Kathleen Hartnett White, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 6, 2004

(210 545-4329

Mr. Scott Knowlton
KT Real Estate Investments, Ltd.
18225 FM 2252
San Antonio, TX 78266

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Rockwall Ranch Subdivision; Located west of the intersection of FM 1863 and Schoenthal Road and is bound by FM 1863 on the north and by Schoenthal Road to the south; New Braunfels, Texas
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program File No. 2177.00
Regulated Entity ID: RN104256243

Dear Mr. Knowlton:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the referenced project submitted to the San Antonio Regional Office by Todd Simmang, P.E. of Carter & Burgess, Inc. on behalf of KT Real Estate Investments, Ltd. on April 21, 2001. Final review of the WPAP application was completed after additional material was received on September 2, 2004, and September 23, 2004. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed no later than 20 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The Rockwall Ranch subdivision includes 1,291 acres of which 379 acres adjacent to FM 1863 and Schoenthal Road have been subdivided into lots that are 10 acres or larger and are not included within the site covered by this WPAP. The proposed residential project covered by this WPAP will have an area of approximately 912 acres. The site will include 497 single family residential lots, roads, and utilities. The impervious cover will be 109.8 acres (12 percent). According to a letter dated, March 30, 2004, signed by Tom Hornseth, P.E., with Comal County, the site in the development is acceptable for the use of on-site sewage facilities (OSSFs).

Brenda-
Let's file this away.

Rockwall Ranch, Unit 2, Block 11, Lot 34

Determining separation distances for proposed OSSF systems:

Per the 9/23/04 letter from Carter & Burgess Consultants, "The labeled distances take into account the dimensions of the feature based on the Geologic Assessment. For example a feature with a 15' radius will have a 165' radius setback easement shown."

Feature S-2:	Reported dimensions:	200' x 200' x 5'
	Radius of feature:	100'
	Radius of setback from center of feature =	100' + 150' = 250'
	Diameter of setback =	500'
	Measured Dimensions of Setback:	350' x 460'

30 TAC 285, Table X (Minimum required separation distances for on-site sewage facilities from recharge features (30 TAC 213)):

Sewage Treatment Tanks or Holding Tanks:	50'
Soil Absorption Systems & Unlined ET Beds:	150'
Lined Evapotranspiration Beds:	50'
Sewer Pipe With Watertight Joint:	50'
Surface Irrigation (Spray Area):	150'
Drip Irrigation:	100' when Ra 0.1 150' when Ra > 0.1

The spray area is outside the 150' setback.

Assuming the setback on the map provided by Comal County matches the 9/23/04 letter, the tank is 35' inside the 150' setback. Therefore the tank is 115' (150' – 35') away from the recharge feature.

Assuming the measured dimensions of the setback on the map provided by Comal County are correct (350' x 460'), the "long radius" of the setback is 230' (100' + 260/2 = 230'), the tank is 80' (130' – 50') from the recharge feature. Therefore, the tank meets the minimum separation distance of 50' (30 TAC 285, Table X).

DRAFT

PERMANENT POLLUTION ABATEMENT MEASURES

Since this single-family residential project will not have more than 20 percent impervious cover, an exemption from permanent BMPs is approved.

Separation distances for on-site sewage facilities from sensitive features and feature related drainage easements are identified in the following table.

Feature ID	Feature Surface Dimensions (feet)	Setback/Easement Dimensions
*S-2	200 x 200 x 5	250' radius
*S-8 *	100 x 70 x 1.5	470' x 370'
*S-9	3.5 x 1 x 1.5	151.75' radius
S-10	200 x 200 x 3	#
*S-14	2 x 2 x 5	153.50' radius
*S-16	1 x 1 x 2.5	150' radius
*S-17 *	0.75 x 0.75 x 1.5	150' radius
*S-23	0.8 x 0.5 x 3.5	153' radius
*S-25	2 x 1 x 0.8	151' radius
*S-29	8 x 8 x 4	154' radius
*S-32	100 x 40 x 4	340' x 440'
*S-33	65 x 55 x 5	413' x 395'
*S-34	45 x 30 x 6	413' x 395'
*S-35	15 x 15 x 10	180' radius
*S-46	-Water Well-	150' radius
S-47	360 x 360 x 5	#
S-48	540 x 450 x 3	#
*S-49	-Water Well-	150' radius
*S-59	2.5 x 1.5 x 1	151.5' radius
S-61	400 x 300 x 5	#

* - Sensitive Feature
# - Drainage easement to be determined by completed drainage study and shown on final plat
*- Outside 912 acre site but impacts lots covered by the WPAP

GEOLOGY

According to the geologic assessment included with the application, 61 geologic or man-made features were identified within the 1,291 acre Rockwall Ranch Subdivision. Thirty-eight geologic or manmade features occur within the 912 acres covered by this WPAP. Of the 38 features identified within the site, 14 features were assessed as sensitive. The San Antonio Regional Office site inspection of July 20, 2004, and September 2, 2004, revealed that the site is generally as described by the geologic assessment.

SPECIAL CONDITIONS

I. If the impervious cover ever increases above 20 percent or the land use changes, the exemption for the whole site may no longer apply and the property owner must notify the San Antonio Regional Office of these changes.

II. Drainage easements and OSSF separation distances must be shown on the respective plats. Two copies of each plat must be submitted to the San Antonio Region office within 30 days after plat has been recorded.

III. Any geologic features discovered during construction and assessed as sensitive must have the appropriate separation distances between the feature and the OSSF components as specified in 30 Texas Administrative Code 285.

STANDARD CONDITIONS

1. Pursuant to §26.136 of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Prior to Commencement of Construction:

2. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

3. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.

4. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

5. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and file number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

6. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

7. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

<u>During Construction:</u>

8. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

9. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

10. Two wells exist on the 912 acre site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

11. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

12. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

13. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

14. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

15. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

16. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

17. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

18. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

If you have any questions or require additional information, please contact Lynn M. Bumguardner of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210.403.4023.

Sincerely,

Bradley D. Caldwell

for Glen Shankle
Executive Director
Texas Commission on Environmental Quality

GS/LMB/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance on Permanent BMPs-Form TCEQ-10263

cc: Mr. Todd Simmang, P.E, Carter & Burgess, Inc.
Mr. Michael Short, P.E., City of New Braunfels
Mr. Tom Hornseth, Comal County
Mr. Greg Ellis, Edwards Aquifer Authority
TCEQ Central Records MC 212

Feature Comments

S-1 This feature is a closed depression on the open meadow area. It is four feet in diameter and approximately 6 to 8 inches deep. There is some vuggy rock on one edge of the feature.

S-2 This feature is a large swallow hole. It has three drainage features that drain into it. There are several feet of organic matter in the bottom of the feature. This feature was likely once a cave that accepted large amounts of water. Now, the opening is clogged with organics. The soil profile is very deep. There is still good drainage into the feature through the organics. There is some rim rock that is about 35 feet by 25 feet by 3 feet deep. The area of the closed depression is larger, about 200 feet in diameter, with an overall depth of about 5 feet.

S-3 This feature is a large, shallow closed depression. It is 60 feet in diameter and about 0.75 feet deep. It is filled with a combination of fine-grained soils (evidence of desiccation cracks), loose cobbles and organic matter. There is some grass growing in the bottom.

S-4 This feature is a large, shallow closed depression. It is 7 feet in diameter and about 0.75 feet deep. It is filled with a combination of fine-grained soils, loose cobbles and organic matter.

S-5 This is a fracture in a rock that is about 2 feet up from the bottom of a creek bed. The fracture is about 8 inches wide by 1 foot long and has a dip about 60°. It extends about four feet downward. It is filled with a combination of fine-grained soils, loose cobbles and organic matter.

S-6 This feature is a closed depression. It appears to be man made. It is 60 feet by 40 feet and about 2 feet deep. It is filled with fine-grained soils, (evidence of desiccation cracks).

S-7 This feature is a closed depression. It is 25 feet in diameter and about 6 inches deep. It is filled with fine-grained soils, (evidence of desiccation cracks) and coarser grained rock.

S-8 This feature is a large, shallow closed depression. It has 2 lobes to it. It is 100 feet by 70 feet and about 1.5 feet deep. There is a cliff wall on one side. It appears to be man made. It is in a possible quarry area. It is filled with a combination of fine-grained soils (evidence of desiccation cracks) and loose cobbles. There is some grass growing in the bottom.

S-9 This is a fracture in a rock that appears to have undergone solutioning. The fracture is about 3.5 feet long. The width varies up to almost a foot but averages about 4 inches. It extends downward about 15 inches. It is filled with a combination of fine-grained soils, loose cobbles and organic matter.

S-10 This feature is a large, shallow closed depression. It appears to be altered by man. It is one of the large tanks in the meadow area. It is 200 feet in diameter and is about 3 feet deep. It is filled with mostly with fine-grained soils. There are some loose cobbles on the bottom. There is grass growing in the bottom.

S-11 This feature is a closed depression. It is 10 feet by 8 feet and is 1 foot deep. There is a lot of loose rock lying in and around the feature. There is no specific rim rock. This may have been created by an uprooted tree. There is fine-grained soils and organic material in the bottom.

Carter=Burgess

911 Central Parkway North, Suite 425
San Antonio, Texas 78232-5065
Phone: 210.494.0088
Fax: 210.494.4525
www.c-b.com

RECEIVED-TCEQ
2004 JUN 10 PM 4:02
SAN ANTONIO REGION

May 26, 2004

Lynn Bumguardner
TCEQ – Region 13
14250 Judson Road
San Antonio, Texas 78233

Re: Rockwall Ranch Subdivision WPAP.

Ms. Bumguardner,

Included with this letter is the information that we discussed over the phone last week. Listed below are the revisions made to the Rockwall Ranch Subdivision WPAP.

1. Correction of the site location on the Official Edwards Aquifer Recharge Zone Map. New site boundary shown too more accurately indicate what is included as part of the Rockwall Ranch Subdivision WPAP. All three maps are included in this revised submittal.
2. Additional information was added to the Project Description (Attachment C in the General Information) to better describe the project limits of the WPAP.
3. Application Fee Form with a revised project size. Fees required have not changed from the original submittal.
4. Revised Site Map too more accurately indicates the limits of the Rockwall Ranch Subdivision WPAP.
5. One additional copy of the Rockwall Ranch Subdivision WPAP for the City of New Braunfels.

One original and four copies revised on May 26, 2004 are included in this submittal. Please call if you have any questions or require additional information.

Sincerely,

Todd M. Simmang, P.E., CFM

RECEIVED-TCEQ
2004 JUN 10 PM 4:03
SAN ANTONIO REGION

WATER POLLUTION ABATEMENT PLAN APPLICATION

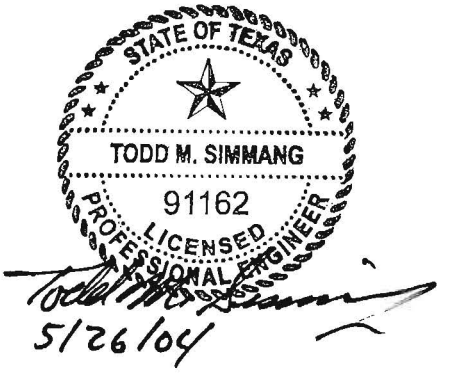
For

ROCKWALL RANCH SUBDIVISION

Comal County, Texas

Submitted
April 21, 2004
Revised May 26, 2004

Submitted To:	Submitted By:
Texas Commission on Environmental Quality Region 13 - San Antonio 14250 Judson Road San Antonio, Texas 78233 210.490-3096 Fax 210.545-4329	**Carter & Burgess, Inc.** 911 Central Parkway North, Suite 425 San Antonio, Texas 78232 210.494-0088 Fax 210.494-4525



General Information Form
For Regulated Activities on the
Edwards Aquifer Recharge and Transition Zones
and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B)
Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch Subdivision**
COUNTY: **Comal County** STREAM BASIN: **Tributary to the West Fork of the Dry Comal Creek.**

EDWARDS AQUIFER: ✓ RECHARGE ZONE
__ TRANSITION ZONE

PLAN TYPE: ✓ WPAP __ AST __ EXCEPTION
__ SCS __ UST __ MODIFICATION

CUSTOMER INFORMATION

1. Customer (Applicant):

Contact Person: **Scott Knowlton**
Entity: **KT Real Estate Investments, LTD**
Mailing Address: **18225 FM 2252**
City, State: **San Antonio, TX** Zip: **78266**
Telephone: **(210)651-6860** FAX: **(210)651-5435**

Agent/Representative (If any):

Contact Person: **Todd Simmang, P.E.**
Entity: **Carter & Burgess, Inc.**
Mailing Address: **911 Central Parkway North, Suite 425**
City, State: **San Antonio, TX** Zip: **78247**
Telephone: **(210)494-0088** FAX: **(210)494-4525**

2. __ This project is inside the city limits of _____.
✓ This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of **New Braunfels**.
__ This project is not located within any city's limits or ETJ.

3. The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.
The site is located west of the intersection of FM 1863 and Schoenthal Rd. The site is bound to the north by FM 1863 and by Schoenthal Rd to the south. Vogel Dam is located at the southern portion of the property. See attached location map.

4. ✓ **ATTACHMENT A - ROAD MAP.** A road map showing directions to and the location of the project site is attached at the end of this form.

5. ✓ **ATTACHMENT B - USGS / EDWARDS RECHARGE ZONE MAP.** A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is

attached behind this sheet. The map(s) should clearly show:

- ✓ Project site.
- ✓ USGS Quadrangle Name(s).
- ✓ Boundaries of the Recharge Zone (and Transition Zone, if applicable).
- ✓ Drainage path from the project to the boundary of the Recharge Zone.

6. ✓ Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment. **The TCEQ must be able to inspect the project site or the application will be returned.**

7. ✓ **ATTACHMENT C - PROJECT DESCRIPTION.** Attached at the end of this form is a detailed narrative description of the proposed project.

8. Existing project site conditions are noted below:
   - ___ Existing commercial site
   - ___ Existing industrial site
   - ___ Existing residential site
   - ___ Existing paved and/or unpaved roads
   - ___ Undeveloped (Cleared)
   - ✓ Undeveloped (Undisturbed/Uncleared)
   - ___ Other:

PROHIBITED ACTIVITIES

9. ✓ I am aware that the following activities are prohibited on the **Recharge Zone** and are not proposed for this project:

   (1) waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
   (2) new feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
   (3) land disposal of Class I wastes, as defined in 30 TAC §335.1;
   (4) the use of sewage holding tanks as parts of organized collection systems; and
   (5) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

10. ✓ I am aware that the following activities are prohibited on the **Transition Zone** and are not proposed for this project:

   (1) waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
   (2) land disposal of Class I wastes, as defined in 30 TAC §335.1; and
   (3) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

ADMINISTRATIVE INFORMATION

11. The fee for the plan(s) is based on:

   ✓ For a Water Pollution Abatement Plan and Modifications, the total acreage of the site

where regulated activities will occur.

__ For an Organized Sewage Collection System Plans and Modifications, the total linear footage of all collection system lines.

__ For a UST Facility Plan or an AST Facility Plan, the total number of tanks or piping systems.

__ A Contributing Zone Plan.

__ A request for an exception to any substantive portion of the regulations related to the protection of water quality.

__ A request for an extension to a previously approved plan.

12. Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

__ TCEQ cashier

__ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)

✓ San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

13. ✓ Submit one (1) original and three (3) copies of the completed application to the appropriate regional office for distribution by the TCEQ to the local municipality or county, groundwater conservation districts, and the TCEQ's Central Office.

14. ✓ No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the executive director.

__ No person shall commence any regulated activity until the Contributing Zone Plan for the activity has been filed with the executive director.

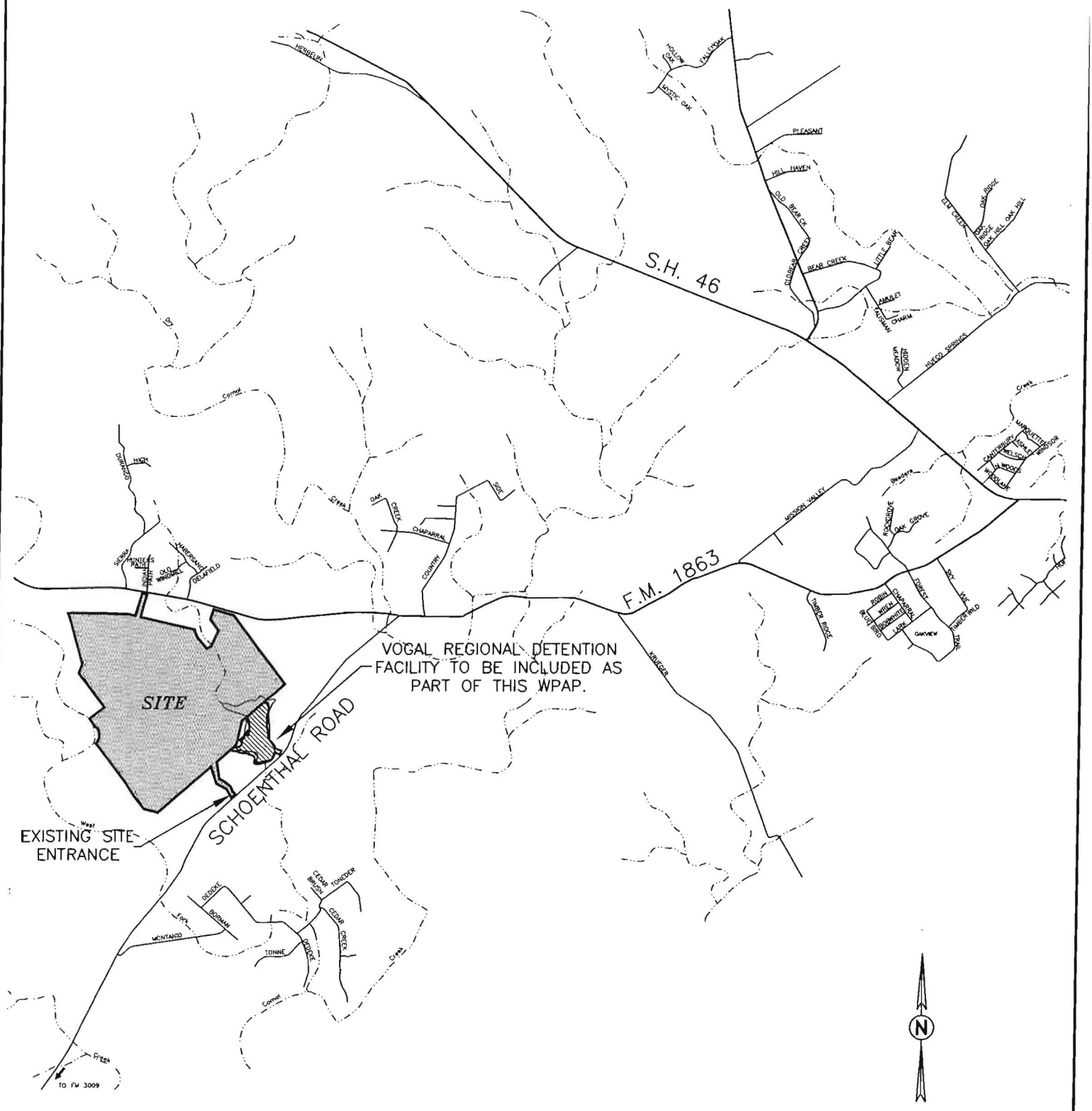
To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **GENERAL INFORMATION FORM** is hereby submitted for TCEQ review. The application was prepared by:

Todd M. Simmang, P.E.
Print Name of Customer/**Agent**

Todd M. Simmang
Signature of Customer/**Agent**

5/26/04
Date

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.



SCALE: 1" = 1 MILE

Carter :: Burgess

Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.

911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-4525

© COPYRIGHT 2003 Carter and Burgess, Inc.

ATTACHMENT "A"
ROCKWALL RANCH

DRAWN BY: RJ CHECKED BY: TS

DATE: 11/20/03 PROJECT NO.: 310209.013

SHEET 1 OF 1

Attachment C – Project Description

Rockwall Ranch Subdivision is located west of the intersection of FM 1863 and Schoenthal Rd. The site is bound to the north by FM 1863 and by Schoenthal Rd to the south. (See location map) Rockwall Ranch Subdivision is approximately 1291 acres of unimproved land, primarily composed of dense brush and trees, with grass and rock outcroppings. There is existing floodplain located on both the east and west sides of the property. The floodplain to the west is the West Fork Creek that flows into the Krause regional detention pond. This pond is located just outside of the proposed site. The floodplain to the east is an unnamed tributary to the West Fork Creek. Storm water from this creek is detained by the Vogel Dam located on the southeast portion of the site. A detailed flood study is being performed to determine the 100-year flood elevations for both creeks. The flood study will be submitted to Comal County and FEMA for approval.

The proposed land use will consist of approximately 497 single-family lots with an average size of 1.2 acres, and 14 single-family lots with a minimum size of 10 acres. The smaller lots are located in the interior of property consisting of approximately 912 acres. The large tracks are located along Schoenthal Rd and FM 1863, and consist of approximately 379 acres. Some of the large tracks have already been sold and each will require their own well and septic system. The interior subdivision infrastructure will include a water system, electricity, telephone, and approximately 66,700 LF of roadway. The ultimate development impervious cover for the 912 acres will be approximately 12%.

The 14 single-family large tracts have or will be sold to individuals and will not be included as part of this subdivision. Current land use restrictions for the 14 large tracts will be single-family with no more than one residence per 5-acres. Currently the 14 large tracts are not considered a regulated activity for the construction of the single-family residence. If individual owners propose a land use change that is considered a regulated activity, the landowner will be required to submit a WPAP to TCEQ.

The WPAP for Rockwall Ranch only covers the 912 acres for the single-family residential lots averaging 1.2 acres and an additional 45 acres of the Vogal regional detention facility. The area within the 100-year floodplain behind the Vogal Dam is included as part of this WPAP as an area to provide additional storm water detention. At this time the exact location of additional storage has not been approved by Comal County and the City of New Braunfels. The area of disturbance will be less than 10-acres.

Official Edwards Aquifer Recharge Zone Map
31 Texas Administrative Code Chapter 313
Subchapter A—San Antonio Region

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BAT CAVE QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

SITE

VOGAL REGIONAL DETENTION FACILITY TO BE INCLUDED AS PART OF THIS WRAP.

RECHARGE ZONE

TRANSITION ZONE

RECHARGE ZONE

Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, NOS/NOAA, and USCE

Topography by photogrammetric methods from aerial photographs taken 1952. Field annotated 1953. Revised by Geological Survey from aerial photographs taken 1966. Field checked 1967.

Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system, south central zone
1000-metre Universal Transverse Mercator grid ticks, zone 14, shown in blue

Fine red dashed lines indicate selected fence lines

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1973. This information not field checked

UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

ROAD CLASSIFICATION
Primary highway, hard surface
Light-duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route · U. S. Route · State Route

BAT CAVE, TEX.
N2937.5-W9815/7.5

1967
PHOTOREVISED 1973
AMS 6343 III NE-SERIES V882

2 [illegible]-424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NEW BRAUNFELS WEST QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

TRANSITION ZONE

NEW BRAUNFELS

Produced by the United States Geological Survey
Revised in cooperation with the Texas Water Development Board

Control by USGS, NOS/NOAA, and USCE

Compiled by the Army Map Service by photogrammetric methods from aerial photographs taken 1956. Field checked 1958
Revised from aerial photographs taken 1986. Field checked 1987
Map edited 1988

Projection and 10,000-foot grid ticks: Texas coordinate system, south central zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid, zone 14
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 20 meters south and 28 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines generally visible on aerial photographs. This information is unchecked

Gray tint indicates area in which only landmark buildings are shown

UTM GRID AND 1988 MAGNETIC NORTH DECLINATION AT CENTER OF MAP DIAGRAM IS APPROXIMATE

SCALE 1:24 000

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 FEET
1 .5 0 1 MILES
1 .5 0 KILOMETERS 1 2
1000 0 METERS 1000 2000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

TEXAS
QUADRANGLE LOCATION

2998-413

ROAD CLASSIFICATION

Primary highway, hard surface ——— Light-duty road, hard or improved surface ———
Secondary highway, hard surface ——— Unimproved road ———
Interstate Route U. S. Route State Route

NEW BRAUNFELS WEST, TEX.
29098-F2-TF-024

1988

DMA 6343 II NW-SERIES V822

INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA—1988

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

Official Edwards Aquifer Recharge Zone Map
31 Texas Administrative Code Chapter 313
Subchapter A—San Antonio Region

NEW BRAUNFELS EAST QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

TRANSITION ZONE

NEW BRAUNFELS
(BM 623)

Gruene
Gruene Siding
Thorn Hill
Preiss Heights
Freiheit
Clear Springs
Camp Willow
Barbarosa
Mesquite
NEW BRAUNFELS MUNICIPAL AIRPORT
Guadalupe Valley Memorial Park
Texas Power Company Dam 1
Powerhouse
Schlumansville
Comal Creek
Alligator Creek
Dunlap Creek
Long Creek
Boggy Creek
Missouri Pacific
Lake Dunlap
Guadalupe River

AUSTIN 39 MI.
SAN MARCOS 12 MI.
(NEW BRAUNFELS WEST) 5 MI. TO I-35 SOLMS 3.2 MI. VALLEY VIEW 10 MI.
(GERONIMO) 6443 III NW
GERONIMO 2.3 MI.
27 MI. TO TEX 123
(MC QUEENEY) 6343 II SE
MC QUEENEY 3.6 MI.
SEGUIN 6.2 MI.
(SEGUIN) 6443 III SW

2 280 000 FEET
2 310 000 FEET
690 000 FEET
3279000m. N
595000m. E

INTERIOR—GEOLOGICAL SURVEY, RESTON, VIRGINIA—1975

Mapped by the Army Map Service
Published for civil use by the Geological Survey

Control by USGS, NOS/NOAA, and USCE

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1956. Field check 1958

Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system, south central zone
1000-metre Universal Transverse Mercator grid ticks, zone 14, shown in blue

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1973. This information not field checked

Purple tint indicates extension of urban areas

UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

1 MILE
1000 0 1000 2000 3000 4000 5000 6000 7000 FEET
1 .5 0 1 KILOMETRE

CONTOUR INTERVAL 10 FEET
DASHED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

TEXAS
QUADRANGLE LOCATION

2998-414

ROAD CLASSIFICATION

Primary highway, hard surface
Secondary highway, hard surface
Light-duty road, hard or improved surface
Unimproved road
Interstate Route
U. S. Route
State Route

NEW BRAUNFELS EAST, TEX.

N2937.5—W9800/7.5

1958
PHOTOREVISED 1973
AMS 6343 II NE SERIES V882

Geologic Assessment
For Regulated Activities
On The Edwards Aquifer Recharge/transition Zones
And Relating to 30 TAC '213.5(b)(3), Effective June 1, 1999

REGULATED ENTITY NAME: ~~TK Ranch~~ ROCKWALL RANCH SUBDIVISION

TYPE OF PROJECT: X WPAP __ AST __ SCS __ UST

LOCATION OF PROJECT: X Recharge Zone __ Transition Zone __ Contributing Zone within the Transition Zone

PROJECT INFORMATION

1. X Geologic or manmade features are described and evaluated using the attached **GEOLOGIC ASSESSMENT TABLE.**

2. Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (*Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A*, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Soil Units, Infiltration Characteristics & Thickness		
Soil Name	Group*	Thickness (feet)
Rumple-Comfort (RUD)	C-D	0-1
Comfort Rock Outcrop (CrD)	D	0-1
Medlin-Eckrant (MEC)	D	0-1
Pits (Pt)	A	0-.5

* Soil Group Definitions (Abbreviated)

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

3. X A **STRATIGRAPHIC COLUMN** is attached at the end of this form that shows formations, members, and thicknesses. The outcropping unit should be at the top of the stratigraphic column.

4. X A **NARRATIVE DESCRIPTION OF SITE SPECIFIC GEOLOGY** is attached at the end of this form. The description must include a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure, and karst characteristics of the site.

5. X Appropriate **SITE GEOLOGIC MAP(S)** are attached:

The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1" : 400'

Applicant's Site Plan Scale	1" = 400 ft.
Site Geologic Map Scale	1" = 400 ft.
Site Soils Map Scale (if more than 1 soil type)	1" = 400 ft.

6. Method of collecting positional data:
X Global Positioning System (GPS) technology.
__ Other method(s).

7. X The project site is shown and labeled on the Site Geologic Map.

8. X Surface geologic units are shown and labeled on the Site Geologic Map.

9. X Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.

__ Geologic or manmade features were not discovered on the project site during the field investigation.

10. X The Recharge Zone boundary is shown and labeled, if appropriate.

11. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.):

X There are 3 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply.)

__ The wells are not in use and have been properly abandoned.

__ The wells are not in use and will be properly abandoned.

X The wells are in use and comply with 16 TAC '76.

__ There are no wells or test holes of any kind known to exist on the project site.

ADMINISTRATIVE INFORMATION

12. X One (1) original and three (3) copies of the completed assessment has been provided.

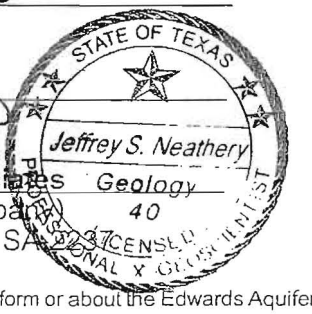
Date(s) Geologic Assessment was performed: Aug 26 - Sept 23, 2003
Date(s)

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC 213.

John L. Kniffen & Jeffrey S. Neathery, P.G.
Print Name of Geologist

Signature of Geologist

Representing: Arias & Associates
(Name of Company)
Project No.: 03 SA 223



(210) 308-5884
Telephone

(210) 308-5886
Fax

December 20, 2003
Date

If you have questions on how to fill out this form or about the Edwards Aquifer Protection Program, please contact us at 512/939-2929 (Austin) or 210/403-4024 (San Antonio).

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Site Specific Soils

The site lies on a variety of terrains, from hilltops to creek valleys, to closed basins. There were two basic parent materials for these soils. The first is the Edwards and Buda limestones, which underlies most of the site. The second is the Del Rio Clay, which underlies a small portion of the southeast side of the site.

In general, the soils overlying the Edwards and Buda limestones are a dark brown to black clay. The clay includes a high percentage of organic material and rock fragments ranging in size up to pebbles. Although the clay content of the soils would tend to impede the downward flow of water, in areas where the organic material and rock fragments are more abundant, the water mobility would increase.

The soils overlying the Del Rio Clay are dark brown. These soils in this area are generally a bit thicker. These soils would generally impede the downward flow of water.

According to the U.S. Soil Conservation Service, the soils beneath the SITE are classified as Rumple-Comfort association, undulating (RUD), Comfort Rock Outcrop (CrD), Medlin-Eckrant association, undulating, and Pits (Pt). Descriptions of these soil units are described below.

The Rumple-Comfort association, undulating (RUD) soil group covers an estimated 70% of the property and classified as extremely stony clay. These soils typically have a thickness of about 0 to 12 inches, contain approximately 20% to 70% cobbles and small limestone boulders, and are considered to have low to very low permeability.

The Comfort Rock Outcrop (CrD) soil group covers an estimated 20% of the property and it is classified as extremely stone clay and stony clay. These soils typically have a thickness of about 0 to 13 inches, contain approximately 20% to 70% cobbles and small limestone boulders, and are considered to have low permeability.

The Medlin-Eckrant association, undulating (MEC) soil group covers an estimated 9% of the property and it is classified as extremely stone clay. These soils typically have a thickness of about 0 to 16 inches, contain approximately 25% to 75% cobbles and small limestone boulders, and are considered to have very low permeability.

The Pits (Pt) soil group covers an estimated 1% of the property and it is locally classified a clayey sand with considerable organics. These soils typically have a thickness of about 0 to 6 inches and are considered to have high permeability.

Stratigraphic Column

Group	Formation	Member	Thickness (ft)
Buda Limestone	Buda Limestone		40-50
Del Rio Clay	Del Rio Clay		40-50
Edwards Limestone	Person	Cyclic and Marine	80-90
		Leached and Collapsed	70-90
		Regional Dense	20-24
	Kainer	Grainstone	50-60
		Kirschberg Evaporite	50-60
		Dolomitic	110-130
		Basil Nodular	50-60
Glen Rose Limestone	Upper Glen Rose		350-500

(From U.S.G.S., 1996)

Site Specific Geology

Geographically, the subject property is located between Schoenthal Road and FM 1863 approximately 8 miles west of New Braunfels. The property is irregular in shape and covers an area of approximately 1300 acres.

Four bedrock formations were encountered on the property. They consist of the Buda Limestone, Del Rio-Clay, which are mapped as part of the Upper Confinement Unit, and members of the Person and Kainer Formations, which are mapped as the Edwards Aquifer group. The Buda Limestone and Del Rio Clay Formations were present along the southeastern portion of the property and are separated from the other formations by the Hueco Springs Fault.

The property is crossed by two previously mapped faults; one being the above mentioned Hueco Springs Fault. The other known fault, as well as two unknown faults, roughly parallels the Hueco Springs Fault to its north side. All faults encountered are indicated and labeled on the Geologic Map.

Approximately 16 karst type features were noted on the property and are indicated and labeled on the Geologic Map. The features varied from small closed depressions to large sinkholes, most of which were choked with thick mats of organic debris. An individual description of each of these features is included in the Feature Comments section of this report.

It may be possible that other shallow karst type features may be encountered during grading. Should any solution cavity feature be encountered during development of the property, the geologist of record should be notified immediately to evaluate the feature.

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: TK Ranch

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B*	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGR	DOM	DENSITY (N	APERTURE (	INFILL	RELATIVE INFILT	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	≥1.6	
S-1	29° 41' 50.1"	98° 16' 46.1"	CD	5		4	4	0.5	none				O	15	20	20		X		hilltop
S-2	29° 41' 35.8"	98° 16' 54.3"	SW	30		200	200	5	none				O	35	65		65	X		hilltop
S-3	29° 41' 30.5"	98° 16' 58.8"	CD	5		60	60	0.75	none				FV	15	20	20		X		hilltop
S-4	29° 41' 40.6"	98° 16' 24.8"	CD	5		7	7	0.75	none				OCF	15	20	20		X		hillside
S-5	29° 41' 44.8"	98° 16' 19.4"	O	5		1	0.8	4	?				OCF	25	30	20			X	streambed
S-6	29° 41' 48.5"	98° 16' 18.5"	MB	30		60	40	2	none				F	15	45		45		X	hillside
S-7	29° 42' 00.5"	98° 16' 14.1"	CD	5		25	25	0.5	none				OF	10	15	15		X		hilltop
S-8	29° 42' 04.8"	98° 16' 07.8"	MB	30		100	70	1.5	none				OFV	10	40		40		X	hillside
S-9	29° 42' 01.0"	98° 17' 19.9"	SF	20		3.5	1	1.5	?				OCF	20	40		40	X		hillside
S-10	29° 42' 11.3"	98° 16' 59.8"	MB	30		200	200	3	none				OFV	5	35	35		X		hilltop
S-11	29° 42' 09.1"	98° 16' 59.3"	CD	5		10	8	1	none				OF	15	20	20		X		hilltop
S-12	29° 42' 03.4"	98° 17' 01.8"	CD	5		12	10	1.5	none				OF	15	20	20		X		hilltop
S-13	29° 42' 0.00"	98° 17' 18.1"	SC	20		1	0.25	1.5	none				OF	5	25	25		X		hillside
S-14	29° 42' 32.7"	98° 17' 28.7"	SC	20		2	2	5	none				OF	20	40		40	X		hilltop
S-15	29° 42' 23.4"	98° 17' 30.1"	O	5		80	50		N40E	10			OF	20	35	35			X	streambed
S-16	29° 42' 03.5"	98° 17' 20.4"	SC	20		1	1	2.5	none				OF	20	40		40	X		hillside
S-17	29° 42' 39.5"	98° 17' 24.8"	SC	20		0.75	0.75	1.5	none				OF	20	40		40	X		hilltop
S-18	29° 42' 40.0"	98° 17' 25.9"	SC	20		0.8	0.8	1.5	none				OF	5	25	25		X		hilltop
S-19	29° 42' 30.1"	98° 17' 37.1"	SC	20		1	0.25	0.8	none				F	5	25	25		X		hilltop
S-20	29° 42' 36.6"	98° 17' 40.8"	SC	20		1.5	1	1.5	none				OF	15	35	35		X		hillside
S-21	29° 42' 46.1"	98° 17' 11.8"	O	5		2	0.5	1.5	N20W	10			OF	15	30	30		X		hilltop
S-22	29° 42' 04.8"	98° 16' 10.4"	CD	5		80	45	1	none				OF	15	20	20		X		hilltop
S-23	29° 42' 10.2"	98° 16' 10.1"	SC	20		0.8	0.5	3.5	none				OF	25	45		45	X		hillside
S-24	29° 42' 05.2"	98° 16' 15.8"	CD	5		12	8	0.8	none				OF	15	20	20		X		hillside
S-25	29° 42' 11.6"	98° 16' 12.0"	SC	20		2	1	10	none				OF	25	45		45	X		hillside
S-26	29° 42' 37.6"	98° 16' 38.8"	MB	30		150	12	2	none				OF	30	60		60		X	streambed
S-27	29° 42' 02.7"	98° 16' 52.1"	CD	5		10	10	0.75	none				OF	20	25	25		X		hilltop
S-28	29° 42' 03.6"	98° 16' 33.2"	SC	20		0.5	0.25	1	none				OF	5	25	25		X		hilltop
S-29	29° 42' 01.8"	98° 16' 29.2"	SH	20		8	8	4	none				OCF	25	45		45	X		hilltop
S-30	29° 42' 03.1"	98° 16' 25.0"	CD	5		12	5	0.5	none				OF	15	20	20		X		hilltop
S-31	29° 41' 51.7"	98° 16' 33.3"	CD	5		60	45	4	none				OF	30	35	35		X		hilltop
S-32	29° 42' 45.8"	98° 16' 37.3"	SW	30		100	40	4	none				OF	35	65		65		X	hillside
S-33	29° 41' 44.4"	98° 16' 44.5"	SH	20		65	55	5	none				OF	35	55		55	X		hilltop
S-34	29° 41' 43.8"	98° 16' 44.2"	SH	20		45	30	6	none				OF	35	55		55	X		hilltop
S-35	29° 41' 48.9"	98° 16' 57.6"	SH	20		15	15	10	none				CF	35	55		55	X		hilltop

* DATUM: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING

N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Natural Resource Conservation Commission's Instructions information presented here complies with that document and is a true representation of the conditions observed in th My signature certifies that I am qualified as a geologist as defined by 30 TAC 213

Date 12/20/03

Sheet 1 of 2

TNRCC-0585-Table (Rev. 5-1-02)

STATE OF TEXAS
Jeffrey S. Neathery
Geology
40
LICENSED
PROFESSIONAL GEOSCIENTIST

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: TK Ranch

LOCATION			FEATURE CHARACTERISTICS											EVALUATION			PHYSICAL SETTING		
1A	1B *	1C*	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGR	COM	DENSITY (#	APERTURE (	INFILL	RELATIVE INFILTR	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	>1.6	
S-36	29° 42' 44.9"	98° 17' 30.0"	O	5		100	50		N30E	10			OF	20	35	35			X	streambed
S-37	29° 42' 40.6"	98° 17' 31.7"	CD	5		40	20	1	none				OF	20	25	25			X	streambed
S-38	29° 42' 37.8"	98° 17' 35.2"	O	5		300	60		N30E	10			OF	20	35	35			X	streambed
S-39	29° 42' 25.2"	98° 16' 34.6"	O	5		40	30		N75E	10			OF	20	35	35			X	streambed
S-40	29° 42' 23.1"	98° 16' 30.5"	O	5		100	60		N30E	10			OF	20	35	35			X	streambed
S-41	29° 42' 06.3"	98° 16' 31.6"	CD	5		30	12	2	none				COF	20	25	25		X		hillside
S-42	29° 41' 58.4"	98° 16' 14.8"	CD	5		45	12	1.5	none				OCF	20	25	25			X	streambed
S-43	29° 42' 12.2"	98° 16' 10.3"	CD	5		10	6	0.75	none				NOF	30	35	35			X	streambed
S-44	29° 41' 42.1"	98° 16' 10.4"	MB	30					none				FOC	25	55		55		X	floodplain
S-45	29° 41' 32.6"	98° 16' 24.1"	MB	30					none					35	65		65	X		hillside
S-46	29° 42' 25.1"	98° 17' 06.3"	MB	30					none					35	65		65	X		hilltop
S-47	29° 42' 23.1"	98° 17' 04.1"	CD	5		360	360	5	none				FV	5	10	10		X		hilltop
S-48	29° 41' 51.1"	98° 16' 09.2"	CD	5		540	450	3	none				FV	5	10	10		X		hilltop
S-49	29° 41' 53.2"	98° 16' 50.5"	MB	30					none					35	65		65	X		hilltop
S-50	29° 41' 27.8"	98° 16' 25.4"	MB	30		100	100	?	none				F	5	35	35			X	streambed
S-51	29° 41' 31.0"	98° 16' 19.6"	MB	30		8	8	?	none				X	5	35	35		X		hillside
S-52	29° 41' 38.2"	98° 16' 23.0"	CD	5		200	60	2	none				F	5	10	10			X	streambed
S-53	29° 41' 35.6"	98° 16' 15.6"	CD	5		350	80	10	none				F	5	10	10			X	streambed
S-54			F	20					N56E	10			F	5	35			X		
S-55			F	20					N47E	10			F	5	35			X		
S-56			F	20					N65E	10			F	5	35			X		
S-57			F	20					N41E	10			F	5	35			X		
S-58			F	20					N89E	0			F	5	25			X		

* DATUM: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
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FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Natural Resource Conservation Commission's Instructions information presented here complies with that document and is a true representation of the conditions observed in th My signature certifies that I am qualified as a geologist as defined by 30 TAC 213

Date 12/20/03

Sheet 2 of 2

TNRCC-0585-Table (Rev. 5-1-02)

STATE OF TEXAS
Jeffrey S. Neathery
Geology
40
LICENSED
PROFESSIONAL GEOSCIENTIST

Feature Comments

S-1 This feature is a closed depression on the open meadow area. It is four feet in diameter and approximately 6 to 8 inches deep. There is some vuggy rock on one edge of the feature.

S-2 This feature is a large swallow hole. It has three drainage features that drain into it. There are several feet of organic matter in the bottom of the feature. This feature was likely once a cave that accepted large amounts of water. Now, the opening is clogged with organics. The soil profile is very deep. There is still good drainage into the feature through the organics. There is some rim rock that is about 35 feet by 25 feet by 3 feet deep. The area of the closed depression is larger, about 200 feet in diameter, with an overall depth of about 5 feet.

S-3 This feature is a large, shallow closed depression. It is 60 feet in diameter and about 0.75 feet deep. It is filled with a combination of fine-grained soils (evidence of desiccation cracks), loose cobbles and organic matter. There is some grass growing in the bottom.

S-4 This feature is a large, shallow closed depression. It is 7 feet in diameter and about 0.75 feet deep. It is filled with a combination of fine-grained soils, loose cobbles and organic matter.

S-5 This is a fracture in a rock that is about 2 feet up from the bottom of a creek bed. The fracture is about 8 inches wide by 1 foot long and has a dip about 60°. It extends about four feet downward. It is filled with a combination of fine-grained soils, loose cobbles and organic matter.

S-6 This feature is a closed depression. It appears to be man made. It is 60 feet by 40 feet and about 2 feet deep. It is filled with fine-grained soils, (evidence of desiccation cracks).

S-7 This feature is a closed depression. It is 25 feet in diameter and about 6 inches deep. It is filled with fine-grained soils, (evidence of desiccation cracks) and coarser grained rock.

S-8 This feature is a large, shallow closed depression. It has 2 lobes to it. It is 100 feet by 70 feet and about 1.5 feet deep. There is a cliff wall on one side. It appears to be man made. It is in a possible quarry area. It is filled with a combination of fine-grained soils (evidence of desiccation cracks) and loose cobbles. There is some grass growing in the bottom.

S-9 This is a fracture in a rock that appears to have undergone solutioning. The fracture is about 3.5 feet long. The width varies up to almost a foot but averages about 4 inches. It extends downward about 15 inches. It is filled with a combination of fine-grained soils, loose cobbles and organic matter.

S-10 This feature is a large, shallow closed depression. It appears to be altered by man. It is one of the large tanks in the meadow area. It is 200 feet in diameter and is about 3 feet deep. It is filled with mostly with fine-grained soils. There are some loose cobbles on the bottom. There is grass growing in the bottom.

S-11 This feature is a closed depression. It is 10 feet by 8 feet and is 1 foot deep. There is a lot of loose rock lying in and around the feature. There is no specific rim rock. This may have been created by an uprooted tree. There is fine-grained soils and organic material in the bottom.

S-12 This feature is a closed depression. It is 12 feet by 10 feet and is 1.5 feet deep. There is fine-grained soils and organic material in the bottom.

S-13 This feature includes several solution features in a rock outcrop. The largest solution feature is hourglass shaped and is 1 foot long and 4 inches wide. It extends straight down 18 inches. The second solution feature is 3 inches in diameter. The third solution feature is 3 inches by 4 inches. The fourth feature is 1.5 inches in diameter. The second, third and fourth features are all connected in the subsurface. They extend downward one foot. All four of the features are filled with water. There is fine-grained soils and organic material in the bottom of these features.

S-14 This feature is a solution feature. It is "L" shaped. It is 2 feet by 2 feet by 5 inches wide at the surface. It extends downward 5 feet. There is fine-grained soils and organic material in the bottom.

S-15 This is an area of fractured rock. The area is 80 feet long by 50 feet wide. The spacing ranges from 2 to 8 inches. The fractures range up to an inch wide. They trend N40°E. The fractures are filled with fine-grained soils, coarse gravel and organic material.

S-16 This feature is a solution feature. It is one foot in diameter and extends 2.5 feet downward at a 45-degree angle. It is located within a slight closed depression that is 8 feet in diameter and is about 4 inched deep. It is filled with fine-grained soils, coarse gravel and organic material.

S-17 This feature is a solution feature that occurs along a small fracture in the rock. It is 8 inches in diameter and extends downward 1.5 feet. There is fine-grained soils and organic material in the bottom.

S-18 This feature is a solution feature. It is 10 inches in diameter and extends downward 1.5 feet. It is full of water. There is fine-grained soils and organic material in the bottom.

S-19 This feature is a solution feature. It ranges in width from about 4 inches up to a foot. It extends 10 inches downward. It has rounded edges at the surface and is full of water. There is fine-grained soils and organic material in the bottom.

S-20 This feature is a solution feature in the side of a small ledge. It is 1 foot wide by 1.5 feet tall and extends back into the rock at a 45-degree angle a distance of 1.5 feet. There is fine-grained soils and organic material in the bottom.

S-21 This feature is a single fracture in a rock outcrop. It is 2 feet long and 4 to 6 inches wide. It extends downward 1.5 feet. It trends N20°W. There is fine-grained soils and organic material in the bottom.

S-22 This feature is a closed depression. It is 80 feet long by 45 feet wide by 1 foot deep. There is a small rise in the middle. It may be man made. The bottom is filled with coarse gravels, fine-grained soils and organic material.

S-23 This is a solution feature in a closed depression. The closed depression is about 6 feet in diameter by 6 inches deep. In the bottom of the depression is a small flat rock outcrop. There is a hole 8 inches by 6 inches that extends downward 3.5 feet. The feature bells out at the bottom to about 1 foot by 1 foot. The bottom is filled with fine-grained soils and organic material.

S-24 This feature is a closed depression. It is 12 feet long by 8 feet wide by 10 inches deep. There is no rim rock. There are a couple of trees growing in the bottom. The bottom is filled with fine-grained soils and organic material.

S-25 This feature is a solution feature. It is 2 feet long by 1 foot wide and extends 10 inched downward. The bottom is filled with fine-grained soils and organic material.

S-26 This is a man made earthen dam that is 5 to 7 feet high. The dam is breached at one end. There is ponded water near the dam. The ponded area is 150 feet long by 12 feet wide by 2 feet deep. There is fine-grained soils and organic material in the bottom.

S-27 This feature is a closed depression in the creek bottom. It is 10 feet in diameter by 8 inches deep. There is no rim rock. The bottom is filled with fine-grained soils and organic material.

S-28 This feature is a solution feature. The opening is 6 inches by 4 inches. It extends at a 45 degree angle downward a distance of 1 foot. The feature is full of water. The bottom is filled with fine-grained soils and organic material.

S-29 This feature is a collapse feature along the side of the creek. The rock here is very marly and soft. It appears that the erosion scoured out some of the soft rock causing the collapse. There are two areas that are 8 feet in diameter. They form a cliff face of 4 feet. The bottom is filled with coarse gravels, fine-grained soils and organic material.

S-30 This feature is a closed depression. It is 12 feet long by 5 feet wide by 6 inches deep. There is no rim rock. The bottom is filled with fine-grained soils and organic material.

S-31 This feature is a closed depression. It is 60 feet long by 45 feet wide by 4 feet deep. There is no rim rock, but there is a lot of vuggy rock in the area. The bottom is filled with fine-grained soils and organic material. The soil profile is very deep.

S-32 This feature is a swallow hole. It is 100 feet long by 40 feet wide by 4 feet deep. Two drainages drain into this feature. There is no rim rock, but there is a lot of vuggy rock in the area. The bottom is filled with fine-grained soils and organic material. The soil profile is very deep. There is also an animal burrow near the bottom of the feature.

S-33 This feature is a closed depression. It is 65 feet long by 55 feet wide by 5 feet deep. There is rim rock nearly all the way around. There are large trees growing in the bottom. The bottom is filled with fine-grained soils and organic material.

S-34 This feature is a closed depression. It is 45 feet long by 30 feet wide by 6 feet deep. There is rim rock nearly all the way around. It appears that alluvial material flowed into one end of the feature. There are large trees growing in the bottom. The bottom is filled with fine-grained soils and organic material.

S-35 This feature is a closed depression and a collapse feature. It is 60 feet in diameter by 4 feet deep. At the bottom of this is a hole that is 15 feet in diameter and extends to feet straight down. The bottom is filled with boulders, gravels, and fine-grained soils. This feature appears to be fairly new.

S-36 This feature is an area of fractured rock in the creek bed. The area is 100 feet long by 50 feet wide. The fractures trend N30°E, which corresponds to the dominant fracture trends. The fractures range from healed to 8 inches wide. Fracture spacing varies from 6 inches to several feet. Most of the fractures are filled with fine-grained soils and organic material.

S-37 This feature is a closed depression in the creek bottom. It is 40 feet long by 20 feet wide. It is 1 foot deep. There is no rim rock. The bottom is filled with fine-grained soils and organic material.

S-38 This feature is an area of fractured rock in the creek bed. The area is 300 feet long by 60 feet wide. The fractures trend N30°E, which corresponds to the dominant fracture trends. The fractures range from healed to 6 inches wide. Fracture spacing varies from 3 inches to 1 foot. Most of the fractures are filled with fine-grained soils and organic material.

S-39 This feature is an area of fractured rock in the creek bed. The area is 40 feet long by 30 feet wide. The fractures trend N75°E, which corresponds to the dominant fracture trends. The fractures range from healed to 2 inches wide. Fracture spacing varies from 8 inches to 2 feet. Most of the fractures are filled with fine-grained soils and organic material.

S-40 This feature is an area of fractured rock in the creek bed. The area is 100 feet long by 60 feet wide. The fractures trend N30°E, which corresponds to the dominant fracture trends. The outcrop dips S60°E. The fractures range from healed to 3 inches wide. Fracture spacing varies from up to 1 foot. Most of the fractures are filled with fine-grained soils and organic material.

S-41 This feature is a closed depression that is 30 feet long, 12 feet wide and 2 feet deep. It may have been formed by the collapse of rock due to erosional scouring. The bottom is filled with large boulders, coarse gravel, fine-grained soils and organic material.

S-42 This feature is a closed depression that is 45 feet long, 12 feet wide and 1.5 feet deep. It may have been formed by erosional scouring. The downstream end is a soil embankment. The bottom is filled with coarse gravel, fine-grained soils and organic material.

S-43 This feature is a closed depression in the creek bottom. There is erosional scout that results from water flowing off an uprooted tree. It is 10 feet long, 6 feet wide and 8 inches deep. It has rock on all sides. The rock has bedding planes, which would allow the infiltration of water. The bottom is filled with coarse gravel, fine-grained soils and organic material.

S-44 This feature is a large man made earthen dam at the site. At the base of the dam on the upstream side is a closed depression. This appears to also be man made.

S-45 This feature is an active water well located near the house at the front of the property.

S-46 This feature is an active water well.

S-47 This feature is a large closed depression that appears to be altered by man. The area that contains water is roughly 360 feet in diameter. The overall area is closer to 450 feet in diameter. The maximum depth is 5 feet. It is filled with mostly with fine-grained soils. There are some loose cobbles on the bottom. There is grass growing in the bottom.

S-48 This feature is a large closed depression. It appears to be a man made tank. The area that contains water is roughly 540 feet in diameter. The maximum depth is 3 feet. It is filled with mostly with fine-grained soils. There are some loose cobbles on the bottom. There is grass growing in the bottom.

S-49 This is a water well being drilled at the time of our site investigation.

S-50 This feature is a man made earthen dam. The area of ponded water is 100 feet in diameter. The depth is unknown. The dam can hold more water than what is present.

S-51 This is a cistern at the front of the house. It is "dressed" as a water well.

S-52 This is a closed depression. It is a pond located on the Del Rio clay. It is 200 feet long by 60 feet wide by 2 feet deep. It appears to be man made.

S-53 This feature is a closed depression at the toe of the dam. It appears to be man made. It is 350 feet long by 80 feet wide by 10 feet deep. A portion of the depression is a pond.

S-54 This feature is a mapped fault. It has been named the Hueco Fault and has an estimated length through the property of 6,700 feet. It is a significant feature that separates the Edwards Group from the Upper Confinement Unit within the project area. No openings were noted throughout its length. It is considered to have a clay infill and have generally low infiltration rates within the project area.

S-55 This feature is a mapped fault. It's an unnamed fault with an estimated length through the property of 6,600 feet. No openings were noted throughout its length. It is considered to have a clay infill and have generally low infiltration rates within the project area.

S-56 This feature is a mapped fault. It's an unnamed fault with an estimated length through the property of 4,400 feet. No openings were noted throughout its length. It is considered to have a clay infill and have generally low infiltration rates within the project area.

S-57 This feature is a mapped fault. It's an unnamed fault with an estimated length through the property of 1,700 feet. No openings were noted throughout its length. It is considered to have a clay infill and have generally low infiltration rates within the project area.

S-58 This feature is a mapped fault. It's an unnamed fault with an estimated length through the property of 1,500 feet. No openings were noted throughout its length. It is considered to have a clay infill and have generally low infiltration rates within the project area.

ARIAS & ASSOCIATES
Geotechnical • Environmental • Testing

March 3, 2004
A&A Project No.: 03SA-2237

Mr. Todd Simmang, P.E.
Carter & Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, Texas 78232

RE: Feature Rating Report
TK Ranch
Comal County, Texas

Dear Mr. Moeller,

Pursuant to your request I have described and rated the surface infiltration rate for the 58 features located on the subject property. They are as follows:

S-1 This feature is a small closed depression and, due to its geographic location, it is considered to have a low potential for surface infiltration.

S-2 This feature is a large swallow hole; however, due to its geographic location, it is considered to have only a moderate infiltration rate.

S-3 This feature is a large but very shallow closed depression and, due to its geographic location, it is considered to have a low potential for surface infiltration.

S-4 This feature is a small closed depression and, due to its geographic location, it is considered to have a low potential for surface infiltration.

S-5 This feature consists of a small open fracture; however, its location on a hillside near the bottom of a creek channel gives it moderate potential for infiltration.

S-6 This feature appears to be a large but shallow man-made closed depression and, due to its geographic location, it is considered to have a low potential for surface infiltration.

S-7 This feature is a large but very shallow closed depression and, due to its geographic location, it is considered to have a low potential for surface infiltration.

S-8 This feature appears to a large and shallow man-made closed depression and, due to its geographic location, it is considered to have a low potential for surface infiltration.

S-9 This feature consists of a possible small solution cavity; however, due to its geographic location, it is considered to have a moderate potential for surface infiltration.

S-10 This feature consists of a large but shallow closed depression and, due to its geographic location and thick clay soil infill, it is considered to have a low potential for surface infiltration.

762 Wilson
Eagle Pass, Texas 78852
(830) 757-8891
(830) 757-8899 Fax

10821 Gulfdale
San Antonio, Texas 78216
(210) 308-5884
(210) 308-5886 Fax

1030 Logandale
Houston, Texas 77032
(281) 227-2243
(281) 227-7088 Fax

S-11 This feature consists of a small closed depression and, due to its geographic location, it is considered to have a low potential for surface infiltration.

S-12 This feature consists of a small closed depression and, due to its geographic location, it is considered to have a low potential for surface infiltration.

S-13 This feature consists of a small group of small solution cavities. Due to their geographic location, they are considered to have a low potential for surface infiltration.

S-14 This feature consists of a small "L" shaped solution cavity and, due to its geographic location, it is considered to have a moderate potential for surface infiltration.

S-15 This feature consists of a moderately large area of fractured limestone in a creek bottom; however, due to fine soil infill within the fractures, it is considered to have only a moderate potential for surface infiltration.

S-16 This feature consists of a small solution cavity; however, due to its geographic location, it is considered to have a moderate potential for surface infiltration.

S-17 This feature consists of a small solution cavity; however, due to its geographic location, it is considered to have a moderate potential for surface infiltration.

S-18 This feature consists of a small solution cavity; however, due to its geographic location and that it was observed to hold water, it is considered to have a low potential for surface infiltration.

S-19 This feature consists of a small solution cavity; however, due to its geographic location and that it was observed to hold water, it is considered to have a low potential for surface infiltration.

S-20 This feature consists of a small solution cavity; however, due to its geographic location it is considered to have a low potential for surface infiltration.

S-21 This feature consists of a small fracture within a bedrock outcrop; however, due to its geographic location it is considered to have a low potential for surface infiltration.

S-22 This feature appears to be a large but shallow man-made closed depression and, due to its geographic location, it should be considered to have a low potential for surface infiltration.

S-23 This feature consists of a small solution cavity within a small closed depression and, due to its geographic location, it is considered to have a moderate potential for surface infiltration.

S-24 This feature is a small to medium sized closed depression; however, due to its geographic location and clay soil infill, it is considered to have a low potential for surface infiltration.

S-25 This feature consists of a small solution cavity; however, due to its geographic location it is considered to have a moderate potential for surface infiltration.

S-26 This feature consists of a small man-made earthen dam in the bottom of a creek channel. Due to its geographic location and thick sand, clay and organic infill, it should be considered as having a moderate surface infiltration rate.

S-27 This feature consists of a small and shallow closed depression within a small creek bottom. Due to its geographic location and thick clay soil infill is considered to have a moderate potential for surface infiltration.

S-28 This feature consists of a small solution cavity; however, due to its geographic location and it was observed to hold water, it is considered to have a low potential for surface infiltration.

S-29 This feature appears to consist of a small collapsed solution cavity within a marly bedrock material on the side of creek bank. Due to its geographic location it should be considered to have a moderate potential for surface infiltration.

S-30 This feature consists of a small closed depression and is considered to have a low potential for surface infiltration.

S-31 This feature consists of a large approximately 4 foot deep closed depression. Due to its location on a near hilltop location it is considered to have a moderate potential for surface infiltration.

S-32 This feature is a large swallow hole with notable stream inflows. Due to its geographic hillside location it is considered to have a high infiltration rate.

S-33 This feature is a large approximately 5 foot deep sink hole type depression. Due to its geographic hillside location it is considered to have a high infiltration rate.

S-34 This feature is a large approximate 6 foot deep closed depression with a notable stream inflow. Due to its geographic location it is considered to have a high infiltration rate.

S-35 This feature is a large approximately 4 foot deep closed depression with an approximate 15 foot diameter by 10 foot deep collapse hole at its bottom. Due to its geographic hillside location it is considered to have a high infiltration rate.

S-36 This feature consists of a moderately large area of fractured limestone and, due to its location in a creek bottom, it is considered to have a moderate potential for surface infiltration.

S-37 This feature is a moderate sized closed depression within a creek bottom. Due to its location it is considered to have a moderate infiltration rate.

S-38 This feature consists of a large area of fractured limestone and, due to its location in a creek bottom, it is considered to have a moderate potential for surface infiltration.

S-39 This feature consists of a small to moderately sized area of fractured limestone and, due to its location in a creek bottom, it is considered to have a moderate potential for surface infiltration.

S-40 This feature consists of a moderately large area of fractured limestone and, due to its location in a creek bottom, it is considered to have a moderate potential for surface infiltration.

S-41 This feature is a moderate sized closed depression within a creek bottom. Due to its location it is considered to have a moderate infiltration rate.

S-42 This feature is a moderate to large sized closed depression within a creek bottom. Due to its location it is considered to have a moderate infiltration rate.

S-43 This feature is a small closed depression within a creek bottom. Due to its location and the exposed bedrock structure it is considered to have the potential for a moderate infiltration rate.

S-44 This feature consists of a large man-made earthen dam. It has the potential for a large area of impoundment over the limestones of both the Person and Kainer Formations and should therefore be considered as having a moderate potential for surface infiltration.

S-45 This feature consists of an active water well and, potentially being an open conduit, it should be considered as having a high potential for surface infiltration.

S-46 This feature consists of recently drilled active water well and, potentially being an open conduit, it should be considered as having a high potential for surface infiltration.

S-47 This feature consists of a large but relatively shallow closed depression that may have been somewhat altered by human activities in the past; however, due to its apparent thick clay soil infill indicated by its ability to pond surface water it is considered to have a low potential for surface infiltration.

S-48 This feature consists of a large but relatively shallow closed depression and due to its apparent thick clay soil infill indicated by its ability to pond surface water it is considered to have a low potential for surface infiltration.

S-49 This feature consists of recently drilled active water well and, potentially being an open conduit, it should be considered as having a high potential for surface infiltration.

S-50 This feature consists of a medium sized man-made earthen dam. It is actively impounding water and should therefore be considered as having a low potential for surface infiltration.

S-51 This feature is consists of a small man-made cistern that is "dressed' as a water well; however, due to its location and construction it considered to have a low potential for surface infiltration.

S-52 This feature consists of a small man-made livestock tank excavated into the Del Rio Clay Formation that is actively holding water and is therefore considered to have a low potential for surface infiltration.

S-53 This feature consists of a medium sized man-made livestock tank excavated into the Del Rio Clay Formation that is actively holding water and is therefore considered to have a low potential for surface infiltration.

S-54 This feature consists of a fault. Due to no open fractures being noted along its length is considered to have a low potential for surface infiltration.

S-55 This feature consists of a fault. Due to no open fractures noted along its length is considered to have a low potential for surface infiltration; however, an area of fractured limestone was noted at a stream crossing that may be related to past movement of the fault. (See S-39 & S-40)

S-56 This feature consists of a fault. Due to no open fractures being noted along its length is considered to have a low potential for surface infiltration.

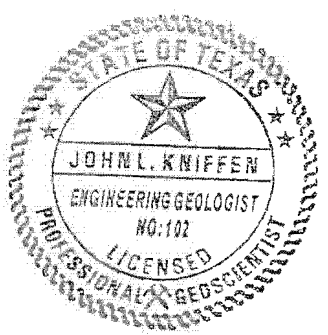
S-57 This feature consists of a fault. Due to no open fractures noted along its length is considered to have a low potential for surface infiltration; however, an area of fractured limestone was noted at a stream crossing that may be related to past movement of the fault. (See S-38)

S-58 This feature consists of a fault. Due to no open fractures being noted along its length is considered to have a low potential for surface infiltration.

We sincerely appreciate the opportunity to be of assistance to you on this phase of this project. Please contact us regarding any questions on this report or if any additional services are required.

Cordially,
Arias & Associates, Inc.

John L. Kniffen, P.G.
Engineering Geologist



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SOILS MAP

RUD Rumple-Comfort association
CrD Comfort Rock Outcrop
MEC Medlin-Eckrant association
Pt Man-made Pits or Quarries

Contact



ARIAS & ASSOCIATES, INC.

SCALE: 1" = 400'

GEOLOGIC MAP

UPPER CONFINMENT UNITS

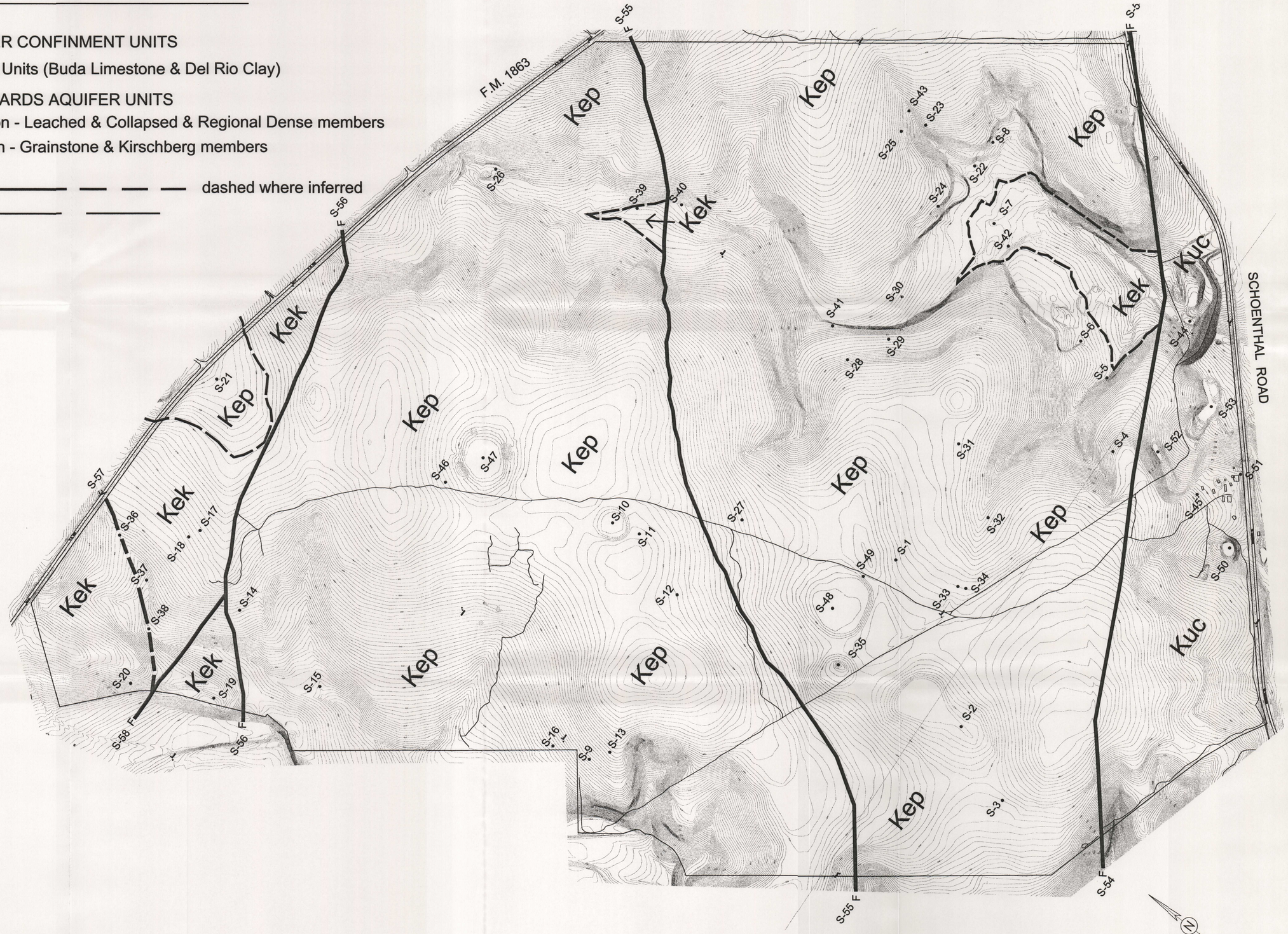
Kuc	Upper Confining Units (Buda Limestone & Del Rio Clay)

EDWARDS AQUIFER UNITS

Kep	Person Formation - Leached & Collapsed & Regional Dense members
Kek	Kainer Formation - Grainstone & Kirschberg members

Fault ——— — — — dashed where inferred

Contact ——— ——— ———



SCALE: 1" = 400'

ARIAS & ASSOCIATES, INC.

Water Pollution Abatement Plan Application

for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b), Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch Subdivision**

REGULATED ENTITY INFORMATION

1. The type of project is:
   - ✓ Residential: # of Lots: **497**
   - ___ Residential: # of Living Unit Equivalents:
   - ___ Commercial
   - ___ Industrial
   - ___ Other:

2. Total site acreage (size of property): **912 ac**

3. Projected population: **1740**

4. The amount and type of impervious cover expected after construction are shown below:

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	**1,988,000**	÷ 43,560 =	**45.6**
Parking **(Drives)**	**1,192,800**	÷ 43,560 =	**27.4**
Other paved surfaces **(Streets)**	**1,601,112**	÷ 43,560 =	**36.7**
Total Impervious Cover	**4,781,912**	÷ 43,560 =	**109.8**
Total Impervious Cover ÷ Total Acreage x 100 =			**12** %

5. ✓ **ATTACHMENT A - Factors Affecting Water Quality.** A description of any factors that could affect surface water and groundwater quality is provided at the end of this form.

6. ✓ Only inert materials as defined by 30 TAC 330.2 will be used as fill material.

FOR ROAD PROJECTS ONLY

Complete questions 7-12 if this application is exclusively for a road project.

7. Type of project:
   - ___ TXDOT road project.
   - ___ County road or roads built to county specifications.
   - ___ City thoroughfare or roads to be dedicated to a municipality.
   - ___ Street or road providing access to private driveways.

8. Type of pavement or road surface to be used:

   ___ Concrete

__ Asphaltic concrete pavement
__ Other:

9. Length of Right of Way (R.O.W.): _____ feet.
Width of R.O.W.: _____ feet.
L x W = _____ Fts) 43,560 Fts/Acre = _____ acres.

10. Length of pavement area: _____ feet.
Width of pavement area: _____ feet.
L x W = _____ Fts) 43,560 Fts/Acre = _____ acres.
Pavement area _____ acres) R.O.W. area _____ acres x 100 = ____% impervious cover.

11. __ A rest stop will be included in this project.
__ A rest stop will **not** be included in this project.

12. __ Maintenance and repair of existing roadways that do not require approval from the TNRCC Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TNRCC.

STORMWATER TO BE GENERATED BY THE PROPOSED PROJECT

13. **ATTACHMENT B - Volume and Character of Stormwater.** A description of the volume and character (quality) of the stormwater runoff which is expected to occur from the proposed project is provided at the end of this form. The estimates of stormwater runoff quality and quantity should be based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

14. The character and volume of wastewater is shown below:

100 % Domestic	**149,100** gallons/day
__ % Industrial	_____ gallons/day
__ % Commingled	_____ gallons/day
TOTAL	**149,100** gallons/day

15. Wastewater will be disposed of by:
✓ **On-Site** Sewage Facility (OSSF/Septic Tank):
ATTACHMENT C - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater. The appropriate licensing authority's (authorized agent) written approval is provided at the end of this form. It states that the land is suitable for the use of an on-site sewage facility or identifies areas that are not suitable.
✓ Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC §285.

NA Sewage Collection System (Sewer Lines):
__ Private service laterals from the wastewater generating facilities will be connected to an existing SCS.

__ Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.
- __ The SCS was previously submitted on _____.
- __ The SCS was submitted with this application.
- __ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to executive director approval.

The sewage collection system will convey the wastewater to the (name) Treatment Plant. The treatment facility is :
- __ existing.
- __ proposed.

16. NA All private service laterals will be inspected as required in 30 TAC 213.5.

SITE PLAN REQUIREMENTS

Items 17 through 27 must be included on the Site Plan.

17. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = **400** '.

18. 100-year floodplain boundaries
- ✓ Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.
- __ No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s):

19.
- __ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.
- ✓ The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):
- ✓ There are 3 (#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)
  - __ The wells are not in use and have been properly abandoned.
  - __ The wells are not in use and will be properly abandoned.
  - __ The wells are in use and comply with 30 TAC §238.
  - ✓ **2 water wells are under construction, 1 existing well currently serving original homestead.**
- __ There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:
- ✓ All **sensitive and possibly sensitive** geologic or manmade features identified in the Geologic Assessment are shown and labeled.
- __ No **sensitive and possibly sensitive** geologic or manmade features were identified in the Geologic Assessment.
- NA **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to

the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. Geologic or manmade features were found and are shown and labeled.

— **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. No geologic or manmade features were found.

22. ✓ The drainage patterns and approximate slopes anticipated after major grading activities.

23. ✓ Areas of soil disturbance and areas which will not be disturbed.

24. ✓ Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

25. ✓ Locations where soil stabilization practices are expected to occur.

26. ✓ Surface waters (including wetlands).

27. ✓ Locations where stormwater discharges to surface water or sensitive features.
— There will be no discharges to surface water or sensitive features.

ADMINISTRATIVE INFORMATION

28. ✓ One (1) original and three (3) copies of the completed application have been provided.

29. ✓ Any modification of this WPAP will require TNRCC executive director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **WATER POLLUTION ABATEMENT PLAN APPLICATION FORM** is hereby submitted for TNRCC review and executive director approval. The form was prepared by:

Todd M. Simmang, P.E.
Print Name of Customer/**Agent**

Signature of Customer/**Agent**

5/26/04
Date

Attachment A – Factors Affecting Water Quality

The development will be a low density, single-family development that will result in minimal to no pollution. Pollution may originate from ordinary household chemicals, normal automobile wastes, and runoff from asphalt streets.

Attachment B – Volume and Character of Stormwater

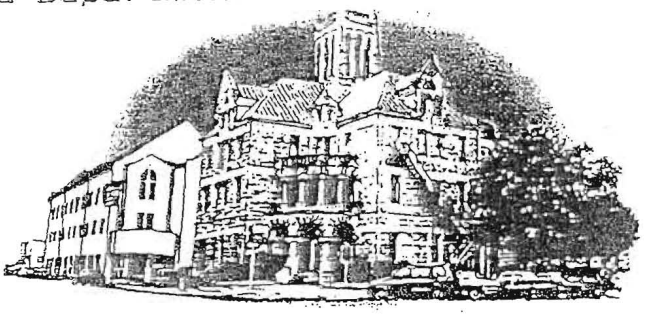
The development of Rockwall Subdivision will result in a minimal increase in stormwater runoff. Calculations were performed using HEC-HMS. The CN value for existing soil conditions is 77, with an existing impervious cover of 0.0%. The CN value for the proposed condition remained the same, however, the impervious cover increased to 12%. For the 25-year storm event, stormwater runoff from the proposed subdivision increased from 2460 cfs to 3000 cfs, an increase of 22%. For the 100-year storm event, stormwater runoff increased from 3315 cfs to 3965 cfs. This is an increase of 20%.

The following information shows the increase in the 100-year storm water discharges and locations from the proposed site only. This information does not include the entire watershed just the discharge rates from the proposed site.

- Vogel Dam increase from 2284 cfs to 2732 cfs
- Krause Dam increase from 969 cfs to 1159 cfs
- Area draining below these two dams increase from 62 cfs to 74 cfs.

Drainage patterns for the site will remain relatively unchanged. Low areas and swales will remain in their original condition, therefore offering natural vegetative filtering capabilities. The lot layout was designed to utilize the drainage patterns to protect the vegetation in these areas and prevent improvements from being constructed that would alter these areas.

Due to the fact that the majority of the drainage lows will remain in their natural condition and that the total impervious cover is low (12%), the quality of stormwater runoff leaving the site should remain unchanged.



Comal County

OFFICE OF COMAL COUNTY ENGINEER

March 30, 2004

KT Real Estate Investments, Ltd.
18225 FM 2252
San Antonio, TX 78266

Re: Proposed plat of ROCKWALL RANCH, within Comal County, Texas

Dear Property Owner(s):

We have completed the field inspection of the referenced for the recommendation for private sewage facilities and have found the property to be approved with the conditions that individual septic systems permits shall be required for the lots within this subdivision.

Please be advised that these individual permits will be required to meet 30 TAC 285.40, subchapter E (copy attached). Please specifically reference the one acre minimum lot size and 150 foot distance requirement to recharge features.

Should you have any questions, please feel free to contact us.

Sincerely,

Thomas H. Hornseth, P.E.
Comal County Engineer

LOT SUMMARY

±912 ACRES – 1.2 ACRE RESIDENTIAL LOTS

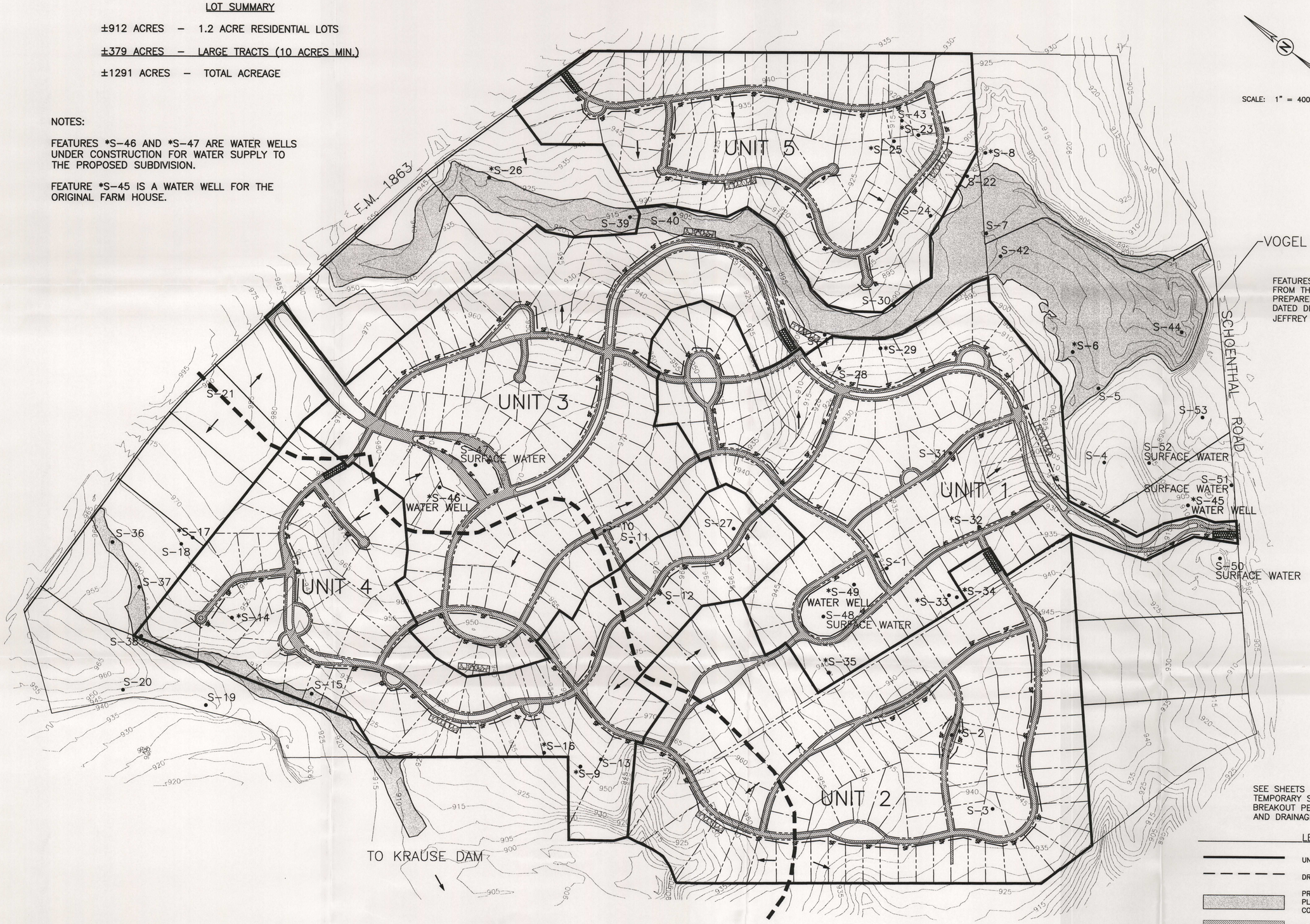
±379 ACRES – LARGE TRACTS (10 ACRES MIN.)

±1291 ACRES – TOTAL ACREAGE

NOTES:

FEATURES *S-46 AND *S-47 ARE WATER WELLS UNDER CONSTRUCTION FOR WATER SUPPLY TO THE PROPOSED SUBDIVISION.

FEATURE *S-45 IS A WATER WELL FOR THE ORIGINAL FARM HOUSE.



SCALE: 1" = 400'

FEATURES IDENITIFIED ON THIS PLAN ARE FROM THE GEOLOGIC ASSESSMENT PREPARED BY ARIAS & ASSOCIATES DATED DECEMBER 20, 2003. JEFFREY S. NEATHERLY, P.G. #40

SEE SHEETS 2 THROUGH 6 OF 6 IN THE TEMPORARY STORMWATER SECTION FOR A BREAKOUT PER UNIT OF SOIL DISTURBANCE AND DRAINAGE AREAS.

LEGEND

- UNIT LINE
- DRAINAGE BOUNDARY
- PRELIMINARY 100-YEAR FLOOD PLAIN TO BE SUBMITTED TO COMAL COUNTY AND FEMA FOR APPROVAL
- AREAS OF DISTURBANCE
- •*S-15 SENSITIVE RECHARGE FEATURES
- •S-3 POSSIBLY SENSITIVE RECHARGE FEATURES
- ROCK BERM
- SF SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE

NO.	DATE	REVISION	BY

Carter :: Burgess
Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-4525
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ROCKWALL RANCH

STATE OF TEXAS
TODD M. SIMMANG
91162
LICENSED
PROFESSIONAL ENGINEER
4/21/04

WPAP APPLICATION FORM SITE PLAN

ROCKWALL RANCH SUBDIVISION
COMAL COUNTY, TEXAS

DATE: 4/20/04
DRAWN BY: RJ
DESIGNED BY: TS
CHECKED BY: TS
REVIEWED BY: JM
PROJECT NUMBER: 310209.013

SHEET 1 OF 1

Temporary Stormwater Section

for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch Subdivision**

POTENTIAL SOURCES OF CONTAMINATION

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

   — Aboveground storage tanks with a cumulative storage capacity of less that 250 gallons will be stored on the site for less than one (1) year.

   — Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

   — Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An **Aboveground Storage Tank Facility Plan** application must be submitted to the appropriate regional office of the TNRCC prior to moving the tanks onto the project.

   ✓ Fuels and hazardous substances will not be stored on-site.

2. ✓ **ATTACHMENT A - Spill Response Actions.** A description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is provided at the end of this form.

3. NA Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. ✓ **ATTACHMENT B - Potential Sources of Contamination.** Describe in an attachment at the end of this form any other activities or processes which may be a potential source of contamination.

   — There are no other potential sources of contamination.

SEQUENCE OF CONSTRUCTION

5. ✓ **ATTACHMENT C - Sequence of Major Activities.** A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is provided at the end of this form. For each activity described, an estimate of the total area of the site to be disturbed by each activity is given.

6. ✓~~NA~~ Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project:

   DRY COMAL CREEK.

TEMPORARY BEST MANAGEMENT PRACTICES (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. **All structural BMPs must be shown on the site plan.**

7. ✓ **ATTACHMENT D - Temporary Best Management Practices and Measures.** A description of the TBMPs and measures that will be used during and after construction are provided at the end of this form. For each activity listed in the sequence of construction, include appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

   ✓ TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information has been provided in the attachment at the end of this form

   a. A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

   b. A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

   c. A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

   d. A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TNRCC inspections, or during excavation, blasting, or construction.

8. The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

   ___ **ATTACHMENT E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is provided at the end of this form. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

   ✓ There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. ✓ **ATTACHMENT F - Structural Practices.** Describe the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site. Placement of structural practices in floodplains has been avoided.

10. ✓ **ATTACHMENT G - Drainage Area Map.** A drainage area map is provided at the end of this form to support the following requirements.

— For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

— For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

— For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

✓ There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

11. ✓ **ATTACHMENT H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure has been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are provided as at the end of this form.

12. ✓ **ATTACHMENT I - Inspection and Maintenance for BMPs.** A plan for the inspection of temporary BMPs and measures and for their timely maintenance, repair, and, if necessary, retrofit is provided at the end of this form. A description of documentation procedures and record keeping practices is included in the plan.

13. ✓ All control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicates a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. ✓ If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. NA Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. ✓ Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

SOIL STABILIZATION PRACTICES

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. ✓ **ATTACHMENT J - Schedule of Interim and Permanent Soil Stabilization Practices.** A schedule of the interim and permanent soil stabilization practices for the site is attached at the end of this form.

18. ✓ Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. ✓ Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

ADMINISTRATIVE INFORMATION

20. ✓ All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. ✓ If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TNRCC Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TNRCC has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. ✓ Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **TEMPORARY STORMWATER SECTION** is hereby submitted for TNRCC review and executive director approval. The application was prepared by:

Todd M. Simmang, P.E.
Print Name of Customer/**Agent**

Todd M. Simmang
Signature of Customer/**Agent**

5/26/04
Date

Attachment A – Spill Response Actions

There will be no above ground fuel storage tanks allowed on this project. Equipment will be fueled using mobile fuel trucks as needed. There is a small chance of a fuel spill occurring due to leaking construction equipment or re-fueling operations. If a minor spill were to occur, the soil impacted would be removed from the site and properly disposed of in an approved landfill site. If a major spill were to occur, where the amounts spilled were equal to, or exceeding, the Reportable Quantity, RQ, as defined by EPA regulations 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 then the following steps will be taken.

- Notify the National Response Center at (800) 424-8802 and the TCEQ San Antonio Regional Office at (210) 545-4329 immediately.
- Submit a written description of their release to the EPA and TCEQ Regional office providing the date and circumstances of the release and the steps to be taken to prevent another release
- Modify the WPAP and SWPPP to include the information listed above.

Attachment B – Potential Sources of Contamination

The only potential sources of contamination are construction equipment leaks, re-fueling spills and asphalt lay down operations. There are no other anticipated potential sources of contamination.

Attachment C – Sequence of Major Activities

Stages of Construction:
The following construction sequence will occur for each unit. Final stabilization will be completed prior to the start of the next unit.

1. Clearing and Grubbing – removal of trees, stumps, brush and other debris within the proposed street right-of-way. Approximate disturbed area = 64 acres
2. Rough Grading – Cutting and filling of street areas to prepare the roadbed for pavement layers. Approximate disturbed area = 64 acres.
3. Culvert Installation – Culverts will be installed where needed to allow runoff under the proposed roads. Approximated disturbed area is less than 7 acres.
4. Utility Installation – There will be underground water, telephone and electric lines installed. Approximate disturbed area = less than 16 acres.
5. Finished Grading – Final landscaping and asphalt pavement layers are installed. Approximate disturbed area = 38 acres.
6. Residential Construction – Lots will be sold to individuals only, and homes built at random times. The construction is very minimal and will average less than 10% disturbed area per lot.

Attachment D – Temporary BMPs and Measures

Soil disturbance will be limited to a minimal distance outside of the proposed pavement and no soil disturbance will occur outside of the ROW. All of the low areas, which collect storm water runoff, will remain in a natural state acting as vegetative filter strips. Grasses will be allowed to grow between the edge of pavement and right-of-way line and will act as a filter for street runoff once established.

Silt fence will be place on the down gradient side of the site to contain pollutants generated from on-site runoff. Rock berms will be constructed at concentrated points of discharge and just downstream of all culvert locations. The majority of the property will not be disturbed leaving the natural vegetation, therefore, reducing the potential of polluting streams and the aquifer. A stabilized construction exit will be installed to help eliminate contaminants from leaving the site during construction traffic.

There are 34 possibly sensitive and 19 sensitive features identified in the Geologic Assessment. The features that were identified in the Geologic Assessment will be protected during construction by diverting concentrated runoff away from the features and/or placing silt fence just upstream of the feature location. Material from excavated utility trenches will be placed upstream of the trench to reduce the potential of sediment transport.

The following sequence will be followed for installing temporary BMPs:

1. Roadway centerline will be roughly cleared for surveying purposes.
2. Silt fence will be constructed on the downstream side of proposed roadways prior to beginning clearing and grubbing operations.
3. A stabilized construction exit will be established before clearing and grubbing equipment is delivered to the site.
4. Rock berms and rock check dams are constructed downstream of proposed culvert locations once rough grading has been completed and prior to culvert installation.

Attachment E – Request to Temporarily Seal a Feature

No features will be temporarily sealed.

Attachment F – Structural Practices

Rock berms, rock check dams and silt fence will be used to protect exposed soils and to prevent contamination from leaving the site or flowing over the features identified in the Geologic Assessment. The majority of the site will remain in a natural condition; therefore, natural filtration will be allowed to occur.

Attachment H – Temporary Sediment Pond(s) Plans and Calculations

There will not be more than 10-acres of disturbed soil in a common drainage area that will occur at one time. There will be rock berms and rock check dams installed to treat concentrated runoff from larger drainage areas (<10-acres) and silt fence used for small drainage areas and sheet flow runoff. No sediment ponds will be used on this project due to the minimal disturbance of soil.

Attachment I – Inspection and Maintenance for BMPs

Inspection and Maintenance Plan

- The contractor is required to inspect the controls and fences at weekly intervals and after significant rainfall events to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six inches. Contractor is required to maintain the construction exit in a condition that prevents soil from tracking onto public roads via construction equipment and traffic.
- TCEQ staff will be allowed full access to the property during construction of the project for inspecting controls and fences and to verify that the accepted plan is being utilized in the field. TCEQ staff has the right to speak with the contractor to verify plan changes and modifications.
- Any changes made to the location or type of controls shown on the accepted plans, due to onsite conditions, shall be documented on the site plan that is part of this Water Pollution Abatement Plan. No other changes shall be made unless approved by the TCEQ and the Design Engineer. Documentation shall clearly show changes made, date, and person responsible and reason change was made.

Owner's Information:

Owner: KT Real Estate Investments, LTD.
Contact: Scott Knowlton, Vice President
Phone #: (210) 651-6860
Address: 18225 FM 2252
San Antonio, Texas 78266

Owner's Engineer:

Company: Carter & Burgess, Inc.
Contact: Todd Simmang, P.E.
Phone #: (210) 494-0088
Address: 911 Central Pkwy North, #425
San Antonio, Texas 78232

Person or Firm Responsible For Erosion/Sedimentation Control Maintenance:

Company: _____ Phone #: _____
Contact: _____
Address: _____
_____

Signature of Responsible Party: _____

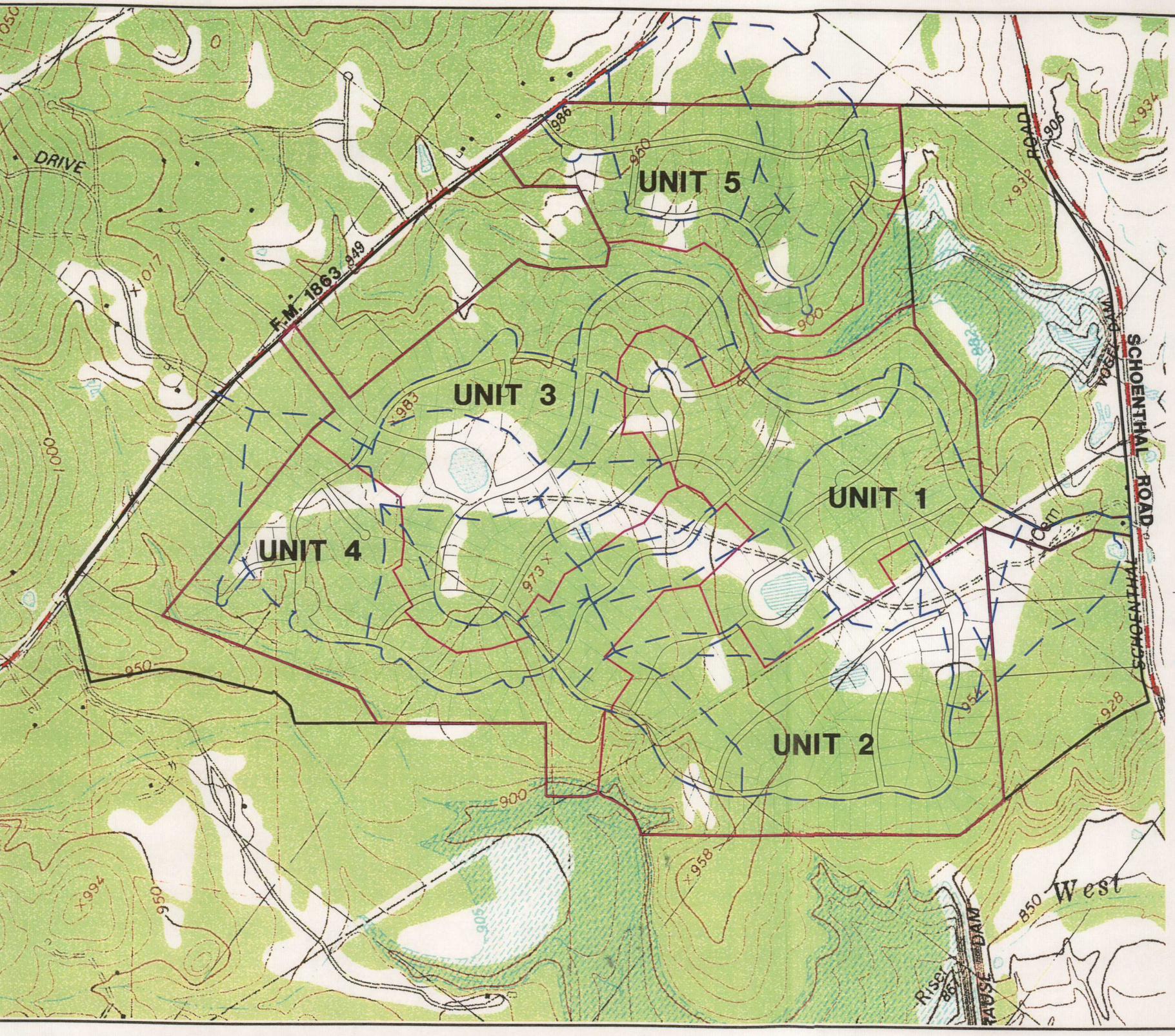
This portion of the form shall be filled out and signed by the responsible party prior to construction.

Attachment J – Schedule of Interim and Permanent Soil Stabilization Practices

There will be minimal disturbed soil due to construction operations that are not covered by pavement or buildings. The area is generally very rocky with a minimal amount of overlying soil. Areas, which are disturbed by construction staging, and storage areas will be hydro mulched with the appropriate seed mixture. Areas between the edge of pavement and right-of-way line will also be hydro mulched if a soil layer exists. Areas within islands and the entrance will be landscaped with appropriate plants and mulched. There will be no fill slopes exceeding a 3:1 slope and all fill slopes will be hydro mulched. Installation of hydro mulch is as follows:

1. Final grading must be completed and all necessary BMPs should be in place prior to the addition of hydro mulch.
2. Hydro mulch mixture shall be as recommended by the County Agriculture Extension Agent or as shown below for the specific time of year and whether or not irrigation will be utilized.
3. Hydro mulch shall be applied at a rate stipulated by the Extension Agent or as shown below and shall be applied in a uniform manner
4. Other types of seeding applications may be used by the Contractor if approved by the Design Engineer and TNRCC.
5. If blankets or matting are used, they shall conform to the Texas Department of Transportation specifications.

Dates	**Climate**	**Species**	**(lb/ac)**
Sept. 1 to Nov. 30	Temporary Cool Season	Tall Fescue Oats Wheat **Total**	4.0 21.0 30.0 **55.0**
Sept. 1 to Nov. 30	Cool Season Legume	Hairy Vetch	8.0
May 1 to Aug. 31	Temporary Warm Season	Foxtail Millet	30.0



SCALE: 1"=1000'

LEGEND

UNIT BOUNDARY

DRAINAGE BOUNDARY

SEE SHEETS 2 – 6 OF 6
FOR DRAINAGE AREAS.

Carter :: Burgess

Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.

911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-4525

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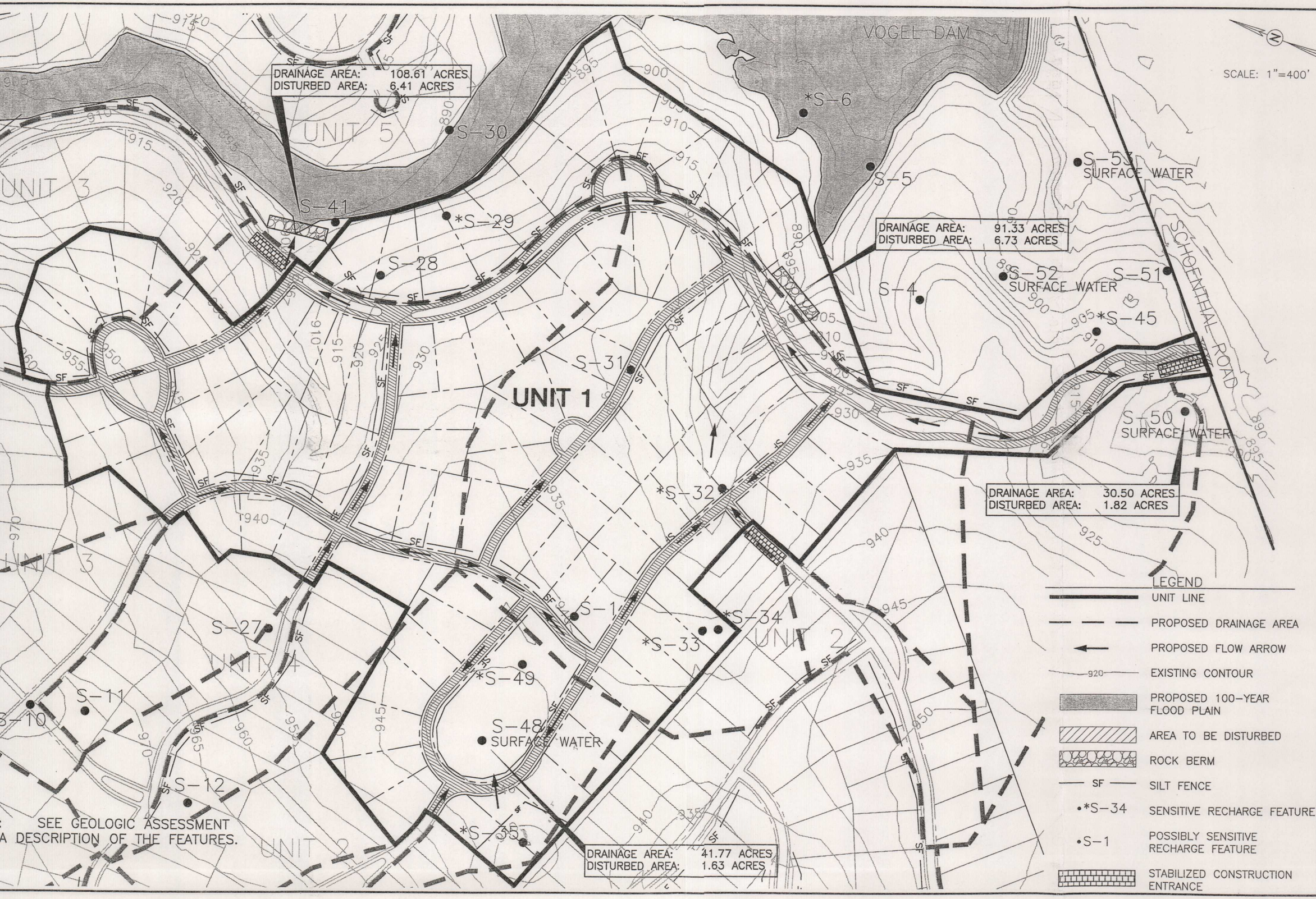
DRAINAGE AREA MAP INDEX

WPAP
ROCKWALL RANCH
KT REAL ESTATE INVESTMENTS, LTD.
COMAL COUNTY, TEXAS

SHEET SCALE: 1:1
DATE PLOTTED: 4/20/04
DWG NAME: UNIT 5 – DISTURBED AREAS.DWG
DRAWN BY: RJ
DESIGNED BY: RJ
REVIEWED BY: TS
PROJECT NUMBER: 310209.013

SHEET 1 OF 6



SEE GEOLOGIC ASSESSMENT
A DESCRIPTION OF THE FEATURES.

UNIT 1
LIMITS OF AREA TO BE DISTURBED

Carter :: Burgess
Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-4525

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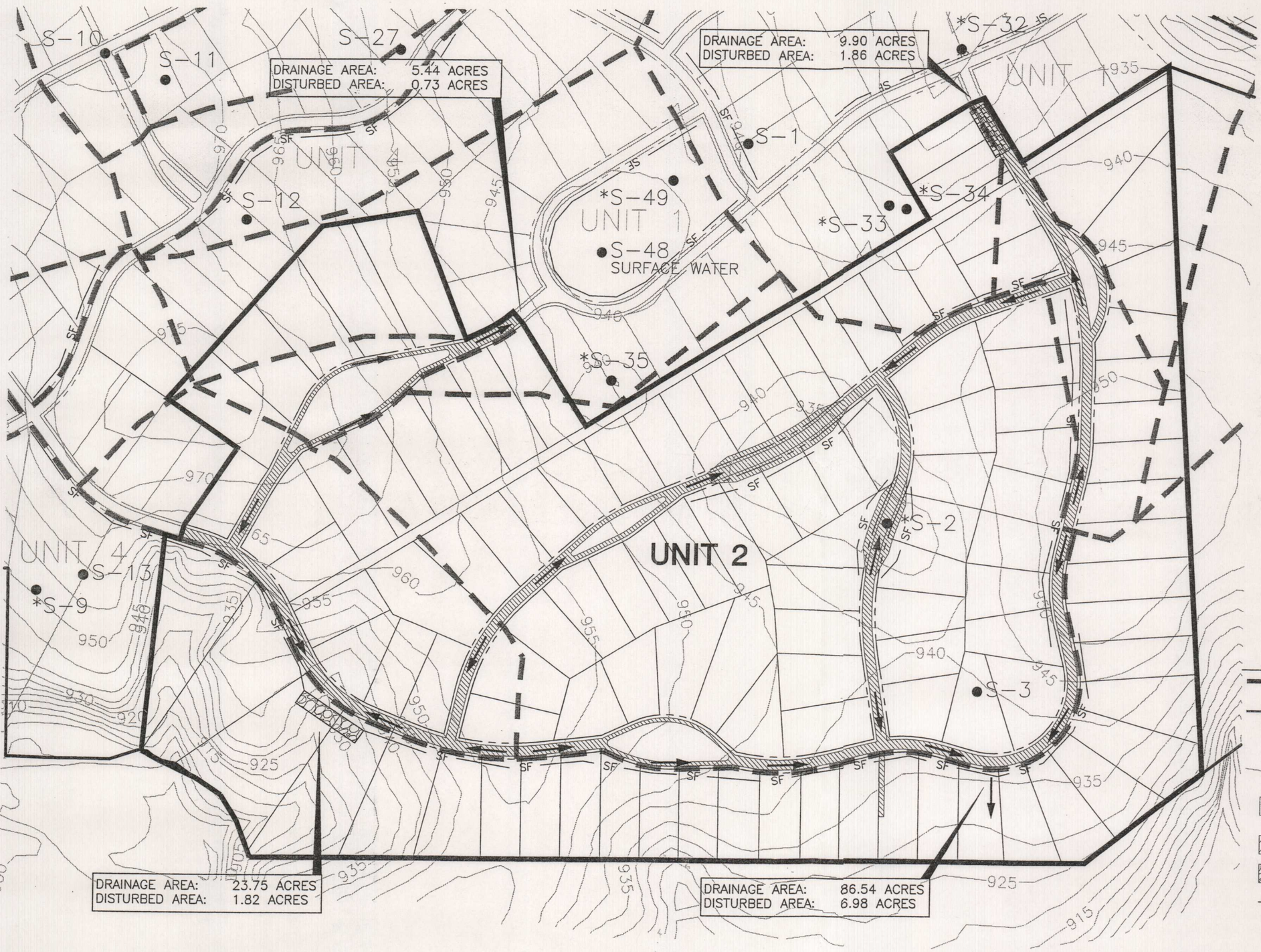
WPAP
ROCKWALL RANCH

KT REAL ESTATE INVESTMENTS, LTD.
COMAL COUNTY, TEXAS

SHEET SCALE: 1:1
DATE PLOTTED: 4/20/04
DWG NAME: UNIT 1 - DISTURBED AREAS.DWG
DRAWN BY: RJ
DESIGNED BY: RJ
REVIEWED BY: TS
PROJECT NUMBER: 310209.013

SHEET 2 OF 6



SCALE: 1"=400'

LEGEND

- UNIT LINE
- PROPOSED DRAINAGE AREA
- PROPOSED FLOW ARROW
- 920 EXISTING CONTOUR
- PROPOSED 100-YEAR FLOOD PLAIN
- AREA TO BE DISTURBED
- ROCK BERM
- SF SILT FENCE
- •*S-34 SENSITIVE RECHARGE FEATURE
- •S-1 POSSIBLY SENSITIVE RECHARGE FEATURE
- STABILIZED CONSTRUCTION ENTRANCE

NOTE: SEE GEOLOGIC ASSESSMENT FOR A DESCRIPTION OF THE FEATURES.

UNIT 2 LIMITS OF AREA TO BE DISTURBED

WPAP
ROCKWALL RANCH
KT REAL ESTATE INVESTMENTS, LTD.
COMAL COUNTY, TEXAS

Carter :: Burgess
Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-0525

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SHEET SCALE:	1:1
DATE PLOTTED:	4/20/04
DWG NAME:	UNIT 2 - DISTURBED AREAS.DWG
DRAWN BY:	RJ
DESIGNED BY:	RJ
REVIEWED BY:	TS
PROJECT NUMBER:	310209.013

SHEET 3 OF 6

NOTE: SEE GEOLOGIC ASSESSMENT FOR A DESCRIPTION OF THE FEATURES.

SCALE: 1"=400'

DRAINAGE AREA: 8.23 ACRES
DISTURBED AREA: 1.91 ACRES

AINAGE AREA: 0.73 ACRES
TURBED AREA: 0.23 ACRES

DRAINAGE AREA: 27.26 ACRES
DISTURBED AREA: 2.55 ACRES

DRAINAGE AREA: 66.97 ACRES
DISTURBED AREA: 9.83 ACRES

DRAINAGE AREA: 13.54 ACRES
DISTURBED AREA: 1.39 ACRES

NAGE AREA: 39.31 ACRES
URBED AREA: 3.10 ACRES

F.M. 1863

UNIT 3

UNIT 4

UNIT 5

UNIT 1

UNIT 4

S-21 S-26 S-47 SURFACE WATER S-10 S-11 S-26 S-39 S-40 S-41

LEGEND

- UNIT LINE
- PROPOSED DRAINAGE AREA
- PROPOSED FLOW ARROW
- 920 EXISTING CONTOUR
- PROPOSED 100-YEAR FLOOD PLAIN
- AREA TO BE DISTURBED
- ROCK BERM
- SF SILT FENCE
- •*S-34 SENSITIVE RECHARGE FEATURE
- •S-1 POSSIBLY SENSITIVE RECHARGE FEATURE
- STABILIZED CONSTRUCTION ENTRANCE

Carter :: Burgess
Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-4525

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UNIT 3 LIMITS OF AREA TO BE DISTURBED

WPAP ROCKWALL RANCH

KT REAL ESTATE INVESTMENTS, LTD.
COMAL COUNTY, TEXAS

SHEET SCALE: 1:1
DATE PLOTTED: 4/20/04
DWG NAME: UNIT 2 - DISTURBED AREAS.DWG
DRAWN BY: RJ
DESIGNED BY: RJ
REVIEWED BY: TS
PROJECT NUMBER: 310209.013

SHEET 4 OF 6

DRAINAGE AREA: 7.46 ACRES
DISTURBED AREA: 1.64 ACRES

DRAINAGE AREA: 4.48 ACRES
DISTURBED AREA: 0.41 ACRES

DRAINAGE AREA: 2.67 ACRES
DISTURBED AREA: 0.36 ACRES

DRAINAGE AREA: 2.02 ACRES
DISTURBED AREA: 0.39 ACRES

DRAINAGE AREA: 60.07 ACRES
DISTURBED AREA: 3.73 ACRES

DRAINAGE AREA: 38.04 ACRES
DISTURBED AREA: 3.22 ACRES

SCALE: 1"=400'

LEGEND

- UNIT LINE
- PROPOSED DRAINAGE AREA
- PROPOSED FLOW ARROW
- 920 EXISTING CONTOUR
- PROPOSED 100-YEAR FLOOD PLAIN
- AREA TO BE DISTURBED
- ROCK BERM
- SF SILT FENCE
- •*S-34 SENSITIVE RECHARGE FEATURE
- •S-1 POSSIBLY SENSITIVE RECHARGE FEATURE
- STABILIZED CONSTRUCTION ENTRANCE

TE: SEE GEOLOGIC ASSESSMENT
R A DESCRIPTION OF THE FEATURES.

UNIT 4
LIMITS OF AREA TO BE DISTURBED

WPAP
ROCKWALL RANCH
KT REAL ESTATE INVESTMENTS, LTD.
COMAL COUNTY, TEXAS

Carter :: Burgess
Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-6525

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SHEET SCALE: 1:1
DATE PLOTTED: 4/20/04
DWG NAME: UNIT 2 - DISTURBED AREAS.DWG
DRAWN BY: RJ
DESIGNED BY: RJ
REVIEWED BY: TS
PROJECT NUMBER: 310209.013

SCALE: 1"=400'

FM 1863

DRAINAGE AREA: 8.39 ACRES
DISTURBED AREA: 0.82 ACRES

UNIT 5

DRAINAGE AREA: 41.62 ACRES
DISTURBED AREA: 1.93 ACRES

DRAINAGE AREA: 52.63 ACRES
DISTURBED AREA: 2.77 ACRES

DRAINAGE AREA: 12.37 ACRES
DISTURBED AREA: 1.88 ACRES

UNIT 3

UNIT 1

S-26 S-39 S-40 S-41 S-28 *S-29 S-30 S-42 S-7 S-22 *S-8 S-24 *S-25 S-43 *S-23

NOTE: SEE GEOLOGIC ASSESSMENT FOR A DESCRIPTION OF THE FEATURES.

LEGEND

- UNIT LINE
- PROPOSED DRAINAGE AREA
- PROPOSED FLOW ARROW
- 920 EXISTING CONTOUR
- PROPOSED 100-YEAR FLOOD PLAIN
- AREA TO BE DISTURBED
- ROCK BERM
- SF SILT FENCE
- •*S-34 SENSITIVE RECHARGE FEATURE
- •S-1 POSSIBLY SENSITIVE RECHARGE FEATURE
- STABILIZED CONSTRUCTION ENTRANCE

UNIT 5
LIMITS OF AREA TO BE DISTURBED

Carter :: Burgess
Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0038 FAX (210) 494-4525

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WPAP
ROCKWALL RANCH
KT REAL ESTATE INVESTMENTS, LTD.
COMAL COUNTY, TEXAS

SHEET SCALE: 1:1
DATE PLOTTED: 4/20/04
DWG NAME: UNIT 5 - DISTURBED AREAS.DWG
DRAWN BY: RJ
DESIGNED BY: RJ
REVIEWED BY: TS
PROJECT NUMBER: 310209.013

Permanent Stormwater Section

for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b)(4)(C), (D)(li), (E), and (5), Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch Subdivision**

Permanent best management practices (BMPs) and measures that will be used during and after construction is completed.

1. NA Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

2. NA These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

   — The TNRCC Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
   — A technical guidance other than the TNRCC TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is provided below

3. NA Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

4. ✓ Where a site is used for low density single-family residential development and has 20% or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   ✓ This site will be used for low density single-family residential development and has 20% or less impervious cover.
   — This site will be used for low density single-family residential development but has more than 20% impervious cover.
   — This site will not be used for low density single-family residential development.

5. NA The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be

recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

___ **ATTACHMENT A - 20% or Less Impervious Cover Waiver.** This site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is found at the end of this form.

___ This site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.

___ This site will not be used for multi-family residential developments, schools, or small business sites.

6. **ATTACHMENT B - BMPs for Upgradient Stormwater.**

___ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is identified as **ATTACHMENT B** at the end of this form.

___ If no surface water, groundwater or stormwater originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT B** at the end of this form.

✓ If permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT B** at the end of this form.

7. **ATTACHMENT C - BMPs for On-site Stormwater.**

___ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is identified as **ATTACHMENT C** at the end of this form.

✓ If permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, an explanation is provided as **ATTACHMENT C** at the end of this form.

8. ✓ **ATTACHMENT D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is provided at the end of this form. Each feature identified in the Geologic Assessment as "sensitive" or "possibly sensitive" has been addressed.

9. ✓ The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

✓ The permanent sealing of or diversion of flow from a naturally-occurring "sensitive" or "possibly sensitive" feature that accepts recharge to the Edwards Aquifer as a

permanent pollution abatement measure has not been proposed for any naturally-occurring "sensitive" or "possibly sensitive" features on this site.

__ **ATTACHMENT E - Request to Seal Features.** A request to seal a naturally-occurring "sensitive" or "possibly sensitive" feature, that includes a justification as to why no reasonable and practicable alternative exists, is found at the end of this form. A request and justification has been provided for each feature.

10. NA **ATTACHMENT F - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information have been signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed permanent BMPs and measures are provided at the end of this form. Design Calculations, TNRCC Construction Notes, all man-made or naturally occurring geologic features, all proposed structural measures, and appropriate details must be shown on the construction plans.

11. NA **ATTACHMENT G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is provided at the end of this form. The plan has been prepared and certified by the engineer designing the permanent BMPs and measures. The plan has been signed by the owner or responsible party. The plan includes procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofits as well as a discussion of record keeping procedures.

12. NA The TNRCC Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

__ Pilot-scale field testing (including water quality monitoring) may be required for BMPs that are not contained in technical guidance recognized by or prepared by the executive director.

__ **ATTACHMENT H - Pilot-Scale Field Testing Plan.** A plan for pilot-scale field testing is provided at the end of this form.

13. ✓ ATTACHMENT I **-Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is provided at the end of this form. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity which increase erosion that results in water quality degradation.

Responsibility for maintenance of permanent BMPs and measures after construction is complete.

14. NA The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is

transferred.

15. **NA** A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **PERMANENT STORMWATER SECTION** is hereby submitted for TNRCC review and executive director approval. The application was prepared by:

Todd M. Simmang, P.E.
Print Name of Customer/**Agent**

Todd M. Simmang
Signature of Customer/**Agent**

5/26/04
Date

Attachment A – 20% or Less Impervious Cover Waiver

The site will not be used for multi-family residential or small businesses. The development will be low density, single family, residential with 0.54 dwelling units per acre based on the 912 acres with 497 lots. The total impervious cover for the site is approximately 12% at full development. This assumes a 24-foot asphalt roadway and 6400 square feet of impervious cover per lot.

Attachment B – BMPs for Upgradient Stormwater

Approximately 340-acre watershed drains through the proposed property from the north into the Vogel Regional Detention Pond. This storm water is conveyed by an existing natural channel that is located on the eastern side of the property from FM 1863 to the Vogel Detention Pond. This existing natural channel will not be crossed with a road or be modified in any way. Minor underbrush removal may occur. Please refer to the Drainage Area Map in the Temporary Stormwater Section. Storm water pollution should remain unchanged and the natural filtration properties of the existing channel will remain.

Attachment C – BMPs for On-site Stormwater

No permanent BMPs will be constructed to treat stormwater runoff. The site design allows the natural swales and low areas of the site to remain in a natural state, therefore acting as natural vegetative filter strips. The site, when fully developed, will have an impervious cover of approximately 12%. There will be appropriate sanitary setback easements placed around all recharge features identified in the Geologic Assessment as having significant recharge potential. The perimeter of the site will remain in a natural condition, preventing contaminated runoff from leaving the site.

Attachment D – BMPs for Surface Streams

All of the features identified as having significant recharge potential in the Geologic Assessment will be protected by a sanitary setback easement surrounding the feature. These easements will be shown on the plat for the subject property and recorded during the platting process. All surface streams will be protected from erosion by not allowing runoff to exceed existing velocities or drastically changing the drainage patterns. This will be accomplished by street layouts and by adding energy dissipaters to the downstream side of culverts.

Attachment E – Request to Seal Features

The proposed site layout was designed to cause minimal impact on features identified in the Geologic Assessment. Due to severe topographic constraints, building the proposed roadways through the subdivision could seal a portion of some of the features. No features will be closed in their entirety; only small portions of the affected features will be closed. The features that will be affected are S-2 and S-10. Feature S-2 is a large swallow hole with large amounts of organic matter. This feature has been identified as only having a moderate infiltration rate. The area being sealed will be selected to minimize the impact on the infiltration rate of this feature. Feature S-10 is a large shallow closed depression. This feature has been identified as having a low potential of infiltration.

Features S-46 and S-49 are new man-made water wells being developed to serve the proposed subdivision. These wells will meet current standards prior to serving the subdivision or be properly sealed if not being used for the subdivision. Feature S-45 is an old well that is currently serving the existing homestead and will remain in its current state. This well is located on a tract of land greater than 10-acres.

Attachment I – Measures for Minimizing Surface Stream Contamination

All surface streams will be protected from erosion by not allowing runoff to exceed existing velocities. This will be accomplished by adding energy dissipaters to the downstream side of culverts.

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I **Virgil Knowlton**,
Print Name

Owner
Title - Owner/President/Other

of **KT Real Estate Investments, LTD.**.
Corporation/Partnership/Entity Name

have authorized **Todd M. Simmang, P.E.**
Print Name of Agent/Engineer

of **Carter & Burgess, Inc.**
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Natural Resource Conservation Commission (TNRCC) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TNRCC's approval letter. The TNRCC is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and the forms must accompany the completed application.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TNRCC cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. For applicants who are not the property owner, but who have the right to control and possess and control the property, additional authorization is required from the owner.

Virgil K. Knowlton

Applicant's Signature Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared Virgil K Knowlton known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 19th day of April, 2004.

EUGENIA SOUTHWELL
NOTARY PUBLIC
State of Texas
Comm. Exp. 04-17-2006

NOTARY PUBLIC
Eugenia Southwell
Typed or Printed Name of Notary
Eugenia Southwell
MY COMMISSION EXPIRES: 4-17-2006

Texas Natural Resource Conservation Commission
Edwards Aquifer Protection Plan
Application Fee Form

NAME OF PROPOSED REGULATED ENTITY: **Rockwall Ranch Subdivision**
REGULATED ENTITY LOCATION: **Comal County**
NAME OF CUSTOMER: **KT Real Estate Investments, LTD.**

CONTACT PERSON: **Scott Knowlton** PHONE: **(210) 651-6260**
(Please Print)

Customer Reference Number (if issued): CN _____ (nine digits)
Regulated Entity Reference Number (if issued): RN _____ (nine digits)

AUSTIN REGIONAL OFFICE (3373)
☐ Hays
☐ Travis
☐ Williamson

SAN ANTONIO REGIONAL OFFICE (3362)
☐ Bexar
☒ Comal
☐ Kinney
☐ Medina
☐ Uvalde

APPLICATION FEES MUST BE PAID BY CHECK, CERTIFIED CHECK, OR MONEY ORDER, PAYABLE TO THE TEXAS NATURAL RESOURCE CONSERVATION COMMISSION. YOUR CANCELED CHECK WILL SERVE AS YOUR RECEIPT. **THIS FORM MUST BE SUBMITTED WITH YOUR FEE PAYMENT**. THIS PAYMENT IS BEING SUBMITTED TO (CHECK ONE):

☒ **SAN ANTONIO REGIONAL OFFICE**
☐ **Mailed to TNRCC**:
TNRCC - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ **AUSTIN REGIONAL OFFICE**
☐ **Overnight Delivery to TNRCC**:
TNRCC - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

Type of Plan	Size	Fee Due
Water Pollution Abatement, One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement, Multiple Single Family Residential and Parks	**957** Acres	$ **5,000.00**
Water Pollution Abatement, Non-residential	Acres	$
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Area includes the single family residential subdivision (912ac) + area of Vogal regional detention facility (45ac).

Todd M. Lammy
Signature

5/24/04
Date

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Texas Natural Resource Conservation Commission
Edwards Aquifer Protection Program
Application Fee Schedule
30 TAC §213.14 (effective 11/14/97) & 30 TAC §213.9 (effective 6/1/99)

Water Pollution Abatement Plans and Modifications

PROJECT	PROJECT AREA IN ACRES	FEE
One Single Family Residential Dwelling	<5	$500
Multiple Single Family Residential and Parks	<5 5 < 10 10 < 50 ≥50	$1,000 $2,000 $3,000 $5,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 ≥10	$2,000 $3,000 $4,000 $5,000

Organized Sewage Collection Systems and Modifications

PROJECT	COST PER LINEAR FOOT	MINIMUM FEE MAXIMUM FEE
Sewage Collection Systems	$0.50	$500 - $5,000

Underground and Aboveground Storage Tank System Facility Plans and Modifications

PROJECT	COST PER TANK OR PIPING SYSTEM	MINIMUM FEE MAXIMUM FEE
Underground and Aboveground Storage Tank Facility	$500	$500 - $5,000

Exception Requests

PROJECT	FEE
Exception Request	$250

Extension of Time Requests

PROJECT	FEE
Extension of Time Request	$100

TCEQ Core Data Form

TCEQ Use Only

If you have questions on how to fill out this form or about our Central Registry, please contact us at 512-239-5175.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

SECTION I: General Information

1. Reason for Submission *Example: new wastewater permit; IHW registration; change in customer information; etc.*

New WPAP Application

2. Attachments			Describe Any Attachments: *(ex: Title V Application, Waste Transporter Application, etc.)*
✓	YES	NO	Part of WPAP submittal to TCEQ

3. Customer Reference Number-*if issued*			4. Regulated Entity Reference Number-*if issued*		
CN		*(9 digits)*	RN		*(9 digits)*

SECTION II: Customer Information

5. Customer Role *(Proposed or Actual)* -- As It Relates to the Regulated Entity Listed on This Form

Please check one of the following:		Owner		Operator	✓	Owner and Operator
	Occupational Licensee		Volunteer Cleanup Applicant		✓	Other WPAP
TCEQ Use Only			Superfund	PST		Respondent

6. General Customer Information

✓	New Customer		Change to Customer Information
	Change in Regulated Entity Ownership		No Change *

*If No Changes and Section I is complete, skip to Section III - Regulated Entity Information.

7. Type of Customer:					
✓	Partnership		Corporation		Federal Government
	State Government		County Government		City Government
	Other Government		Other:		

8. Customer Name *(If an individual, please print last name first)*	*If new name, enter previous name:*
KT Real Estate Investments, LTD	

9. Mailing Address:	18225 FM 2252			
	City	State	ZIP	ZIP + 4
	San Antonio	Texas	78266	

10. Country Mailing Information *if outside USA*	11. E-Mail Address *if applicable*

12. Telephone Number	13. Extension or Code	14. Fax Number *if applicable*
210.651.6860		

15. Federal Tax ID *(9 digits)*	16. State Franchise Tax ID Number *if applicable*	17. DUNS Number *if applicable (9 digits)*
68-0557026	NA	NA

18. Number of Employees							19. Independently Owned and Operated?		
✓	0-20		21-100		101-250		251-500		501 and higher		Yes	✓	No

SECTION III: Regulated Entity Information

20. General Regulated Entity Information

✓	New Regulated Entity		Change to Regulated Entity Information		No Change*

*If "No Change" and Section I is complete, skip to Section IV - Preparer Information.

21. Regulated Entity Name *(If an individual, please print last name first)*				
KT Real Estate Investments, LTD				
22. Street Address (No PO Boxes)	18225 FM 2252			
	City	State	ZIP	ZIP + 4
	San Antonio	Texas	78266	
23. Mailing Address	18225 FM 2252			
	City	State	ZIP	ZIP + 4
	San Antonio	Texas	78266	
24. E-Mail Address:				

25. Telephone Number	26. Extension or Code	27. Fax Number *if applicable*
210.651.6860		

28. Primary SIC Code (4 digits)	29. Secondary SIC Code (4 digits)	30. Primary NAICS Code (5 or 6 digits)	31. Secondary NAICS Code (5 or 6 digits)
6552	NA	237210	NA

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

Land developer for a residential subdivision

Questions 33 - 37 address geographic location. Please refer to the instructions for applicability.

33. County Comal

34. Description of Physical Location

Approx. 1.7 miles southwest of the intersection of Schoenthal Rd and FM 1863. Located on the northwest side of Schoenthal Rd

35. Nearest City	State	Nearest Zip
New Braunfels	Texas	78266

36. Latitude (N)			*37. Longitude (W)*		
Degrees	*Minutes*	*Seconds*	*Degrees*	*Minutes*	*Seconds*
029	41	28	098	16	22

38. TCEQ Programs In Which This Regulated Entity Participates *Not all programs have been listed. Please add to this list as needed. If you don't know or are unsure, please mark "Unknown".* If you know a permit or registration # for this entity, please write it below the program."

	Animal Feeding Operation		Petroleum Storage Tank		Water Rights
	Title V - Air		Wastewater Permit		**WPAP**
	Industrial & Hazardous Waste		Water Districts		
	Municipal Solid Waste		Water Utilities		Unknown
	New Source Review - Air		Licensing - TYPE(s)		

Section IV: Preparer Information

39. Name: Todd M. Simmang, P.E.	40. Title: Authorized Agent

41. Telephone Number	42. Extension or Code	43. Fax Number *if applicable*
0.494.0088	5519	210.494.4525

44. *E-mail Address:* simmangtm@c-b.com

Carter & Burgess, Inc.
31748 0101 TCEQ

365646

PLEASE DETACH AND RETAIN FOR YOUR RECORDS

VOUCHER NUMBER	INVOICE NUMBER	INVOICE DATE	INVOICE AMOUNT	AMOUNT PAID	DISCOUNT TAKEN	NET INVOICE
13112317	APR-SIMMANG	04/19/2004	$5,000.00	$5,000.00	$0.00	$5,000.00
TOTALS			$5,000.00	$5,000.00	$0.00	$5,000.00

THE FACE OF THIS DOCUMENT IS PRINTED BLUE ON WHITE PAPER. THE SIGNATURE LINE IS MICRO PRINTED WITH A MESSAGE

Bank One, N.A.

Carter=Burgess

04/20/2004 000365646 $5,000.00

PAY Five Thousand And 00/100 Dollars

Carter & Burgess, Inc.
Disbursement Account

TO THE ORDER OF

TCEQ
FINANCIAL MGMT.
ATTN: ACCOUNTS RECEIVABLE
P.O. BOX 13088
AUSTIN, TX 78711-3088

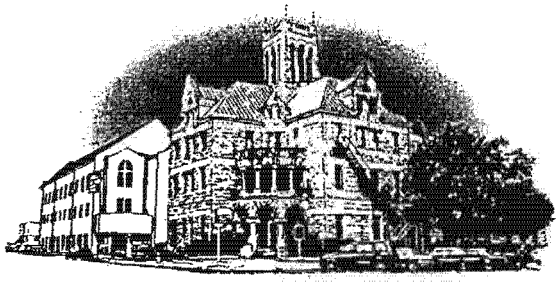
Carter=Burgess

Ben J. Watts
AUTHORIZED SIGNATURE
VOID AFTER 90 DAYS

THE BACK OF THIS DOCUMENT CONTAINS AN ARTIFICIAL WATERMARK - CARTER & BURGESS - HOLD AT AN ANGLE TO VIEW

⑈365646⑈ ⑆113101401⑆ 93200004 18⑈

TCEQ
FINANCIAL MGMT.
ATTN: ACCOUNTS RECEIVABLE
P.O. BOX 13088
AUSTIN, TX 78711-3088



Comal County

OFFICE OF COMAL COUNTY ENGINEER

July 18, 2007

Mr. Todd Simmang, P.E.
Carter & Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, TX 78232-5065

Re: Rockwall Ranch East Subdivision On-Site Sewage Facility Suitability Letter, within Comal County, Texas

Dear Mr. Simmang:

In accordance with TAC §213.5(b)(4)(F)(ii), Comal County has found that the entire referenced site is suitable for the use of private sewage facilities and will meet the special requirements for on-site sewage facilities located on the Edwards Aquifer recharge zone as specified in TAC §285.40-42 based on the following information submitted to our office on July 17, 2007:

- The Geologic Assessment, prepared by Arias & Associates, states that no sensitive features of any kind were noted on the site.
- The Water Pollution Abatement Plan, prepared by Carter & Burgess, states that no sensitive and possibly sensitive geologic or manmade features were identified in the Geologic Assessment.

In addition, according to TAC §285.41(b), KT East Realestate Investments, L.P., the owner of the referenced site, must inform, in writing, each prospective purchaser, lessee, or renter of the following:

- All lots within Rockwall Ranch East Subdivision are subject to the terms and conditions of TAC §285.40-42;
- A Permit to Construct is required from Comal County before an OSSF can be constructed in Rockwall Ranch East Subdivision;
- A License to Operate is required from Comal County before an OSSF can be operated; and
- That an application for a water pollution abatement plan as defined in TAC §213 has been made, whether it has been approved, and if any restrictions or conditions have been placed on that approval.

Furthermore, according to TAC §285.42(a), if any recharge feature is discovered during construction of an OSSF, all regulated activities near the feature shall be suspended immediately. The owner shall immediately notify the TCEQ San Antonio office of the discovery of the feature. All activities regulated under TAC §213 shall not proceed near the feature until Comal County, in

conjunction with the TCEQ San Antonio office, has reviewed and approved a plan proposed to protect the feature, the structural integrity of the OSSF, and the water quality of the aquifer. The plan shall be sealed, signed, and dated by a professional engineer.

Finally, on a separate matter, according to TAC §285.4(c), persons proposing residential subdivisions within Comal County and using on-site sewage facilities (OSSFs) for sewage disposal are required to submit planning materials for the residential subdivision to Comal County. The planning materials shall be prepared by a professional engineer or professional sanitarian and shall include an overall site plan, topographic map, 100-year floodplain map, soil survey, location of water wells, locations of easements as identified in TAC §285.91(10) (relating to Tables), a complete report detailing the types of OSSFs to be considered and their compatibility with area-wide drainage and groundwater, and a comprehensive drainage plan. Comal County also asks for an existing improvements sketch and gate combination(s) in order to adequately inspect the site for use of OSSFs for sewage disposal. We have included Comal County's *Application for Licensing Authority Recommendation for Private Sewerage Facilities for a Proposed Subdivision* for your use.

If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

Robert Boyd, P.E.
Comal County Assistant Engineer

cc: Jay Millikin, Comal County Commissioner, Precinct No. 2
Betty Lien, Comal County Subdivision Coordinator

attachment a/s

Application for Licensing Authority Recommendation
for Private Sewerage Facilities for a Proposed Subdivision

Date: _____

Subdivision Name: _____

Owner's Name: _____

Address: _____

Phone #: _____

Fee Schedule:
5 or less tracts: $20/tract
6 or more tracts: $100 base fee + $5/tract

Total Fee: $_____

Received by: _____

Make check payable to Comal County

According to TAC §285.4(c), before the permit process for individual OSSFs can begin, persons proposing residential subdivisions, manufactured housing communities, multi-unit residential developments, business parks, or other similar uses within Comal County and using on-site sewage facilities (OSSFs) for sewage disposal are required to submit planning materials for these developments to Comal County, as the Authorized Agent of the Texas Commission on Environmental Quality (TCEQ). The planning materials shall be prepared by a professional engineer or professional sanitarian and shall include:

- an overall site plan
- topographic map
- 100-year floodplain map
- soil survey
- location of water wells
- locations of easements as identified in TAC §285.91(10) (relating to Tables)
- a complete report detailing the types of OSSFs to be considered and their compatibility with area-wide drainage and groundwater
- a comprehensive drainage plan

Comal County also asks for an existing improvements sketch and gate combination(s) in order to adequately inspect the site for use of OSSFs for sewage disposal.

Date of Review (must be within 45 days of receipt): _____

☐ Approved

☐ Denied

Reasons for Denial: _____

_____

_____

_____

Reviewer: _____, D.R.

* Note: This sheet shall be first with all planning materials listed above following behind

Carter::Burgess

911 Central Parkway North
Suite 425
San Antonio, TX 78232-5065
Phone: 210.494.0088
Fax: 210.494.4525
www.c-b.com

July 16, 2007

Mr. Robert Boyd
Comal County Engineer's Office
195 David Jonas Drive
New Braunfels, Texas 78132-3760

Re: Rockwall Ranch East Subdivision Onsite Sewage Facilities Suitability Letter

Dear Mr. Boyd:

Carter & Burgess is in the process of submitting a WPAP to TCEQ and we are requesting a suitability letter for onsite sewage facilities for the property. This letter is required from the appropriate licensing authority, which states that the land is suitable for the use of an on-site sewage facility or identifies areas that are not suitable. The proposed 325-acre single-family subdivision will have a central water system and individual septic systems. There are 216 residential lots with an average lot size is 1.16 acres.

Attached is a copy of the draft WPAP that will be submitted to the TCEQ following the evaluation of the site by Comal County.

Please feel free to contact me at 210-494-0088 should you have any questions or need additional information. Thank you for your time.

Sincerely,
Carter & Burgess, Inc.

Todd M. Simmang, P.E.

Encl:

Kathleen Hartnett White, *Chairman*
Larry R. Soward, *Commissioner*
H. S. Buddy Garcia, *Commissioner*
Glenn Shankle, *Executive Director*

RECEIVED
SEP 1 1 2007
COUNTY ENGINEER

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

August 30, 2007

Mr. Thomas H. Hornseth, P.E.
Comal County Engineer
195 David Jonas Drive
New Braunfels TX 78132-3710

Re: Edwards Aquifer, Comal County
PROJECT NAME: PROJECT NAME: Rockwall Ranch East Subdivision: Located at 17117 Redland Road; San Antonio, Texas
PLAN TYPE: PLAN TYPE: Application for Approval of a Water Pollution Abatement Plan (WPAP) request, 30 Texas Administration Code (TAC) Chapter 213; Edwards Aquifer Protection Program
San Antonio Region File Number: 2706.00

Dear Mr. Hornseth:

The enclosed WPAP application is being forwarded to you pursuant to the Edwards Aquifer Rules. The Texas Commission on Environmental Quality (TCEQ) is required by 30 TAC Chapter 213 to provide copies of all applications to affected incorporated cities and underground water conservation districts for their comments prior to TCEQ approval.

Please forward your comments to this office by September 30, 2007.

The Texas Commission on Environmental Quality appreciates your assistance in this matter and your compliance efforts to ensure protection of the State's environment. If you or members of your staff have any questions regarding these matters, please feel free to contact the San Antonio Region Office at (210) 490-3096.

Sincerely

Lynn M. Bumguardner
Water Section Work Leader
San Antonio Regional Office

LMB/eg

Official Edwards Aquifer Recharge Zone Map
31 Texas Administrative Code Chapter 313
Subchapter A—San Antonio Region

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BAT CAVE QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

RECHARGE ZONE

SITE

RECHARGE ZONE

TRANSITION ZONE

Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, NOS/NOAA and USCE

Topography by photogrammetric methods from aerial photographs taken 1952. Field annotated 1953. Revised by Geological Survey from aerial photographs taken 1966. Field checked 1967

Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system, south central zone
1000-metre Universal Transverse Mercator grid ticks, zone 14, shown in blue

Fine red dashed lines indicate selected fence lines

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1973. This information not field checked

UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Primary highway, hard surface
Light-duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route
U. S. Route
State Route

TEXAS
QUADRANGLE LOCATION

BAT CAVE, TEX.
N2937.5—W9815/7.5

1967
PHOTOREVISED 1973
AMS 6343 III NE—SERIES V882

2 ,,,-424

3

Official Edwards Aquifer Recharge Zone Map
31 Texas Administrative Code Chapter 313
Subchapter A—San Antonio Region

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NEW BRAUNFELS EAST QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

TRANSITION ZONE

NEW BRAUNFELS
(BM 623)

NEW BRAUNFELS
MUNICIPAL AIRPORT

Mapped by the Army Map Service
Published for civil use by the Geological Survey

Control by USGS, NOS/NOAA, and USCE

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1956. Field check 1958

Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system,
south central zone
1000-metre Universal Transverse Mercator grid ticks,
zone 14, shown in blue

Revisions shown in purple compiled by the Geological Survey from
aerial photographs taken 1973. This information not field checked

Purple tint indicates extension of urban areas

UTM GRID AND 1978 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24000

CONTOUR INTERVAL 10 FEET
DASHED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

QUADRANGLE LOCATION

2998-414

ROAD CLASSIFICATION

Primary highway, hard surface
Light-duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route U.S. Route State Route

NEW BRAUNFELS EAST, TEX.

N2937.5—W9800/7.5

1958
PHOTOREVISED 1973
AMS 6345 II NE SERIES V882

26

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NEW BRAUNFELS WEST QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

TRANSITION ZONE

NEW BRAUNFELS

Produced by the United States Geological Survey
Revised in cooperation with the Texas Water Development Board

Control by USGS, NOS/NOAA, and USCE

Compiled by the Army Map Service by photogrammetric methods
from aerial photographs taken 1956. Field checked 1958
Revised from aerial photographs taken 1986. Field checked 1987
Map edited 1988

Projection and 10,000-foot grid ticks: Texas coordinate
system, south central zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid, zone 14
1927 North American Datum
To place on the predicted North American Datum 1983
move the projection lines 20 meters south and
28 meters east as shown by dashed corner ticks

Fine red dashed lines indicate selected fence and field lines
generally visible on aerial photographs. This information is unchecked

UTM GRID AND 1988 MAGNETIC NORTH
DECLINATION AT CENTER OF MAP
DIAGRAM IS APPROXIMATE

SCALE 1:24 000

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 FEET

1 .5 0 1 MILES

1 .5 0 1 2 KILOMETERS

1000 0 1000 2000 METERS

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

TEXAS
QUADRANGLE LOCATION

2998-413

ROAD CLASSIFICATION

Primary highway, hard surface ——— Light-duty road, hard or improved surface ———
Secondary highway, hard surface ——— Unimproved road ———
Interstate Route U. S. Route State Route

NEW BRAUNFELS WEST, TEX.
29098-F2-TF-024
1988
DMA 6343 II NW-SERIES V882

© INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA 1989

Water Pollution Abatement Plan

For

Rockwall Ranch East Subdivision

July 16, 2007

This document is released for the purposed of obtaining a suitability letter for on-site sewage facilities for the property. It is not intended for construction, building or permit purposes.

Water Pollution Abatement Plan Checklist

___ General Information Form (*TCEQ-0587)*
- ATTACHMENT A - Road Map
- ATTACHMENT B - USGS / Edwards Recharge Zone Map
- ATTACHMENT C - Project Description

___ Geologic Assessment Form (*TCEQ-0585)*
- ATTACHMENT A - Geologic Assessment Table (*TCEQ-0585-Table)*
- Comments to the Geologic Assessment Table
- ATTACHMENT B - Soil Profile and Narrative of Soil Units
- ATTACHMENT C - Stratigraphic Column
- ATTACHMENT D - Narrative of Site Specific Geology
- Site Geologic Map(s)
- Table or list for the position of features' latitude/longitude (if mapped using GPS)

___ Water Pollution Abatement Plan Application Form (*TCEQ-0584)*
- ATTACHMENT A - Factors Affecting Water Quality
- ATTACHMENT B - Volume and Character of Stormwater
- ATTACHMENT C - Suitability Letter from Authorized Agent (if OSSF is proposed)
- ATTACHMENT D - Exception to the Required Geologic Assessment (if requesting an exception)
- Site Plan

___ Temporary Stormwater Section (*TCEQ-0602)*
- ATTACHMENT A - Spill Response Actions
- ATTACHMENT B - Potential Sources of Contamination
- ATTACHMENT C - Sequence of Major Activities
- ATTACHMENT D - Temporary Best Management Practices and Measures
- ATTACHMENT E - Request to Temporarily Seal a Feature, if sealing a feature
- ATTACHMENT F - Structural Practices
- ATTACHMENT G - Drainage Area Map
- ATTACHMENT H - Temporary Sediment Pond(s) Plans and Calculations
- ATTACHMENT I - Inspection and Maintenance for BMPs
- ATTACHMENT J - Schedule of Interim and Permanent Soil Stabilization Practices

___ Permanent Stormwater Section (*TCEQ-0600)*
- ATTACHMENT A - 20% or Less Impervious Cover Waiver, if project is multi-family residential, a school, or a small business and 20% or less impervious cover is proposed for the site
- ATTACHMENT B - BMPs for Upgradient Stormwater
- ATTACHMENT C - BMPs for On-site Stormwater
- ATTACHMENT D - BMPs for Surface Streams
- ATTACHMENT E - Request to Seal Features (if sealing a feature)
- ATTACHMENT F - Construction Plans
- ATTACHMENT G - Inspection, Maintenance, Repair and Retrofit Plan
- ATTACHMENT H - Pilot-Scale Field Testing Plan, if BMPs not based on *Complying with the Edwards Aquifer Rules: Technical Guidance for BMPs*
- ATTACHMENT I -Measures for Minimizing Surface Stream Contamination

___ Agent Authorization Form (*TCEQ-0599*), if application submitted by agent

___ Application Fee Form (*TCEQ-0574*)

___ Check Payable to the "Texas Commission on Environmental Quality"

___ Core Data Form (*TCEQ-10400)*

General Information Form
For Regulated Activities on the
Edwards Aquifer Recharge and Transition Zones
and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B)
Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch East subdivision**
COUNTY: **Comal County** STREAM BASIN: **Tributary to the West Fork of Dry Comal Creek**

EDWARDS AQUIFER: X RECHARGE ZONE
__ TRANSITION ZONE

PLAN TYPE: X WPAP __ AST __ EXCEPTION
__ SCS __ UST __ MODIFICATION

CUSTOMER INFORMATION

1. Customer (Applicant):

Contact Person: **Scott Knowlton**
Entity: **KT East Real Estate Investments L.P.**
Mailing Address: **18225 FM 2252**
City, State: **San Antonio, TX.** Zip: **78266**
Telephone: **(210)651-6860** FAX: **(210)651-5435**

Agent/Representative (If any):

Contact Person: **Todd Simmang, P.E.**
Entity: **Carter & Burgess, Inc.**
Mailing Address: **911 Central Parkway North, Suite 425**
City, State: **San Antonio, TX.** Zip: **78232**
Telephone: **(210)494-0088** FAX: **(210)494-4525**

2. __ This project is inside the city limits of _____.
x This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of New Braunfels.
__ This project is not located within any city's limits or ETJ.

3. The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.
The project is located on the east line of Schowental Rd. approximately 2 miles south of the intersection of FM 1863 and Schoenthal Rd.

4. x **ATTACHMENT A - ROAD MAP**. A road map showing directions to and the location of the project site is attached at the end of this form.

5. x **ATTACHMENT B - USGS / EDWARDS RECHARGE ZONE MAP**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached behind this sheet. The map(s) should clearly show:

X Project site.
X USGS Quadrangle Name(s).
X Boundaries of the Recharge Zone (and Transition Zone, if applicable).
X Drainage path from the project to the boundary of the Recharge Zone.

6. X Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment. **The TCEQ must be able to inspect the project site or the application will be returned.**

7. X **ATTACHMENT C - PROJECT DESCRIPTION**. Attached at the end of this form is a detailed narrative description of the proposed project.

8. Existing project site conditions are noted below:
   — Existing commercial site
   — Existing industrial site
   — Existing residential site
   — Existing paved and/or unpaved roads
   — Undeveloped (Cleared)
   X Undeveloped (Undisturbed/Uncleared)
   — Other: _____

PROHIBITED ACTIVITIES

9. X I am aware that the following activities are prohibited on the **Recharge Zone** and are not proposed for this project:

   (1) waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
   (2) new feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
   (3) land disposal of Class I wastes, as defined in 30 TAC §335.1;
   (4) the use of sewage holding tanks as parts of organized collection systems; and
   (5) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

10. X I am aware that the following activities are prohibited on the **Transition Zone** and are not proposed for this project:

   (1) waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
   (2) land disposal of Class I wastes, as defined in 30 TAC §335.1; and
   (3) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

ADMINISTRATIVE INFORMATION

11. The fee for the plan(s) is based on:

   X For a Water Pollution Abatement Plan and Modifications, the total acreage of the site where regulated activities will occur.
   — For an Organized Sewage Collection System Plans and Modifications, the total linear

footage of all collection system lines.

__ For a UST Facility Plan or an AST Facility Plan, the total number of tanks or piping systems.

__ A Contributing Zone Plan.

__ A request for an exception to any substantive portion of the regulations related to the protection of water quality.

__ A request for an extension to a previously approved plan.

12. Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

__ TCEQ cashier

__ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)

X San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

13. X Submit one (1) original and three (3) copies of the completed application to the appropriate regional office for distribution by the TCEQ to the local municipality or county, groundwater conservation districts, and the TCEQ's Central Office.

14. X No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the executive director.

__ No person shall commence any regulated activity until the Contributing Zone Plan for the activity has been filed with the executive director.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **GENERAL INFORMATION FORM** is hereby submitted for TCEQ review. The application was prepared by:

Todd Simmang, P.E.

Print Name of Customer/Agent

This document is released for the purposed of interim review. It is not intended for construction, building or permit purposes.

Signature of Customer/Agent Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.



SCALE: 1" = 1 MILE

Carter :: Burgess

Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.

911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-4525
© COPYRIGHT 2007 Carter and Burgess, Inc.

ATTACHMENT "A"
ROCKWALL RANCH EAST

DRAWN BY: M.A.R. CHECKED BY: TS

DATE: 06/12/07 PROJECT NO.: 310485.022

SHEET 1 OF 1

Official Edwards Aquifer Recharge Zone Map
31 Texas Administrative Code Chapter 313
Subchapter A—San Antonio Region

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

BAT CAVE QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

RECHARGE ZONE

RECHARGE ZONE

TRANSITION ZONE

SITE

Mapped by the Army Map Service
Edited and published by the Geological Survey

Control by USGS, NOS/NOAA and USCE

Topography by photogrammetric methods from aerial photographs taken 1952. Field annotated 1953. Revised by Geological Survey from aerial photographs taken 1966. Field checked 1967

Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system, south central zone
1000-metre Universal Transverse Mercator grid ticks, zone 14, shown in blue

Fine red dashed lines indicate selected fence lines

Revisions shown in purple compiled by the Geological Survey from aerial photographs taken 1973. This information not field checked

UTM GRID AND 1973 MAGNETIC NORTH DECLINATION AT CENTER OF SHEET

SCALE 1:24 000

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

ROAD CLASSIFICATION

Primary highway, hard surface — Light-duty road, hard or improved surface

Secondary highway, hard surface — Unimproved road

Interstate Route · U. S. Route · State Route

QUADRANGLE LOCATION

BAT CAVE, TEX.
N2937.5–W9815/7.5

1967
PHOTOREVISED 1973
AMS 6343 III NE–SERIES V882

3

2 [illegible]-424

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NEW BRAUNFELS WEST QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

TRANSITION ZONE

NEW BRAUNFELS

Produced by the United States Geological Survey
Revised in cooperation with the Texas Water Development Board
Control by USGS, NOS/NOAA, and USCE
Compiled by the Army Map Service by photogrammetric methods from aerial photographs taken 1956. Field checked 1958
Revised from aerial photographs taken 1986. Field checked 1987
Map edited 1988
Projection and 10,000-foot grid ticks: Texas coordinate system, south central zone (Lambert conformal conic)
1000-meter Universal Transverse Mercator grid, zone 14
1927 North American Datum
To place on the predicted North American Datum 1983 move the projection lines 20 meters south and 25 meters east as shown by dashed corner ticks
Fine red dashed lines indicate selected fence and field lines generally visible on aerial photographs. This information is unchecked
Gray dot indicates area in which only landmark buildings are shown

UTM GRID AND 1988 MAGNETIC NORTH DECLINATION AT CENTER OF MAP DIAGRAM IS APPROXIMATE

SCALE 1:24 000

1000 0 1000 2000 3000 4000 5000 6000 7000 8000 9000 10 000 FEET
1 .5 0 1 MILES
1 .5 0 1 2 KILOMETERS
1000 0 1000 2000 METERS

CONTOUR INTERVAL 10 FEET
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U.S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

TEXAS
QUADRANGLE LOCATION

2998-413

ROAD CLASSIFICATION
Primary highway, hard surface — Light-duty road, hard or improved surface
Secondary highway, hard surface — Unimproved road
Interstate Route · U. S. Route · State Route

NEW BRAUNFELS WEST, TEX.
29098-F2-TF-024
1988
DMA 6343 II NW-SERIES V822

© INTERIOR-GEOLOGICAL SURVEY, RESTON, VIRGINIA 1988

Official Edwards Aquifer Recharge Zone Map
31 Texas Administrative Code Chapter 313
Subchapter A—San Antonio Region

UNITED STATES
DEPARTMENT OF THE INTERIOR
GEOLOGICAL SURVEY

NEW BRAUNFELS EAST QUADRANGLE
TEXAS
7.5 MINUTE SERIES (TOPOGRAPHIC)

RECHARGE ZONE

TRANSITION ZONE

NEW BRAUNFELS
(BM 623)

NEW BRAUNFELS
MUNICIPAL AIRPORT

Thorn Hill

Gruene

Freiheit

Clear Springs

Camp Willow

Mesquite

Alligator

Barbarosa

Lake Dunlap

Guadalupe River

Comal River

Lone Star Creek

Mapped by the Army Map Service
Published for civil use by the Geological Survey

Control by USGS, NOS/NOAA, and USCE

Topography from aerial photographs by photogrammetric methods
Aerial photographs taken 1956. Field check 1958

Polyconic projection. 1927 North American datum
10,000-foot grid based on Texas coordinate system,
south central zone
1000-metre Universal Transverse Mercator grid ticks,
zone 14, shown in blue

Revisions shown in purple compiled by the Geological Survey from
aerial photographs taken 1973. This information not field checked

Purple tint indicates extension of urban areas

UTM GRID AND 1978 MAGNETIC NORTH
DECLINATION AT CENTER OF SHEET

SCALE 1:24000

CONTOUR INTERVAL 10 FEET
DASHED LINES REPRESENT 5-FOOT CONTOURS
NATIONAL GEODETIC VERTICAL DATUM OF 1929

THIS MAP COMPLIES WITH NATIONAL MAP ACCURACY STANDARDS
FOR SALE BY U. S. GEOLOGICAL SURVEY, DENVER, COLORADO 80225, OR RESTON, VIRGINIA 22092
A FOLDER DESCRIBING TOPOGRAPHIC MAPS AND SYMBOLS IS AVAILABLE ON REQUEST

TEXAS
QUADRANGLE LOCATION

2998-414

ROAD CLASSIFICATION

Primary highway, hard surface
Light-duty road, hard or improved surface
Secondary highway, hard surface
Unimproved road
Interstate Route
U. S. Route
State Route

NEW BRAUNFELS EAST, TEX.

N2937.5—W9800/7.5

1958
PHOTOREVISED 1973
AMS 6345 II NE SERIES V882

26

ATTACHMENT "C"

Project Description

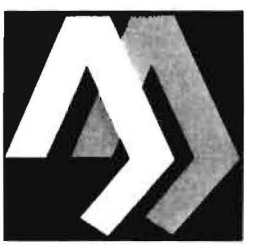
Rockwall Ranch East Subdivision is located on the east line of Schoenthal Rd. approximately 2 miles south of the intersection of FM 1863 and Schoenthal Rd. and bound to the south by Schoenthal Ranch Subdivision (See location map). Rockwall Ranch East Subdivision is approximately 325 acres of unimproved land, primarily composed of dense brush and trees, with grass and rock outcroppings. There is existing floodplain located through the property. The floodplain is an unnamed tributary to the West Fork Creek.

The proposed land use will consist of approximately 216 single-family lots with an average size of 1.16 acres. The subdivision infrastructure will include a water system, electricity, telephone, and approximately 30,500 LF of roadway. Each lot will be served by private individual on-site sewage facilities. The ultimate development impervious cover for the 325 acres will be approximately 15.7%.

GEOLOGIC ASSESSMENT

For:

Water Pollution Abatement Plan
305-Acre Tract
Proposed Rockwall Ranch East Subdivision
Schoenthal Road
Comal County, Texas



ARIAS & ASSOCIATES
Geotechnical • Environmental • Testing

prepared for:

V.K. Knowlton Construction & Utilities, Ltd.
Mr. Scott Knowlton
18255 FM 2252
San Antonio, Texas 78266

A&A Project No. 06SA-4118
June 2007

Geologic Assessment
For Regulated Activities
on The Edwards Aquifer Recharge/transition Zones
and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

REGULATED ENTITY NAME: **305-Acre Tract - Proposed Rockwall Ranch East Subdivision**

TYPE OF PROJECT: X WPAP __ AST __ SCS __ UST

LOCATION OF PROJECT: X Recharge Zone __ Transition Zone __ Contributing Zone within the Transition Zone

PROJECT INFORMATION

1. X Geologic or manmade features are described and evaluated using the attached **GEOLOGIC ASSESSMENT TABLE**.

2. Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (*Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A*, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Soil Units, Infiltration Characteristics & Thickness		
Soil Name	Group*	Thickness (feet)
Denton silty clay, 1-3% slopes (DeB)	D	1.0 to 1.5
Denton silty clay 1-5% slopes, eroded (DeC3)	D	1.0 to 1.5
Krum clay, 1-3% slopes (KrB)	D	1.5 to 3.5
Medlin-Eckrant association, undulating (MEC)	D	0.5 to 1.5
Rumple Comfort association, undulating (RUD)	C	0.5 to 1.5

* Soil Group Definitions (Abbreviated)

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

3. X A **STRATIGRAPHIC COLUMN** is attached at the end of this form that shows formations, members, and thicknesses. The outcropping unit should be at the top of the stratigraphic column.

4. X A **NARRATIVE DESCRIPTION OF SITE SPECIFIC GEOLOGY** is attached at the end of this form. The description must include a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure, and karst characteristics of the site.

5. X Appropriate **SITE GEOLOGIC MAP(S)** are attached:

The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1" : 400'

Applicant's Site Plan Scale	1" = 200'
Site Geologic Map Scale	1" = 200'
Site Soils Map Scale (if more than 1 soil type)	1" = 800'

6. Method of collecting positional data:
   X Global Positioning System (GPS) technology.
   __ Other method(s).

7. X The project site is shown and labeled on the Site Geologic Map.

8. X Surface geologic units are shown and labeled on the Site Geologic Map.

9. X Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
   __ Geologic or manmade features were not discovered on the project site during the field investigation.

10. __ The Recharge Zone boundary is shown and labeled, if appropriate.

11. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.):

__There are ___(#) wells present on the project site and the locations are shown and labeled.
(Check all of the following that apply.)
__ The wells are not in use and have been properly abandoned.
__ The wells are not in use and will be properly abandoned.
__ The wells are in use and comply with 16 TAC Chapter 76.
X There are no wells or test holes of any kind known to exist on the project site.

ADMINISTRATIVE INFORMATION

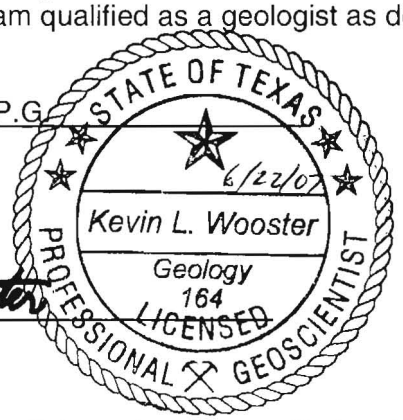
12. X One (1) original and three (3) copies of the completed assessment has been provided.

Date(s) Geologic Assessment was performed:

Date(s) April 12, 2006

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Kevin L. Wooster, P.G.
Print Name of Geologist



Telephone 210-308-5884

Fax 210-208-8731

Kevin L. Wooster
Signature of Geologist

June 22, 2007
Date

Representing: Arias & Associates, Inc. Project No.: 06SA-4118
(Name of Company)

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: Proposed Rockwall Ranch East Subdivision

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C *	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S1	29° 40' 54.4"	98° 15' 48.9"	SC	20	Kep	1	2	1.5					F,O	5	25	X		X		hillside
S2	29° 40' 58.7"	98° 15' 42.9"	SF	20	Kep	6	1	1.5					O,F	10	30	X		X		hillside
S3	29° 40' 59.5"	98° 15' 43.2"	SC	20	Kep	2.5	2.5	2					O,F	15	35	X		X		hillside
S4	29° 40' 48.9"	98° 15' 56.2"	SC	20	Kep	3.5	2.5	2.5					O,F	15	35	X		X		hillside
S5	29° 41' 30.3"	98° 16' 10.6"	CD	5	Kep	30	25	2					O,C,F	10	15	X			X	streambed
S6	29° 41' 26.4"	98° 16' 9.5"	CD	5	Kgt	45	15	2					O,C,F	10	15	X			X	streambed
S7	29° 41' 22.0"	98° 16' 6.7"	CD	5	Kep	300	100	3					C,O,F	15	20	X			X	streambed
S8	29° 41' 16.9"	98° 16' 3.2"	CD	5	Kep	100	40	1					C,O,F	10	15	X			X	streambed
S9	29° 41' 4.3"	98° 16' 1.7"	CD	5	Kep	70	15	1.5					C,O,F	10	15	X			X	streambed
S10	29° 40' 59.1"	98° 16' 2.8"	CD	5	Kep	120	25	2					C,O,F	10	15	X			X	streambed
S11	29° 41' 9.9"	98° 15' 52.6"	CD	5	Kep	12	6	1.5					F	5	10	X		X		hillside
S12	29° 41' 3.3"	98° 15' 55.2"	SC	20	Kep	2	1.5	2					F,O	10	30	X		X		hillside
S13	29° 40' 49.0"	98° 16' 2.2"	SC	20	Kep	1	1	1					F	10	30	X		X		hillside
S14	29° 40' 46.4"	98° 16' 8 4"	SC	20	Kep	2	1	1					F,C	10	30	X		X		hilltop
S15	29° 40' 46.1"	98° 16' 9.7"	SC	20	Kep	5	1	1.5					F	10	30	X		X		hilltop
S16	29° 40 49.1"	98° 16' 6.2"	SC	20	Kep	3	2	1.5					F	10	30	X		X		hillside
S17	29° 40' 47.4"	98° 16' 10.4"	SC	20	Kep	2	2	1					F,O	10	30	X		X		hilltop

* DATUM: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined in 30 TAC Chapter 213.

Kevin L. Wooster

Date 6/22/2007

STATE OF TEXAS — 6/22/07 — Kevin L. Wooster — Geology 164 LICENSED PROFESSIONAL GEOSCIENTIST

Sheet 1 of 2

TCEQ-0585-Table (Rev. 10-01-04)

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Proposed Rockwall Ranch East Subdivision

LOCATION			FEATURE CHARACTERISTICS											EVALUATION			PHYSICAL SETTING		
1A	1B *	1C *	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	>40	<1.6	>1.6	
S18	29° 40' 49.0"	98° 16' 25.1"	SC	20	Kep	3.5	2.5	2					F,O	15	35	X		X		hilltop
S19	29° 41' 05.2"	98° 16' 20.7"	F	20	Kdr/Kgt/Kep	3700+			N52E				C,F	15	35	X			X	hilltop
S20	29° 40' 49.6"	98° 16' 11.6"	SC	20	Kep	4	2	1.5					C,F	15	35	X		X		hillside
S21	29° 40' 54.8"	98° 16' 3.7"	SC	20	Kep	3	3	2					F,O	15	35	X		X		hilltop
S22	29° 40' 52.0"	98° 16' 9.6"	SC	20	Kep	1.5	1	2					F	10	30	X		X		hillside
S23	29° 40' 55.3"	98° 16' 11.6"	SC	20	Kep	2	1	1					F	10	30	X		X		hilltop
S24	29° 41' 4.4"	98° 16' 10.2"	SF	20	Kep	4	1	2					F,O	15	35	X		X		hillside
S25	29° 41' 5.5"	98° 16' 22.3"	SC	20	Kep	1	1	2					O,F	15	35	X		X		hilltop
S26	29° 41' 6.8"	98° 16' 20.4"	SC	20	Kep	1	3	1.5					O,F	15	35	X		X		hillside
S27	29° 41' 8.0"	98° 16' 16.8"	SF	20	Kep	10	2	1					O,F	15	35	X		X		hilltop
S28	29° 41' 9.8"	98° 16' 10.5"	SC	20	Kep	2	2	1.5					O,F	15	35	X		X		hillside
S29	29° 41' 10.6"	98° 16' 19.9"	CD	5	Kdr	6	5	2					C,F	15	20	X		X		hilltop
S30	29° 41' 20.5"	98° 16' 1.0"	SC	20	Kgt	2	2	1.5					F	15	35	X		X		hillside
S31	29° 41' 26.1"	98° 16' 24.2"	MM	30	Kdr	60	40	5	(Stock tank)				F	5	35	X		X		hilltop
S32	29° 41' 32.1"	98° 16' 14.2"	MM	30	Kdr	25	20	3	(Stock tank)				F	5	35	X		X		hilltop

* DATUM: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
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Kevin L. Wooster

STATE OF TEXAS
Kevin L. Wooster
Geology
164
LICENSED
PROFESSIONAL GEOSCIENTIST

Date 6/22/2007

Sheet 2 of 2

TCEQ-0585-Table (Rev. 10-01-04)

305-ACRE TRACT
PROPOSED ROCKWALL RANCH EAST SUBDIVISION

SOIL NARRATIVE

In accordance with the U.S.D.A. Soil Survey of Comal and Hays Counties, dated 1984, the natural surface soils have been mapped as within several soil units.

Denton silty clay, 1-3% slopes (DeB) which is a moderately deep, gently sloping soil typically found on valley slopes and uplands. The surface layer of DeB clay is a dark grayish brown clay extending to depth as dark brown silty clay. This soils is well drained. Permeability of this soil is slow and surface runoff is medium. This soil occurs in the northwestern portion of the Site.

Denton silty clay, 1-5% slopes, eroded (DeC3) which is a moderately deep, gently sloping soil typically found on valley slopes and uplands. The surface layer of DeC3 clay is a dark grayish brown silty clay, and extendd to depth as grayish brown silty clay. This soil is well drained. Permeability of this soil is slow and surface runoff is rapid. This soil occurs in the northwestern portion of the Site.

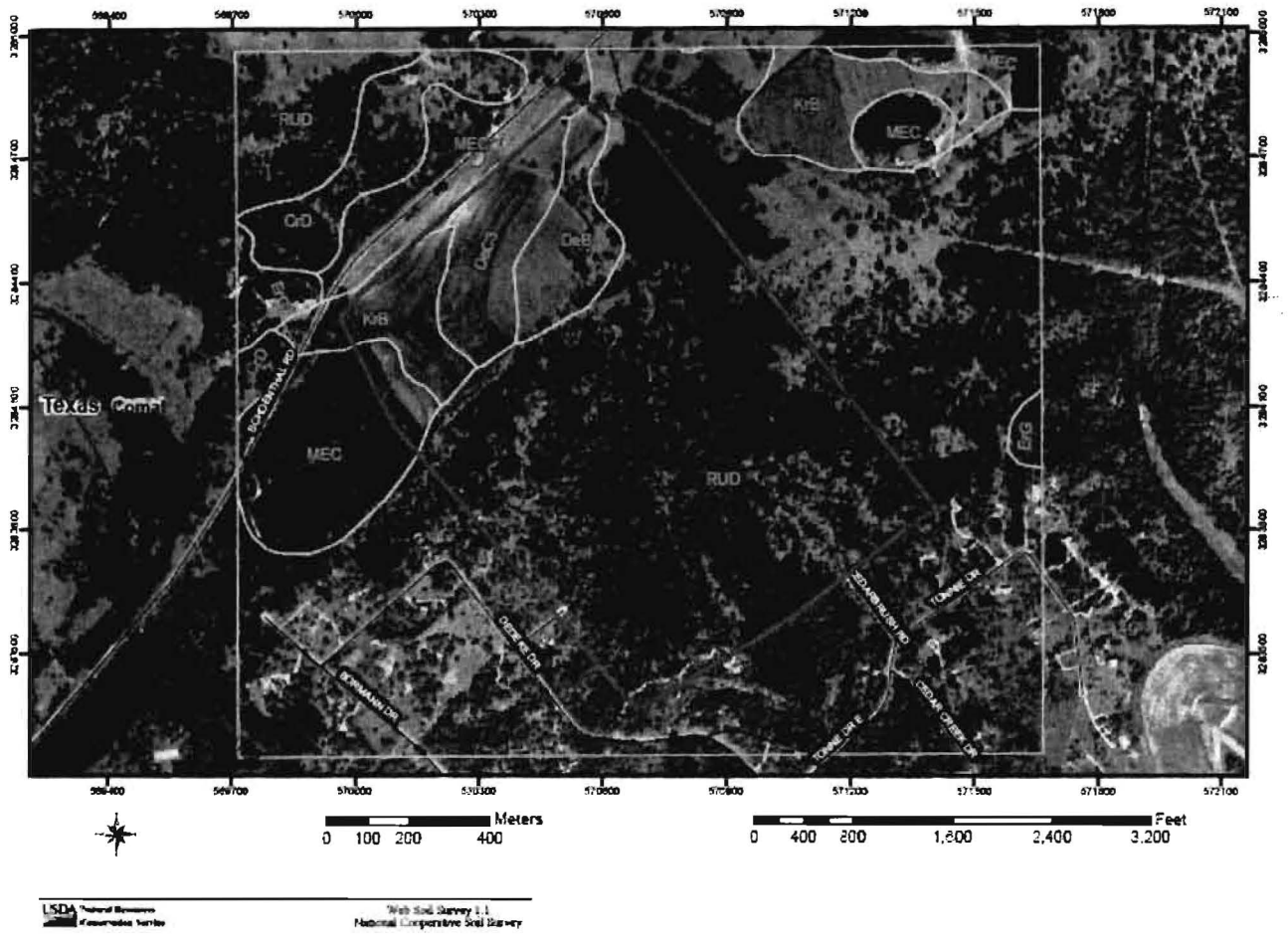
Krum clay (KrB) which is a deep, nearly level soil typically found on stream terraces and valley fills. The surface layer of Krum clay is a dark brown clay with some calcareous nodules to a depth of approximately 19 inches which overlies a lighter colored clay layer that ranges up to 48 inches thick or more. This soil is well drained. Permeability of this soil is moderately slow and surface runoff is medium. This soil occurs in the northwestern portion of the Site.

Medlin-Eckrant association, undulating (MEC) soils are mapped to cover the majority of property and are classified as dark reddish brown cherty clay loam. The MEC soils are very shallow to shallow and deep soils on uplands. These soils consist of grayish brown clay grading down into olive and pale yellow clay, having slow permeability. This soil is well drained. Permeability of this soil is very slow and surface runoff is rapid. This soil occurs in the western and far northwestern portions of the Site.

Rumple Comfort association, undulating (RUD) soils are mapped to cover the majority of property and are classified as dark reddish brown cherty clay loam. The RUD soils are shallow to moderately deep over hard limestone. These soils consist of dark gray clay grading down into reddish brown clay, having slow permeability. This soil occurs in the south, central, and eastern portions of the Site.

SOIL MAP

SOIL SURVEY OF COMAL AND HAYS COUNTIES, TEXAS

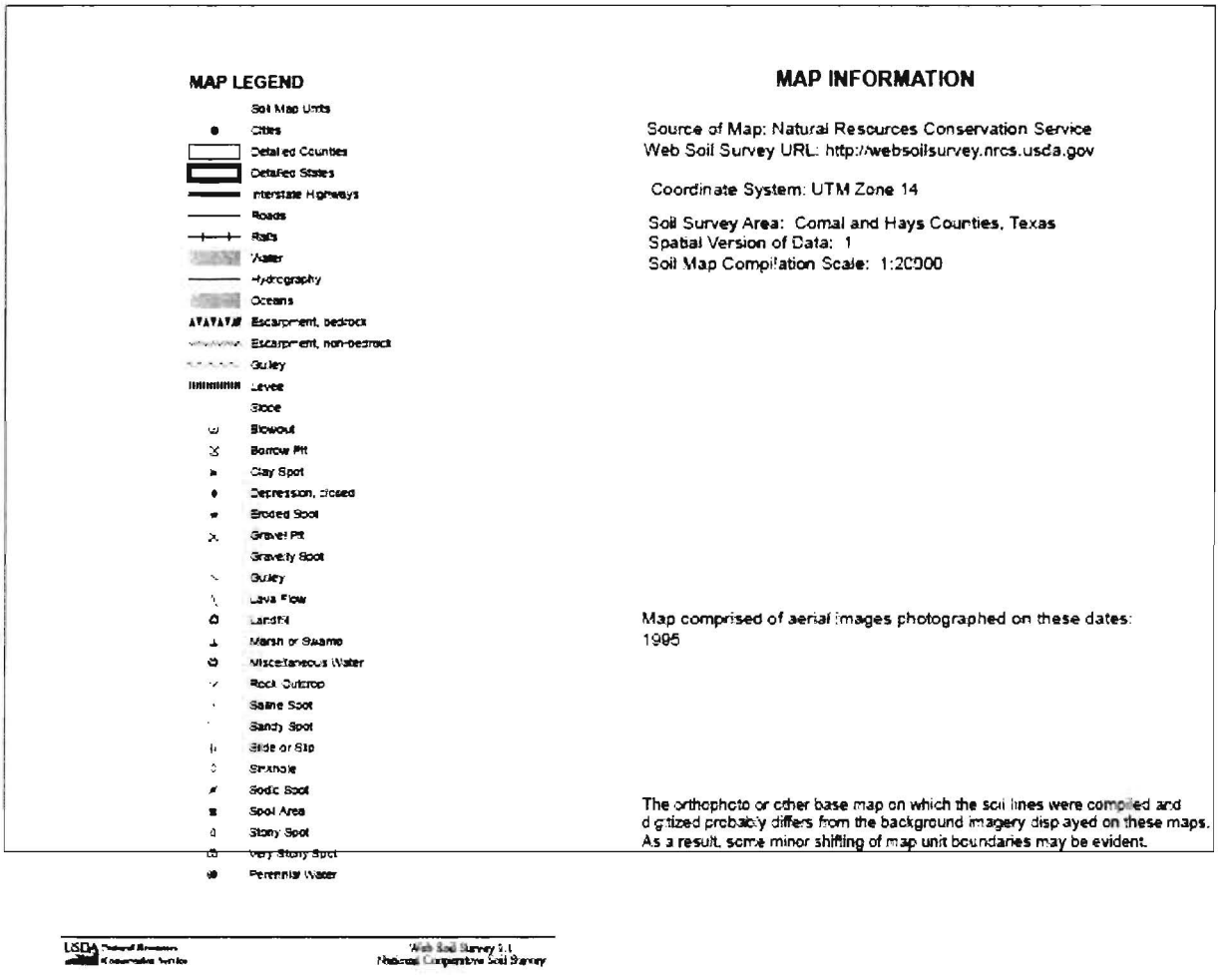


Soil Survey of Comal and Hays Counties, Texas

Map Unit Legend Summary

Comal and Hays Counties, Texas

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CrD	Comfort-Rock outcrop complex, 1 to 8 percent slopes	32.9	3.9
DeB	Denton silty clay, 1 to 3 percent slopes	19.8	2.4
DeC3	Denton silty clay, 1 to 5 percent slopes, eroded	24.3	2.9
ErG	Eckrant-Rock outcrop complex, 8 to 30 percent slopes	10.9	1.3
KrB	Krum clay, 1 to 3 percent slopes	46.3	5.5
MEC	Medlin-Eckrant association, 1 to 8 percent slopes	94.9	11.3
RUD	Rumple-Comfort association, 1 to 8 percent slopes	607.5	72.6


MAP LEGEND
Soil Map Units
Cities
Detailed Counties
Detailed States
Interstate Highways
Roads
Rails
Water
Hydrography
Oceans
Escarpment, bedrock
Escarpment, non-bedrock
Gulley
Levee
Slope
Blowout
Borrow Pit
Clay Spot
Depression, closed
Eroded Spot
Gravel Pit
Gravelly Spot
Gulley
Lava Flow
Landfill
Marsh or Swamp
Miscellaneous Water
Rock Outcrop
Saline Spot
Sandy Spot
Slide or Slip
Sinkhole
Sodic Spot
Spoil Area
Stony Spot
Very Stony Spot
Perennial Water
MAP INFORMATION
Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov
Coordinate System: UTM Zone 14
Soil Survey Area: Comal and Hays Counties, Texas
Spatial Version of Data: 1
Soil Map Compilation Scale: 1:20000
Map comprised of aerial images photographed on these dates:
1995
The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.
USDA
Web Soil Survey 1.1
National Cooperative Soil Survey

Proposed Rockwall Ranch East Subdivision

STRATIGRAPHIC COLUMN

Hydrogeologic subdivision			Group formation or member			Hydro-logic fuction	Thick-ness (feet)	Lithology	Cavern develop-ment	Porosity / permeability type
Quaternary			Terrace Deposits			CU	0-30	Gravel and sand	None	High porosity / high permeability
Upper Cretaceous	Upper Confining Unit		Austin Group			CU	130-150	White to gray limestone	None	Low porosity / low permeability
			Eagle Ford Group			CU	30-50	Buff, light gray, dense mudstone	None	Low porosity / low permeability
			Buda Limestone			CU	40-50	Brown flaggy shale and argillaceous limestone	None	Low porosity / low permeability
			Del Rio Clay			CU	40-50	Blue-green to yellow-brown clay	None	None / primary upper confining unit
Lower Cretaceous	I	Edwards aquifer	Georgetown Formation			CU	10	Reddish-brown, gray to light tan marly limestone	None	Low porosity / low permeability
	II		Edwards Group	Person Fm.	Cyclic & marine members undivided	AQ	80-100	Mudstone to packstone; miliolid grainstone; chert	Many sub-surface	Laterally extensive; water yielding
	III				Leached & col-lapsed members	AQ	80-100	Crystalline limestone; mudstone to grainstone; chert collapsed breccia	Extensive lateral devel-opment; large rooms	Majority not fabric / one of the most permeable
	IV				Regional dense member	CU	20-24	Dense, argillaceous mudstone	Very few; only vertical fracture enlargement	Not fabric / low permeability; vertical barrier
	V			Kainer Fm.	Grainstone member	AQ	50-60	Miliolid grainstone; mudstone to wackestone; chert	Few	Not fabric / recrystal-lization reduces permeability
	VI				Kirschberg evaporite member	AQ	50-60	Highly altered crystalline limestone; chalky mudstone; chert	Probably extensive cave devel.	Majority fabric / one of the most permeable
	VII				Dolomitic member	AQ	110-130	Mudstone to grainstone; crystaline limestone; chert	Caves rela-ted to struc-ture or bed-ding planes	Mostly not fabric; some bedding plane fabric / water-yielding
	VIII				Basal nodular member	Karst AQ; not karst CU	50-60	Shaly, nodular limestone; mudstone and miliolid grainstone	Large lateral caves at surface	Fabric; stratigraph-ically controlled / large conduit flow at surface; no permea-bility in subsurface
	Lower confining unit		Upper member of the Glen Rose Limestone			CU; evaporite beds AQ	350-500	Yellowish tan, thinly bedded limestone and marl	Some sur-face cave development	Some water product-ion at evaporite beds / relatively impermeable

Reference: U.S.G.S. Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County, Texas; Water-Resources Investigations Report 94-4117

Note: CU = Confining Unit; AQ = Aquifer

— — Indicates Upper Most Surface Bedrock Formation

305-ACRE TRACT
PROPOSED ROCKWALL RANCH EAST SUBDIVISION

GEOLOGY NARRATIVE

The underlying limestone bedrock is exposed as generally small scattered outcrops on the subject property. The south, central, and eastern portions of the Site has been mapped by others as the cyclic and marine member of the lower Cretaceous Person Formation of the Edwards Group. This member is composed of mudstone to grainstone with some chert and collapse breccia. The north eastern portion along a drainageway is mapped as the Georgetown Limestone, while the northwestern portion is shown as the Del Rio Clay formation, with no outcrops of limestone.

No structural features such as faults or fractures were noted in the reviewed literature sources, with the exception of a major fault crossing the north central portion of the Site and off-setting the Del Rio and Georgetown from the Person formation. This feature (Feature 19) was observed on the Site through subtle changes in surface lithology, soil weathering and vegetation.

Two man-made features were noted on the north side of the property near Schoenthal Road. Both features (Features 31 and 32) are existing closed depressions, man made stock tanks in Del Rio Clay. The approximate locations of all features are indicated on the accompanying Site Geologic Map.

No sensitive karst type features of any kind were noted, however, numerous small solution cavities and some solution enlarged fractures were observed and mapped. These features were observed to be infilled with clay or fine grained sediments, and, per the Rapid Infiltration Probability flowchart of TCEQ-0585, are considered as having a slow infiltration rates.

Several large-diameter, shallow closed depressions (Features S5 through S-11) were observed on the north central and central portions of the site, mostly associated with the main drainageway/streambed that crosses the Site. The depressions were generally infilled or covered by dark brown and reddish brown fine grained sediments and clay, along with coarse gravels and cobbles. No fracture patterns or exposed bedrock were observed. No karst openings were observed in the floors of the features. These features, per the Rapid Infiltration Probability flowchart of TCEQ-0585, are considered as having slow infiltration rates.

Proposed Rockwall Ranch East Subdivision

GPS TABLE

FEATURE ID	LATITUDE	LONGITUDE	DATE	HORIZ. ACCURACY
S1	29° 40' 54.4"	98° 15' 48.9"	6/7/2006	<25 m
S2	29° 40' 58.7"	98° 15' 42.9"	6/7/2006	<25 m
S3	29° 40' 59.5"	98° 15' 43.2"	6/7/2006	<25 m
S4	29° 40' 48.9"	98° 15' 56.2"	6/7/2006	<25 m
S5	29° 41' 30.3"	98° 16' 10.6"	6/7/2006	<25 m
S6	29° 41' 26.4"	98° 16' 9.5"	6/7/2006	<25 m
S7	29° 41' 22.0"	98° 16' 6.7"	6/7/2006	<25 m
S8	29° 41' 16.9"	98° 16' 3.2"	6/7/2006	<25 m
S9	29° 41' 4.3"	98° 16' 1.7"	6/7/2006	<25 m
S10	29° 40' 59.1"	98° 16' 2.8"	6/8/2006	<25 m
S11	29° 41' 9.9"	98° 15' 52.6"	6/13/2006	<25 m
S12	29° 41' 3.3"	98° 15' 55.2"	6/13/2006	<25 m
S13	29° 40' 49.0"	98° 16' 2.2"	6/13/2006	<25 m
S14	29° 40' 46.4"	98° 16' 8.4"	6/13/2006	<25 m
S15	29° 40' 46.1"	98° 16' 9.7"	6/13/2006	<25 m
S16	29° 40 49.1"	98° 16' 6.2"	6/13/2006	<25 m
S17	29° 40' 47.4"	98° 16' 10.4"	6/13/2006	<25 m
S18	29° 40' 49.0"	98° 16' 9.7"	6/13/2006	<25 m
S19	29° 41' 05.2"	98° 16' 25.1"	6/13/2006	<25 m
S20	29° 40' 49.6"	98° 16' 11.6"	6/13/2006	<25 m
S21	29° 40' 54.8"	98° 16' 3.7"	6/15/2006	<25 m
S22	29° 40' 52.0"	98° 16' 9.6"	6/15/2006	<25 m
S23	29° 40' 55.3"	98° 16' 11.6"	6/15/2006	<25 m
S24	29° 41' 4.4"	98° 16' 10.2"	6/15/2006	<25 m
S25	29° 41' 5.5"	98° 16' 22.3"	6/15/2006	<25 m
S26	29° 41' 6.8"	98° 16' 20.4"	6/15/2006	<25 m
S27	29° 41' 8.0"	98° 16' 16.8"	6/15/2006	<25 m
S28	29° 41' 9.8"	98° 16' 10.5"	6/15/2006	<25 m
S29	29° 41' 10.6"	98° 16' 19.9"	6/15/2006	<25 m
S30	29° 41' 20.5"	98° 16' 1.0"	6/15/2006	<25 m
S31	29° 41' 26.1"	98° 16' 24.2"	6/15/2006	<25 m
S32	29° 41' 32.1"	98° 16' 14.2"	6/15/2006	<25 m

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LEGEND:

- Kdr = Del Rio Clay
- Kgt = Georgetown Formation
- Kep = Edwards Person
- CD = Closed Depression
- U/D = Fault
- U = Upthrown
- D = Downthrown
- SC = Solution Cavity
- SF = Solution Enlarged Fracture
- Contour Interval = 5 feet
- = Property Boundary
- = Contact

GRAPHIC SCALE
100 0 50 100 200
1 inch = 200 ft.

SCHOENTHAL ROAD

Kdr
Kgt
Kep
U D
5 CD
6 CD
7 CD
8 CD
30 SC
32 CD (TANK)
31 CD (TANK)
11 CD
3 SC
2 SF
12 SC
1 SC
9 CD
28 SC
10 CD
24 SF
4 SC
29 CD
27 SF
21 SC
26 SC
13 SC
25 SC
23 SC
22 SC
16 SC
18 SC
20 SC
14 SC
17 SC
15 SC
19 F

Site Geologic Map
305-Acre Tract
Proposed Rockwall Ranch East
Subdivision
San Antonio, Texas

A & A File No. 06SA-4118

ARIAS & ASSOCIATES, INC.

STATE OF TEXAS
6-22-10
Kevin L. Wooster
Geology
164
LICENSED
PROFESSIONAL GEOSCIENTIST

Water Pollution Abatement Plan Application
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b), Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch East Subdivision**

REGULATED ENTITY INFORMATION

1. The type of project is:
   - [X] Residential: # of Lots: **216**
   - [ ] Residential: # of Living Unit Equivalents:
   - [ ] Commercial
   - [ ] Industrial
   - [ ] Other:

2. Total site acreage (size of property): **325.33 ac.**

3. Projected population: **750**

4. The amount and type of impervious cover expected after construction are shown below:

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	**864,000**	÷ 43,560 =	**19.8**
Parking (Drives)	**518,400**	÷ 43,560 =	**11.9**
Other paved surfaces (Streets)	**850,000**	÷ 43,560 =	**19.5**
Total Impervious Cover	**2,232,400**	÷ 43,560 =	**51.2**
Total Impervious Cover ÷ Total Acreage x 100 =			**15.7** **%**

5. [X] **ATTACHMENT A - Factors Affecting Water Quality.** A description of any factors that could affect surface water and groundwater quality is provided at the end of this form.

6. [X] Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

FOR ROAD PROJECTS ONLY
Complete questions 7-12 if this application is exclusively for a road project.

7. Type of project:
   - [ ] TXDOT road project.
   - [ ] County road or roads built to county specifications.
   - [ ] City thoroughfare or roads to be dedicated to a municipality.
   - [ ] Street or road providing access to private driveways.

8. Type of pavement or road surface to be used:
   - [ ] Concrete

__ Asphaltic concrete pavement
__ Other:

9. Length of Right of Way (R.O.W.): _____ feet.
Width of R.O.W.: _____ feet.
L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

10. Length of pavement area: _____ feet.
Width of pavement area: _____ feet.
L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = ____% impervious cover.

11. __ A rest stop will be included in this project.
__ A rest stop will **not** be included in this project.

12. __ Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

STORMWATER TO BE GENERATED BY THE PROPOSED PROJECT

13. **ATTACHMENT B - Volume and Character of Stormwater.** A description of the volume and character (quality) of the stormwater runoff which is expected to occur from the proposed project is provided at the end of this form. The estimates of stormwater runoff quality and quantity should be based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

14. The character and volume of wastewater is shown below:

100 % Domestic	**64,800** gallons/day
__ % Industrial	_____ gallons/day
__ % Commingled	_____ gallons/day
TOTAL	**64,800** gallons/day

15. Wastewater will be disposed of by:
X **On-Site** Sewage Facility (OSSF/Septic Tank):
ATTACHMENT C - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater. The appropriate licensing authority's (authorized agent) written approval is provided at the end of this form. It states that the land is suitable for the use of an on-site sewage facility or identifies areas that are not suitable.
X Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

NA Sewage Collection System (Sewer Lines):
__ Private service laterals from the wastewater generating facilities will be connected

to an existing SCS.

NA Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

__ The SCS was previously submitted on _____.

__ The SCS was submitted with this application.

__ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to executive director approval.

The sewage collection system will convey the wastewater to the (name) Treatment Plant. The treatment facility is :

__ existing.

__ proposed.

16. __ All private service laterals will be inspected as required in 30 TAC §213.5.

SITE PLAN REQUIREMENTS

Items 17 through 27 must be included on the Site Plan.

17. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = **200** '.

18. 100-year floodplain boundaries

X Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.

__ No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s):

19. __ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.

X The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

__ There are __(#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

__ The wells are not in use and have been properly abandoned.

__ The wells are not in use and will be properly abandoned.

__ The wells are in use and comply with 30 TAC §238.

X There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:

X All **sensitive and possibly sensitive** geologic or manmade features identified in the Geologic Assessment are shown and labeled.

__ No **sensitive and possibly sensitive** geologic or manmade features were identified in the Geologic Assessment.

NA **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to

the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. Geologic or manmade features were found and are shown and labeled.

___ **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. No geologic or manmade features were found.

22. X The drainage patterns and approximate slopes anticipated after major grading activities.

23. X Areas of soil disturbance and areas which will not be disturbed.

24. X Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

25. X Locations where soil stabilization practices are expected to occur.

26. X Surface waters (including wetlands).

27. X Locations where stormwater discharges to surface water or sensitive features.
___ There will be no discharges to surface water or sensitive features.

ADMINISTRATIVE INFORMATION

28. X One (1) original and three (3) copies of the completed application have been provided.

29. X Any modification of this WPAP will require TCEQ executive director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **WATER POLLUTION ABATEMENT PLAN APPLICATION FORM** is hereby submitted for TCEQ review and executive director approval. The form was prepared by:

Todd M. Simmang, P.E.
Print Name of Customer/Agent

This document is released for the purposed of interim review. It is not intended for construction, building or permit purposes.

_____ _____
Signature of Customer/Agent Date

ATTACHMENT "A"

Factors Affecting Water Quality

The development will be a low density, single-family development that will result in minimal to no pollution. Pollution may originate from ordinary household chemicals, normal automobile wastes, and runoff from asphalt streets.

ATTACHMENT "B"

Volume and Character of Stormwater

The development of Rockwall Ranch East Subdivision will result in a minimal increase in stormwater runoff. Preliminary calculations were performed using HEC-HMS. The CN value for existing soil conditions is 77, with an existing impervious cover of 0.0%. The CN value for the proposed condition remained the same, however, the impervious cover increased to 15.7%. For the 25-year storm event, stormwater runoff from the proposed subdivision increased from 1100 cfs to 1250 cfs, an increase of 12%. For the 100-year storm event, stormwater runoff increased from 1600 cfs to 1880 cfs. This is an increase of 15%.

The following information shows the increase in the 100-year storm water discharges and locations from the proposed site only. This information does not include the entire watershed just the discharge rates from the proposed site.

Drainage patterns for the site will remain relatively unchanged. Low areas and swales will remain in their original condition, therefore offering natural vegetative filtering capabilities. The lot layout was designed to utilize the drainage patterns to protect the vegetation in these areas and prevent improvements from being constructed that would alter these areas.

Due to the fact that the majority of the drainage lows will remain in their natural condition and that the total impervious cover is low (15.7%), the quality of stormwater runoff leaving the site should remain unchanged.



AREA OF DISTURBANCE = 35.29 AC.
AREA OF NO DISTURBANCE = 287.04 AC.
TOTAL AREA = 323.33 AC.

NO.	DATE	REVISION	BY

ROCKWALL RANCH EAST SUBDIVISION

COMAL COUNTY, TEXAS

WATER POLLUTION ABATEMENT PLAN SITE PLAN

DATE: 06/13/2007
DRAWN BY: M.A.R.
DESIGNED BY: T.S.
CHECKED BY: T.S.
REVIEWED BY: T.S.
PROJECT NUMBER: 310485.022

SHEET 1 OF

This document is released for the purpose of interim review under the authority of Todd M. Simmons, P.E. on July 13, 2007. It is not to be used for construction, bidding, or permit purposes.

Carter :: Burgess
Consultants in Engineering, Architecture, Construction Management and Related Services
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San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-4525
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Temporary Stormwater Section
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch East Subdivision**

POTENTIAL SOURCES OF CONTAMINATION

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

   ___ Aboveground storage tanks with a cumulative storage capacity of less that 250 gallons will be stored on the site for less than one (1) year.

   ___ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

   ___ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An **Aboveground Storage Tank Facility Plan** application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

   X Fuels and hazardous substances will not be stored on-site.

2. X **ATTACHMENT A - Spill Response Actions**. A description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is provided at the end of this form.

3. NA Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. X **ATTACHMENT B - Potential Sources of Contamination.** Describe in an attachment at the end of this form any other activities or processes which may be a potential source of contamination.

   ___ There are no other potential sources of contamination.

SEQUENCE OF CONSTRUCTION

5. X **ATTACHMENT C - Sequence of Major Activities.** A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is provided at the end of this form. For each activity described, an estimate of the total area of the site to be disturbed by each activity is given.

6. X Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: **Dry Comal Creek**

TEMPORARY BEST MANAGEMENT PRACTICES (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. **All structural BMPs must be shown on the site plan.**

7. X **ATTACHMENT D - Temporary Best Management Practices and Measures.** A description of the TBMPs and measures that will be used during and after construction are provided at the end of this form. For each activity listed in the sequence of construction, include appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

   X TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information has been provided in the attachment at the end of this form

   a. A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

   b. A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

   c. A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

   d. A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

   NA **ATTACHMENT E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is provided at the end of this form. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

   NA There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. NA **ATTACHMENT F - Structural Practices.** Describe the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site. Placement of structural practices in floodplains has been avoided.

10. X **ATTACHMENT G - Drainage Area Map**. A drainage area map is provided at the end of this form to support the following requirements.

__ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

__ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

__ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

X There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

11. __ **ATTACHMENT H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure has been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are provided as at the end of this form.

12. X **ATTACHMENT I - Inspection and Maintenance for BMPs.** A plan for the inspection of temporary BMPs and measures and for their timely maintenance, repair, and, if necessary, retrofit is provided at the end of this form. A description of documentation procedures and recordkeeping practices is included in the plan.

13. X All control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicates a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. X If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. NA Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. X Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

SOIL STABILIZATION PRACTICES

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. X **ATTACHMENT J - Schedule of Interim and Permanent Soil Stabilization Practices.** A schedule of the interim and permanent soil stabilization practices for the site is attached at the end of this form.

18. X Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. X Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

ADMINISTRATIVE INFORMATION

20. X All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. X If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. X Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **TEMPORARY STORMWATER SECTION** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Todd M. Simmang, P.E.
Print Name of Customer/Agent

This document is released for the purposed of interim review. It is not intended for construction, building or permit purposes.

Signature of Customer/Agent Date

ATTACHMENT "A "

Spill Response Actions

There will be no above ground fuel storage tanks allowed on this project. Equipment will be fueled using mobile fuel trucks as needed. There is a small chance of a fuel spill occurring due to leaking construction equipment or re-fueling operations. If a minor spill were to occur, the soil impacted would be removed from the site and properly disposed of in an approved landfill site. If a major spill were to occur, where the amounts spilled were equal to, or exceeding, the Reportable Quantity, RQ, as defined by EPA regulations 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 then the following steps will be taken.

- Notify the National Response Center at (800) 424-8802 and the TCEQ San Antonio Regional Office at (210) 545-4329 immediately.
- Submit a written description of their release to the EPA and TCEQ Regional office providing the date and circumstances of the release and the steps to be taken to prevent another release
- Modify the WPAP and SWPPP to include the information listed above.

ATTACHMENT "B"

Potential Sources of Contamination

The only potential sources of contamination are construction equipment leaks, re-fueling spills and asphalt lay down operations. There are no other anticipated potential sources of contamination.

ATTACHMENT "C"

Sequence of Major Activities

Stages of Construction:
The following construction sequence will occur for each unit. Final stabilization will be completed prior to the start of the next unit.

1. Clearing and Grubbing – removal of trees, stumps, brush and other debris within the proposed street right-of-way. Approximate disturbed area = 64 acres
2. Rough Grading – Cutting and filling of street areas to prepare the roadbed for pavement layers. Approximate disturbed area = 19.5 acres.
3. Culvert Installation – Culverts will be installed where needed to allow runoff under the proposed roads. Approximated disturbed area is less than 4 acres.
4. Utility Installation – There will be underground water, telephone and electric lines installed. Approximate disturbed area = less than 8 acres.
5. Finished Grading – Final landscaping and asphalt pavement layers are installed. Approximate disturbed area = 24 acres.
6. Residential Construction – Lots will be sold to individuals only, and homes built at random times. The construction is very minimal and will average less than 10% disturbed area per lot.

Attachment "D"

Temporary BMPs and Measures

Soil disturbance will be limited to a minimal distance outside of the proposed pavement and no soil disturbance will occur outside of the ROW. All of the low areas, which collect storm water runoff, will remain in a natural state acting as vegetative filter strips. Grasses will be allowed to grow between the edge of pavement and right-of-way line and will act as a filter for street runoff once established.

Silt fence will be place on the down gradient side of the site to contain pollutants generated from on-site runoff. Rock berms will be constructed at concentrated points of discharge and just downstream of all culvert locations. The majority of the property will not be disturbed leaving the natural vegetation, therefore, reducing the potential of polluting streams and the aquifer. A stabilized construction exit will be installed to help eliminate contaminants from leaving the site during construction traffic.

There are no sensitive features identified in the Geologic Assessment.

The following sequence will be followed for installing temporary BMPs:

1. Roadway centerline will be roughly cleared for surveying purposes.
2. Silt fence will be constructed on the downstream side of proposed roadways prior to beginning clearing and grubbing operations.
3. A stabilized construction exit will be established before clearing and grubbing equipment is delivered to the site.
4. Rock berms and rock check dams are constructed downstream of proposed culvert locations once rough grading has been completed and prior to culvert installation.

Attachment "E"

Request to Temporarily Seal a Feature

No features found on site.

Attachment "F"

Structural Practices

Rock berms, rock check dams and silt fence will be used to protect exposed soils and to prevent contamination from leaving the site or flowing over the features identified in the Geologic Assessment. The majority of the site will remain in a natural condition; therefore, natural filtration will be allowed to occur.



DATE:	06/13/2007
DRAWN BY:	M.A.R.
DESIGNED BY:	T.S.
CHECKED BY:	T.S.
REVIEWED BY:	T.S.
PROJECT NUMBER:	310485.022

SHEET 1

ROCKWALL RANCH EAST SUBDIVISION

COMAL COUNTY, TEXAS

DRAINAGE AREA MAP

ATTACHMENT "G"

Carter :: Burgess

Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.

911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-4825
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Attachment "H"

Temporary Sediment Pond(s) Plans and Calculations

There will not be more than 10-acres of disturbed soil in a common drainage area that will occur at one time. There will be rock berms and rock check dams installed to treat concentrated runoff from larger drainage areas (<10-acres) and silt fence used for small drainage areas and sheet flow runoff. No sediment ponds will be used on this project due to the minimal disturbance of soil.

Attachment "I"

Inspection and Maintenance for BMPs

Inspection and Maintenance Plan

- The contractor is required to inspect the controls and fences at weekly intervals and after significant rainfall events to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six inches. Contractor is required to maintain the construction exit in a condition that prevents soil from tracking onto public roads via construction equipment and traffic.
- TCEQ staff will be allowed full access to the property during construction of the project for inspecting controls and fences and to verify that the accepted plan is being utilized in the field. TCEQ staff has the right to speak with the contractor to verify plan changes and modifications.
- Any changes made to the location or type of controls shown on the accepted plans, due to onsite conditions, shall be documented on the site plan that is part of this Water Pollution Abatement Plan. No other changes shall be made unless approved by the TCEQ and the Design Engineer. Documentation shall clearly show changes made, date, and person responsible and reason change was made.

Owner's Information:

Owner:	KT Real Estate Investments, LTD.
Contact:	Scott Knowlton, Vice President
Phone #:	(210) 651-6860
Address:	18225 FM 2252
	San Antonio, Texas 78266

Owner's Engineer:

Company: Carter & Burgess, Inc.
Contact: Todd Simmang, P.E.
Phone #: (210) 494-0088
Address: 911 Central Pkwy North, #425
San Antonio, Texas 78232

Person or Firm Responsible For Erosion/Sedimentation Control Maintenance:

Company: _____ Phone #: _____
Contact: _____
Address: _____
_____

Signature of Responsible Party: _____

This portion of the form shall be filled out and signed by the responsible party prior to construction.

Attachment "J"

Schedule of Interim and Permanent Soil Stabilization Practices

There will be minimal disturbed soil due to construction operations that are not covered by pavement or buildings. The area is generally very rocky with a minimal amount of overlying soil. Areas, which are disturbed by construction staging, and storage areas will be hydro mulched with the appropriate seed mixture. Areas between the edge of pavement and right-of-way line will also be hydro mulched if a soil layer exists. Areas within islands and the entrance will be landscaped with appropriate plants and mulched. There will be no fill slopes exceeding a 3:1 slope and all fill slopes will be hydro mulched. Installation of hydro mulch is as follows:

1. Final grading must be completed and all necessary BMPs should be in place prior to the addition of hydro mulch.
2. Hydro mulch mixture shall be as recommended by the County Agriculture Extension Agent or as shown below for the specific time of year and whether or not irrigation will be utilized.
3. Hydro mulch shall be applied at a rate stipulated by the Extension Agent or as shown below and shall be applied in a uniform manner
4. Other types of seeding applications may be used by the Contractor if approved by the Design Engineer and TNRCC.
5. If blankets or matting are used, they shall conform to the Texas Department of Transportation specifications.

Dates	**Climate**	**Species**	**(lb/ac)**
Sept. 1 to Nov. 30	Temporary Cool Season	Tall Fescue	4.0
		Oats	21.0
		Wheat	30.0
		Total	**55.0**
Sept. 1 to Nov. 30	Cool Season Legume	Hairy Vetch	8.0
May 1 to Aug. 31	Temporary Warm Season	Foxtail Millet	30.0

Permanent Stormwater Section
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b)(4)(C), (D)(li), (E), and (5), Effective June 1, 1999

REGULATED ENTITY NAME:
Permanent best management practices (BMPs) and measures that will be used during and after construction is completed.

1. NA Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

2. NA These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

   __ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
   __ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is provided below

3. NA Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

4. X Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   X This site will be used for low density single-family residential development and has 20% or less impervious cover.
   __ This site will be used for low density single-family residential development but has more than 20% impervious cover.
   __ This site will not be used for low density single-family residential development.

5. NA The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover

increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

__ **ATTACHMENT A - 20% or Less Impervious Cover Waiver.** This site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is found at the end of this form.

__ This site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.

__ This site will not be used for multi-family residential developments, schools, or small business sites.

6. **ATTACHMENT B - BMPs for Upgradient Stormwater.**

__ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is identified as **ATTACHMENT B** at the end of this form.

__ If no surface water, groundwater or stormwater originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT B** at the end of this form.

X If permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT B** at the end of this form .

7. **ATTACHMENT C - BMPs for On-site Stormwater.**

__ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is identified as **ATTACHMENT C** at the end of this form.

X If permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, an explanation is provided as **ATTACHMENT C** at the end of this form.

8. X **ATTACHMENT D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is provided at the end of this form. Each feature identified in the Geologic Assessment as "sensitive" or "possibly sensitive" has been addressed.

9. X The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

X The permanent sealing of or diversion of flow from a naturally-occurring "sensitive" or "possibly sensitive" feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed for any naturally-occurring "sensitive" or "possibly sensitive" features on this site.

__ **ATTACHMENT E - Request to Seal Features.** A request to seal a naturally-occurring "sensitive" or "possibly sensitive" feature, that includes a justification as to why no reasonable and practicable alternative exists, is found at the end of this form. A request and justification has been provided for each feature.

10. NA **ATTACHMENT F - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information have been signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed permanent BMPs and measures are provided at the end of this form. Design Calculations, TCEQ Construction Notes, all man-made or naturally occurring geologic features, all proposed structural measures, and appropriate details must be shown on the construction plans.

11. NA **ATTACHMENT G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is provided at the end of this form. The plan has been prepared and certified by the engineer designing the permanent BMPs and measures. The plan has been signed by the owner or responsible party. The plan includes procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofits as well as a discussion of record keeping procedures.

12. NA The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

__ Pilot-scale field testing (including water quality monitoring) may be required for BMPs that are not contained in technical guidance recognized by or prepared by the executive director.

__ **ATTACHMENT H - Pilot-Scale Field Testing Plan.** A plan for pilot-scale field testing is provided at the end of this form.

13. X **ATTACHMENT I - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is provided at the end of this form. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity which increase erosion that results in water quality degradation.

Responsibility for maintenance of permanent BMPs and measures after construction is complete.

14. NA The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.

15. **NA** A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **PERMANENT STORMWATER SECTION** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Todd Simmang, P.E.
Print Name of Customer/Agent

This document is released for the purposed of interim review. It is not intended for construction, building or permit purposes.

Signature of Customer/Agent Date

ATTACHMENT "A"

20% or Less Impervious Cover Waiver

The site will not be used for multi-family residential or small businesses. The development will be low density, single family, residential with 0.66 dwelling units per acre based on the 325 acres with 216 lots. The total impervious cover for the site is approximately 15.7% at full development. This assumes a 24-foot asphalt roadway and 6400 square feet of impervious cover per lot.

ATTACHMENT "B"

BMPs for Upgradient Stormwater

The upgradient stormwater drains through the proposed property and is conveyed by an existing natural channel. This existing natural channel will not be crossed with a road or be modified in any way. Minor underbrush removal may occur. Please refer to the Drainage Area Map in the Temporary Stormwater Section. Storm water pollution should remain unchanged and the natural filtration properties of the existing channel will remain.

ATTACHMENT "C"

BMPs for On-site Stormwater

No permanent BMPs will be constructed to treat stormwater runoff. The site design allows the natural swales and low areas of the site to remain in a natural state, therefore acting as natural vegetative filter strips. The site, when fully developed, will have an impervious cover of approximately 15.7%. The perimeter of the site will remain in a natural condition, preventing contaminated runoff from leaving the site.

ATTACHMENT "D"

BMPs for Surface Streams

All surface streams will be protected from erosion by not allowing runoff to exceed existing velocities or drastically changing the drainage patterns. This will be accomplished by street layouts and by adding energy dissipaters to the downstream side of culverts.

Attachment "E"

Request to Seal Features

Not Applicable

Attachment "I"

Measures for Minimizing Surface Stream Contamination

All surface streams will be protected from erosion by not allowing runoff to exceed existing velocities. This will be accomplished by adding energy dissipaters to the downstream side of culverts.

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I **Scott Knowlton**
Print Name

Owner
Title - Owner/President/Other

of **KT East Realestate Investments, L.P.**
Corporation/Partnership/Entity Name

have authorized **Todd M. Simmang, P.E.**
Print Name of Agent/Engineer

of **Carter & Burgess, Inc.**
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For applicants who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

_____

Applicant's Signature Date

THE STATE OF _____ §

County of _____ §

BEFORE ME, the undersigned authority, on this day personally appeared_____ known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this ___ day of _____, ____.

NOTARY PUBLIC

Typed or Printed Name of Notary

MY COMMISSION EXPIRES:

Texas Commission on Environmental Quality
Edwards Aquifer Protection Plan
Application Fee Form

NAME OF PROPOSED REGULATED ENTITY: **Rockwall Ranch East Subdivision**
REGULATED ENTITY LOCATION: **Comal County**
NAME OF CUSTOMER: **KT East Realestate Investments, L.P.**
CONTACT PERSON: **Scott Knowlton** PHONE: **(210) 651-6260**
(Please Print)

Customer Reference Number (if issued): CN _____ (nine digits)
Regulated Entity Reference Number (if issued): RN _____ (nine digits)

AUSTIN REGIONAL OFFICE (3373)
☐ Hays
☐ Travis
☐ Williamson

SAN ANTONIO REGIONAL OFFICE (3362)
☐ Bexar
☒ Comal
☐ Kinney
☐ Medina
☐ Uvalde

APPLICATION FEES MUST BE PAID BY CHECK, CERTIFIED CHECK, OR MONEY ORDER, PAYABLE TO THE Texas Commission on Environmental Quality. YOUR CANCELED CHECK WILL SERVE AS YOUR RECEIPT. **THIS FORM MUST BE SUBMITTED WITH YOUR FEE PAYMENT**. THIS PAYMENT IS BEING SUBMITTED TO (CHECK ONE):

☒ **SAN ANTONIO REGIONAL OFFICE**
☐ **Mailed to TCEQ**:
TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ **AUSTIN REGIONAL OFFICE**
☐ **Overnight Delivery to TCEQ**:
TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

Type of Plan	Size	Fee Due
Water Pollution Abatement, One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement, Multiple Single Family Residential and Parks	**325** Acres	$ **5,000**
Water Pollution Abatement, Non-residential	Acres	$
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

_____
Signature Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Application Fee Schedule
30 TAC §213.14 (effective 11/14/97) & 30 TAC §213.9 (effective 6/1/99)

Water Pollution Abatement Plans and Modifications

PROJECT	PROJECT AREA IN ACRES	FEE
One Single Family Residential Dwelling	<5	$500
Multiple Single Family Residential and Parks	<5 5 < 10 10 < 50 ≥50	$1,000 $2,000 $3,000 $5,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 ≥10	$2,000 $3,000 $4,000 $5,000

Organized Sewage Collection Systems and Modifications

PROJECT	COST PER LINEAR FOOT	MINIMUM FEE MAXIMUM FEE
Sewage Collection Systems	$0.50	$500 - $5,000

Underground and Aboveground Storage Tank System Facility Plans and Modifications

PROJECT	COST PER TANK OR PIPING SYSTEM	MINIMUM FEE MAXIMUM FEE
Underground and Aboveground Storage Tank Facility	$500	$500 - $5,000

Exception Requests

PROJECT	FEE
Exception Request	$250

Extension of Time Requests

PROJECT	FEE
Extension of Time Request	$100

TCEQ Core Data Form

TCEQ Use Only

If you have questions on how to fill out this form or about our Central Registry, please contact us at 512-239-5175.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

SECTION I: General Information

1. Reason for Submission *Example: new wastewater permit; IHW registration; change in customer information; etc.*

New WPAP Application

2. Attachments		**Describe Any Attachments:** *(ex: Title V Application, Waste Transporter Application, etc.)*
X **YES**	**NO**	**Part of WPAP Submittal to TCEQ**

3. Customer Reference Number-*if issued*			**4. Regulated Entity Reference Number-*if issued***		
CN		***(9 digits)***	**RN**		***(9 digits)***

SECTION II: Customer Information

5. Customer Role *(Proposed or Actual)* -- As It Relates to the Regulated Entity Listed on This Form

Please check one of the following:		Owner		Operator	X	Owner and Operator	
	Occupational Licensee		Volunteer Cleanup Applicant		X	Other	**WPAP**
TCEQ Use Only			**Superfund**		**PST**		**Respondent**

6. General Customer Information

X	New Customer		Change to Customer Information
	Change in Regulated Entity Ownership		No Change *

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

7. Type of Customer:					
X	Partnership		Corporation		Federal Government
	State Government		County Government		City Government
	Other Government		Other:		

8. Customer Name *(If an individual, please print last name first)*	*If new name, enter previous name:*
KT East Real Estate Investments, L.P.	

9. Mailing Address:	**18225 FM 2252**			
	City	State	ZIP	ZIP + 4
	San Antonio	**Texas**	**78266**	

10. Country Mailing Information *if outside USA*	**11. E-Mail Address *if applicable***

12. Telephone Number	**13. Extension or Code**	**14. Fax Number *if applicable***
(210) 651-6860		

15. Federal Tax ID *(9 digits)*	**16. State Franchise Tax ID Number** *if applicable*	**17. DUNS Number** *if applicable* *(9 digits)*
68-0557026	**NA**	**NA**

18. Number of Employees										**19. Independently Owned and Operated?**			
X	**0-20**		**21-100**		**101-250**		**251-500**		**501 and higher**		**Yes**	X	**No**

SECTION III: Regulated Entity Information

20. General Regulated Entity Information

	New Regulated Entity		Change to Regulated Entity Information		No Change*

*If "No Change" and Section I is complete, skip to Section IV - Preparer Information.

21. Regulated Entity Name *(If an individual, please print last name first)*				
KT East Real Estate Investments, L.P.				
22. Street Address (No PO Boxes)	**18225 FM 2252**			
	City	State	ZIP	ZIP + 4
	San Antonio	**TX**	**78266**	
23. Mailing Address	**18225 FM 2252**			
	City	State	ZIP	ZIP + 4
	San Antonio	**TX**	**78266**	
24. E-Mail Address:				

25. Telephone Number	26. Extension or Code	27. Fax Number *if applicable*
(210) 651-6860		

28. Primary SIC Code (4 digits)	29. Secondary SIC Code (4 digits)	30. Primary NAICS Code (5 or 6 digits)	31. Secondary NAICS Code (5 or 6 digits)
6552	NA	237210	NA

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

Questions 33 - 37 address geographic location. Please refer to the instructions for applicability.

33. County	Comal

34. Description of Physical Location

On the east line of Shoenthal Rd. approximately 2 miles south of the intersection with FM 1863

35. Nearest City	State	Nearest Zip
New Braunfels	Texas	78266

36. Latitude (N)			*37. Longitude (W)*		
Degrees	*Minutes*	*Seconds*	*Degrees*	*Minutes*	*Seconds*
029	41	28	098	16	22

38. TCEQ Programs In Which This Regulated Entity Participates *Not all programs have been listed. Please add to this list as needed. If you don't know or are unsure, please mark "Unknown".* If you know a permit or registration # for this entity, please write it below the program."

	Animal Feeding Operation		Petroleum Storage Tank		Water Rights
	Title V - Air		Wastewater Permit		
					WPAP
	Industrial & Hazardous Waste		Water Districts		
	Municipal Solid Waste		Water Utilities		Unknown
	New Source Review - Air		Licensing - TYPE(s)		

Section IV: Preparer Information

39. Name	40. Title
Todd M. Simmang, P.E.	**Authorized Agent**

41. Telephone Number	42. Extension or Code	43. Fax Number *if applicable*
(210) 494-0088	5519	**(210) 494-4525**

44. E-mail Address:	

RECEIVED
SEP 1 1 2007
COUNTY ENGINEER

WATER POLLUTION ABATEMENT PLAN APPLICATION

For

ROCKWALL RANCH EAST SUBDIVISION

Comal County, Texas

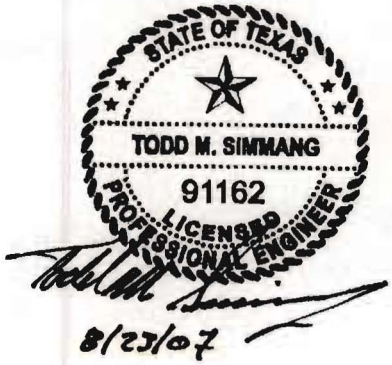
Submitted
August 24, 2007

Submitted To:

Texas Commission on Environmental Quality
Region 13 - San Antonio
14250 Judson Road
San Antonio, Texas 78233
210.490-3096
Fax 210.545-4329

Submitted By:

Carter & Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, Texas 78232
210.494-0088
Fax 210.494-4525



WATER POLLUTION ABATEMENT PLAN APPLICATION

For

ROCKWALL RANCH EAST SUBDIVISION

Comal County, Texas

Submitted
August 24, 2007

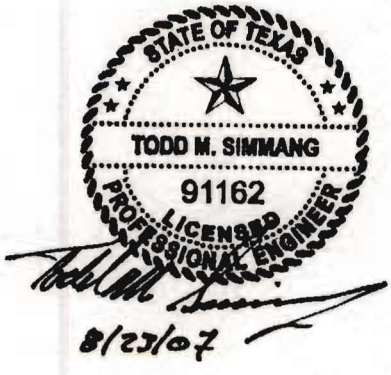
TCEQ-R13
AUG 30 2007
SAN ANTONIO

Submitted To:

Texas Commission on Environmental Quality
Region 13 - San Antonio
14250 Judson Road
San Antonio, Texas 78233
210.490-3096
Fax 210.545-4329

Submitted By:

Carter & Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, Texas 78232
210.494-0088
Fax 210.494-4525



General Information Form
For Regulated Activities on the
Edwards Aquifer Recharge and Transition Zones
and Relating to 30 TAC §213.4(b) & §213.5(b)(2)(A), (B)
Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch East subdivision**
COUNTY: **Comal County** STREAM BASIN: **Tributary to the West Fork of Dry Comal Creek**

EDWARDS AQUIFER: X RECHARGE ZONE
__ TRANSITION ZONE

PLAN TYPE: X WPAP __ AST __ EXCEPTION
__ SCS __ UST __ MODIFICATION

CUSTOMER INFORMATION

1. Customer (Applicant):

Contact Person: **Scott Knowlton**
Entity: **KT East Real Estate Investments L.P.**
Mailing Address: **18225 FM 2252**
City, State: **San Antonio, TX.** Zip: **78266**
Telephone: **(210)651-6860** FAX: **(210)651-5435**

Agent/Representative (If any):

Contact Person: **Todd Simmang, P.E.**
Entity: **Carter & Burgess, Inc.**
Mailing Address: **911 Central Parkway North, Suite 425**
City, State: **San Antonio, TX.** Zip: **78232**
Telephone: **(210)494-0088** FAX: **(210)494-4525**

2. __ This project is inside the city limits of _____.
x This project is outside the city limits but inside the ETJ (extra-territorial jurisdiction) of New Braunfels.
__ This project is not located within any city's limits or ETJ.

3. The location of the project site is described below. The description provides sufficient detail and clarity so that the TCEQ's Regional staff can easily locate the project and site boundaries for a field investigation.
The project is located on the east line of Schowental Rd. approximately 2 miles south of the intersection of FM 1863 and Schoenthal Rd. (Across the street from Rockwall Ranch Subdivision.)

4. x **ATTACHMENT A - ROAD MAP**. A road map showing directions to and the location of the project site is attached at the end of this form.

5. x **ATTACHMENT B - USGS / EDWARDS RECHARGE ZONE MAP**. A copy of the official 7 ½ minute USGS Quadrangle Map (Scale: 1" = 2000') of the Edwards Recharge Zone is attached behind this sheet. The map(s) should clearly show:

X Project site.
X USGS Quadrangle Name(s).
X Boundaries of the Recharge Zone (and Transition Zone, if applicable).
X Drainage path from the project to the boundary of the Recharge Zone.

6. X Sufficient survey staking is provided on the project to allow TCEQ regional staff to locate the boundaries and alignment of the regulated activities and the geologic or manmade features noted in the Geologic Assessment. **The TCEQ must be able to inspect the project site or the application will be returned.**

7. X **ATTACHMENT C - PROJECT DESCRIPTION.** Attached at the end of this form is a detailed narrative description of the proposed project.

8. Existing project site conditions are noted below:
__ Existing commercial site
__ Existing industrial site
__ Existing residential site
__ Existing paved and/or unpaved roads
__ Undeveloped (Cleared)
X Undeveloped (Undisturbed/Uncleared)
__ Other: _____

PROHIBITED ACTIVITIES

9. X I am aware that the following activities are prohibited on the **Recharge Zone** and are not proposed for this project:

(1) waste disposal wells regulated under 30 TAC Chapter 331 of this title (relating to Underground Injection Control);
(2) new feedlot/concentrated animal feeding operations, as defined in 30 TAC §213.3;
(3) land disposal of Class I wastes, as defined in 30 TAC §335.1;
(4) the use of sewage holding tanks as parts of organized collection systems; and
(5) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41(b), (c), and (d) of this title (relating to Types of Municipal Solid Waste Facilities).

10. N/A I am aware that the following activities are prohibited on the **Transition Zone** and are not proposed for this project:

(1) waste disposal wells regulated under 30 TAC Chapter 331 (relating to Underground Injection Control);
(2) land disposal of Class I wastes, as defined in 30 TAC §335.1; and
(3) new municipal solid waste landfill facilities required to meet and comply with Type I standards which are defined in §330.41 (b), (c), and (d) of this title.

ADMINISTRATIVE INFORMATION

11. The fee for the plan(s) is based on:

X For a Water Pollution Abatement Plan and Modifications, the total acreage of the site where regulated activities will occur.
__ For an Organized Sewage Collection System Plans and Modifications, the total linear

footage of all collection system lines.

___ For a UST Facility Plan or an AST Facility Plan, the total number of tanks or piping systems.

___ A Contributing Zone Plan.

___ A request for an exception to any substantive portion of the regulations related to the protection of water quality.

___ A request for an extension to a previously approved plan.

12. Application fees are due and payable at the time the application is filed. If the correct fee is not submitted, the TCEQ is not required to consider the application until the correct fee is submitted. Both the fee and the Edwards Aquifer Fee Form have been sent to the Commission's:

___ TCEQ cashier

___ Austin Regional Office (for projects in Hays, Travis, and Williamson Counties)

X San Antonio Regional Office (for projects in Bexar, Comal, Kinney, Medina, and Uvalde Counties)

13. X Submit one (1) original and three (3) copies of the completed application to the appropriate regional office for distribution by the TCEQ to the local municipality or county, groundwater conservation districts, and the TCEQ's Central Office.

14. X No person shall commence any regulated activity until the Edwards Aquifer Protection Plan(s) for the activity has been filed with and approved by the executive director.

___ No person shall commence any regulated activity until the Contributing Zone Plan for the activity has been filed with the executive director.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **GENERAL INFORMATION FORM** is hereby submitted for TCEQ review. The application was prepared by:

Todd Simmang, P.E.

Print Name of Customer/Agent

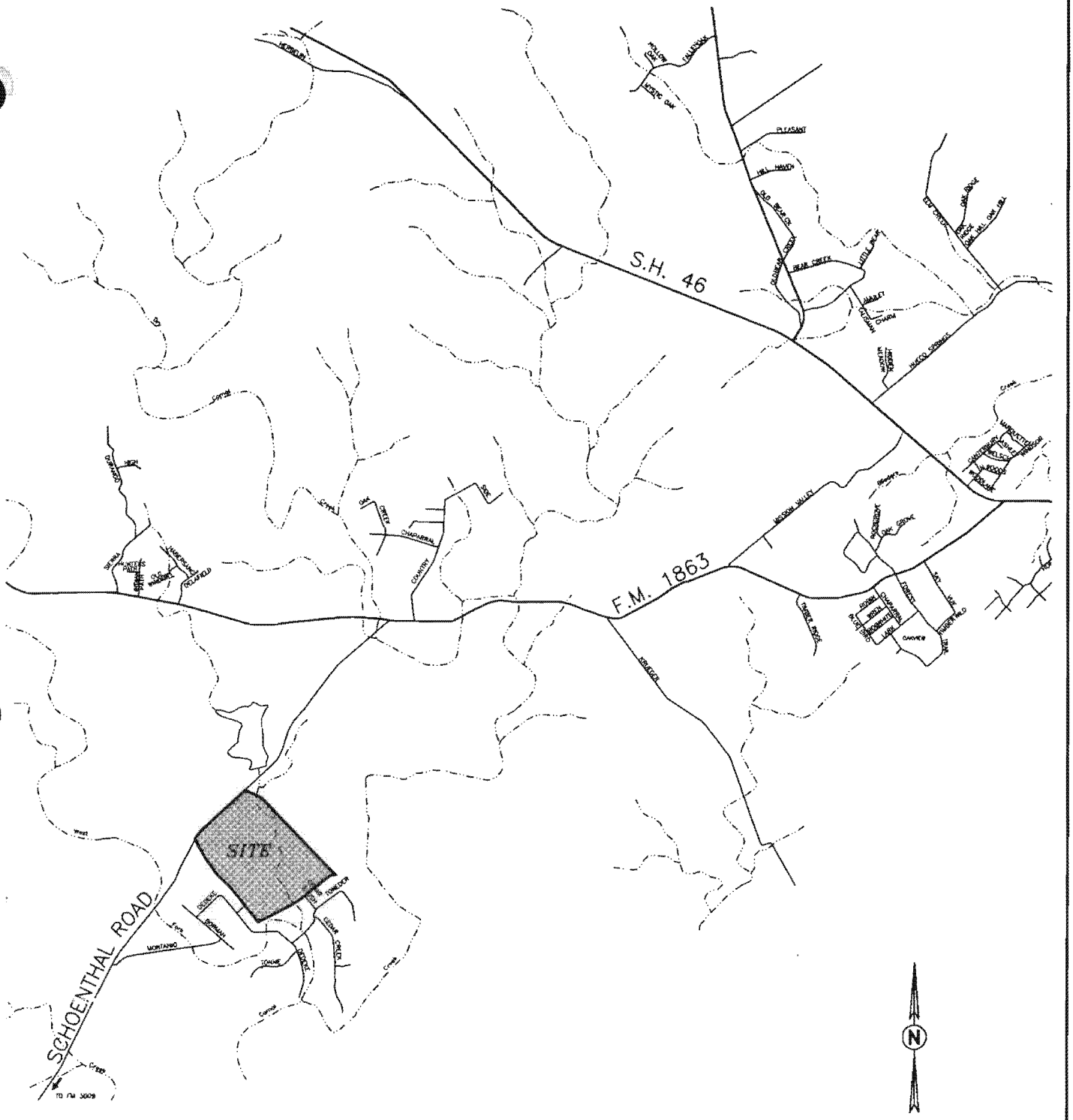
Signature of Customer/Agent

8/23/07

Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.



SCALE: 1" = 1 MILE

Carter :: Burgess

Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.

911 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-4525

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ATTACHMENT "A"
ROCKWALL RANCH EAST

DRAWN BY: M.A.R. CHECKED BY: TS

DATE: 06/12/07 PROJECT NO.: 310485.022

SHEET 1 OF 1

ATTACHMENT "C"

Project Description

Rockwall Ranch East Subdivision is located on the east line of Schoenthal Rd. approximately 2 miles south of the intersection of FM 1863 and Schoenthal Rd. and bound to the south by Schoenthal Ranch Subdivision (See location map). Rockwall Ranch East Subdivision is approximately 325 acres of unimproved land, primarily composed of open fields, dense brush and trees, with grass and rock outcroppings. There is existing floodplain located through the property. The floodplain is an unnamed tributary to the West Fork Creek.

The proposed land use will consist of approximately 216 single-family lots with an average size of 1.16 acres. The subdivision infrastructure will include a water system, electricity, telephone, and approximately 30,500 LF of roadway. Each lot will be served by private individual on-site sewage facilities. The ultimate development impervious cover for the 325 acres will be approximately 15.7%.

GEOLOGIC ASSESSMENT

For:

Water Pollution Abatement Plan
325-ac TMS 8/30/07 ~~305~~-**Acre Tract**
Proposed Rockwall Ranch East Subdivision
Schoenthal Road
Comal County, Texas

ARIAS & ASSOCIATES
Geotechnical • Environmental • Testing

prepared for:

V.K. Knowlton Construction & Utilities, Ltd.
Mr. Scott Knowlton
18255 FM 2252
San Antonio, Texas 78266

A&A Project No. 06SA-4118
June 2007

Geologic Assessment
For Regulated Activities
on The Edwards Aquifer Recharge/transition Zones
and Relating to 30 TAC §213.5(b)(3), Effective June 1, 1999

325 AC TMS 8/30/07

REGULATED ENTITY NAME: ~~305~~ **Acre Tract - Proposed Rockwall Ranch East Subdivision**

TYPE OF PROJECT: **X** WPAP __ AST __ SCS __ UST

LOCATION OF PROJECT: **X** Recharge Zone __ Transition Zone __ Contributing Zone within the Transition Zone

PROJECT INFORMATION

1. **X** Geologic or manmade features are described and evaluated using the attached **GEOLOGIC ASSESSMENT TABLE**.

2. Soil cover on the project site is summarized in the table below and uses the SCS Hydrologic Soil Groups* (*Urban Hydrology for Small Watersheds, Technical Release No. 55, Appendix A*, Soil Conservation Service, 1986). If there is more than one soil type on the project site, show each soil type on the site Geologic Map or a separate soils map.

Soil Units, Infiltration Characteristics & Thickness		
Soil Name	Group*	Thickness (feet)
Denton silty clay, 1-3% slopes (DeB)	D	1.0 to 1.5
Denton silty clay 1-5% slopes, eroded (DeC3)	D	1.0 to 1.5
Krum clay, 1-3% slopes (KrB)	D	1.5 to 3.5
Medlin-Eckrant association, undulating (MEC)	D	0.5 to 1.5
Rumple Comfort association, undulating (RUD)	C	0.5 to 1.5

* Soil Group Definitions (Abbreviated)

A. Soils having a high infiltration rate when thoroughly wetted.

B. Soils having a moderate infiltration rate when thoroughly wetted.

C. Soils having a slow infiltration rate when thoroughly wetted.

D. Soils having a very slow infiltration rate when thoroughly wetted.

3. **X** A **STRATIGRAPHIC COLUMN** is attached at the end of this form that shows formations, members, and thicknesses. The outcropping unit should be at the top of the stratigraphic column.

4. **X** A **NARRATIVE DESCRIPTION OF SITE SPECIFIC GEOLOGY** is attached at the end of this form. The description must include a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure, and karst characteristics of the site.

5. **X** Appropriate **SITE GEOLOGIC MAP(S)** are attached:

The Site Geologic Map must be the same scale as the applicant's Site Plan. The minimum scale is 1" : 400'

Applicant's Site Plan Scale	1" = 200'
Site Geologic Map Scale	1" = 200'
Site Soils Map Scale (if more than 1 soil type)	1" = 800'

6. Method of collecting positional data:
   X Global Positioning System (GPS) technology.
   __ Other method(s).

7. X The project site is shown and labeled on the Site Geologic Map.

8. X Surface geologic units are shown and labeled on the Site Geologic Map.

9. X Geologic or manmade features were discovered on the project site during the field investigation. They are shown and labeled on the Site Geologic Map and are described in the attached Geologic Assessment Table.
   __ Geologic or manmade features were not discovered on the project site during the field investigation.

10. __ The Recharge Zone boundary is shown and labeled, if appropriate.

11. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.):

__There are ___(#) wells present on the project site and the locations are shown and labeled.
(Check all of the following that apply.)
__ The wells are not in use and have been properly abandoned.
__ The wells are not in use and will be properly abandoned.
__ The wells are in use and comply with 16 TAC Chapter 76.

X There are no wells or test holes of any kind known to exist on the project site.

ADMINISTRATIVE INFORMATION

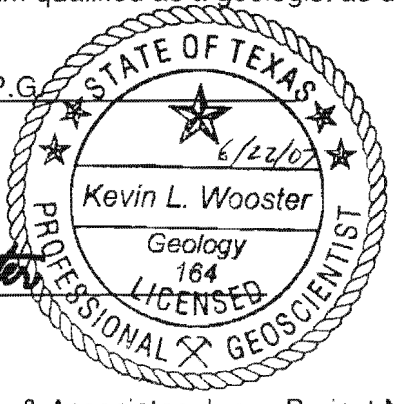
12. X One (1) original and three (3) copies of the completed assessment has been provided.

Date(s) Geologic Assessment was performed:

Date(s) April 12, 2006

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. My signature certifies that I am qualified as a geologist as defined by 30 TAC Chapter 213.

Kevin L. Wooster, P.G.
Print Name of Geologist



Telephone 210-308-5884

Fax 210-208-8731

Kevin L. Wooster
Signature of Geologist

June 22, 2007
Date

Representing: Arias & Associates, Inc. Project No.: 06SA-4118
(Name of Company)

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

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GEOLOGIC ASSESSMENT TABLE — PROJECT NAME: Proposed Rockwall Ranch East Subdivision

LOCATION			FEATURE CHARACTERISTICS												EVALUATION		PHYSICAL SETTING		
1A	1B *	1C *	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	≥1.6	
S1	29° 40' 54.4"	98° 15' 48.9"	SC	20	Kep	1	2	1.5					F,O	5	25	X		X		hillside
S2	29° 40' 58.7"	98° 15' 42.9"	SF	20	Kep	6	1	1.5					O,F	10	30	X		X		hillside
S3	29° 40' 59.5"	98° 15' 43.2"	SC	20	Kep	2.5	2.5	2					O,F	15	35	X		X		hillside
S4	29° 40' 48.9"	98° 15' 56.2"	SC	20	Kep	3.5	2.5	2.5					O,F	15	35	X		X		hillside
S5	29° 41' 30.3"	98° 16' 10.6"	CD	5	Kep	30	25	2					O,C,F	10	15	X			X	streambed
S6	29° 41' 26.4"	98° 16' 9.5"	CD	5	Kgt	45	15	2					O,C,F	10	15	X			X	streambed
S7	29° 41' 22.0"	98° 16' 6.7"	CD	5	Kep	300	100	3					C,O,F	15	20	X			X	streambed
S8	29° 41' 16.9"	98° 16' 3.2"	CD	5	Kep	100	40	1					C,O,F	10	15	X			X	streambed
S9	29° 41' 4.3"	98° 16' 1.7"	CD	5	Kep	70	15	1.5					C,O,F	10	15	X			X	streambed
S10	29° 40' 59.1"	98° 16' 2.8"	CD	5	Kep	120	25	2					C,O,F	10	15	X			X	streambed
S11	29° 41' 9.9"	98° 15' 52.6"	CD	5	Kep	12	6	1.5					F	5	10	X		X		hillside
S12	29° 41' 3.3"	98° 15' 55.2"	SC	20	Kep	2	1.5	2					F,O	10	30	X		X		hillside
S13	29° 40' 49.0"	98° 16' 2.2"	SC	20	Kep	1	1	1					F	10	30	X		X		hillside
S14	29° 40' 46.4"	98° 16' 8.4"	SC	20	Kep	2	1	1					F,C	10	30	X		X		hilltop
S15	29° 40' 46.1"	98° 16' 9.7"	SC	20	Kep	5	1	1.5					F	10	30	X		X		hilltop
S16	29° 40 49.1"	98° 16' 6.2"	SC	20	Kep	3	2	1.5					F	10	30	X		X		hillside
S17	29° 40' 47.4"	98° 16' 10.4"	SC	20	Kep	2	2	1					F,O	10	30	X		X		hilltop

* DATUM: NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
F	Fines, compacted clay-rich sediment, soil profile, gray or red colors
V	Vegetation. Give details in narrative description
FS	Flowstone, cements, cave deposits
X	Other materials

12 TOPOGRAPHY
Cliff, Hilltop, Hillside, Drainage, Floodplain, Streambed

I have read, I understood, and I have followed the Texas Commission on Environmental Quality's Instructions to Geologists. The information presented here complies with that document and is a true representation of the conditions observed in the field.

My signature certifies that I am qualified as a geologist as defined in 30 TAC Chapter 213.

Kevin L. Wooster

STATE OF TEXAS — 6/22/07 — Kevin L. Wooster — Geology — 164 — LICENSED PROFESSIONAL GEOSCIENTIST

Date 6/22/2007

Sheet 1 of 2

TCEQ-0585-Table (Rev. 10-01-04)

GEOLOGIC ASSESSMENT TABLE

PROJECT NAME: Proposed Rockwall Ranch East Subdivision

LOCATION			FEATURE CHARACTERISTICS												EVALUATION			PHYSICAL SETTING		
1A	1B *	1C *	2A	2B	3	4			5	5A	6	7	8A	8B	9	10		11		12
FEATURE ID	LATITUDE	LONGITUDE	FEATURE TYPE	POINTS	FORMATION	DIMENSIONS (FEET)			TREND (DEGREES)	DOM	DENSITY (NO/FT)	APERTURE (FEET)	INFILL	RELATIVE INFILTRATION RATE	TOTAL	SENSITIVITY		CATCHMENT AREA (ACRES)		TOPOGRAPHY
						X	Y	Z		10						<40	≥40	<1.6	≥1.6	
S18	29° 40' 49.0"	98° 16' 25.1"	SC	20	Kep	3.5	2.5	2					F,O	15	35	X		X		hilltop
S19	29° 41' 05.2"	98° 16' 20.7"	F	20	Kdr/Kgt/Kep	3700+			N52E				C,F	15	35	X			X	hilltop
S20	29° 40' 49.6"	98° 16' 11.6"	SC	20	Kep	4	2	1.5					C,F	15	35	X		X		hillside
S21	29° 40' 54.8"	98° 16' 3.7"	SC	20	Kep	3	3	2					F,O	15	35	X		X		hilltop
S22	29° 40' 52.0"	98° 16' 9.6"	SC	20	Kep	1.5	1	2					F	10	30	X		X		hillside
S23	29° 40' 55.3"	98° 16' 11.6"	SC	20	Kep	2	1	1					F	10	30	X		X		hilltop
S24	29° 41' 4.4"	98° 16' 10.2"	SF	20	Kep	4	1	2					F,O	15	35	X		X		hillside
S25	29° 41' 5.5"	98° 16' 22.3"	SC	20	Kep	1	1	2					O,F	15	35	X		X		hilltop
S26	29° 41' 6.8"	98° 16' 20.4"	SC	20	Kep	1	3	1.5					O,F	15	35	X		X		hillside
S27	29° 41' 8.0"	98° 16' 16.8"	SF	20	Kep	10	2	1					O,F	15	35	X		X		hilltop
S28	29° 41' 9.8"	98° 16' 10.5"	SC	20	Kep	2	2	1.5					O,F	15	35	X		X		hillside
S29	29° 41' 10.6"	98° 16' 19.9"	CD	5	Kdr	6	5	2					C,F	15	20	X		X		hilltop
S30	29° 41' 20.5"	98° 16' 1.0"	SC	20	Kgt	2	2	1.5					F	15	35	X		X		hillside
S31	29° 41' 26.1"	98° 16' 24.2"	MM	30	Kdr	60	40	5	(Stock tank)				F	5	35	X		X		hilltop
S32	29° 41' 32.1"	98° 16' 14.2"	MM	30	Kdr	25	20	3	(Stock tank)				F	5	35	X		X		hilltop

* DATUM NAD 83

2A TYPE	TYPE	2B POINTS
C	Cave	30
SC	Solution cavity	20
SF	Solution-enlarged fracture(s)	20
F	Fault	20
O	Other natural bedrock features	5
MB	Manmade feature in bedrock	30
SW	Swallow hole	30
SH	Sinkhole	20
CD	Non-karst closed depression	5
Z	Zone, clustered or aligned features	30

8A INFILLING	
N	None, exposed bedrock
C	Coarse - cobbles, breakdown, sand, gravel
O	Loose or soft mud or soil, organics, leaves, sticks, dark colors
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Kevin L. Wooster

STATE OF TEXAS
6/22/07
Kevin L. Wooster
Geology
164
LICENSED
PROFESSIONAL GEOSCIENTIST

Date 6/22/2007

Sheet 2 of 2

TCEQ-0585-Table (Rev. 10-01-04)

305-ACRE TRACT
PROPOSED ROCKWALL RANCH EAST SUBDIVISION

SOIL NARRATIVE

In accordance with the U.S.D.A. Soil Survey of Comal and Hays Counties, dated 1984, the natural surface soils have been mapped as within several soil units.

Denton silty clay, 1-3% slopes (DeB) which is a moderately deep, gently sloping soil typically found on valley slopes and uplands. The surface layer of DeB clay is a dark grayish brown clay extending to depth as dark brown silty clay. This soils is well drained. Permeability of this soil is slow and surface runoff is medium. This soil occurs in the northwestern portion of the Site.

Denton silty clay, 1-5% slopes, eroded (DeC3) which is a moderately deep, gently sloping soil typically found on valley slopes and uplands. The surface layer of DeC3 clay is a dark grayish brown silty clay, and extendd to depth as grayish brown silty clay. This soil is well drained. Permeability of this soil is slow and surface runoff is rapid. This soil occurs in the northwestern portion of the Site.

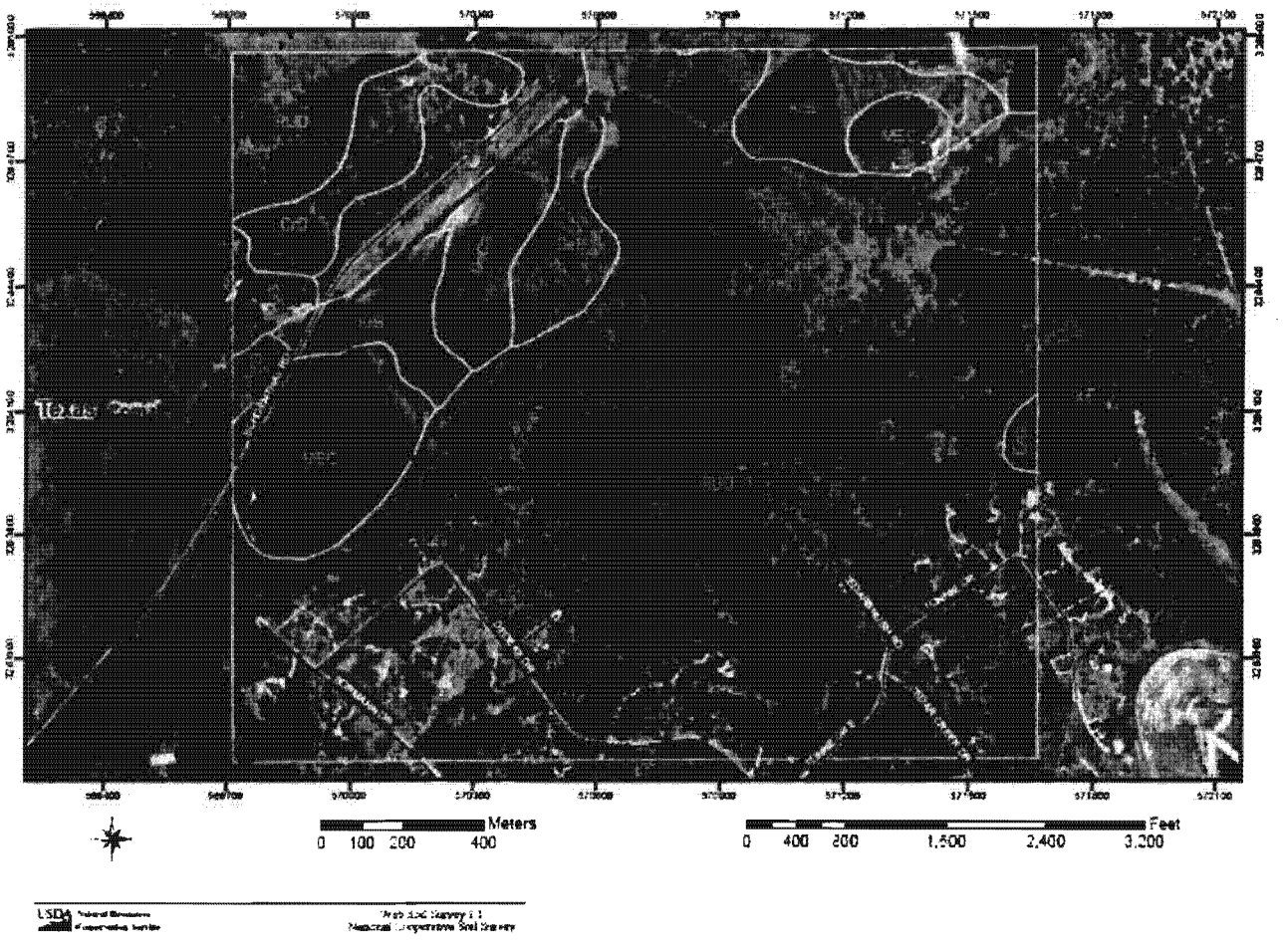
Krum clay (KrB) which is a deep, nearly level soil typically found on stream terraces and valley fills. The surface layer of Krum clay is a dark brown clay with some calcareous nodules to a depth of approximately 19 inches which overlies a lighter colored clay layer that ranges up to 48 inches thick or more. This soil is well drained. Permeability of this soil is moderately slow and surface runoff is medium. This soil occurs in the northwestern portion of the Site.

Medlin-Eckrant association, undulating (MEC) soils are mapped to cover the majority of property and are classified as dark reddish brown cherty clay loam. The MEC soils are very shallow to shallow and deep soils on uplands. These soils consist of grayish brown clay grading down into olive and pale yellow clay, having slow permeability. This soil is well drained. Permeability of this soil is very slow and surface runoff is rapid. This soil occurs in the western and far northwestern portions of the Site.

Rumple Comfort association, undulating (RUD) soils are mapped to cover the majority of property and are classified as dark reddish brown cherty clay loam. The RUD soils are shallow to moderately deep over hard limestone. These soils consist of dark gray clay grading down into reddish brown clay, having slow permeability. This soil occurs in the south, central, and eastern portions of the Site.

SOIL MAP

SOIL SURVEY OF COMAL AND HAYS COUNTIES, TEXAS



Soil Survey of Comal and Hays Counties, Texas

Map Unit Legend Summary

Comal and Hays Counties, Texas

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
CnD	Comfort-Rock outcrop complex, 1 to 8 percent slopes	32.9	3.9
DnB	Denton silty clay, 1 to 3 percent slopes	19.8	2.4
DnC3	Denton silty clay, 1 to 5 percent slopes, eroded	24.3	2.9
ErG	Eckrant-Rock outcrop complex, 8 to 30 percent slopes	10.9	1.3
KnB	Krum clay, 1 to 3 percent slopes	46.3	5.5
MEC	Medlin-Eckrant association, 1 to 8 percent slopes	94.9	11.3
RUD	Rumple-Comfort association, 1 to 8 percent slopes	607.5	72.6

MAP LEGEND

- Soil Map Units
- Cities
- Detailed Counties
- Detailed States
- Interstate Highways
- Roads
- Rails
- Water
- Hydrography
- Streams
- Escarpment, bedrock
- Escarpment, non-bedrock
- Gulley
- Levee
- Slope
- Blowout
- Borrow Pit
- Clay Spot
- Depression, closed
- Eroded Spot
- Gravel Pit
- Gravelly Spot
- Gully
- Lava Flow
- Landfill
- Marsh or Swamp
- Miscellaneous Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Side or Slip
- Sinkhole
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Perennial Water

MAP INFORMATION

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL: http://websoilsurvey.nrcs.usda.gov

Coordinate System: UTM Zone 14

Soil Survey Area: Comal and Hays Counties, Texas
Soaba Version of Data: 1
Soil Map Compilation Scale: 1:20000

Map comprised of aerial images photographed on these dates:
1995

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

USDA Natural Resources Conservation Service

Web Soil Survey 3.1
National Cooperative Soil Survey

Proposed Rockwall Ranch East Subdivision

STRATIGRAPHIC COLUMN

Hydrogeologic subdivision			Group formation or member			Hydrologic fuction	Thickness (feet)	Lithology	Cavern development	Porosity / permeability type
Quaternary			Terrace Deposits			CU	0-30	Gravel and sand	None	High porosity / high permeability
Upper Cretaceous	Upper Confining Unit		Austin Group			CU	130-150	White to gray limestone	None	Low porosity / low permeability
			Eagle Ford Group			CU	30-50	Buff, light gray, dense mudstone	None	Low porosity / low permeability
			Buda Limestone			CU	40-50	Brown flaggy shale and argillaceous limestone	None	Low porosity / low permeability
			Del Rio Clay			CU	40-50	Blue-green to yellow-brown clay	None	None / primary upper confining unit
Lower Cretaceous	I	Edwards aquifer	Georgetown Formation			CU	10	Reddish-brown, gray to light tan marly limestone	None	Low porosity / low permeability
	II		Edwards Group	Person Fm.	Cyclic & marine members undivided	AQ	80-100	Mudstone to packstone; miliolid grainstone; chert	Many subsurface	Laterally extensive; water yielding
	III				Leached & collapsed members	AQ	80-100	Crystalline limestone; mudstone to grainstone; chert collapsed breccia	Extensive lateral development; large rooms	Majority not fabric / one of the most permeable
	IV				Regional dense member	CU	20-24	Dense, argillaceous mudstone	Very few; only vertical fracture enlargement	Not fabric / low permeability; vertical barrier
	V			Kainer Fm.	Grainstone member	AQ	50-60	Miliolid grainstone; mudstone to wackestone; chert	Few	Not fabric / recrystallization reduces permeability
	VI				Kirschberg evaporite member	AQ	50-60	Highly altered crystalline limestone; chalky mudstone; chert	Probably extensive cave devel.	Majority fabric / one of the most permeable
	VII				Dolomitic member	AQ	110-130	Mudstone to grainstone; crystaline limestone; chert	Caves related to structure or bedding planes	Mostly not fabric; some bedding plane fabric / water-yielding
	VIII				Basal nodular member	Karst AQ; not karst CU	50-60	Shaly, nodular limestone; mudstone and miliolid grainstone	Large lateral caves at surface	Fabric; stratigraphically controlled / large conduit flow at surface; no permeability in subsurface
	Lower confining unit		Upper member of the Glen Rose Limestone			CU; evaporite beds AQ	350-500	Yellowish tan, thinly bedded limestone and marl	Some surface cave development	Some water production at evaporite beds / relatively impermeable

Reference: U.S.G.S. Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County, Texas; Water-Resources Investigations Report 94-4117

Note: CU = Confining Unit; AQ = Aquifer

Indicates Upper Most Surface Bedrock Formation

305-ACRE TRACT
PROPOSED ROCKWALL RANCH EAST SUBDIVISION

GEOLOGY NARRATIVE

The underlying limestone bedrock is exposed as generally small scattered outcrops on the subject property. The south, central, and eastern portions of the Site has been mapped by others as the cyclic and marine member of the lower Cretaceous Person Formation of the Edwards Group. This member is composed of mudstone to grainstone with some chert and collapse breccia. The north eastern portion along a drainageway is mapped as the Georgetown Limestone, while the northwestern portion is shown as the Del Rio Clay formation, with no outcrops of limestone.

No structural features such as faults or fractures were noted in the reviewed literature sources, with the exception of a major fault crossing the north central portion of the Site and off-setting the Del Rio and Georgetown from the Person formation. This feature (Feature 19) was observed on the Site through subtle changes in surface lithology, soil weathering and vegetation.

Two man-made features were noted on the north side of the property near Schoenthal Road. Both features (Features 31 and 32) are existing closed depressions, man made stock tanks in Del Rio Clay. The approximate locations of all features are indicated on the accompanying Site Geologic Map.

No sensitive karst type features of any kind were noted, however, numerous small solution cavities and some solution enlarged fractures were observed and mapped. These features were observed to be infilled with clay or fine grained sediments, and, per the Rapid Infiltration Probability flowchart of TCEQ-0585, are considered as having a slow infiltration rates.

Several large-diameter, shallow closed depressions (Features S5 through S-11) were observed on the north central and central portions of the site, mostly associated with the main drainageway/streambed that crosses the Site. The depressions were generally infilled or covered by dark brown and reddish brown fine grained sediments and clay, along with coarse gravels and cobbles. No fracture patterns or exposed bedrock were observed. No karst openings were observed in the floors of the features. These features, per the Rapid Infiltration Probability flowchart of TCEQ-0585, are considered as having slow infiltration rates.

Proposed Rockwall Ranch East Subdivision

GPS TABLE

FEATURE ID	LATITUDE	LONGITUDE	DATE	HORIZ. ACCURACY
S1	29° 40' 54.4"	98° 15' 48.9"	6/7/2006	<25 m
S2	29° 40' 58.7"	98° 15' 42.9"	6/7/2006	<25 m
S3	29° 40' 59.5"	98° 15' 43.2"	6/7/2006	<25 m
S4	29° 40' 48.9"	98° 15' 56.2"	6/7/2006	<25 m
S5	29° 41' 30.3"	98° 16' 10.6"	6/7/2006	<25 m
S6	29° 41' 26.4"	98° 16' 9.5"	6/7/2006	<25 m
S7	29° 41' 22.0"	98° 16' 6.7"	6/7/2006	<25 m
S8	29° 41' 16.9"	98° 16' 3.2"	6/7/2006	<25 m
S9	29° 41' 4.3"	98° 16' 1.7"	6/7/2006	<25 m
S10	29° 40' 59.1"	98° 16' 2.8"	6/8/2006	<25 m
S11	29° 41' 9.9"	98° 15' 52.6"	6/13/2006	<25 m
S12	29° 41' 3.3"	98° 15' 55.2"	6/13/2006	<25 m
S13	29° 40' 49.0"	98° 16' 2.2"	6/13/2006	<25 m
S14	29° 40' 46.4"	98° 16' 8.4"	6/13/2006	<25 m
S15	29° 40' 46.1"	98° 16' 9.7"	6/13/2006	<25 m
S16	29° 40 49.1"	98° 16' 6.2"	6/13/2006	<25 m
S17	29° 40' 47.4"	98° 16' 10.4"	6/13/2006	<25 m
S18	29° 40' 49.0"	98° 16' 9.7"	6/13/2006	<25 m
S19	29° 41' 05.2"	98° 16' 25.1"	6/13/2006	<25 m
S20	29° 40' 49.6"	98° 16' 11.6"	6/13/2006	<25 m
S21	29° 40' 54.8"	98° 16' 3.7"	6/15/2006	<25 m
S22	29° 40' 52.0"	98° 16' 9.6"	6/15/2006	<25 m
S23	29° 40' 55.3"	98° 16' 11.6"	6/15/2006	<25 m
S24	29° 41' 4.4"	98° 16' 10.2"	6/15/2006	<25 m
S25	29° 41' 5.5"	98° 16' 22.3"	6/15/2006	<25 m
S26	29° 41' 6.8"	98° 16' 20.4"	6/15/2006	<25 m
S27	29° 41' 8.0"	98° 16' 16.8"	6/15/2006	<25 m
S28	29° 41' 9.8"	98° 16' 10.5"	6/15/2006	<25 m
S29	29° 41' 10.6"	98° 16' 19.9"	6/15/2006	<25 m
S30	29° 41' 20.5"	98° 16' 1.0"	6/15/2006	<25 m
S31	29° 41' 26.1"	98° 16' 24.2"	6/15/2006	<25 m
S32	29° 41' 32.1"	98° 16' 14.2"	6/15/2006	<25 m

REFERENCES

Barnes V.L. 1983, Geologic Atlas of Texas, San Antonio, Sheet, Bureau of Economic Geology, The University of Texas at Austin, Texas.

Collins, E.W., 1993. Geology of Bat Cave Quadrangle, Comal County, Texas. Open File Map 2998-424. Bureau of Economic Geology, The University of Texas at Austin, Texas.

San Antonio Water System, 1995. Hydrogeologic Subdivisions of the Edwards Aquifer Recharge Zone, Bat Cave Quadrangle, SAWS, San Antonio, Texas.

Stein, W.G., and Ozuna, G.B., 1995. Geologic Framework and Hydrogeologic Characteristics of the Edwards Aquifer Outcrop, Comal County, Texas. U.S. Geol. Survey, Water-Resources Investigations Report 94-4117. 10 pp., 2 figs.

Texas Commission on Environmental Quality, (TCEQ), Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge Zone, TCEQ-0585-Instructions (Rev. 10-01-04).

United States Department of Agriculture. Soil Survey of Comal and Hays Counties, Texas. Web Soil Survey 1.1, Natural Resource Conservation Service. <http://websoilsurvey.nrcs.usda.gov/app/WebSoilSurvey.aspx> June, 2006.

United States Department of Agriculture. Urban Hydrology for Small Watersheds, Technical Release No. 55.,Appendix A. Natural Resource Conservation Service, <http://www.info.usda.gov/CED/ftp/CED/tr55.pdf > June, 1986.

United Stated Geologic Survey, (USGS), Bat Cave Quadrangle, USGS, Denver, Colorado.

LEGEND:

- Kdr = Del Rio Clay
- Kgt = Georgetown Formation
- Kep = Edwards Person
- = Closed Depression
- U D = Fault
- U = Upthrown
- D = Downthrown
- = Solution Cavity
- = Solution Enlarged Fracture
- Contour Interval = 5 feet
- = Property Boundary
- = Contact

GRAPHIC SCALE
100 0 50 100 200
1 inch = 200 ft.

SCHOENTHAL ROAD

Site Geologic Map
~~305~~ 325 Ac Tract
Proposed Rockwall Ranch East
Subdivision
San Antonio, Texas

A & A File No. 06SA-4118

ARIAS & ASSOCIATES, INC.

STATE OF TEXAS
Kevin L. Wooster
Geology
164
LICENSED
PROFESSIONAL GEOSCIENTIST
4/22/10

Water Pollution Abatement Plan Application
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b), Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch East Subdivision**

REGULATED ENTITY INFORMATION

1. The type of project is:
   - X Residential: # of Lots: **216**
   - ___ Residential: # of Living Unit Equivalents:
   - ___ Commercial
   - ___ Industrial
   - ___ Other:

2. Total site acreage (size of property): **325.33 ac.**

3. Projected population: **750**

4. The amount and type of impervious cover expected after construction are shown below:

Impervious Cover of Proposed Project	Sq. Ft.	Sq. Ft./Acre	Acres
Structures/Rooftops	**864,000**	÷ 43,560 =	**19.8**
Parking (Drives)	**518,400**	÷ 43,560 =	**11.9**
Other paved surfaces (Streets)	**850,000**	÷ 43,560 =	**19.5**
Total Impervious Cover	**2,232,400**	÷ 43,560 =	**51.2**
Total Impervious Cover ÷ Total Acreage x 100 =			**15.7** %

5. X **ATTACHMENT A - Factors Affecting Water Quality.** A description of any factors that could affect surface water and groundwater quality is provided at the end of this form.

6. X Only inert materials as defined by 30 TAC §330.2 will be used as fill material.

FOR ROAD PROJECTS ONLY
Complete questions 7-12 if this application is exclusively for a road project.

7. Type of project:
   - ___ TXDOT road project.
   - ___ County road or roads built to county specifications.
   - ___ City thoroughfare or roads to be dedicated to a municipality.
   - ___ Street or road providing access to private driveways.
8. Type of pavement or road surface to be used:
   - ___ Concrete

__ Asphaltic concrete pavement
__ Other:

9. Length of Right of Way (R.O.W.): _____ feet.
Width of R.O.W.: _____ feet.
L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.

10. Length of pavement area: _____ feet.
Width of pavement area: _____ feet.
L x W = _____ Ft^2 ÷ 43,560 Ft^2/Acre = _____ acres.
Pavement area _____ acres ÷ R.O.W. area _____ acres x 100 = ____% impervious cover.

11. __ A rest stop will be included in this project.
__ A rest stop will **not** be included in this project.

12. __ Maintenance and repair of existing roadways that do not require approval from the TCEQ Executive Director. Modifications to existing roadways such as widening roads/adding shoulders totaling more than one-half (1/2) the width of one (1) existing lane require prior approval from the TCEQ.

STORMWATER TO BE GENERATED BY THE PROPOSED PROJECT

13. **ATTACHMENT B - Volume and Character of Stormwater.** A description of the volume and character (quality) of the stormwater runoff which is expected to occur from the proposed project is provided at the end of this form. The estimates of stormwater runoff quality and quantity should be based on area and type of impervious cover. Include the runoff coefficient of the site for both pre-construction and post-construction conditions.

WASTEWATER TO BE GENERATED BY THE PROPOSED PROJECT

14. The character and volume of wastewater is shown below:

100 % Domestic	**64,800** gallons/day
__ % Industrial	_____ gallons/day
__ % Commingled	_____ gallons/day
TOTAL	**64,800** gallons/day

15. Wastewater will be disposed of by:

X **On-Site** Sewage Facility (OSSF/Septic Tank):

ATTACHMENT C - Suitability Letter from Authorized Agent. An on-site sewage facility will be used to treat and dispose of the wastewater. The appropriate licensing authority's (authorized agent) written approval is provided at the end of this form. It states that the land is suitable for the use of an on-site sewage facility or identifies areas that are not suitable.

X Each lot in this project/development is at least one (1) acre (43,560 square feet) in size. The system will be designed by a licensed professional engineer or registered sanitarian and installed by a licensed installer in compliance with 30 TAC Chapter 285.

NA Sewage Collection System (Sewer Lines):

__ Private service laterals from the wastewater generating facilities will be connected

to an existing SCS.

NA Private service laterals from the wastewater generating facilities will be connected to a proposed SCS.

__ The SCS was previously submitted on _____.

__ The SCS was submitted with this application.

__ The SCS will be submitted at a later date. The owner is aware that the SCS may not be installed prior to executive director approval.

The sewage collection system will convey the wastewater to the (name) Treatment Plant. The treatment facility is :

__ existing.

__ proposed.

16. N/A All private service laterals will be inspected as required in 30 TAC §213.5.

SITE PLAN REQUIREMENTS

Items 17 through 27 must be included on the Site Plan.

17. The Site Plan must have a minimum scale of 1" = 400'.
Site Plan Scale: 1" = **200** '.

18. 100-year floodplain boundaries

X Some part(s) of the project site is located within the 100-year floodplain. The floodplain is shown and labeled.

__ No part of the project site is located within the 100-year floodplain.

The 100-year floodplain boundaries are based on the following specific (including date of material) sources(s):

19. __ The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Show lots, recreation centers, buildings, roads, etc.

X The layout of the development is shown with existing contours. Finished topographic contours will not differ from the existing topographic configuration and are not shown.

20. All known wells (oil, water, unplugged, capped and/or abandoned, test holes, etc.):

__ There are __(#) wells present on the project site and the locations are shown and labeled. (Check all of the following that apply)

__ The wells are not in use and have been properly abandoned.

__ The wells are not in use and will be properly abandoned.

__ The wells are in use and comply with 30 TAC §238.

X There are no wells or test holes of any kind known to exist on the project site.

21. Geologic or manmade features which are on the site:

__ All **sensitive and possibly sensitive** geologic or manmade features identified in the Geologic Assessment are shown and labeled.

X No **sensitive and possibly sensitive** geologic or manmade features were identified in the Geologic Assessment.

NA **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to

the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. Geologic or manmade features were found and are shown and labeled.

___ **ATTACHMENT D - Exception to the Required Geologic Assessment.** An exception to the Geologic Assessment requirement is requested and explained in ATTACHMENT D provided at the end of this form. No geologic or manmade features were found.

22. X The drainage patterns and approximate slopes anticipated after major grading activities.

23. X Areas of soil disturbance and areas which will not be disturbed.

24. X Locations of major structural and nonstructural controls. These are the temporary and permanent best management practices.

25. X Locations where soil stabilization practices are expected to occur.

26. X Surface waters (including wetlands).

27. X Locations where stormwater discharges to surface water or sensitive features.
___ There will be no discharges to surface water or sensitive features.

ADMINISTRATIVE INFORMATION

28. X One (1) original and three (3) copies of the completed application have been provided.

29. X Any modification of this WPAP will require TCEQ executive director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **WATER POLLUTION ABATEMENT PLAN APPLICATION FORM** is hereby submitted for TCEQ review and executive director approval. The form was prepared by:

Todd M. Simmang, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

8/23/07
Date

ATTACHMENT "A"

Factors Affecting Water Quality

The development will be a low density, single-family development that will result in minimal to no pollution. Pollution may originate from ordinary household chemicals, normal automobile wastes, and runoff from asphalt streets.

ATTACHMENT "B"

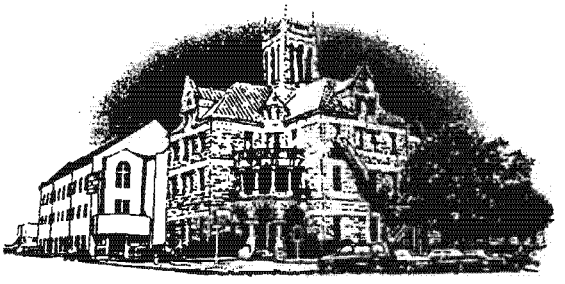
Volume and Character of Stormwater

The development of Rockwall Ranch East Subdivision will result in a minimal increase in stormwater runoff. Preliminary calculations were performed using HEC-HMS. The CN value for existing soil conditions is 77, with an existing impervious cover of 0.0%. The CN value for the proposed condition remained the same, however, the impervious cover increased to 15.7%. For the 25-year storm event, stormwater runoff from the proposed subdivision increased from 1100 cfs to 1250 cfs, an increase of 13.6%. For the 100-year storm event, stormwater runoff increased from 1600 cfs to 1880 cfs. This is an increase of 17.5%.

The following information shows the increase in the 100-year storm water discharges and locations from the proposed site only. This information does not include the entire watershed just the discharge rates from the proposed site.

Drainage patterns for the site will remain relatively unchanged. Low areas and swales will remain in their original condition, therefore offering natural vegetative filtering capabilities. The lot layout was designed to utilize the drainage patterns to protect the vegetation in these areas and prevent improvements from being constructed that would alter these areas.

Due to the fact that the majority of the drainage lows will remain in their natural condition and that the total impervious cover is low (15.7%), the quality of stormwater runoff leaving the site should remain relatively unchanged.



Comal County

OFFICE OF COMAL COUNTY ENGINEER

July 18, 2007

Mr. Todd Simmang, P.E.
Carter & Burgess, Inc.
911 Central Parkway North, Suite 425
San Antonio, TX 78232-5065

Re: Rockwall Ranch East Subdivision On-Site Sewage Facility Suitability Letter, within Comal County, Texas

Dear Mr. Simmang:

In accordance with TAC §213.5(b)(4)(F)(ii), Comal County has found that the entire referenced site is suitable for the use of private sewage facilities and will meet the special requirements for on-site sewage facilities located on the Edwards Aquifer recharge zone as specified in TAC §285.40-42 based on the following information submitted to our office on July 17, 2007:

- The Geologic Assessment, prepared by Arias & Associates, states that no sensitive features of any kind were noted on the site.
- The Water Pollution Abatement Plan, prepared by Carter & Burgess, states that no sensitive and possibly sensitive geologic or manmade features were identified in the Geologic Assessment.

In addition, according to TAC §285.41(b), KT East Realestate Investments, L.P., the owner of the referenced site, must inform, in writing, each prospective purchaser, lessee, or renter of the following:

- All lots within Rockwall Ranch East Subdivision are subject to the terms and conditions of TAC §285.40-42;
- A Permit to Construct is required from Comal County before an OSSF can be constructed in Rockwall Ranch East Subdivision;
- A License to Operate is required from Comal County before an OSSF can be operated; and
- That an application for a water pollution abatement plan as defined in TAC §213 has been made, whether it has been approved, and if any restrictions or conditions have been placed on that approval.

Furthermore, according to TAC §285.42(a), if any recharge feature is discovered during construction of an OSSF, all regulated activities near the feature shall be suspended immediately. The owner shall immediately notify the TCEQ San Antonio office of the discovery of the feature. All activities regulated under TAC §213 shall not proceed near the feature until Comal County, in

conjunction with the TCEQ San Antonio office, has reviewed and approved a plan proposed to protect the feature, the structural integrity of the OSSF, and the water quality of the aquifer. The plan shall be sealed, signed, and dated by a professional engineer.

Finally, on a separate matter, according to TAC §285.4(c), persons proposing residential subdivisions within Comal County and using on-site sewage facilities (OSSFs) for sewage disposal are required to submit planning materials for the residential subdivision to Comal County. The planning materials shall be prepared by a professional engineer or professional sanitarian and shall include an overall site plan, topographic map, 100-year floodplain map, soil survey, location of water wells, locations of easements as identified in TAC §285.91(10) (relating to Tables), a complete report detailing the types of OSSFs to be considered and their compatibility with area-wide drainage and groundwater, and a comprehensive drainage plan. Comal County also asks for an existing improvements sketch and gate combination(s) in order to adequately inspect the site for use of OSSFs for sewage disposal. We have included Comal County's *Application for Licensing Authority Recommendation for Private Sewerage Facilities for a Proposed Subdivision* for your use.

If you have any questions or need additional information, please do not hesitate to contact our office.

Sincerely,

Robert Boyd, P.E.
Comal County Assistant Engineer

cc: Jay Millikin, Comal County Commissioner, Precinct No. 2
Betty Lien, Comal County Subdivision Coordinator

attachment a/s

Application for Licensing Authority Recommendation
for Private Sewerage Facilities for a Proposed Subdivision

Date: _____

Subdivision Name: _____

Owner's Name: _____

Address: _____

Phone #: _____

Fee Schedule:
5 or less tracts: $20/tract
6 or more tracts: $100 base fee + $5/tract

Total Fee: $_____

Received by: _____

Make check payable to Comal County

According to TAC §285.4(c), before the permit process for individual OSSFs can begin, persons proposing residential subdivisions, manufactured housing communities, multi-unit residential developments, business parks, or other similar uses within Comal County and using on-site sewage facilities (OSSFs) for sewage disposal are required to submit planning materials for these developments to Comal County, as the Authorized Agent of the Texas Commission on Environmental Quality (TCEQ). The planning materials shall be prepared by a professional engineer or professional sanitarian and shall include:

- an overall site plan
- topographic map
- 100-year floodplain map
- soil survey
- location of water wells
- locations of easements as identified in TAC §285.91(10) (relating to Tables)
- a complete report detailing the types of OSSFs to be considered and their compatibility with area-wide drainage and groundwater
- a comprehensive drainage plan

Comal County also asks for an existing improvements sketch and gate combination(s) in order to adequately inspect the site for use of OSSFs for sewage disposal.

Date of Review (must be within 45 days of receipt): _____

☐ Approved

☐ Denied

Reasons for Denial: _____

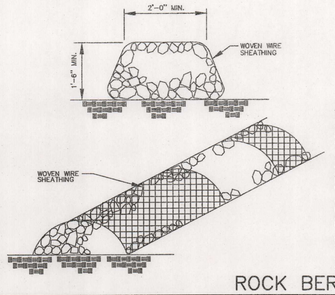
_____

_____

_____

Reviewer: _____, D.R.

* Note: This sheet shall be first with all planning materials listed above following behind



NOTES:

USE ONLY OPEN GRADED ROCK 3–5 INCHES DIAMETER.

THE ROCK BERM SHALL BE SECURED WITH A WOVEN WIRE SHEATHING HAVING MAXIMUM 1 INCH OPENINGS AND MINIMUM WIRE DIAMETER OF 20 GAUGE.

THE ROCK BERM SHALL BE INSPECTED WEEKLY OR AFTER EACH RAIN, AND THE STONE AND/OR FABRIC CORE–WOVEN WIRE SHEATHING, SHALL BE REPLACED WHEN THE STRUCTURE CEASES TO FUNCTION AS INTENDED, DUE TO SILT ACCUMULATION AMONG THE ROCKS, WASHOUT, CONSTRUCTION TRAFFIC DAMAGE, ETC.

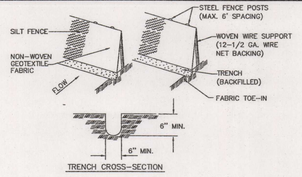
WHEN SILT REACHES A DEPTH EQUAL TO ONE–THIRD THE HEIGHT OF THE BERM OR ONE FOOT, WHICHEVER IS LESS, THE SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CREATE A SILTATION PROBLEM.

DAILY INSPECTION SHALL BE MADE ON SEVERE SERVICE ROCK BERMS; SILT SHALL BE REMOVED WHEN ACCUMULATION REACHES 6 INCHES.

WHEN THE SITE IS COMPLETELY STABILIZED, THE BERM AND ACCUMULATED SILT SHALL BE REMOVED AND DISPOSED OF IN AN APPROVED MANNER.

ROCK BERM

N.T.S.



TRENCH CROSS–SECTION

NOTES:

STEEL POSTS WHICH SUPPORT THE SILT FENCE SHALL BE INSTALLED ON A SLIGHT ANGLE TOWARD THE ANTICIPATED RUNOFF SOURCE. POST MUST BE EMBEDDED A MINIMUM OF ONE FOOT.

THE TOE OF THE SILT FENCE SHALL BE TRENCHED IN WITH A SPADE OR MECHANICAL TRENCHER, SO THAT THE DOWNSLOPE FACE OF THE TRENCH IS FLAT AND PERPENDICULAR TO THE LINE OF FLOW. WHERE FENCE CAN NOT BE TREATED (e.g. pavement) WEIGHT FABRIC FLAP WITH WASHED GRAVEL ON UPHILL SIDE TO PREVENT FLOW UNDER FENCE.

THE TRENCH MUST BE A MINIMUM OF 6 INCHES DEEP AND 6 INCHES WIDE TO ALLOW FOR THE SILT FENCE FABRIC TO BE LAID IN THE GROUND AND BACKFILLED WITH COMPACTED MATERIAL.

SILT FENCE SHOULD BE SECURELY FASTENED TO EACH STEEL SUPPORT POST OR TO WOVEN WIRE, WHICH IS IN TURN ATTACHED TO THE STEEL FENCE POST.

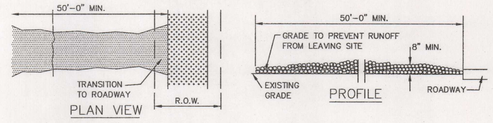
INSPECTION SHALL BE MADE WEEKLY OR AFTER EACH RAINFALL EVENT AND REPAIR OR REPLACEMENT SHALL BE MADE PROMPTLY AS NEEDED.

SILT FENCE SHALL BE REMOVED WHEN THE SITE IS COMPLETELY STABILIZED SO AS NOT TO BLOCK OR IMPEDE STORM FLOW OR DRAINAGE.

ACCUMULATED SILT SHALL BE REMOVED WHEN IT REACHES A DEPTH OF 6 INCHES. THE SILT SHALL BE DISPOSED OF IN AN APPROVED SITE AND IN SUCH A MANNER AS TO NOT CONTRIBUTE TO ADDITIONAL SILTATION.

SILT FENCE

N.T.S.



NOTES:

STONE SIZE– 3 TO 5 INCH OPEN GRADED ROCK.

LENGTH– AS EFFECTIVE, BUT NOT LESS THAN 50 FEET.

THICKNESS– NOT LESS THAN 8 INCHES.

WIDTH– NOT LESS THAN FULL WIDTH OF ALL POINTS OF INGRESS OR EGRESS.

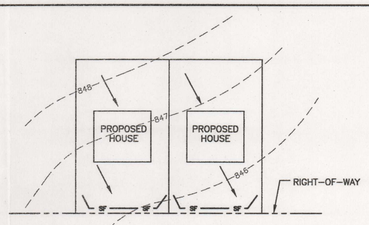
WASHING– WHEN NECESSARY, WHEELS SHALL BE CLEANED TO REMOVE SEDIMENT PRIOR TO ENTRANCE ONTO PUBLIC ROADWAY. WHEN WASHING IS REQUIRED, IT SHALL BE DONE ON AN AREA STABILIZED WITH CRUSHED STONE WHICH DRAINS INTO AN APPROVED SITRAP OR SEDIMENT BASIN. ALL SEDIMENT SHALL BE PREVENTED FROM ENTERING ANY STORM DRAIN, DITCH, OR WATERCOURSE USING APPROVED METHODS.

MAINTENANCE– THE ENTRANCE SHALL BE MAINTAINED IN A CONDITION WHICH WILL PREVENT TRACKING OR FLOWING OF SEDIMENT ONTO PUBLIC ROADWAYS. THIS MAY REQUIRE PERIODIC TOP DRESSING WITH ADDITIONAL STONE AS CONDITIONS DEMAND, AND REPAIR AND/OR CLEANOUT OF ANY MEASURES USED TO TRAP SEDIMENT. ALL SEDIMENT SPILLED, DROPPED, WASHED OR TRACKED ONTO PUBLIC ROADWAY MUST BE REMOVED IMMEDIATELY.

DRAINAGE– ENTRANCE MUST BE PROPERLY GRADED OR INCORPORATE A DRAINAGE SWALE TO PREVENT RUNOFF FROM LEAVING THE CONSTRUCTION SITE.

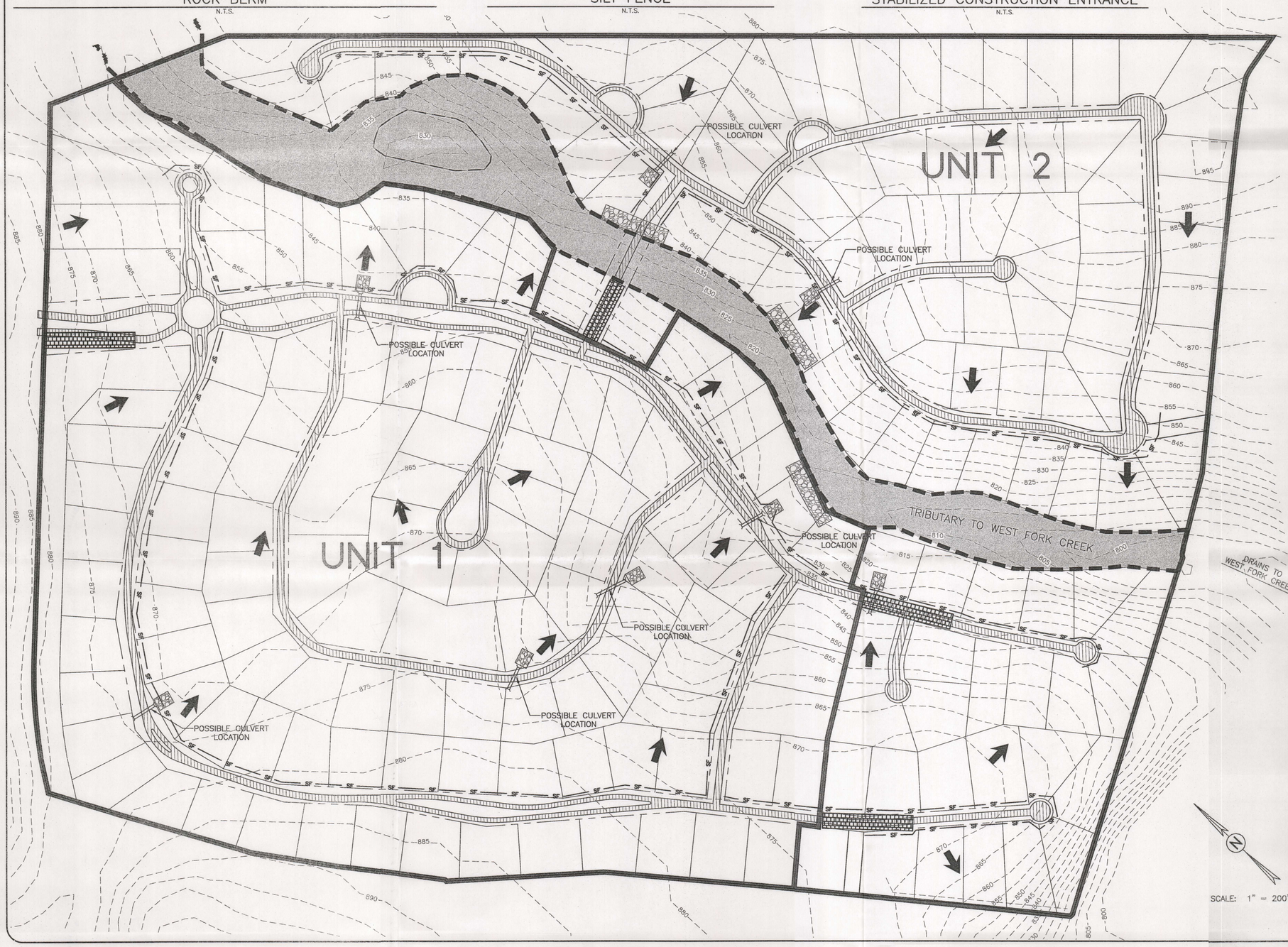
STABILIZED CONSTRUCTION ENTRANCE

N.T.S.



TYPICAL SILT FENCE AT RESIDENTAIL LOT

NOTE:
RESIDENTIAL LOT CONSTRUCTION MUST MEET THE REQUIREMENTS OF THIS WPAP AS WELL AS WITH LOCAL, STATE, AND FEDERAL REGULATIONS. TEMPORARY BMPS MUST BE IN PLACE PRIOR TO ANY RESIDENTIAL LOTS CONSTRUCTION.



SCALE: 1" = 200'

Texas Commission on Environmental Quality
Water Pollution Abatement Plan
General Construction Notes

1. Written construction notification must be given to the appropriate TCEQ regional office no later than 48 hours prior to commencement of the regulated activity. Information must include the date on which the regulated activity will commence, the name of the approved plan for the regulated activity, and the name of the prime contractor and the name and telephone number of the contact person.
2. All contractors conducting regulated activities associated with this project must be provided with complete copies of the approved Water Pollution Abatement Plan and the TCEQ letter indicating the specific conditions of its approval. During the course of these regulated activities, the contractors are required to keep on-site copies of the approved plan and approval letter.
3. If any sensitive feature is discovered during construction, all regulated activities near the sensitive feature must be suspended immediately. The appropriate TCEQ regional office must be immediately notified of any sensitive features encountered during construction. The regulated activities near the sensitive feature may not proceed until the TCEQ has reviewed and approved the methods proposed to protect the sensitive feature and the Edwards Aquifer from any potentially adverse impacts to water quality.
4. No temporary aboveground hydrocarbon and hazardous substance storage tank system is installed within 150 feet of a domestic, industrial, irrigation, or public water supply well, or other sensitive feature.
5. Prior to commencement of construction, all temporary erosion and sedimentation (E&S) control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. Controls specified in the temporary storm water section of the approved Edwards Aquifer Protection Plan are required during construction. If inspections indicate a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations. The controls must remain in place until disturbed areas are revegetated and the areas have become permanently stabilized.
6. If sediment escapes the construction site, off–site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).
7. Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake must be provided that can indicate when the sediment occupies 50% of the basin volume.
8. Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).
9. All spoils (excavated material) generated from the project site must be stored on-site with proper E&S controls. For storage or disposal of spoils at another site on the Edwards Aquifer Recharge Zone, the owner of the site must receive approval of a water pollution abatement plan for the placement of fill material or mass grading prior to the placement of spoils at the other site.
10. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, but in no case more than 14 days after the construction activity in that portion of the site has temporarily or permanently ceased. Where the initiation of stabilization measures by the 14th day after construction activity temporary or permanently cease is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable. Where construction activity on a portion of the site is temporarily ceased, and earth disturbing activities will be resumed within 21 days, temporary stabilization measures do not have to be initiated on that portion of site. In areas experiencing droughts where the initiation of stabilization measures by the 14th day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.
11. The following records shall be maintained and made available to the TCEQ upon request: the dates when major grading activities occur; the dates when construction activities temporarily or permanently cease on a portion of the site; and the dates when stabilization measures are initiated.
12. The holder of any approved Edward Aquifer protection plan must notify the appropriate regional office in writing and obtain approval from the executive director prior to initiating any of the following:

A. any physical or operational modification of any water pollution abatement structure(s), including but not limited to ponds, dams, berms, sewage treatment plants, and diversionary structures;

B. any change in the nature or character of the regulated activity from that which was originally approved or a change which would significantly impact the ability of the plan to prevent pollution of the Edwards Aquifer;

C. any development of land previously identified as undeveloped in the original water pollution abatement plan.

Austin Regional Office
2800 S. IH 35, Suite 100
Austin, Texas 78704-5712
Phone(512) 339-2929
Fax (512) 339-3795

San Antonio Regional Office
14250 Judson Road
San Antonio, Texas 78233-4480
Phone(210) 490-3096
Fax (210) 545-4329

NOTE:

PORTION OF THIS SUBDIVISION IS LOCATED WITHIN THE EXISTING SPECIAL FLOOD HAZARD AREA. THE 100 YEAR FLOOD BOUNDARY AS SHOWN IS BASED OFF OF THE PRELIMINARY D–FIRM MAPPING PREPARED FOR FEMA.

AREA OF DISTURBANCE – NO MORE THAN 10 ACRES PER SUB–WATERSHED SHALL BE DISTURBED AT ONE TIME = 20.40 AC.

AREA OF NO DISTURBANCE = 304.93 AC.

TOTAL AREA = 325.33 AC.

LEGEND

- UNIT LINE
- 100–YEAR FLOOD PLAIN BASED ON PRELIMINARY D–FIRM MAPPING
- AREAS OF DISTURBANCE
- ROCK BERM
- SF SF — SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- 850 — EXISTING CONTOURS

NO.	DATE	REVISION	BY
1	8/29/07	ADDED GENERAL NOTES AND DETAILS	MAR

Carter :: Burgess
Consultants in Engineering, Architecture, Construction Management and Related Services
Carter and Burgess, Inc.
811 Central Parkway North, Suite 425
San Antonio, Texas 78232
(210) 494-0088 Fax (210) 494-0626
© Carter and Burgess, Inc.

STATE OF TEXAS
TODD H. SIMMANG
91162
LICENSED
PROFESSIONAL ENGINEER
8/29/07

WATER POLLUTION ABATEMENT PLAN SITE PLAN

ROCKWALL RANCH EAST SUBDIVISION

COMAL COUNTY, TEXAS

DATE: 06/13/2007
DRAWN BY: M.A.R.
DESIGNED BY: T.S.
CHECKED BY: T.S.
REVIEWED BY: T.S.
PROJECT NUMBER: 310485.022

SHEET 1 OF

Temporary Stormwater Section
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b)(4)(A), (B), (D)(I) and (G); Effective June 1, 1999

REGULATED ENTITY NAME: **Rockwall Ranch East Subdivision**

POTENTIAL SOURCES OF CONTAMINATION

Examples: Fuel storage and use, chemical storage and use, use of asphaltic products, construction vehicles tracking onto public roads, and existing solid waste.

1. Fuels for construction equipment and hazardous substances which will be used during construction:

__ Aboveground storage tanks with a cumulative storage capacity of less that 250 gallons will be stored on the site for less than one (1) year.

__ Aboveground storage tanks with a cumulative storage capacity between 250 gallons and 499 gallons will be stored on the site for less than one (1) year.

__ Aboveground storage tanks with a cumulative storage capacity of 500 gallons or more will be stored on the site. An **Aboveground Storage Tank Facility Plan** application must be submitted to the appropriate regional office of the TCEQ prior to moving the tanks onto the project.

X Fuels and hazardous substances will not be stored on-site.

2. X **ATTACHMENT A - Spill Response Actions**. A description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is provided at the end of this form.

3. NA Temporary aboveground storage tank systems of 250 gallons or more cumulative storage capacity must be located a minimum horizontal distance of 150 feet from any domestic, industrial, irrigation, or public water supply well, or other sensitive feature.

4. X **ATTACHMENT B - Potential Sources of Contamination.** Describe in an attachment at the end of this form any other activities or processes which may be a potential source of contamination.

__ There are no other potential sources of contamination.

SEQUENCE OF CONSTRUCTION

5. X **ATTACHMENT C - Sequence of Major Activities.** A description of the sequence of major activities which will disturb soils for major portions of the site (grubbing, excavation, grading, utilities, and infrastructure installation) is provided at the end of this form. For each activity described, an estimate of the total area of the site to be disturbed by each activity is given.

6. X Name the receiving water(s) at or near the site which will be disturbed or which will receive discharges from disturbed areas of the project: **Dry Comal Creek**

TEMPORARY BEST MANAGEMENT PRACTICES (TBMPs)

Erosion control examples: tree protection, interceptor swales, level spreaders, outlet stabilization, blankets or matting, mulch, and sod. Sediment control examples: stabilized construction exit, silt fence, filter dikes, rock berms, buffer strips, sediment traps, and sediment basins. Please refer to the Technical Guidance Manual for guidelines and specifications. **All structural BMPs must be shown on the site plan.**

7. X **ATTACHMENT D - Temporary Best Management Practices and Measures.** A description of the TBMPs and measures that will be used during and after construction are provided at the end of this form. For each activity listed in the sequence of construction, include appropriate control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

   X TBMPs and measures will prevent pollution of surface water, groundwater, and stormwater. The construction-phase BMPs for erosion and sediment controls have been designed to retain sediment on site to the extent practicable. The following information has been provided in the attachment at the end of this form

   a. A description of how BMPs and measures will prevent pollution of surface water, groundwater or stormwater that originates upgradient from the site and flows across the site.

   b. A description of how BMPs and measures will prevent pollution of surface water or groundwater that originates on-site or flows off site, including pollution caused by contaminated stormwater runoff from the site.

   c. A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.

   d. A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring sensitive features identified in either the geologic assessment, TCEQ inspections, or during excavation, blasting, or construction.

8. The temporary sealing of a naturally-occurring sensitive feature which accepts recharge to the Edwards Aquifer as a temporary pollution abatement measure during active construction should be avoided.

   NA **ATTACHMENT E - Request to Temporarily Seal a Feature.** A request to temporarily seal a feature is provided at the end of this form. The request includes justification as to why no reasonable and practicable alternative exists for each feature.

   NA There will be no temporary sealing of naturally-occurring sensitive features on the site.

9. NA **ATTACHMENT F - Structural Practices.** Describe the structural practices that will be used to divert flows away from exposed soils, to store flows, or to otherwise limit runoff discharge of pollutants from exposed areas of the site. Placement of structural practices in floodplains has been avoided.

10. X **ATTACHMENT G - Drainage Area Map**. A drainage area map is provided at the end of this form to support the following requirements.

__ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.

__ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin and/or sediment trap(s) will be used.

__ For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin or other equivalent controls are not attainable, but other TBMPs and measures will be used in combination to protect down slope and side slope boundaries of the construction area.

X There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. A smaller sediment basin and/or sediment trap(s) will be used in combination with other erosion and sediment controls within each disturbed drainage area.

11. N/A **ATTACHMENT H - Temporary Sediment Pond(s) Plans and Calculations.** Temporary sediment pond or basin construction plans and design calculations for a proposed temporary BMP or measure has been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information must be signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed temporary BMPs and measures are provided as at the end of this form.

12. X **ATTACHMENT I - Inspection and Maintenance for BMPs.** A plan for the inspection of temporary BMPs and measures and for their timely maintenance, repair, and, if necessary, retrofit is provided at the end of this form. A description of documentation procedures and recordkeeping practices is included in the plan.

13. X All control measures must be properly selected, installed, and maintained in accordance with the manufacturers specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicates a control has been used inappropriately, or incorrectly, the applicant must replace or modify the control for site situations.

14. X If sediment escapes the construction site, off-site accumulations of sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain).

15. NA Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50%. A permanent stake will be provided that can indicate when the sediment occupies 50% of the basin volume.

16. X Litter, construction debris, and construction chemicals exposed to stormwater shall be prevented from becoming a pollutant source for stormwater discharges (e.g., screening outfalls, picked up daily).

SOIL STABILIZATION PRACTICES

Examples: establishment of temporary vegetation, establishment of permanent vegetation, mulching, geotextiles, sod stabilization, vegetative buffer strips, protection of trees, or preservation of mature vegetation.

17. X **ATTACHMENT J - Schedule of Interim and Permanent Soil Stabilization Practices.** A schedule of the interim and permanent soil stabilization practices for the site is attached at the end of this form.

18. X Records must be kept at the site of the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

19. X Stabilization practices must be initiated as soon as practicable where construction activities have temporarily or permanently ceased.

ADMINISTRATIVE INFORMATION

20. X All structural controls will be inspected and maintained according to the submitted and approved operation and maintenance plan for the project.

21. X If any geologic or manmade features, such as caves, faults, sinkholes, etc., are discovered, all regulated activities near the feature will be immediately suspended. The appropriate TCEQ Regional Office shall be immediately notified. Regulated activities must cease and not continue until the TCEQ has reviewed and approved the methods proposed to protect the aquifer from any adverse impacts.

22. X Silt fences, diversion berms, and other temporary erosion and sediment controls will be constructed and maintained as appropriate to prevent pollutants from entering sensitive features discovered during construction.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **TEMPORARY STORMWATER SECTION** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Todd M. Simmang, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

8/23/07
Date

ATTACHMENT "A "

Spill Response Actions

There will be no above ground fuel storage tanks allowed on this project. Equipment will be fueled using mobile fuel trucks as needed. There is a small chance of a fuel spill occurring due to leaking construction equipment or re-fueling operations. If a minor spill were to occur, the soil impacted would be removed from the site and properly disposed of in an approved landfill site. If a major spill were to occur, where the amounts spilled were equal to, or exceeding, the Reportable Quantity, RQ, as defined by EPA regulations 40 CFR Part 110, 40 CFR Part 117, or 40 CFR Part 302 then the following steps will be taken.

- Notify the National Response Center at (800) 424-8802 and the TCEQ San Antonio Regional Office at (210) 545-4329 immediately.
- Submit a written description of their release to the EPA and TCEQ Regional office providing the date and circumstances of the release and the steps to be taken to prevent another release
- Modify the WPAP and SWPPP to include the information listed above.

ATTACHMENT "B"

Potential Sources of Contamination

The only potential sources of contamination are construction equipment leaks, re-fueling spills and asphalt lay down operations, as well as potential from port-o-lets. There are no other anticipated potential sources of contamination.

ATTACHMENT "C"

Sequence of Major Activities

Stages of Construction:
The following construction sequence will occur for each unit. Final stabilization will be completed prior to the start of the next unit.

1. Clearing and Grubbing – removal of trees, stumps, brush and other debris within the proposed street right-of-way to allow for the construction of streets. Approximate disturbed area = 21 acres
2. Rough Grading – Cutting and filling of street areas to prepare the roadbed for pavement layers. Disturbed area < 20 acres.
3. Culvert Installation – Culverts will be installed where needed to allow runoff under the proposed roads. Approximated disturbed area is less than 4 acres.
4. Utility Installation – There will be underground water, telephone and electric lines installed primarily within the proposed streets. There will be minimal disturbance outside of the clearing and grubbing area.
5. Finished Grading – Final landscaping and asphalt pavement layers are installed. Approximate area = 20 acres.

6. Residential Construction – Lots will be sold to individuals only, and homes built at random times. The construction is very minimal and will average 10% - 15% disturbed area per lot. Approximate disturbed area = 32 acres.

Attachment "D"

Temporary BMPs and Measures

Soil disturbance will be limited to a minimal distance outside of the proposed pavement and no soil disturbance will occur outside of the ROW. All of the low areas, which collect storm water runoff, will remain in a natural state acting as vegetative filter strips. Grasses will be allowed to grow between the edge of pavement and right-of-way line and will act as a filter for street runoff once established.

Silt fence will be place on the down gradient side of the site to contain pollutants generated from on-site runoff. Rock berms will be constructed at concentrated points of discharge and just downstream of all culvert locations. The majority of the property will not be disturbed leaving the natural vegetation, therefore, reducing the potential of polluting streams and the aquifer. A stabilized construction exit will be installed to help eliminate contaminants from leaving the site during construction traffic.

There are no sensitive features identified in the Geologic Assessment.

The following sequence will be followed for installing temporary BMPs:

1. Roadway centerline will be roughly cleared for surveying purposes. (No soil disturbance.)
2. Silt fence will be constructed on the downstream side of proposed roadways prior to beginning clearing and grubbing operations.
3. A stabilized construction exit will be established before clearing and grubbing equipment is delivered to the site.
4. Rock berms and rock check dams are constructed downstream of proposed culvert locations once rough grading has been completed and prior to culvert installation.

Attachment "E"

Request to Temporarily Seal a Feature

No features found on site.

Attachment "F"

Structural Practices

Rock berms, rock check dams and silt fence will be used to protect exposed soils and to prevent contamination from leaving the site. The majority of the site will remain in a natural condition with minimal impacts to existing drainage paths; therefore, natural filtration will be allowed to occur.

DRAINAGE AREA: 3.56 AC.
DISTURBED AREA : 0.93 AC.

DRAINAGE AREA: 12.73 AC.
DISTURBED AREA : 0.68 AC.

DRAINAGE AREA: 9.33 AC.
DISTURBED AREA : 0.78 AC.

POSSIBLE CULVERT LOCATION

DRAINAGE AREA: 21.70 AC.
DISTURBED AREA : 2.31 AC.

UNIT 2

POSSIBLE CULVERT LOCATION

DRAINAGE AREA: 20.49 AC.
DISTURBED AREA : 2.23 AC.

POSSIBLE CULVERT LOCATION

DRAINAGE AREA: 61.01 AC.
DISTURBED AREA : 5.82 AC.

POSSIBLE CULVERT LOCATION

POSSIBLE CULVERT LOCATION

UNIT 1

DRAINAGE AREA: 53.63 AC.
DISTURBED AREA : 5.81 AC.

POSSIBLE CULVERT LOCATION

DRAINAGE AREA: 18.49 AC.
DISTURBED AREA : 1.34 AC.

POSSIBLE CULVERT LOCATION

DRAINAGE AREA: 12.62 AC.
DISTURBED AREA : 0.50 AC.

N

SCALE: 1" = 400'

LEGEND

- DRAINAGE BOUNDARY
- UNIT LINE
- ROCK BERM
- SF SF SILT FENCE
- STABILIZED CONSTRUCTION ENTRANCE
- 100-YEAR FLOOD PLAIN BASED ON PRELIMINARY D-FIRM MAPPING

DRAINAGE AREA MAP

ATTACHMENT "G"

ROCKWALL RANCH EAST SUBDIVISION

COMAL COUNTY, TEXAS

Carter Burgess

Consultants in Engineering, Architecture, Construction Management, and Related Services
Carter and Burgess, Inc.

DATE: 06/13/2007
DRAWN BY: M.A.R.
DESIGNED BY: T.S.
CHECKED BY: T.S.
REVIEWED BY: T.S.
PROJECT NUMBER: 310485.022

SHEET 1

Attachment "H"

Temporary Sediment Pond(s) Plans and Calculations

There will not be more than 10-acres of disturbed soil in a common drainage area that will occur at one time. There will be rock berms and rock check dams installed to treat concentrated runoff from larger drainage areas (>10-acres) and silt fence used for small drainage areas and sheet flow runoff. No sediment ponds will be used on this project due to the minimal disturbance of soil.

Attachment "I"

Inspection and Maintenance for BMPs

Inspection and Maintenance Plan

- The contractor is required to inspect the controls and fences at weekly intervals and after any rainfall events to insure that they are functioning properly. The person(s) responsible for maintenance of controls and fences shall immediately make any necessary repairs to damaged areas. Silt accumulation at controls must be removed when the depth reaches six inches. Contractor is required to maintain the construction exit in a condition that prevents soil from tracking onto public roads via construction equipment and traffic.
- TCEQ staff will be allowed full access to the property during construction of the project for inspecting controls and fences and to verify that the accepted plan is being utilized in the field. TCEQ staff has the right to speak with the contractor to verify plan changes and modifications.
- Any changes made to the location or type of controls shown on the accepted plans, due to onsite conditions, shall be documented on the site plan that is part of this Water Pollution Abatement Plan. No other changes shall be made unless approved by the TCEQ and the Design Engineer. Documentation shall clearly show changes made, date, and person responsible and reason change was made.

Owner's Information:

Owner:	KT Real Estate Investments, LTD.
Contact:	Scott Knowlton, Vice President
Phone #:	(210) 651-6860
Address:	18225 FM 2252
	San Antonio, Texas 78266

Owner's Engineer:

Company: Carter & Burgess, Inc.
Contact: Todd Simmang, P.E.
Phone #: (210) 494-0088
Address: 911 Central Pkwy North, #425
San Antonio, Texas 78232

Person or Firm Responsible For Erosion/Sedimentation Control Maintenance:

Company: _____ Phone #: _____
Contact: _____
Address: _____
_____

Signature of Responsible Party: _____

This portion of the form shall be filled out and signed by the responsible party prior to construction.

Attachment "J"

Schedule of Interim and Permanent Soil Stabilization Practices

There will be minimal disturbed soil due to construction operations that are not covered by pavement or buildings. The area is generally very rocky with a minimal amount of overlying soil. Areas, which are disturbed by construction staging, and storage areas will be hydro mulched with the appropriate seed mixture. Areas between the edge of pavement and right-of-way line will also be hydro mulched if a soil layer exists. Areas within islands and the entrance will be landscaped with appropriate plants and mulched. There will be no fill slopes exceeding a 3:1 slope and all fill slopes will be hydro mulched. Installation of hydro mulch is as follows:

1. Final grading must be completed and all necessary BMPs should be in place prior to the addition of hydro mulch.
2. Hydro mulch mixture shall be as recommended by the County Agriculture Extension Agent or as shown below for the specific time of year and whether or not irrigation will be utilized.
3. Hydro mulch shall be applied at a rate stipulated by the Extension Agent or as shown below and shall be applied in a uniform manner
4. Other types of seeding applications may be used by the Contractor if approved by the Design Engineer and TNRCC.
5. If blankets or matting are used, they shall conform to the Texas Department of Transportation specifications.

Dates	**Climate**	**Species**	**(lb/ac)**
Sept. 1 to Nov. 30	Temporary Cool Season	Tall Fescue Oats Wheat **Total**	4.0 21.0 30.0 **55.0**
Sept. 1 to Nov. 30	Cool Season Legume	Hairy Vetch	8.0
May 1 to Aug. 31	Temporary Warm Season	Foxtail Millet	30.0

Permanent Stormwater Section
for Regulated Activities
on the Edwards Aquifer Recharge Zone
and Relating to 30 TAC §213.5(b)(4)(C), (D)(li), (E), and (5), Effective June 1, 1999

REGULATED ENTITY NAME: Rockwall Ranch East Subdivision

Permanent best management practices (BMPs) and measures that will be used during and after construction is completed.

1. **NA** Permanent BMPs and measures must be implemented to control the discharge of pollution from regulated activities after the completion of construction.

2. **NA** These practices and measures have been designed, and will be constructed, operated, and maintained to insure that 80% of the incremental increase in the annual mass loading of total suspended solids (TSS) from the site caused by the regulated activity is removed. These quantities have been calculated in accordance with technical guidance prepared or accepted by the executive director.

   __ The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.
   __ A technical guidance other than the TCEQ TGM was used to design permanent BMPs and measures for this site. The complete citation for the technical guidance that was used is provided below

3. **NA** Owners must insure that permanent BMPs and measures are constructed and function as designed. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the appropriate regional office within 30 days of site completion.

4. **X** Where a site is used for low density single-family residential development and has 20 % or less impervious cover, other permanent BMPs are not required. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

   X This site will be used for low density single-family residential development and has 20% or less impervious cover.
   __ This site will be used for low density single-family residential development but has more than 20% impervious cover.
   __ This site will not be used for low density single-family residential development.

5. **NA** The executive director may waive the requirement for other permanent BMPs for multi-family residential developments, schools, or small business sites where 20% or less impervious cover is used at the site. This exemption from permanent BMPs must be recorded in the county deed records, with a notice that if the percent impervious cover

increases above 20% or land use changes, the exemption for the whole site as described in the property boundaries required by 30 TAC §213.4(g) (relating to Application Processing and Approval), may no longer apply and the property owner must notify the appropriate regional office of these changes.

__ **ATTACHMENT A - 20% or Less Impervious Cover Waiver.** This site will be used for multi-family residential developments, schools, or small business sites and has 20% or less impervious cover. A request to waive the requirements for other permanent BMPs and measures is found at the end of this form.

__ This site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.

__ This site will not be used for multi-family residential developments, schools, or small business sites.

6. **ATTACHMENT B - BMPs for Upgradient Stormwater.**

__ A description of the BMPs and measures that will be used to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site is identified as **ATTACHMENT B** at the end of this form.

__ If no surface water, groundwater or stormwater originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT B** at the end of this form.

X If permanent BMPs or measures are not required to prevent pollution of surface water, groundwater, or stormwater that originates upgradient from the site and flows across the site, an explanation is provided as **ATTACHMENT B** at the end of this form .

7. **ATTACHMENT C - BMPs for On-site Stormwater.**

__ A description of the BMPs and measures that will be used to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff from the site is identified as **ATTACHMENT C** at the end of this form.

X If permanent BMPs or measures are not required to prevent pollution of surface water or groundwater that originates on-site or flows off the site, including pollution caused by contaminated stormwater runoff, an explanation is provided as **ATTACHMENT C** at the end of this form.

8. X **ATTACHMENT D - BMPs for Surface Streams.** A description of the BMPs and measures that prevent pollutants from entering surface streams, sensitive features, or the aquifer is provided at the end of this form. Each feature identified in the Geologic Assessment as "sensitive" or "possibly sensitive" has been addressed.

9. X The applicant understands that to the extent practicable, BMPs and measures must maintain flow to naturally occurring sensitive features identified in either the geologic assessment, executive director review, or during excavation, blasting, or construction.

X The permanent sealing of or diversion of flow from a naturally-occurring "sensitive" or "possibly sensitive" feature that accepts recharge to the Edwards Aquifer as a permanent pollution abatement measure has not been proposed for any naturally-occurring "sensitive" or "possibly sensitive" features on this site.

N/A **ATTACHMENT E - Request to Seal Features.** A request to seal a naturally-occurring "sensitive" or "possibly sensitive" feature, that includes a justification as to why no reasonable and practicable alternative exists, is found at the end of this form. A request and justification has been provided for each feature.

10. NA **ATTACHMENT F - Construction Plans.** Construction plans and design calculations for the proposed permanent BMPs and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer. All construction plans and design information have been signed, sealed, and dated by the Texas Licensed Professional Engineer. Construction plans for the proposed permanent BMPs and measures are provided at the end of this form. Design Calculations, TCEQ Construction Notes, all man-made or naturally occurring geologic features, all proposed structural measures, and appropriate details must be shown on the construction plans.

11. NA **ATTACHMENT G - Inspection, Maintenance, Repair and Retrofit Plan.** A plan for the inspection, maintenance, repair, and, if necessary, retrofit of the permanent BMPs and measures is provided at the end of this form. The plan has been prepared and certified by the engineer designing the permanent BMPs and measures. The plan has been signed by the owner or responsible party. The plan includes procedures for documenting inspections, maintenance, repairs, and, if necessary, retrofits as well as a discussion of record keeping procedures.

12. NA The TCEQ Technical Guidance Manual (TGM) was used to design permanent BMPs and measures for this site.

__ Pilot-scale field testing (including water quality monitoring) may be required for BMPs that are not contained in technical guidance recognized by or prepared by the executive director.

__ **ATTACHMENT H - Pilot-Scale Field Testing Plan.** A plan for pilot-scale field testing is provided at the end of this form.

13. X **ATTACHMENT I - Measures for Minimizing Surface Stream Contamination.** A description of the measures that will be used to avoid or minimize surface stream contamination and changes in the way in which water enters a stream as a result of the construction and development is provided at the end of this form. The measures address increased stream flashing, the creation of stronger flows and in-stream velocities, and other in-stream effects caused by the regulated activity which increase erosion that results in water quality degradation.

Responsibility for maintenance of permanent BMPs and measures after construction is complete.

14. NA The applicant is responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. Such entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred.

15. **NA** A copy of the transfer of responsibility must be filed with the executive director at the appropriate regional office within 30 days of the transfer if the site is for use as a multiple single-family residential development, a multi-family residential development, or a non-residential development such as commercial, industrial, institutional, schools, and other sites where regulated activities occur.

To the best of my knowledge, the responses to this form accurately reflect all information requested concerning the proposed regulated activities and methods to protect the Edwards Aquifer. This **PERMANENT STORMWATER SECTION** is hereby submitted for TCEQ review and executive director approval. The application was prepared by:

Todd Simmang, P.E.
Print Name of Customer/Agent

Signature of Customer/Agent

8/23/07
Date

ATTACHMENT "A"

20% or Less Impervious Cover Waiver

The site will not be used for multi-family residential or small businesses. The development will be low density, single family, residential with 0.66 dwelling units per acre based on the 325 acres with 216 lots. The total impervious cover for the site is approximately 15.7% at full development. This assumes a 24-foot asphalt roadway and 6400 square feet of impervious cover per lot.

ATTACHMENT "B"

BMPs for Upgradient Stormwater

The upgradient stormwater drains through the proposed property and is conveyed by an existing natural channel. This existing natural channel will be crossed with minimal impacts to the channel. Minor underbrush removal may occur. Please refer to the Drainage Area Map in the Temporary Stormwater Section. Storm water pollution should remain unchanged and the natural filtration properties of the existing channel will remain.

ATTACHMENT "C"

BMPs for On-site Stormwater

No permanent BMPs will be constructed to treat stormwater runoff. The site design allows the natural swales and low areas of the site to remain in a natural state, therefore acting as natural vegetative filter strips. The site, when fully developed, will have an impervious cover of approximately 15.7%. The perimeter of the site will remain in a natural condition, preventing contaminated runoff from leaving the site.

ATTACHMENT "D"

BMPs for Surface Streams

All surface streams will be protected from erosion by not allowing runoff to exceed existing velocities or drastically changing the drainage patterns. This will be accomplished by street layouts and by adding energy dissipaters to the downstream side of culverts.

ATTACHMENT "E"

Request to Seal Features

Not Applicable

ATTACHMENT "I"

Measures for Minimizing Surface Stream Contamination

All surface streams will be protected from erosion by not allowing runoff to exceed existing velocities. This will be accomplished by adding energy dissipaters to the downstream side of culverts.

Agent Authorization Form
For Required Signature
Edwards Aquifer Protection Program
Relating to 30 TAC Chapter 213
Effective June 1, 1999

I **Virgil Knowlton**
Print Name

Owner
Title - Owner/President/Other

of **KT East Realestate Investments, L.P.**
Corporation/Partnership/Entity Name

have authorized **Todd M. Simmang, P.E.**
Print Name of Agent/Engineer

of **Carter & Burgess, Inc.**
Print Name of Firm

to represent and act on the behalf of the above named Corporation, Partnership, or Entity for the purpose of preparing and submitting this plan application to the Texas Commission on Environmental Quality (TCEQ) for the review and approval consideration of regulated activities.

I also understand that:

1. The applicant is responsible for compliance with 30 Texas Administrative Code Chapter 213 and any condition of the TCEQ's approval letter. The TCEQ is authorized to assess administrative penalties of up to $10,000 per day per violation.

2. For applicants who are not the property owner, but who have the right to control and possess the property, additional authorization is required from the owner.

3. Application fees are due and payable at the time the application is submitted. The application fee must be sent to the TCEQ cashier or to the appropriate regional office. The application will not be considered until the correct fee is received by the commission.

4. A notarized copy of the Agent Authorization Form must be provided for the person preparing the application, and this form must accompany the completed application.

W. K. Knowlton

Applicant's Signature Date

THE STATE OF Texas §

County of Comal §

BEFORE ME, the undersigned authority, on this day personally appeared W. K. Knowlton known to me to be the person whose name is subscribed to the foregoing instrument, and acknowledged to me that (s)he executed same for the purpose and consideration therein expressed.

GIVEN under my hand and seal of office on this 7th day of August 2007

MARYETTA CRUM
NOTARY PUBLIC
State of Texas
Comm. Exp. 12-21-2010

NOTARY PUBLIC Maryetta Crum

Typed or Printed Name of Notary Maryetta Crum

MY COMMISSION EXPIRES: 12-21-2010

Texas Commission on Environmental Quality
Edwards Aquifer Protection Plan
Application Fee Form

NAME OF PROPOSED REGULATED ENTITY: **Rockwall Ranch East Subdivision**
REGULATED ENTITY LOCATION: **Comal County**
NAME OF CUSTOMER: **KT East Realestate Investments, L.P.**
CONTACT PERSON: **Scott Knowlton** PHONE: **(210) 651-6260**
(Please Print)

Customer Reference Number (if issued): CN _____ (nine digits)
Regulated Entity Reference Number (if issued): RN _____ (nine digits)

AUSTIN REGIONAL OFFICE (3373)
☐ Hays
☐ Travis
☐ Williamson

SAN ANTONIO REGIONAL OFFICE (3362)
☐ Bexar
☒ Comal
☐ Kinney
☐ Medina
☐ Uvalde

APPLICATION FEES MUST BE PAID BY CHECK, CERTIFIED CHECK, OR MONEY ORDER, PAYABLE TO THE Texas Commission on Environmental Quality. YOUR CANCELED CHECK WILL SERVE AS YOUR RECEIPT. **THIS FORM MUST BE SUBMITTED WITH YOUR FEE PAYMENT**. THIS PAYMENT IS BEING SUBMITTED TO (CHECK ONE):

☒ **SAN ANTONIO REGIONAL OFFICE**
☐ **Mailed to TCEQ**:
TCEQ - Cashier
Revenues Section
Mail Code 214
P.O. Box 13088
Austin, TX 78711-3088

☐ **AUSTIN REGIONAL OFFICE**
☐ **Overnight Delivery to TCEQ**:
TCEQ - Cashier
12100 Park 35 Circle
Building A, 3rd Floor
Austin, TX 78753
512/239-0347

Type of Plan	Size	Fee Due
Water Pollution Abatement, One Single Family Residential Dwelling	Acres	$
Water Pollution Abatement, Multiple Single Family Residential and Parks	**325** Acres	$ **5,000**
Water Pollution Abatement, Non-residential	Acres	$
Sewage Collection System	L.F.	$
Lift Stations without sewer lines	Acres	$
Underground or Aboveground Storage Tank Facility	Tanks	$
Piping System(s)(only)	Each	$
Exception	Each	$
Extension of Time	Each	$

Signature

9/23/07
Date

If you have questions on how to fill out this form or about the Edwards Aquifer protection program, please contact us at 210/490-3096 for projects located in the San Antonio Region or 512/339-2929 for projects located in the Austin Region.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512/239-3282.

Texas Commission on Environmental Quality
Edwards Aquifer Protection Program
Application Fee Schedule
30 TAC §213.14 (effective 11/14/97) & 30 TAC §213.9 (effective 6/1/99)

Water Pollution Abatement Plans and Modifications

PROJECT	PROJECT AREA IN ACRES	FEE
One Single Family Residential Dwelling	<5	$500
Multiple Single Family Residential and Parks	<5 5 < 10 10 < 50 ≥50	$1,000 $2,000 $3,000 $5,000
Non-residential (Commercial, industrial, institutional, multi-family residential, schools, and other sites where regulated activities will occur)	< 1 1 < 5 5 < 10 ≥10	$2,000 $3,000 $4,000 $5,000

Organized Sewage Collection Systems and Modifications

PROJECT	COST PER LINEAR FOOT	MINIMUM FEE MAXIMUM FEE
Sewage Collection Systems	$0.50	$500 - $5,000

Underground and Aboveground Storage Tank System Facility Plans and Modifications

PROJECT	COST PER TANK OR PIPING SYSTEM	MINIMUM FEE MAXIMUM FEE
Underground and Aboveground Storage Tank Facility	$500	$500 - $5,000

Exception Requests

PROJECT	FEE
Exception Request	$250

Extension of Time Requests

PROJECT	FEE
Extension of Time Request	$100

CHECK IS VOID IF ANY OF THE FOLLOWING SECURITY FEATURES ARE ABSENT: ORIGINAL DOCUMENT PRINTED ON CHEMICAL REACTIVE PAPER

V.K. KNOWLTON
Construction & Utilities, Inc.
18225 F.M. 2252
SAN ANTONIO, TEXAS 78266-2718

BANK OF AMERICA
SAN ANTONIO, TEXAS

35-2/1130

CHECK NO.
00019838

PAY Five Thousand & 00/100 Dollars **********

DATE 08/06/07

AMOUNT $5,000.00

VOID AFTER 180 DAYS

TO THE ORDER OF TCEQ

RUB RED IMAGE. - DISAPPEARS WITH HEAT.

Sean P. Young
AUTHORIZED SIGNATURE(S)

SECURITY FEATURES INCLUDED, DETAILS ON BACK.

SEE BACK FOR ARTIFICIAL WATERMARK

⑈019838⑈ ⑆111000025⑆ 0013900298846⑈

TCEQ Core Data Form

TCEQ Use Only

If you have questions on how to fill out this form or about our Central Registry, please contact us at 512-239-5175.

Individuals are entitled to request and review their personal information that the agency gathers on its forms. They may also have any errors in their information corrected. To review such information, contact us at 512-239-3282.

SECTION I: General Information

1. Reason for Submission *Example: new wastewater permit; IHW registration; change in customer information; etc.*

New WPAP Application

2. Attachments				**Describe Any Attachments:** *(ex: Title V Application, Waste Transporter Application, etc.)*
X	**YES**		**NO**	**Part of WPAP Submittal to TCEQ**

3. Customer Reference Number-*if issued*				**4. Regulated Entity Reference Number-*if issued***		
CN		***(9 digits)***		**RN**		***(9 digits)***

SECTION II: Customer Information

5. Customer Role *(Proposed or Actual)* -- As It Relates to the Regulated Entity Listed on This Form

Please check one of the following:									
	Occupational Licensee		Volunteer Cleanup Applicant		**X**	Other	**WPAP**		
TCEQ Use Only			**Superfund**		**PST**		**Respondent**		

6. General Customer Information

X	New Customer		Change to Customer Information
	Change in Regulated Entity Ownership		No Change *

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

7. Type of Customer:					
X	Partnership		Corporation		Federal Government
	State Government		County Government		City Government
	Other Government		Other:		

8. Customer Name *(If an individual, please print last name first)*	*If new name, enter previous name:*
KT East Real Estate Investments, L.P.	

9. Mailing Address:	**18225 FM 2252**			
	City	State	ZIP	ZIP + 4
	San Antonio	**Texas**	**78266**	

10. Country Mailing Information *if outside USA*	**11. E-Mail Address *if applicable***

12. Telephone Number	**13. Extension or Code**	**14. Fax Number *if applicable***
(210) 651-6860		210-651-5435

15. Federal Tax ID *(9 digits)*	**16. State Franchise Tax ID Number** *if applicable*	**17. DUNS Number** *if applicable* ***(9 digits)***
68-0557026	**NA**	**NA**

18. Number of Employees										**19. Independently Owned and Operated?**			
X	**0-20**		**21-100**		**101-250**		**251-500**		**501 and higher**		**Yes**	**X**	**No**

SECTION III: Regulated Entity Information

20. General Regulated Entity Information

	New Regulated Entity		Change to Regulated Entity Information		No Change*

*If "No Change" and Section I is complete, skip to Section IV - Preparer Information.

TMS 8/30/07

21. Regulated Entity Name *(If an individual, please print last name first)*				
~~**KT East Real Estate Investments, L.P.**~~ ROCKWALL RANCH EAST SUBDIVISION				
22. Street Address (No PO Boxes)	~~18225 FM 2252~~ SEE PHYSICAL LOCATION ON #34			
	City	State	ZIP	ZIP + 4
	~~San Antonio~~	~~TX~~	~~78266~~	
23. Mailing Address	18225 FM 2252			
	City	State	ZIP	ZIP + 4
	San Antonio	TX	78266	
24. E-Mail Address:				

25. Telephone Number	**26. Extension or Code**	**27. Fax Number** *if applicable*
(210) 651-6860		

28. Primary SIC Code (4 digits)	**29. Secondary SIC Code** (4 digits)	**30. Primary NAICS Code** (5 or 6 digits)	**31. Secondary NAICS Code** (5 or 6 digits)
~~6552~~ 1521	NA	~~237210~~ 236115	NA

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

RESIDENTIAL DEVELOPMENT LAND SUBDIVISION

Questions 33 - 37 address geographic location. Please refer to the instructions for applicability.

33. County	**Comal**

34. Description of Physical Location

On the east line of Shoenthal Rd. approximately 2 miles south of the intersection with FM 1863

35. Nearest City	**State**	**Nearest Zip**
New Braunfels	**Texas**	~~78266~~ 78132

. Latitude (N)			***37. Longitude (W)***		
Degrees	***Minutes***	***Seconds***	***Degrees***	***Minutes***	***Seconds***
029	**41**	**28**	**098**	**16**	**22**

38. TCEQ Programs In Which This Regulated Entity Participates *Not all programs have been listed. Please add to this list as needed. If you don't know or are unsure, please mark "Unknown".* If you know a permit or registration # for this entity, please write it below the program."

	Animal Feeding Operation		Petroleum Storage Tank		Water Rights
	Title V - Air		Wastewater Permit		
					WPAP
	Industrial & Hazardous Waste		Water Districts		
	Municipal Solid Waste		Water Utilities		Unknown
	New Source Review - Air		Licensing - TYPE(s)		

Section IV: Preparer Information

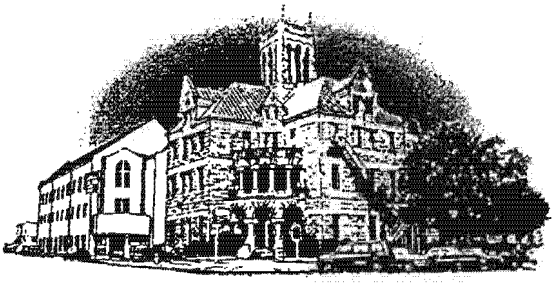
39. Name	**40. Title**
Todd M. Simmang, P.E.	**Authorized Agent**

41. Telephone Number	**42. Extension or Code**	**43. Fax Number** *if applicable*
(210) 494-0088	5519	**(210) 494-4525**

44. E-mail Address:	TODD.SIMMANG@C-B.COM

TMS 8/30/07

FILE COPY



Comal County

OFFICE OF COMAL COUNTY ENGINEER

May 26, 2004

Mr. Jeff Moeller, P.E.
Carter & Burgess, Inc.
911 Central Parkway North
San Antonio, TX 78232

Re: Vogel Dam Inundation Easement within Comal County, Texas

Dear Mr. Moeller:

Subsequent to our May 19, 2004 meeting, we have done research with regards to the referenced subject. We have attached a copy of an easement, dated September 20, 1956, dedicated to the Comal, Hays, Guadalupe County Soil Conservation District from Herman Vogel and Ida Vogel (Volume 109, Pages 168-169, Comal County Deed Records). This easement states that the Comal, Hays, Guadalupe County Soil Conservation District shall have the right, privilege and authority to use said land for the installation, operation, maintenance and inspection of the following described works and measures (earthen structure or dam), and for the storage of waters that may be impounded by any dam or other reservoir structure.

Furthermore, the easement states that an earthen structure or dam will be built in accordance with the plans and specifications as prepared by the engineers of the Soil Conservation Service, which plans and specifications have been fully agreed on by the parties and a copy of which is on file with the Comal, Hays, Guadalupe County Soil Conservation District and Herman Vogel and Ida Vogel.

Because the plans and specifications for the earthen structure were referenced in the easement, we sought to find a copy of them at the New Braunfels NRCS office. We have attached a copy of the as-built plans. In these plans, the spillway crest elevation is 881.5'. This is consistent with the elevation referenced on the USGS maps for the area. From this document, we find that the easement includes all land below the 881.5' contour.

Therefore, from these two documents, we have found that Comal County has an easement to the following:

1) The footprint of the earthen structure known as Vogel Dam.

2) Access to the Vogel Dam by any means necessary.

3) All land upstream of the Vogel Dam below the 881.5' elevation.

195 David Jonas Drive • New Braunfels, Texas 78130 • (830) 608-2090 FAX (830) 608-2009

Since this property has recently been transferred from the Tschoepe family to Texas Lutheran University to KT Real Estate Development Corporation and then to others, we felt it was important to remind everyone involved with this property of Comal County's existing land interests. In addition, we have been asked to discontinue our use of our traditional access to the Vogel Dam, which has been along the alignment of Old Schoenthal Road. We have decided that we wish to continue using our historic access route and wish to maintain all rights to this access drive.

Finally, in our May 19, 2004 meeting, you had mentioned that the developer might excavate within the inundation easement to expand the capacity of the facility. Please be aware that any activities that occur within these easements must receive written approval from Comal County prior to commencing.

If you have any questions or need additional information, please do not hesitate to contact us.

Sincerely,

Thomas H. Hornseth, P.E.
Comal County Engineer

attachments a/s

cc: Jay Millikin, Comal County Commissioner, Precinct No. 2
Virgil K. Knowlton, Vice President, KT Real Estate Development Corporation
Mike Short, P.E., New Braunfels City Engineer

GENERAL NOTES:

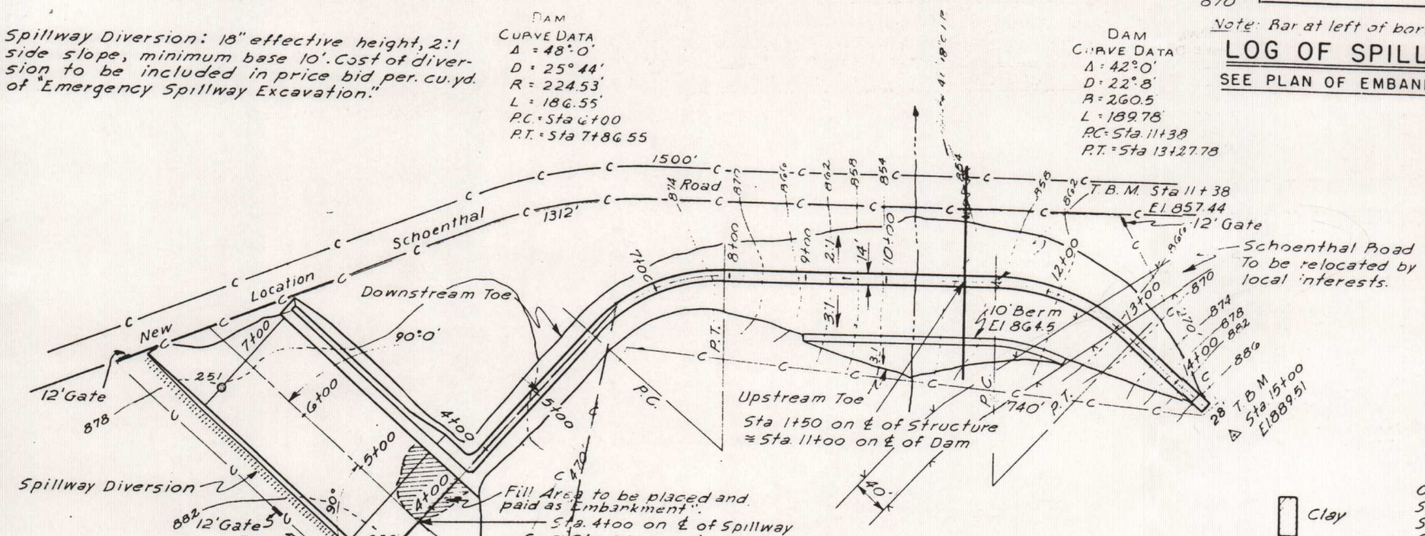
A minimum of 6" of top soil to be placed in spillway and on all embankment, dike, spillway slope and waste areas except where rock is encountered or rock rip rap is placed. See the specifications.

Stream Channel within embankment area to be cleared of objectionable material in accordance with "Stream Channel Excavation" of the specifications.

Spillway Diversion: 18" effective height, 2:1 side slope, minimum base 10'. Cost of diversion to be included in price bid per. cu. yd. of "Emergency Spillway Excavation."

DAM
CURVE DATA
Δ = 48°0'
D = 25°44'
R = 224.53'
L = 186.55'
P.C. = Sta 6+00
P.T. = Sta 7+86.55

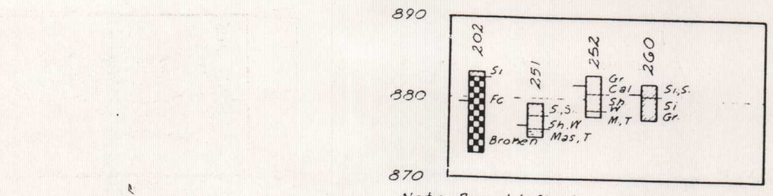
DAM
CURVE DATA
Δ = 42°0'
D = 22°8'
R = 260.5
L = 189.78
P.C. = Sta. 11+38
P.T. = Sta 13+27.78



SPILLWAY CURVE DATA
Δ = 30°00'
D = 15°24'
R = 372.27
T = 161.08
L = 196.70
P.C. = Sta 2+05.3
P.T. = Sta 3+01.9
P.I. = Sta 3+05.3

PLAN OF EMBANKMENT AND SPILLWAY

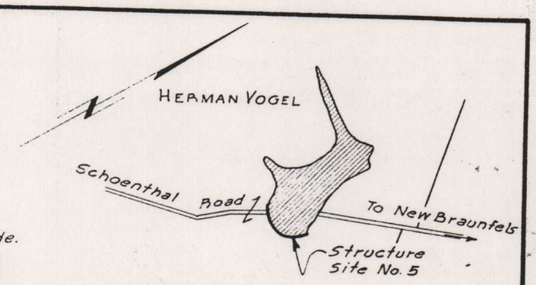
0 100 200 500
SCALE IN FEET



Note: Bar at left of boring is at spillway grade.

LOG OF SPILLWAY BORINGS

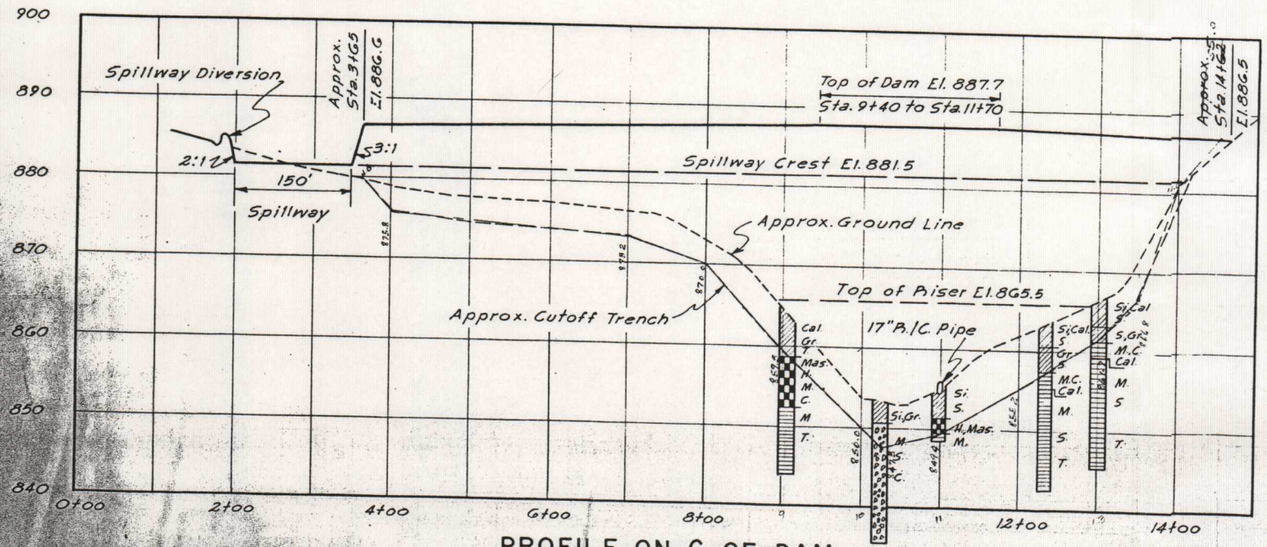
SEE PLAN OF EMBANKMENT AND SPILLWAY



Located approx. 8mi. West of New Braunfels, Comal County, Tex.

VICINITY MAP

0 1/4 1/2 1
SCALE IN MILES



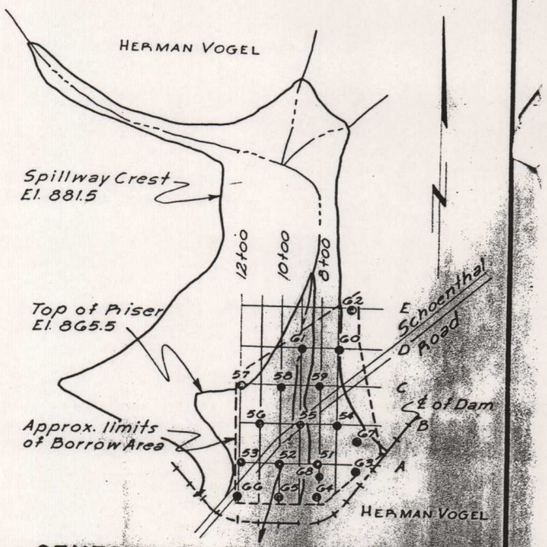
PROFILE ON ℄ OF DAM

Clay	C. Clay Clayey
	S. Sand Sandy
Shale	Sh. Shale Shaly
	Si. Silt Silty
Limestone	M. Marl Marly
	Gr. Gravel Gravelly
Cobbles Gravel Boulders	Cal. Calcarous
	W. Weathered
	Fc. Fractured
	Mas. Massive
	T. Tough
	H. Hard

LEGEND OF BORINGS

Elevation	Surface Acres	Storage Acre Ft.	Storage Inches
865.5	7.8	44.0	.60
869.0	11.4	78.7	1.07
873.0	19.8	141.1	1.92
877.0	28.9	238.5	3.35
881.0	39.0	374.3	5.10
881.5	40.2	394.2	5.37
885.0	48.6	549.5	7.49
889.0	66.1	778.9	10.61

Top of Dam (Effective) Elev.	886.5
Spillway Crest Elev.	881.5
Top of Riser Elev.	865.5
Sediment Pool Elev.	865.5
Drainage Area, Acres	881
Sediment Storage, Ac. Ft.	44
Floodwater Storage, Ac. Ft.	350



GENERAL PLAN OF RESERVOIR

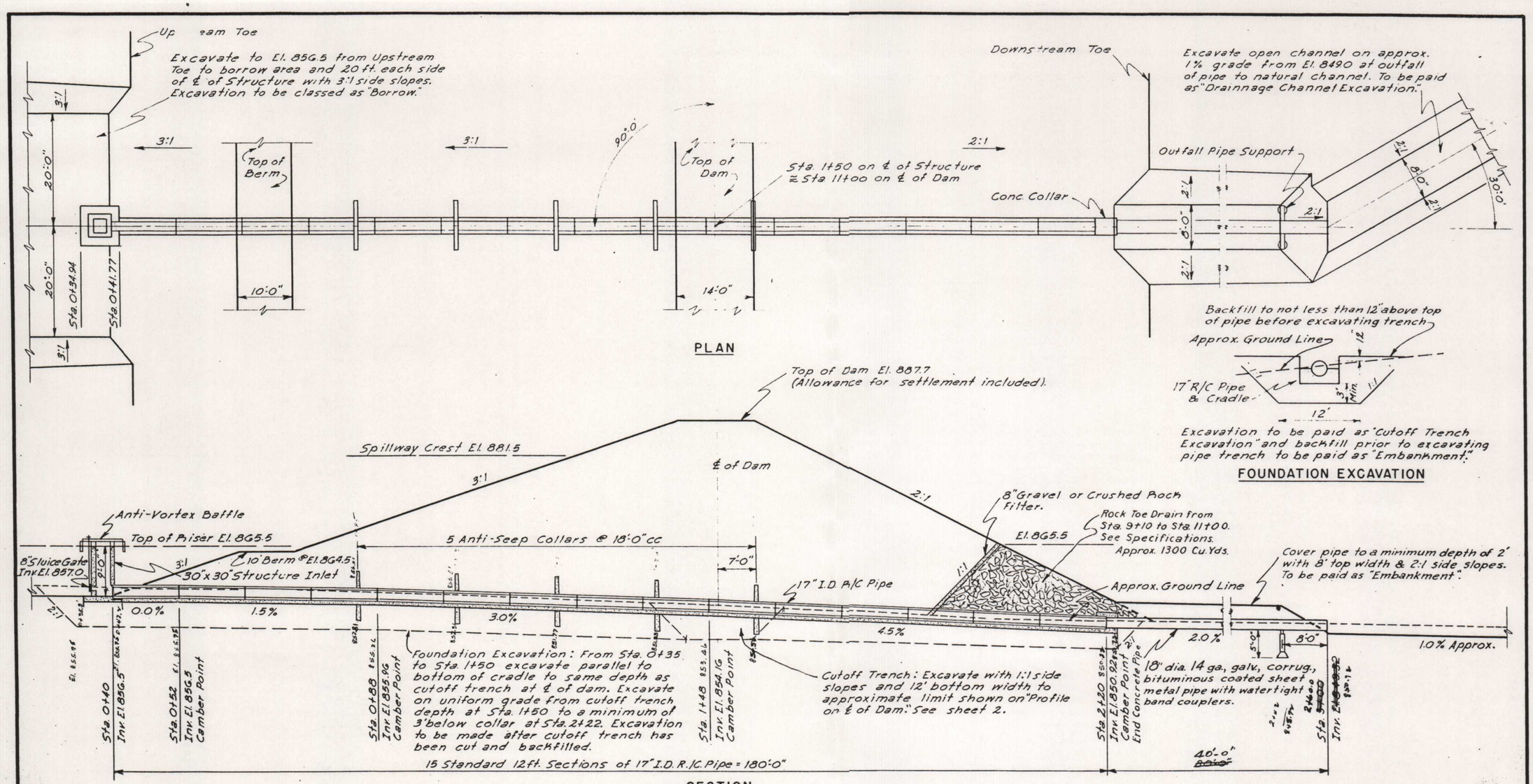
0 400 800 1600
SCALE IN FEET

As Built (Completed 6-27-57)

GENERAL PLAN AND PROFILE
FLOODWATER RETARDING STRUCTURE SITE No. 5
COMAL CREEK WATERSHED
IN
COMAL COUNTY, TEXAS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed H.H.L.	Date 11-56	Approved by	
Drawn H.H.L. & G.B.	11-56	MEAD ENGINEERING & WATERSHED PLANNING UNIT FORT WORTH, TEXAS	
Traced G.B.	11-56	STATE CONSERVATION ENGINEER, S.C.S. TEMPLE, TEXAS	
Checked H.H.L.	11-56	Sheet No. 2 of 7	Drawing No. 4-E-11,024



As-Built

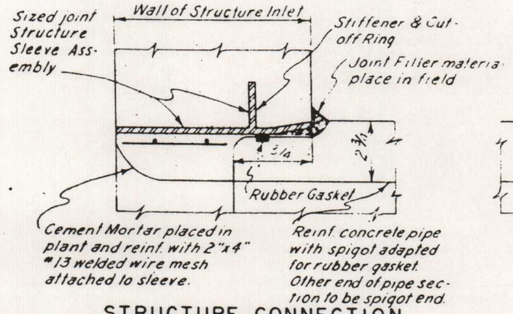
STRUCTURE — PLAN AND SECTION
FLOODWATER RETARDING STRUCTURE SITE No. 5
COMAL CREEK WATERSHED
IN
COMAL COUNTY, TEXAS

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

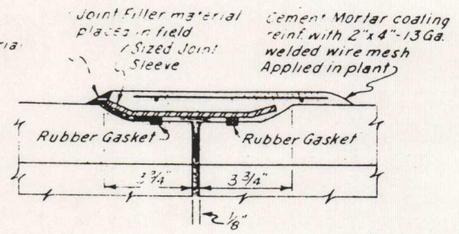
		Date
Designed	H.H.L.	11-56
Drawn	H.H.L. & G.P.	11-56
Traced	G.P.	11-56
Checked	H.H.L.	11-56

Approved by: HEAD, ENGINEERING & WATERSHED PLANNING UNIT, FORT WORTH, TEXAS
STATE CONSERVATIONIST ENGINEER S. C. S. TEMPLE, TEXAS

Sheet No. 3 of 7
Drawing No. 4-E-11,024



STRUCTURE CONNECTION

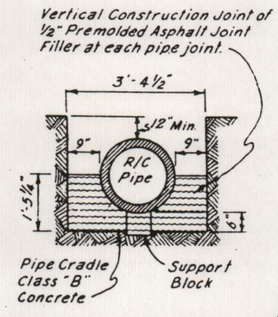


PIPE JOINT

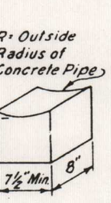
PIPE JOINT DETAILS

FOR TYPICAL BAR TYPES REFER TO A.C.I. STANDARD 315-48

Bar No.	Location	Qty.	Lgth.	Total Length	Size	Type	A	B	C	D	E	F	G	H	J	O
A-1	Anti-Seep Collar	6	8-2	49-0	4	Str										
A-2	" "	6	7-2	43-0	4	Str										
A-3	" "	4	2-9	11-0	4	Str										
A-4	" "	6	2-3	13-6	4	Str										
	Total steel in 1 Anti-Seep Collar (Size 4 = 116'-6" = 77.81 lbs.															
	Class "A" Concrete in one Anti-Seep Collar 1.20 cu. yds.															
B-1	Outfall Pipe Supp.	8	5-6	44-0	4	1	0-9	4-9							0-4	
B-2		1	9-6	9-6	4	4	0-9	1-6	0-11	3-2	0-11	1-6	0-9	0-8		7-6
B-3		2	9-6	19-0	4	4	0-9	1-0	0-11	4-2	0-11	1-0	0-9	0-8		7-6
B-4		2	5-6	11-0	4	Str										
	Total steel in Outfall Pipe Support (Size 4) = 83'-6" = 55.78 lbs															
	Class "A" Concrete in Outfall Pipe Support = 0.51 cu. yds.															
C-1	Pipe Collar	10	3-6	35-0	4	Str										
C-2	" "	4	8-0	32-0	4	2	2-6	3-0					2-6			
C-3	" "	4	4-2	16-8	4	2	0-7	3-0					0-7			
	Total Steel in Pipe Collar (Size 4) = 83'-8" = 55.9 lbs															
	Total Class "A" Concrete in Pipe Collar = 1.09 cu. yds.															
	Class "B" Concrete in Pipe Cradle = 0.1286 cu yd per lin. ft.															

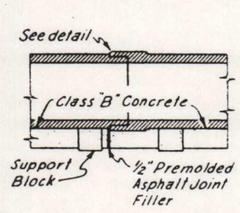


CRADLE & TRENCH

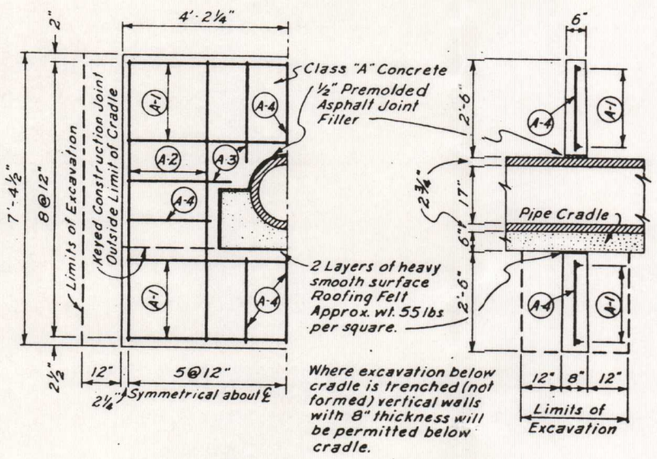


Precast Concrete Support Blocks may be set up to 24" from end of pipe joint. Use 2 blocks per joint of pipe.

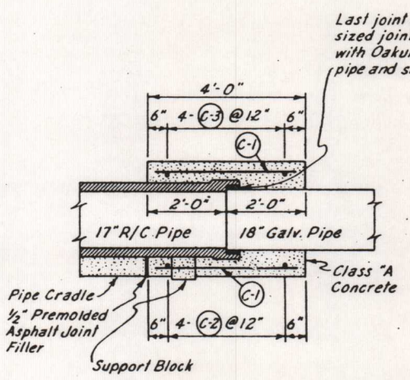
SUPPORT BLOCK



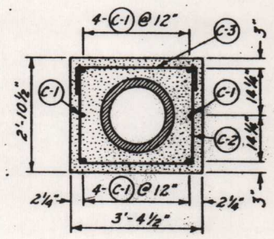
TYPICAL JOINT



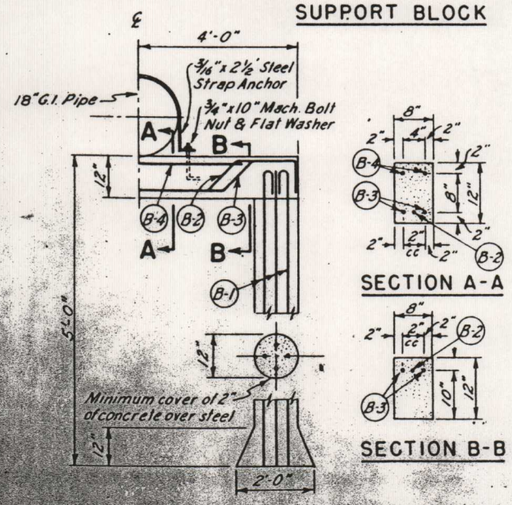
ANTI-SEEP COLLAR



COLLAR



CONCRETE PIPE PLACEMENT DETAILS



OUTFALL PIPE SUPPORT

SECTION A-A

SECTION B-B

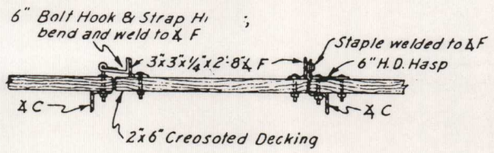
Note: Holes for supporting piers to be drilled or hand dug in natural ground.

As Built

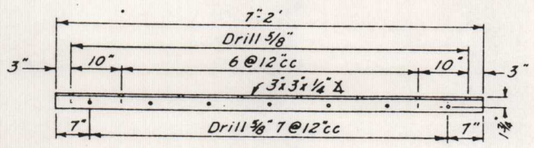
STRUCTURE PIPE DETAILS
FLOODWATER RETARDING STRUCTURE SITE NO. 5
COMAL CREEK WATERSHED
IN
COMAL COUNTY, TEXAS
No Changes in Construction

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

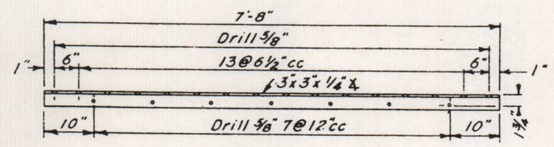
		Date	Approved by:
Designed	H.H.L.	11-56	HEAD, ENGINEERING & WATERSHED PLANNING UNIT, FORT WORTH, TEXAS
Drawn	H.H.L.	11-56	
Traced	A.R.A.	12-56	STATE CONSERVATION ENGINEER, TEMPLE, TEXAS
Checked	H.H.L.	12-56	Sheet No. 4 of 7 — Drawing No. 4-E-11,024



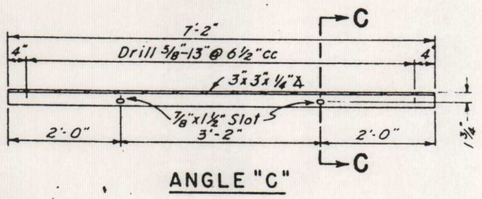
SECTION B-B



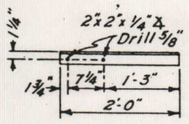
ANGLE "A"



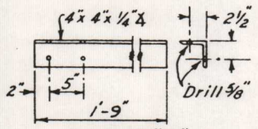
ANGLE "B"



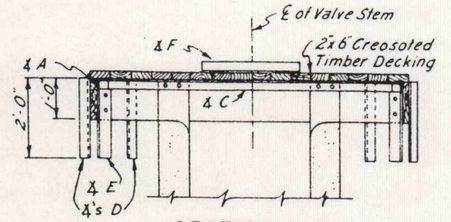
ANGLE "C"



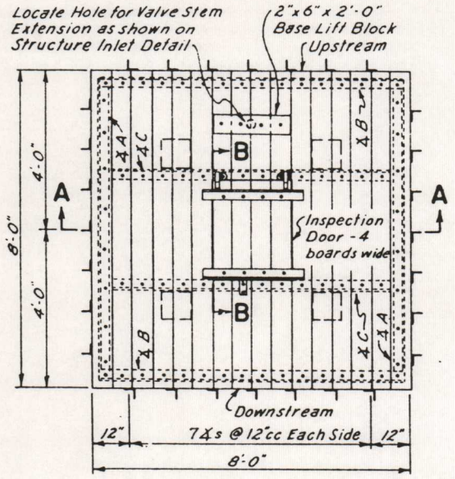
ANGLE "D"



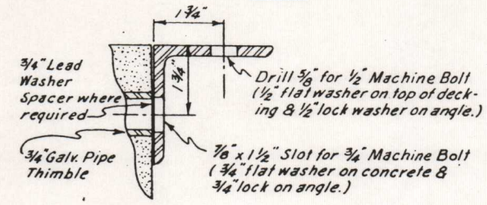
ANGLE "E"



SECTION A-A



PLAN



SECTION C-C

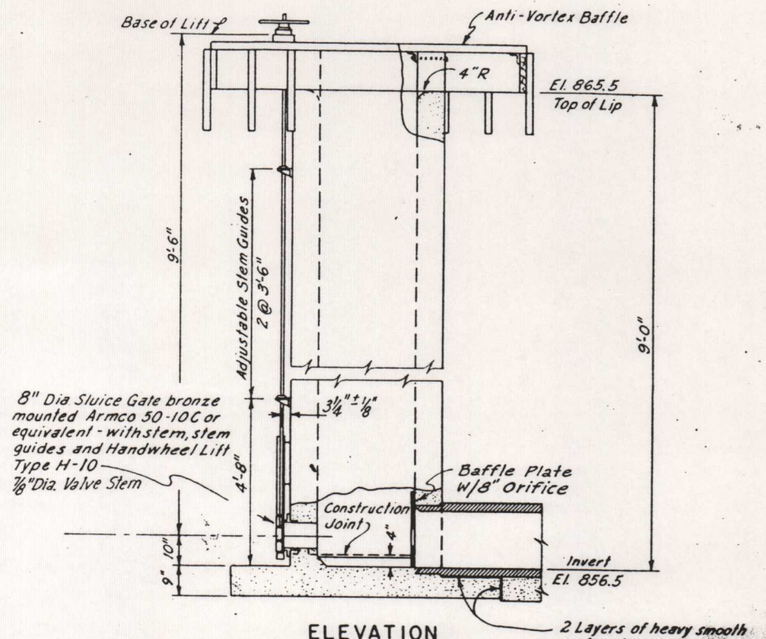
ANTI-VORTEX BAFFLE

Quan.	Item
2	3"x3"x¼"x7'-2" ∠ A
2	3"x3"x¼"x7'-8" ∠ B
2	3"x3"x¼"x7'-2" ∠ C
28	2"x2"x¼"x2'-0" ∠ D
4	4"x4"x¼"x1'-9" ∠ E
2	3"x3"x¼"x2'-8" ∠ F
1	6" Heavy Duty Hinge Hasp
1pr	6" Bolt Hook & Strap Hinge
4	¾"x9½" Mechine Bolts (Galvanized)
4	¾" Flat Washers (Galvanized)
4	¾" Lock Washers (Galvanized)
151	½"x3½" Machine Bolts (Galvanized)
151	½" Flat Washers (Galvanized)
155	½" Lock Washers (Galvanized)
2	½"x5" Machine Bolts (Galvanized)
2	½"x6" Machine Bolts (Galvanized)
1	2"x6"x2'-0" No. 1 Rough Pine (Treated)
2	2"x12"x8'-0" No. 1 Rough Pine (Treated)
2	2"x12"x7'-8" No. 1 Rough Pine (Treated)
15	2"x6"x8'-0" No. 1 Rough Pine (Treated)
4	¾" Lead Washers

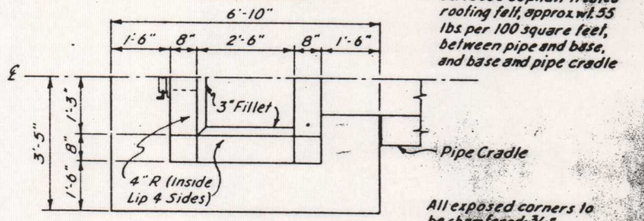
All angles to be shop painted with one coat of red lead. One field coat of red lead, and one coat of aluminum paint to be applied after baffle is assembled.

All treated wood material to be creasoted with not less than 8 lbs retention per cu. ft. Preservative shall meet Federal Specifications TT-W-566-A

Where bearing is on wood, all bolt heads and nuts to be backed with flat washers. Use lock washer under each nut.



ELEVATION



HALF PLAN

STRUCTURE INLET

As Built

STRUCTURE INLET
FLOODWATER RETARDING STRUCTURE SITE NO. 5
COMAL CREEK WATERSHED
IN
COMAL COUNTY, TEXAS
No Changes in Construction

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

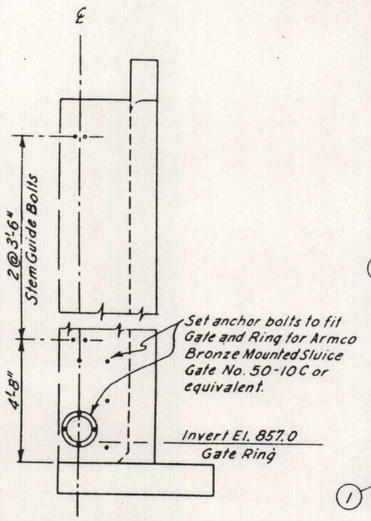
		Date
Designed	H.H.L.	11-56
Drawn	H.H.L. & A.R.A.	11-56
Traced	A.R.A.	12-56
Checked	H.H.L.	12-56

Approved by: W. M. PEARL, ENGINEERING & WATERSHED PLANNING STAFF, FORT WORTH, TEXAS

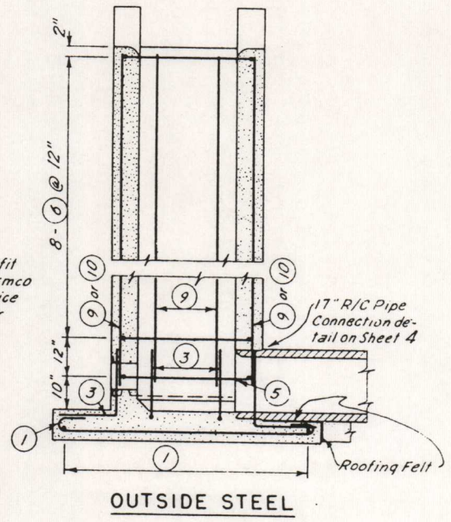
STATE CONSERVATIONIST ENGINEER, S. C. S., TEMPLE, TEXAS

Sheet No. 5 of 7

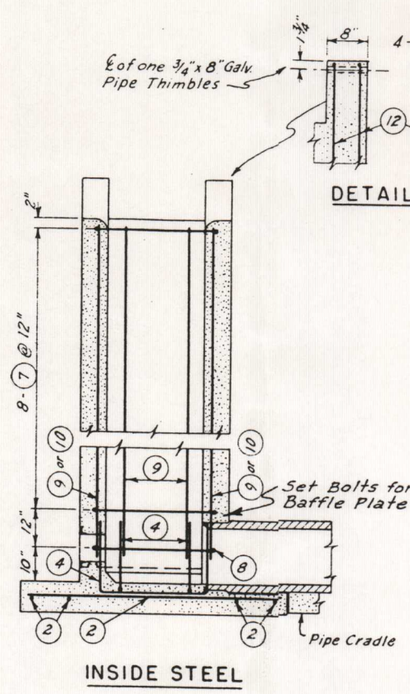
Drawing No. 4-E-11,024



SLUICE GATE



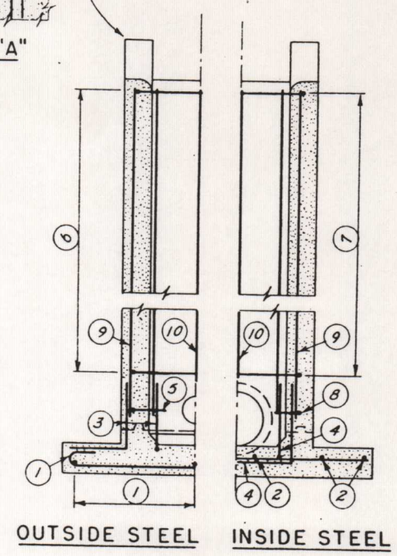
OUTSIDE STEEL



DETAIL "A"

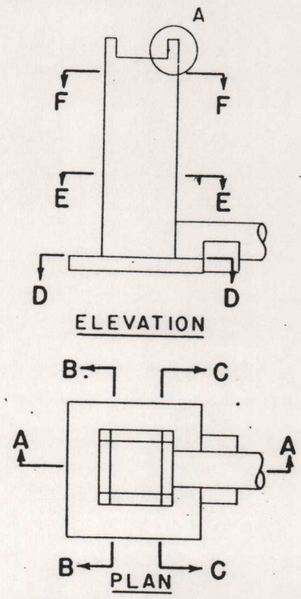
INSIDE STEEL

SECTION A-A



OUTSIDE STEEL INSIDE STEEL

SECTION B-B & C-C



ELEVATION

PLAN

KEY TO SECTIONS

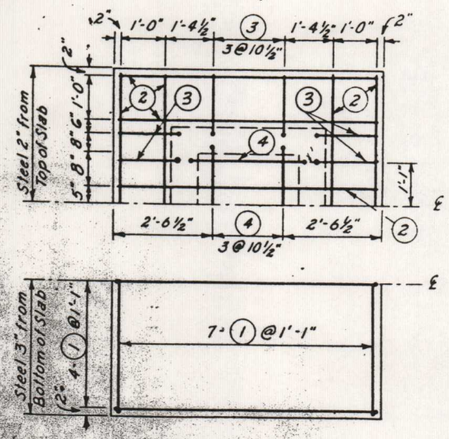
30"x30" RISER

For Typical Bar Types Refer to A.C.I Standard 315-48

Bar No.	Qty.	Length	Total Length	Size	Type	A	B	C	D	E	G	H	J	O
1	14	7-6	105-0	4	1	0-6	6-6				0-6		0-6	
2	10	6-6	65-0	4	Str	—								
3	14	3-3	45-6	4	2	1-9	1-6							
4	5	6-4	31-8	4	2	1-9	2-10							
5	2	5-6	11-0	4	2	1-2	3-6				1-9			
6	8	15-2	121-4	4	T-2	0-7	3-6	3-6	3-6	3-6	0-10			
7	8	12-6	100-0	4	T-2	0-7	2-10	2-10	2-10	2-10	0-7			
8	2	4-2	8-4	4	2	0-10	2-10				0-6			
9	24	8-6	204-0	4	Str									
10	4	7-0	28-0	4	Str									
11	5	2-8	13-4	4	2	0-10	1-0				0-10			
12	8	4-0	32-0	3	1	2-0	2-0						0-3	

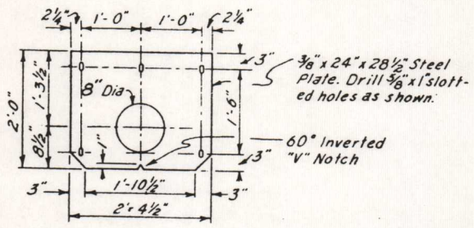
Total Size No. 3 Steel in Inlet Structure = 32'-0" x 12.03 lbs.
" " " 4 " " " " = 733'-2" x 489.75 "
Total Steel = 501.78 lbs.
Class "A" Concrete in Inlet Structure = 4.1 cu. yds.
4 - 3/4" x 8" Galvanized Steel Pipe Thimbles - Required
5 - 1/2" x 6" Galvanized Machine Bolts
3/8" x 24" x 28 1/2" Steel Baffle Plate

Notes: In placing steel around concrete pipe, deflect bars where necessary to clear pipe at least 1 inch.
See Detail "A" for Bar No. 12

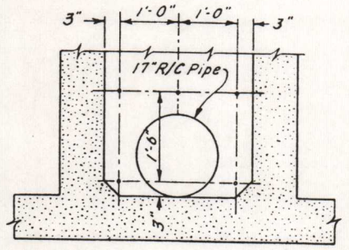


Steel Symmetrical about ℄

SECTION D-D



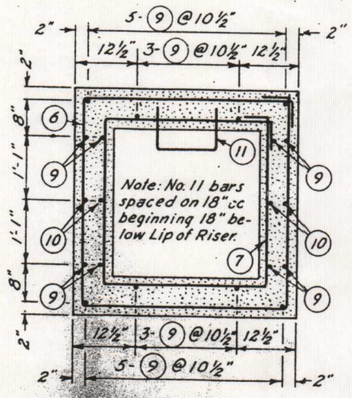
BAFFLE



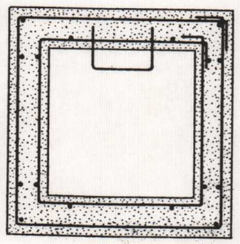
Note: 5-½"x6" Galvanized Machine Bolts set 1½" of threads exposed from inside face of concrete. Supply Nuts & Washers. Baffle Plate may be in place when concrete is poured.

BOLT PLACEMENT

BAFFLE PLATE



SECTION E-E



All steel and steel placement same as Section E-E unless noted

SECTION F-F

As Built

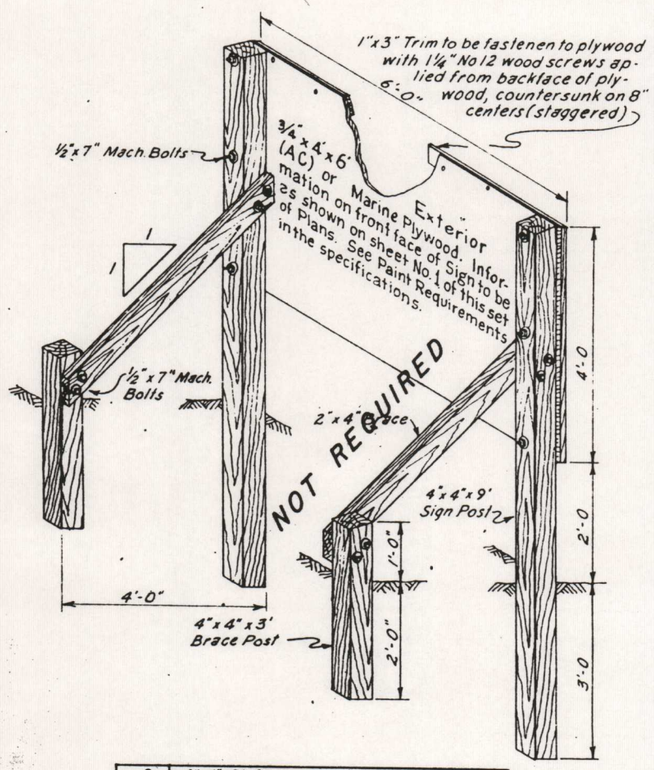
STRUCTURE INLET - STEEL PLACEMENT
FLOODWATER RETARDING STRUCTURE SITE NO. 5
COMAL CREEK WATERSHED
IN
COMAL COUNTY, TEXAS
No Changes in Construction

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

		Date
Designed	H.H.L.	11/56
Drawn	H.H.L. & A.R.A.	11/56
Traced	A.R.A.	12/56
Checked	H.H.L.	12/56

Approved by: Area Engineering & Watershed Planning Staff, Fort Worth, Texas
State Conservation Engineer, Temple, Texas
Sheet No. 6 of 7
Drawing No. 4-E-11,024

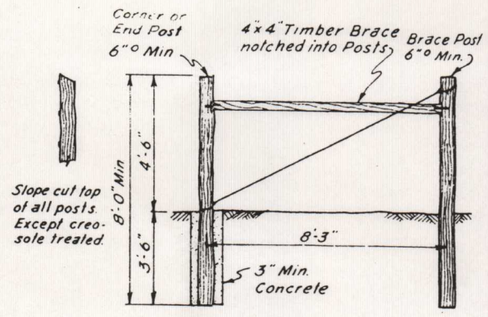
Revised 11-30-55



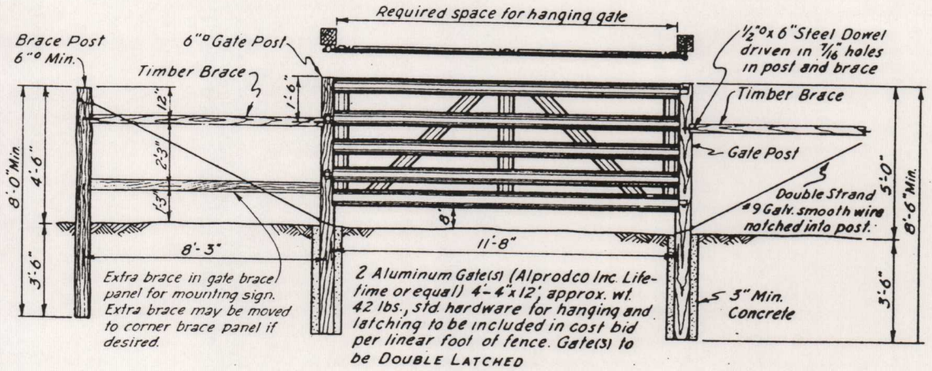
2	4"x4"x9'-0" No.1 Rough Pine (Treated)
2	4"x4"x3'-0" No.1 Rough Pine (Treated)
2	2"x4"x6'-0" No.1 Rough Pine (Treated)
1	¾"x4'x6' Exterior (AC) or Marine Plywood
2	1"x3"x6'-0" No.1 Pine S4S
2	1"x3"x4'-0" No.1 Pine S4S
14	½"x7" Machine Bolts (Galvanized)
28	½" Flat Washers (Galvanized)
14	½" Lock Washers (Galvanized)
38	1¼" No.12 Wood Screws (Galvanized)

All wood material to be creosote treated with not less than 8 lbs retention per cu.ft. Preservative shall meet Federal Specifications TT-W-566A
All bolt heads and nuts to be backed with flat washers. "Use lock washer under each nut.

SIGN

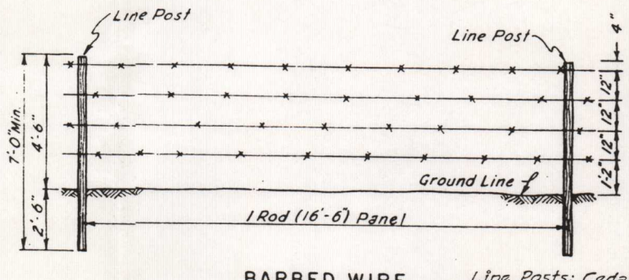


CORNER OR END PANEL

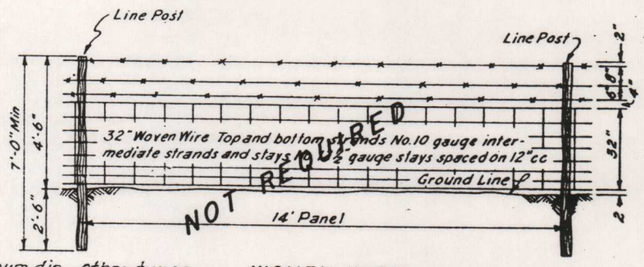


GATE PANEL

Contractor to mount 4'x6' Metal Sign on braces at no extra cost if sign is available at time fencing is installed. A 2" filler block to be used between sign and braces to clear wire on fence.



BARBED WIRE



WOVEN WIRE

Line Posts: Cedar, 4" minimum dia., other types 3" min dia., unless otherwise provided for in the Specifications.

12½ ga. galv., double strand barbed wire with 14 ga. 2pt. barbs on 4"cc. On treated pine posts use 1½" bright L-shaped "Stronghold" staples having annular corrugations. Regular, 1¼" galvanized staples to be used on all other posts.

NOTE: Gate Posts and Timber Braces to be creosote treated pine with not less than 8 lbs. retention per cu.ft. Preservative shall meet requirements of Federal Specifications TT-W-566a. See Specifications for Fence Post Material.

FENCE DETAILS

As Built

FENCE DETAILS
FLOODWATER RETARDING STRUCTURE SITE NO. 5
COMAL CREEK WATERSHED
IN
COMAL COUNTY, TEXAS
No change in Cost — Constructed by County

U. S. DEPARTMENT OF AGRICULTURE
SOIL CONSERVATION SERVICE

Designed H.H.L.	Date 11/56	Approved by ...	
Drawn H.H.L. & A.R.A.	11/56		
Traced A.R.A.	12/56		
Checked H.H.L.	12/56	Sheet No 7 of 7	Drawing No 4-E-11,024

shall be, of full age for all legal purposes except as to the right to vote. It is further ordered that this judgment be entered of record among the decrees and judgments of this court, that a certified copy of same shall be recorded in the deed records of Comal County, in which county the estate of said Leonard Kraft is situated, and that the said Leonard Kraft pay out of his estate as costs the fee for recording such copy, as well as the costs of this proceeding, for which let execution issue.

J. R. Fuchs
Judge of the District Court in and
for Comal County, Texas.

CERTIFICATE

THE STATE OF TEXAS
COUNTY OF COMAL

I, the undersigned, Alwin Reinarz, Clerk of the District Court in and for Comal County, Texas, hereby certify that the above and foregoing is a full, true and correct copy of JUDGMENT as the same appears of record in Volume "N", pages 578-579 of the Minutes of the District Court of Comal County, Texas, in the cause of IN RE: LEONARD KRAFT, A MINOR, file No. 5027, and that I am the lawful possessor and custodian of said record.

Witness my hand and seal of office, and of said court, at my office in New Braunfels, Texas, this 25th day of September, A. D. 1956.

(Seal)

Alwin Reinarz
Clerk of the District Court in and
for Comal County, Texas

Filed for Record September 27, 1956, at 1:25 o'clock P.M., and recorded September 28, 1956, at 9:00 o'clock A. M.

County Clerk, Comal County, Texas.

No. 53227 - EASEMENT. HERMAN VOGEL, ET UX TO COMAL, HAYS, GUADALUPE COUNTY SOIL CONSERVATION DISTRICT.

EASEMENT

THIS INDENTURE, made this 20th day of Sept., 1956, by and between Herman Vogel and Ida Vogel his wife, residents of the County of Comal, State of Texas, hereinafter referred to as the first party, and Comal, Hays, Guadalupe County Soil Conservation District, hereinafter referred to as the second party,

WITNESSETH THAT:

WHEREAS, The Secretary of Agriculture, United States Department of Agriculture, has been authorized by the Congress to carry out a program of assistance to local agencies and organizations in planning and installing works and measures for watershed protection, flood prevention, and agricultural phases of the conservation, development, utilization and disposal of water, and

WHEREAS, the second party is cooperating in said program in the Comal Creek Branch watershed, State of Texas, in connection with which the second party desires to secure certain rights in, over and upon the hereinafter described land of the first party,

WHEREFORE, for and in consideration of One Dollar ($1.00) and the benefits accruing to the first party from the installation of said program and other good and valuable considerations, the receipt whereof is hereby acknowledged, the first party does hereby grant and convey unto the second party an easement in, over and upon the following described land situated in the County of Comal, State of Texas, to-wit:

All that certain tract or parcel of land situated in Comal County, Texas, and being part of the C. Andreas Survey No. 437, the land over which the easement is granted and on which the structure is to be erected being situated on the south side of the Schoenthal Road, and this

easement is confined to the property located south of said road and upon the properties owned by the parties of the first part herein located south of and immediately joining said Schoenthal Road.

1. The second party shall have the right, privilege and authority to use said land for the installation, operation,maintenance and inspection of the following described works and measures, and for the storage of waters that may be impounded by any dam or other reservoir structure described below:

One earthen structure or dam to be built in accordance with the plans and specifications as prepared by the engineers of the Soil Conservation Service, which plans and specifications have been fully agreed on by the parties and a copy of which is on file with the party of the second part and another copy delivered to parties of the first part.

2. The second party shall be responsible for operating, maintaining, and keeping in good repair the works and measures herein described.

3. The first party reserves the right to use said land or any part thereof at any time and for any purpose, provided such use does not damage the structure or interfere with the full enjoyment by the second party of the easement herein conveyed.

4. The second party shall have the right to construct fences and gates around the structures, and such fences and gates shall not be changed in any way except by the consent of the second party.

5. This easement shall include the right of ingress and egress at any time over and upon said land and any adjoining land owned by the first party.

6. This easement shall include all easements, rights-of-way, rights, privileges and appurtenances in or to said land that may be necessary, useful or convenient for the full enoyment of the easement herein conveyed.

7. The first party hereby releases the second party from any and all claims for damages arising out of or in connection with the installation, operation and maintenance of the works and measures herein described:

8. The first party hereby warrants the title to said land; however, the easement herein conveyed shall be subject to any easements, rights-of-way, or mineral reservations or rights now outstanding in third persons. This easement shall not pass, nor shall same be construed to pass, to the second party any fee simple interest or title to the above described lands.

9. In the event the easement described herein is abandoned, the rights, privileges, and authority granted hereunder to the second party shall cease and determine.

IN WITNESS HEREOF, the parties hereto have hereunto subscribed their names and affixed their seals as of the day and year first above written.

Ida Vogel
Herman Vogel
(Signature of first party)

Comal-Hays Guadalupe
Soil Conservation District

By Herman Blank
Chairman,Board of Supervisors

THE STATE OF TEXAS
COUNTY OF COMAL

BEFORE ME, the undersigned, a Notary Public in and for said County and State, on this day personally appeared Herman Vogel and Ida Vogel, his wife, both known to me to be the persons whose names are subscribed to the foregoing instrument and acknowledged to me that they each executed the same for the purposes and consideration therein expressed, and the said Ida Vogel, wife of the said Herman Vogel, having been examined by me privily and apart from her husband, and having the same fully explained to her, she, the said Ida Vogel

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 25, 2007

Mr. Scott Knowlton
KT East Real Estate Investments L.P.
18225 FM 2252
San Antonio, Texas 78266

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Rockwall Ranch East Subdivision; Located approximately two miles south of the intersection of FM 1863 and Schoenthal Rd.; New Braunfels, Texas
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program ID No. 2706.00; Investigation No. 593786; Regulated Entity No. RN105332571

Dear Mr. Knowlton:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the above-referenced project submitted to the San Antonio Regional Office by Carter & Burgess, Inc. on behalf of KT East Real Estate Investments L.P. on August 30, 2007. Final review of the WPAP was completed after additional material was received on October 18, 2007. As presented to the TCEQ, the Temporary Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer Protection Plan. A motion for reconsideration must be filed no later than 23 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The proposed single family residential project will have an area of approximately 325 acres. It will include 216 single-family lots with an average size of 1.16 acres, and associated rooftops, driveways, and paved streets. The impervious cover will be 51.2 acres (15.7%). According to a letter dated, July 18, 2007, signed by Mr. Robert Boyd, P.E., with Comal County, the site in the development is acceptable for the use of on-site sewage facilities.

PERMANENT POLLUTION ABATEMENT MEASURES

Since this single-family residential project will not have more than 20 percent impervious cover, an exemption from permanent BMPs is approved.

GEOLOGY

The underlying limestone bedrock ranges from the lower Cretaceous Person Formation of the Edwards Group in the south, central and eastern portions of the site, the Georgetown Limestone in the northeast, to the Del Rio Clay formation in the northwest. The four soil types associated with the site are Denton silty clay, Krum clay, and both Medlin-Eckrant, and Rumple Comfort undulating associations. According to the geologic assessment included with the application, features were found at the site. None were ranked as sensitive. The San Antonio Regional Office did not conduct a site inspection.

SPECIAL CONDITIONS

I. The holder of the approved Edwards Aquifer WPAP must comply with all provisions of 30 TAC Chapter 213 and all best management practices and measures contained in the application.

II. Intentional discharges of sediment laden storm water are not allowed. If dewatering becomes necessary, the discharge will be filtered through appropriately selected best management practices. These may include vegetated filter strips, sediment traps, rock berms, silt fence rings, etc.

III. In addition to the rules of the Commission, the applicant may also be required to comply with state and local ordinances and regulations providing for the protection of water quality.

IV. Since this project will not have more than 20% impervious cover, an exemption from permanent BMPs is approved. If the percent impervious cover ever increases above 20% or the land use changes, the exemption for the whole site as described in the property boundaries required by §213.4(g), may no longer apply and the property owner must notify the appropriate regional office of these changes.

STANDARD CONDITIONS

1. Pursuant to Chapter 7 Subchapter C of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Prior to Commencement of Construction:

2. Within 60 days of receiving written approval of an Edwards Aquifer Protection Plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

3. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.

4. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

5. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the

approved plan and program ID number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

6. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

7. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

8. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

9. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

10. No water wells exist on the site. Wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

11. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

12. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

13. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

14. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

15. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

16. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

17. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

18. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

If you have any questions or require additional information, please contact Jason Jupe of the Edwards Aquifer Protection Program of the San Antonio Regional Office at (210) 403-4023.

Sincerely,

Richard Garcia

Glenn Shankle
Executive Director
Texas Commission on Environmental Quality

GS/JJ/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance of Permanent BMPs, Form TCEQ-10263

cc: Mr. Todd Simmang, P.E., Carter & Burgess
Mr. Bruce Boyer, City of New Braunfels
Mr. Tom Hornseth, Comal County
Ms. Velma Danielson, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

Brenda-
Let's file this away.

Rockwall Ranch, Unit 2, Block 11, Lot 34

Determining separation distances for proposed OSSF systems:

Per the 9/23/04 letter from Carter & Burgess Consultants, "The labeled distances take into account the dimensions of the feature based on the Geologic Assessment. For example a feature with a 15' radius will have a 165' radius setback easement shown."

Feature S-2:	Reported dimensions:	200' x 200' x 5'
	Radius of feature:	100'
	Radius of setback from center of feature =	100' + 150' = 250'
	Diameter of setback =	500'
	Measured Dimensions of Setback:	350' x 460'

30 TAC 285, Table X (Minimum required separation distances for on-site sewage facilities from recharge features (30 TAC 213)):

Sewage Treatment Tanks or Holding Tanks:	50'
Soil Absorption Systems & Unlined ET Beds:	150'
Lined Evapotranspiration Beds:	50'
Sewer Pipe With Watertight Joint:	50'
Surface Irrigation (Spray Area):	150'
Drip Irrigation:	100' when Ra 0.1 150' when Ra > 0.1

The spray area is outside the 150' setback.

Assuming the setback on the map provided by Comal County matches the 9/23/04 letter, the tank is 35' inside the 150' setback. Therefore the tank is 115' (150' – 35') away from the recharge feature.

Assuming the measured dimensions of the setback on the map provided by Comal County are correct (350' x 460'), the "long radius" of the setback is 230' (100' + 260/2 = 230'), the tank is 80' (130' – 50') from the recharge feature. Therefore, the tank meets the minimum separation distance of 50' (30 TAC 285, Table X).

DRAFT

Kathleen Hartnett White, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

October 6, 2004

(210 545-4329

Mr. Scott Knowlton
KT Real Estate Investments, Ltd.
18225 FM 2252
San Antonio, TX 78266

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Rockwall Ranch Subdivision; Located west of the intersection of FM 1863 and Schoenthal Road and is bound by FM 1863 on the north and by Schoenthal Road to the south; New Braunfels, Texas
TYPE OF PLAN: Request for Approval of a Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program File No. 2177.00
Regulated Entity ID: RN104256243

Dear Mr. Knowlton:

The Texas Commission on Environmental Quality (TCEQ) has completed its review of the WPAP application for the referenced project submitted to the San Antonio Regional Office by Todd Simmang, P.E. of Carter & Burgess, Inc. on behalf of KT Real Estate Investments, Ltd. on April 21, 2001. Final review of the WPAP application was completed after additional material was received on September 2, 2004, and September 23, 2004. As presented to the TCEQ, the Temporary and Permanent Best Management Practices (BMPs) and construction plans were prepared by a Texas Licensed Professional Engineer to be in general compliance with the requirements of 30 TAC Chapter 213. These planning materials were sealed, signed, and dated by a Texas Licensed Professional Engineer. Therefore, based on the engineer's concurrence of compliance, the planning materials for construction of the proposed project and pollution abatement measures are hereby approved subject to applicable state rules and the conditions in this letter. The applicant or a person affected may file with the chief clerk a motion for reconsideration of the executive director's final action on this Edwards Aquifer protection plan. A motion for reconsideration must be filed no later than 20 days after the date of this approval letter. *This approval expires two (2) years from the date of this letter unless, prior to the expiration date, more than 10 percent of the construction has commenced on the project or an extension of time has been requested.*

PROJECT DESCRIPTION

The Rockwall Ranch subdivision includes 1,291 acres of which 379 acres adjacent to FM 1863 and Schoenthal Road have been subdivided into lots that are 10 acres or larger and are not included within the site covered by this WPAP. The proposed residential project covered by this WPAP will have an area of approximately 912 acres. The site will include 497 single family residential lots, roads, and utilities. The impervious cover will be 109.8 acres (12 percent). According to a letter dated, March 30, 2004, signed by Tom Hornseth, P.E., with Comal County, the site in the development is acceptable for the use of on-site sewage facilities (OSSFs).

PERMANENT POLLUTION ABATEMENT MEASURES

Since this single-family residential project will not have more than 20 percent impervious cover, an exemption from permanent BMPs is approved.

Separation distances for on-site sewage facilities from sensitive features and feature related drainage easements are identified in the following table.

Feature ID	Feature Surface Dimensions (feet)	Setback/Easement Dimensions
*S-2	200 x 200 x 5	250' radius
*S-8 ✻	100 x 70 x 1.5	470' x 370'
*S-9	3.5 x 1 x 1.5	151.75' radius
S-10	200 x 200 x 3	#
*S-14	2 x 2 x 5	153.50' radius
*S-16	1 x 1 x 2.5	150' radius
*S-17 ✻	0.75 x 0.75 x 1.5	150' radius
*S-23	0.8 x 0.5 x 3.5	153' radius
*S-25	2 x 1 x 0.8	151' radius
*S-29	8 x 8 x 4	154' radius
*S-32	100 x 40 x 4	340' x 440'
*S-33	65 x 55 x 5	413' x 395'
*S-34	45 x 30 x 6	413' x 395'
*S-35	15 x 15 x 10	180' radius
*S-46	-Water Well-	150' radius
S-47	360 x 360 x 5	#
S-48	540 x 450 x 3	#
*S-49	-Water Well-	150' radius
*S-59	2.5 x 1.5 x 1	151.5' radius
S-61	400 x 300 x 5	#

* - Sensitive Feature
# - Drainage easement to be determined by completed drainage study and shown on final plat
✻- Outside 912 acre site but impacts lots covered by the WPAP

GEOLOGY

According to the geologic assessment included with the application, 61 geologic or man-made features were identified within the 1,291 acre Rockwall Ranch Subdivision. Thirty-eight geologic or manmade features occur within the 912 acres covered by this WPAP. Of the 38 features identified within the site, 14 features were assessed as sensitive. The San Antonio Regional Office site inspection of July 20, 2004, and September 2, 2004, revealed that the site is generally as described by the geologic assessment.

SPECIAL CONDITIONS

I. If the impervious cover ever increases above 20 percent or the land use changes, the exemption for the whole site may no longer apply and the property owner must notify the San Antonio Regional Office of these changes.

II. Drainage easements and OSSF separation distances must be shown on the respective plats. Two copies of each plat must be submitted to the San Antonio Region office within 30 days after plat has been recorded.

III. Any geologic features discovered during construction and assessed as sensitive must have the appropriate separation distances between the feature and the OSSF components as specified in 30 Texas Administrative Code 285.

STANDARD CONDITIONS

1. Pursuant to §26.136 of the Texas Water Code, any violations of the requirements in 30 TAC Chapter 213 may result in administrative penalties.

Prior to Commencement of Construction:

2. Within 60 days of receiving written approval of an Edwards Aquifer protection plan, the applicant must submit to the San Antonio Regional Office, proof of recordation of notice in the county deed records, with the volume and page number(s) of the county deed records of the county in which the property is located. A description of the property boundaries shall be included in the deed recordation in the county deed records. A suggested form (Deed Recordation Affidavit, TCEQ-0625) that you may use to deed record the approved WPAP is enclosed.

3. All contractors conducting regulated activities at the referenced project location shall be provided a copy of this notice of approval. At least one complete copy of the approved WPAP and this notice of approval shall be maintained at the project location until all regulated activities are completed.

4. Modification to the activities described in the referenced WPAP application following the date of approval may require the submittal of a plan to modify this approval, including the payment of appropriate fees and all information necessary for its review and approval prior to initiating construction of the modifications.

5. The applicant must provide written notification of intent to commence construction, replacement, or rehabilitation of the referenced project. Notification must be submitted to the San Antonio Regional Office no later than 48 hours prior to commencement of the regulated activity. Written notification must include the date on which the regulated activity will commence, the name of the approved plan and file number for the regulated activity, and the name of the prime contractor with the name and telephone number of the contact person. The executive director will use the notification to determine if the approved plan is eligible for an extension.

6. Temporary erosion and sedimentation (E&S) controls, i.e., silt fences, rock berms, stabilized construction entrances, or other controls described in the approved WPAP, must be installed prior to construction and maintained during construction. Temporary E&S controls may be removed when vegetation is established and the construction area is stabilized. If a water quality pond is proposed, it shall be used as a sedimentation basin during construction. The TCEQ may monitor stormwater discharges from the site to evaluate the adequacy of temporary E&S control measures. Additional controls may be necessary if excessive solids are being discharged from the site.

7. All borings with depths greater than or equal to 20 feet must be plugged with non-shrink grout from the bottom of the hole to within three (3) feet of the surface. The remainder of the hole must be backfilled with cuttings from the boring. All borings less than 20 feet must be backfilled with cuttings from the boring. All borings must be backfilled or plugged within four (4) days of completion of the drilling operation. Voids may be filled with gravel.

During Construction:

8. During the course of regulated activities related to this project, the applicant or agent shall comply with all applicable provisions of 30 TAC Chapter 213, Edwards Aquifer. The applicant shall remain responsible for the provisions and conditions of this approval until such responsibility is legally transferred to another person or entity.

9. If any sensitive feature (caves, solution cavities, sink holes, etc.) is discovered during construction, all regulated activities near the feature must be suspended immediately. The applicant or his agent must immediately notify the San Antonio Regional Office of the discovery of the feature. Regulated activities near the feature may not proceed until the executive director has reviewed and approved the methods proposed to protect the feature and the aquifer from potentially adverse impacts to water quality. The plan must be sealed, signed, and dated by a Texas Licensed Professional Engineer.

10. Two wells exist on the 912 acre site. All water wells, including injection, dewatering, and monitoring wells must be in compliance with the requirements of the Texas Department of Licensing and Regulation under Title 16 TAC Chapter 76 (relating to Water Well Drillers and Pump Installers) and all other locally applicable rules, as appropriate.

11. If sediment escapes the construction site, the sediment must be removed at a frequency sufficient to minimize offsite impacts to water quality (e.g., fugitive sediment in street being washed into surface streams or sensitive features by the next rain). Sediment must be removed from sediment traps or sedimentation ponds not later than when design capacity has been reduced by 50 percent. Litter, construction debris, and construction chemicals shall be prevented from becoming stormwater discharge pollutants.

12. The following records shall be maintained and made available to the executive director upon request: the dates when major grading activities occur, the dates when construction activities temporarily or permanently cease on a portion of the site, and the dates when stabilization measures are initiated.

13. Stabilization measures shall be initiated as soon as practicable in portions of the site where construction activities have temporarily or permanently ceased, and construction activities will not resume within 21 days. When the initiation of stabilization measures by the 14th day is precluded by weather conditions, stabilization measures shall be initiated as soon as practicable.

After Completion of Construction:

14. A Texas Licensed Professional Engineer must certify in writing that the permanent BMPs or measures were constructed as designed. The certification letter must be submitted to the San Antonio Regional Office within 30 days of site completion.

15. The applicant shall be responsible for maintaining the permanent BMPs after construction until such time as the maintenance obligation is either assumed in writing by another entity having ownership or control of the property (such as without limitation, an owner's association, a new property owner or lessee, a district, or municipality) or the ownership of the property is transferred to the entity. The regulated entity shall then be responsible for maintenance until another entity assumes such obligations in writing or ownership is transferred. A copy of the transfer of responsibility must be filed with the executive director through the San Antonio Regional Office within 30 days of the transfer. A copy of the transfer form (TCEQ-10263) is enclosed.

16. Upon legal transfer of this property, the new owner(s) is required to comply with all terms of the approved Edwards Aquifer protection plan. If the new owner intends to commence any new regulated activity on the site, a new Edwards Aquifer protection plan that specifically addresses the new activity must be submitted to the executive director. Approval of the plan for the new regulated activity by the executive director is required prior to commencement of the new regulated activity.

17. An Edwards Aquifer protection plan approval or extension will expire and no extension will be granted if more than 50 percent of the total construction has not been completed within ten years from the initial approval of a plan. A new Edwards Aquifer protection plan must be submitted to the San Antonio Regional Office with the appropriate fees for review and approval by the executive director prior to commencing any additional regulated activities.

18. At project locations where construction is initiated and abandoned, or not completed, the site shall be returned to a condition such that the aquifer is protected from potential contamination.

If you have any questions or require additional information, please contact Lynn M. Bumguardner of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210.403.4023.

Sincerely,

Bradley D. Caldwell

for Glen Shankle
Executive Director
Texas Commission on Environmental Quality

GS/LMB/eg

Enclosure: Deed Recordation Affidavit, Form TCEQ-0625
Change in Responsibility for Maintenance on Permanent BMPs-Form TCEQ-10263

cc: Mr. Todd Simmang, P.E, Carter & Burgess, Inc.
Mr. Michael Short, P.E., City of New Braunfels
Mr. Tom Hornseth, Comal County
Mr. Greg Ellis, Edwards Aquifer Authority
TCEQ Central Records MC 212

Feature Comments

S-1 This feature is a closed depression on the open meadow area. It is four feet in diameter and approximately 6 to 8 inches deep. There is some vuggy rock on one edge of the feature.

S-2 This feature is a large swallow hole. It has three drainage features that drain into it. There are several feet of organic matter in the bottom of the feature. This feature was likely once a cave that accepted large amounts of water. Now, the opening is clogged with organics. The soil profile is very deep. There is still good drainage into the feature through the organics. There is some rim rock that is about 35 feet by 25 feet by 3 feet deep. The area of the closed depression is larger, about 200 feet in diameter, with an overall depth of about 5 feet.

S-3 This feature is a large, shallow closed depression. It is 60 feet in diameter and about 0.75 feet deep. It is filled with a combination of fine-grained soils (evidence of desiccation cracks), loose cobbles and organic matter. There is some grass growing in the bottom.

S-4 This feature is a large, shallow closed depression. It is 7 feet in diameter and about 0.75 feet deep. It is filled with a combination of fine-grained soils, loose cobbles and organic matter.

S-5 This is a fracture in a rock that is about 2 feet up from the bottom of a creek bed. The fracture is about 8 inches wide by 1 foot long and has a dip about 60°. It extends about four feet downward. It is filled with a combination of fine-grained soils, loose cobbles and organic matter.

S-6 This feature is a closed depression. It appears to be man made. It is 60 feet by 40 feet and about 2 feet deep. It is filled with fine-grained soils, (evidence of desiccation cracks).

S-7 This feature is a closed depression. It is 25 feet in diameter and about 6 inches deep. It is filled with fine-grained soils, (evidence of desiccation cracks) and coarser grained rock.

S-8 This feature is a large, shallow closed depression. It has 2 lobes to it. It is 100 feet by 70 feet and about 1.5 feet deep. There is a cliff wall on one side. It appears to be man made. It is in a possible quarry area. It is filled with a combination of fine-grained soils (evidence of desiccation cracks) and loose cobbles. There is some grass growing in the bottom.

S-9 This is a fracture in a rock that appears to have undergone solutioning. The fracture is about 3.5 feet long. The width varies up to almost a foot but averages about 4 inches. It extends downward about 15 inches. It is filled with a combination of fine-grained soils, loose cobbles and organic matter.

S-10 This feature is a large, shallow closed depression. It appears to be altered by man. It is one of the large tanks in the meadow area. It is 200 feet in diameter and is about 3 feet deep. It is filled with mostly with fine-grained soils. There are some loose cobbles on the bottom. There is grass growing in the bottom.

S-11 This feature is a closed depression. It is 10 feet by 8 feet and is 1 foot deep. There is a lot of loose rock lying in and around the feature. There is no specific rim rock. This may have been created by an uprooted tree. There is fine-grained soils and organic material in the bottom.

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

January 8, 2008

Mr. Scott Knowlton
KT Real Estate Investments, Ltd.
18225 FM 2252
San Antonio, Texas 78266

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Rockwall Ranch Subdivision; Located west of the intersection of FM 1863 and Schoenthal Road and is bound by FM 1863 on the north and by Schoenthal Road to the south; City of New Braunfels ETJ, Texas
TYPE OF PLAN: Request for Information Regarding an Approved Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213; Edwards Aquifer Protection Program File No. 2177.04, Investigation No.: 613589, Regulated Entity No.: RN104256243

By letter dated 12/14/07, you provided additional geologic information about feature S-14, and a re-assessment of its sensitivity. The definition of a "sensitive feature" from 30 TAC 213.3(29) is:

> A permeable geologic or manmade feature located on the recharge zone or transition zone where:
>
> > (A) a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer exists; and
> >
> > (B) rapid infiltration to the subsurface may occur.

As understood from the geologist's report, the feature was re-assessed as not sensitive because the original drainage area to the feature had been altered by development on the lot, and therefore the infiltration rate had been reduced from 20 points to 19 points. Figure 1 of the Instructions to Geologists indicates that the probability of rapid infiltration for small drainage areas is between 20 and 34 points, and not 19.

Alteration of the original drainage area to the feature was not authorized and may need to be reconstructed. Using Figure 1, please provide an explanation of how the feature's (A) potential for hydraulic interconnectedness between the surface and the Edwards Aquifer, and (B) rapid infiltration to the subsurface (which) may occur, has changed sufficiently to warrant a revision of the feature's sensitivity.

If you have any questions or require additional information, please contact John Mauser of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210/403-4024.

Sincerely,

Lynn Bumguardner
Water Section Work Leader
Texas Commission on Environmental Quality

cc: Mr. Todd Simmang, P.E., Carter & Burgess, Inc.
Mr. Mike Etelamaki, P.E., City of New Braunfels
Mr. Tom Hornseth, P.E., Comal County
Ms. Velma Danielson, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

Buddy Garcia, *Chairman*
Larry R. Soward, *Commissioner*
Bryan W. Shaw, Ph.D., *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

February 22, 2008

Mr. Scott Knowlton
KT Real Estate Investments, Ltd.
18225 FM 2252
San Antonio, Texas 78266

Re: Edwards Aquifer, Comal County
NAME OF PROJECT: Rockwall Ranch Subdivision; Located west of the intersection of FM 1863 and Schoenthal Road and is bound by FM 1863 on the north and by Schoenthal Road to the south; City of New Braunfels ETJ, Texas
TYPE OF PLAN: Request for Information Regarding an Approved Water Pollution Abatement Plan (WPAP); 30 Texas Administrative Code (TAC) Chapter 213; Edwards Aquifer Protection Program File No. 2177.05, Investigation No.: 619070, Previous Investigation No.: 613589, Regulated Entity No.: RN104256243

By letter dated February 4, 2008 additional geologic information was provided about feature S-14 (0.5' diameter solution feature), and a re-assessment of its sensitivity. This information was submitted in response to previous correspondence from the TCEQ.

The definition of a "sensitive feature" from 30 TAC 213.3(29) is:

> A permeable geologic or manmade feature located on the recharge zone or transition zone where:
>
> (A) a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer exists; and
>
> (B) rapid infiltration to the subsurface may occur.

As understood from the geologist's January 23, 2008, re-assessment, the feature does have a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer, but rapid infiltration to the subsurface does not occur. As further understood, this conclusion is based on the logical argument that a large natural catchment area to a feature (>1.6 acres) is assigned a high probability of rapid infiltration, a small catchment area (<1.6 acres) is assigned an intermediate probability of rapid infiltration, and therefore, an extremely small catchment area (approximately 100 square feet) should be given a low probability of rapid infiltration.

While logical, the TCEQ disagrees with the validity of the argument. As described, the feature still appears to meet the definition of a "sensitive feature" because it has a potential for hydraulic interconnectedness between the surface and the Edwards Aquifer, and rapid infiltration to the subsurface may occur.

Based on the information provided, the feature and its natural drainage area can be protected with the appropriate separation distance as listed in 30 TAC 285. As discussed with the project engineer, the separation distance for a drip irrigation system can be 100 feet when the soil application rate is less than or equal to 0.1. Alteration of the original drainage area to the feature is not authorized.

If you have any questions or require additional information, please contact John Mauser of the Edwards Aquifer Protection Program of the San Antonio Regional Office at 210/403-4024.

Sincerely,

Lynn Bumguardner
Water Program Work Leader
Texas Commission on Environmental Quality

LMB/JKM/eg

cc: Mr. Todd Simmang, P.E., Carter & Burgess, Inc.
Mr. Mike Etelamaki, P.E., City of New Braunfels
Mr. Tom Hornseth, P.E., Comal County
Ms. Velma Danielson, Edwards Aquifer Authority
TCEQ Central Records, Building F, MC 212

Carter::Burgess

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REGION

February 4, 2008

Mr. John Mauser
TCEQ – Region 13
14250 Judson Road
San Antonio, Texas 78233

RE: Re-evaluation of feature S-14, Lot 64, Unit 4, Rockwall Ranch Subdivision
EAPP File No. 2177.04

John:

This letter is a follow up to the information we sent TCEQ on December 14, 2007 and addresses information contained in a letter we received from TCEQ, dated January 8, 2008 regarding feature S-14. In TCEQ's letter, two main issues were identified:

1. Clarification on how the geologist re-assessed the feature, in particular, how that relates to Figure 1 of the Instructions to Geologists.

2. Alteration of the original drainage area by development, causing a reduction of infiltration rate.

Addressing item 1 above, we have included additional information from the geologists per TCEQ's request. The geologist prepared additional information outlining how they are determining the feature's probability of rapid infiltration. The information is in a letter form from Arias and Associates, the geologist of record for this GA, dated January 23, 2008. This information addresses how the feature was re-assessed and should be used with the information that was submitted to TCEQ on December 14, 2007.

Addressing item 2 above, the drainage area to the feature has not been altered by development as stated in TCEQ's letter. In a phone conversation with TCEQ on January 9, 2008 it was explained that information submitted on December 14, 2007 did not state the natural drainage to the feature was altered by development, rather it stated "the natural drainage has been altered by the tree line". It also stated that the feature's condition was unchanged since the original GA; however, due to dense underbrush during the original GA, an accurate judgment on surface drainage conditions could not be made.

The drainage area just upstream of the feature has not changed since the original GA. A very unique naturally occurring oak tree line just upstream of the feature prevents upstream runoff from getting to the feature. The oak tree line is about 5 to 10 feet upstream of the feature and was not noticed during the original GA due to the dense brush conditions. The tree line and

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runoff pattern near the feature is also shown on the contour mapping and photos which were submitted to TCEQ on December 14, 2007. The contours were developed from actual ground survey points collected in the field. As noted with the information submitted on December 14, 2007, some mulching of underbrush has occurred by the individual lot owner, however, the feature remains in its natural condition and no ground disturbing or grading activities have occurred that would alter the recharge potential of the feature. This was described in detail with TCEQ on the January 9th phone call and is well documented on the photographs that were submitted on December 14, 2007 and again with this submittal. The geologist and Carter Burgess have made several visits to the site and can confirm this information.

We respectfully request TCEQ to take this information, and the information submitted on December 14, 2007, into consideration and firmly believe this assessment is more accurate than the original assessment.

If these findings meet with your approval, we recommend feature S-14 be removed from the "Permanent Pollution Abatement Measures as shown in the table on page 2 of TCEQ's approval letter dated October 6, 2004.

Enclosed with this letter are an original and three copies of the geologist's letter dated January 23, 2008.

Sincerely,

Todd Simmang, P.E.
Sr. Project Manager

Jeff Moeller, P.E.
Unit Manger

Attachments

P:\310209.013 KT Ranch\Documents\WPAP\Unit 4 Feature issues2007\ResponseLtr 020408.doc

Kathleen Hartnett White, *Chairman*
R. B. "Ralph" Marquez, *Commissioner*
Larry R. Soward, *Commissioner*
Glenn Shankle, *Executive Director*

TEXAS COMMISSION ON ENVIRONMENTAL QUALITY

Protecting Texas by Reducing and Preventing Pollution

May 3, 2005

Mr. Scott Knowlton
KT Real Estate Investments, Ltd.
18225 FM 2252
San Antonio, TX 78266

Re: Edwards Aquifer, Investigation Number: 379272, Comal County
NAME OF PROJECT: Rockwall Ranch Subdivision; Located west of the intersection of FM 1863 and Schoenthal Road and is bound by FM 1863 on the north and by Schoenthal Road to the south; New Braunfels, Texas
TYPE OF PLAN: Request for Approval of a Dewatering Plan; 30 Texas Administrative Code (TAC) Chapter 213 Edwards Aquifer
Edwards Aquifer Protection Program File No. 2177.02, Regulated Entity ID: RN104256243

Dear Mr. Knowlton:

The Texas Commission on Environmental Quality (TCEQ) received a request and plan to dewater the closed depression located in Rockwall Ranch, Unit1. The request and plan were submitted by Todd Simmang, P.E. of Carter & Burgess, Inc. and received by the San Antonio office on March 24, 2005.

It is the understanding of the TCEQ that a 6 inch pump with a maximum pumping rate of 1350 gpm will be used to dewater the closed depression know as S- 48. The discharge will be over large clean rock with an 18 inch rock berm around the perimeter. The discharge area will be approximately 20 feet square and will be located approximately 600 feet south of feature S-48. The discharge, after passing though the aforementioned controls, will enter the feature known as S-61. It is noted that the contractor will be responsible for monitoring the water elevation in feature S-61 to ensure that water does not overflow into the adjacent sensitive feature known as S-2 and for notifying the engineer of record if there is a risk of water flowing into feature S-2.

The engineer has certified in the correspondence that, "This plan will provide filtration of the water in a manner that will not cause downstream erosion or allow discharge off site or into a sensitive feature as identified in the WPAP." Therefore, the dewatering plan for feature S- 28 is approved and will be placed in the file. The TCEQ must be notified if discharged water enters sensitive features S-2 or S-35 due to the dewatering process.

Mr. Scott Knowlton
May 3, 2005
AGE 2

Should clarification of this letter be desired or if we may be of any other assistance, please contact Lynn M. Bumguardner of our San Antonio office at 210/403-4023. Please reference project numbers 2177.02.

Sincerely,

Bobby D. Caldwell,
Water Section Manager
San Antonio Region Office
Texas Commission on Environmental Quality

BDC/LMB/eg

fc: Mr. Todd Simmang, PE, Carter & Burgess, Inc.
Mr. Michael Short, P.E., City of New Braunfels
Mr. Tom Hornseth, Comal County
cc: Mr. Robert J. Potts, Edwards Aquifer Authority
TCEQ Central Records MC 212