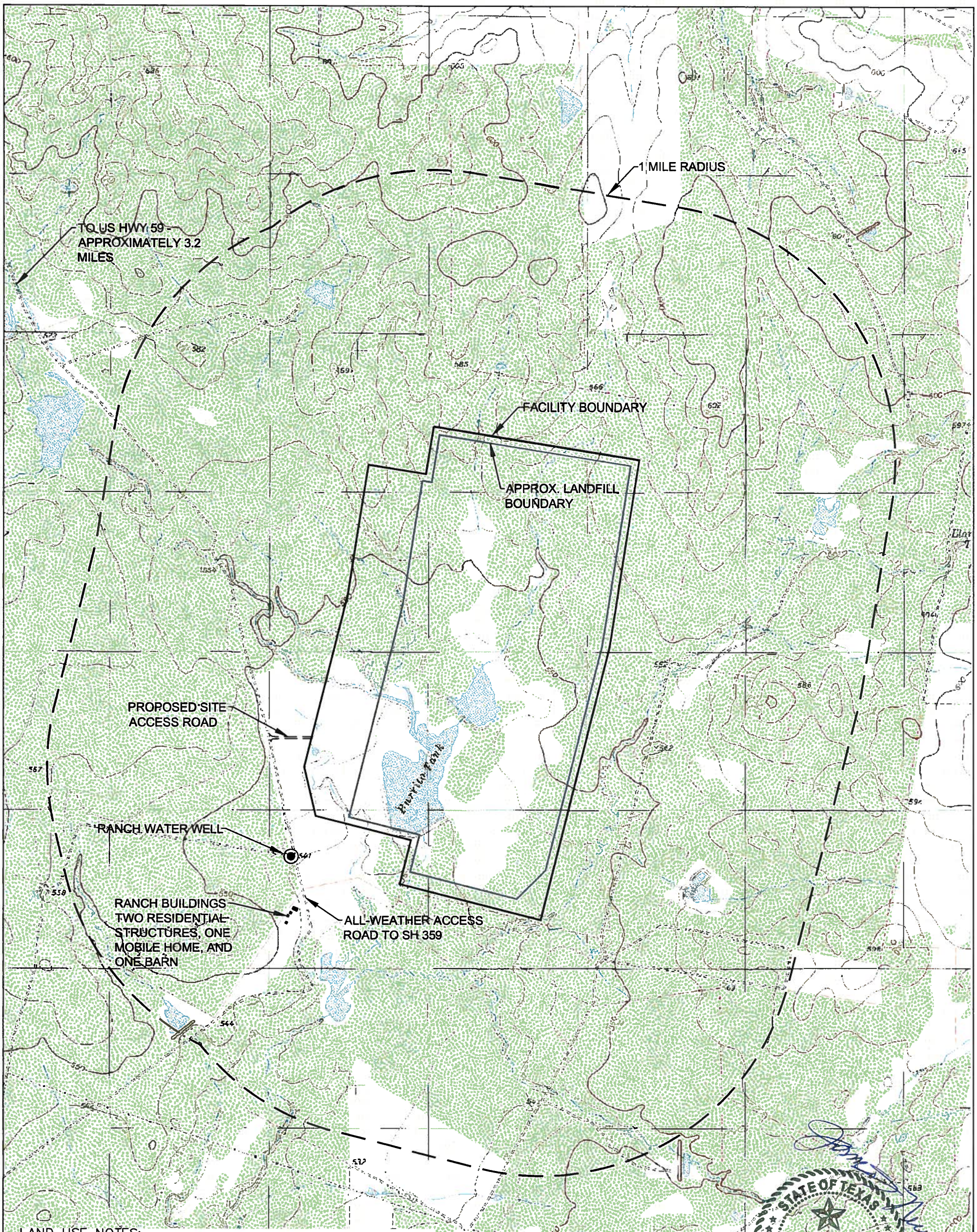
AERIAL PHOTOGRAPH

PESCADITO ENVIRONMENTAL RESOURCE CENTER
MSW PERMIT NO. 2374
WEBB COUNTY, TEXAS

PROJECT NO.	170401	DWG FILE	170401-MSW-II-7
DRAWN BY.	CL	DATE	02/14/11

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 7
PART II
PAGE XX



LAND USE NOTES:

1. 100 PERCENT OF LAND USE AT AND WITHIN 1 MILE OF PROPOSED FACILITY IS CATTLE RANCHING INTERMIXED WITH OIL AND GAS PRODUCTION.
2. TWO RESIDENTIAL STRUCTURES & ONE MOBILE HOME FOR RANCH PERSONNEL ARE LOCATED WITHIN ONE MILE.
3. THERE ARE NO COMMERCIAL ESTABLISHMENTS, SCHOOLS, LICENSED DAY-CARE FACILITIES, CHURCHES, CEMETARIES, OR RECREATIONAL AREAS WITHIN ONE MILE.
4. ALL PONDS OR LAKES ARE MAN-MADE LIVESTOCK WATERING TANKS.
5. EASEMENTS SHOWN ON FIGURE 4, SHEETS 1 & 2, PART I

LEGEND

- WATER WELL (NONE WITHIN 500')
- STRUCTURE OR INHABITABLE BUILDING
- POND OR LAKE

0 1000 2000 4000

SCALE IN FEET
1" = 2000'

N

SOURCE

U.S.G.S. 7.5-MINUTE SERIES TOPOGRAPHIC MAP, BURRITO TANK (1980), TEXAS.

REV. 1 8/24/11	ADDED ONE STRUCTURE

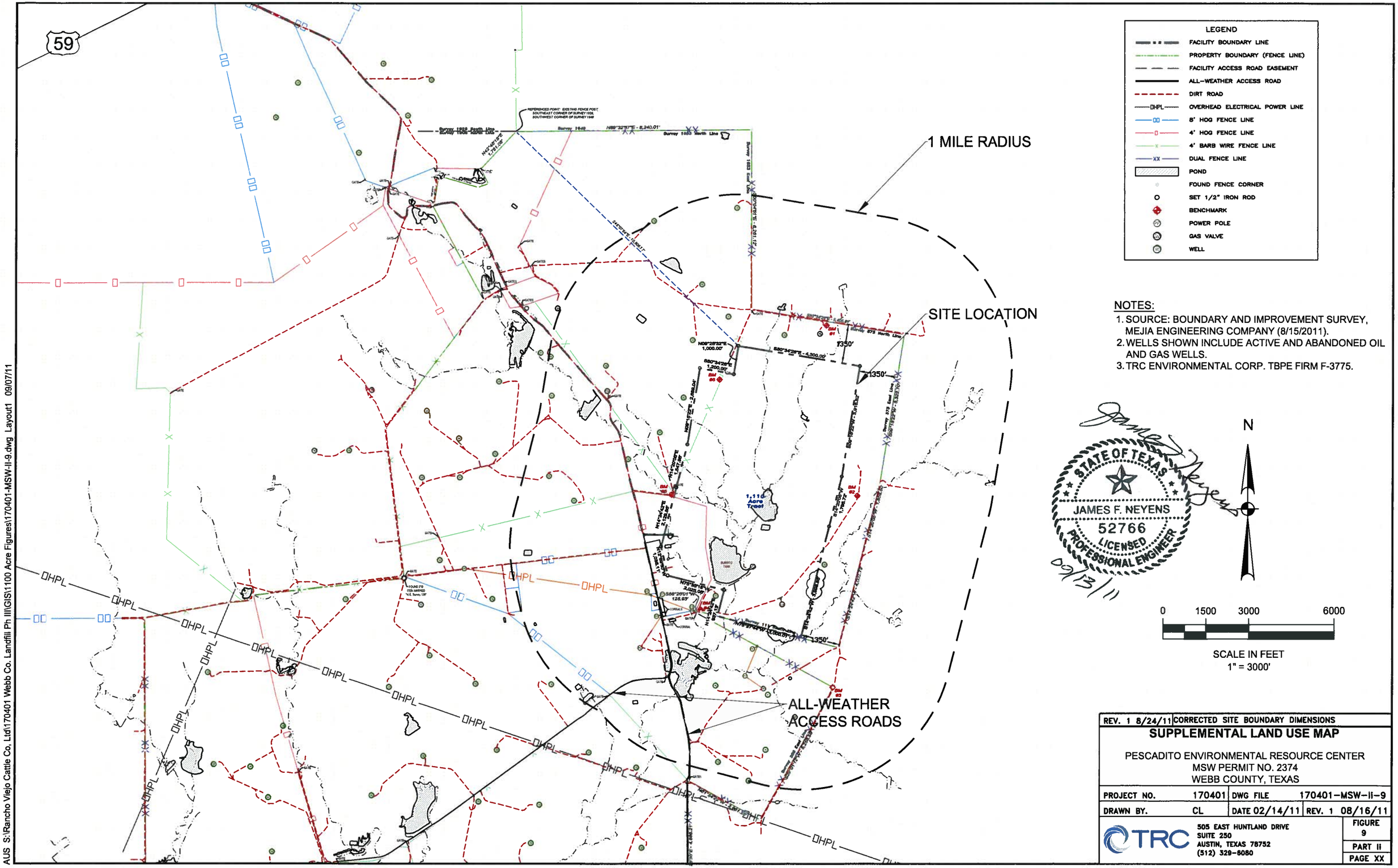
LAND USE MAP

PESCADITO ENVIRONMENTAL RESOURCE CENTER
MSW PERMIT NO. 2374
WEBB COUNTY, TEXAS

PROJECT NO.	170401	DWG FILE	170401-MSW-II-8
DRAWN BY.	CL	DATE	02/14/11

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 8
PART II
PAGE XX



NOTES:

1. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEJIA ENGINEERING COMPANY (8/15/2011).
2. WELLS SHOWN INCLUDE ACTIVE AND ABANDONED OIL AND GAS WELLS.
3. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER
09/13/11

REV. 1 8/24/11	CORRECTED SITE BOUNDARY DIMENSIONS		
SUPPLEMENTAL LAND USE MAP			
PESCADITO ENVIRONMENTAL RESOURCE CENTER MSW PERMIT NO. 2374 WEBB COUNTY, TEXAS			
PROJECT NO.	170401	DWG FILE	170401-MSW-II-9
DRAWN BY.	CL	DATE 02/14/11	REV. 1 08/16/11

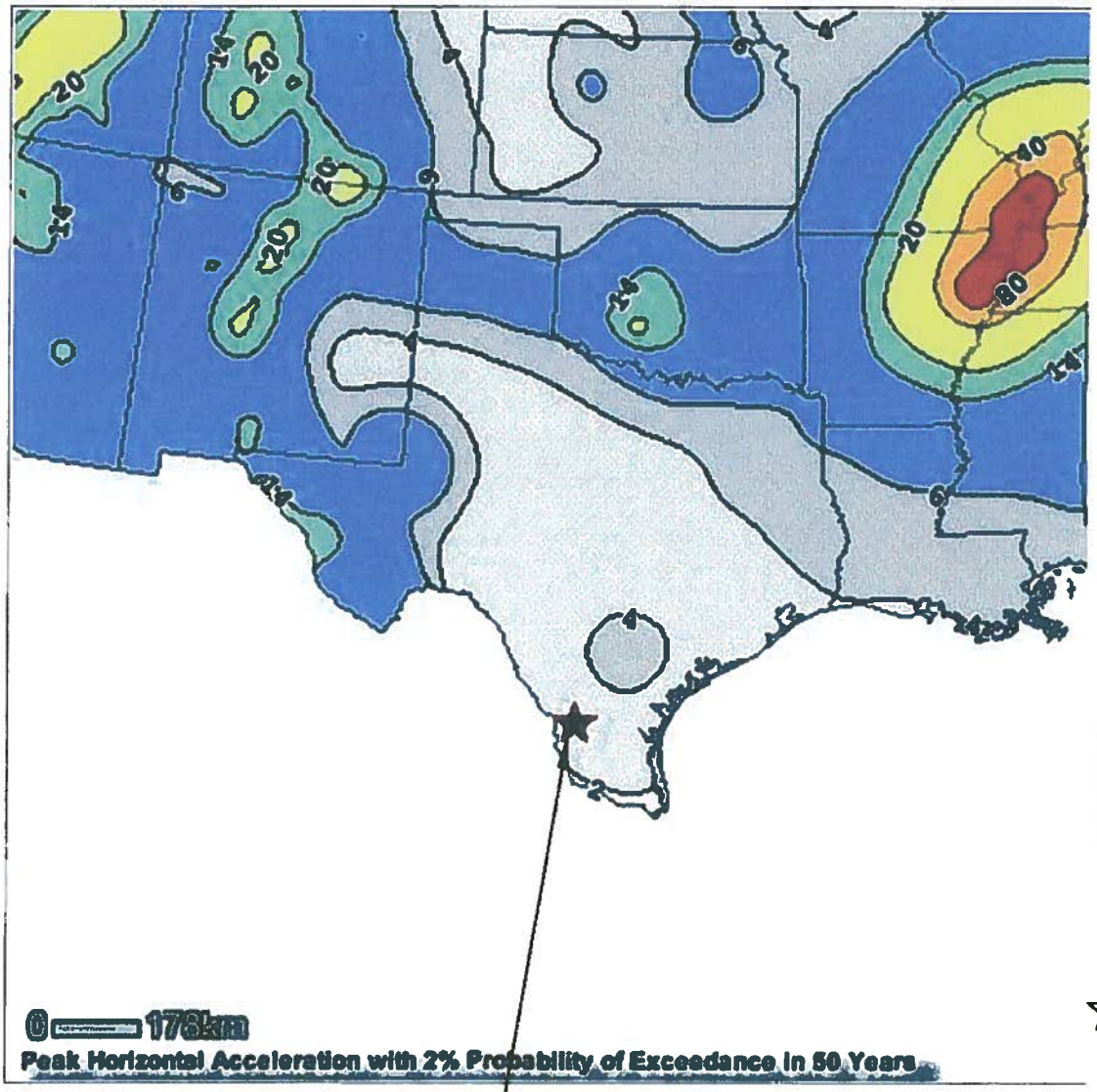
TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 9
PART II
PAGE XX

AUS S:\Rancho Viejo Cattle Co, Ltd\170401 Webb Co. Landfill Ph II\GIS\1100 Acre Figures\170401-MSW-II-9.dwg Layout1 09/07/11

225 112.5 0 225 450

APPROX. SCALE : 1" = 225 MILES



SITE LOCATION

STATE OF TEXAS
H.C. Clark
Geophysics
1777
LICENSED PROFESSIONAL GEOPHYSICIST

9-14-11

SOURCE
USGS EARTHQUAKE HAZARDS PROGRAM, 2008
COTERMINOUS US, INTERACTIVE VERSION

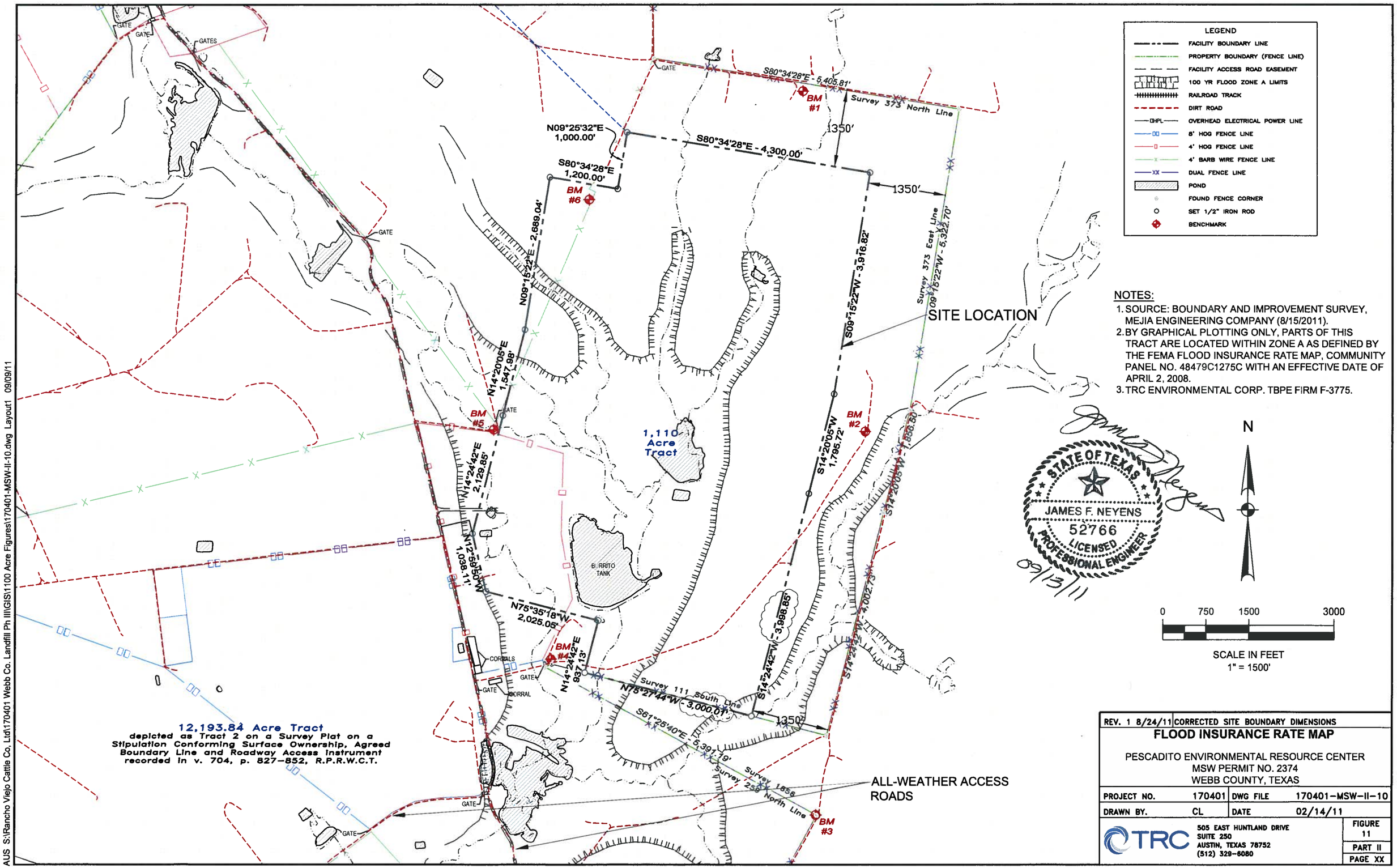
USGS SEISMIC HAZARD MAP

PESCADITO ENVIRONMENTAL RESOURCE CENTER
MSW PERMIT NO. 2374
WEBB COUNTY, TEXAS

PROJECT NO.	182277	DWG FILE	170401-MSW-II-12 (USGS)
DRAWN BY: WCD	DATE 09/14/11	REVISED	

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
(512) 329-6080

FIGURE 10
PART II
PAGE XX



NOTES:

1. SOURCE: BOUNDARY AND IMPROVEMENT SURVEY, MEJIA ENGINEERING COMPANY (8/15/2011).
2. BY GRAPHICAL PLOTTING ONLY, PARTS OF THIS TRACT ARE LOCATED WITHIN ZONE A AS DEFINED BY THE FEMA FLOOD INSURANCE RATE MAP, COMMUNITY PANEL NO. 48479C1275C WITH AN EFFECTIVE DATE OF APRIL 2, 2008.
3. TRC ENVIRONMENTAL CORP. TBPE FIRM F-3775.

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED PROFESSIONAL ENGINEER
9/13/11

REV. 1 8/24/11	CORRECTED SITE BOUNDARY DIMENSIONS		
FLOOD INSURANCE RATE MAP			
PESCADITO ENVIRONMENTAL RESOURCE CENTER MSW PERMIT NO. 2374 WEBB COUNTY, TEXAS			
PROJECT NO.	170401	DWG FILE	170401–MSW–II–10
DRAWN BY.	CL	DATE	02/14/11

TRC
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FIGURE 11
PART II
PAGE XX

AUS S:\Rancho Viejo Cattle Co, Ltd\170401 Webb Co. Landfill Ph III\GIS\1100 Acre Figures\170401-MSW-II-10.dwg Layout1 09/09/11

Attachment A

T&E Species and Wetlands Assessment

505 East Huntland Drive
Suite 250
Austin, TX 78752

512.329.6080 PHONE
512.329.8750 FAX

www.TRCsolutions.com

August 12, 2011

Mr. Allan Strand
Field Supervisor
U.S. Fish & Wildlife Service
c/o TAMU-CC
6300 Ocean Drive, Unit 5837
Corpus Christi, TX 78412-5837

Re: Request for Review – Solid Waste Landfill Application, Webb County, Texas

Dear Mr. Strand:

Rancho Viejo Waste Management, LLC proposes to establish a solid waste management facility on an 1,110-acre tract of land located approximately 20 miles east of Laredo in Webb County, Texas. The proposed Pescadito Environmental Resource Center (PERC) would be located entirely within the 12,000-acre Yugo ranch. PERC would be a comprehensive waste management facility that would provide municipal and industrial solid waste landfill disposal, processing of recyclable materials to extract reusable commodities, processing of liquid wastes from grease and grit traps, and disposal of liquid waste from the oilfield in an injection well. TRC Environmental Corporation (TRC) has been contracted to provide environmental, engineering and permitting services for the proposed landfill.

Please find enclosed the Biological Evaluation that has been prepared to address potential impacts to threatened and endangered species. Five federally listed threatened or endangered species potentially occur in Webb County (USFWS, 2011). These include the jaguarundi (*Herpailurus yaguarondi*), ocelot (*Leopardus pardalis*), least tern (*Sternula antillarum*), ashy dogweed (*Thymophylla tephroleuca*) and Johnston's frankenia (*Frankenia johnstonii*).

A field reconnaissance survey was conducted by TRC on November 2 and 3, 2009, to assess habitat suitability for threatened and endangered species in the project area. The majority of the project area consists of heavily grazed rangeland with few areas of moderately dense scrub-shrub. No federally listed threatened or endangered species were observed during the field survey. Potential habitat for ashy dogweed and Johnston's frankenia was identified during this survey. TRC recommended a species-specific presence/absence survey of areas with suitable soils for both ashy dogweed and Johnston's frankenia.

TRC biologists, Ms. Gena Janssen and Mr. Barrett Clark, conducted a presence/absence survey for ashy dogweed and Johnston's frankenia at the project area from March 29 to 31, 2011. No ashy dogweed or Johnston's frankenia were identified during the survey. The full survey report is enclosed for your review.

In addition to the presence/absence survey of endangered plant species, a wetland delineation survey was conducted for the project area from April 18 to 21, 2011 (enclosed). During both the presence/absence survey and the wetland delineation survey, no federally listed species were observed.

According to Title 30, Chapter 330.61(n) of the Texas Administrative Code, the construction and operation of a solid waste disposal facility "*...shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or cause or contribute to the taking of any endangered or threatened species.*" Based on the marginal to poor habitat for ocelot, jaguarundi and least tern as well as the confirmed absence of ashy dogweed and Johnston's frankenia, TRC has determined that the proposed landfill would not result in the destruction or adverse modification of critical habitat or cause or contribute to the taking of any federally listed threatened or endangered species.

TRC respectfully requests your review and comment regarding this proposed project. In order to ensure a timely submittal to the TCEQ, comments are requested by **September 12, 2011**. If you have any questions or concerns, please contact Adrienne Boer or me at (512) 329-6080 or by email at dblackburn@trcsolutions.com. Thank you for your timely assistance in this matter.

Sincerely,

Deborah Blackburn
Senior Scientist

Enclosures

TRC

505 East Huntland Drive
Suite 250
Austin, TX 78752

512.329.6080 PHONE
512.329.8750 FAX

www.TRCsolutions.com

August 12, 2011

Wildlife Habitat Assessment Branch
Wildlife Division
Texas Parks and Wildlife Department
4200 Smith School Road
Austin, Texas 78744

Re: Request for Review – Solid Waste Landfill Application, Webb County, Texas

To Whom It May Concern:

Rancho Viejo Waste Management, LLC proposes to establish a solid waste management facility on an 1,110-acre tract of land located approximately 20 miles east of Laredo in Webb County, Texas. The proposed Pescadito Environmental Resource Center (PERC) would be located entirely within the 12,000-acre Yugo ranch. PERC would be a comprehensive waste management facility that would provide municipal and industrial solid waste landfill disposal, processing of recyclable materials to extract reusable commodities, processing of liquid wastes from grease and grit traps, and disposal of liquid waste from the oilfield in an injection well. TRC Environmental Corporation (TRC) has been contracted to provide environmental, engineering and permitting services for the proposed landfill.

Please find enclosed the Biological Evaluation that has been prepared to address potential impacts to threatened and endangered species. Twenty-three state-listed threatened or endangered species potentially occur in Webb County (TPWD, 2011).

A field reconnaissance survey was conducted by TRC on November 2 and 3, 2009, to assess habitat suitability for threatened and endangered species in the project area. The majority of the project area consists of heavily grazed rangeland with few areas of moderately dense scrub-shrub. The state threatened indigo snake was observed during the field survey. Potential habitat for ashy dogweed, Johnston's frankenia, reticulate collared lizard, Texas horned lizard, and Texas tortoise was identified during this survey. TRC recommended a species-specific presence/absence survey of areas with suitable soils for both ashy dogweed and Johnston's frankenia.

TRC biologists, Ms. Gena Janssen and Mr. Barrett Clark, conducted a presence/absence survey for ashy dogweed and Johnston's frankenia at the project area from March 29 to 31, 2011. No ashy dogweed or Johnston's frankenia were identified during the survey. The full survey report is enclosed for your review.

In addition to the presence/absence survey of endangered plant species, a wetland delineation survey was conducted for the project area from April 18 to 21, 2011 (enclosed). During both the presence/absence survey and the wetland delineation survey, no federal or state-listed species were observed.

According to Title 30, Chapter 330.61(n) of the Texas Administrative Code, the construction and operation of a solid waste disposal facility "*...shall not result in the destruction or adverse modification of the critical habitat of endangered or threatened species, or cause or contribute to the taking of any endangered or threatened species.*" It is anticipated that indigo snake, reticulate collared lizard, Texas tortoise and Texas horned lizard, if present, would move to adjacent, undisturbed areas during construction and operation of the landfill. TRC has determined that the proposed landfill would not result in the destruction or adverse modification of critical habitat or cause or contribute to the taking of any state-listed threatened or endangered species.

TRC respectfully requests your review and comment regarding this proposed project. In order to ensure a timely submittal to the TCEQ, comments are requested by **September 12, 2011**. If you have any questions or concerns, please contact Adrienne Boer or me at (512) 329-6080 or by email at dblackburn@trcsolutions.com. Thank you for your timely assistance in this matter.

Sincerely,

Deborah Blackburn
Senior Scientist

Enclosures

TRC

BIOLOGICAL EVALUATION FOR PESCADITO ENVIRONMENTAL RESOURCE CENTER, WEBB COUNTY, TEXAS

Prepared For: Rancho Viejo Waste Management, LLC
Webb County, Texas

Prepared By: TRC Environmental Corporation
Austin, Texas

TRC

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BIOLOGICAL EVALUATION FOR PESCADITO ENVIRONMENTAL RESOURCE CENTER, WEBB COUNTY, TEXAS

Submitted By:
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August 2011

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1.0 INTRODUCTION

Rancho Viejo Waste Management, LLC owns a 1,110-acre tract of land (site) about 20 miles east of Laredo in Webb County, Texas and proposes to establish a solid waste management facility on this site. The proposed facility would be known as Pescadito Environmental Resource Center (PERC). The site is ideally located for such a facility because of the favorable soil and geological conditions, its isolation from usable groundwater, absence of neighbors or potentially conflicting land uses, and transportation access. The site is located entirely within a ranch of about 12,000 acres that is owned by Rancho Viejo Cattle Company, Ltd and is known as Yugo Ranch. This ranch has been family-owned for generations, and has been used for cattle ranching and oil and gas production for many years. The owners of Yugo Ranch support the development of PERC and propose to undertake solid waste management and landfill disposal as the next stage in land use at the site.

A field reconnaissance survey was conducted by TRC Environmental Corporation (TRC) on November 2 and 3, 2009 to identify areas that would need further wetland delineations and to assess habitat suitability for threatened and endangered (T&E) species in the project area. The field reconnaissance was used to determine general vegetation and soil types present in the study area.

Based on the results of the field reconnaissance survey, a presence/absence survey for ashy dogweed (*Thymophylla tephroleuca*) and Johnston's frankenia (*Frankenia johnstonii*) was conducted for the project area from March 29 to 31, 2011 (Appendix A). In addition, a wetland delineation survey was conducted for the project area from April 18 to 21, 2011.

This Biological Evaluation (BE) was prepared in support of the application for a Municipal Solid Waste (MSW) permit to summarize the results of the natural resources field surveys, including wetlands and T&E species habitat evaluations.

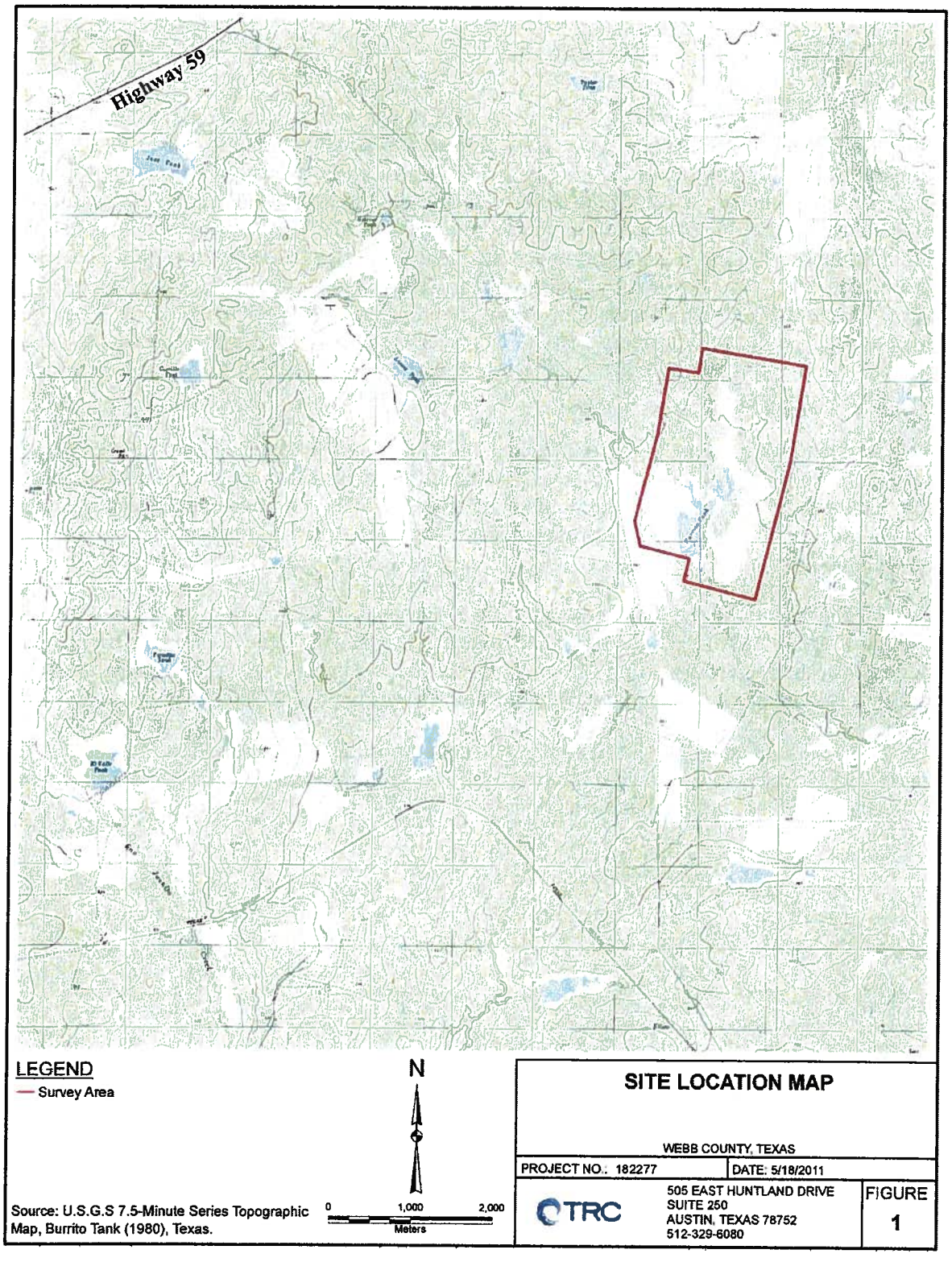

Figure 1. Project Location Map – Webb County.

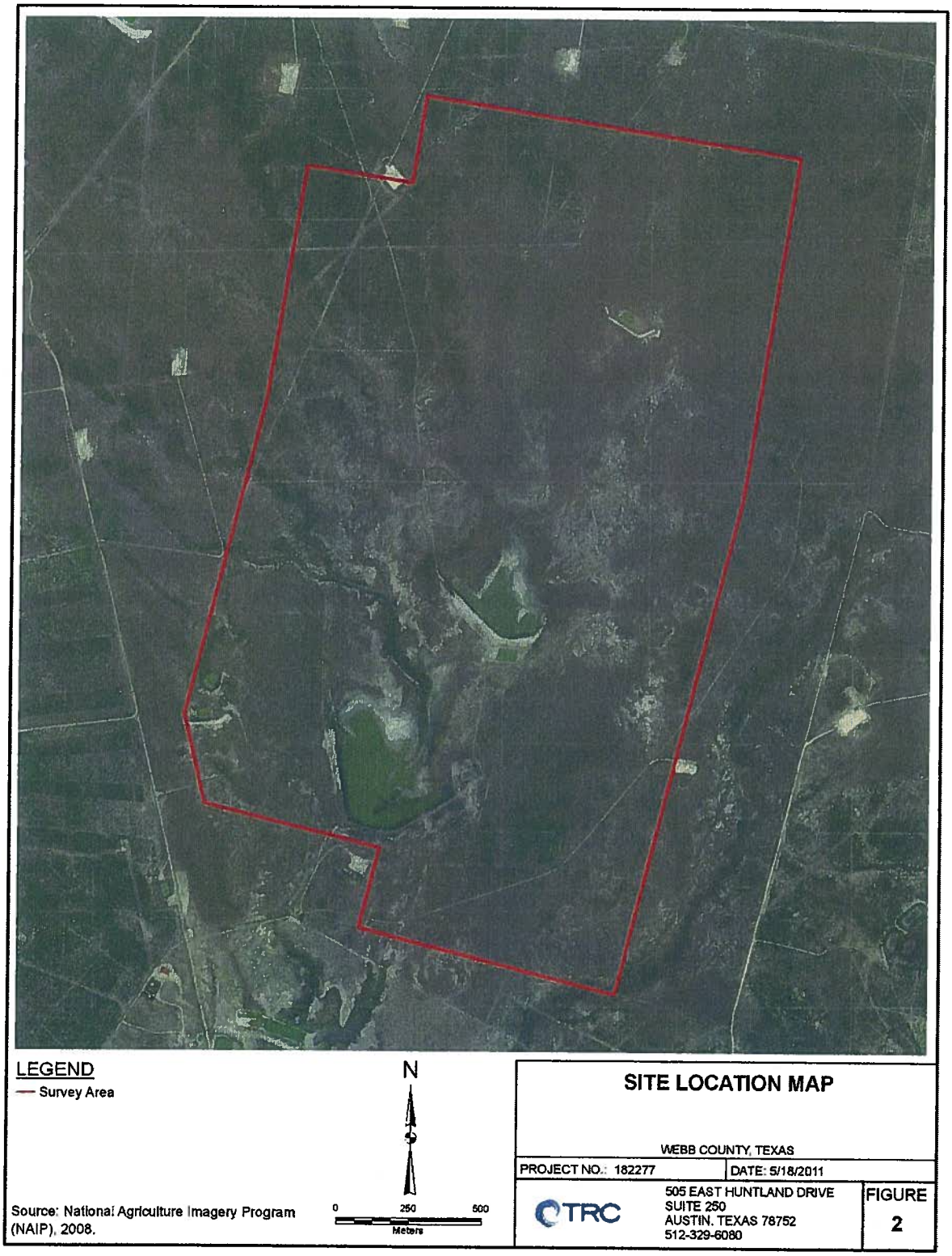

Figure 2. Survey Area Map.

2.0 PROJECT DESCRIPTION

PERC would be a comprehensive waste management facility that would provide municipal and industrial solid waste landfill disposal, processing of recyclable materials to extract reusable commodities, processing of liquid wastes from grease and grit traps, and disposal of liquid waste from the oilfield in an injection well. The largest part of the site would be devoted to a landfill of up to approximately 900 acres. Current estimates put the potential landfill volume at about 450 million cubic yards, with a potential waste disposal capacity of about 335 million tons. The actual capacity of the PERC landfill would be determined by its final design and permit, when issued.

The landfill would be designed and permitted as a Type I MSW landfill that would accept essentially all categories of MSW and Class 2 and 3 industrial solid wastes, and certain types of Class 1 non-hazardous wastes. The landfill would be designed for recirculation of leachate and for recovery of landfill gas for beneficial use. Because the site area already contains many natural gas wells, it is expected that landfill gas would be processed and/or scrubbed as it is generated to produce gas of suitable quality, and then metered and introduced into the nearby existing gas gathering system. Other facilities planned for the site include a material recovery facility (clean MRF) to process co-mingled recyclables, such as those collected in single-stream curbside collection programs that have become popular in many cities in the U.S. The clean MRF would process these recyclable materials to separate them into various commodities for sale. Potentially, a MRF for electronic waste (e-waste) may also be established at the site.

3.0 VEGETATION

3.1 REGIONAL VEGETATION

The site is located within the Texas-Tamaulipan Thornscurb component of the South Texas Plains Ecological Region of Texas (Griffith & Omernik, 2009). Comprised of mostly gently rolling or irregular plains, the region is cut by arroyos and streams, and covered with low-growing vegetation. Overgrazing, fire suppression and droughts have contributed to the spread of brush and the decrease of grasses. Soils are varied and complex, highly alkaline to slightly acidic, ranging from deep sands to clays and clay loams. Caliche outcroppings and gravel ridges are common. The vegetation is dominated by drought-tolerant, mostly small leaved, and often thorn-laden small trees and shrubs, especially legumes. The most dominant woody species is honey mesquite (*Prosopis glandulosa*). Where conditions are suitable, there is a dense understory of smaller trees and shrubs such as Texas persimmon (*Diospyros texana*), lotebush (*Ziziphus obtusifolia*), kidneywood (*Eysenhardtia* sp.), paloverde (*Parkinsonia texana*), anacahuita (*Cordia boissieri*), and various species of cacti. Xerophytic brush species, such as blackbrush (*Acacia rigidula*), and guajillo (*Acacia berlandieri*) are typical on the rocky, gravelly ridges and uplands. Mid and short grasses are common, including cane bluestem (*Bothriochloa barbinodis*), silver bluestem (*Bothriochloa laguroides*), sideoats grama (*Bouteloua curtipendula*), pink pappusgrass (*Pappophorum bicolor*), bristlegrass (*Setaria* sp.), lovegrasses (*Eragrostis* sp.), and tobosa (*Pleuraphis mutica*) (Gould, 1975).

3.2 VEGETATION WITHIN THE PROJECT AREA

Vegetation communities within the project area were evaluated during the November 2009 field reconnaissance survey, the March 2011 wetlands delineation survey, and the April 2011 presence/absence survey. The majority of land within and around the project area consists of rangeland. Overall range conditions of the project area were extremely dry from drought and severely overgrazed, with some areas mechanically altered by root-plowing or similar clearing methods in the past. Severe overgrazing was observed throughout nearly all of the project survey area, making identification of some vegetation (e.g., herbaceous species) impossible. Soil compaction, likely a result of the presence of cattle, was also observed in many areas. Large areas of bare ground were present, including notably absent herbaceous cover across much of the project area. Many areas within the project area have been or currently are being used for oil and gas activities. A photographic log of the project area is located in Appendix B.

Vegetation classifications for the project area are adapted from Diamond (1993) and the 1996 National Vegetation Classification System used by the U.S. Fish and Wildlife Service (USFWS) and Texas Parks and Wildlife Department (TPWD). Additional information was provided by the vegetation inventories of Texas by Correll and Johnston (1979) and Taylor et al. (1994). Based on literature review and information acquired during field surveys, woodland/thornscrub, wetland, and riparian vegetation communities were identified within the project area. Other areas such as open water and developed land were identified within the project area.

3.2.1 Woodland/Thornscrub Associations

The woodland/thornscrub communities occur over well- to moderately well drained soils. Most of these communities are highly disturbed, severely overgrazed, and altered as a result of root-plowing or similar clearance methods in the past. Portions of the woodland/thornscrub communities were relatively undisturbed and consisted of dense, woody vegetation, although most of the herbaceous vegetation within these areas has been disturbed from overgrazing; these areas are located within the Aguilares fine sandy loam soil map unit. Vegetation density was variable across the woodland/thornscrub communities. The dominant landscape feature in many areas consisted of bare ground while some areas exhibited higher vegetation density, such as along drainages and swales.

Observed woody species within the Aguilares fine sandy loam woodland/thornscrub communities include honey mesquite, dwarf screw-bean mesquite (*Prosopis reptans*), common goldenweed (*Isocoma coronopifolia*), knife-leaf condalia (*Condalia spathulata*), desert yaupon (*Schaefferia cuneifolia*), guayacan (*Guaiacum angustifolium*), allthorn (*Koeberlinia spinosa*), lotebush, oreja de perro (*Tiquilia canescens*), blackbrush, whitebrush (*Aloysia gratissima*), saladillo (*Varilla texana*), coma (*Sideroxylon celastrinum*), creosote (*Larrea tridentata*), Tulipan del monte (*Hibiscus martianus*), goat-bush (*Castela texana*), orange zexmenia (*Wedelia texana*), paloverde, guajillo, coppery false fanpetals (*Billieturnera helleri*), leather stem (*Jatropha dioica*), and popote (*Ephedra antisyphilitica*).

Observed cacti species included Texas prickly pear (*Opuntia engelmannii*), tasajillo (*Opuntia leptocaulis*), dog cholla (*Opuntia schottii*), pitaya (*Echinocereus enneacanthus*), rat-tail cactus (*Wilcoxia poselgeri*), horse crippler (*Echinocactus texensis*), nipple cactus (*Mammillaria heyderi*), Berlandier's alicoche (*Echinocereus berlandieri*), Fitch's hedgehog cactus (*Echinocereus reichenbachii var. fitchii*), and root cactus (*Ancistrocactus scheeri*). Observed herbaceous species within the Aguilares fine sandy loam woodland/thronscrub communities include sueada (*Sueada* sp.), Dahlberg daisy (*Thymophylla tenuiloba*), and buffelgrass (*Pennisetum ciliare*).

The disturbed woodland/thornscrub communities located across the remaining areas of the project area were dominated by honey mesquite, Texas prickly pear, and saladillo, species that typically dominate areas that have been root-plowed. Other observed woody species included, dwarf screw-bean mesquite, blackbrush, lotebush, common goldenweed, goat-bush, coppery false fanpetals, desert yaupon, guayacan, allthorn, white brush, knife-leaf condalia, leather stem, sueada, rough agave (*Agave scabra*), snake-eyes (*Phaulothamnus spinescens*), twisted acacia (*Acacia schaffneri*), Texas broomweed (*Gutierrezia texana*), palma pita (*Yucca treculeana*), and sea ox-eye daisy (*Borrichia frutescens*). Other observed cacti species included Texas prickly pear, tasajillo, pitaya, Fitch's hedgehog cactus, horse crippler, nipple cactus, longmamma nipple cactus (*Mammillaria sphaerica*), and miniature barrel cactus (*Thelocactus setispinus*).

3.2.2 Riparian and Wetland Vegetation Associations

TRC conducted a wetland delineation on April 18 through 21, 2011 to determine the jurisdictional status and location of wetlands within the project area. Wetlands and waterbodies within the project area were identified and characterized in the Waters of the U.S. Delineation Report (Appendix C). Figures presenting wetlands and waterbodies located within the project area are included in the Waters of the U.S. Delineation Report.

The wetland delineation was conducted by qualified TRC wetland scientists within the project area in April 2011, using methods described in the U.S. Army Corps of Engineers (USACE) *Wetlands Delineation Manual* (USACE and Environmental Laboratory, 1987). Methods used are consistent with the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region* (USACE, 2010). The project spatial boundaries were confirmed by aerial photograph interpretation and initial site reconnaissance. The survey area was then examined for the presence of atypical situations via site reconnaissance to identify any recent and sufficient natural or human-induced alteration that may have significantly changed the area vegetation, soils, and/or hydrology.

Wetlands within the project area can be classified into two systems: palustrine and riverine. Palustrine systems are all nontidal wetlands dominated by trees, shrubs, and other vegetation. Small palustrine systems associated with low-lying areas, including former levee borrow sites, exist in the survey area. Riverine systems are all wetlands and deepwater habitats within a river channel. Small riverine systems associated with ephemeral streams exist in the survey area.

Waterbodies within the survey area are primarily associated with impounded or excavated stock ponds of various sizes and the small riverine systems within channels along ephemeral streams. Some of these riverine systems are associated with riparian vegetation, which is restricted to an area approximately 10 to 15 feet beyond the ordinary high water mark. Most other ephemeral streams support upland vegetation.

3.2.3 Ephemeral Streams

Riparian vegetation within the survey area is associated primarily with ephemeral streams and includes native and non-native woody and herbaceous vegetation. Common riparian species included retama (*Parkinsonia aculeata*), twisted acacia, saltcedar (*Tamarix ramosissima*), honey mesquite, Mexican devil-weed (*Aster spinosus*), Texas prickly pear, rattlebox (*Sesbania drummondii*), smallhead sneezeweed (*Helenium microcephalum*), and gulf cordgrass (*Spartina spartinae*). The ephemeral streams that flow into the two, large, centrally located stock tanks are bounded by constructed levees, which enhance flow into the stock tanks.

3.2.4 Emergent Wetland

One palustrine, emergent wetland is situated between the two, large, centrally located stock tanks and is encircled by a scrub-shrub wetland. The palustrine, emergent wetland is dominated by herbaceous vegetation including Bermudagrass (*Cynodon dactylon*), smallhead sneezeweed, salt heliotrope (*Heliotropium curassavicum*), hierba del sapo (*Eringium heterophyllum*), and Plains coreopsis (*Coreopsis tinctoria*). Stunted, woody species including saltcedar, Mexican devil-

weed, rattlebox, and Carolina wolfberry (*Lycium carolinianum*) are scattered in some areas of the wetland.

3.2.5 Scrub-Shrub Wetland

Seven palustrine, scrub-shrub wetlands are located within the project survey area. These wetlands are dominated by woody vegetation including retama, twisted acacia, saltcedar, Mexican devil-weed, sea ox-eye daisy, and rattlebox. Observed herbaceous vegetation includes smallhead sneezeweed, gulf cordgrass, and Bermudagrass. Carolina wolfberry and occasionally gulf cordgrass typically dominated the broad boundaries of the wetlands and often extended from within the limits of the wetlands into adjacent upland habitats.

3.2.6 Open Water

Waterbodies within the project area are associated with constructed stock tanks for cattle. Nine stock tanks were identified on the project area. Numerous erosional gullies are also located throughout the project survey area and are primarily a result of construction of the stock tanks. Species recorded near the stock tanks, upland swales, and other low lying features within uplands included smallhead sneezeweed, Plains coreopsis, bearded dalea (*Dalea pogonanthera*), Carolina wolfberry, retama, and Gregg keelpod (*Synthlipsis greggii*). Observed herbaceous species included jicamilla (*Jatropha cathartica*), bitterweed (*Hymenoxys odorata*), whorled dropseed (*Sporobolus pyramidatus*), red grama (*Bouteloua trifida*), and buffelgrass.

4.0 WILDLIFE

4.1 REGIONAL WILDLIFE

Common wildlife species in the region include whitetail deer, turkey, javelina, bobwhite quail, scaled quail, white-winged dove, mourning dove, cottontail rabbit, jackrabbit, various waterfowl species, and many species of nongame birds. The region also provides important wintering habitat for thousands of migratory birds including many species of passerines and raptors. In addition, a number of unique and rare animals occur in the region. Many of the terrestrial wildlife species in the project area are limited in their distribution either partially or entirely to the Tamaulipan Biotic Province.

4.2 FEDERALLY LISTED THREATENED AND ENDANGERED SPECIES

The potential for T&E species habitat within the project area was evaluated based on a November 2009 field reconnaissance survey conducted by TRC, as well as information and data obtained on habitat requirements of T&E species potentially occurring in the area. Sources of information included T&E species lists published by natural resource agencies and scientific literature.

The Texas Natural Diversity Database (TxNDD), which is maintained by TPWD, was reviewed in order to assess the potential for federal T&E species to occur within the vicinity of the project area. Data from the TxNDD do not provide a definitive statement as to the presence, absence, or condition of special status species, natural communities, or other significant features within a project area. The TxNDD database was accessed to obtain a report detailing the Elements of Occurrence for listed species within the Burrito Tank Quadrangle and all adjoining quadrangles. There were two occurrence records for the federally listed Johnston's frankenia approximately 13 miles west and northwest of the project area.

Based on the results of the field reconnaissance survey, a presence/absence survey for ashy dogweed and Johnston's frankenia was conducted for the project area from March 29 to 31, 2011. No federally listed T&E species were observed during the March and April 2011 surveys.

4.2.1 Status and Life History of Potentially Impacted Federally Listed Species

Five federally listed threatened or endangered species potentially occur in Webb County (USFWS, 2011). These include the jaguarundi (*Herpailurus yaguarondi*), ocelot (*Leopardus pardalis*), least tern (*Sternula antillarum*), ashy dogweed and Johnston's frankenia.

No federally listed T&E species were observed during the November 2009, March 2011 or April 2011 surveys. Brief natural histories and habitat requirements are provided in Table 1 for federally listed species potentially occurring within the project area.

Table 1: Federally Listed Threatened and Endangered Species with Potential to Occur in Webb County

Species Common Name	Scientific Name	USFWS[1]	Preferred Habitat in South Texas
WILDLIFE			
Least tern	*Sternula antillarum*	LE	nests along sand and gravel bars within braided streams, rivers; also know to nest on man-made structures (inland beaches, wastewater treatment plants, gravel mines, etc); eats small fish and crustaceans, when breeding forages within a few hundred feet of colony
Gulf Coast jaguarundi	*Herpailurus yagouaroundi cacomitli*	LE	thick brushlands, near water favored; 60 to 75 day gestation, young born sometimes twice per year in March and August, elsewhere the beginning of the rainy season and end of the dry season
Ocelot	*Leopardus pardalis*	LE	dense chaparral thickets; mesquite-thorn scrub and live oak mottes; avoids open areas; breeds and raises young June-November
PLANTS			
Ashy dogweed	*Thymophylla tephroleuca*	LE	Texas endemic; grasslands with scattered shrubs; most sites on sands or sandy loams on level or very gently rolling topography over Eocene strata of the Laredo Formation
Johnston's frankenia	*Frankenia johnstonii*	LE	dwarf shrublands on strongly saline, highly alkaline, calcareous or gypseous, clayey to sandy soils of valley flats or rocky slopes; mapped soils at many sites are of the Catarina and/or Maverick Series, other mapped soils include Copita, Brennan, Zapata, and Montell series; most sites are underlain by Eocene sandstones and clays of the Jackson Group or the Yegua and Laredo formations; a few are underlain by El Pico clay or the Catahoula and Frio formations shrublands

[1] - USFWS: LE = endangered

Source: USFWS 2011

4.2.2 Least Tern

The least tern is a federally and state-listed endangered species in Webb County (TPWD, 2011). The nesting habitat of the least tern includes bare or sparsely vegetated sand, sandbars, islands, and salt flats associated with rivers and reservoirs (TPWD, 2009). They prefer open habitat, and tend to avoid thick vegetation and narrow beaches (TPWD, 2009). Distribution of least terns is generally restricted to the less altered and more natural or little disturbed river segments within major river systems (TPWD, 2009). According to TPWD (2009), channelization, irrigation, and the construction of reservoirs have contributed to the loss of much of the least tern's natural nesting habitat in the major river systems of the Midwest.

4.2.3 Jaguarundi

The jaguarundi is a federally and state-listed endangered species in Webb County (TPWD, 2011). The habitat of the jaguarundi includes dense thornscrub with greater than 95 percent canopy cover (TPWD, n.d.(a)). Habitat loss and fragmentation from agriculture and development, especially along the Rio Grande, are the primary causes of population decline (TPWD, n.d.(a)).

4.2.4 Ocelot

The ocelot is a federally and state-listed endangered species in Webb County (TPWD, 2011). This species is found from the southern tip of Texas to Arizona and northern Mexico into northern Argentina, Paraguay, and Uruguay (TPWD, n.d.(b)). The habitat of the ocelot is similar to that of the jaguarundi and includes dense thornscrub with greater than 95 percent canopy cover (TPWD, n.d.(b)). Habitat loss and fragmentation from agriculture and development, especially along the Rio Grande, are the primary causes of population decline (TPWD, n.d.(b)).

4.2.5 Ashy Dogweed

Ashy dogweed is a federally and state-listed endangered plant species in Webb County (TPWD, 2011). This species is an herbaceous perennial that occupies sandy pockets of Maverick-Catarina, Copita-Zapata and Nueces-Comita soils in Webb and Zapata counties (TPWD, n.d.(c)).

4.2.6 Johnston's Frankenia

Johnston's frankenia is a federally and state-listed endangered species in Webb County (TPWD, 2011). This species is a small shrub that occupies pockets of highly saline soils, particularly in the Maverick soil series (TPWD, n.d.(d)). Populations of Johnston's frankenia are clumped, and tend to occur within openings in the blackbrush dominated brushlands (TPWD, n.d.(d)).

4.2.7 Effects of the Proposed Project on Federally Listed Species

The project area has been significantly disturbed in the past due to ranching and oil and gas activities. There is no designated or proposed critical habitat in the project area. The proposed project would eventually convert approximately 900 acres of the survey area into a landfill over

a period of several decades. Construction activities associated with redirecting surface flow to remove the project area from the existing floodplain would result in conversion of ephemeral streams and wetlands into upland habitat. Anticipated permitting requirements with the USACE would include mitigation for jurisdictional streams and wetlands. Based on the lack of preferred habitat within the project and the degree and frequency of disturbances from ranching and oil and gas activities, it is determined that the proposed project is not likely to adversely affect least tern, jaguarundi, and ocelot. Based on the absence of ashy dogweed and Johnston's frankenia within the project area (Appendix A), it is determined that the proposed project would have no affect on these species.

The following detailed species descriptions outline potential impacts associated with the proposed project to federally listed species potentially present in the project area.

4.2.8 Least Tern

Construction activities associated with redirecting surface flow to remove the project area from the existing floodplain would result in conversion of ephemeral streams and wetlands within the project area to upland habitat. Landfill operations would eventually result in the removal of all current vegetation in the project area. Areas around the existing stock tanks contain suitable soils and lack of vegetation preferred by least terns (TPWD, 2009). However, the project area does not contain the preferred riverine habitat preferred by least terns (TPWD, 2009). The nearest suitable riverine system would be the Rio Grande, located approximately 20 miles to the southwest. In addition, frequent disturbance by cattle around the existing stock tanks is likely to deter least terns from nesting. Anticipated permitting requirements with the USACE would include mitigation for jurisdictional streams and wetlands. Due to the lack of preferred habitat, the proposed project is not likely to adversely affect this species.

4.2.9 Jaguarundi

Landfill operations would eventually result in the removal of all current vegetation in the project area. The majority of the project area is open ranchland. An area in the northwest portion of the site contains denser vegetation however the density and canopy cover is not sufficient to be considered preferred habitat for jaguarundi. Due to the lack of preferred habitat, the proposed project is not likely to adversely affect this species.

4.2.10 Ocelot

Landfill operations would eventually result in the removal of all current vegetation in the project area. The majority of the project area is open ranchland. An area in the northwest portion of the site contains denser vegetation however the density and canopy cover is not sufficient to be considered preferred habitat for ocelot. Due to the lack of preferred habitat, the proposed project is not likely to adversely affect this species.

4.2.11 Ashy Dogweed

Landfill operations would eventually result in the removal of all current vegetation in the project area. A presence/absence survey for ashy dogweed was conducted in all areas with suitable soils

within the project area (Appendix A). No ashy dogweed was observed. Due to the absence of ashy dogweed within the project area, the proposed project would not affect this species.

4.2.12 Johnston's Frankenia

Landfill operations would eventually result in the removal of all current vegetation in the project area. A presence/absence survey for Johnston's frankenia was conducted in all areas with suitable soils within the project area (Appendix A). No Johnston's frankenia was observed. Due to the absence of Johnston's frankenia within the project area, the proposed project would not affect this species.

4.3 STATE-LISTED SPECIES

4.3.1 Potentially Impacted State-Listed Species

Twenty-three state-listed T&E species have potential to occur within Webb County (TPWD 2011). However, the gray wolf and Rio Grande silvery minnow are considered extirpated from Texas. Table 2 presents state-listed species potentially found in Webb County. The TxNDD was reviewed in order to assess the potential for state T&E species to occur within the vicinity of the project area. Data from the TxNDD do not provide a definitive statement as to the presence, absence, or condition of special status species, natural communities, or other significant features within a project area. The TxNDD database was accessed to obtain a report detailing the Elements of Occurrence for listed species within the Burrito Tank Quadrangle and all adjoining quadrangles. There was one occurrence record for the state-listed Texas tortoise approximately 4 miles northeast of the project area.

One state-listed T&E species, indigo snake, was observed during the November 2009 survey. Potential habitat for reticulate collared lizard, Texas horned lizard, and Texas tortoise was also observed during the November 2009 survey. No state-listed T&E species were observed during the March and April 2011 surveys.

4.3.2 Effects of the Proposed Project on State-Listed Species

The project area has been significantly disturbed in the past due to ranching and oil and gas activities. The proposed project would eventually convert approximately 900 acres of the survey area into a landfill over a period of several decades. Construction activities associated with redirecting surface flow to remove the project area from the existing floodplain would result in conversion of ephemeral streams and wetlands into upland habitat. Anticipated permitting requirements with the USACE would include mitigation for jurisdictional streams and wetlands. It is anticipated that indigo snake, reticulate collared lizard, white-nosed coati, Texas tortoise and Texas horned lizard would move to the adjacent, undisturbed areas during construction and operation of the landfill.

Table 2: State-Listed Threatened and Endangered Species with Potential to Occur in Webb County

Species Common Name	Scientific Name	TPWD[1]	Preferred Habitat in South Texas	Preferred Habitat in Project Area?
WILDLIFE				
American peregrine falcon	*Falco peregrinus anatum*	T	In Texas, low-altitude migrant across state from more northern breeding areas in U.S. and Canada; winters along coast and barrier islands and occupies a wide range of habitats during migration, including urban, concentrations along coast and barrier islands; utilizes stopovers at leading landscape edges such as lake shores, coastlines, and barrier islands	Foraging habitat only
Common black-hawk	*Buteogallus anthracinus*	T	Inhabits cottonwood-lined rivers and streams and willow tree groves on the Lower Rio Grande floodplain; formerly bred in south Texas	No
Interior least tern	*Sternula antillarum athalassos*	E	Nests on ground, typically on sites that are sandy and relatively free of vegetation, such as sand and gravel bars in rivers, as well as beaches, spits, and coastal areas	No
Wood stork	*Mycteria Americana*	T	Forages in prairie ponds, flooded pastures or fields, ditches, and other shallow standing water, including saltwater; usually roosts communally in tall snags, sometimes in association with other wading birds; breeds in Mexico and moves into Gulf states in search of mudflats, other wetlands, and even forested areas; formerly nested in Texas	Foraging habitat only
Peregrine Falcon	*Falco peregrinus*	T	both subspecies migrate across the state from more northern breeding areas in US and Canada to winter along coast and farther south; subspecies (F. p. anatum) is also a resident breeder in west Texas; the two subspecies' listing statuses differ, F.p. tundrius is no longer listed in Texas; but because the subspecies are not easily distinguishable at a distance	Foraging habitat only
Blue sucker	*Cycleptus elongates*	T	larger portions of major rivers in Texas; usually in channels and flowing pools with a moderate current; bottom type usually of exposed bedrock, perhaps in combination with hard clay, sand, and gravel; adults winter in deep pools and move upstream in spring to spawn on riffles	No
Rio Grande darter	*Etheostoma graham*	T	Rio Grande and lower Pecos River basins; gravel and rubble riffles of creeks and small rivers; spawns in the winter	No
Rio Grande silvery minnow	*Hybognathus amarus*	E	historically Rio Grande and Pecos River systems and canals; reintroduced in Big Bend area; pools and backwaters of medium to large streams with low or moderate gradient in mud, sand, or gravel bottom; ingests mud and bottom ooze for algae and other organic matter; probably spawns on silt substrates of quiet coves	No

Table 2: State-Listed Threatened and Endangered Species with Potential to Occur in Webb County (continued)

Species Common Name	Scientific Name	TPWD[1]	Preferred Habitat in South Texas	Suitable Habitat in Project Area?
Black bear	*Ursus americanus*	T	bottomland hardwoods and large tracts of inaccessible forested areas; due to field characteristics similar to Louisiana Black Bear (LT, T), treat all east Texas black bears as federal and state listed Threatened	No
Gray wolf	*Canis lupus*	E	extirpated; formerly known throughout the western two-thirds of the state in forests, brushlands, or grasslands	No
Jaguarundi	*Herpailurus yaguarondi*	E	thick brushlands, near water favored; 60 to 75 day gestation, young born sometimes twice per year in March and August, elsewhere the beginning of the rainy season and end of the dry season	No
Ocelot	*Leopardus (=Felis) pardalis*	E	dense chaparral thickets; mesquite-thorn scrub and live oak mottes; avoids open areas; breeds and raises young June-November	No
White-nosed coati	*Nasua narica*	T	woodlands, riparian corridors and canyons; most individuals in Texas probably transients from Mexico; diurnal and crepuscular; very sociable; forages on ground and in trees; omnivorous; may be susceptible to hunting, trapping, and pet trade	Marginal
False spike mussel	*Quadrula mitchelli*	T	possibly extirpated in Texas; probably medium to large rivers; substrates varying from mud through mixtures of sand, gravel and cobble; one study indicated water lilies were present at the site; Rio Grande, Brazos, Colorado, and Guadalupe (historic) river basins	No
Mexican fawnsfoot mussel	*Truncilla cognate*	T	largely unknown; possibly intolerant of impoundment; possibly needs flowing streams and rivers with sand or gravel bottoms based on related species needs; Rio Grande basin	No
Salina mucket	*Potamilus metnecktayi*	T	lotic waters; submerged soft sediment (clay and silt) along river bank; other habitat requirements are poorly understood; Rio Grande Basin	No
Texas Hornshell	*Popenaias popei*	T	both ends of narrow shallow runs over bedrock, in areas where small-grained materials collect in crevices, along river banks, and at the base of boulders; not known from impoundments; Rio Grande Basin and several rivers in Mexico	No
Reticulate collared lizard	*Crotaphytus reticulatus*	T	requires open brush-grasslands; thorn-scrub vegetation, usually on well-drained rolling terrain of shallow gravel, caliche, or sandy soils; often on scattered flat rocks below escarpments or isolated rock outcrops among scattered clumps of prickly pear and mesquite	Yes
Texas horned lizard	*Phrynosoma cornutum*	T	open, arid and semi-arid regions with sparse vegetation, including grass, cactus, scattered brush or scrubby trees; soil may vary in texture from sandy to rocky; burrows into soil	Yes

Table 2: State-Listed Threatened and Endangered Species with Potential to Occur in Webb County (continued)

Species Common Name	*Scientific Name*	TPWD1	Preferred Habitat in South Texas	Suitable Habitat in Project Area?
Texas indigo snake	*Drymarchon melanurus erebennus*	T	Texas south of the Guadalupe River and Balcones Escarpment; thornbush-chaparral woodlands of south Texas, in particular dense riparian corridors; can do well in suburban and irrigated croplands if not molested or indirectly poisoned; requires moist microhabitats, such as rodent burrows, for shelter	Yes
Texas tortoise	*Gopherus berlandieri*	T	open brush with a grass understory is preferred; open grass and bare ground are avoided; when inactive occupies shallow depressions at base of bush or cactus, sometimes in underground burrows or under objects; longevity greater than 50 years; active March-November; breeds April-November	Yes
PLANTS				
Ashy dogweed	*Thymophylla tephroleuca*	E	Texas endemic; grasslands with scattered shrubs; most sites on sands or sandy loams on level or very gently rolling topography over Eocene strata of the Laredo Formation	Yes; Not found during presence/absence survey
Johnston's frankenia	*Frankenia johnstonii*	E	dwarf shrublands on strongly saline, highly alkaline, calcareous or gypseous, clayey to sandy soils of valley flats or rocky slopes; mapped soils at many sites are of the Catarina and/or Maverick Series, other mapped soils include Copita, Brennan, Zapata, and Montell series; most sites are underlain by Eocene sandstones and clays of the Jackson Group or the Yegua and Laredo formations; a few are underlain by El Pico clay or the Catahoula and Frio formations shrublands	Yes; Not found during presence/absence survey

[1] - TPWD: E = endangered, T= threatened Source: TPWD 2011

5.0 REFERENCES

Correll, D.S. & Johnston, M.C. (1979). *Manual of the Vascular Plants of Texas.* Dallas, TX: The University of Texas at Dallas.

Diamond, D.D. (1993). *Classification of the plant communities of Texas.* Series level. Unpublished manuscript, Texas Natural Heritage Program.

Gould, F.W. (1975). *Texas Plants - A Checklist and Ecological Summary.* College Station, TX: Texas Agricultural Experiment Station.

Griffith, G.E. & Omernik, J.M. (2009). *Ecoregions of Texas (EPA).* Retrieved September 8, 2010, from http://www.eoearth.org/article/Ecoregions_of_Texas_(EPA).

Taylor, R.B., J. Rutledge, and J.G. Herrera. (1994). *A Field Guide to Common South Texas Shrubs*. Austin, TX: Texas Parks and Wildlife Press.

Texas Parks and Wildlife Department. (2011). *Annotated County Lists of Rare Species for Webb County.* Retrieved August 6, 2011, from http://gis.tpwd.state.tx.us/TpwEndangeredSpecies/DesktopDefault.aspx.

Texas Parks and Wildlife Department. (2009). *Interior Least Tern, Wildlife Fact Sheet.* Retrieved August 1, 2011, from http://www.tpwd.state.tx.us/huntwild/wild/species/leasttern/.

Texas Parks and Wildlife Department. (n.d.(a)). *Jaguarundi.* Retrieved August 1, 2011, from http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_w7000_0013_jaguarundi.pdf

Texas Parks and Wildlife Department. (n.d.(b)). *Ocelot.* Retrieved August 1, 2011, from http://www.tpwd.state.tx.us/publications/pwdpubs/media/pwd_bk_w7000_0013_ocelot.pdf

Texas Parks and Wildlife Department. (n.d.(c)). *Ashy Dogweed, Wildlife Fact Sheet.* Retrieved August 6, 2011, from http://www.tpwd.state.tx.us/huntwild/wild/species/ashy/.

Texas Parks and Wildlife Department. (n.d.(d)). *Johnston's frankenia, Wildlife Fact Sheet.* Retrieved August 6, 2011, from http://www.tpwd.state.tx.us/huntwild/wild/species/johnston/.

U.S. Army Corps of Engineers. 2010. *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region* (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-1. U.S. Army Engineer Research and Development Center, Vicksburg, MS.

U.S. Army Corps of Engineers. (1987). *Corps of Engineers Wetlands Delineation Manual.* Technical Report Y-87-1. Vicksburg, MS: Environmental Laboratory.

U.S. Fish and Wildlife Service. (2011). *Endangered Species List – Webb County*. Retrieved August 6, 2011, from http://www.fws.gov/southwest/es/EndangeredSpecies/lists/ListSpecies.cfm

APPENDIX A:
PRESENCE/ABSENCE SURVEY REPORT

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Presence/Absence Survey for Johnston's Frankenia and Ashy Dogweed

Pescadito Environmental Resource Center Project

Webb County, Texas

Prepared For: Rancho Viejo Waste Management, LLC
Webb County, Texas

Prepared By: TRC Environmental Corporation
Austin, Texas

August 2011

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Presence/Absence Survey for Johnston's Frankenia and Ashy Dogweed

Pescadito Environmental Resource Center Project

Webb County, Texas

Submitted By:

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Austin, Texas 78752

512.329.6080 (phone)
512.329.8750 (fax)

August 2011

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1.0 INTRODUCTION

TRC Environmental Corporation (TRC) was contracted by Rancho Viejo Waste Management, LLC to obtain environmental clearances and consultations for a proposed 1,110-acre landfill facility near Laredo, Webb County, Texas (Project). A site location map is included as Figure 1. The Project area is located within open ranchland currently stocked with cattle.

There are two federally and state-listed endangered plants that may occur in Webb County (USFWS 2011; TPWD 2011): Johnston's frankenia (*Frankenia johnstonii*) and ashy dogweed (*Thymophylla tephroleuca*). A TRC field reconnaissance survey of the Project area in November 2009 identified potentially suitable habitat for Johnston's frankenia and ashy dogweed. Subsequently, TRC conducted a presence/absence survey for the two protected plant species within the Project survey area. This report describes the results of the presence/absence survey conducted in March 29 to 31, 2011.

2.0 METHODS

In Texas, Johnston's frankenia is typically found on saline or clayey soils having high gypsum content, including Maverick, Catarina, Copita, Montell, and Zapata soils (USFWS 1988). Known populations of ashy dogweed are located on sandy pockets of Maverick-Catarina, Copita-Zapata, and Nueces-Comita soils near the border of Webb and Zapata counties, with the nearest recorded occurrence of this species located approximately 20 miles southwest of the Project area (TXNDD 2011).

A review of the United States Department of Agriculture (USDA) National Resource Conservation Service (NRCS) Web Soil Survey (USDA – NRCS 2011) identified four soil map units within the Project area: Aguilares sandy clay loam (AgB), Montell clay (MnB), Catarina clay (CaB), and Brundage fine sandy loam (Bd; Figure 2). Areas consisting of Montell and Catarina clays would be surveyed for Johnston's frankenia and ashy dogweed. Since one known occurrence of ashy dogweed occurs along the border of Hebbronville soils and Aguilares soils (TxNDD 2011), it was determined that areas consisting of Aguilares sandy clay loam would also be surveyed for ashy dogweed. No known occurrences of either ashy dogweed or Johnston's frankenia exist for Brundage fine sandy loam; therefore, this soil map unit was not included in the survey.

Surveys were performed by two qualified biologists, Gena Janssen and Barrett Clark, along multiple transects within individual soil map units. Transect widths varied based on field conditions (e.g., narrow widths in areas of dense vegetation and wider widths in areas of open to sparse vegetation). Representative plant lists were recorded by soil map unit (with the exception of the Brundage fine sandy loam), and illustrative digital photographs were taken as the landscape or habitats changed.

3.0 RESULTS

Overall range conditions of the Project area were extremely dry from drought and severely overgrazed, with some areas mechanically altered by root-plowing or similar clearing methods in the past. Large areas of bare ground were present, including notably absent herbaceous cover across much of the Project area. The survey results, including observed species of vegetation, are presented by the three high priority soil map unit classifications: Aguilares fine sandy loam, Montell clay, and Catarina clay.

3.1 Aguilares Fine Sandy Loam

Vegetation within the Aguilares fine sandy loam was relatively dense compared to the other soil map units within the Project area. Vegetation within this soil map unit was particularly dense along the northern portion of the Project area. Species diversity was relatively higher within this soil map unit than those of the other soil map units. Ashy dogweed was not observed during the survey. Johnston's frankenia was not expected to be present in this soil type and none were observed. Representative vegetation communities of the Aguilares fine sandy loam soil map units are presented in Photos 1 – 3.

Observed woody species included honey mesquite (*Prosopis glandulosa*), dwarf screw-bean mesquite (*Prosopis reptans*), common goldenweed (*Isocoma coronopifolia*), knife-leaf condalia (*Condalia spathulata*), desert yaupon (*Schaefferia cuneifolia*), guayacan (*Guaiacum angustifolium*), allthorn (*Koeberlinia spinosa*), lotebush (*Ziziphus obtusifolia*), oreja de perro (*Tiquilia canescens*), blackbrush (*Acacia rigidula*), whitebrush (*Aloysia gratissima*), saladillo (*Varilla texana*), coma (*Sideroxylon celastrina*), creosote (*Larrea tridentata*), Tulipan del monte (*Hibiscus martianus*), goat-bush (*Castela texana*), orange zexmenia (*Wedelia texana*), paloverde (*Parkinsonia texana*), guajillo (*Acacia berlandieri*), coppery false fanpetals (*Billieturnera helleri*), leather stem (*Jatropha dioica*), and popote (*Ephedra antisyphilitica*).

Observed herbaceous species included sueada (*Sueada* sp.), Dahlberg daisy (*Thymophylla tenuiloba*), and buffelgrass (*Pennisetum ciliare*). Observed cacti species included Texas prickly pear (*Opuntia engelmannii*), tasajillo (*Opuntia leptocaulis*), dog cholla (*Opuntia schottii*), pitaya (*Echinocereus enneacanthus*), rat-tail cactus (*Wilcoxia poselgeri*), horse crippler (*Echinocactus texensis*), nipple cactus (*Mammillaria heyderi*), Berlandier's alicoche (*Echinocereus berlandieri*), and Fitch's hedgehog cactus (*Echinocereus reichenbachii* var. *fitchii*).

Photo 1. Typical Aguilares fine sandy loam vegetation. Dominant species included honey mesquite and Texas prickly pear.

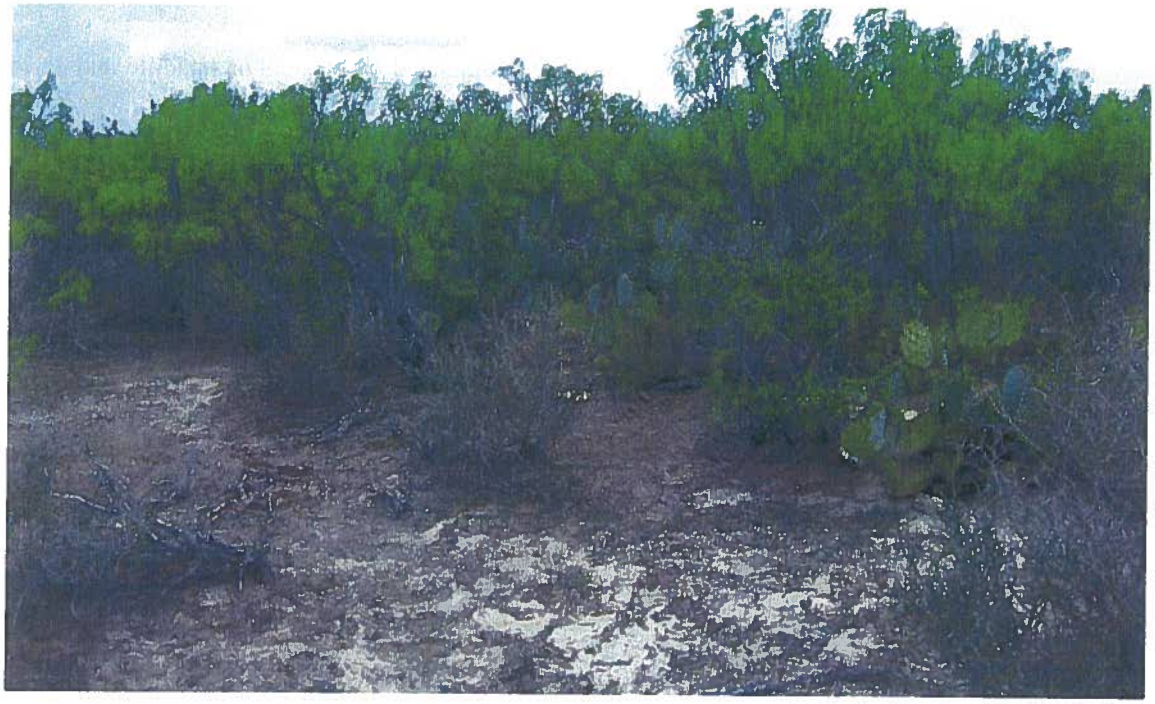

Photo 2. Typical Aguilares fine sandy loam vegetation. A mosaic of bare ground was present throughout this soil map unit.

Photo 3. Typical Aguilares fine sandy loam vegetation. Dense vegetation was present in many areas.

3.2 Montell Clay

Areas of Montell clay within the Project area were dominated by clusters of saladillo and Texas prickly pear, forming a mosaic with large expanses of bare ground and other woody species. Vegetation density was variable across the Montell clay soil map units. The dominant landscape feature in many areas consisted of bare ground while some areas exhibited higher vegetation density, such as along drainages and swales. Johnston's frankenia was not observed during the survey. Ashy dogweed was not expected to be present in this soil type and none were observed. Representative vegetation communities of the Montell clay soil map units are presented in Photos 4 – 6.

Observed woody species included honey mesquite, dwarf screw-bean mesquite, saladillo, blackbrush, lotebush, common goldenweed, goat-bush, coppery false fanpetals, desert yaupon, guayacan, allthorn, white brush, knife-leaf condalia, leather stem, sueada, rough agave (*Agave scabra*), snake-eyes (*Phaulothamnus spinescens*), twisted acacia (*Acacia schaffneri*), Texas broomweed (*Gutierrezia texana*), palma pita (*Yucca treculeana*), and sea ox-eye daisy (*Borrichia frutescens*).

Observed herbaceous species included jicamilla (*Jatropha cathartica*), bitterweed (*Hymenoxys odorata*), whorled dropseed (*Sporobolus pyramidatus*), and buffelgrass. Observed cacti species included Texas prickly pear, tasajillo, pitaya, Fitch's hedgehog cactus, horse crippler, nipple cactus, longmamma nipple cactus (*Mammillaria sphaerica*), and miniature barrel cactus (*Thelocactus setispinus*). Species recorded near the stock ponds included smallhead sneezeweed (*Helenium microcephalum*), Plains coreopsis (*Coreopsis tinctoria*), bearded dalea (*Dalea pogonanthera*), Carolina wolfberry (*Lycium carolinianum*), retama (*Parkinsonia aculeata*), and Gregg keelpod (*Synthlipsis greggii*).

Photo 4. Typical Montell clay vegetation. Many areas consisted of a mosaic of saladillo and Texas prickly pear clusters, bare ground, and clusters of other woody species.

Photo 5. Typical Montell clay vegetation. Some areas exhibited increased vegetation density(background).

Photo 6. Typical Montell clay vegetation. In many areas, bare ground was the dominant landscape feature.

3.3 Catarina Clay

Areas of Catarina clay soil map units within the Project area contained relatively low species diversity and were dominated by honey mesquite, Texas prickly pear, saladillo, and (in the western portion of the Project area) Texas broomweed. Vegetation density was variable across the Catarina clay soil map units and ranged from large areas of bare ground to areas of higher density shrubland. Johnston's frankenia and ashy dogweed were not observed during the survey. Representative vegetation communities of the Catarina clay soil map units are presented in Photos 7 – 10.

Observed woody species included saladillo, honey mesquite, dwarf screw-bean mesquite, goat-bush, guayacan, knife-leaf condalia, common goldenweed, lotebush, snake-eyes, leather stem, jicamilla, palma pita, broomweed, sueada, coppery false fanpetals, Dahlberg daisy, Texas prickly pear, tasajillo, horse crippler, pitaya, Fitch's hedgehog cactus, miniature barrel cactus, nipple cactus, and root cactus (*Ancistrocactus scheeri*). The two identifiable grasses in these areas were whorled dropseed and red grama (*Bouteloua trifida*).

Photo 7. Typical Catarina clay vegetation. In some areas, bare ground was the dominant landscape feature.

Photo 8. Typical Catarina clay vegetation. Severe overgrazing was evident throughout the Project area.

Photo 9. Typical Catarina clay vegetation. Increased vegetation density was located in the southeastern Catarina clay soil map unit.

Photo 10. Typical Catarina clay vegetation. Within the western Catarina clay soil map unit, broomweed was an additional dominant species.

4.0 CONCLUSION

TRC was contracted by Rancho Viejo Waste Management, LLC to conduct a biological survey in order to identify the presence of two federally and state-listed endangered plant species, ashy dogweed and Johnston's frankenia, for the proposed Project. Ashy dogweed and Johnston's frankenia were not observed within any of the high priority soil map units of the Project area during the March 2011 survey. Based on review of background data and the results of the field investigation, qualified biologists from TRC determined that ashy dogweed and Johnston's frankenia are not present within the Project survey area.

5.0 REFERENCES

Poole, J. M., W. R. Carr, D. M Price, and J. R. Singhurst. 2007. Rare Plants of Texas. Texas A & M University Press, College Station, Texas. 640 pp.

Texas Parks and Wildlife Department (TPWD). 2011. *Annotated County List of Rare Species –Webb County*. Retrieved March 14, 2011, from http://gis.tpwd.state.tx.us/TpwEndangeredSpecies/DesktopDefault.aspx.

Texas Natural Diversity Database (TXNDD). 2011. TXNDD Element Occurrence Record Report. Data request received March 16, 2011, from txndd@tpwd.state.tx.us.

USDA – NRCS. 2011. Soil Survey Division. Web Soil Survey. Accessed on March 14, 2011 at: http://websoilsurvey.nrcs.usda.gov/app/.

U.S. Fish and Wildlife Service [USFWS]. (2011). *Endangered Species List – Webb County, Texas.* Retrieved March 14, 2011, from, http://www.fws.gov/southwest/es/EndangeredSpecies/lists/ListSpecies.cfm

USFWS 1988. Johnston's Frankenia (*Frankenia johnstonii*) Recovery Plan. USFWS, Region 2. Albuquerque, New Mexico: J.M. Poole, Texas Natural Heritage Program, TPWD, Austin, Texas. C. McDonald (Ed.).

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FIGURE 1

SITE LOCATION MAP

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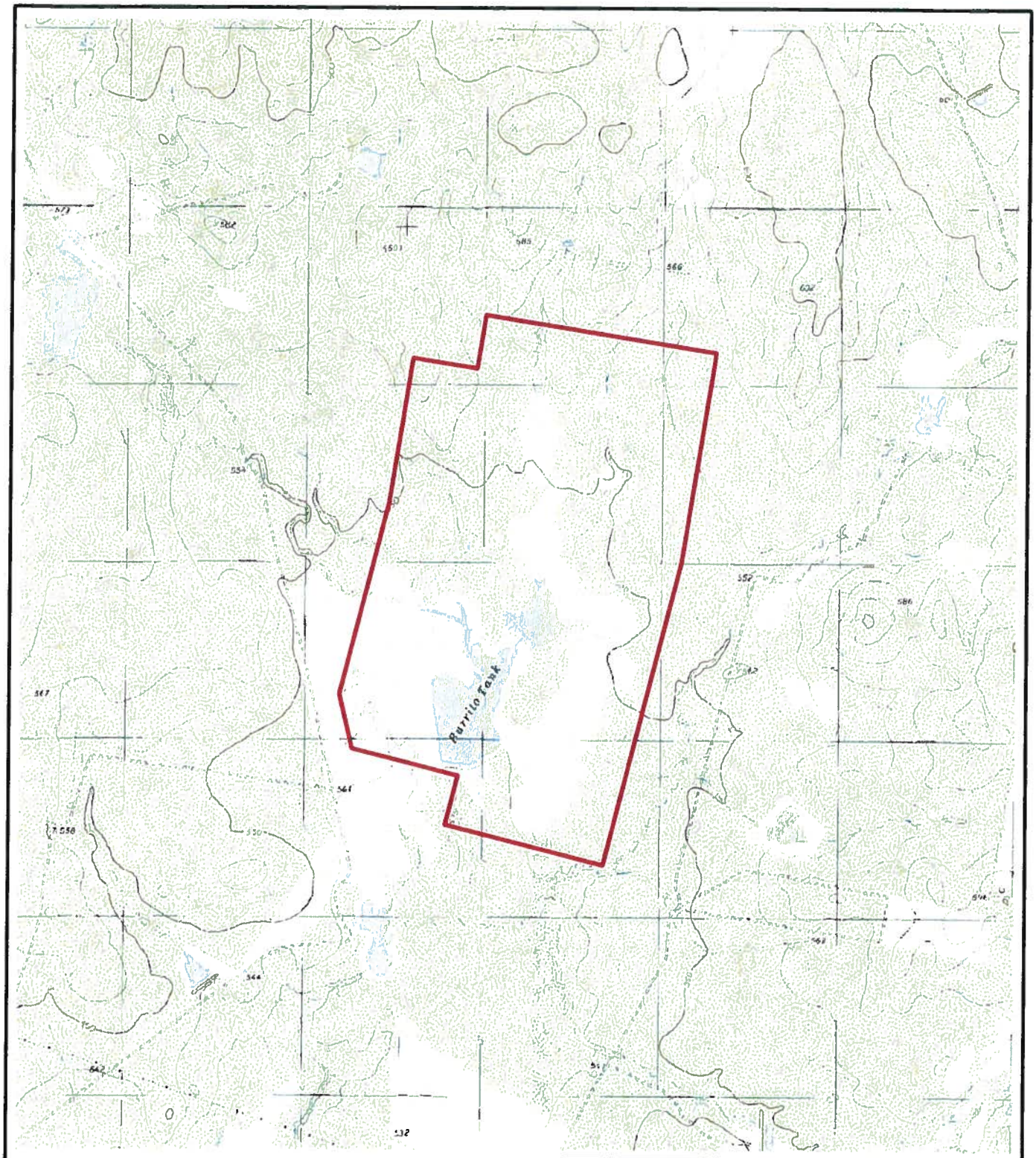

LEGEND

— Survey Area

N

0 1,000 2,000

Feet

Source: U.S.G.S 7.5-Minute Series Topographic Map, Burrito Tank (1980), Texas.

SITE LOCATION MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 5/18/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 1

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FIGURE 2

SOILS MAP

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LEGEND

— Survey Area

N

0 1,000 2,000

Feet

Source: Soil Survey Geographic (SSURGO) Database for Webb County, Texas

SOILS MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 5/18/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 2

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APPENDIX B:
PHOTOGRAPHIC LOG

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PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 1 **Feature: Stock Tank WB101** **Date: 4/19/2011** **Comments: Stock tank WB101 in northeastern portion of project area. Facing north.**	
Photograph ID: 2 **Feature: Stream S123** **Date: 4/21/2011** **Comments: Ephemeral stream S123 in northwestern portion of project area. Facing downstream (south).**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	Project Number: 182277
Project Name: Pescadito Environmental Resource Center	County, State: Webb County, Texas

Photograph ID: 3	
Feature: Northwestern portion of project area	
Date: March 2011	
Comments: Typical Aguilares fine sandy loam vegetation. Moderately dense vegetation was present in many areas with a mosaic of bare ground present throughout this soil map unit.	
Photograph ID: 4	
Feature: Stock Tank WB104	
Date: 4/19/2011	
Comments: Large stock tank in central portion of project area. Facing south.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	Project Number: 182277
Project Name: Pescadito Environmental Resource Center	County, State: Webb County, Texas

Photograph ID: 5	
Feature: Stream S103	
Date: 4/19/2011	
Comments: Ephemeral stream S103 in central portion of the project area. Facing north (upstream).	
Photograph ID: 6	
Feature: Stream S120	
Date: 4/20/2011	
Comments: Ephemeral stream S120 (left of photo) in west-central portion of project area. Facing east (downstream).	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	Project Number: 182277
Project Name: Pescadito Environmental Resource Center	County, State: Webb County, Texas

Photograph ID: 7	
Feature: Typical upland in west-central portion of project area	
Date: 4/21/2011	
Comments: Upland habitat in west-central portion of project area. Facing west.	
Photograph ID: 8	
Feature: Wetland and Stock Tank WB128	
Date: 4/21/2011	
Comments: Fringe area of wetland W127 near large stock tank in southern portion of project area. Stock tank in background. Facing southwest.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 9 **Feature: Upland habitat; southern portion of site** **Date: 4/21/2011** **Comments: Upland habitat near large stock tank in southern portion of the project area. Facing northwest.**	
Photograph ID: 10 **Feature: Upland Habitat; southwest portion of site** **Date: 4/20/2011** **Comments: Upland habitat at in southwestern portion of project area. Facing east.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**
Photograph ID: 11	
Feature: Typical Habitat; southeastern portion of site	
Date: March 2011	
Comments: Typical habitat in the southeastern portion of the project area.	

APPENDIX C:
WETLAND DELINEATION REPORT

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WATERS OF THE UNITED STATES DELINEATION REPORT

Pescadito Environmental Resource Center Project

Webb County, Texas

Prepared For: **Rancho Viejo Waste Management, LLC**
Webb County, Texas

Prepared By: **TRC Environmental Corporation**
Austin, Texas

Revision No. 00
August 2011

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WATERS OF THE UNITED STATES DELINEATION REPORT

Pescadito Environmental Resource Center Project

Webb County, Texas

Submitted By:

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512.329.8750 (fax)

Prepared By: **Barrett Clark**

Reviewed By: **Jason Sean Lancaster**

Approved By: **Deborah Blackburn**

Revision No. 00
August 2011

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ABBREVIATIONS AND ACRONYMS

AgB	Aguilares sandy clay soil, 0 to 3 percent slope
Bd	Brundage fine sandy loam, occasionally flooded
CaB	Catarina clay, 0 to 2 percent slopes
CBD	Cannot Be Determined
CfA	Catarina, occasionally flooded
FAC	Facultative Species Status
FACU	Facultative Upland Species Status
FACW	Facultative Wetland Species Status
FEMA	Federal Emergency Management Agency
GPS	Global Positioning System
JD	Jurisdictional Determination
MnB	Montell clay, 0 to 2 percent slopes
NASIS	National Soil Information System
NI	No Indicator Status
NWI	National Wetland Inventory
OBL	Obligate Wetland Species Status
OHWM	Ordinary High Water Mark
Project	Rancho Viejo Waste Management Subsurface Investigation Project
RPW	Relatively Permanent Water
TNW	Traditionally Navigable Water
TRC	TRC Environmental Corporation
UPL	Obligate Upland Species Status
U.S.	United States
USACE	United States Army Corps of Engineers
USDA – NRCS	United States Department of Agriculture – Natural Resource Conservation Service
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UTM	Universal Transverse Mercator

1.0 INTRODUCTION

TRC Environmental Corporation (TRC) has been contracted by Rancho Viejo Waste Management, LLC to obtain environmental clearances and consultations for a proposed landfill project in Webb County, Texas (Project). The Project is located approximately 20 miles east of Laredo, Texas. A topographic vicinity map is included as Figure 1. A delineation of waters of the United States (U.S.) was conducted in April 2011 for the Project.

Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, TRC conducted a survey of wetlands, waterbodies, and other special aquatic sites for the Project survey area. This wetland delineation report describes the results of delineation of waters of the U.S. conducted in April 2011.

2.0 METHODS

The wetland determination and delineation was performed using the routine on-site determination methods described in the *Corps of Engineers Wetlands Delineation Manual* (U.S. Army Corps of Engineers [USACE], Environmental Laboratory 1987), hereafter referred to as the "1987 Manual," and is consistent with the methods, guidelines, and indicators present in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region* (*Version 2.0* [Regional Supplement] USACE 2010). The determination and delineation consisted of: (1) background data collection and assessment, (2) field investigation, and (3) reporting.

2.1 Background Data Review

Prior to initiation of the routine on-site investigation, existing background data and information were reviewed to provide information regarding the presence of previously identified wetlands, the location of hydric soils, and/or locations where jurisdictional wetlands could exist that have not been previously mapped. The background data reviewed consisted of the following materials:

- U.S. Geological Survey (USGS), 7.5-minute series quadrangle topographical maps, Burrito Tank Quadrangle in Webb County, Texas (USGS 1980)
- USDA – NRCS, National Soil Information System (NASIS) Database, National Hydric Soils List by State, Texas (USDA – NRCS 2011a)
- U.S. Department of Agriculture – Natural Resource Conservation Service (USDA – NRCS), Web Soil Survey Application (USDA – NRCS 2011b)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper Application (USFWS 2011)
- Federal Emergency Management Agency (FEMA), Map Service Center: FEMA Issued Flood Maps, Webb County, Texas, Flood Map ID 48479C1275C (FEMA 2011)

2.2 Field Investigation

An on-site determination and delineation of waters of the U.S. was conducted by a qualified wetland scientist within the Project survey area in April 2011.

The Project spatial boundaries were confirmed by aerial photograph interpretation and initial site reconnaissance. The survey area was then examined for the presence of atypical situations via site reconnaissance to identify any recent and sufficient natural or human-induced alteration that may have significantly changed the area vegetation, soils, and/or hydrology.

A site reconnaissance was conducted of all portions of the survey area to identify and develop an approximate location map of each different plant community type present to ensure all plant community types were included in the investigation. Each identified plant community type was further examined to determine the type(s) and number of vegetative layers in each community, including trees (woody overstory), shrubs (woody understory), herbs (herbaceous understory), and/or woody vines.

Observation points were established and documented within each vegetative community. The investigators determined whether normal environmental conditions were present at each observation point by considering whether: (a) hydrophytic vegetation and/or hydrologic indicators were lacking due to annual or seasonal fluctuations in precipitation or groundwater levels; and (b) hydrophytic vegetation indicators were lacking due to seasonal fluctuations in temperature.

Data points were recorded using a sub-meter Trimble Global Positioning System (GPS) unit. GPS data were recorded as NAD 1983 UTM coordinates. Soil pit sampling was conducted to determine the presence of hydric soil indicators, with plant communities identified and characterized for hydrophytic properties, indicator status, and percent cover. Particular wetland hydrology indicators were also identified.

Vegetation, soil, and hydrologic information for each sample plot was recorded on data forms and used to determine wetland boundaries. A description of the methods employed to assess each parameter is provided in Sections 2.2.1 to 2.2.3.

2.2.1 *Hydrophytic Vegetation*

According to the 1987 Manual, hydrophytic vegetation is defined as, "the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present." Plant species are further categorized according to their probability of occurrence in wetlands. Each plant species is assigned an "Indicator Status," which ranges from Obligate Wetland (100% occurrence in wetlands) to Obligate Upland (does not occur in wetlands). Indicator status categories are further defined as follows:

- Obligate Wetland (OBL): A species that almost always (under natural conditions) occurs in wetlands (estimated probability greater than 99%).
- Facultative Wetland (FACW): A species that usually occurs in wetlands (estimated probability 67% - 99%), but occasionally is found in non-wetlands.
- Facultative (FAC): A species that is equally likely to occur in non-wetlands (estimated probability 34% - 66%).
- Facultative Upland (FACU): A species that usually occurs in non-wetlands (estimated probability 67% - 99%), but is occasionally found in wetlands.

- Obligate Upland (UPL): A species that almost always (under natural conditions) occurs in non-wetlands (estimated probability greater than 99%).
- No Indicator (NI): A species for which there is insufficient information to determine an indicator status ranking.
- Cannot Be Determined (CBD): A species that was only identified to the genus level. Therefore, no indicator could be assigned.

All plant communities investigated were characterized by identifying dominant plant species using the dominance test. For each stratum in the plant community (tree, sapling, shrub, herb, and woody vine), a list of plant species (Reed 1988) and their respective percent cover was recorded. Percent cover for each plant species was recorded within a 5-foot radius around a central observation point for herbaceous stratum, as well as a 15-foot radius for saplings and shrub strata and 30-foot radius for trees and woody vines strata. The total cover for each stratum may range from zero to over 100 percent, depending on the density and amount of overlapping of vegetation.

"Dominant" plants were classified using the 50/20 rule, under which any plant species that equaled or exceeded 50 percent of the total percent aerial coverage for each stratum, and any additional species comprising 20 percent or more of the same stratum, was classified as a dominant plant.

Vegetation was reevaluated using the prevalence index in cases where indicators of hydric soil and wetland hydrology were present, but the percentage of dominant species did not exceed 50 percent utilizing the dominance test. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code and the abundance as evaluated by percent cover is weighted. A site scoring less than 3 on the prevalence index meets the wetland hydrophytic vegetation criterion. The prevalence index is used in the Great Plains Regional Supplement to determine whether hydrophytic vegetation is present on sites where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test.

2.2.2 Hydric Soils

According to the 1987 Manual, a hydric soil is defined as "a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation." The presence or absence of hydric soils was determined by pit sampling to a depth of ten inches or more, and characterization of soil profile layers using Munsell soil color charts (X-Rite Incorporated 2009). The presence of hydric indicators was recorded, including, but not limited to, saturation, gleying, mottling, depleted matrix, and development of other redoximorphic features. The wetland boundary was placed between areas meeting the three wetland criteria and areas which do not meet the criteria. As a result, soil in both the assumed wetland and the surrounding upland were sampled to verify the wetland boundary.

2.2.3 Wetland Hydrology

Guidance in the 1987 Manual indicates that wetland hydrology is found in areas in which "the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively." The frequency of soil inundation or saturation is dependent on a variety of factors, including topography, soil stratigraphy and soil permeability, in conjunction with the water source(s) of precipitation, runoff, stormwater, and groundwater discharge. Wetland hydrology is

classified according to the extent of soil saturation or inundation and ranges from permanently inundated to irregularly inundated or saturated. Those areas which are either intermittently or never inundated or saturated are not considered to have wetland hydrology.

Indicators of wetland hydrology include, but are not limited to, drainage patterns, drift lines, water marks, sediment and debris deposition, and visual observations and historical records. Wetland hydrology indicators were noted during the investigation.

2.3 Reporting

Maps illustrating the results of the survey are presented in Appendix A. Data collected in the field was subsequently entered onto the data forms presented in the Appendix B. Wetland delineation/GPS data were collected and recorded as NAD 1983 UTM coordinates. Photographs were also taken of the Project site and at data collection points. All survey results are presented in Appendices A and B.

3.0 RESULTS

3.1 Background Data Review

Desktop analysis of potential wetlands was evaluated by reviewing topographic maps (Figure 1; USGS 1980), aerial maps (Figure 2), soils data from the USDA – NRCS online web soil survey (Figure 3; USDA – NRCS 2011b), and wetlands data from the USFWS NWI Wetlands Mapper (USFWS 2011). This analysis provided an indication of the presence of wetlands and waterbodies, areas and soils likely to support hydrophytic vegetation, and photographic signatures of potential wetlands and waterbodies. The results of the background data review are included in the following sections.

3.2 Field Investigation

Seven palustrine, scrub-shrub wetlands (W109, W115, W118, W126, W127, W132, and W133) and one palustrine, emergent wetland (W130) were delineated during the survey. Eleven ephemeral streams (S103, S107, S108, S114, S119, S116, S120, S121, S123, S124, and S125) and nine stock tanks (WB101, WB104, WB106, WB110, WB111, WB113, WB117, WB128, and WB131) were also identified. Numerous erosional features are located throughout the Project survey area and are primarily a result of construction of the stock tanks.

Vegetation throughout the Project survey area has been affected by the presence of cattle. Severe overgrazing was observed throughout nearly all of the Project survey area, making identification of some vegetation (e.g., herbaceous species) impossible. Soil compaction, likely a result of the presence of cattle, was also observed in many areas, particularly around stock tanks WB104, WB128 and the wetlands associated with those systems. Subsequently, identification of wetland indicators was difficult in some areas.

Descriptions of vegetation, soils, and hydrology of the Project survey area are discussed below. Maps illustrating the results of the survey are presented in Appendix A. Data forms, photographs, and the documentation of the presence or absence of wetland vegetation, hydric soils, wetland hydrology, and waterbodies are provided in Appendix B.

3.2.1 Vegetation

Wetland and Riparian Plant Communities

All but one delineated wetland within the Project survey area consisted of palustrine, scrub-shrub habitats. These wetlands are dominated by woody vegetation including retama (*Parkinsonia aculeata*), twisted acacia (*Acacia schaffneri*), saltcedar (*Tamarix ramosissima*), Mexican devil-weed (*Aster spinosus*), sea ox-eye daisy (*Borrichia frutescens*), and rattlebox (*Sesbania drummondii*). Observed herbaceous vegetation includes smallhead sneezeweed (*Helenium microcephalum*), gulf cordgrass (*Spartina spartinae*), and Bermudagrass (*Cynodon dactylon*). Carolina wolfberry (*Lycium carolinianum*) and occasionally gulf cordgrass typically dominated the broad boundaries of the wetlands and often extended from within the limits of the wetlands into adjacent upland habitats.

One palustrine, emergent wetland (W130) is located within the Project survey area and is encircled by scrub-shrub wetland W127. Wetland W130 is dominated by herbaceous vegetation including Bermudagrass, smallhead sneezeweed, salt heliotrope (*Heliotropium curassavicum*), hierba del sapo (*Eringium heterophyllum*), and Plains coreopsis (*Coreopsis tinctoria*). Stunted, woody species including saltcedar, Mexican devil-weed, rattle box, and Carolina wolfberry are scattered in some areas of W130.

Riparian vegetation communities generally consisted of a composition of wetland and upland species (discussed below). Common species included retama, twisted acacia, saltcedar, honey mesquite (*Prosopis glandulosa*), Mexican devil-weed, Texas prickly pear (*Opuntia engelmannii*), rattlebox, smallhead sneezeweed, and gulf cordgrass.

Upland Plant Communities

Observed woody species included honey mesquite, dwarf screw-bean mesquite (*Prosopis reptans*), twisted acacia, blackbrush (*Acacia rigidula*), guajillo (*Acacia berlandieri*), knife-leaf condalia (*Condalia spathulata*), snake-eyes (*Phaulothamnus spinescens*), desert yaupon (*Schaefferia cuneifolia*), guayacan (*Guaiacum angustifolium*), allthorn (*Koeberlinia spinosa*), lotebush (*Ziziphus obtusifolia*), coma (*Sideroxylon celastrina*), goat-bush (*Castela texana*), paloverde (*Parkinsonia texana*), creosote (*Larrea tridentata*), whitebrush (*Aloysia gratissima*), Carolina wolfberry, oreja de perro (*Tiquilia canescens*), popote (*Ephedra antisyphilitica*), orange zexmenia (*Wedelia texana*), palma pita (*Yucca treculeana*), rough agave (*Agave scabra*), saladillo (*Varilla texana*), leather stem (*Jatropha dioica*), coppery false fanpetals (*Billieturnera helleri*), common goldenweed (*Isocoma coronopifolia*), Texas broomweed (*Gutierrezia texana*), Tulipan del monte (*Hibiscus martianus*), and sea ox-eye daisy.

Observed herbaceous species included sueada (*Sueada* sp.), Tiny Tim (*Thymophylla tenuiloba*), jicamilla (*Jatropha cathartica*), wooly tidestromia (*Tidestromia lanuginosa*), bitterweed (*Hymenoxys odorata*), whorled dropseed (*Sporobolus pyramidatus*), red grama (*Bouteloua trifida*), King Ranch bluestem (*Bothriochloa ischaemum*), and buffelgrass (*Pennisetum ciliare*).

Observed cacti species included Texas prickly pear, tasajillo (*Opuntia leptocaulis*), dog cholla (*Opuntia schottii*), rat-tail cactus (*Wilcoxia poselgeri*), nipple cactus (*Mammillaria heyderi*), longmamma nipple cactus (*Mammillaria sphaerica*), horse crippler (*Echinocactus texensis*), Berlandier's alicoche (*Echinocereus berlandieri*), pitaya (*Echinocereus enneacanthus*), Fitch's hedgehog cactus (*Echinocereus reichenbachii* var. *fitchii*), root cactus (*Ancistrocactus scheeri*), and miniature barrel cactus (*Thelocactus setispinus*).

Species recorded near stock ponds, ephemeral streams, upland swales, and other low lying features within uplands included smallhead sneezeweed (*Helenium microcephalum*), bearded dalea (*Dalea pogonanthera*), Carolina wolfberry, retama, sea ox-eye daisy, Gregg keelpod (*Synthlipsis greggii*), and gulf cordgrass.

3.2.2 Soils

Descriptions of these soils are provided by the USDA – NRCS National Cooperative Soil Survey (USDA – NRCS 2011b) and are provided below.

Hydric Soils

A review of the USDA – NRCS Soil Survey (USDA – NRCS 2011b) and Hydric Soils List by State (NRCS 2011a) identified no hydric soils within the Project survey area; consequently, no hydric soils are discussed. However, during the field survey, hydric soils were observed at delineated wetlands W109, W115, W118, W126, W127, W132, W130, and W133 (additional detail provided below and in Appendix B).

Non-Hydric Soils

A review of the USDA – NRCS Soil Survey indicates that the non-hydric soils within the Project survey area include clays, sandy clay loam, and sandy loam and lie on slopes that range from 0 to 3 percent. These deep soils are well- to moderately well drained with moderately or very slow permeability. Descriptions of non-hydric soils, as provided by the USDA – NRCS, are provided below.

Aguilares sandy clay loam, 0-3 percent slopes (AgB): The Aguilares sandy clay loam series consists of deep, well drained, moderately permeable, calcareous and moderately alkaline soils on uplands. This Aguilares soil map unit is found on broad, convex plains. The parent material consists of calcareous loamy residuum weathered from sandstone predominantly from the Jackson Formation. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slopes range from 0 to 3 percent.

Brundage fine sandy loam, occasionally flooded (Bd): The Brundage fine sandy clay loam series consists of deep, moderately well drained, very slowly permeable, saline soils in upland valleys. This Brundage soil map unit is found on valleys along small drainageways and on smooth plains parallel to drainageways. The parent material consists of saline, loamy alluvium. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slopes range from 0 to 1 percent.

Catarina Clay, 0 to 2 percent slopes (CaB): The Catarina Clay series consists of deep, moderately well drained, very slowly permeable, saline soils on upland plains and valleys. This Catarina soil map unit is found on broad and narrow valleys along drainageways and on smooth plains. The parent material consists of calcareous, saline, clayey alluvium. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slopes range from 0 to 2 percent.

Catarina Clay, occasionally flooded (CfA): The Catarina Clay series consists of deep, moderately well drained, very slowly permeable, saline soils on upland plains and valleys. This Catarina soil map unit is found on narrow valleys along drainageways. The parent material consists of calcareous, saline, clayey alluvium. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slopes range from 0 to 1 percent.

Montell clay, 0 to 2 percent, saline (MnB): Montell clay series consists of deep, moderately well drained, very slowly permeable, saline, clayey soil on upland plains and valleys. This Montell soil map unit is found on broad and narrow valleys along drainageways and on smooth plains. The parent material consists of clayey valley side alluvium. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slope ranges from 0 to 2 percent.

3.2.3 Hydrology

The Project survey area is located entirely within and near the upper limits of the International Falcon Reservoir Watershed (Hydrologic Unit Code [HUC]: 13080003; U.S. Environmental Protection Agency [USEPA] 2011c). According to the FEMA flood map, approximately 60 percent of the Project survey area is located in the 100-year floodplain. Maps presenting the wetland and waterbodies delineated within the Project survey area, as well as unique wetland and waterbody feature names, are provided in Appendix A.

Hydrology of the Project survey area and surrounding area is primarily associated with surface water runoff from infrequent precipitation events. The primary water flow regime of the surrounding watershed area is to the south and southwest, following numerous ephemeral drainage systems. Many constructed stock tanks area also located within the area. Within the Project survey area, surface water generally flows to the south and southeast, following localized topography and along ephemeral streams, upland swales, and erosional gullies into numerous stock tanks. The construction of stock tanks, as well as roads and pipeline right-of-ways, has likely fragmented drainage systems within the Project survey area and surrounding area. Subsequently, defined channels and ordinary high water mark indicators are not present along portions of the drainage systems.

Seven palustrine, scrub-shrub wetlands (W109, W115, W118, W126, W127, W132, W133), one palustrine, emergent wetland (W130), fourteen ephemeral streams (S103, S107, S108, S114, S119, S116, S120, S121, S122, S123, S124, S125, S134, S135), and nine stock tanks (WB101, WB104, WB106, WB110, WB111, WB113, WB117, WB128, WB131) are located within the Project survey area. Numerous erosional gullies are also located throughout the Project survey area and are primarily a result of construction of the stock tanks. The identified features can be separated into three drainage systems:

- Stock tanks WB110, WB111, WB113, and WB117, scrub-shrub wetlands W109, W115, and W118, ephemeral streams S108, S114, S116, and S119
- Stock tanks WB101, WB104, and WB106, scrub-shrub wetland W133, ephemeral streams S103, S107, S122, S123, S134, and S135
- Stock tank WB128 and WB131, scrub-shrub wetlands W126, W127, and W132, emergent wetland W130, ephemeral streams S120, S121, S124, and S125

Two scrub-shrub wetlands (W109, W115) are situated along an historic intermittent drainage system (S108/S114/S116/S119) that has been fragmented by the construction of roads and a series of impoundments and stock tanks (WB110, WB111, WB113, WB117). One upstream fork of this system originates off-site (S116), while another fork (S119) originates from within the limits of the Project survey area. Surface water eventually flows off-site *via* S108. Scrub-shrub wetland W118 is a remnant of the historic intermittent drainage system and is now an enclosed depression with no observed in- or outflow. The delineated area of wetlands W109, W115, and W118 are 0.19-acre (ac), 0.17 ac, and 0.19

ac, respectively. Stock tanks WB110, WB111, WB113, and WB117 are 0.14 ac, 0.40 ac, 0.43 ac, and 0.04 ac in size, respectively.

Wetland W133 is a relatively large (14.70 ac), scrub-shrub, fringe wetland adjacent to stock tank WB104 (13.58 ac), which receives surface water flow from two, small floodplains (Figure 5). Defined channels and/or ordinary high water mark (OHWM) indicators were observed along the eastern floodplain at ephemeral streams S103, S107, and S122. One stock tank (WB101; 0.49 ac) is located between S103/S107 and S122. The eastern floodplain from WB104 to the northern Project survey area boundary is presented as a dashed blue line on the USGS topographical map indicating an intermittent drainage system (Figure 1; USGS 1980). Defined channels and/or OHWM indicators were observed along the western floodplain at ephemeral streams S123, S134, and S135. The western floodplain is presented as a dashed blue line along S134, at the northern Project survey area boundary (Figure 1; USGS 1980). It is possible that the construction of stock tank WB101, roads, and/or pipeline right-of-ways has fragmented the two floodplain drainage systems associated with WB104, resulting in sheet water flow and no defined channel and/or OHWM indicators in some areas. A small stock tank (WB106; 1.01 ac) is also located south of the WB104 impoundment.

Located to the south and downgradient of WB104 is stock tank WB128 (26.68 ac), which receives surface water flow from ephemeral stream S121. Stream S121 originates off-site from the west and is confined by levees along much of its length within the Project survey area. Also originating off-site from the west is stream S120, an ephemeral tributary of S121. Stream S125 is a second, ephemeral tributary of S121 and originates from within the limits of the Project survey area. A relatively shallow and broad upland swale system, which is situated in a floodplain, is located upgradient of S125. A defined channel and OHWM indicators were observed along a segment of the upland swale at ephemeral stream S124. It is possible that the construction of roads and/or pipeline right-of-ways has fragmented the S124/S125 drainage system, resulting sheet water flow and no defined channel and/or OHWM indicators upgradient of S124 and between S124 and S125; on the USGS topographical map, this system appears as a dashed blue line extending off-site to the northwest from S121 (Figure 1; USGS 1980). Wetland W127 (28.46 ac) is situated between stock tanks WB 104 and WB128. An emergent wetland W130 (3.98 ac) is encircled by wetland W127; groundwater from the upgradient WB104 system likely influences these two wetlands, as well as stock tank WB128. A relatively small (0.59 ac) scrub-shrub wetland (W126) is located adjacent to the southwestern levee of S121, near the confluence of S121 and S125. A 2.00 ac scrub-shrub wetland (W132) is located adjacent to the WB128 impoundment; groundwater from the upgradient WB128 system likely influences this wetland. A small stock tank (WB131; 0.31 ac) is located nearby to the northeast.

4.0 JURISDICTION

Following the Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States, the USACE and the U.S. Environmental Protection Agency issued a guidance memorandum in June 2007 summarizing federal jurisdiction over waters of the U.S. under the Clean Water Act. A brief summary of the key points of that memorandum is outlined below.

The USACE and EPA will assert jurisdiction over the following waters:

- Traditional navigable waters (TNW);

- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent (relatively permanent waters; RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and
- Wetlands that directly abut such tributaries.

The USACE and EPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to but do not directly abut a relatively permanent non-navigable tributary.

The USACE and EPA generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and do not carry a relatively permanent flow of water.

The USACE and EPA will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters; and
- Significant nexus includes consideration of hydrologic and ecologic factors.

Based on these criteria, all TNWs, RPWs (*i.e.*, perennial and intermittent streams), and their directly abutting wetlands identified within the Project survey area would be considered jurisdictional waters of the U.S. All non-directly abutting wetlands and non-RPWs would be examined on a case-by-case basis to determine if the significant nexus criteria were met before being considered a jurisdictional water of the U.S.

Ephemeral streams S103, S107, S108, S114, S116, S119, S120, S121, and S125 would be considered non-RPWs by the USACE. Palustrine, scrub-shrub wetlands W109, W115, W127, and W133 and palustrine, emergent wetland W130 would be considered directly abutting wetlands to a waterbody or waterbodies constructed within historically relatively permanent waters (unnamed tributaries of San Juanita Creek) . Palustrine, scrub-shrub wetlands W118 and W126 would most likely be considered non-directly abutting wetlands. If impacts to wetlands W109, W115, W118, W126, W127, W130, W132, and W133 or streams S103, S107, S108, S114, S116, S119, S120, S121, and S125 are anticipated,

consultation with the USACE is recommended to determine if the agency will exert jurisdiction over those systems.

Stock tanks WB101, WB104, WB110, WB111, WB113, WB117, and WB128 are features that are excavations and/or impoundments of streams that would be considered historically RPWs by the USACE. If impacts to the stock tanks are anticipated, consultation with the USACE is recommended to determine if the agency will exert jurisdiction over those systems. Stock tanks WB106 and WB131 are features that are excavations and/or impoundments of dry land. Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing are generally not considered jurisdictional waters of the U.S. (51 FR, No. 219, page 41,217). However, WB106 and WB131 are located adjacent to excavations and/or impoundments of streams that would be considered non-RPWs by the USACE. If impacts to stock tanks WB106 and WB131 are anticipated, consultation with the USACE is recommended to determine if the agency will exert jurisdiction over those systems.

Defined channels and OHWM indicators were observed along ephemeral streams S122, 123, S124, S134, and S135. Although the five segments all originate and terminate in uplands, the USGS topographical map (Figure 1; USGS 1980) indicates that S122, S123, S124, S134, and S135 may have been components of contiguous drainage systems that were possibly fragmented by the construction of stock tank WB101, roads, and/or pipeline right-of-ways. However, the large upland expanses between these ephemeral streams and another relevant hydrological feature are very broad and nearly flat landforms that dissipate surface water flow and appear to provide no significant nexus to the nearest up- or downstream feature; given the semi-arid nature of the region and nearly level landforms of the area, the typical regime in these upland areas following a typical precipitation event would primarily be dissipation and evaporation, as well as some additional percolation into the soil. If impacts to S122, S123, S124, S134, and S135 are proposed, coordination with the USACE is recommended to determine if the agency will exert jurisdiction over those systems.

Several erosional gullies are present within the Project survey area and are a result of the construction of the stock tanks. The erosional gullies do not appear to be an important hydrological component of the area. The USACE generally will not exert jurisdiction over these systems.

5.0 CONCLUSIONS

TRC was contracted by Rancho Viejo Waste Management, LLC to conduct a determination and delineation of waters of the U.S. for the proposed Rancho Viejo Landfill Project. The determination was performed in order to identify the presence and delineate the boundaries of wetlands and other waters potentially subject to regulation by the USACE pursuant to Section 404 of the Clean Water Act.

Based on review of background data and the results of the field investigation, qualified wetland scientists from TRC determined that potentially jurisdictional wetlands and waters of the U.S. are present within the Project survey area and include seven palustrine, scrub-shrub wetlands (W109, W115, W118, W126, W127, W132, W133), one palustrine, emergent wetland (W130), nine ephemeral streams (S103, S107, S108, S114, S119, S116, S120, S121, S125), and nine stock tanks (WB101, WB104, WB106, WB110, WB111, WB113, WB117, WB128, WB131). Five ephemeral streams (S122, S123, S124, S134, and S135) that may have been components of contiguous drainage systems are also present within the Project survey area. Coordination with the USACE is recommended to determine if the agency will exert

jurisdiction over the identified systems within the Project survey area. Maps presenting the results of the determination and further details regarding the collected data are presented in Appendices A and B.

6.0 REFERENCES

FEMA. 2011. Map Service Center: FEMA Issued Flood Maps. Webb County, Texas. Flood Map ID 484791275. Accessed on April 15, 2011, at: http://gis1.msc.fema.gov/Website/newstore/viewer.htm.

Reed, P. 1988. National List of Plant Species that Occur in Wetlands: Southeast (Region 6). Accessed April 15, 2011, at: http://www.fws.gov/pacific/ecoservices/habcon/pdf/National%20List%20of%20Plant%20Species%201988.pdf.

USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-1. U.S. Army Engineer Research and Development Center, Vicksburg, MS.

USACE, Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers, Waterways Experiment Station, Wetlands Research Program, Technical Report Y-87-1. Vicksburg, MS. January 1987 - Final Report. 92 pp. + app.

USDA – NRCS. 2011a. National Hydric Soils List by State. Accessed on April 15, 2011, at: http://soils.usda.gov/use/hydric/.

USDA – NRCS. 2011b. Soil Survey Division. Web Soil Survey. Accessed on April 15, 2011, at: http://websoilsurvey.nrcs.usda.gov/app/.

USEPA. 2011c. Surf Your Watershed Database. Accessed on April 15, 2011, at: http://cfpub.epa.gov/surf/locate/index.cfm.

USFWS. 2011. NWI Wetlands Mapper. Accessed on April 15, 2011 at: http://www.fws.gov/wetlands/Data/Mapper.html

USGS. 1980. 7.5-minute series quadrangle topographical map, Burrito Tank Quadrangle, Webb County, Texas.

X-Rite, Incorporated. 2009. Munsell Soil Color Charts. Munsell Color Division, Grand Rapids, MI. Revised Edition.

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FIGURE 1

SITE LOCATION MAP

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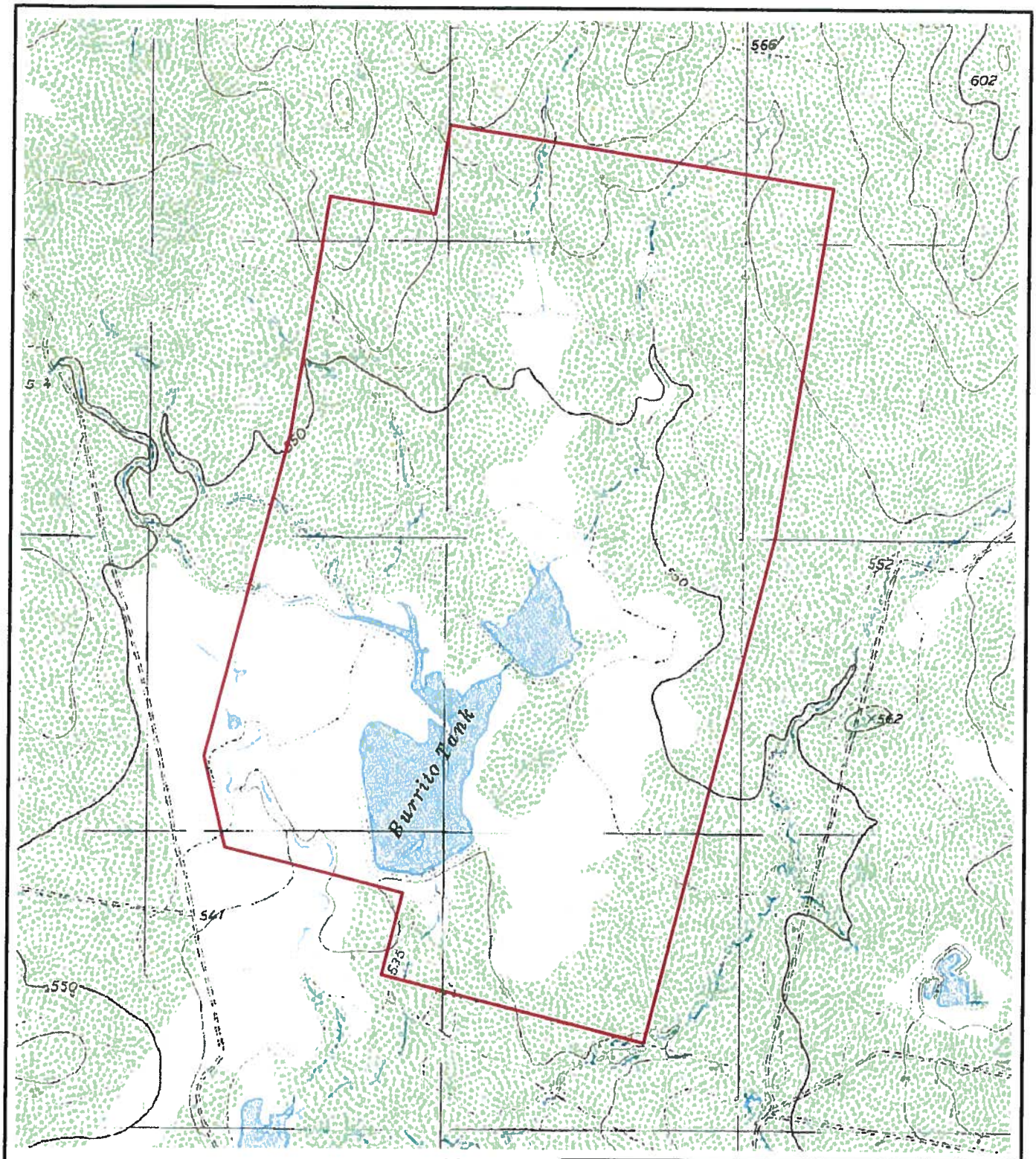

LEGEND

— Survey Area

N

0 250 500

Meters

Source: U.S.G.S 7.5-Minute Series Topographic Map, Burrito Tank (1980), Texas.

SITE LOCATION MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 5/18/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 1

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FIGURE 2

SITE LOCATION MAP

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LEGEND

— Survey Area

N

0 250 500

Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SITE LOCATION MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 5/18/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 2

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FIGURE 3

SOILS MAP

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LEGEND

- Survey Area
- Soil Map Unit Boundary

N

0 250 500
Meters

Source: Soil Survey Geographic (SSURGO) Database for Webb County, Texas

SOILS MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277	DATE: 5/18/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 3

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FIGURE 4

USFWS NATIONAL WETLANDS INVENTORY MAP

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U.S. Fish and Wildlife Service

National Wetlands Inventory

Pescadito Environmental Resource Ctr

Aug 8, 2011

Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

User Remarks:

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FIGURE 5

FEMA FLOOD INSURANCE RATE MAP

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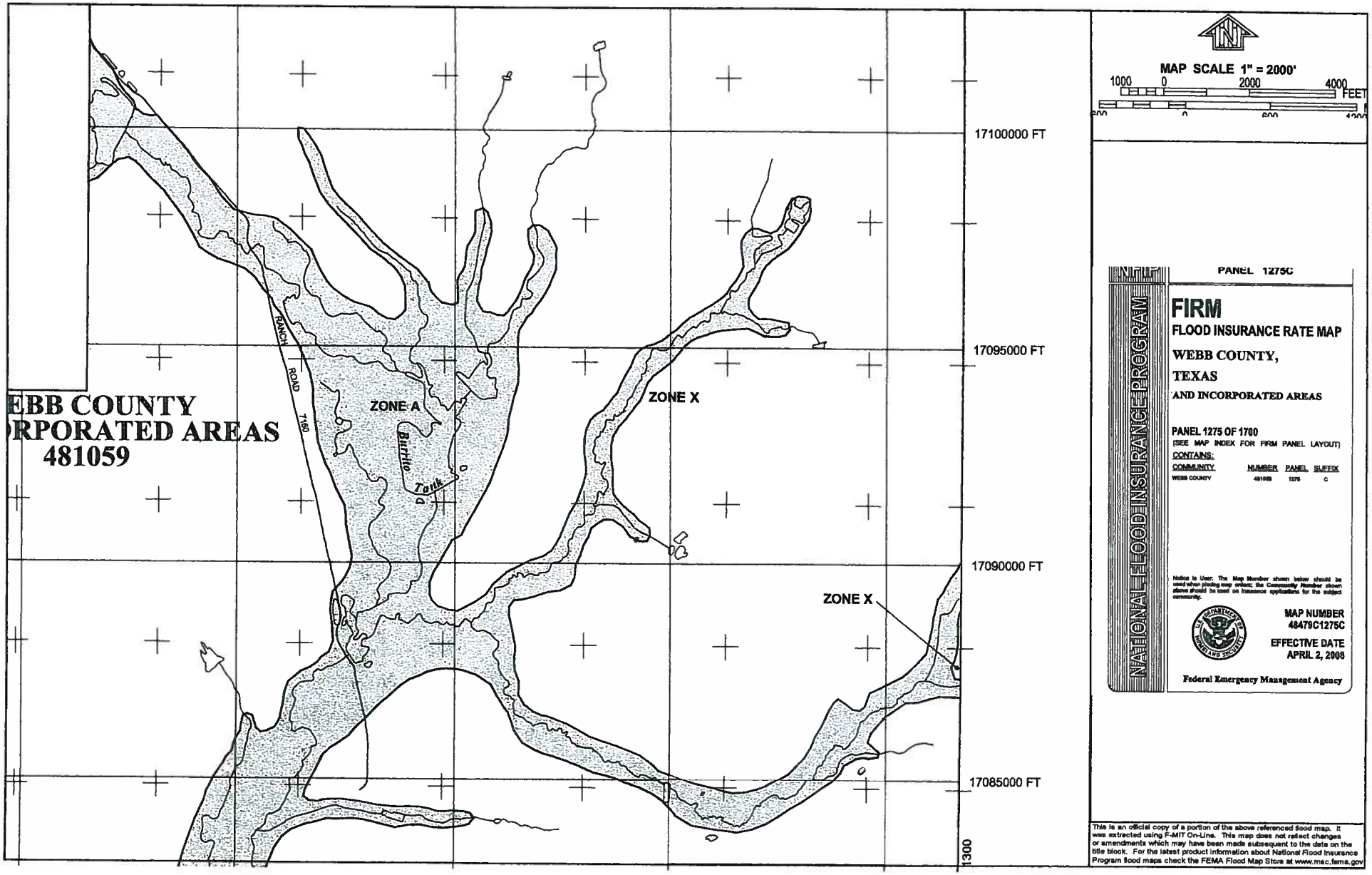

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET

PANEL 1275C

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

WEBB COUNTY,
TEXAS
AND INCORPORATED AREAS

PANEL 1275 OF 1700
(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WEBB COUNTY	481059	1275	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
48479C1275C

EFFECTIVE DATE
APRIL 2, 2008

Federal Emergency Management Agency

APPENDIX A

SURVEY RESULTS -
AERIAL PHOTOGRAPH-BASED WETLAND SURVEY MAPS

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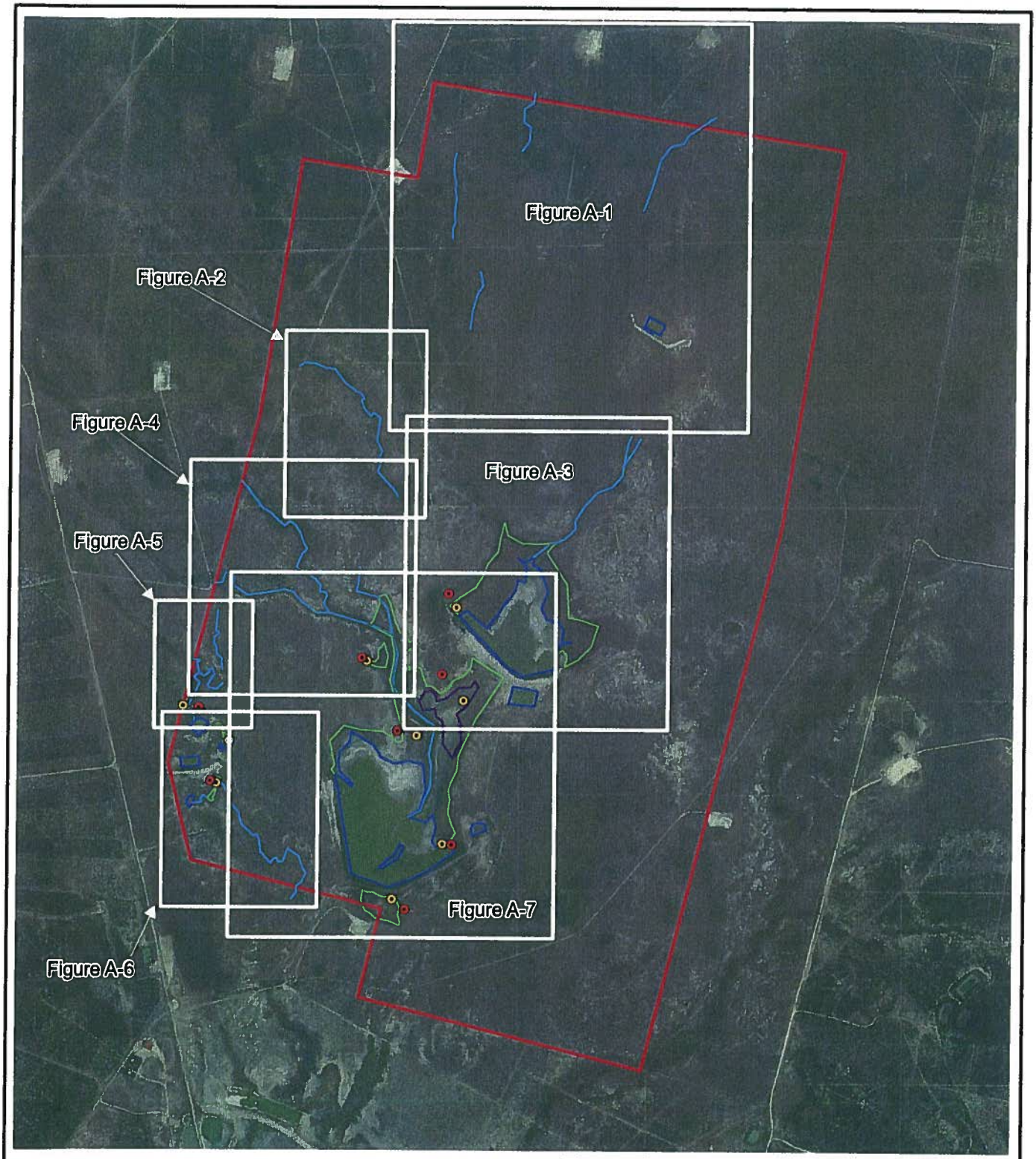


LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Emergent (PEM) Wetland Boundary
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

Source: National Agriculture Imagery Program (NAIP), 2008.

N

0 250 500
Meters

SURVEY RESULTS INDEX MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A

LEGEND
- Survey Area
- Streams
- Stock Tanks

N

0 100 200
Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-1

LEGEND
- Survey Area
- Streams

N

0 50 100
Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

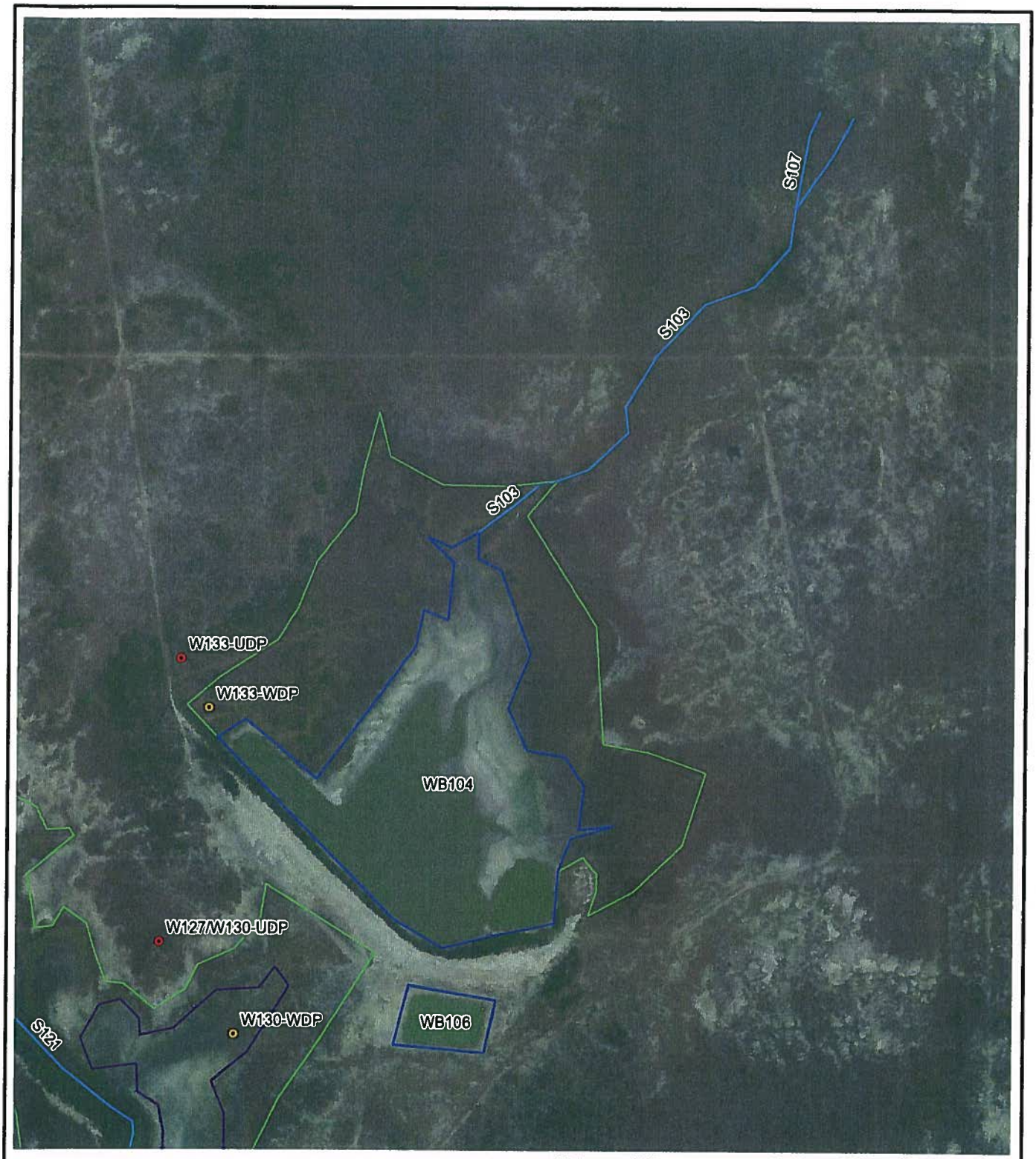
SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-2



LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Emergent (PEM) Wetland Boundary
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

Source: National Agriculture Imagery Program (NAIP), 2008.

N

0 50 100
Meters

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-3

LEGEND

- Survey Area
- Streams
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

N

0 50 100
Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-4

LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

N

0 25 50
Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-5

LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

N

0 50 100
Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-6

LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Emergent (PEM) Wetland Boundary
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

Source: National Agriculture Imagery Program (NAIP), 2008.

N

0 100 200
Meters

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277	DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-7

APPENDIX B

SURVEY RESULTS - INCLUDED FOR EACH WETLAND DETERMINATION DATA POINT

- Wetland Determination Data Forms
- Photographic Log

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WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W109-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Flat Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): LRR I Lat: 3048393.622 N Long: 483296.342 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Prosopis glandulosa (Mesquite,honey)	5	Y	n/a
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size:____)			
1. Opuntia engelmannii var. lindheimeri	10	Y	n/a
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: NaN (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	X 2 =	0
FAC species	0	X 3 =	0
FACU species	0	X 4 =	0
UPL species	0	X 5 =	0
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing. No species present with listed indicator status.

SOIL

Sampling Point: W109-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR4/2	100			N/A	N/A	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes___	No X	Depth (inches):_____
Water Table Present?	Yes___	No X	Depth (inches):_____
Saturation Present? (includes capillary fringe)	Yes___	No X	Depth (inches):_____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W109-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Drainageway Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRR I Lat: 3048387.371 N Long: 483314.876 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:
PSS located along ephemeral drainage (S108). Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
2. Acacia schaffneri (Acacia,twisted)	5	Y	n/a
3. Parkinsonia aculeata (Jerusalem-thorn)	5	Y	FACW
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 10)			
1. Helenium microcephalum (Sneezeweed,small-head)	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	X 2 = ___
FAC species ___	X 3 = ___
FACU species ___	X 4 = ___
UPL species ___	X 5 = ___
Column Totals: ___	(A) ___ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W109-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR4/2	95	7.5YR4/6	5	C	M	Clay	
3-4	10YR6/3	100			N/A	N/A	Sandy	
4-18	10YR 3/2	100			N/A	N/A	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):___

Water Table Present? Yes___ No X Depth (inches):___

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Data point located within ephemeral drainage system (S108).

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W115/W118-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048624.906 N Long: 483259.123 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____	No X
Hydric Soil Present?	Yes ____	No X			
Wetland Hydrology Present?	Yes ____	No X			

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Prosopis glandulosa (Mesquite,honey)	15	Y	n/a
2. Acacia schaffneri (Acacia,twisted)	10	Y	n/a
3.			
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size:____)			
1. Opuntia engelmannii var. lindheimeri	15	Y	n/a
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	15	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 85

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: NaN (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	X 2 =	0
FAC species	0	X 3 =	0
FACU species	0	X 4 =	0
UPL species	0	X 5 =	0
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

____ 1 - Rapid Test for Hydrophytic Vegetation

____ 2 - Dominance Test is > 50%

____ 3 - Prevalence Test is ≤ 3.0[1]

____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be resent, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area. No species present with listed indicator status.

SOIL

Sampling Point: W115/W118-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR4/2	100			N/A	N/A	Sandy	
3-18	10YR4/2	100			N/A	N/A	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W115-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Drainageway Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): LRR I Lat: 3048629.461 N Long: 483209.961 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes X No ___
Hydric Soil Present?	Yes X No ___	
Wetland Hydrology Present?	Yes X No ___	

Remarks:
PSS located along ephemeral drainage (S114). Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:___)			
1. Parkinsonia aculeata (Jerusalem-thorn)	20	Y	FACW
2. Acacia schaffneri (Acacia,twisted)	10	Y	n/a
3. Aster spinosus (Aster,spiny)	10	Y	FACW
4.			
5.			
	40	= Total Cover	
Herb Stratum (Plot size:___)			
1. Aster spinosus (Aster,spiny)	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	= Total Cover	
Woody Vine Stratum (Plot size:___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 90

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	X 2 = ___
FAC species ___	X 3 = ___
FACU species ___	X 4 = ___
UPL species ___	X 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W115-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR4/2	95	5YR4/4	5	C	M	Clay	
					N/A	N/A	N/A	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes___	No X	Depth (inches):___
Water Table Present?	Yes___	No X	Depth (inches):___
Saturation Present? (includes capillary fringe)	Yes___	No X	Depth (inches):___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W118-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Abandoned drainageway Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): LRR I Lat: 3048519.898 N Long: 483354.649 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:

PSS located along abandoned drainageway and is an enclosed depression. Historic ephemeral system (S108/S114/S119) interrupted by series of impoundments/stock tanks (W110, W111, W113, W117). Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. Parkinsonia aculeata (Jerusalem-thorn)	10	Y	FACW
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Lycium carolinianum (Wolf-berry,carolina)	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____	(A) ____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W118-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/2	98	2.5YR4/4	2	C	M	Sandy Clay	
					N/A	N/A	N/A	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W126-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): LRR I Lat: 3048782.571 N Long: 483769.058 E Datum:

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soil Present?	Yes ___ No X	
Wetland Hydrology Present?	Yes ___ No X	

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:___)			
1. Opuntia engelmannii var. lindheimeri	10	Y	n/a
2. Lycium carolinianum (Wolf-berry,carolina)	5	Y	FACW
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size:___)			
1. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
2. Borrichia frutescens (Oxeye,sea)	5	Y	FACW
3. Opuntia engelmannii var. lindheimeri	5	Y	n/a
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20	= Total Cover	
Woody Vine Stratum (Plot size:___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	X 2 = ___
FAC species ___	X 3 = ___
FACU species ___	X 4 = ___
UPL species ___	X 5 = ___
Column Totals: ___	(A) ___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ___ 3 - Prevalence Test is ≤ 3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area.

SOIL

Sampling Point: W126-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR7/3	100			N/A	N/A	Sandy	
2-5	7.5YR4/4	100			N/A	N/A	Clay	Visible salt crystals
5-15	10YR4/3	100			N/A	N/A	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W126-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Drainageway Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): LRR I Lat: 3048772.829 N Long: 483784.291 E Datum:

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	Yes X No ___
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes X No ___		

Remarks:
PSS located adjacent to ephemeral drainage levee/dike (S121) and within small low area/drainage. Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5)			
1. Lycium carolinianum (Wolf-berry,carolina)	15	Y	FACW
2. Parkinsonia aculeata (Jerusalem-thorn)	5	Y	FACW
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Borrichia frutescens (Oxeye,sea)	35	Y	FACW
2. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:	(A)		(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Little herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W126-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR4/2	100			N/A	N/A	Sandy Clay	
2-6	10YR4/2	95	7.5YR4/4	5	C	M	Clay	
6-12	10YR6/3	98	7.5YR4/4	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127-UDP1

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Flat Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): LRR I Lat: 3048551.46 N Long: 483907.416 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10)			
1. Borrichia frutescens (Oxeye,sea)	10	Y	FACW
2. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
3. Tamarix ramosissima (Saltcedar)	2		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	22	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species		x 1 =	
FACW species		X 2 =	
FAC species		X 3 =	
FACU species		X 4 =	
UPL species		X 5 =	
Column Totals:		(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area.

SOIL

Sampling Point: W127-UDP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR7/2	100			N/A	N/A	Sandy	
2-16	7.5YR3/2	100			N/A	N/A	Sandy Clay	
					N/A	N/A	N/A	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:
Stunted hydrophyte growth compared with growth of same species within W127.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127-UDP2

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Ridge Local relief (concave, convex, none): convex Slope (%): 2

Subregion (LRR): LRR I Lat: 3048195.083 N Long: 484052.996 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X		

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area. Soil compacted from livestock at W129-UDP.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acacia schaffneri (Acacia,twisted)	30	Y	n/a
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. Acacia schaffneri (Acacia,twisted)	20	Y	n/a
2. Aster spinosus (Aster,spiny)	20	Y	FACW
3.			
4.			
5.			
	40	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Cynodon dactylon (Grass,bermuda)	30	Y	FACU
2. Aster spinosus (Aster,spiny)	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	X 2 =	
FAC species	X 3 =	
FACU species	X 4 =	
UPL species	X 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Little herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W127-UDP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR5/2	100			N/A	N/A	Sandy	
3-10	10YR4/2	100			N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127/W130-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): LRR I Lat: 3048730.584 N Long: 484019.776 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Opuntia engelmannii var. lindheimeri	5	Y	n/a
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size:____)			
1. Isocoma coronopifolia (Goldenweed,common)	30	Y	n/a
2. Opuntia engelmannii var. lindheimeri	15	Y	n/a
3. Jatropha dioica (Leatherstem)	5		n/a
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: NaN (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	X 2 =	0
FAC species	0	X 3 =	0
FACU species	0	X 4 =	0
UPL species	0	X 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area. No species present with listed indicator status.

SOIL

Sampling Point: W127/W130-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR5/2	100			N/A	N/A	Sandy	
2-10	7.5YR4/2	100			N/A	N/A	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127-WDP1

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): LRR I Lat: 3048538.163 N Long: 483941.687 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	Yes X No ___
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes X No ___		

Remarks:

Large PSS abutting ephemeral stream S121 and stock tank W128. A portion of W127 is within sparsely to non-vegetated area caused by high soil salt content (hydric soil and few oxidized roots present). Levees are present ephemeral stream S121; similar hydrophytic vegetation, hydric soil, and hydrology indicators were observed within S121 and along its levees; therefore, levees are included within the W127 survey polygon. Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Borrichia frutescens (Oxeye,sea)	10	Y	FACW
2. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
3. Tamarix ramosissima (Saltcedar)	5	Y	FACW
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	X 2 = ___
FAC species ___	X 3 = ___
FACU species ___	X 4 = ___
UPL species ___	X 5 = ___
Column Totals: ___	(A) ___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless d sturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)

Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W127-WDP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR7/2	100			N/A	N/A	Sandy	
2-10	7.5YR4/1+	95	7.5YR5/6	5	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127-WDP2

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): LRR I Lat: 3048197.819 N Long: 484024.834 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area. Soil likely compacted from livestock.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Aster spinosus (Aster,spiny)	15	Y	FACW
2. Lycium carolinianum (Wolf-berry,carolina)	5	Y	FACW
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size:____)			
1. Cynodon dactylon (Grass,bermuda)	40	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____	(A) ____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area.

SOIL

Sampling Point: W127-WDP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR5/2	100			N/A	N/A	Sandy	
2-12	10YR4/2	95	7.5YR4/4	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):___
Water Table Present? Yes___ No X Depth (inches):___
Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W130-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048648.316 N Long: 484087.144 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	Yes X No ___
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes X No ___		

Remarks:
PEM located within a PSS (W127) and downgradient of tank W104. Vegetation highly disturbed from severe overgrazing throughout project area. Soil compacted, likely from livestock.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:___)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size:___)			
1. Cynodon dactylon (Grass,bermuda)	15	Y	FACU
2. Helenium microcephalum (Sneezeweed,small-head)	10	Y	FACW
3. Aster spinosus (Aster,spiny)	5		FACW
4. Eryngium nasturtiifolium (Hierba del sapo)	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
	35	= Total Cover	
Woody Vine Stratum (Plot size:___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 65

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	X 2 =	40
FAC species	0	X 3 =	0
FACU species	15	X 4 =	60
UPL species	0	X 5 =	0
Column Totals:	35	(A)	100 (B)

Prevalence Index = B/A = 2.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation
___ 2 - Dominance Test is > 50%
X 3 - Prevalence Test is ≤ 3.0[1]
___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Little herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing. Cynodon dactylon exhibiting stunted growth.

SOIL

Sampling Point: W130-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR5/2	98	7.5YR4/4	2	C	M	Sandy	
6-10	10YR4/2	95	7.5YR4/4	5	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:
Soil compacted, likely from livestock.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___
Water Table Present? Yes ___ No X Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W132-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range: _____

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3047991.051 N Long: 483908.196 E Datum: NAD83

Soil Map Unit Name: _____ NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ___	**Is the Sampled Area within a Wetland?** Yes ___ No X
Hydric Soil Present?	Yes ___	No X	
Wetland Hydrology Present?	Yes ___	No X	

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	

Sapling/Shrub Stratum (Plot size:___)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	

Herb Stratum (Plot size:___)			
1. Opuntia engelmannii var. lindheimeri	5	Y	n/a
2. Varilla texana (Saladillo)	5	Y	n/a
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	= Total Cover	

Woody Vine Stratum (Plot size:___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: NaN (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	X 2 =	0
FAC species	0	X 3 =	0
FACU species	0	X 4 =	0
UPL species	0	X 5 =	0
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing. No species present with listed indicator status.

SOIL

Sampling Point: W132-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ____ Histosol (A1)
- ____ Histic Epipedon (A2)
- ____ Black Histic (A3)
- ____ Hydrogen Sulfide (A4)
- ____ Stratified Layers (A5) **(LRR F)**
- ____ 1 cm Muck (A9) **(LRR F, G, H)**
- ____ Depleted Below Dark Surface (A11)
- ____ Thick Dark Surface (A12)
- ____ Sandy Mucky Mineral (S1)
- ____ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ____ 5 cm Mucky Peat or Peat (S3) (**LRR** F)
- ____ Sandy Gleyed Matrix (S4)
- ____ Sandy Redox (S5)
- ____ Stripped Matrix (S6)
- ____ Loamy Mucky Mineral (F1)
- ____ Loamy Gleyed Matrix (F2)
- ____ Depleted Matrix (F3)
- ____ Redox Dark Surface (F6)
- ____ Depleted Dark Surface (F7)
- ____ Redox Depressions (F8)
- ____ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ____ 1 cm Muck (A9) **(LRR I, J)**
- ____ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ____ Dark Surface (S7) **(LRR G)**
- ____ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ____ Reduced Vertic (F18)
- ____ Red Parent Material (TF2)
- ____ Very Shallow Dark Surface (TF12)
- ____ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? **Yes** _____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W132-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048023.448 N Long: 483868.978 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes X No ____
Hydric Soil Present?	Yes X	No ____	
Wetland Hydrology Present?	Yes X	No ____	

Remarks:
PSS downgradient of and abutting an impoundment of stock tank W128. Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Tamarix ramosissima (Saltcedar)	30	Y	FACW
2. Borrichia frutescens (Oxeye,sea)	10	Y	FACW
3. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size:____)			
1. Spartina spartinae (Cordgrass,gulf)	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate she t)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W132-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR6/2	100			N/A	N/A	Sandy	
2-10	7.5YR4/2	98	5YR4/4	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes___	No X	Depth (inches):___
Water Table Present?	Yes___	No X	Depth (inches):___
Saturation Present? (includes capillary fringe)	Yes___	No X	Depth (inches):___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W133-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range: _____

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048985.983 N Long: 484037.758 E Datum: NAD83

Soil Map Unit Name: _____ NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Prosopis glandulosa (Mesquite,honey)	30	Y	n/a
2. Parkinsonia aculeata (Jerusalem-thorn)	20	Y	FACW
3. Acacia schaffneri (Acacia,twisted)	5		n/a
4.			
5.			
	55	= Total Cover	
Herb Stratum (Plot size:____)			
1. Opuntia engelmannii var. lindheimeri	30	Y	n/a
2. Lycium carolinianum (Wolf-berry,carolina)	5		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	35	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 65

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____	(A) ____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Little herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W133-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	100			N/A	N/A	Sandy Clay	
4-18	7.5YR4/2	100			N/A	N/A	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes _____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W133-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048941.718 N Long: 484062.844 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	Yes X No ___
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes X No ___		

Remarks:
Large PSS abutting ephemeral stream S103 and stock tank W104. Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:___)			
1. Parkinsonia aculeata (Jerusalem-thorn)	30	Y	FACW
2. Acacia schaffneri (Acacia,twisted)	10	Y	n/a
3. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size:___)			
1. Lycium carolinianum (Wolf-berry,carolina)	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	
Woody Vine Stratum (Plot size:___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	X 2 =	
FAC species	X 3 =	
FACU species	X 4 =	
UPL species	X 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W133-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	7.5YR4/2	98	5YR4/3	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (If observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 1 **Feature: Stock Tank WB101** **Date: 4/19/2011** **Comments: Stock tank WB101. Facing north.**	
Photograph ID: 2 **Feature: Stream S103** **Date: 4/19/2011** **Comments: Ephemeral stream S103. Facing south (downstream).**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 3 **Feature: Stream S103** **Date: 4/19/2011** **Comments: Ephemeral stream S103. Facing north (upstream).**	
Photograph ID: 4 **Feature: Ephemeral stream S107** **Date: 4/19/2011** **Comments: Ephemeral stream S107, a short tributary of S103. Facing north (upstream).**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 5	
Feature: Stock Tank WB104 and Wetland W133	
Date: 4/19/2011	
Comments: Stock tank SB104 and wetland W133 (left of photo). Facing south.	
Photograph ID: 6	
Feature: Wetland W133 and Stock Tank W1B104	
Date: 4/21/2011	
Comments: Wetland W133 (background) at the edge of stock tank WB104 (foreground). Facing north.	

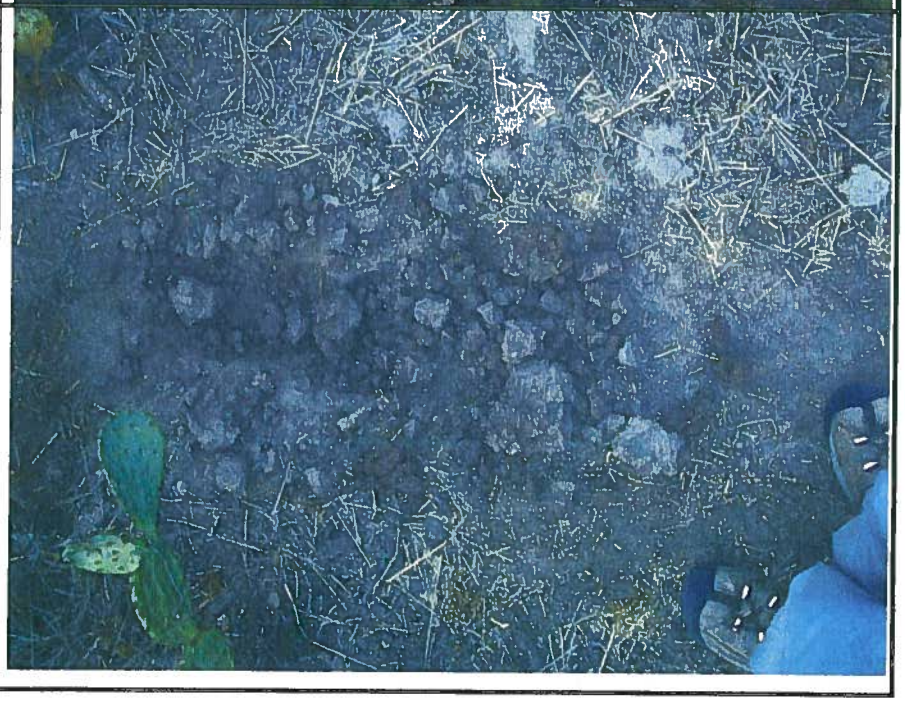
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 7 **Feature: Wetland W133** **Date: 4/21/2011** **Comments: Wetland W133. Facing north.**	
Photograph ID: 8 **Feature: Soil at W133-WDP** **Date: 4/19/2011** **Comments: Soil at W133-WDP wetland data point.**	

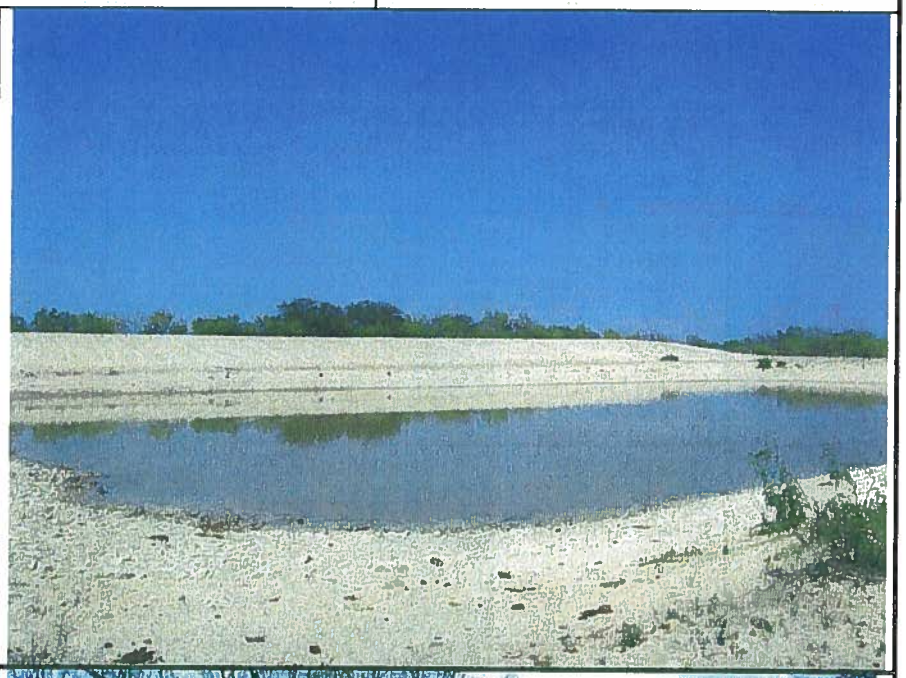
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 9 **Feature: Upland Habitat at W133-UDP** **Date: 4/19/2011** **Comments: Upland habitat at W133-UDP upland data point. Facing north.**	
Photograph ID: 10 **Feature: Soil at W133-UDP** **Date: 4/20/2011** **Comments: Soil at W133-UDP upland data point.**	

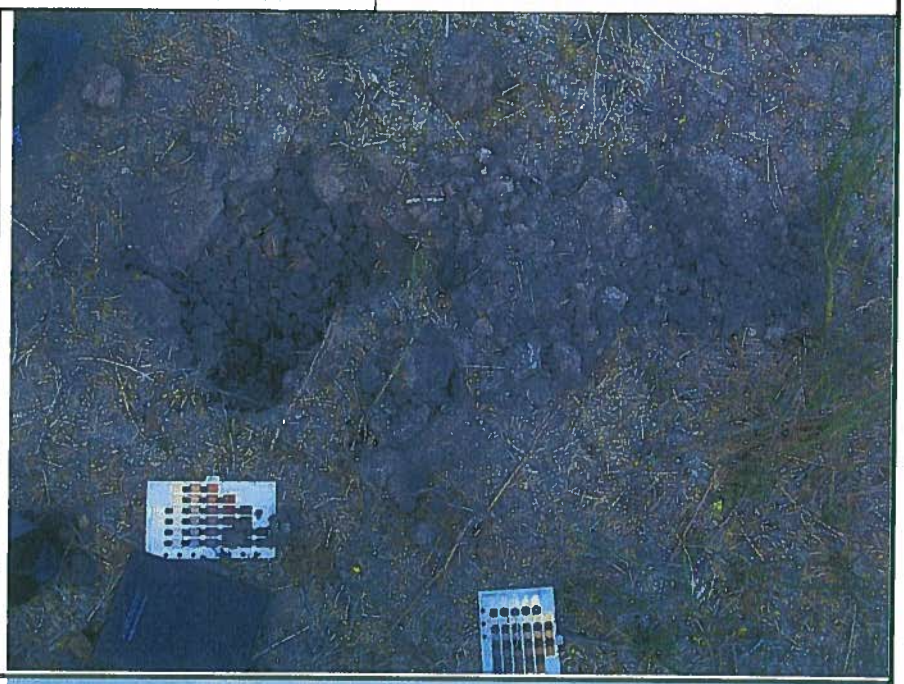
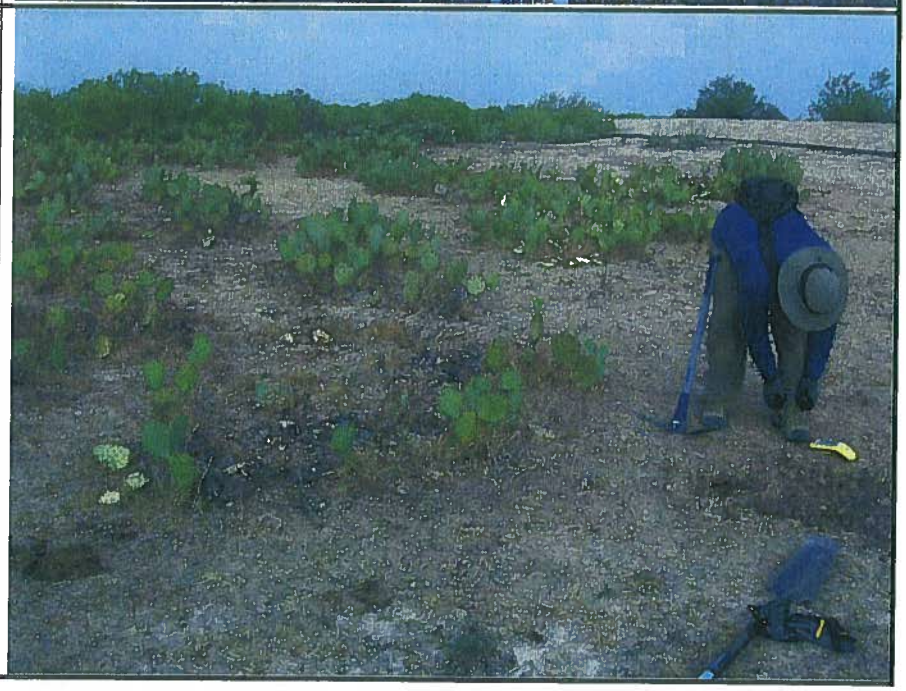
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 11	
Feature: Stock Tank WB106	
Date: 4/19/2011	
Comments: Stock tank WB106. Facing north.	
Photograph ID: 12	
Feature: Wetland W109 (W109-WDP)	
Date: 4/20/2011	
Comments: Wetland W109 at W109-WDP. Facing south.	

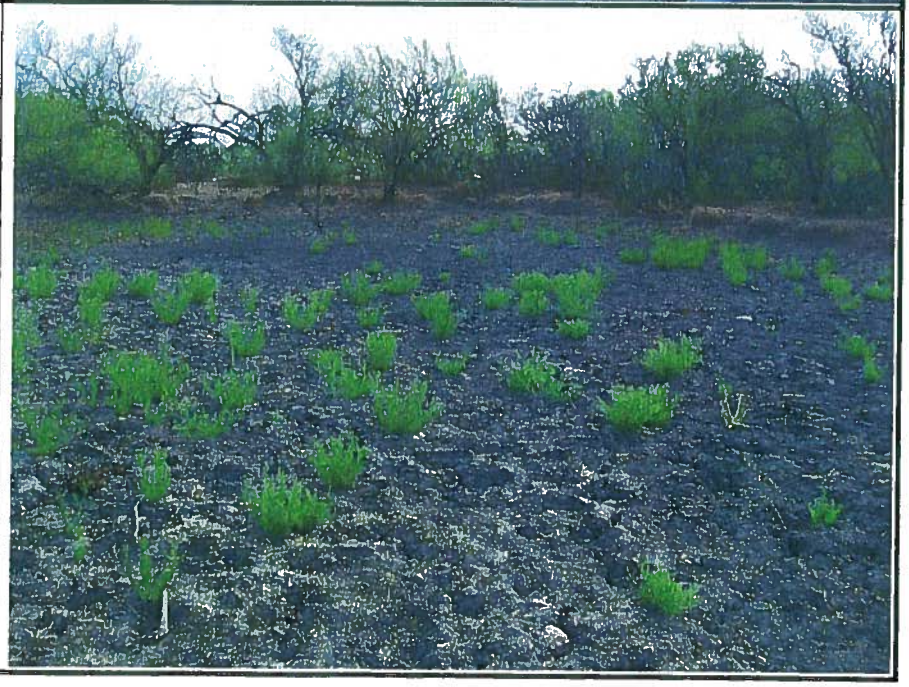
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 13 **Feature: Soil at W109-WDP** **Date: 4/20/2011** **Comments: Soil profile at W109-WDP wetland data point.**	
Photograph ID: 14 **Feature: Upland habitat at W109-UDP** **Date: 4/20/2011** **Comments: Upland habitat at W109-UDP upland data point. Facing north.**	

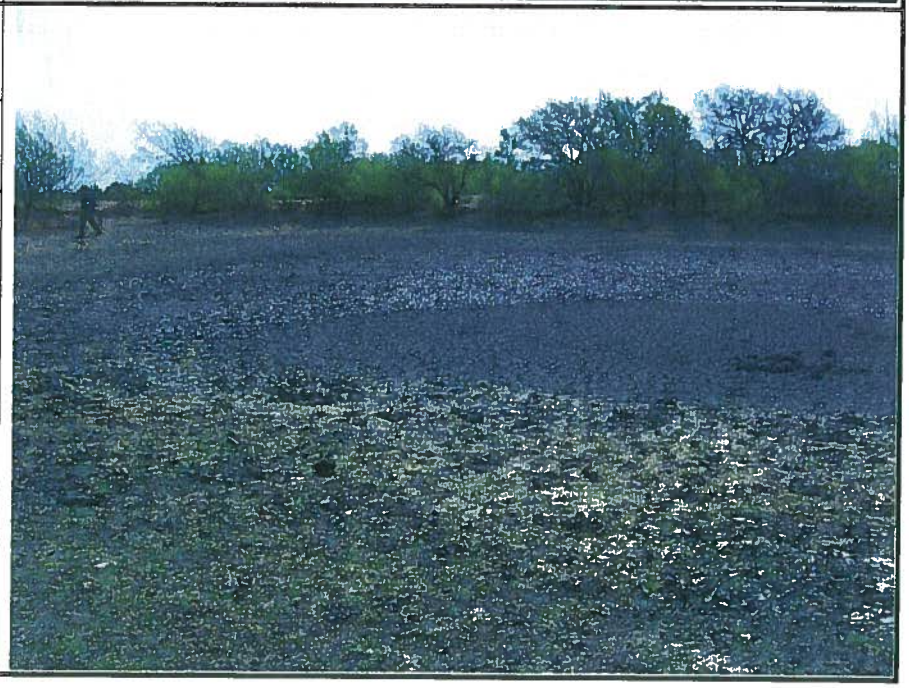
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 15 **Feature: Soil at W109-UDP** **Date: 4/20/2011** **Comments: Soil profile at W109-UDP upland data point.**	
Photograph ID: 16 **Feature: Stock Tank WB110** **Date: 4/20/2011** **Comments: Stock tank WB110. Facing north.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 17 **Feature: Stock Tank WB111** **Date: 4/20/2011** **Comments: Stock Tank WB111. Facing east.**	
Photograph ID: 18 **Feature: Stock Tank WB113** **Date: 4/20/2011** **Comments: Stock Tank WB113. Facing south.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 19	
Feature: Stock Tank WB113 at Stream S114	
Date: 4/20/2011	
Comments: Stock tank WB113 at ephemeral stream S114. Facing north.	
Photograph ID: 20	
Feature: Wetland W115 and Stream S114	
Date: 4/20/2011	
Comments: Wetland W115 (left of photo), located adjacent to ephemeral stream S114 (background). Facing north (upstream).	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	Project Number: 182277
Project Name: Pescadito Environmental Resource Center	County, State: Webb County, Texas

Photograph ID: 21	
Feature: Stream S114	
Date: 4/20/2011	
Comments: Ephemeral stream S114. Facing north (upstream).	
Photograph ID: 22	
Feature: Upland Habitat at W115/W118-UDP	
Date: 4/20/2011	
Comments: Upland habitat at W115/W118-UDP upland data point. Facing east.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 23 **Feature: Soil at W115/W118-UDP** **Date: 4/20/2011** **Comments: Soil at W115/W118-UDP upland data point.**	
Photograph ID: 24 **Feature: Stock Tank WB117** **Date: 4/20/2011** **Comments: Stock Tank WB117. Facing north.**	

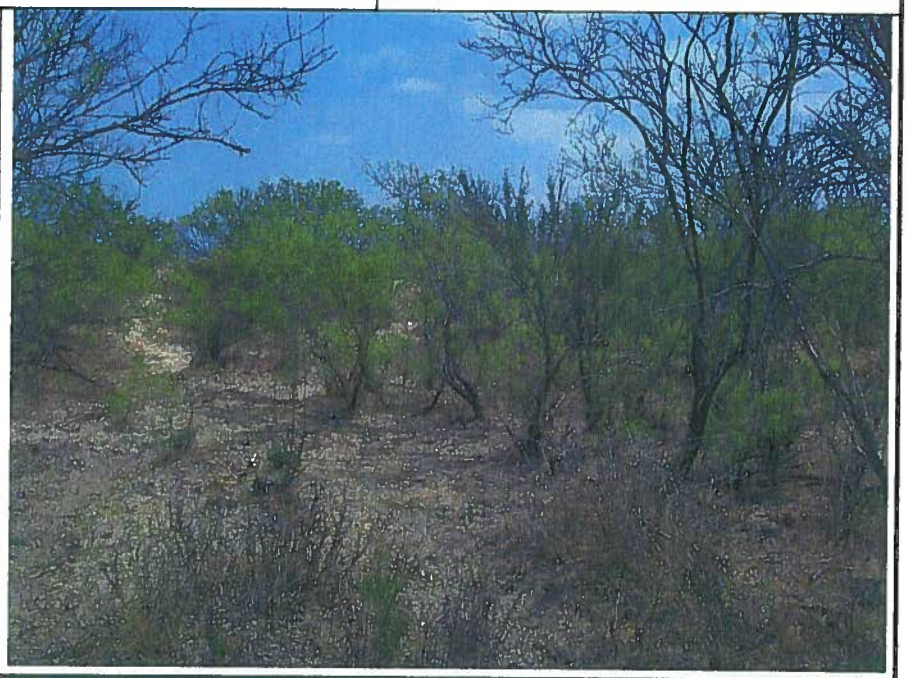
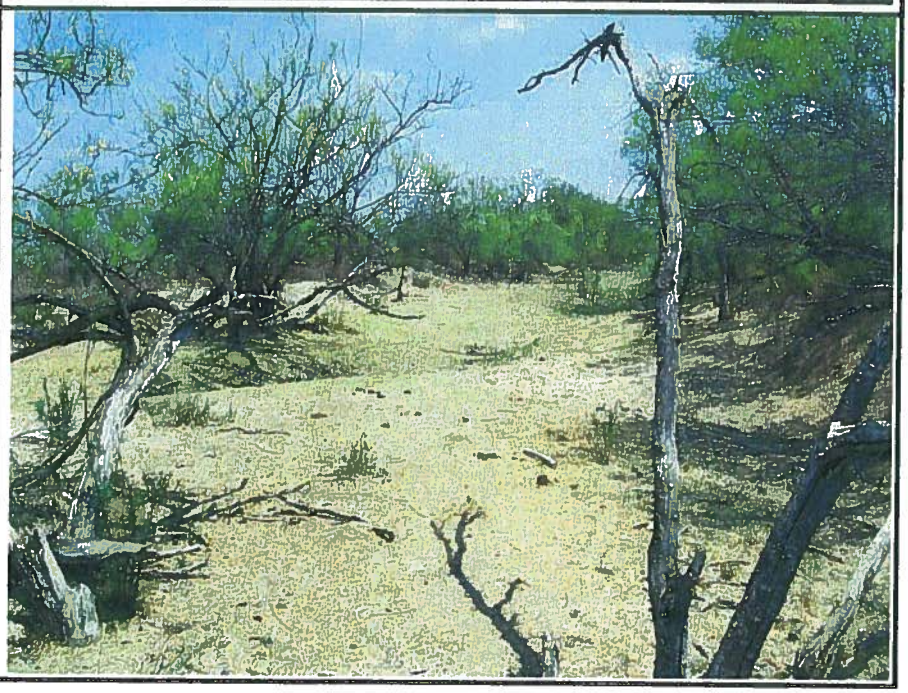
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 25 **Feature: Wetland W118** **Date: 4/20/2011** **Comments: Wetland W118, located within an abandoned drainage channel created by stock tank construction. Facing north.**	
Photograph ID: 26 **Feature: Stream S116** **Date: 4/20/2011** **Comments: Ephemeral stream S116. Facing north (upstream).**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 27 **Feature: Stream S120** **Date: 4/20/2011** **Comments: Ephemeral stream S120 (left of photo). Facing east (downstream).**	
Photograph ID: 28 **Feature: Streams S120 and S121** **Date: 4/20/2011** **Comments: Confluence of ephemeral stream S120 (left of photo) and S121 (foreground and background). Facing east (downstream).**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 29 **Feature: Stream S123** **Date: 4/21/2011** **Comments: Ephemeral stream S123. Facing downstream (south).**	
Photograph ID: 30 **Feature: Stream S124** **Date: 4/21/2011** **Comments: Ephemeral stream S124. Facing south (downstream).**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	Project Number: 182277
Project Name: Pescadito Environmental Resource Center	County, State: Webb County, Texas

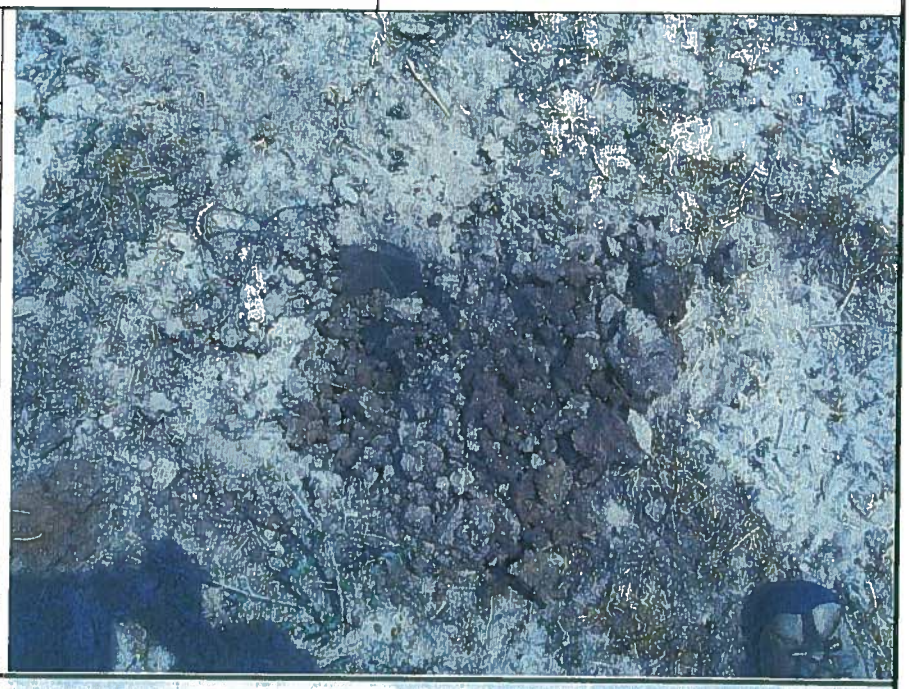
Photograph ID: 31	
Feature: Stream S125	
Date: 4/21/2011	
Comments: Ephemeral stream S125. Facing south (downstream).	
Photograph ID: 32	
Feature: Wetland W126	
Date: 4/21/2011	
Comments: Wetland W126. Facing west.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**
Photograph ID: 33 **Feature: Soil at W126-WDP** **Date: 4/21/2011** **Comments: Soil at W126-WDP wetland data point.**	
Photograph ID: 34 **Feature: Upland habitat at W126-UDP** **Date: 4/21/2011** **Comments: Upland habitat at W126-UDP upland data point. Facing west.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 35 **Feature: Soil at W126-UDP** **Date: 4/21/2011** **Comments: Soil at W126-UDP upland data point.**	
Photograph ID: 36 **Feature: Wetland W127 at W127-WDP1** **Date: 4/21/2011** **Comments: Wetland W127 at W127-WDP1. Facing south.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 37 **Feature: Soil at W127-WDP1** **Date: 4/21/2011** **Comments: Soil at W127-WDP1 wetland data point.**	
Photograph ID: 38 **Feature: Sparse Vegetation at W127 and Stock Tank WB128** **Date: 4/21/2011** **Comments: Area of sparse vegetation at W127, a result of saline soils. Stock tank WB128 in background. Facing south.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 39 **Feature: Soil at W127** **Date: 4/21/2011** **Comments: Hydric soil at sparsely vegetated area of W127.**	
Photograph ID: 40 **Feature: Upland habitat at W127-UDP1** **Date: 4/21/2011** **Comments: Upland habitat at W127-UDP1 upland data point. Facing north.**	

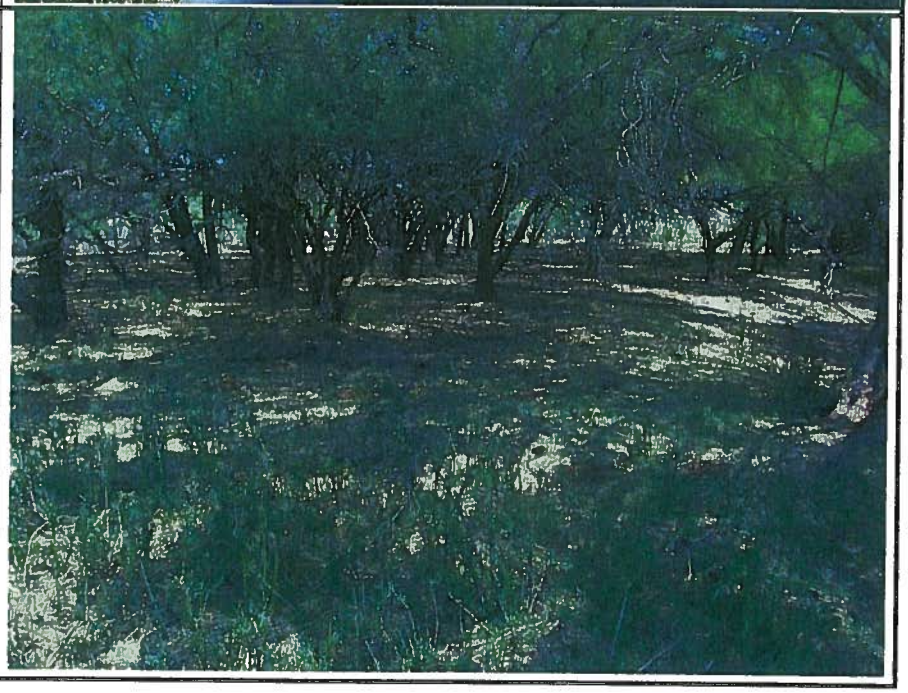
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 41	
Feature: Soil at W127-UDP1	
Date: 4/21/2011	
Comments: Soil profile at W127-UDP1 upland data point.	
Photograph ID: 42	
Feature: Wetland W127 at W127-WDP2 and Stock Tank WB128	
Date: 4/21/2011	
Comments: Fringe area of wetland W127, near W127-WDP2. Stock tank WB128 in background. Facing southwest.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 43 **Feature: Soil at W127-WDP2** **Date: 4/21/2011** **Comments: Soil at W127-WDP2 wetland data point.**	
Photograph ID: 44 **Feature: Upland habitat at W127-UDP2** **Date: 4/21/2011** **Comments: Upland habitat at W127-UDP2 upland data point. Facing southeast.**	

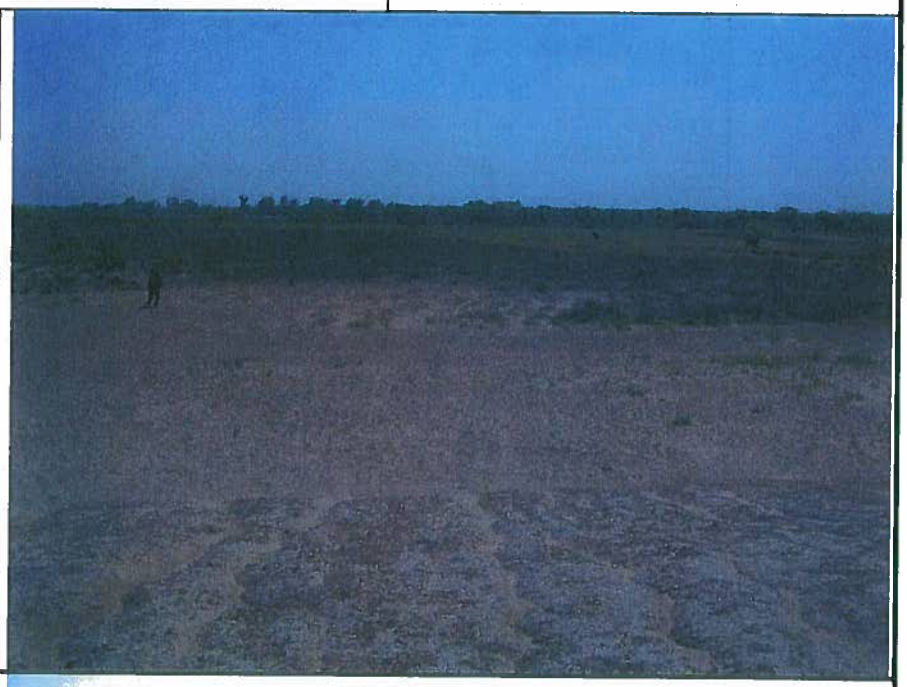
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 45 **Feature: Soil at W127-UDP2** **Date: 4/21/2011** **Comments: Soil profile at W127-UDP2 upland data point.**	
Photograph ID: 46 **Feature: Wetland W127 at Stream S121** **Date: 4/21/2011** **Comments: Wetland W127 at ephemeral stream S121 (left of photo). Facing north.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 47	
Feature: Wetland W127 at W104 Impoundment	
Date: 4/21/2011	
Comments: Wetland W127 (background) at W104 impoundment (foreground). Facing south.	
Photograph ID: 48	
Feature: Wetland W130	
Date: 4/21/2011	
Comments: Wetland W130. Facing south.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 49 **Feature: Soil at W130-UDP1** **Date: 4/21/2011** **Comments: Soil at W130-WDP wetland data point.**	
Photograph ID: 50 **Feature: Upland habitat at W127/W130-UDP** **Date: 4/21/2011** **Comments: Upland habitat at W127/W130-UDP upland data point. Facing northwest.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 51	
Feature: Soil at W12/W130-UDP	
Date: 4/21/2011	
Comments: Soil at W127/W130-UDP upland data point.	
Photograph ID: 52	
Feature: Stock Tank WB131	
Date: 4/21/2011	
Comments: Stock tank WB131. Facing west.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 53 **Feature: Wetland W132** **Date: 4/21/2011** **Comments: Wetland W132. Facing southeast.**	
Photograph ID: 54 **Feature: Soil at W132-WDP** **Date: 4/21/2011** **Comments: Soil at W132-WDP wetland data point.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 55	
Feature: Upland Habitat at W132-UDP	
Date: 4/21/2011	
Comments: Upland habitat at W132-UDP upland data point. Facing east.	
Photograph ID: 56	
Feature: Soil at W132-UDP	
Date: 4/21/2011	
Comments: Soil at W132-UDP upland data point.	

APPENDIX D:
RESUMES

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DEBORAH BLACKBURN

EDUCATION
B.S., Biology, University of Texas at Austin, 2000

PERMITS AND CERTIFICATIONS
U.S. Fish and Wildlife Endangered Species Permit No. TE33863A for
Golden-cheeked Warbler and Southwestern Willow Flycatcher
TxDOT Pre-certification Codes: 2.4.1, 2.4.2, 2.6.1, 2.6.2

AREAS OF EXPERTISE
Ms. Deborah Blackburn has program management and technical experience in the following general areas:

- NEPA Documentation and Environmental Impact Assessments
- Threatened and Endangered Species Assessments and Consultation
- Section 404 Permitting
- Water Resource Planning

REPRESENTATIVE EXPERIENCE
With over 10 years of experience, Ms. Blackburn is a Senior Scientist at TRC in Austin, Texas. She leads multi-discipline teams in the completion of environmental compliance activities and National Environmental Policy Act (NEPA) documentation for federal and state agencies, municipalities, utility districts, energy companies and private developers. Her responsibilities include agency consultation and coordination, field investigation, permitting, and project management. As a NEPA Coordinator with the Bureau of Reclamation, she was solely responsible for the scientific and legal adequacy of the hundreds of NEPA documents produced by the Oklahoma-Texas Area Office. As the environmental representative for a federal agency, she worked closely with numerous local, state and federal officials including USACE, USFWS, NRCS, and EPA.

USIBWC, River Restoration Implementation Plan: Avian Surveys – New Mexico (Project Manager: Present)
TRC has been contracted by the United States International Boundary and Water Commission (USIBWC) to provide environmental services to restore healthy riparian function and enhance natural riverine processes along a 105-mile section of the Rio Grande. Ms. Blackburn is the project manager responsible for conducting multi-year avian surveys for the federally endangered southwestern willow flycatcher and the yellow-billed cuckoo, a species of concern. Ms. Blackburn's responsibilities include conducting surveys in accordance with U.S. Fish and Wildlife Service (USFWS) protocols, coordinating property access with private landowners, and preparing technical reports for USIBWC and USFWS.

USIBWC, Mission Levee Supplemental EA (Project Manager: Present) – Hidalgo County, Texas
TRC has been contracted by the USIBWC to prepare a supplemental EA for a levee rehabilitation project in Hidalgo County, TX. Ms. Blackburn is responsible for coordinating all aspects of the supplemental EA including biological and cultural resource surveys, agency coordination, and development of the EA in accordance with USIBWC regulations.

Southmost Regional Water Authority, Desalination Plant Improvements EID (Project Manager: Present) – Cameron County, Texas
Ms. Blackburn is the project manager responsible for preparing the Environmental Information Document (EID) for improvements to the Regional Desalination Plant in Cameron County, Texas. This project would involve new construction in order to treat elevated levels of arsenic in the raw brackish water. SRWA is seeking funding under the Drinking Water State Revolving Fund Program administered by the Texas Water Development Board (TWDB) for this project. Ms. Blackburn is responsible for coordinating with federal and state agencies to ensure environmental compliance and developing the EID in accordance with TWDB regulations.

Texas Department of Transportation, Biological Services Contract (Project Manager: 2009 – Present)
Ms. Blackburn is the project manager for this 2-year ID/IQ Contract, managing all assigned tasks orders for biological services including presence/absence surveys, habitat analysis, and biological analyses. Task orders have included modifying existing protocols for conducting habitat and presence/absence surveys for mussels in order to meet TxDOT's obligations under state law and to further knowledge regarding habitat requirements and abundance of state-listed species. TRC has conducted mussel habitat and presence/absence surveys for 15 road/bridge improvement projects throughout the state. Surveys have encompassed all types of waterways including lakes, rivers, streams, and creeks. Task orders have also included conducting presence/absence surveys for federally listed plant species.

City of Pflugerville, Environmental Services – Pflugerville, Texas (Project Manager: Present)
TRC has been contracted to provide environmental services for development of a 160-acre property. Ms. Blackburn is responsible for providing environmental services for the project that includes wetland delineations, threatened and endangered species habitat assessment, archeological survey, and an Individual Permit under Section 404 of the Clean Water Act.

City of Baton Rouge, Hooper Road Sanitary Sewer Storage: Environmental Services – Baton Rouge, Louisiana (Project Manager: 2009 – Present)
TRC has been contracted by the City of Baton Rouge and East Baton Rouge Parish to provide engineering design and environmental services for two 5 million gallon wastewater storage tanks, storage tank odor control, and associated pipelines. Ms. Blackburn is the lead biologist responsible for providing environmental services for the project that includes wetland delineations, Phase I Environmental Site Assessments, archeological survey, and any associated permitting.

City of Yoakum, Sanitary Sewer Improvement Project – Phase III Lavaca and DeWitt Counties, Texas (Task Manger: Present)
Ms. Blackburn serves as the task manager responsible for preparing the EA for a sanitary sewer project in Yoakum, Texas. The City of Yoakum is seeking funding under the Clean Water State Revolving Fund Program administered by the TWDB for this $2.5 million sanitary sewer project. Ms. Blackburn is responsible for coordinating with federal and state agencies to ensure environmental compliance, overseeing wetland delineations and archeological surveys and developing the EA in accordance with TWDB regulations.

Confidential Client, Threatened and Endangered Species Habitat Assessment and Waters of the U.S. Determination, Webb County, Texas (Task Manager: Present)
Ms. Blackburn is the task manager for a threatened and endangered species habitat assessment and a waters of the U.S. determination for a proposed landfill located in Webb County, Texas. She is responsible for coordinating the wetland delineation report and well as the biological evaluation report for state and federal protected species in support of a municipal solid waste permit application.

Confidential Client, Waters of the U.S. Determination, Guadalupe County, Texas (Task Manager: Present)
Ms. Blackburn is the task manager for a waters of the U.S. determination for a wastewater treatment plant in Guadalupe County, Texas. She is also responsible for acquiring all necessary 404 permitting that may be required as part of the project.

Confidential Client, Golden-cheeked Warbler Presence/Absence Surveys, Hays County, Texas (Task Manager: 2011)
Ms. Blackburn was the task manager for a presence/absence survey for the federally endangered golden-cheeked warbler at a proposed cell tower expansion. The project also included habitat assessment for the federally endangered black-capped vireo. Neither species was observed at the site.

Guadalupe-Blanco River Authority, Waters of the U.S. Determination, Caldwell County, Texas (Task Manager: 2011)
Ms. Blackburn was the task manager for a waters of the U.S. determination for a water pipeline replacement project in Caldwell County, Texas. She was also responsible for coordinating with the USACE regarding the jurisdictional determination and nationwide permit requirements.

City of Lockhart, Waters of the U.S. Determination, Caldwell County, Texas (Task Manager: 2011)
Ms. Blackburn was the task manager for a waters of the U.S. determination for City of Lockhart property located in Caldwell County, Texas. She was also responsible for coordinating with the USACE regarding the jurisdictional determination.

USIBWC, Arroyo Colorado South Levee EA (Project Manager: 2010) Hidalgo and Cameron Counties, Texas
Ms. Blackburn was the project manager responsible for preparing the EA/FONSI for a levee rehabilitation project in Hidalgo and Cameron Counties, Texas. This project involves raising the existing levee several feet in height for a distance of approximately 16 miles. Ms. Blackburn was responsible for coordinating all aspects of the EA including biological and cultural resource surveys, agency coordination, and development of the EA in accordance with USIBWC regulations. A FONSI was signed by USIBWC on November 26, 2010.

Love's Travel Stops, Categorical Exclusion – Robertson County, Texas (Project Manager: 2010)
Ms. Blackburn served as the project manager responsible for preparing the categorical exclusion (CE) document for a road improvement project in Hearne, Texas. Ms. Blackburn was responsible for developing the CE in accordance with TxDOT regulations.

Timber Lane Utility District, Categorical Exclusion – Harris County, Texas (Task Manager: 2010)
Ms. Blackburn was the task manager responsible for preparing the categorical exclusion (CE) document for a hike and bike trail along Cypress Creek near Spring, TX. She was also responsible for coordinating the wetland delineation report and any associated 404 permitting that may be required as part of the project.

Brownsville Public Utility Board and Laguna Madre Water District, Seawater Desalination Permitting Strategy – Cameron County, Texas (Project Manger: 2009)
Ms. Blackburn was the project manager responsible for developing permitting and environmental compliance strategies for two seawater desalination plants in

Cameron County, Texas. These two facilities would be the first seawater desalination plants permitted in the state of Texas. Ms. Blackburn was responsible for providing reports that will include a detailed list of permits and compliance documents required for each desalination project as well as a projected timeline for each identified permit and compliance document as well as a projected cost to obtain permit and compliance approvals.

Wind Energy Transmission Texas, CREZ Transmission Lines – West Texas (Biologist: 2009 – 2010)
Wind Energy Transmission Texas is proposing to build approximately 300 miles of transmission line in order to deliver renewable energy from Competitive Renewable Energy Zones (CREZ) in West Texas. Ms. Blackburn was responsible for coordinating and preparing threatened and endangered species reports and wetland delineation reports for five switching stations in West Texas. Ms. Blackburn also participated in several public meetings as the environmental representative.

City of Yoakum, Sanitary Sewer Improvement Project – Phase II
Lavaca and DeWitt Counties, Texas (Project Manger: 2009)
Ms. Blackburn served as the project manager responsible for preparing the Environmental Assessment for a sanitary sewer project in Yoakum, Texas. The City of Yoakum was seeking funding under the Clean Water State Revolving Fund Program administered by the TWDB for this $2.5 million sanitary sewer project. Ms. Blackburn was responsible for coordinating with federal and state agencies to ensure environmental compliance and developed the EA in accordance with TWDB regulations. The TWDB approved the Environmental Assessment on March 11, 2010.

USIBWC, Environmental Management System Implementation
Texas, New Mexico, Arizona (Biologist: 2009)
Ms. Blackburn was the project biologist responsible for auditing and preparing an Environmental Management System at four USIBWC field offices in Texas, New Mexico and Arizona. This project involved identifying environmental aspects and assisting USIBWC staff in developing objectives and targets at each facility.

AES, Avian & Bat Mortality Study – Abilene, Texas
(Task Leader/Biologist: 2007 – 2009)
Ms. Blackburn was the lead biologist responsible for monitoring avian and bat mortality at the AES Buffalo Gap 2 and Buffalo Gap 3 wind farms near Abilene, Texas. She was responsible for management of biological survey crews as well as authoring interim and final reports on the projects. In addition, Ms. Blackburn conducted carcass searches according to established protocols and provided species identification, along with photo and GPS documentation of carcasses.

Austin Energy, Mueller Substation – Austin, Texas (Biologist: 2009)
Ms. Blackburn served as the lead biologist for a proposed 4.5-acre electrical substation installation in Austin, Texas. She was responsible for preparing an environmental report focusing on critical environmental features such as floodplains, water quality zones, and vegetation preservation and mitigation.

New Mexico Suntower – Santa Teresa, New Mexico (Biologist: 2009)
Ms. Blackburn served as the lead biologist for a proposed 420-acre solar power facility in Doña Ana County, New Mexico. She was responsible for preparing the biological resources report focusing on suitable habitat and presence/absence of threatened and endangered species.

Energy Transfer Partners, LP, Tiger Pipeline Project – Louisiana and Texas (Biologist: 2009)
Ms. Blackburn served as a biologist for a 180-mile natural gas pipeline route from Panola County, Texas to Richland Parish, Louisiana. She was responsible for delineating wetland and stream resources along portions of the pipeline route in north central Louisiana and identifying numerous upland and wetland plants, hydric soils, and rare habitat for threatened and endangered species. Additional responsibilities included acquiring GPS data for wetland and stream boundaries along the proposed pipeline route, reroutes, and access roads.

Green Light Plan, Old Hammond Highway – Segment 2
Baton Rouge, Louisiana (Project Manager: 2007 – 2008)
Ms. Blackburn served as the biologist responsible for preparing the EA for a road widening project in Baton Rouge, Louisiana. This is a $15 million transportation project expanding an existing 2-lane road to 4-lanes. Ms. Blackburn was responsible for coordinating public involvement meetings with the City of Baton Rouge and East Baton Rouge Parish, agency coordination, and development of the EA in accordance with Federal Highway Administration (FHWA) and Louisiana Department of Transportation and Development regulations. A Finding of No Significant Impact was signed by FHWA on November 24, 2008.

U.S. Bureau of Reclamation – NEPA Specialist/Coordinator (2002 – 2007)
Ms. Blackburn served as a NEPA specialist/coordinator for the Bureau of Reclamation's Oklahoma-Texas Area Office (OTAO) for almost 6 years. She developed and directed environmental compliance and permitting strategies for water resources planning, construction and management activities in Texas, Oklahoma, and Kansas. She directed and conducted environmental impact analyses and prepared documentation to meet the requirements of the NEPA, ESA and all other related laws, regulations and directives for OTAO activities. As NEPA Coordinator, she was solely responsible for the scientific and legal adequacy of the hundreds of NEPA documents produced by the Area Office. As the environmental representative for a federal agency, she worked closely with

numerous local, state and federal officials including USACE, USFWS, NRCS, and EPA. Selected projects include:

Equus Beds Aquifer Storage and Recovery EIS - Wichita, Kansas (2006 – 2007)
Ms. Blackburn was responsible for overseeing the management of the Environmental Impact Statement for the Bureau of Reclamation. This $137 million aquifer storage project is designed to halt saltwater intrusion into the aquifer in addition to meeting the future water supply needs of Wichita. Ms. Blackburn participated in high-level scoping and development meetings, developed assignment scopes of work and budgets, prepared the draft Notice of Intent and provided senior-level review of project deliverables.

Lower Rio Grande Valley Program – U.S./Mexico Border, Texas (2002 – 2007)
Ms. Blackburn served as a NEPA Coordinator/Specialist for the *Lower Rio Grande Valley Water Resources Conservation and Improvement Act of 2000* (Program). The Program authorizes the investigation and identification of opportunities to improve the water supply in 11 Texas counties along the U.S./Mexico border for the purpose of reducing raw water conveyance losses and improving operational efficiencies in the Program area. As the NEPA Specialist/Coordinator for the Program, Ms. Blackburn was responsible for coordinating and preparing NEPA documentation and permits for 19 projects with an estimated construction cost of $96 million. These activities included obtaining Individual Permits from the USACE, conducting habitat surveys for the endangered ocelot and jaguarundi and coordinating with the Texas Historical Commission.

Additionally, she was responsible for quarterly monitoring of projects to ensure environmental commitments were met. As the representative for environmental compliance on the team, she was also intimately involved with discussions and decisions regarding implementation guidance of the Program. Implementation of this Program has proven so successful that it now serves as a basis for other major Reclamation funding programs such as *Water 2025*, *Water for America* and *WaterSMART*.

Ocelot and Jaguarundi Survey – Choke Canyon Reservoir, Texas (2004 – 2005)
Ms. Blackburn served as team member surveying the federal lands surrounding Choke Canyon Reservoir for the federally endangered ocelot and jaguarundi. Ms. Blackburn assisted with the installation and determination of site locations for photo monitoring equipment based on habitat requirements for the felids. She was also a reviewer for the final report presented to the U.S. Fish and Wildlife Service.

Bat Exclusion San Angelo Dam – San Angelo, Texas (2002)
Ms. Blackburn was responsible for designing and implementing a bat exclusion plan for *Myotis velifer* (cave myotis) at the outlet works of San Angelo Dam. Ms. Blackburn coordinated construction of artificial roosts for the resident bat population and provided engineers with concept designs of exclusion devices for the outlet works opening. She also monitored the occupation of the artificial roosts to assist in determining the success of the exclusion.

SPECIALIZED TRAINING

- USFWS Southwestern Willow Flycatcher Training, May 2010
- Gull Identification Class, March 2008
- Wetlands Delineator Certification Training, February 2008
- Intro to NEPA & Transportation Decisionmaking (NHI), September 2007
- NEPA Compliance Course, March 2007
- Black-capped Vireo Habitat Assessment, July 2006
- Cumulative Impacts Analysis, June 2005
- Visual Display of Quantitative Information, October 2004
- USFWS Interagency Consultation for Endangered Species, Nov. 2002
- Preparing and Documenting Environmental Impact Analysis, June 2002
- Groundwater Field Techniques, October 2001
- Operation of Borehole Geophysical Instrumentation, November 2000
- Installation & Operation Satellite Data Collection Platforms, October 2000
- Bat Conservation and Management Workshop, 1998
- Emergency Medical Technician, May 2009
- 24-Hour HAZWOPER, with 8-Hour Refresher, December 2004 – Present

PUBLICATION

Cressler, Alan M., Deborah K. Blackburn and Kristen Bukowski McSwain. 2001. *Ground-Water Conditions in Georgia, 2000.* Open-File Report 01-220. U.S. Geological Survey, Atlanta, Georgia.

HONORS AND AWARDS

- Vice Chancellor's Award in Excellence for Industry/Agency/University/Association Partnerships – College of Agriculture & Life Sciences, Texas A&M University 2005
- Customer Service Excellence Award – Department of the Interior 2004
- Customer Service Excellence Award – Bureau of Reclamation 2003

PROFESSIONAL AFFILIATIONS

- National Association of Environmental Professionals
- Society for Conservation Biology

BARRETT R. CLARK

EDUCATION

M.S., Biology – Restoration Ecology, Louisiana Tech University, 2005
B.S., Biology, Louisiana Tech University, 2002

AREAS OF EXPERTISE

Mr. Barrett R. Clark has technical experience in the following areas:

- Wetland Delineations
- Waters of the U.S. Jurisdictional Determinations
- Ecological Risk Assessments
- Threatened and Endangered Species Surveys and Habitat Characterization
- Biological Monitoring
- Vegetation Identification, Surveying, and Sampling
- Environmental Assessments
- Natural Resource Assessments
- Multi-Phase Site Investigations and Assessments
- Regulatory Support and Compliance

REPRESENTATIVE EXPERIENCE

Mr. Clark has over five years of experience and progressive responsibility in environmental consulting. His range of qualifications include conducting wetland delineations, conducting threatened and endangered species surveys and habitat assessments, plant and freshwater mussel (Texas) taxonomy, providing biological monitoring, completing field investigations and surveys, analyzing investigation results, writing work plans and technical reports, permitting and regulatory compliance, planning, cost estimating and writing proposals, and assisting in project management. He currently serves as a Staff Scientist in the TRC – Austin, Texas office.

THREATENED AND ENDANGERED SPECIES SURVEYS AND HABITAT ASSESSMENTS

Texas Department of Transportation, Presence/Absence Survey, Hidalgo and Starr Counties, Texas (Biologist: 2009)

Mr. Clark served as a Biologist for a presence/absence survey for threatened and endangered plant species along the proposed La Joya Relief Route Highway 83 realignment project in Hidalgo and Starr Counties, Texas. He was responsible for identifying threatened and endangered plant and animal species, characterizing vegetation communities, and reviewing the biological survey report. Surveyed species included the federally and state-listed Walker's manioc (*Manihot walkerae*), star cactus (*Astrophytum asterias*), and Johnston's frankenia (*Frankenia johnstonii*). Two populations of Walker's manioc were identified within the survey corridor, as well as five Texas tortoises (*Gopherus berlandieri*) and one Texas horned lizard (*Phrynosoma*

cornutum). Prior to conducting the survey, the survey crew also visited sites with known populations of Walker's manioc, star cactus, and Johnston's frankenia.

Texas Department of Transportation, Habitat Survey, Upshur and Smith Counties, Texas (Biologist/Field Technician: 2011)
Mr. Clark serves as a Biologist/Field Technician for a multi-phased survey for threatened mollusks for a proposed highway improvement project in Upshur and Smith counties, Texas. The multi-phased approach will consist of preliminary habitat and Phase II probability-based presence/absence surveys for a highway crossing of the Sabine River and relief channel. He is responsible for managing the survey crew, collecting geomorphology data, assisting with species identification, data modeling and analysis, and writing the biological survey reports. Surveyed threatened species included the state-listed Louisiana pigtoe (*Pleurobema riddellii*), sandbank pocketbook (*Lampsilis satura*), southern hickorynut (*Obovaria jacksoniana*), Texas heelsplitter (*Potamilus amphichaenus*), and Texas pigtoe (*Fusconaia askewi*). Observed species included the pondmussel (*Ligumia subrostrata*), yellow sandshell (*Lampsilis teres*), pistolgrip (*Tritogonia verrucosa*), giant floater (*Anodonta grandis*), and lilliput (*Toxolasma parvus*). Phase II presence/absence surveys are planned for the crossings.

Texas Department of Transportation, Habitat Survey, San Saba County, Texas (Biologist/Field Technician: 2011)
Mr. Clark serves as a Biologist/Field Technician for a multi-phased survey for threatened mollusks for a proposed highway improvement project in San Saba County, Texas. The multi-phased approach will consist of preliminary habitat and Phase II probability-based presence/absence surveys for a road crossing of the San Saba River (Colorado River Basin). He is responsible for managing the survey crew, collecting geomorphology data, assisting with species identification, data modeling and analysis, and writing the biological survey reports. Surveyed threatened species included the state-listed Texas fatmucket (*Lampsilis bracteata*), golden orb (*Quadrula aurea*), false spike mussel (*Quadrula mitchelli*), Texas fawnsfoot (*Truncilla macrodon*), and Texas pimpleback (*Quadrula petrina*). One live smooth pimpleback, as well as several dead Texas fawnsfoot and Texas pimpleback specimens were recorded. Other observed species included the bleufer (*Potamilus purpuratus*), threeridge (*Ablema plicata*), pistolgrip, fragile papershell (*Leptodea fragilis*), and paper pondshell (*Utterbackia imbecillis*). A Phase III comprehensive survey is planned for the crossing.

Texas Department of Transportation, Presence/Absence Survey, Collin County, Texas (Biologist/Field Technician: 2011)
Mr. Clark served as a Biologist/Field Technician for a presence/absence survey for threatened mollusks for a proposed highway improvement project at Brinlee Creek (Trinity River Basin) in Collin County, Texas. He was responsible for managing the survey crew, collecting geomorphology data, data modeling and analysis, writing and reviewing the biological survey reports, and assisting with species identification. Surveyed threatened species included the state-listed Texas heelsplitter and Louisiana

pigtoe. Observed species included the giant floater, pondhorn, Texas lilliput (*Toxolasma texasensis*), and paper pondshell.

Texas Department of Transportation, Habitat and Presence/Absence Surveys, Denton County, Texas (Biologist/Field Technician: 2010)
Mr. Clark served as a Biologist/Field Technician for a multi-phased survey for threatened mollusks for a proposed highway improvement project at Lake Lewisville (Trinity River Basin) in Denton County, Texas. The multi-phased approach consisted of a preliminary habitat, Phase II probability-based presence/absence, and Phase III comprehensive surveys in the lake and two stream tributaries. He was responsible for managing the survey crew and dive team, collecting geomorphology data, data modeling and analysis, writing and reviewing the biological survey reports, and assisting with species identification. Surveyed threatened species included the state-listed Texas heelsplitter, sandbank pocketbook, and Louisiana pigtoe. One live Texas heelsplitter was recorded during the Phase II probability-based presence/absence survey. Other observed species included the southern mapleleaf (*Quadrula apiculata*), threeridge, bleufer, giant floater, yellow sandshell, Louisiana fatmucket (*Lampsilis hydiana*), pink papershell (*Potamilus ohiensis*), pondhorn, and tapered pondhorn (*Uniomerus declivis*).

Texas Department of Transportation, Habitat and Presence/Absence Surveys, Kaufman County, Texas (Biologist/Field Technician: 2010)
Mr. Clark served as a Biologist/Field Technician for a multi-phased survey for threatened mollusks for a proposed highway improvement project in Kaufman County, Texas. The multi-phased approach consisted of a preliminary habitat and Phase II probability-based presence/absence surveys in two creeks in the Trinity River Basin. He was responsible for managing the survey crew and dive team, collecting geomorphology data, data modeling and analysis, writing and reviewing the biological survey reports, and assisting with species identification. Surveyed threatened species included the state-listed Texas heelsplitter, sandbank pocketbook, and Louisiana pigtoe. Observed species included the southern mapleleaf, threeridge, giant floater, Texas lilliput, pink papershell, pondmussel, and pondhorn.

Texas Department of Transportation, Habitat Surveys, Kendall, Comal, Guadalupe, and Bexar Counties, Texas (Biologist/Field Technician: 2010)
Mr. Clark serves as a Biologist/Field Technician for a multi-phased survey for threatened mollusks for eight proposed highway improvement projects in Kendall, Comal, Guadalupe, and Bexar counties, Texas. The multi-phased approach will consist of preliminary habitat and Phase II probability-based presence/absence surveys for several highway crossings of the Guadalupe River and associated tributaries. He is responsible for managing the survey crew, collecting geomorphology data, species identification, data modeling and analysis, and writing the biological survey reports. Surveyed threatened species included the state-listed Texas fatmucket, golden orb, false spike mussel, and Texas pimpleback. Observed species included the Tampico pearlymussel (*Cyrtonaias tampicoensis*), yellow sandshell, and threeridge. Phase II probability-based presence/absence surveys are planned for several of the crossings.

Texas Department of Transportation, Habitat Survey, Runnels County, Texas (Biologist/Field Technician: 2010)
Mr. Clark served as a Biologist/Field Technician for a habitat survey for threatened mollusks for a proposed railroad improvement project at the Colorado River in Runnels County, Texas. He was responsible for managing the survey crew, collecting geomorphology data, assisting with species identification, reviewing data modeling and analysis, and reviewing the biological survey reports. Surveyed threatened species included the state-listed Texas fatmucket, Texas pimpleback, smooth pimpleback, and Texas fawnsfoot. Observed species included the Tampico pearlymussel, bleufer, and southern mapleleaf.

Confidential Client, Waters of the U.S. Determination and Threatened and Endangered Species Habitat Assessment, Webb County, Texas (Biologist: 2009)
Mr. Clark served as the Biologist for a Waters of the U.S. Determination and Threatened and Endangered Species Habitat Assessment for a proposed landfill located in Webb County, Texas. He was responsible for identifying potential Waters of the U.S., characterizing vegetation communities, assessing threatened and endangered species habitats, including those for the federally- and state-listed Johnston's frankenia (*Frankenia johnstonii*) and the state-listed indigo snake (*Drymarchon corais*), reticulate collard lizard (*Crotaphytus reticulates*), Texas horned lizard (*Phrynosoma cornutum*), and Texas tortoise (*Gopherus berlandieri*), and preparing the summary report. One indigo snake was identified within the project area during the assessment.

ECOLOGICAL RISK ASSESSMENTS

Austin Energy, Tier 2 Screening Level Ecological Risk Assessment (SLERA) – Austin, Texas (Task Leader/Ecologist: 2006 - Present)
Mr. Clark serves as the Task Leader/Ecologist for a Tier 2 Screening-Level Ecological Risk Assessment (SLERA) of the Holly Street Power Plant located on Town Lake in Austin, Texas. He is responsible for reviewing existing site data, conducting a threatened and endangered species habitat assessment, analyzing ecological significance of site contamination, developing the ecotoxicity model involving a number of wildlife receptors and chemicals of concern (COCs) including polychlorinated biphenyls (PCBs) and polycyclic aromatic hydrocarbons (PAHs), preparing the SLERA in accordance with current regulations, agency consultation with the Texas Commission on Environmental Quality (TCEQ) and the Texas Parks and Wildlife Department (TPWD), and assisting in project management.

Austin Energy, Tier 3 Site Specific Ecological Risk Assessment (SSERA) – Austin, Texas (Task Leader/Ecologist: 2007 – Present)

Mr. Clark serves as the Task Leader/Ecologist for a Tier 3 Site Specific Ecological Risk Assessment (SSERA) for the Holly Street Power Plant located on Town Lake in Austin, Texas. He is responsible for agency consultation with the TCEQ, developing a site-specific sediment sampling strategy and sediment toxicity analysis, which are dependent on the results of the Holly Street Power Plant SLERA. Mr. Clark is also responsible for collecting sediment samples for analytical and ecological toxicity tests, evaluating the benthic invertebrate sediment toxicity test results, and preparing the SSERA in accordance with current regulations. The assessment focused on identifying risks to benthic invertebrates from PCBs and PAHs through a weight-of-evidence approach so that a balanced approach could be undertaken in the risk management process for the evaluation of remediation options. The next phase of the Holly Street Power Plant project will involve conducting a remediation feasibility study and Ecological Services Analysis (ESA), an evaluation to be used for eventually performing an on-site or off-site compensatory ecological restoration project, possibly in combination with more standard remedial actions.

WETLAND DELINEATIONS

The City of Baton Rouge and East Baton Rouge Parish, Waters of the U.S. Determination and Wetland Delineation – Baton Rouge, Louisiana (Biologist: 2009-2010)

Mr. Clark served as the Biologist responsible for conducting a waters of the U.S. determination and wetland delineation for two sites for a proposed waste water storage facility in Baton Rouge. He was responsible for assessing the jurisdictional limits of wetlands within the project area, identifying numerous upland and wetland plants, identifying hydric soils, completing wetland delineation forms, acquiring spatial data with sub-meter GPS equipment, and writing the wetland delineation report. No jurisdictional wetlands were identified within the survey area.

CenterPoint Energy Gas Transmission Company (CEGT), Line E, EM-7, EM-9 Abandonment, Nevada and Ouachita Counties, Arkansas (Biologist: 2010)

Mr. Clark provided support as a Biologist and wetland delineator for several pipeline abandonment projects in south Arkansas. He was responsible for delineating numerous wetland and stream resources along assigned pipeline route sections and identifying numerous upland and wetland plants, hydric soils, and rare habitat for threatened and endangered species.

CEGT, Line H Abandonment, Union Parish, Louisiana and Union County, Arkansas (Biologist: 2010)

Mr. Clark provided support as a Biologist and wetland delineator for a pipeline abandonment project in south Arkansas and north Louisiana. He was responsible for delineating numerous wetland and stream resources along assigned pipeline route sections and identifying numerous upland and wetland plants, hydric soils, and rare habitat for threatened and endangered species.

CEGT, Line K Abandonment, Union Parish, Louisiana and Union County, Arkansas (Senior Biologist: 2010)
Mr. Clark provided support as a Biologist and wetland delineator for a pipeline abandonment project in south Arkansas and north Louisiana. He was responsible for delineating numerous wetland and stream resources along assigned pipeline route sections and identifying numerous upland and wetland plants, hydric soils, and rare habitat for threatened and endangered species.

Energy Transfer Partners, LP, Tiger Pipeline Project – Bienville, Jackson, Ouachita, and Richland Parishes, Louisiana (Biologist: 2009)
Mr. Clark provided support as a Biologist for several segments of a 180-mile natural gas pipeline route from Panola County, Texas to Richland Parish, Louisiana. He was responsible for delineating numerous wetland and stream resources along assigned pipeline route sections in Bienville, Jackson, Ouachita, and Richland Parishes in north central Louisiana and identifying numerous upland and wetland plants, hydric soils, and rare habitat for threatened and endangered species.

Brownsville Public Utility Board, Waters of the U.S. Determination and Wetland Delineation – Brownsville, Cameron County, Texas (Biologist: 2009-2010)
Mr. Clark serves as the Biologist responsible for conducting a waters of the U.S. determination and wetland delineation for two proposed sludge sites near Brownsville, Texas. He was responsible for assessing the jurisdictional limits of wetlands within the project area, identifying numerous upland and wetland plants, identifying hydric soils, completing wetland data forms, acquiring spatial data with sub-meter GPS equipment, and writing the wetland delineation report.

The Cascades, Waters of the U.S. Determination, Wetland Delineation, and Temporary Soil Stabilization and Sediment Control – Tyler, Smith County, Texas (Biologist: 2008)
Mr. Clark served as the Biologist responsible for conducting a waters of the U.S. determination and wetland delineation for waters associated with Bellwood Lake and Indian Creek. He was responsible for assessing the jurisdictional limits of wetlands within the project area, identifying numerous upland and wetland plants, identifying hydric soils within the wetlands, completing wetland data forms, acquiring spatial data with a sub-meter GPS equipment, and reviewing the wetland delineation report. Mr. Clark also assisted in developing a Temporary Soil Stabilization and Sediment Control Plan for revegetation of up to approximately 12 acres of disturbed wetlands and slopes.

Confidential Client, Waters of the U.S. Determination and Wetland Delineation – Harris County, Texas (Biologist: 2008)
Mr. Clark served as a Biologist for a Waters of the U.S. Determination and Wetland Delineation at a chemical plant located in Harris County, Texas. He was responsible for assessing the jurisdictional limits of wetlands within the project area, identifying numerous upland and wetland plants, identifying hydric soils within the wetlands,

completing wetland data forms, acquiring spatial data with a sub-meter GPS equipment, and preparing the wetland delineation report.

The City of Seguin, Waters of the U.S. Determination and Wetland Delineation – Seguin Borrow Pit, Guadalupe County, Texas (Biologist: 2007 - 2008)
Mr. Clark served as a Biologist for a waters of the U.S. determination and wetland delineation of a borrow pit located in Seguin, Texas. He was responsible for assessing the jurisdictional limits of an atypical, problematic wetland within the project area, identifying numerous upland and wetland plants, identifying hydric soils within the wetlands, completing wetland data forms, acquiring spatial data with a sub-meter GPS equipment, and reviewing the wetland delineation report.

BIOLOGICAL MONITORING

Holly Energy Partners, L.P. – Navajo Refinery, Pipeline Construction Oversight and Monitoring – Lea and Eddy Counties, New Mexico (Biologist: 2009)
Mr. Clark provided biological monitoring and environmental inspection services for the construction of an 8-inch crude oil pipeline within areas of land owned by the Bureau of Land Management in Lea and Eddy Counties, New Mexico. Permit requirements for the construction of the pipeline required biological monitoring for the BLM property, located within the Mescalero Sands ecosystem, which contains habitat preferred by the endangered sand dune lizard (*Sceloporus arenicolus*). Mr. Clark monitored construction crews, ensured that no sensitive species entered work areas, and ensured contractor compliance with the project's environmental permits.

SPECIALIZED TRAINING AND COURSEWORK

- OSHA HAZWOPER 40-hour Health and Safety Training, 2005
- Annual OSHA 8-hour Refresher Training, 2006 – 2011
- United States Army Corps of Engineers Wetland Delineation Certification and Regulatory IV Interagency Wetland Delineation Training, 2007
- Regulatory Permitting of Activities in Waters of the U.S. and the State of Texas Including Wetlands, 2006
- Selected Wetland Indicator Plants for Region 2 and Region 6, 2009

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Gena K. Janssen
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Cellular: 512.461.4684

Summary

Outgoing scientist with over 20 years field experience with rare and endangered plants in Texas. Exceptional ability to reach out and work together with private landowners and others of varying disciplines to achieve conservation.

Areas of Expertise

- South Texas Brush Country rare and endangered plants
- Post Oak Savannah rare and endangered plants
- Edwards Plateau rare and endangered plants
- Landowner identification, outreach, right-of-entry
- GPS (Global Positioning Systems) data collection
- GIS (Geographic Information Systems) data development

Experience

Janssen Biological — 1999-Present

Endangered Species Botanist

Work effectively and efficiently with a wide range of landowners and consultants (et al.) to collect rare and endangered plant survey data to achieve rare plant conservation on the ground.

SUBCONTRACTED GRANT RESEARCH

- South Texas *Conservation Cooperative* and *Conservation Partner* development. Texas Nature Conservancy. **IN PROGRESS**
- Research and recovery of star cactus (*Astrophytum asterias*). USFWS Section 6. **IN PROGRESS**
- Population augmentation and reintroduction of large-fruited sand verbena (*Abronia macrocarpa*). USFWS Section 6. **COMPLETED 2007**
- Lower Rio Grande Valley candidate plant conservation agreement project. USFWS Section 6. **COMPLETED 2006**
- Johnston's frankenia (*Frankenia johnstonii*) annual photo-monitoring. USFWS Section 6. **COMPLETED 2003**
- Ashy dogweed (*Thymophylla tephroleuca*) disturbance study. USFWS Section 6. **COMPLETED 2003**
- Large-fruited sand verbena (*Abronia macrocarpa*) landowner outreach and site management study. USFWS Section 6. **COMPLETED 2003**
- Conservation seed collection of south Texas endangered plants. Center for Plant Conservation. **COMPLETED 2002**

SUBCONTRACTED RARE & ENDANGERED PLANT SURVEYS

- Sept. 2009. Two proposed Verizon cell phone tower sites, Starr County, Texas. **SEA—Shoreline Environmental Assessments**
- Aug. 2008-Aug. 2009. 100 square mile seismic, Starr County, Texas. **Edge Petroleum & EOG**
- June 2008-Nov. 2008. Monthly surveys for proposed gas well pad sites in Zapata County, Texas. **ConocoPhillips**
- Aug. 2007-May 2008. Mapped and censused endangered plants potentially impacted by the Highway 83 expansion, and acted as the landowner's representative in TxDOT meetings. **Lopez Family Trusts**
- Oct. 2007-April 2008. Border Fence segments in Maverick, Starr, Hidalgo, and Cameron Counties. **E^2M**
- Aug. 2007. Surveys of proposed gas well pad sites and the transplantation of 30 Johnston's frankenia individuals to a safe site, Zapata County, Texas. **ConocoPhillips**
- August 2007. TPWD Park Grant required survey for Romeo T. Flores Park, Zapata County, Texas. **The County of Zapata**
- June 2006-April 2007. Proposed new 30 mile highway: Rio Grande City Bypass. **Hicks and Company**
- Dec. 2005-June 2006. 50 square mile seismic in Zapata County, Texas. **ConocoPhillips**
- Oct. 2005-Nov. 2005. Proposed 200 mile Energy Transfer Pipeline in Freestone and Anderson Counties. **PBS&J**
- Oct. 2005. Proposed pad site surveys, Zapata County, Texas. **Laredo Energy**
- July 2005. Proposed 737 acre Lower Valley Regional Landfill, Cameron County, Texas. **BNC Engineering**
- June 2005. Seven miles of alternative routes for the proposed Highway 83 expansion, Starr County, Texas. **Blanton and Associates**
- 2004. Ten miles of alternative routes for the proposed Highway 83 expansion, Zapata County, Texas. **Blanton and Associates**
- 2003. Two proposed cell phone tower sites in Kerr and Kimble Counties, Texas. **Drash Consulting Engineers**
- 2002-2003. 63 miles (both sides) of the proposed Highway 83 expansion in Zapata and Starr Counties, Texas. **Blanton and Associates**

- 2002. Right-of-entry for a majority of the Highway 83 expansion in Zapata County. **Dannebaum Engineering Corporation**

Texas Parks and Wildlife Department 1991-1999

Endangered Species Botanist

Set new standards for working with private landowners and endangered plant conservation. Surveyed, sampled and monitored rare and endangered plant species state-wide.

- Responsible for recovery research on rare plants in Texas, including grant writing for funding, data analysis, and presentations at scientific meetings.
- Conducted annual monitoring on rare plants in Texas to establish trends and threats.
- Worked extensively with private landowners to achieve communication and trust resulting in more positive relationships for biologists and landowners during very volatile times. These efforts led to the voluntary conservation of rare plants on private lands.
- Conducted a tremendous amount of public education and outreach of rare plants, including (but not limited to) public speaking, media releases; workshops for school children, landowners, and other conservation professionals; and the development of outreach materials.
- Administered and managed Section 6 Contracts pertaining to rare plants.
- Worked cooperatively with other agencies to achieve rare plant conservation.
- Annually prepared scientific reports on data collected throughout the year.

Education

Texas State University 1988-1991

M.S. Biology

Reproductive biology and leaf structure of Abronia macrocarpa Galloway (Nyctaginaceae), an endangered east Texas endemic.

Texas State University 1983-1988

B.S. Geography

Other Activities

My kids, cooking and reading cookbooks, growing as many flowers as possible in my yard, and camping.

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DEPARTMENT OF THE ARMY
FORT WORTH DISTRICT, CORPS OF ENGINEERS
P.O. BOX 17300
FORT WORTH, TEXAS 76102-0300

REPLY TO
ATTENTION OF

August 17, 2011

Planning, Environmental, and Regulatory Division
Regulatory Branch

SUBJECT: Project Number SWF-2011-00398, Pescadito Environmental Resource Center

Ms. Deborah Blackburn
TRC Environmental Corporation
505 East Huntland Drive
Suite 250
Austin, TX 78752

Dear Ms. Blackburn:

Thank you for your letter received August 15, 2011 concerning a proposal by Rancho Viejo Waste Management, LLC to establish a solid waste management facility on a 1,110-acre tract of the Yugo Ranch located in Webb County, Texas. This project has been assigned Project Number SWF-2011-00398. Please include this number in all future correspondence concerning this project.

Mr. Darvin Messer has been assigned as the regulatory project manager for your request and will be evaluating it as expeditiously as possible.

You may be contacted for additional information about your request. For your information, please reference the Fort Worth District Regulatory Branch homepage at http://www.swf.usace.army.mil/regulatory and particularly guidance on submittals at http://www.swf.usace.army.mil/pubdata/environ/regulatory/introduction/submital.pdf, and mitigation at http://www.usace.army.mil/CECW/Pages/final_cmr.aspx that may help you supplement your current request or prepare future requests.

If you have any questions about the evaluation of your submittal or would like to request a copy of one of the documents referenced above, please contact Mr. Darvin Messer at the address above or telephone (817)886-1744 and refer to your assigned project number. Please note that it is unlawful to start work without a Department of the Army permit if one is required.

Please help the Regulatory Program improve its service by completing the survey on the following website: http://per2.nwp.usace.army.mil/survey.html.

Stephen L Brooks
Chief, Regulatory Branch

WATERS OF THE UNITED STATES DELINEATION REPORT

Pescadito Environmental Resource Center Project

Webb County, Texas

Prepared For: **Rancho Viejo Waste Management, LLC**
Webb County, Texas

Prepared By: **TRC Environmental Corporation**
Austin, Texas

Revision No. 00
August 2011

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WATERS OF THE UNITED STATES DELINEATION REPORT

Pescadito Environmental Resource Center Project

Webb County, Texas

Submitted By:

TRC Environmental Corporation
505 East Huntland Drive, Suite 250
Austin, Texas 78752

512.329.6080 (phone)
512.329.8750 (fax)

Prepared By: **Barrett Clark**

Reviewed By: **Jason Sean Lancaster**

Approved By: **Deborah Blackburn**

Revision No. 00
August 2011

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ABBREVIATIONS AND ACRONYMS

AgB	Aguilares sandy clay soil, 0 to 3 percent slope
Bd	Brundage fine sandy loam, occasionally flooded
CaB	Catarina clay, 0 to 2 percent slopes
CBD	Cannot Be Determined
CfA	Catarina, occasionally flooded
FAC	Facultative Species Status
FACU	Facultative Upland Species Status
FACW	Facultative Wetland Species Status
FEMA	Federal Emergency Management Agency
GPS	Global Positioning System
JD	Jurisdictional Determination
MnB	Montell clay, 0 to 2 percent slopes
NASIS	National Soil Information System
NI	No Indicator Status
NWI	National Wetland Inventory
OBL	Obligate Wetland Species Status
OHWM	Ordinary High Water Mark
Project	Rancho Viejo Waste Management Subsurface Investigation Project
RPW	Relatively Permanent Water
TNW	Traditionally Navigable Water
TRC	TRC Environmental Corporation
UPL	Obligate Upland Species Status
U.S.	United States
USACE	United States Army Corps of Engineers
USDA – NRCS	United States Department of Agriculture – Natural Resource Conservation Service
USEPA	United States Environmental Protection Agency
USFWS	United States Fish and Wildlife Service
USGS	United States Geological Survey
UTM	Universal Transverse Mercator

1.0 INTRODUCTION

TRC Environmental Corporation (TRC) has been contracted by Rancho Viejo Waste Management, LLC to obtain environmental clearances and consultations for a proposed landfill project in Webb County, Texas (Project). The Project is located approximately 20 miles east of Laredo, Texas. A topographic vicinity map is included as Figure 1. A delineation of waters of the United States (U.S.) was conducted in April 2011 for the Project.

Pursuant to Section 404 of the Clean Water Act and Section 10 of the Rivers and Harbors Act, TRC conducted a survey of wetlands, waterbodies, and other special aquatic sites for the Project survey area. This wetland delineation report describes the results of delineation of waters of the U.S. conducted in April 2011.

2.0 METHODS

The wetland determination and delineation was performed using the routine on-site determination methods described in the *Corps of Engineers Wetlands Delineation Manual* (U.S. Army Corps of Engineers [USACE], Environmental Laboratory 1987), hereafter referred to as the "1987 Manual," and is consistent with the methods, guidelines, and indicators present in the *Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0* [Regional Supplement] USACE 2010). The determination and delineation consisted of: (1) background data collection and assessment, (2) field investigation, and (3) reporting.

2.1 Background Data Review

Prior to initiation of the routine on-site investigation, existing background data and information were reviewed to provide information regarding the presence of previously identified wetlands, the location of hydric soils, and/or locations where jurisdictional wetlands could exist that have not been previously mapped. The background data reviewed consisted of the following materials:

- U.S. Geological Survey (USGS), 7.5-minute series quadrangle topographical maps, Burrito Tank Quadrangle in Webb County, Texas (USGS 1980)
- USDA – NRCS, National Soil Information System (NASIS) Database, National Hydric Soils List by State, Texas (USDA – NRCS 2011a)
- U.S. Department of Agriculture – Natural Resource Conservation Service (USDA – NRCS), Web Soil Survey Application (USDA – NRCS 2011b)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) Wetlands Mapper Application (USFWS 2011)
- Federal Emergency Management Agency (FEMA), Map Service Center: FEMA Issued Flood Maps, Webb County, Texas, Flood Map ID 48479C1275C (FEMA 2011)

2.2 Field Investigation

An on-site determination and delineation of waters of the U.S. was conducted by a qualified wetland scientist within the Project survey area in April 2011.

The Project spatial boundaries were confirmed by aerial photograph interpretation and initial site reconnaissance. The survey area was then examined for the presence of atypical situations via site reconnaissance to identify any recent and sufficient natural or human-induced alteration that may have significantly changed the area vegetation, soils, and/or hydrology.

A site reconnaissance was conducted of all portions of the survey area to identify and develop an approximate location map of each different plant community type present to ensure all plant community types were included in the investigation. Each identified plant community type was further examined to determine the type(s) and number of vegetative layers in each community, including trees (woody overstory), shrubs (woody understory), herbs (herbaceous understory), and/or woody vines.

Observation points were established and documented within each vegetative community. The investigators determined whether normal environmental conditions were present at each observation point by considering whether: (a) hydrophytic vegetation and/or hydrologic indicators were lacking due to annual or seasonal fluctuations in precipitation or groundwater levels; and (b) hydrophytic vegetation indicators were lacking due to seasonal fluctuations in temperature.

Data points were recorded using a sub-meter Trimble Global Positioning System (GPS) unit. GPS data were recorded as NAD 1983 UTM coordinates. Soil pit sampling was conducted to determine the presence of hydric soil indicators, with plant communities identified and characterized for hydrophytic properties, indicator status, and percent cover. Particular wetland hydrology indicators were also identified.

Vegetation, soil, and hydrologic information for each sample plot was recorded on data forms and used to determine wetland boundaries. A description of the methods employed to assess each parameter is provided in Sections 2.2.1 to 2.2.3.

2.2.1 Hydrophytic Vegetation

According to the 1987 Manual, hydrophytic vegetation is defined as, "the sum total of macrophytic plant life that occurs in areas where the frequency and duration of inundation or soil saturation produce permanently or periodically saturated soils of sufficient duration to exert a controlling influence on the plant species present." Plant species are further categorized according to their probability of occurrence in wetlands. Each plant species is assigned an "Indicator Status," which ranges from Obligate Wetland (100% occurrence in wetlands) to Obligate Upland (does not occur in wetlands). Indicator status categories are further defined as follows:

- Obligate Wetland (OBL): A species that almost always (under natural conditions) occurs in wetlands (estimated probability greater than 99%).
- Facultative Wetland (FACW): A species that usually occurs in wetlands (estimated probability 67% - 99%), but occasionally is found in non-wetlands.
- Facultative (FAC): A species that is equally likely to occur in non-wetlands (estimated probability 34% - 66%).
- Facultative Upland (FACU): A species that usually occurs in non-wetlands (estimated probability 67% - 99%), but is occasionally found in wetlands.

- Obligate Upland (UPL): A species that almost always (under natural conditions) occurs in non-wetlands (estimated probability greater than 99%).
- No Indicator (NI): A species for which there is insufficient information to determine an indicator status ranking.
- Cannot Be Determined (CBD): A species that was only identified to the genus level. Therefore, no indicator could be assigned.

All plant communities investigated were characterized by identifying dominant plant species using the dominance test. For each stratum in the plant community (tree, sapling, shrub, herb, and woody vine), a list of plant species (Reed 1988) and their respective percent cover was recorded. Percent cover for each plant species was recorded within a 5-foot radius around a central observation point for herbaceous stratum, as well as a 15-foot radius for saplings and shrub strata and 30-foot radius for trees and woody vines strata. The total cover for each stratum may range from zero to over 100 percent, depending on the density and amount of overlapping of vegetation.

"Dominant" plants were classified using the 50/20 rule, under which any plant species that equaled or exceeded 50 percent of the total percent aerial coverage for each stratum, and any additional species comprising 20 percent or more of the same stratum, was classified as a dominant plant.

Vegetation was reevaluated using the prevalence index in cases where indicators of hydric soil and wetland hydrology were present, but the percentage of dominant species did not exceed 50 percent utilizing the dominance test. The prevalence index is a weighted-average wetland indicator status of all plant species in the sampling plot, where each indicator status category is given a numeric code and the abundance as evaluated by percent cover is weighted. A site scoring less than 3 on the prevalence index meets the wetland hydrophytic vegetation criterion. The prevalence index is used in the Great Plains Regional Supplement to determine whether hydrophytic vegetation is present on sites where indicators of hydric soil and wetland hydrology are present but the vegetation initially fails the dominance test.

2.2.2 Hydric Soils

According to the 1987 Manual, a hydric soil is defined as "a soil that is saturated, flooded or ponded long enough during the growing season to develop anaerobic conditions that favor the growth and regeneration of hydrophytic vegetation." The presence or absence of hydric soils was determined by pit sampling to a depth of ten inches or more, and characterization of soil profile layers using Munsell soil color charts (X-Rite Incorporated 2009). The presence of hydric indicators was recorded, including, but not limited to, saturation, gleying, mottling, depleted matrix, and development of other redoximorphic features. The wetland boundary was placed between areas meeting the three wetland criteria and areas which do not meet the criteria. As a result, soil in both the assumed wetland and the surrounding upland were sampled to verify the wetland boundary.

2.2.3 Wetland Hydrology

Guidance in the 1987 Manual indicates that wetland hydrology is found in areas in which "the presence of water has an overriding influence on characteristics of vegetation and soils due to anaerobic and reducing conditions, respectively." The frequency of soil inundation or saturation is dependent on a variety of factors, including topography, soil stratigraphy and soil permeability, in conjunction with the water source(s) of precipitation, runoff, stormwater, and groundwater discharge. Wetland hydrology is

classified according to the extent of soil saturation or inundation and ranges from permanently inundated to irregularly inundated or saturated. Those areas which are either intermittently or never inundated or saturated are not considered to have wetland hydrology.

Indicators of wetland hydrology include, but are not limited to, drainage patterns, drift lines, water marks, sediment and debris deposition, and visual observations and historical records. Wetland hydrology indicators were noted during the investigation.

2.3 Reporting

Maps illustrating the results of the survey are presented in Appendix A. Data collected in the field was subsequently entered onto the data forms presented in the Appendix B. Wetland delineation/GPS data were collected and recorded as NAD 1983 UTM coordinates. Photographs were also taken of the Project site and at data collection points. All survey results are presented in Appendices A and B.

3.0 RESULTS

3.1 Background Data Review

Desktop analysis of potential wetlands was evaluated by reviewing topographic maps (Figure 1; USGS 1980), aerial maps (Figure 2), soils data from the USDA – NRCS online web soil survey (Figure 3; USDA – NRCS 2011b), and wetlands data from the USFWS NWI Wetlands Mapper (USFWS 2011). This analysis provided an indication of the presence of wetlands and waterbodies, areas and soils likely to support hydrophytic vegetation, and photographic signatures of potential wetlands and waterbodies. The results of the background data review are included in the following sections.

3.2 Field Investigation

Seven palustrine, scrub-shrub wetlands (W109, W115, W118, W126, W127, W132, and W133) and one palustrine, emergent wetland (W130) were delineated during the survey. Eleven ephemeral streams (S103, S107, S108, S114, S119, S116, S120, S121, S123, S124, and S125) and nine stock tanks (WB101, WB104, WB106, WB110, WB111, WB113, WB117, WB128, and WB131) were also identified. Numerous erosional features are located throughout the Project survey area and are primarily a result of construction of the stock tanks.

Vegetation throughout the Project survey area has been affected by the presence of cattle. Severe overgrazing was observed throughout nearly all of the Project survey area, making identification of some vegetation (e.g., herbaceous species) impossible. Soil compaction, likely a result of the presence of cattle, was also observed in many areas, particularly around stock tanks WB104, WB128 and the wetlands associated with those systems. Subsequently, identification of wetland indicators was difficult in some areas.

Descriptions of vegetation, soils, and hydrology of the Project survey area are discussed below. Maps illustrating the results of the survey are presented in Appendix A. Data forms, photographs, and the documentation of the presence or absence of wetland vegetation, hydric soils, wetland hydrology, and waterbodies are provided in Appendix B.

3.2.1 Vegetation

Wetland and Riparian Plant Communities

All but one delineated wetland within the Project survey area consisted of palustrine, scrub-shrub habitats. These wetlands are dominated by woody vegetation including retama (*Parkinsonia aculeata*), twisted acacia (*Acacia schaffneri*), saltcedar (*Tamarix ramosissima*), Mexican devil-weed (*Aster spinosus*), sea ox-eye daisy (*Borrichia frutescens*), and rattlebox (*Sesbania drummondii*). Observed herbaceous vegetation includes smallhead sneezeweed (*Helenium microcephalum*), gulf cordgrass (*Spartina spartinae*), and Bermudagrass (*Cynodon dactylon*). Carolina wolfberry (*Lycium carolinianum*) and occasionally gulf cordgrass typically dominated the broad boundaries of the wetlands and often extended from within the limits of the wetlands into adjacent upland habitats.

One palustrine, emergent wetland (W130) is located within the Project survey area and is encircled by scrub-shrub wetland W127. Wetland W130 is dominated by herbaceous vegetation including Bermudagrass, smallhead sneezeweed, salt heliotrope (*Heliotropium curassavicum*), hierba del sapo (*Eringium heterophyllum*), and Plains coreopsis (*Coreopsis tinctoria*). Stunted, woody species including saltcedar, Mexican devil-weed, rattle box, and Carolina wolfberry are scattered in some areas of W130.

Riparian vegetation communities generally consisted of a composition of wetland and upland species (discussed below). Common species included retama, twisted acacia, saltcedar, honey mesquite (*Prosopis glandulosa*), Mexican devil-weed, Texas prickly pear (*Opuntia engelmannii*), rattlebox, smallhead sneezeweed, and gulf cordgrass.

Upland Plant Communities

Observed woody species included honey mesquite, dwarf screw-bean mesquite (*Prosopis reptans*), twisted acacia, blackbrush (*Acacia rigidula*), guajillo (*Acacia berlandieri*), knife-leaf condalia (*Condalia spathulata*), snake-eyes (*Phaulothamnus spinescens*), desert yaupon (*Schaefferia cuneifolia*), guayacan (*Guaiacum angustifolium*), allthorn (*Koeberlinia spinosa*), lotebush (*Ziziphus obtusifolia*), coma (*Sideroxylon celastrina*), goat-bush (*Castela texana*), paloverde (*Parkinsonia texana*), creosote (*Larrea tridentata*), whitebrush (*Aloysia gratissima*), Carolina wolfberry, oreja de perro (*Tiquilia canescens*), popote (*Ephedra antisyphilitica*), orange zexmenia (*Wedelia texana*), palma pita (*Yucca treculeana*), rough agave (*Agave scabra*), saladillo (*Varilla texana*), leather stem (*Jatropha dioica*), coppery false fanpetals (*Billieturnera helleri*), common goldenweed (*Isocoma coronopifolia*), Texas broomweed (*Gutierrezia texana*), Tulipan del monte (*Hibiscus martianus*), and sea ox-eye daisy.

Observed herbaceous species included sueada (*Sueada* sp.), Tiny Tim (*Thymophylla tenuiloba*), jicamilla (*Jatropha cathartica*), wooly tidestromia (*Tidestromia lanuginosa*), bitterweed (*Hymenoxys odorata*), whorled dropseed (*Sporobolus pyramidatus*), red grama (*Bouteloua trifida*), King Ranch bluestem (*Bothriochloa ischaemum*), and buffelgrass (*Pennisetum ciliare*).

Observed cacti species included Texas prickly pear, tasajillo (*Opuntia leptocaulis*), dog cholla (*Opuntia schottii*), rat-tail cactus (*Wilcoxia poselgeri*), nipple cactus (*Mammillaria heyderi*), longmamma nipple cactus (*Mammillaria sphaerica*), horse crippler (*Echinocactus texensis*), Berlandier's alicoche (*Echinocereus berlandieri*), pitaya (*Echinocereus enneacanthus*), Fitch's hedgehog cactus (*Echinocereus reichenbachii* var. *fitchii*), root cactus (*Ancistrocactus scheeri*), and miniature barrel cactus (*Thelocactus setispinus*).

Species recorded near stock ponds, ephemeral streams, upland swales, and other low lying features within uplands included smallhead sneezeweed (*Helenium microcephalum*), bearded dalea (*Dalea pogonanthera*), Carolina wolfberry, retama, sea ox-eye daisy, Gregg keelpod (*Synthlipsis greggii*), and gulf cordgrass.

3.2.2 Soils

Descriptions of these soils are provided by the USDA – NRCS National Cooperative Soil Survey (USDA – NRCS 2011b) and are provided below.

Hydric Soils

A review of the USDA – NRCS Soil Survey (USDA – NRCS 2011b) and Hydric Soils List by State (NRCS 2011a) identified no hydric soils within the Project survey area; consequently, no hydric soils are discussed. However, during the field survey, hydric soils were observed at delineated wetlands W109, W115, W118, W126, W127, W132, W130, and W133 (additional detail provided below and in Appendix B).

Non-Hydric Soils

A review of the USDA – NRCS Soil Survey indicates that the non-hydric soils within the Project survey area include clays, sandy clay loam, and sandy loam and lie on slopes that range from 0 to 3 percent. These deep soils are well- to moderately well drained with moderately or very slow permeability. Descriptions of non-hydric soils, as provided by the USDA – NRCS, are provided below.

Aguilares sandy clay loam, 0-3 percent slopes (AgB): The Aguilares sandy clay loam series consists of deep, well drained, moderately permeable, calcareous and moderately alkaline soils on uplands. This Aguilares soil map unit is found on broad, convex plains. The parent material consists of calcareous loamy residuum weathered from sandstone predominantly from the Jackson Formation. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slopes range from 0 to 3 percent.

Brundage fine sandy loam, occasionally flooded (Bd): The Brundage fine sandy clay loam series consists of deep, moderately well drained, very slowly permeable, saline soils in upland valleys. This Brundage soil map unit is found on valleys along small drainageways and on smooth plains parallel to drainageways. The parent material consists of saline, loamy alluvium. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slopes range from 0 to 1 percent.

Catarina Clay, 0 to 2 percent slopes (CaB): The Catarina Clay series consists of deep, moderately well drained, very slowly permeable, saline soils on upland plains and valleys. This Catarina soil map unit is found on broad and narrow valleys along drainageways and on smooth plains. The parent material consists of calcareous, saline, clayey alluvium. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slopes range from 0 to 2 percent.

Catarina Clay, occasionally flooded (CfA): The Catarina Clay series consists of deep, moderately well drained, very slowly permeable, saline soils on upland plains and valleys. This Catarina soil map unit is found on narrow valleys along drainageways. The parent material consists of calcareous, saline, clayey alluvium. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slopes range from 0 to 1 percent.

Montell clay, 0 to 2 percent, saline (MnB): Montell clay series consists of deep, moderately well drained, very slowly permeable, saline, clayey soil on upland plains and valleys. This Montell soil map unit is found on broad and narrow valleys along drainageways and on smooth plains. The parent material consists of clayey valley side alluvium. Most areas of these soils are mainly used for rangeland and habitat for wildlife. Slope ranges from 0 to 2 percent.

3.2.3 Hydrology

The Project survey area is located entirely within and near the upper limits of the International Falcon Reservoir Watershed (Hydrologic Unit Code [HUC]: 13080003; U.S. Environmental Protection Agency [USEPA] 2011c). According to the FEMA flood map, approximately 60 percent of the Project survey area is located in the 100-year floodplain. Maps presenting the wetland and waterbodies delineated within the Project survey area, as well as unique wetland and waterbody feature names, are provided in Appendix A.

Hydrology of the Project survey area and surrounding area is primarily associated with surface water runoff from infrequent precipitation events. The primary water flow regime of the surrounding watershed area is to the south and southwest, following numerous ephemeral drainage systems. Many constructed stock tanks area also located within the area. Within the Project survey area, surface water generally flows to the south and southeast, following localized topography and along ephemeral streams, upland swales, and erosional gullies into numerous stock tanks. The construction of stock tanks, as well as roads and pipeline right-of-ways, has likely fragmented drainage systems within the Project survey area and surrounding area. Subsequently, defined channels and ordinary high water mark indicators are not present along portions of the drainage systems.

Seven palustrine, scrub-shrub wetlands (W109, W115, W118, W126, W127, W132, W133), one palustrine, emergent wetland (W130), fourteen ephemeral streams (S103, S107, S108, S114, S119, S116, S120, S121, S122, S123, S124, S125, S134, S135), and nine stock tanks (WB101, WB104, WB106, WB110, WB111, WB113, WB117, WB128, WB131) are located within the Project survey area. Numerous erosional gullies are also located throughout the Project survey area and are primarily a result of construction of the stock tanks. The identified features can be separated into three drainage systems:

- Stock tanks WB110, WB111, WB113, and WB117, scrub-shrub wetlands W109, W115, and W118, ephemeral streams S108, S114, S116, and S119
- Stock tanks WB101, WB104, and WB106, scrub-shrub wetland W133, ephemeral streams S103, S107, S122, S123, S134, and S135
- Stock tank WB128 and WB131, scrub-shrub wetlands W126, W127, and W132, emergent wetland W130, ephemeral streams S120, S121, S124, and S125

Two scrub-shrub wetlands (W109, W115) are situated along an historic intermittent drainage system (S108/S114/S116/S119) that has been fragmented by the construction of roads and a series of impoundments and stock tanks (WB110, WB111, WB113, WB117). One upstream fork of this system originates off-site (S116), while another fork (S119) originates from within the limits of the Project survey area. Surface water eventually flows off-site *via* S108. Scrub-shrub wetland W118 is a remnant of the historic intermittent drainage system and is now an enclosed depression with no observed in- or outflow. The delineated area of wetlands W109, W115, and W118 are 0.19-acre (ac), 0.17 ac, and 0.19

ac, respectively. Stock tanks WB110, WB111, WB113, and WB117 are 0.14 ac, 0.40 ac, 0.43 ac, and 0.04 ac in size, respectively.

Wetland W133 is a relatively large (14.70 ac), scrub-shrub, fringe wetland adjacent to stock tank WB104 (13.58 ac), which receives surface water flow from two, small floodplains (Figure 5). Defined channels and/or ordinary high water mark (OHWM) indicators were observed along the eastern floodplain at ephemeral streams S103, S107, and S122. One stock tank (WB101; 0.49 ac) is located between S103/S107 and S122. The eastern floodplain from WB104 to the northern Project survey area boundary is presented as a dashed blue line on the USGS topographical map indicating an intermittent drainage system (Figure 1; USGS 1980). Defined channels and/or OHWM indicators were observed along the western floodplain at ephemeral streams S123, S134, and S135. The western floodplain is presented as a dashed blue line along S134, at the northern Project survey area boundary (Figure 1; USGS 1980). It is possible that the construction of stock tank WB101, roads, and/or pipeline right-of-ways has fragmented the two floodplain drainage systems associated with WB104, resulting in sheet water flow and no defined channel and/or OHWM indicators in some areas. A small stock tank (WB106; 1.01 ac) is also located south of the WB104 impoundment.

Located to the south and downgradient of WB104 is stock tank WB128 (26.68 ac), which receives surface water flow from ephemeral stream S121. Stream S121 originates off-site from the west and is confined by levees along much of its length within the Project survey area. Also originating off-site from the west is stream S120, an ephemeral tributary of S121. Stream S125 is a second, ephemeral tributary of S121 and originates from within the limits of the Project survey area. A relatively shallow and broad upland swale system, which is situated in a floodplain, is located upgradient of S125. A defined channel and OHWM indicators were observed along a segment of the upland swale at ephemeral stream S124. It is possible that the construction of roads and/or pipeline right-of-ways has fragmented the S124/S125 drainage system, resulting sheet water flow and no defined channel and/or OHWM indicators upgradient of S124 and between S124 and S125; on the USGS topographical map, this system appears as a dashed blue line extending off-site to the northwest from S121 (Figure 1; USGS 1980). Wetland W127 (28.46 ac) is situated between stock tanks WB 104 and WB128. An emergent wetland W130 (3.98 ac) is encircled by wetland W127; groundwater from the upgradient WB104 system likely influences these two wetlands, as well as stock tank WB128. A relatively small (0.59 ac) scrub-shrub wetland (W126) is located adjacent to the southwestern levee of S121, near the confluence of S121 and S125. A 2.00 ac scrub-shrub wetland (W132) is located adjacent to the WB128 impoundment; groundwater from the upgradient WB128 system likely influences this wetland. A small stock tank (WB131; 0.31 ac) is located nearby to the northeast.

4.0 JURISDICTION

Following the Supreme Court's decision in the consolidated cases Rapanos v. United States and Carabell v. United States, the USACE and the U.S. Environmental Protection Agency issued a guidance memorandum in June 2007 summarizing federal jurisdiction over waters of the U.S. under the Clean Water Act. A brief summary of the key points of that memorandum is outlined below.

The USACE and EPA will assert jurisdiction over the following waters:

- Traditional navigable waters (TNW);

- Wetlands adjacent to traditional navigable waters;
- Non-navigable tributaries of traditional navigable waters that are relatively permanent (relatively permanent waters; RPW) where the tributaries typically flow year-round or have continuous flow at least seasonally (e.g., typically three months); and
- Wetlands that directly abut such tributaries.

The USACE and EPA will decide jurisdiction over the following waters based on a fact-specific analysis to determine whether they have a significant nexus with a traditional navigable water:

- Non-navigable tributaries that are not relatively permanent;
- Wetlands adjacent to non-navigable tributaries that are not relatively permanent; and
- Wetlands adjacent to but do not directly abut a relatively permanent non-navigable tributary.

The USACE and EPA generally will not assert jurisdiction over the following features:

- Swales or erosional features (e.g., gullies, small washes characterized by low volume, infrequent, or short duration flow); and
- Ditches (including roadside ditches) excavated wholly in and draining only uplands and do not carry a relatively permanent flow of water.

The USACE and EPA will apply the significant nexus standard as follows:

- A significant nexus analysis will assess the flow characteristics and functions of the tributary itself and the functions performed by all wetlands adjacent to the tributary to determine if they significantly affect the chemical, physical, and biological integrity of downstream traditional navigable waters; and
- Significant nexus includes consideration of hydrologic and ecologic factors.

Based on these criteria, all TNWs, RPWs (*i.e.*, perennial and intermittent streams), and their directly abutting wetlands identified within the Project survey area would be considered jurisdictional waters of the U.S. All non-directly abutting wetlands and non-RPWs would be examined on a case-by-case basis to determine if the significant nexus criteria were met before being considered a jurisdictional water of the U.S.

Ephemeral streams S103, S107, S108, S114, S116, S119, S120, S121, and S125 would be considered non-RPWs by the USACE. Palustrine, scrub-shrub wetlands W109, W115, W127, and W133 and palustrine, emergent wetland W130 would be considered directly abutting wetlands to a waterbody or waterbodies constructed within historically relatively permanent waters (unnamed tributaries of San Juanita Creek) . Palustrine, scrub-shrub wetlands W118 and W126 would most likely be considered non-directly abutting wetlands. If impacts to wetlands W109, W115, W118, W126, W127, W130, W132, and W133 or streams S103, S107, S108, S114, S116, S119, S120, S121, and S125 are anticipated,

consultation with the USACE is recommended to determine if the agency will exert jurisdiction over those systems.

Stock tanks WB101, WB104, WB110, WB111, WB113, WB117, and WB128 are features that are excavations and/or impoundments of streams that would be considered historically RPWs by the USACE. If impacts to the stock tanks are anticipated, consultation with the USACE is recommended to determine if the agency will exert jurisdiction over those systems. Stock tanks WB106 and WB131 are features that are excavations and/or impoundments of dry land. Artificial lakes or ponds created by excavating and/or diking dry land to collect and retain water and which are used exclusively for such purposes as stock watering, irrigation, settling basins, or rice growing are generally not considered jurisdictional waters of the U.S. (51 FR, No. 219, page 41,217). However, WB106 and WB131 are located adjacent to excavations and/or impoundments of streams that would be considered non-RPWs by the USACE. If impacts to stock tanks WB106 and WB131 are anticipated, consultation with the USACE is recommended to determine if the agency will exert jurisdiction over those systems.

Defined channels and OHWM indicators were observed along ephemeral streams S122, 123, S124, S134, and S135. Although the five segments all originate and terminate in uplands, the USGS topographical map (Figure 1; USGS 1980) indicates that S122, S123, S124, S134, and S135 may have been components of contiguous drainage systems that were possibly fragmented by the construction of stock tank WB101, roads, and/or pipeline right-of-ways. However, the large upland expanses between these ephemeral streams and another relevant hydrological feature are very broad and nearly flat landforms that dissipate surface water flow and appear to provide no significant nexus to the nearest up- or downstream feature; given the semi-arid nature of the region and nearly level landforms of the area, the typical regime in these upland areas following a typical precipitation event would primarily be dissipation and evaporation, as well as some additional percolation into the soil. If impacts to S122, S123, S124, S134, and S135 are proposed, coordination with the USACE is recommended to determine if the agency will exert jurisdiction over those systems.

Several erosional gullies are present within the Project survey area and are a result of the construction of the stock tanks. The erosional gullies do not appear to be an important hydrological component of the area. The USACE generally will not exert jurisdiction over these systems.

5.0 CONCLUSIONS

TRC was contracted by Rancho Viejo Waste Management, LLC to conduct a determination and delineation of waters of the U.S. for the proposed Rancho Viejo Landfill Project. The determination was performed in order to identify the presence and delineate the boundaries of wetlands and other waters potentially subject to regulation by the USACE pursuant to Section 404 of the Clean Water Act.

Based on review of background data and the results of the field investigation, qualified wetland scientists from TRC determined that potentially jurisdictional wetlands and waters of the U.S. are present within the Project survey area and include seven palustrine, scrub-shrub wetlands (W109, W115, W118, W126, W127, W132, W133), one palustrine, emergent wetland (W130), nine ephemeral streams (S103, S107, S108, S114, S119, S116, S120, S121, S125), and nine stock tanks (WB101, WB104, WB106, WB110, WB111, WB113, WB117, WB128, WB131). Five ephemeral streams (S122, S123, S124, S134, and S135) that may have been components of contiguous drainage systems are also present within the Project survey area. Coordination with the USACE is recommended to determine if the agency will exert

jurisdiction over the identified systems within the Project survey area. Maps presenting the results of the determination and further details regarding the collected data are presented in Appendices A and B.

6.0 REFERENCES

FEMA. 2011. Map Service Center: FEMA Issued Flood Maps. Webb County, Texas. Flood Map ID 484791275. Accessed on April 15, 2011, at: http://gis1.msc.fema.gov/Website/newstore/viewer.htm.

Reed, P. 1988. National List of Plant Species that Occur in Wetlands: Southeast (Region 6). Accessed April 15, 2011, at: http://www.fws.gov/pacific/ecoservices/habcon/pdf/National%20List%20of%20Plant%20Species%201988.pdf.

USACE. 2010. Regional Supplement to the Corps of Engineers Wetland Delineation Manual: Great Plains Region (Version 2.0), ed. J. S. Wakeley, R. W. Lichvar, and C. V. Noble. ERDC/EL TR-10-1. U.S. Army Engineer Research and Development Center, Vicksburg, MS.

USACE, Environmental Laboratory. 1987. Corps of Engineers Wetlands Delineation Manual. U.S. Army Corps of Engineers, Waterways Experiment Station, Wetlands Research Program, Technical Report Y-87-1. Vicksburg, MS. January 1987 - Final Report. 92 pp. + app.

USDA – NRCS. 2011a. National Hydric Soils List by State. Accessed on April 15, 2011, at: http://soils.usda.gov/use/hydric/.

USDA – NRCS. 2011b. Soil Survey Division. Web Soil Survey. Accessed on April 15, 2011, at: http://websoilsurvey.nrcs.usda.gov/app/.

USEPA. 2011c. Surf Your Watershed Database. Accessed on April 15, 2011, at: http://cfpub.epa.gov/surf/locate/index.cfm.

USFWS. 2011. NWI Wetlands Mapper. Accessed on April 15, 2011 at: http://www.fws.gov/wetlands/Data/Mapper.html

USGS. 1980. 7.5-minute series quadrangle topographical map, Burrito Tank Quadrangle, Webb County, Texas.

X-Rite, Incorporated. 2009. Munsell Soil Color Charts. Munsell Color Division, Grand Rapids, MI. Revised Edition.

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FIGURE 1

SITE LOCATION MAP

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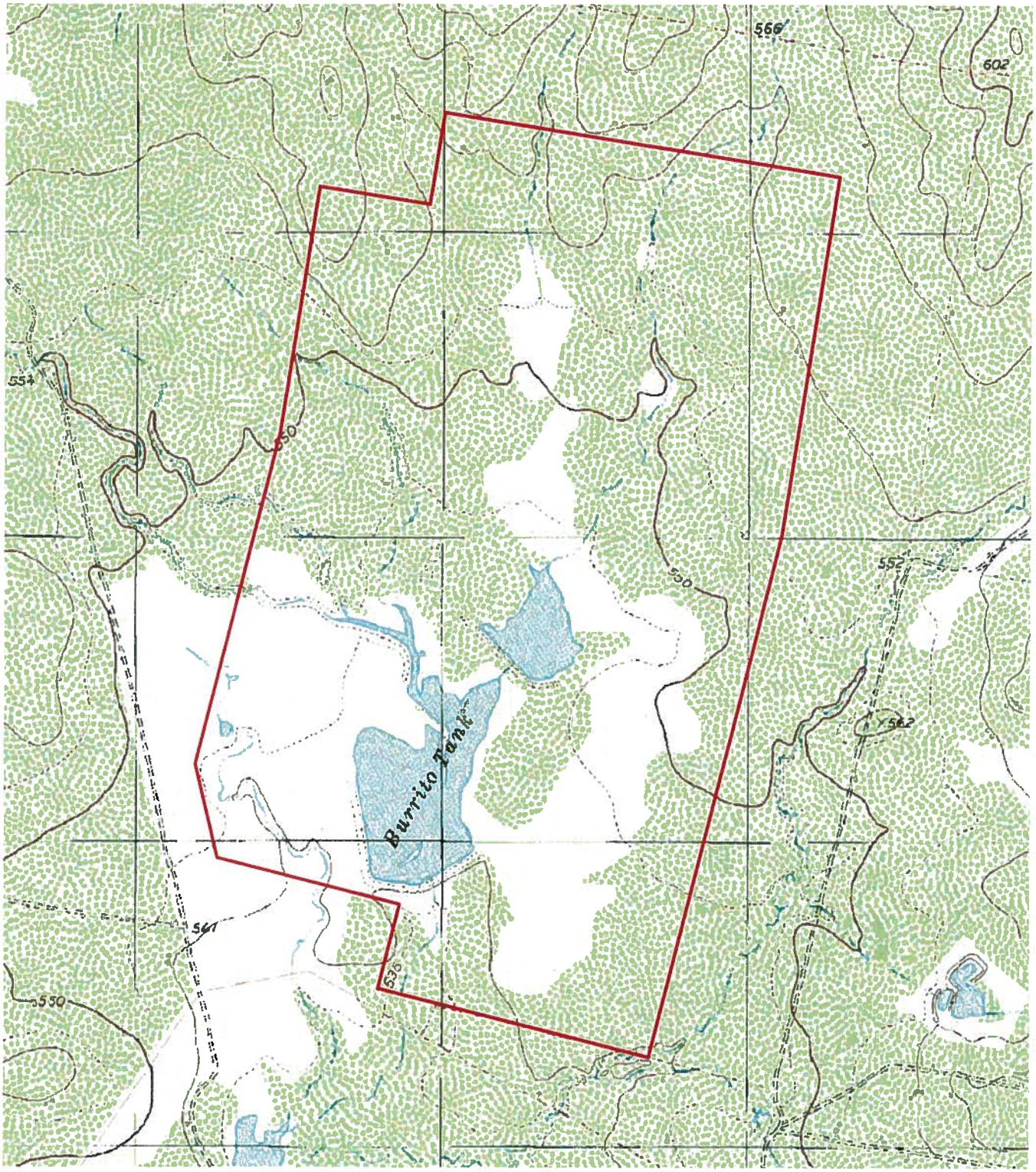

LEGEND

— Survey Area

N

0 250 500

Meters

Source: U.S.G.S 7.5-Minute Series Topographic Map, Burrito Tank (1980), Texas.

SITE LOCATION MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 5/18/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 1

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FIGURE 2

SITE LOCATION MAP

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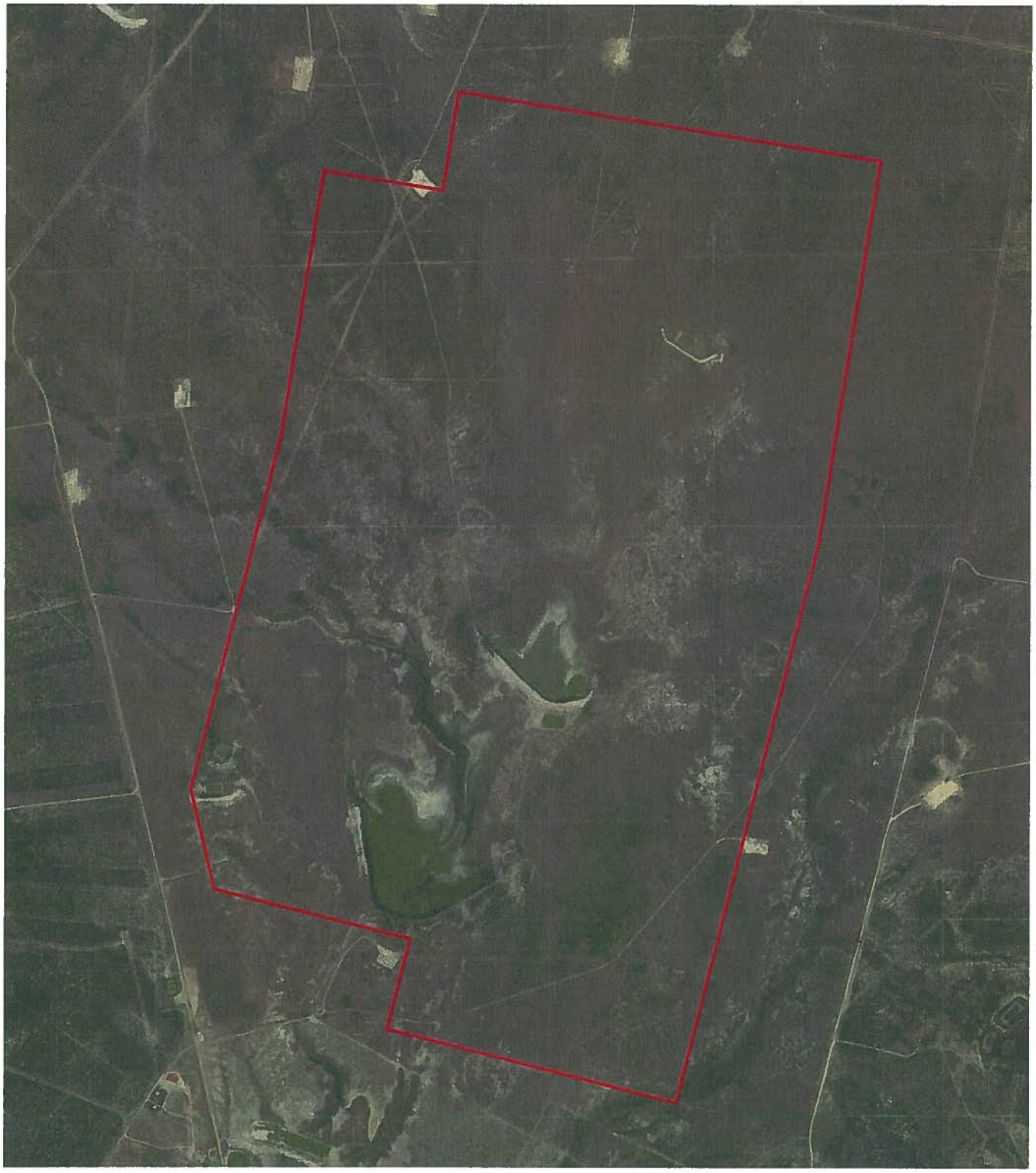

LEGEND

— Survey Area

N

0 250 500

Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SITE LOCATION MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 5/18/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 2

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FIGURE 3

SOILS MAP

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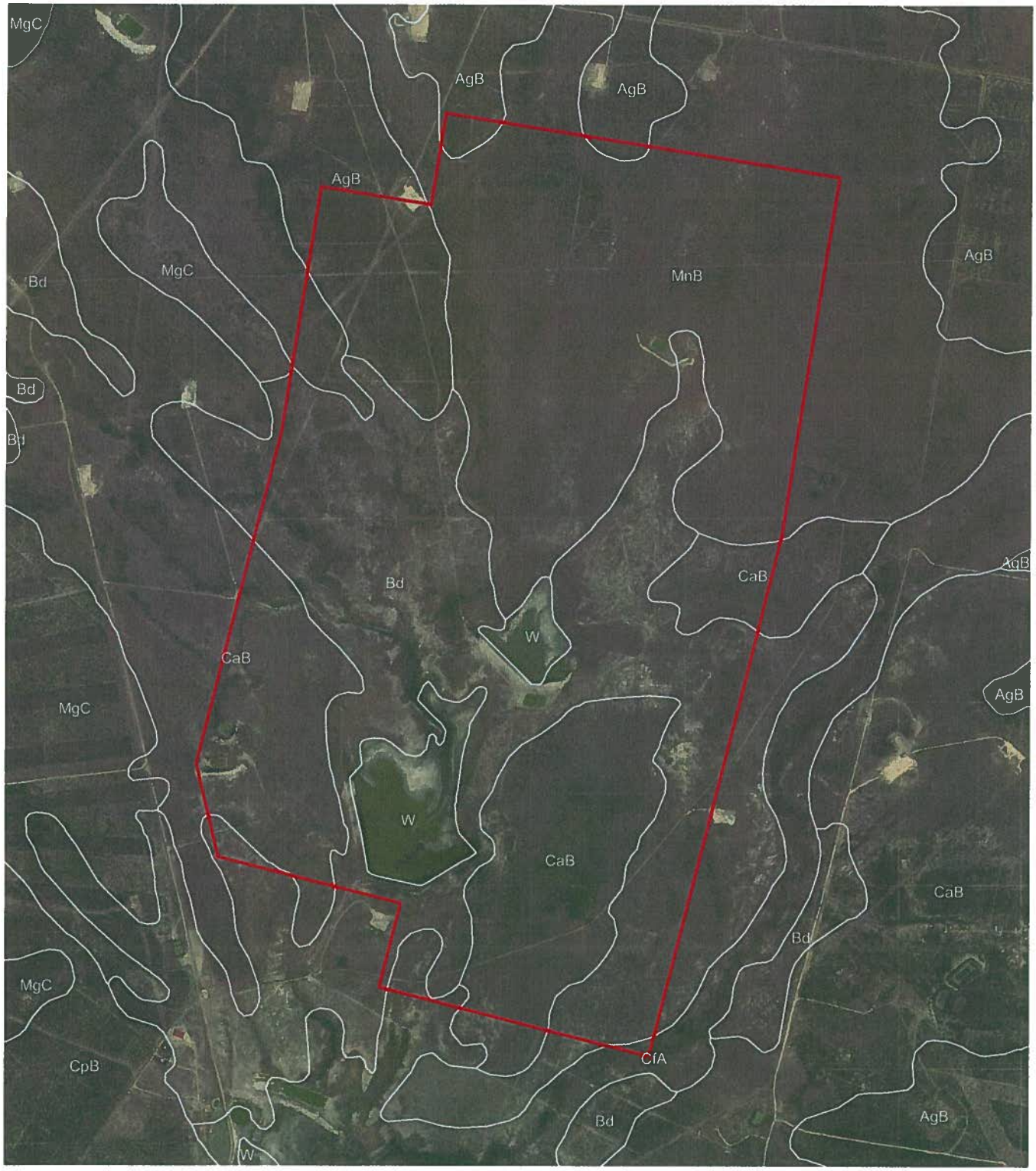

LEGEND

- Survey Area
- Soil Map Unit Boundary

N

0 250 500
Meters

Source: Soil Survey Geographic (SSURGO) Database for Webb County, Texas

SOILS MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277	DATE: 5/18/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE 3

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FIGURE 4

USFWS NATIONAL WETLANDS INVENTORY MAP

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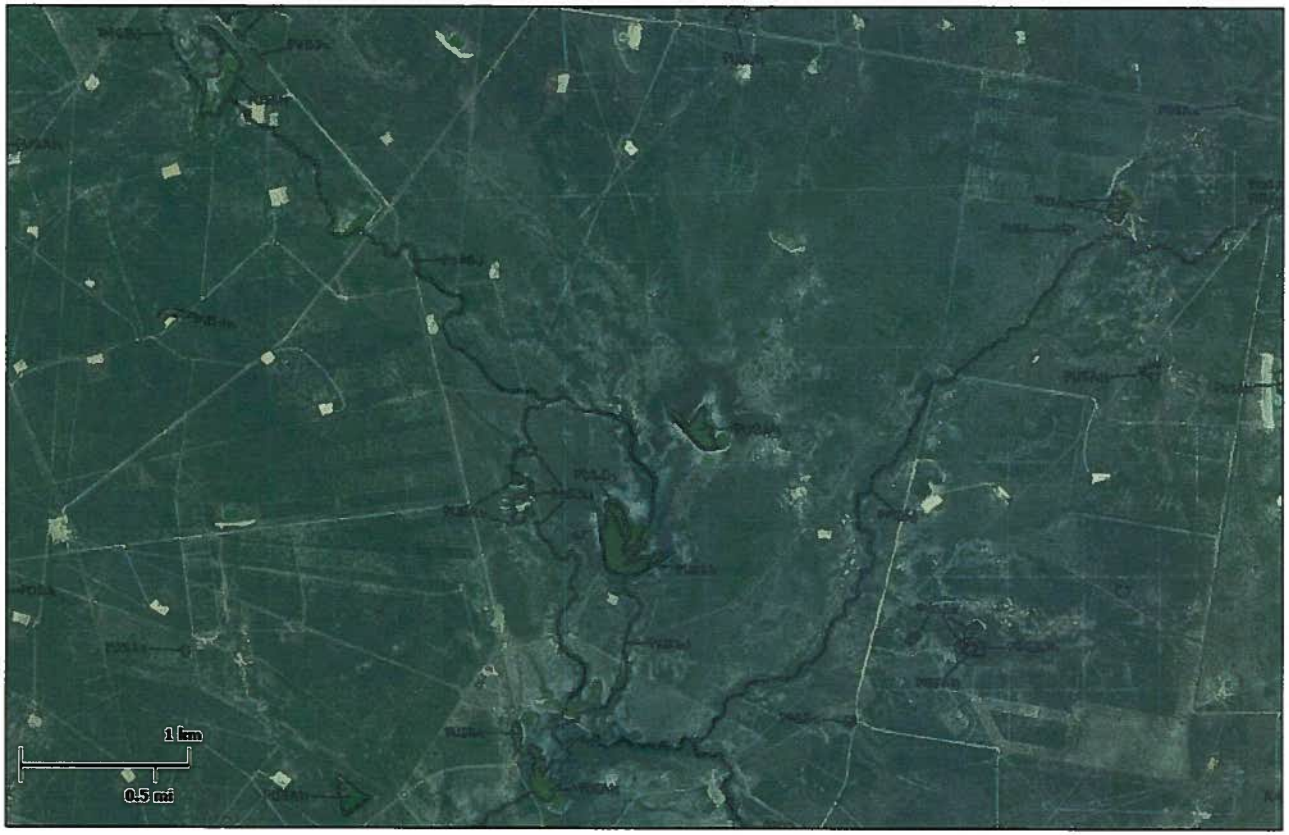
U.S. Fish and Wildlife Service

National Wetlands Inventory

Pescadito Environmental Resource Ctr

Aug 8, 2011



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

User Remarks:

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FIGURE 5

FEMA FLOOD INSURANCE RATE MAP

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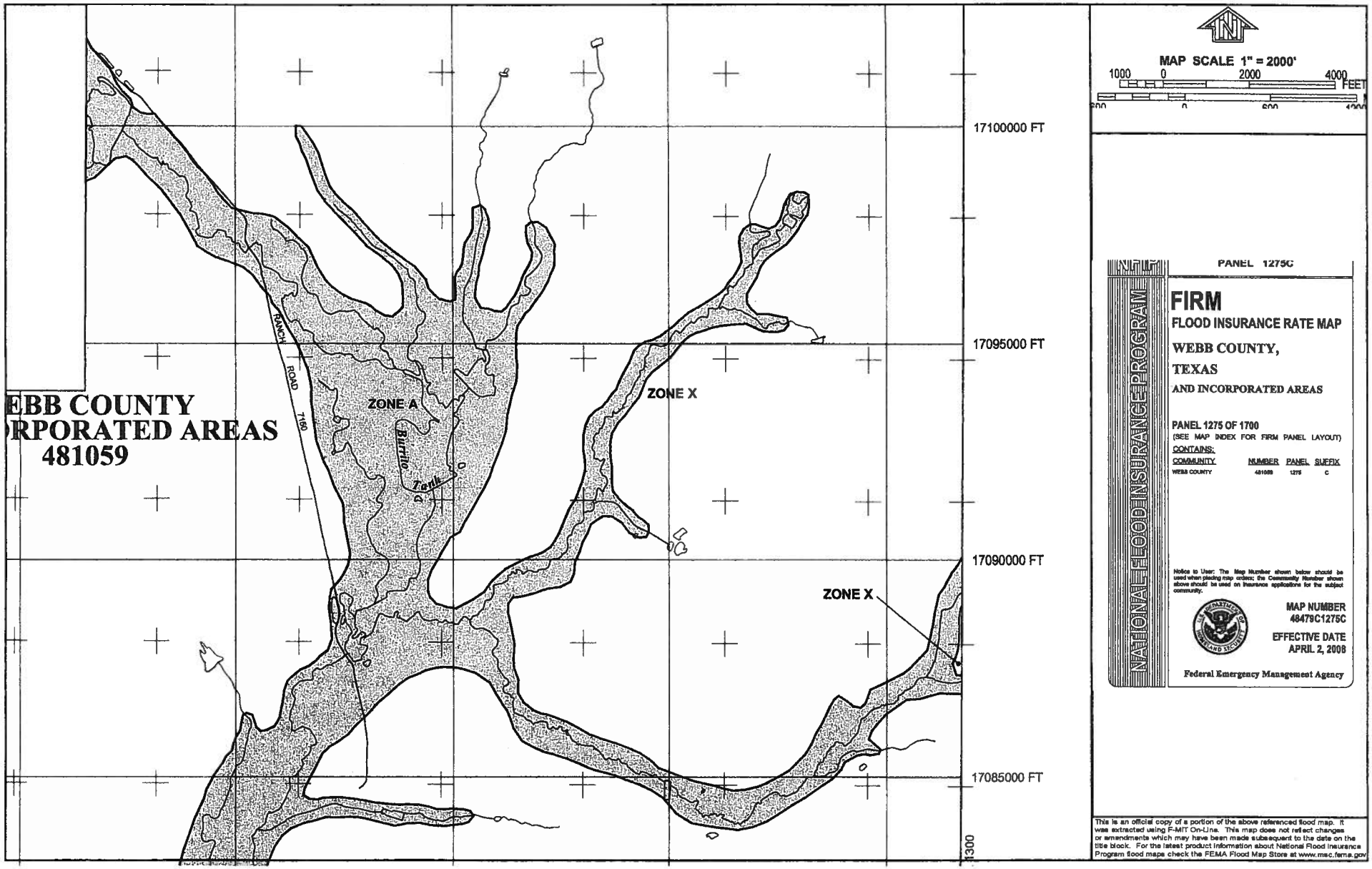

MAP SCALE 1" = 2000'

1000 0 2000 4000 FEET

200 0 600 1000

PANEL 1275C

NATIONAL FLOOD INSURANCE PROGRAM

FIRM

FLOOD INSURANCE RATE MAP

WEBB COUNTY, TEXAS AND INCORPORATED AREAS

PANEL 1275 OF 1700

(SEE MAP INDEX FOR FIRM PANEL LAYOUT)

CONTAINS:

COMMUNITY	NUMBER	PANEL	SUFFIX
WEBB COUNTY	481059	1275	C

Notice to User: The Map Number shown below should be used when placing map orders; the Community Number shown above should be used on insurance applications for the subject community.

MAP NUMBER
48479C1275C

EFFECTIVE DATE
APRIL 2, 2008

Federal Emergency Management Agency

APPENDIX A

SURVEY RESULTS -
AERIAL PHOTOGRAPH-BASED WETLAND SURVEY MAPS

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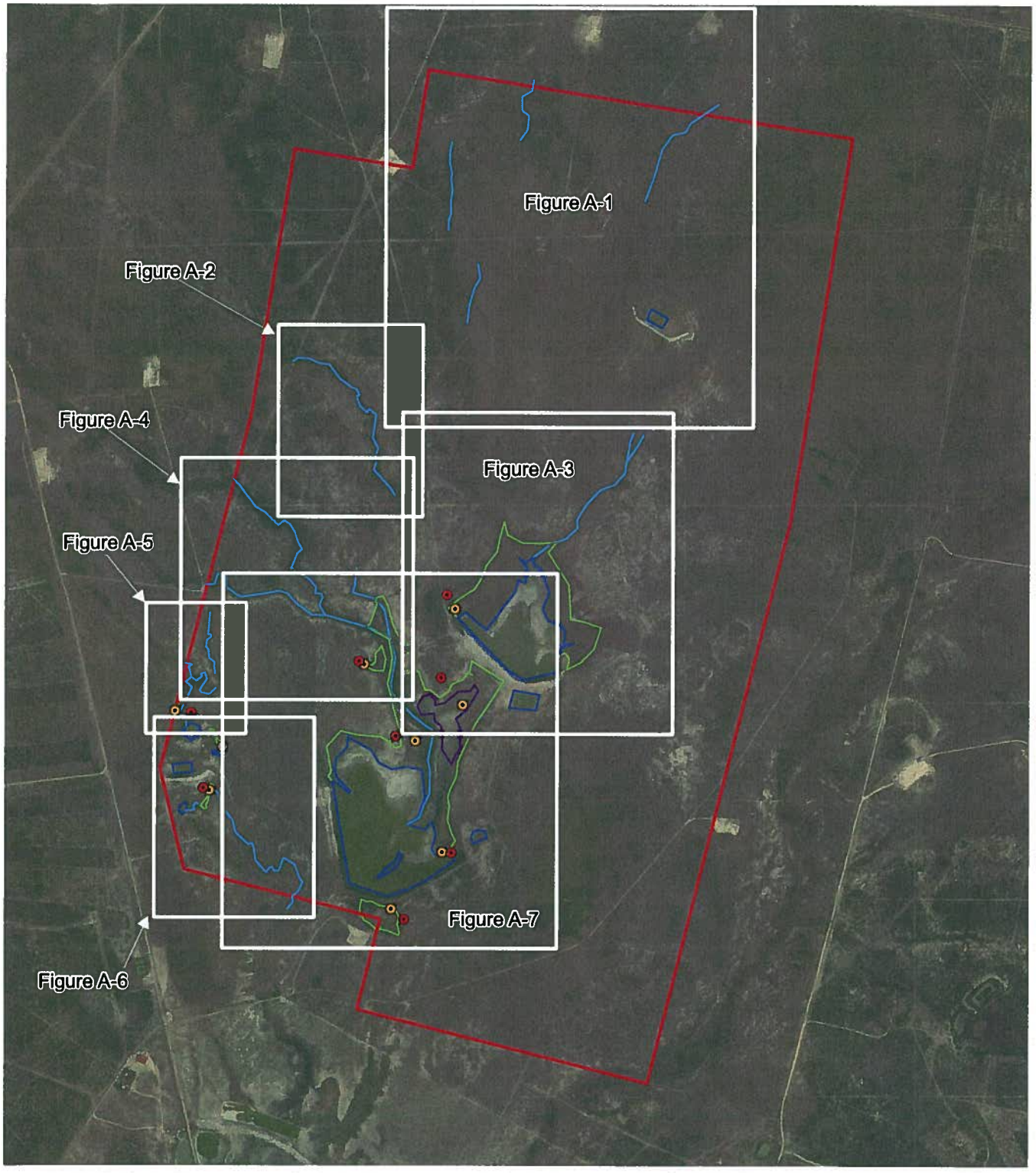

LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Emergent (PEM) Wetland Boundary
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

Source: National Agriculture Imagery Program (NAIP), 2008.

N

0 250 500
Meters

SURVEY RESULTS INDEX MAP

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A

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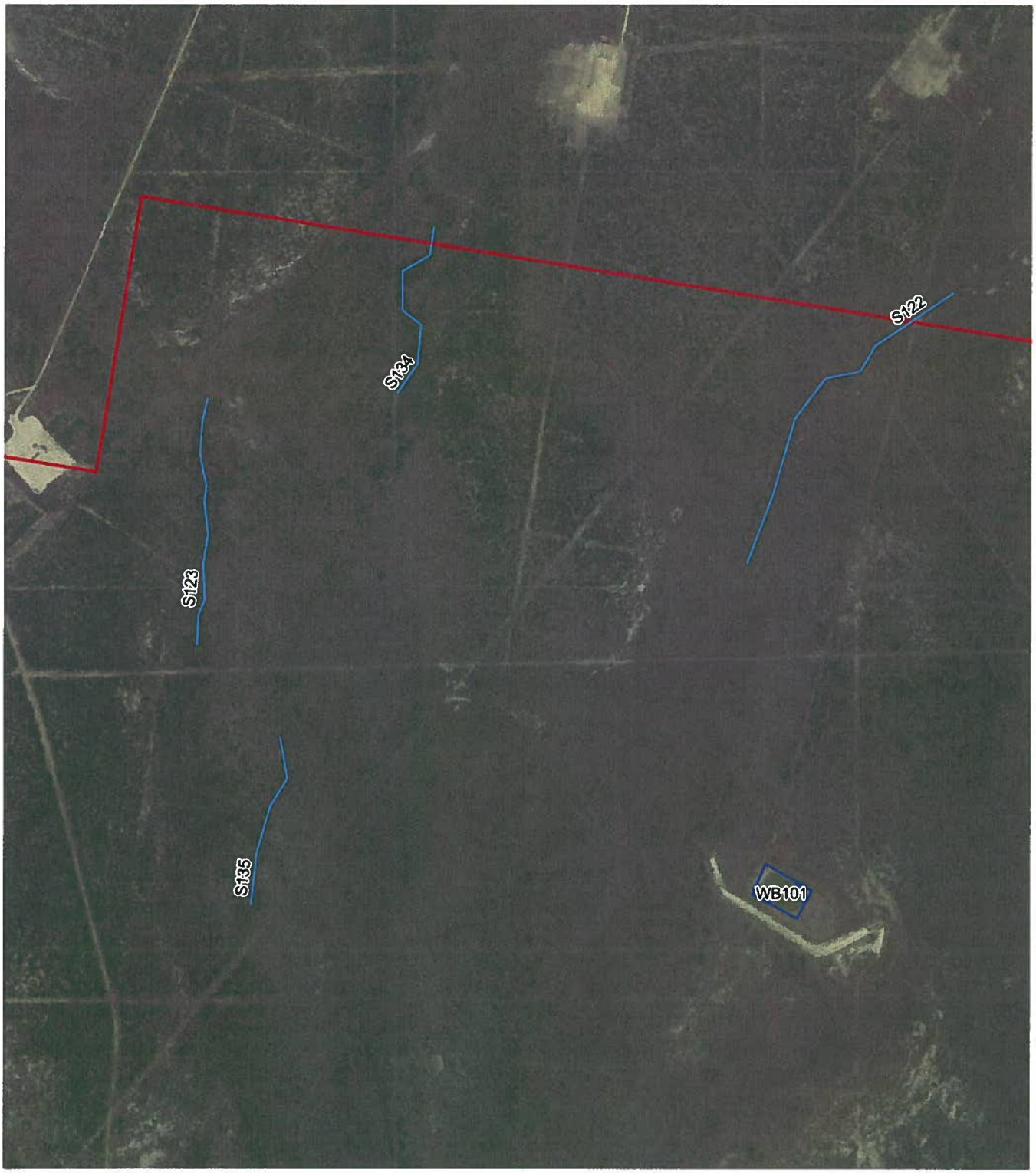

LEGEND

- Survey Area
- Streams
- Stock Tanks

N

0 100 200

Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-1

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LEGEND

- Survey Area
- Streams

N

0 50 100

Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277	DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-2

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LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Emergent (PEM) Wetland Boundary
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

Source: National Agriculture Imagery Program (NAIP), 2008.

N

0 50 100
Meters

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-3

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LEGEND

- Survey Area
- Streams
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

N

0 50 100
Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-4

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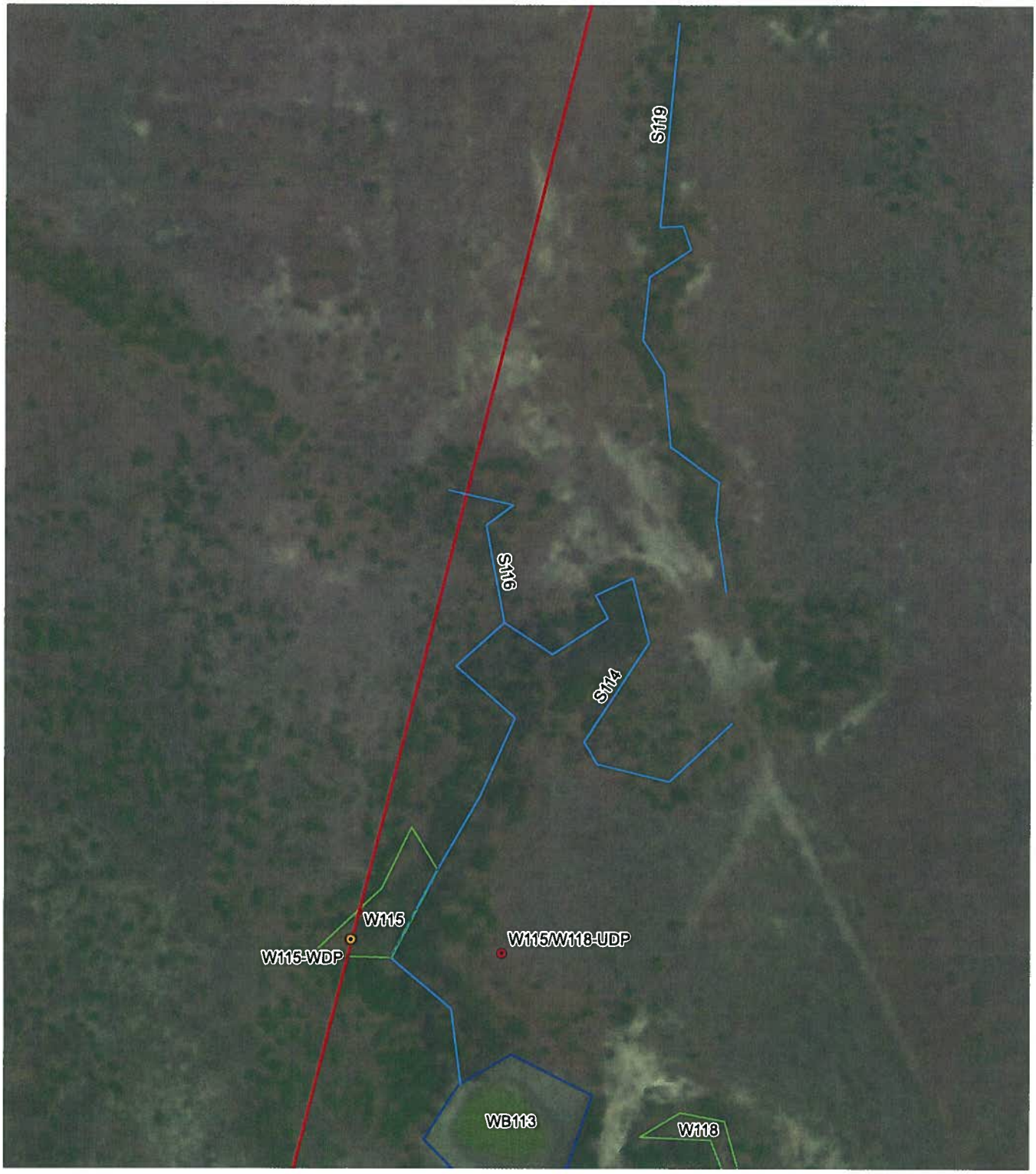

LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

N

0 25 50
Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-5

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LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

N

0 50 100
Meters

Source: National Agriculture Imagery Program (NAIP), 2008.

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-6

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LEGEND

- Survey Area
- Streams
- Stock Tanks
- Palustrine Emergent (PEM) Wetland Boundary
- Palustrine Scrub Shrub (PSS) Wetland Boundary
- Wetland Data Point (WDP)
- Upland Data Point (UPD)

Source: National Agriculture Imagery Program (NAIP), 2008.

N

0 100 200
Meters

SURVEY RESULTS

WEBB COUNTY, TEXAS

PROJECT NO.: 182277 | DATE: 6/21/2011

TRC
505 EAST HUNTLAND DRIVE
SUITE 250
AUSTIN, TEXAS 78752
512-329-6080

FIGURE
A-7

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APPENDIX B

SURVEY RESULTS -
INCLUDED FOR EACH WETLAND DETERMINATION DATA POINT

- Wetland Determination Data Forms
- Photographic Log

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WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W109-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Flat Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): LRR I Lat: 3048393.622 N Long: 483296.342 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	
Hydric Soil Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?** Yes ____ No X
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Prosopis glandulosa (Mesquite,honey)	5	Y	n/a
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size:____)			
1. Opuntia engelmannii var. lindheimeri	10	Y	n/a
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: NaN (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	X 2 =	0
FAC species	0	X 3 =	0
FACU species	0	X 4 =	0
UPL species	0	X 5 =	0
Column Totals:	0	(A)	0 (B)

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing. No species present with listed indicator status.

SOIL

Sampling Point: W109-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-18	10YR4/2	100			N/A	N/A	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W109-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Drainageway Local relief (concave, convex, none): concave Slope (%): 2

Subregion (LRR): LRR I Lat: 3048387.371 N Long: 483314.876 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
PSS located along ephemeral drainage (S108). Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
2. Acacia schaffneri (Acacia,twisted)	5	Y	n/a
3. Parkinsonia aculeata (Jerusalem-thorn)	5	Y	FACW
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 10)			
1. Helenium microcephalum (Sneezeweed,small-head)	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W109-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR4/2	95	7.5YR4/6	5	C	M	Clay	
3-4	10YR6/3	100			N/A	N/A	Sandy	
4-18	10YR 3/2	100			N/A	N/A	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes___	No X	Depth (inches):___
Water Table Present?	Yes___	No X	Depth (inches):___
Saturation Present? (includes capillary fringe)	Yes___	No X	Depth (inches):___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:
Data point located within ephemeral drainage system (S108).

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W115/W118-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048624.906 N Long: 483259.123 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes ____	No X	**Is the Sampled Area within a Wetland?**	Yes ____	No X
Hydric Soil Present?	Yes ____	No X			
Wetland Hydrology Present?	Yes ____	No X			

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. Prosopis glandulosa (Mesquite,honey)	15	Y	n/a
2. Acacia schaffneri (Acacia,twisted)	10	Y	n/a
3.			
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Opuntia engelmannii var. lindheimeri	15	Y	n/a
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	15	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 85

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: NaN (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	X 2 =	0
FAC species	0	X 3 =	0
FACU species	0	X 4 =	0
UPL species	0	X 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be resent, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes ____ No X

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area. No species present with listed indicator status.

SOIL

Sampling Point: W115/W118-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR4/2	100			N/A	N/A	Sandy	
3-18	10YR4/2	100			N/A	N/A	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W115-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Drainageway Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): LRR I Lat: 3048629.461 N Long: 483209.961 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
PSS located along ephemeral drainage (S114). Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. Parkinsonia aculeata (Jerusalem-thorn)	20	Y	FACW
2. Acacia schaffneri (Acacia,twisted)	10	Y	n/a
3. Aster spinosus (Aster,spiny)	10	Y	FACW
4.			
5.			
	40	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Aster spinosus (Aster,spiny)	10	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 90

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____	(A) ____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W115-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-12	7.5YR4/2	95	5YR4/4	5	C	M	Clay	
					N/A	N/A	N/A	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes___	No X	Depth (inches):___
Water Table Present?	Yes___	No X	Depth (inches):___
Saturation Present? (includes capillary fringe)	Yes___	No X	Depth (inches):___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 20, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W118-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Abandoned drainageway Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): LRR I Lat: 3048519.898 N Long: 483354.649 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:

PSS located along abandoned drainageway and is an enclosed depression. Historic ephemeral system (S108/S114/S119) interrupted by series of impoundments/stock tanks (W110, W111, W113, W117). Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. Parkinsonia aculeata (Jerusalem-thorn)	10	Y	FACW
2.			
3.			
4.			
5.			
	10	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Lycium carolinianum (Wolf-berry,carolina)	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)

Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W118-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-8	10YR4/2	98	2.5YR4/4	2	C	M	Sandy Clay	
					N/A	N/A	N/A	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___
Water Table Present? Yes ___ No X Depth (inches): ___
Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W126-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): LRR I Lat: 3048782.571 N Long: 483769.058 E Datum:

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X		

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Opuntia engelmannii var. lindheimeri	10	Y	n/a
2. Lycium carolinianum (Wolf-berry,carolina)	5	Y	FACW
3.			
4.			
5.			
	15	= Total Cover	
Herb Stratum (Plot size:____)			
1. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
2. Borrichia frutescens (Oxeye,sea)	5	Y	FACW
3. Opuntia engelmannii var. lindheimeri	5	Y	n/a
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	20	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area.

SOIL

Sampling Point: W126-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR7/3	100			N/A	N/A	Sandy	
2-5	7.5YR4/4	100			N/A	N/A	Clay	Visible salt crystals
5-15	10YR4/3	100			N/A	N/A	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes ___ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes ___ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W126-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Drainageway Local relief (concave, convex, none): concave Slope (%): <1

Subregion (LRR): LRR I Lat: 3048772.829 N Long: 483784.291 E Datum:

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
PSS located adjacent to ephemeral drainage levee/dike (S121) and within small low area/drainage. Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 5)			
1. Lycium carolinianum (Wolf-berry,carolina)	15	Y	FACW
2. Parkinsonia aculeata (Jerusalem-thorn)	5	Y	FACW
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size: 5)			
1. Borrichia frutescens (Oxeye,sea)	35	Y	FACW
2. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	45	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 55

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species	x 1 =
FACW species	X 2 =
FAC species	X 3 =
FACU species	X 4 =
UPL species	X 5 =
Column Totals:	(A) (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Little herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W126-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR4/2	100			N/A	N/A	Sandy Clay	
2-6	10YR4/2	95	7.5YR4/4	5	C	M	Clay	
6-12	10YR6/3	98	7.5YR4/4	2	C	M	Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127-UDP1

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Flat Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): LRR I Lat: 3048551.46 N Long: 483907.416 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: 10)			
1. Borrichia frutescens (Oxeye,sea)	10	Y	FACW
2. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
3. Tamarix ramosissima (Saltcedar)	2		FACW
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	22	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 80

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____	(A) ____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area.

SOIL

Sampling Point: W127-UDP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR7/2	100			N/A	N/A	Sandy	
2-16	7.5YR3/2	100			N/A	N/A	Sandy Clay	
					N/A	N/A	N/A	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:
Stunted hydrophyte growth compared with growth of same species within W127.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127-UDP2

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) Ridge Local relief (concave, convex, none): convex Slope (%): 2

Subregion (LRR): LRR I Lat: 3048195.083 N Long: 484052.996 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X		

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area. Soil compacted from livestock at W129-UDP.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1. Acacia schaffneri (Acacia,twisted)	30	Y	n/a
2.			
3.			
4.			
	30	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. Acacia schaffneri (Acacia,twisted)	20	Y	n/a
2. Aster spinosus (Aster,spiny)	20	Y	FACW
3.			
4.			
5.			
	40	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Cynodon dactylon (Grass,bermuda)	30	Y	FACU
2. Aster spinosus (Aster,spiny)	10	Y	FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 60

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	X 2 =	
FAC species	X 3 =	
FACU species	X 4 =	
UPL species	X 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Little herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W127-UDP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-3	10YR5/2	100			N/A	N/A	Sandy	
3-10	10YR4/2	100			N/A	N/A	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127/W130-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): LRR I Lat: 3048730.584 N Long: 484019.776 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes ____ No X
Hydric Soil Present?	Yes ____ No X		
Wetland Hydrology Present?	Yes ____ No X		

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Opuntia engelmannii var. lindheimeri	5	Y	n/a
2.			
3.			
4.			
5.			
	5	= Total Cover	
Herb Stratum (Plot size:____)			
1. Isocoma coronopifolia (Goldenweed,common)	30	Y	n/a
2. Opuntia engelmannii var. lindheimeri	15	Y	n/a
3. Jatropha dioica (Leatherstem)	5		n/a
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	50	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: NaN (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	X 2 =	0
FAC species	0	X 3 =	0
FACU species	0	X 4 =	0
UPL species	0	X 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area. No species present with listed indicator status.

SOIL

Sampling Point: W127/W130-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR5/2	100			N/A	N/A	Sandy	
2-10	7.5YR4/2	100			N/A	N/A	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127-WDP1

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): <1

Subregion (LRR): LRR I Lat: 3048538.163 N Long: 483941.687 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
Large PSS abutting ephemeral stream S121 and stock tank W128. A portion of W127 is within sparsely to non-vegetated area caused by high soil salt content (hydric soil and few oxidized roots present). Levees are present ephemeral stream S121; similar hydrophytic vegetation, hydric soil, and hydrology indicators were observed within S121 and along its levees; therefore, levees are included within the W127 survey polygon. Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: 10)			
1. Borrichia frutescens (Oxeye,sea)	10	Y	FACW
2. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
3. Tamarix ramosissima (Saltcedar)	5	Y	FACW
4.			
5.			
	25	= Total Cover	
Herb Stratum (Plot size: ____)			
1.			
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	0	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____	(A) ____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless d sturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W127-WDP1

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR7/2	100			N/A	N/A	Sandy	
2-10	7.5YR4/1+	95	7.5YR5/6	5	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W127-WDP2

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 2

Subregion (LRR): LRR I Lat: 3048197.819 N Long: 484024.834 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	Yes X No ___
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes X No ___		

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area. Soil likely compacted from livestock.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:___)			
1. Aster spinosus (Aster,spiny)	15	Y	FACW
2. Lycium carolinianum (Wolf-berry,carolina)	5	Y	FACW
3.			
4.			
5.			
	20	= Total Cover	
Herb Stratum (Plot size:___)			
1. Cynodon dactylon (Grass,bermuda)	40	Y	FACU
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	40	= Total Cover	
Woody Vine Stratum (Plot size:___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 50

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 66.7 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ___	x 1 = ___
FACW species ___	X 2 = ___
FAC species ___	X 3 = ___
FACU species ___	X 4 = ___
UPL species ___	X 5 = ___
Column Totals: ___ (A)	___ (B)

Prevalence Index = B/A = ___

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation highly disturbed from severe overgrazing throughout project area.

SOIL

Sampling Point: W127-WDP2

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR5/2	100			N/A	N/A	Sandy	
2-12	10YR4/2	95	7.5YR4/4	5	C	M	Sandy	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W130-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048648.316 N Long: 484087.144 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PEM

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil X, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	Yes X No ___
Hydric Soil Present?	Yes X No ___		
Wetland Hydrology Present?	Yes X No ___		

Remarks:
PEM located within a PSS (W127) and downgradient of tank W104. Vegetation highly disturbed from severe overgrazing throughout project area. Soil compacted, likely from livestock.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ___)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size: ___)			
1. Cynodon dactylon (Grass,bermuda)	15	Y	FACU
2. Helenium microcephalum (Sneezeweed,small-head)	10	Y	FACW
3. Aster spinosus (Aster,spiny)	5		FACW
4. Eryngium nasturtiifolium (Hierba del sapo)	5		FACW
5.			
6.			
7.			
8.			
9.			
10.			
	35	= Total Cover	
Woody Vine Stratum (Plot size: ___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 65

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 2 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 50 (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	20	X 2 =	40
FAC species	0	X 3 =	0
FACU species	15	X 4 =	60
UPL species	0	X 5 =	0
Column Totals:	35 (A)		100 (B)

Prevalence Index = B/A = 2.86

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

X 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Little herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing. Cynodon dactylon exhibiting stunted growth.

SOIL

Sampling Point: W130-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-6	10YR5/2	98	7.5YR4/4	2	C	M	Sandy	
6-10	10YR4/2	95	7.5YR4/4	5	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:
Soil compacted, likely from livestock.

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- X Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W132-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3047991.051 N Long: 483908.196 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ___ (If no, explain in Remarks.)

Are Vegetation X, Soil ___, or Hydrology ___ significantly disturbed? Are "Normal Circumstances" present? Yes ___ No X

Are Vegetation ___, Soil ___, or Hydrology ___ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ___	**Is the Sampled Area within a Wetland?**	Yes ___ No X
Hydric Soil Present?	Yes ___ No X		
Wetland Hydrology Present?	Yes ___ No X		

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:___)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:___)			
1.			
2.			
3.			
4.			
5.			
	0	= Total Cover	
Herb Stratum (Plot size:___)			
1. Opuntia engelmannii var. lindheimeri	5	Y	n/a
2. Varilla texana (Saladillo)	5	Y	n/a
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	10	= Total Cover	
Woody Vine Stratum (Plot size:___)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum ___

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 0 (A)

Total Number of Dominant Species Across All Strata: 0 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: NaN (A/B)

Prevalence Index worksheet:

Total % Cover of:		Multiply by:	
OBL species	0	x 1 =	0
FACW species	0	X 2 =	0
FAC species	0	X 3 =	0
FACU species	0	X 4 =	0
UPL species	0	X 5 =	0
Column Totals:	0 (A)		0 (B)

Prevalence Index = B/A = NaN

Hydrophytic Vegetation Indicators:

___ 1 - Rapid Test for Hydrophytic Vegetation

___ 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ___

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing. No species present with listed indicator status.

SOIL

Sampling Point: W132-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? **Yes** _____ **No** X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- ___ FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? **Yes** ____ **No** X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W132-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048023.448 N Long: 483868.978 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
PSS downgradient of and abutting an impoundment of stock tank W128. Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Tamarix ramosissima (Saltcedar)	30	Y	FACW
2. Borrichia frutescens (Oxeye,sea)	10	Y	FACW
3. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size:____)			
1. Spartina spartinae (Cordgrass,gulf)	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 4 (A)

Total Number of Dominant Species Across All Strata: 4 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A = ____

Hydrophytic Vegetation Indicators:

X 1 - Rapid Test for Hydrophytic Vegetation

X 2 - Dominance Test is > 50%

___ 3 - Prevalence Test is ≤ 3.0[1]

___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate she t)

X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W132-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth	Matrix		Redox Features					
(inches)	Color (moist)	%	Color (moist)	%	Type[1]	Loc[2]	Texture	Remarks
0-2	10YR6/2	100			N/A	N/A	Sandy	
2-10	7.5YR4/2	98	5YR4/4	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? **Yes** X **No** ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present?	Yes___	No X	Depth (inches):___
Water Table Present?	Yes___	No X	Depth (inches):___
Saturation Present? (includes capillary fringe)	Yes___	No X	Depth (inches):___

Wetland Hydrology Present? **Yes** X **No** ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W133-UDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048985.983 N Long: 484037.758 E Datum: NAD83

Soil Map Unit Name: NWI Classification: UPL

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X	No ____	**Is the Sampled Area within a Wetland?** Yes ____ No X
Hydric Soil Present?	Yes ____	No X	
Wetland Hydrology Present?	Yes ____	No X	

Remarks:
Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size:____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size:____)			
1. Prosopis glandulosa (Mesquite,honey)	30	Y	n/a
2. Parkinsonia aculeata (Jerusalem-thorn)	20	Y	FACW
3. Acacia schaffneri (Acacia,twisted)	5		n/a
4.			
5.			
	55	= Total Cover	
Herb Stratum (Plot size:____)			
1. Opuntia engelmannii var. lindheimeri	30	Y	n/a
2. Lycium carolinianum (Wolf-berry,carolina)	5		FACW
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	35	= Total Cover	
Woody Vine Stratum (Plot size:____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 65

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 1 (A)

Total Number of Dominant Species Across All Strata: 1 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:
OBL species ____	x 1 = ____
FACW species ____	X 2 = ____
FAC species ____	X 3 = ____
FACU species ____	X 4 = ____
UPL species ____	X 5 = ____
Column Totals: ____ (A)	____ (B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ____ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ____ 3 - Prevalence Test is ≤ 3.0[1]
- ____ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Little herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W133-UDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-4	10YR4/2	100			N/A	N/A	Sandy Clay	
4-18	7.5YR4/2	100			N/A	N/A	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- ___ Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: _____
Depth (inches): _____

Hydric Soil Present? Yes _____ No X

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes___ No X Depth (inches):_____

Water Table Present? Yes___ No X Depth (inches):_____

Saturation Present? (includes capillary fringe) Yes___ No X Depth (inches):_____

Wetland Hydrology Present? Yes ____ No X

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

WETLAND DETERMINATION DATA FORM – Great Plains Region

Project/Site: Rancho Viejo Webb County Landfill City/County: Webb Sampling Date: Apr 21, 2011

Applicant/Owner: Rancho Viejo Waste Management, LLC State: Texas Sampling Point: W133-WDP

Investigator(s): B.Clark, T.Schnakenberg Section, Township, Range:

Landform (hillslope, terrace, etc.) flat Local relief (concave, convex, none): none Slope (%): 0

Subregion (LRR): LRR I Lat: 3048941.718 N Long: 484062.844 E Datum: NAD83

Soil Map Unit Name: NWI Classification: PSS

Are climatic / hydrologic conditions on the site typical for this time of year? Yes X No ____ (If no, explain in Remarks.)

Are Vegetation X, Soil ____, or Hydrology ____ significantly disturbed? Are "Normal Circumstances" present? Yes ____ No X

Are Vegetation ____, Soil ____, or Hydrology ____ naturally problematic? (If needed, explain any answers in Remarks.)

SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.

Hydrophytic Vegetation Present?	Yes X No ____	**Is the Sampled Area within a Wetland?**	Yes X No ____
Hydric Soil Present?	Yes X No ____		
Wetland Hydrology Present?	Yes X No ____		

Remarks:
Large PSS abutting ephemeral stream S103 and stock tank W104. Vegetation highly disturbed from severe overgrazing throughout project area.

VEGETATION - Use scientific names of plants.

Tree Stratum (Plot size: ____)	Absolute % Cover	Dominant Species?	Indicator Status
1.			
2.			
3.			
4.			
	0	= Total Cover	
Sapling/Shrub Stratum (Plot size: ____)			
1. Parkinsonia aculeata (Jerusalem-thorn)	30	Y	FACW
2. Acacia schaffneri (Acacia,twisted)	10	Y	n/a
3. Lycium carolinianum (Wolf-berry,carolina)	10	Y	FACW
4.			
5.			
	50	= Total Cover	
Herb Stratum (Plot size: ____)			
1. Lycium carolinianum (Wolf-berry,carolina)	5	Y	FACW
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
	5	= Total Cover	
Woody Vine Stratum (Plot size: ____)			
1.			
2.			
	0	= Total Cover	

% Bare Ground in Herb Stratum 95

Dominance Test worksheet:

Number of Dominant Species That Are OBL, FACW, or FAC: 3 (A)

Total Number of Dominant Species Across All Strata: 3 (B)

Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)

Prevalence Index worksheet:

Total % Cover of:	Multiply by:	
OBL species	x 1 =	
FACW species	X 2 =	
FAC species	X 3 =	
FACU species	X 4 =	
UPL species	X 5 =	
Column Totals:	(A)	(B)

Prevalence Index = B/A =

Hydrophytic Vegetation Indicators:

- ___ 1 - Rapid Test for Hydrophytic Vegetation
- X 2 - Dominance Test is > 50%
- ___ 3 - Prevalence Test is ≤ 3.0[1]
- ___ 4 - Morphological Adaptations[1] (Provide supporting data in Remarks or on a separate sheet)
- X Problematic Hydrophytic Vegetation[1] (Explain)

[1]Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.

Hydrophytic Vegetation Present? Yes X No ____

Remarks: (Include photo numbers here or on a separate sheet.)
Sparse herbaceous vegetation. Vegetation in the area highly disturbed from severe overgrazing.

SOIL

Sampling Point: W133-WDP

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)

Depth (inches)	Matrix Color (moist)	Matrix %	Redox Features Color (moist)	Redox Features %	Type[1]	Loc[2]	Texture	Remarks
0-10	7.5YR4/2	98	5YR4/3	2	C	M	Sandy Clay	

[1]Type: C=Concentration, D=Depletion, RM=Reduced Matrix, CS=Covered or Coated Sand Grains. [2]Location: PL=Pore Lining, M=Matrix.

Hydric Soil Indicators:

- ___ Histosol (A1)
- ___ Histic Epipedon (A2)
- ___ Black Histic (A3)
- ___ Hydrogen Sulfide (A4)
- ___ Stratified Layers (A5) **(LRR F)**
- ___ 1 cm Muck (A9) **(LRR F, G, H)**
- ___ Depleted Below Dark Surface (A11)
- ___ Thick Dark Surface (A12)
- ___ Sandy Mucky Mineral (S1)
- ___ 2.5 cm Mucky Peat or Peat (S2) **(LRR G, H)**
- ___ 5 cm Mucky Peat or Peat (S3) **(LRR F)**
- ___ Sandy Gleyed Matrix (S4)
- ___ Sandy Redox (S5)
- ___ Stripped Matrix (S6)
- ___ Loamy Mucky Mineral (F1)
- ___ Loamy Gleyed Matrix (F2)
- X Depleted Matrix (F3)
- ___ Redox Dark Surface (F6)
- ___ Depleted Dark Surface (F7)
- ___ Redox Depressions (F8)
- ___ High Plains Depressions (F16) **(MLRA 72 & 73 of LRR H)**

Indicators for Problematic Hydric Soils[3]:

- ___ 1 cm Muck (A9) **(LRR I, J)**
- ___ Coast Prairie Redox (A16) **(LRR F, G, H)**
- ___ Dark Surface (S7) **(LRR G)**
- ___ High Plains Depressions (F16) **(LRR H outside of MLRA 72 & 73)**
- ___ Reduced Vertic (F18)
- ___ Red Parent Material (TF2)
- ___ Very Shallow Dark Surface (TF12)
- ___ Other (Explain in Remarks)

[3]Indicators of Hydrophytic vegetation and wetland hydrology must be present, unless disturbed or problematic.

Restrictive Layer (if observed):
Type: ___
Depth (inches): ___

Hydric Soil Present? Yes X No ___

Remarks:

HYDROLOGY

Wetland Hydrology Indicators:

Primary Indicators (minimum of one is required; check all that apply)

- ___ Surface Water (A1)
- ___ High Water Table (A2)
- ___ Saturation (A3)
- ___ Water Marks (B1)
- ___ Sediment Deposits (B2)
- ___ Drift Deposits (B3)
- ___ Algal Mat or Crust (B4)
- ___ Iron Deposits (B5)
- ___ Inundation Visible on Aerial Imagery (B7)
- ___ Water-Stained Leaves (B9)
- ___ Salt Crust (B11)
- ___ Aquatic Fauna (B13)
- ___ Hydrogen Sulfide Odor (C1)
- ___ Dry-Season Water Table (C2)
- X Oxidized Rhizospheres on Living Roots (C3) **(where not tilled)**
- ___ Presence of Reduced Iron (C4)
- ___ Thin Muck Surface (C7)
- ___ Other (Explain in Remarks)

Secondary Indicators (minimum of two required)

- ___ Surface Soil Cracks (B6)
- ___ Sparsely Vegetated Concave Surface (B8)
- ___ Drainage Patterns (B10)
- ___ Oxidized Rhizospheres on Living Roots (C3) **(where tilled)**
- ___ Crayfish Burrows (C8)
- ___ Saturation Visible on Aerial Imagery (C9)
- ___ Geomorphic Position (D2)
- X FAC-Neutral Test (D5)
- ___ Frost-Heave Hummocks (D7) **(LRR F)**

Field Observations:

Surface Water Present? Yes ___ No X Depth (inches): ___

Water Table Present? Yes ___ No X Depth (inches): ___

Saturation Present? (includes capillary fringe) Yes ___ No X Depth (inches): ___

Wetland Hydrology Present? Yes X No ___

Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:

Remarks:

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 1	
Feature: Stock Tank WB101	
Date: 4/19/2011	
Comments: Stock tank WB101. Facing north.	
Photograph ID: 2	
Feature: Stream S103	
Date: 4/19/2011	
Comments: Ephemeral stream S103. Facing south (downstream).	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 3 **Feature: Stream S103** **Date: 4/19/2011** **Comments: Ephemeral stream S103. Facing north (upstream).**	
Photograph ID: 4 **Feature: Ephemeral stream S107** **Date: 4/19/2011** **Comments: Ephemeral stream S107, a short tributary of S103. Facing north (upstream).**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 5 **Feature: Stock Tank WB104 and Wetland W133** **Date: 4/19/2011** **Comments: Stock tank SB104 and wetland W133 (left of photo). Facing south.**	
Photograph ID: 6 **Feature: Wetland W133 and Stock Tank W1B104** **Date: 4/21/2011** **Comments: Wetland W133 (background) at the edge of stock tank WB104 (foreground). Facing north.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 7 **Feature: Wetland W133** **Date: 4/21/2011** **Comments: Wetland W133. Facing north.**	
Photograph ID: 8 **Feature: Soil at W133-WDP** **Date: 4/19/2011** **Comments: Soil at W133-WDP wetland data point.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 9 **Feature: Upland Habitat at W133-UDP** **Date: 4/19/2011** **Comments: Upland habitat at W133-UDP upland data point. Facing north.**	
Photograph ID: 10 **Feature: Soil at W133-UDP** **Date: 4/20/2011** **Comments: Soil at W133-UDP upland data point.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 11 **Feature: Stock Tank WB106** **Date: 4/19/2011** **Comments: Stock tank WB106. Facing north.**	
Photograph ID: 12 **Feature: Wetland W109 (W109-WDP)** **Date: 4/20/2011** **Comments: Wetland W109 at W109-WDP. Facing south.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 13 **Feature: Soil at W109-WDP** **Date: 4/20/2011** **Comments: Soil profile at W109-WDP wetland data point.**	
Photograph ID: 14 **Feature: Upland habitat at W109-UDP** **Date: 4/20/2011** **Comments: Upland habitat at W109-UDP upland data point. Facing north.**	

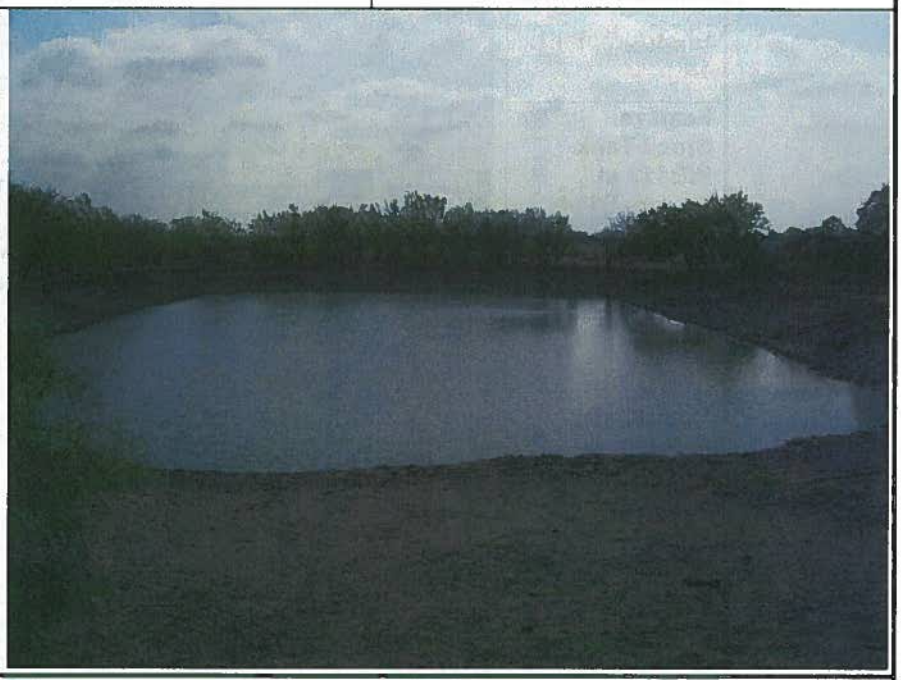
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 15 **Feature: Soil at W109-UDP** **Date: 4/20/2011** **Comments: Soil profile at W109-UDP upland data point.**	
Photograph ID: 16 **Feature: Stock Tank WB110** **Date: 4/20/2011** **Comments: Stock tank WB110. Facing north.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 17 **Feature: Stock Tank WB111** **Date: 4/20/2011** **Comments: Stock Tank WB111. Facing east.**	
Photograph ID: 18 **Feature: Stock Tank WB113** **Date: 4/20/2011** **Comments: Stock Tank WB113. Facing south.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 19	
Feature: Stock Tank WB113 at Stream S114	
Date: 4/20/2011	
Comments: Stock tank WB113 at ephemeral stream S114. Facing north.	
Photograph ID: 20	
Feature: Wetland W115 and Stream S114	
Date: 4/20/2011	
Comments: Wetland W115 (left of photo), located adjacent to ephemeral stream S114 (background). Facing north (upstream).	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 21 **Feature: Stream S114** **Date: 4/20/2011** **Comments: Ephemeral stream S114. Facing north (upstream).**	
Photograph ID: 22 **Feature: Upland Habitat at W115/W118-UDP** **Date: 4/20/2011** **Comments: Upland habitat at W115/W118-UDP upland data point. Facing east.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 23	
Feature: Soil at W115/W118-UDP	
Date: 4/20/2011	
Comments: Soil at W115/W118-UDP upland data point.	
Photograph ID: 24	
Feature: Stock Tank WB117	
Date: 4/20/2011	
Comments: Stock Tank WB117. Facing north.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 25 **Feature: Wetland W118** **Date: 4/20/2011** **Comments: Wetland W118, located within an abandoned drainage channel created by stock tank construction. Facing north.**	
Photograph ID: 26 **Feature: Stream S116** **Date: 4/20/2011** **Comments: Ephemeral stream S116. Facing north (upstream).**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 27	
Feature: Stream S120	
Date: 4/20/2011	
Comments: Ephemeral stream S120 (left of photo). Facing east (downstream).	
Photograph ID: 28	
Feature: Streams S120 and S121	
Date: 4/20/2011	
Comments: Confluence of ephemeral stream S120 (left of photo) and S121 (foreground and background). Facing east (downstream).	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 29 **Feature: Stream S123** **Date: 4/21/2011** **Comments: Ephemeral stream S123. Facing downstream (south).**	
Photograph ID: 30 **Feature: Stream S124** **Date: 4/21/2011** **Comments: Ephemeral stream S124. Facing south (downstream).**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 31 **Feature: Stream S125** **Date: 4/21/2011** **Comments: Ephemeral stream S125. Facing south (downstream).**	
Photograph ID: 32 **Feature: Wetland W126** **Date: 4/21/2011** **Comments: Wetland W126. Facing west.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 33	
Feature: Soil at W126-WDP	
Date: 4/21/2011	
Comments: Soil at W126-WDP wetland data point.	
Photograph ID: 34	
Feature: Upland habitat at W126-UDP	
Date: 4/21/2011	
Comments: Upland habitat at W126-UDP upland data point. Facing west.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**
Photograph ID: 35 **Feature: Soil at W126-UDP** **Date: 4/21/2011** **Comments: Soil at W126-UDP upland data point.**	
Photograph ID: 36 **Feature: Wetland W127 at W127-WDP1** **Date: 4/21/2011** **Comments: Wetland W127 at W127-WDP1. Facing south.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 37	
Feature: Soil at W127-WDP1	
Date: 4/21/2011	
Comments: Soil at W127-WDP1 wetland data point.	
Photograph ID: 38	
Feature: Sparse Vegetation at W127 and Stock Tank WB128	
Date: 4/21/2011	
Comments: Area of sparse vegetation at W127, a result of saline soils. Stock tank WB128 in background. Facing south.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 39	
Feature: Soil at W127	
Date: 4/21/2011	
Comments: Hydric soil at sparsely vegetated area of W127.	
Photograph ID: 40	
Feature: Upland habitat at W127-UDP1	
Date: 4/21/2011	
Comments: Upland habitat at W127-UDP1 upland data point. Facing north.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 41 **Feature: Soil at W127-UDP1** **Date: 4/21/2011** **Comments: Soil profile at W127-UDP1 upland data point.**	
Photograph ID: 42 **Feature: Wetland W127 at W127-WDP2 and Stock Tank WB128** **Date: 4/21/2011** **Comments: Fringe area of wetland W127, near W127-WDP2. Stock tank WB128 in background. Facing southwest.**	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**
Photograph ID: 43	
Feature: Soil at W127-WDP2	
Date: 4/21/2011	
Comments: Soil at W127-WDP2 wetland data point.	
Photograph ID: 44	
Feature: Upland habitat at W127-UDP2	
Date: 4/21/2011	
Comments: Upland habitat at W127-UDP2 upland data point. Facing southeast.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 45	
Feature: Soil at W127-UDP2	
Date: 4/21/2011	
Comments: Soil profile at W127-UDP2 upland data point.	
Photograph ID: 46	
Feature: Wetland W127 at Stream S121	
Date: 4/21/2011	
Comments: Wetland W127 at ephemeral stream S121 (left of photo). Facing north.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	Project Number: 182277
Project Name: Pescadito Environmental Resource Center	County, State: Webb County, Texas

Photograph ID: 47	
Feature: Wetland W127 at W104 Impoundment	
Date: 4/21/2011	
Comments: Wetland W127 (background) at W104 impoundment (foreground). Facing south.	
Photograph ID: 48	
Feature: Wetland W130	
Date: 4/21/2011	
Comments: Wetland W130. Facing south.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 49	
Feature: Soil at W130-UDP1	
Date: 4/21/2011	
Comments: Soil at W130-WDP wetland data point.	
Photograph ID: 50	
Feature: Upland habitat at W127/W130-UDP	
Date: 4/21/2011	
Comments: Upland habitat at W127/W130-UDP upland data point. Facing northwest.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 51	
Feature: Soil at W12/W130-UDP	
Date: 4/21/2011	
Comments: Soil at W127/W130-UDP upland data point.	
Photograph ID: 52	
Feature: Stock Tank WB131	
Date: 4/21/2011	
Comments: Stock tank WB131. Facing west.	

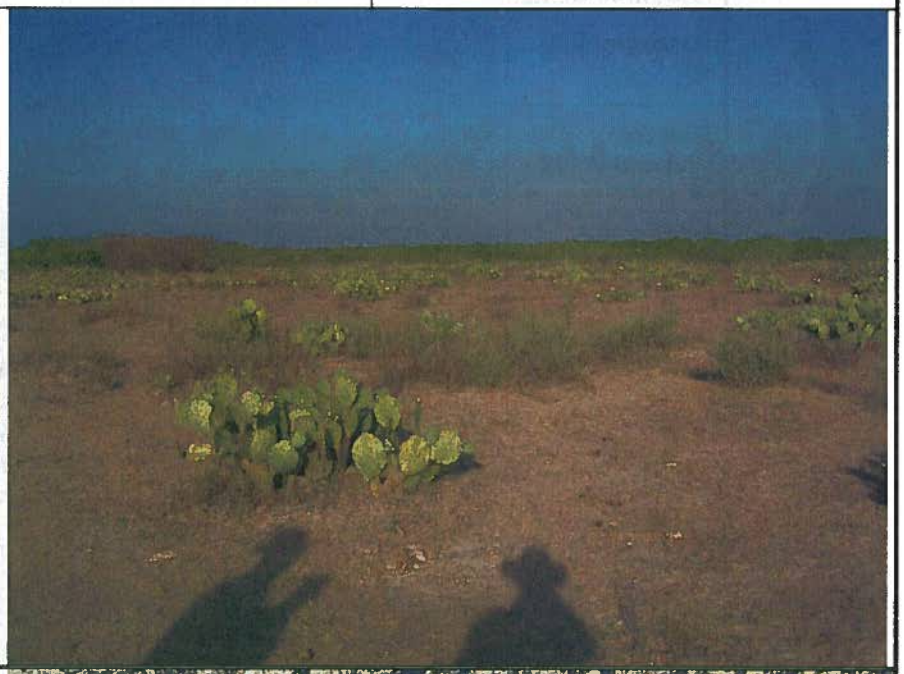
PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	Project Number: 182277
Project Name: Pescadito Environmental Resource Center	County, State: Webb County, Texas

Photograph ID: 53 Feature: Wetland W132 Date: 4/21/2011 Comments: Wetland W132. Facing southeast.	
Photograph ID: 54 Feature: Soil at W132-WDP Date: 4/21/2011 Comments: Soil at W132-WDP wetland data point.	

PHOTOGRAPHIC LOG

Client: Rancho Viejo Waste Management, LLC	**Project Number: 182277**
Project Name: Pescadito Environmental Resource Center	**County, State: Webb County, Texas**

Photograph ID: 55 **Feature: Upland Habitat at W132-UDP** **Date: 4/21/2011** **Comments: Upland habitat at W132-UDP upland data point. Facing east.**	
Photograph ID: 56 **Feature: Soil at W132-UDP** **Date: 4/21/2011** **Comments: Soil at W132-UDP upland data point.**	

Attachment B

TxDOT Coordination

Attachment C

Texas Historical Commission Review Letter

TRC

505 East Huntland Drive
Suite 250
Austin, TX 78752

512.329.6080 PHONE
512.329.8750 FAX

www.TRCsolutions.com

March 28, 2011

Texas Historical Commission
P.O. Box 12276
Austin, Texas 78711-2276

Reference: Rancho Viejo Waste Management, LLC - Municipal Solid Waste Landfill Laredo, Webb County, Texas

Dear Historical Commission Staff Member:

Rancho Viejo Waste Management, LLC has applied to the Texas Commission on Environmental Quality (TCEQ) for a permit for a municipal solid waste landfill to be located approximately 18 miles east of Laredo and about 5 miles north of State Highway 359 in Webb County, Texas.

TCEQ regulations [30 TAC 330.61(o)] require documentation of coordination with your agency regarding historical sites and cultural resources. The purpose of this letter is to inform you of the proposed solid waste landfill facility and request your response indicating that the facility as proposed will not conflict with established historical sites or known cultural resources sites. The applicant is under a strict deadline to file your response, so we would appreciate receiving it as soon as possible.

A location map showing the proposed landfill with respect to readily identifiable features is enclosed to assist in your determination.

Please contact me if you have any questions. We look forward to your response.

Very truly yours,

James F. Neyens, P.E.
TBPE Firm Registration No. F-3775

STATE OF TEXAS
JAMES F. NEYENS
52766
LICENSED
PROFESSIONAL ENGINEER

03/28/2011

NO HISTORIC
PROPERTIES AFFECTED
PROJECT MAY PROCEED
by
for Mark Wolfe
State Historic Preservation Officer
Date 5/5/11
Track# 201112283

Attachment D

Cultural Resources Review

Attachment E

Local Agency Coordination

DANNY VALDEZ
WEBB COUNTY JUDGE

April 13, 2011

Pescadito Environmental Resource Center
Attn: Carlos Y. Benavides

Re: Letter of Support, Pescadito Environmental Resource Center

Dear Mr. Benavides:

This letter is in support of the future development of the Pescadito Environmental Resource Center, a proposed state-of-the-art solid waste management facility in Webb County, Texas. The continued population growth and economic development of Webb County requires infrastructure to meet its future needs, including proper management of solid waste. While Webb County needs an environmentally secure landfill, we recognize that landfill disposal alone is not the answer for the future. A landfill should be employed only for those wastes that cannot be recycled or put to some beneficial re-use.

We find that the Pescadito Environmental Resource Center offers Webb County a long term solid waste management facility that will include comprehensive recycling in a location that is both environmentally well-suited and compatible with surrounding land use. Because the facility is proposed to be served by rail, it can serve a broad region without causing impacts to Webb County traffic or its residential communities. Furthermore, the facility will provide significant direct economic impacts, including long-term employment, payroll and taxes. The County of Webb supports the benefits of this proposed project.

Sincerely,

Danny Valdez
Webb County Judge

xc: Webb County Commissioner's Court

1000 HOUSTON STREET • 3RD FLOOR • LAREDO, TEXAS 78040
TEL. (956) 523-4600 • FAX: (956) 523-5065 • E-mail: webbcountyjudge@webbcountytx.gov

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August 22, 2011

John Keiser, Program Manager
Solid Waste Program
South Texas Development Council
1002 Dickey Lane
Laredo, Texas 78043-4237

Reference: Proposed Rancho Viejo Waste Management, LLC – Municipal Solid Waste Facility – STDC Checklist for Review

Dear Mr. Keiser:

As you know from our previous correspondence, Rancho Viejo Waste Management, LLC has applied to the Texas Commission on Environmental Quality (TCEQ) for a permit for a proposed Type I municipal solid waste management facility to be located approximately 18 miles east of Laredo, Texas. A copy of Parts I and II of the application was sent to the South Texas Development Council (STDC) for review on March 28, 2011.

TCEQ regulations [30 TAC 330.61(p)] require a demonstration of compliance with the regional solid waste plan that was developed under the leadership of your agency. STDC developed a checklist to assist your agency with its review of such applications. We have completed the enclosed checklist and are submitting it for your review.

Together with the applicant and other members of our project team, we look forward to the opportunity to meet with you and your staff or other representatives of STDC to discuss the proposed project. We believe the proposed facility will serve the solid waste management, waste diversion and recycling needs of South Texas for many years. We further believe the proposed facility will be in compliance with the regional solid waste plan, goals and recommendations.

Very truly yours,

James F. Neyens, P.E.
TBPE Firm No. F-3775

SOUTH TEXAS DEVELOPMENT COUNCIL
Checklist for Review of Conformance with
Regional Plan Goals and Recommendations and
General Land Use Compatibility

INSTRUCTIONS

As stated in Chapter Four of the amended regional solid waste plan, MSW facility permit or registration applicants may request a regional plan conformance review by submitting the following packet of information to STDC:

1. Cover letter from an official representative of the applicant to Mr. Amando Garza, Jr., Executive Director, requesting the regional plan conformance review. The cover letter should include contact information.
2. A completed STDC regional plan conformance checklist.
3. A copy of Parts 1 and 2 of the application materials submitted to TCEQ.
4. Any additional information the applicant wishes to provide.

Please complete all parts of the checklist appropriately. Please word-process the checklist, and expand any response spaces as necessary. The checklist must be signed by an official representative of the applicant. Please submit your complete packet of information to:

South Texas Development Council
1002 Dicky Lane
P.O. Box 2187
Laredo, Texas 78044
Attention: Mr. John Keiser, Regional Program Manager

RANCHO VIEJO WASTE MANAGEMENT, LLC

PESCADITO ENVIRONMENTAL RESOURCE CENTER
LANDFILL, RECYCLING AND LIQUID WASTE PROCESSING FACILITY
LAREDO, TEXAS 78043

GENERAL INFORMATION

Applicant: Rancho Viejo Waste Management, LLC
1116 Calle del Norte
Laredo, Texas 78041

Permit or registration number: 2374

Facility type: Type I landfill with Type V Grease and Grit Processing

Location description (also, please attach an 8½x11 map showing the general location):
Approximately 20 miles east of Laredo and 5 miles north of SH 359 in Webb County, Texas

Description of service area and facility customers:

Rancho Viejo Waste Management, LLC (RVWM) is planning to serve two service areas and two types of customers. The first service area includes Laredo, Webb County and adjacent areas, with customers that include municipalities, commercial establishments and industrial entities. Typically,

this service area will be served by direct hauling of waste materials and recyclables or transporting waste through transfer stations (including possibly rail hauling). The second service area is national and international, with municipal, commercial and industrial generators shipping through transfer stations and shipping by rail. The international service area is expected to be limited to nonhazardous industrial waste generated by rail-served industries in Mexico.

Waste types to be accepted by the facility (note if any interstate, international, Class I nonhazardous industrial, or special waste will be accepted):
Waste types to be accepted include:

1. Municipal solid waste by truck
2. Municipal solid waste by rail (including interstate)
3. Nonhazardous industrial waste by truck and rail (including interstate and international sources and Class I nonhazardous waste in accordance with TCEQ restrictions)
4. Event-type municipal solid waste from disaster cleanups (including interstate)
5. Certain types of special wastes to be managed according to specific practices or on-site treatment (sludge, grease and grit trap waste, electronic waste, incinerator ash or coal combustion waste, scrap tires) (including interstate), and
6. Under the regulatory authority of the Railroad Commission of Texas, liquid waste from oil and gas exploration and production for underground injection.

Solid waste management activities to be conducted at the facility site (e.g., disposal, treatment, recycling, storage, transfer, etc.):
Solid waste management and recycling processing activities include:

1. Landfill disposal of municipal solid waste, nonhazardous industrial waste, event-type waste, special waste (in accordance with TCEQ restrictions), and the non-recyclable fraction of shipments of recyclables following processing
2. Storage and treatment of grease and grit trap waste
3. Storage and treatment of sludge as needed to allow landfill disposal
4. Recycling of construction and demolition debris
5. Processing of comingled recyclables to reclaim commodities
6. Storage and processing of event-type waste to facilitate recovery of recyclable materials
7. Storage and processing of scrap tires and electronic waste to facilitate recycling , and
8. Other waste management and recycling activities that are compatible with the facility, compliant with TCEQ and other applicable rules, and are supported by market needs.

Types of equipment to be operated at the facility site:
Landfill equipment includes landfill compactors (two, min.), bulldozer, hydraulic excavator, motor grader, crane for intermodal container handling, bucket loader, flat bed tractor/trailer, and water truck. Recycling processing equipment includes rubber-tired loader, conveyor-type processing line with picking stations and semi-automated processing equipment, balers (two, min.). Grease and grit processing equipment includes storage tanks, chemical storage and feeding systems, mixing tank, pumps and dewatering system. Processing equipment for scrap tires and electronic waste is to be determined.

Hours of facility operation:
Up to 24 hours per day, 7 days per week, as needed based on volume of material received.

Facility staffing (include typical number and extent of certification):
The anticipated staffing for this facility comprises the following personnel. A range in numbers is shown to indicate positions where the staffing will vary according to the amount of waste or other materials that are received, with the lower number representing initial staffing. General manager (one,

with minimum of 5 years waste management experience and Class A license (per 30 TAC§30, Subchapter F); Landfill supervisor (one, Class A or B); Recycling facility supervision (one, Class A or B); Transportation supervisor (one, commercial driver's license); Landfill equipment operator (two to five, no certification required); Shift foremen (none to six, Class B); Laborers, facility-wide (two to 18, no certification required); Recycling equipment operator (one to two, no certification required); Gate attendant (one to four, no certification required); Accountant (one and one to two assistants, no certification required); Marketing staff (one to three, manager to have 5-10 years experience in solid waste services marketing).

CONFORMANCE WITH REGIONAL PLAN GOALS AND RECOMMENDATIONS

As applicable, describe the extent to which the proposed facility supports the following selected goals and recommendations of the amended regional solid waste management plan:

Goal 1: Ensure adequate disposal facilities and long-range disposal capacity in the region.

Recommendation 1.1: Development of public and private disposal facilities should not be in conflict with state, regional, and local solid waste management plans.
RVWM intends the privately-developed Pescadito Environmental Resource Center will be fully compliant with existing state, regional and local solid waste management plans, and intends to work closely with waste generators and planning officials in its service areas to ensure that its services meet current and anticipated future needs. RVWM plans to do this by offering a range of services that address the entire region's needs, especially in areas such as recycling and waste diversion. Some of these needs have been largely unmet to date.

Recommendation 1.2: Application for any landfill or alternative technology facility permit should be required to present an integrated solid waste management program that conforms to the amended regional solid waste management plan.
RVWM proposes to offer processing of recyclable materials, management of liquid wastes (grease and grit trap waste, processing of construction and demolition (C&D) waste to recover recyclables, and potentially other services to achieve a truly integrated solution to the waste management needs of the region.

Recommendation 1.4: Maximize landfill capacity in the region through increased resource recovery, conservation and waste diversion activities, including a study of regional alternatives.
While the PERC landfill will have ample capacity for many decades of service, RVWM views landfill disposal to be the last alternative rather than the first. Processing of commingled (or single stream) recyclables, C&D waste, and potentially electronic waste are planned services that will divert waste from the landfill and maximize landfill capacity for the future. But more importantly, these activities will recover reusable commodities and thus conserve natural resources.

Recommendation 1.5: Through regional cooperation, and to take advantage of economies of scale, eliminate the development of new, small arid-exempt landfills serving local areas, and focus on the development of transfer stations to transport waste to regional facilities.
RVWM proposes to work with cities, counties and solid waste authorities in South Texas to offer financial and/or technical support for the development of local transfer stations as an alternative to continued operation of small local landfills. RVWM believes this approach can be a viable solution if coupled with a mutually agreeable contract for waste management services.

Recommendation 1.6: The long-term solution to the region's MSW disposal needs is best met through regional landfills, and any future expansions of current landfills or development of new landfills should conform to this approach.
PERC is intended to serve as a regional landfill.

Recommendation 1.7: Evaluate and review new and proven technologies for the disposal of wastes within the region.
RVWM fully intends to evaluate and review any new or proven technology, and to employ all such technologies that are economically viable and consistent with the overall development of this facility.

Goal 2: Ensure that solid waste management issues and needs and environmental protection in rural areas and colonias are adequately addressed.

Recommendation 2.1: Present appropriate alternatives in providing solid waste management services to rural subdivisions and colonias of South Texas.
RVWM will discuss methods of providing waste management services to rural subdivision and *colonias* with Webb County or other local authorities. Possible solutions to be considered include RVWM providing financial and technical support for developing citizens' collection stations in such locations if the local authority has a means of paying for the operation (waste transportation and disposal) of these facilities.

Recommendation 2.4: Rural communities should study the specific advantages of developing transfer stations for managing their municipal solid waste.
RVWM will work with elected officials of rural communities or local government for the establishment of such solutions.

Recommendation 2.5: Rural area governments and operators of existing, small MSW facilities should evaluate and utilize new waste management technologies.
Although this recommendation is not directly applicable to RVWM, it will nonetheless provide assistance to rural areas in efforts to adopt new technologies.

Goal 4: Encourage efficient, effective, and equitable solid waste management practices and actions in the South Texas region.

Recommendation 4.1: Continue to encourage counties and municipalities in South Texas to ensure that adequate solid waste services are available to all residents within their jurisdictions.
As discussed under recommendations 1.5 and 1.6, RVWM will provide the initiative plus the upfront financial support to counties and municipalities in South Texas that wish to improve solid waste services. For example, by supporting the development of local transfer stations and citizens' collection stations in return for contracts for transportation and disposal of waste and processing of recyclables, RVWM would help these local entities focus their resources on the operation of waste and recyclable collection systems within their jurisdictions.

Recommendation 4.2: Improve overall systems of residential waste collection, transfer, and transportation.
As discussed under recommendations 1.5, 1.6 and 4.1, RVWM proposes to develop partnership agreements that could enable local jurisdictions focus their efforts on waste and recyclables collection, which they can do most effectively, while RVWM can provide the collection, processing and disposal services, which it can do very well.

Goal 6: Increase waste diversion and recycling in the South Texas region; establish local waste diversion recycling goals that best represent individual planning unit needs and capabilities; and continue support of long-term planning for waste diversion and recycling activities, market development, and innovative technologies in the region.

Recommendation 6.1: Support measures that can achieve the greatest solid waste management benefits/results, such as source reduction, waste diversion, and recycling.
RVWM proposes to offer centralized processing of recyclables materials and the delivery of recycled commodities to their markets. These activities provide the financial support that is necessary to insure the long term success of waste diversion and recycling programs.

Recommendation 6.2: Encourage utilization of shredders and chippers for diversion and volume reduction of yard waste.
The PERC facility anticipates employing efficient processing equipment for yard waste at its facility. RVWM plans to employ this equipment to shred or compost all yard waste that is delivered to PERC as a source-separated material, or that can be separated by the processing of C&D waste. RVWM does not propose to operate a material recovery facility (MRF) to remove yard waste that is commingled with household waste. Large scale or community wide diversion of yard waste can only be accomplished by regulatory action of the community itself. The community would need to enact an ordinance that requires separate bagging and storage of yard waste, and also provide for the collection and delivery of source-separated yard waste to PERC. RVWM will provide its support to such measures.

Recommendation 6.3: Promote source separation of yard waste so that it can be more effectively used in chipping and composting programs.
As stated in its response to recommendation 6.2, RVWM will support the local initiatives that are required to implement source separation of yard waste.

Recommendation 6.5: Continue and expand existing waste diversion and reduction programs as necessary and feasible.
RVWM will work to support and expand all existing effective programs to accomplish this recommendation.

Recommendation 6.6: Support development and implementation of new waste diversion and reduction programs to the extent technologically and economically feasible.
RVWM is a forward looking waste services company that is committed to waste diversion and reduction, and will work to support all reasonable and effective programs to accomplish this goal.

Recommendation 6.8: Encourage the private sector to become involved in source reduction and waste minimization.
RVWM intends to become a regional leader with its efforts to reduce waste through recycling and waste diversion, and intends to promote these approaches to the private sector.

Goal 9: Ensure that special wastes are managed in an efficient, effective, and environmentally sound manner.

Recommendation 9.2: Establish public used oil and used oil filter collection programs as part of developing strategies for prohibiting the disposal of automotive wastes in the region's landfills.
Although RVWM supports the concept of used oil and used oil filter collection by the public, its present business plans do not include a venue for establishing such a program. PERC is not located where such a program would be useful to the public.

Recommendation 9.4: Encourage better management of municipal sludge and agricultural wastes for the South Texas region.
RVWM is interested in managing municipal sludge, either as a special waste or as a component to on-site composting, and plans to establish this service either as part of its current permit application or as an amendment, depending on the status of current municipal sludge management practices in the region. RVWM has not yet explored the market for agricultural waste management, but is open to the concept of providing this service.

Goal 10: The SWAC should review and comment on all permit applications for MSW management facilities in the region.

Recommendation 10.2: Protect water and other environmental resources from the potential adverse impacts of siting MSW landfills and other disposal facilities.
The proposed PERC facility site was chosen in part because it is very well suited to provide natural protection to water and other environmental resources. The facility will be designed and constructed to enhance its natural environmental protection with appropriate engineered features such as liner, leachate collection system, and daily, interim and final cover system.

Recommendation 10.3: Facility design and operating plans should consider the impact on the residents in close proximity to the facility and take appropriate measures to minimize the impact.
The facility design and operating plans provide suitable protection for residents if they were located in close proximity of the facility, however there are no residents within several miles of the facility, except for fewer than five ranch hands that live about one-quarter mile southwest of the facility boundary. These persons are housed at a location that will be nearly two miles from the part of the landfill that will be operated initially.

GENERAL LAND USE COMPATIBILITY

Description of any applicable local zoning or siting restrictions:
The facility is in rural Webb County, well outside the extra-territorial jurisdiction (ETJ) of the City of Laredo. There are no zoning or land use restrictions applicable to the site or surrounding area. A portion of the site is currently located within the 100-year floodplain, but engineering studies currently being complete will result in a design of surface water management systems that will be submitted to Webb County Planning Department and then to the Federal Emergency Management Agency (FEMA) The result of this engineering design is expected to result in the issuance of a Conditional Letter of Map Revision (CLOMR) by FEMA, which will signify that the construction of the designed improvements will result in the removal of the area of the site that is planned for development from the 100-year floodplain. Also, there are certain areas on the site associated with several artificially-constructed livestock ponds that have been studied and designated as wetlands subject to Federal jurisdiction. Plans are being developed to secure approval from the U.S. Army Corps of Engineers to replace these wetlands with compensatory wetlands under a Section 404 Permit under the Federal Clean Water Act. Studies have shown there are no other restrictions to developing the site under federal, state or local restrictions.

Description of current land uses within one-half mile of the proposed facility site:
Except for several residential structures used by ranch hands as discussed under Recommendation 10.3 above, all land within one-half mile of the proposed facility is used for cattle ranching or oil and gas production, including the improvements associated with these uses (roadways, stock watering tanks, etc.

Description of any property adjacent to the proposed facility site that has been purchased, zoned, or platted for future development known at this time:
There are no such properties being considered for future development known to RVWM.

Description of the extent measures will be taken to control noise, odors, vectors, and litter associated with the facility and its operations:
Before discussing the measures to be taken to mitigate possible impacts to others associated with this facility and its operation, it is important to emphasize that the potential for impacts from each of these conditions to affect third parties such as neighbors or the general public diminishes with separation distance. This facility is separated from its nearest neighbor by a distance of more than two miles. The next nearest neighbor and an area that is accessible to the general public is about three to four miles away. In reality, the facility basically cannot be seen or heard by the public, and odors (if any are released by the facility) should be undetectable at these distances.
The only significant source of noise is the operation of trucks and motorized construction equipment. This noise will be controlled by requiring all trucks and motorized equipment to be provided with mufflers in good condition, and utilizing such equipment at relatively low speeds or engine revolutions per minute.
Odors will be controlled by the delivery of waste in closed or covered containers. Potentially odiferous waste will only be exposed to the atmosphere when it is uncovered or the container is opened at the working face of the landfill. The waste is only exposed as it is actually being placed into the landfill, and as soon as it is placed, it is compacted and covered. The working face is the only surface where waste will be exposed, and the working face will be restricted to the smallest practical area. Stockpiles of soil will be maintained at the working face, and will be used to cover waste throughout the day.
Vectors will be controlled by keeping the types of waste that might attract vectors enclosed until it is landfilled, and then by promptly applying cover soil.
Similarly, litter will be controlled by keeping waste enclosed, applying cover soil, and as necessary, employing litter barrier fences near the active face of the landfill.

Description of the extent to which the facility will have a visual impact on the surrounding landscape (e.g., for a landfill, the maximum height of aerial fill compared to the height of surrounding features):
As described above, the facility including the landfill will be separated from public view by a horizontal distance of about 3 to 4 miles. The closest public view is from U.S. Highway 59 near Ranchitos los Lomas which is northwest of PERC. The intervening terrain includes a brush-covered hill less than a mile from Hwy 59 that is about 60 feet higher in elevation, and is about one-sixth the distance to the landfill area. The highest existing ground surface elevation at the landfill site is about 30 feet lower than the elevation along Hwy 59. By simple geometry, these terrain features will prevent a person along Hwy 59 from seeing something at the landfill location unless it is over about 400 feet above grade. While we do not yet have a final design height for the landfill, it will not be anywhere near 400 feet high. Therefore, it will be impossible for anyone to see the landfill from this location, or from the adjacent community of Ranchitos los Lomas.

Description of any significant cultural or environmental features within one-half mile of the proposed facility site, and any efforts to mitigate impacts:
We have confirmed from the Texas Historical Commission that there are no known areas of cultural or historical significance within one-half mile of the site. There are also no known environmental features except the 100-year floodplain and wetlands described above, for which we will have mitigation measures reviewed and approved by appropriate agencies.

Description of effects the facility and its operations will have on local traffic patterns, and any efforts to mitigate impacts:

The predominant method of shipment of waste and recyclable materials will be by rail. The nos ranch for PERC is situated on the main line of the Kansas City Southern Railroad (KCS). and we anticipate constructing a siding directly into the landfill area. Initially, until the waste volume is large enough, we may bring waste to the facility via the KCS intermodal shipping yard near State Highway 359 east of Laredo. SH 359 is designated as the access route to the facility, and will be used by trucks hauling locally-generated waste from the Laredo area. We have submitted our traffic and access plans to the TxDOT Laredo Region Office, and TxDOT has stated in writing that it concurs with this plan.

Description of any other efforts taken to address community concerns:
RVWM is committed to meeting with elected officials, governmental agencies, and interested citizens to explain the plans for the facility and answer any questions, and has already been doing this. Thus far, the reception has been very positive and no community concerns have been raised.

CERTIFICATION

I (We) hereby certify that the information contained herein is, to the best of my (our) knowledge, complete and accurate.

8/18/2011

Carlos Y. Benavides, III - Partner — Date
Rancho Viejo Waste Management, LLC

8/8/2011

Cristina B. Alexander - Partner — Date
Rancho Viejo Waste Management, LLC

8-18-11

Guillermo Benavides - Partner — Date
Rancho Viejo Waste Management, LLC

Attachment F

Federal Aviation Administration Coordination

U.S. Department
of Transportation
Federal Aviation Administration

Airports Division
Southwest Region
Arkansas, Louisiana,
New Mexico, Oklahoma,
Texas

2601 Meacham Boulevard
Fort Worth, Texas 76137

May 25, 2011

Mr. James R. Neyens, P.E.
Project Manager
TRC
505 East Huntland Drive
Suite 250
Austin, TX 78752

Dear Mr. Neyens:

This is in response to your letter of May 11, 2011, regarding the proposed new municipal solid waste facility, Pescadito Environmental Research Center, in Webb County, Texas. Based on the information provided, there are no public use airports within a 5 mile radius of the proposed facility. We have no objection to the proposal from the standpoint of potential bird hazards to aircraft.

This site has been assigned our File No. 2011-009TX. Please refer to this number in any future correspondence regarding this site. Thank you for coordinating the project with us.

If you have any questions, please call me at (817) 222-5656.

Sincerely,

Faye Nedderman
Executive Technical Assistant