

EMERGENCY PREPAREDNESS PLAN IMPLEMENTATION

Hills Pump Station

## WATER POLLUTION ABATEMENT PLAN



September 2023



SAN ANTONIO • EL PASO

## Edwards Aquifer Application (TCEQ-20705)

## Texas Commission on Environmental Quality Edwards Aquifer Application Cover Page

#### **Our Review of Your Application**

The Edwards Aquifer Program staff conducts an administrative and technical review of all applications. The turnaround time for administrative review can be up to 30 days as outlined in 30 TAC 213.4(e). Generally administrative completeness is determined during the intake meeting or within a few days of receipt. The turnaround time for technical review of an administratively complete Edwards Aquifer application is 90 days as outlined in 30 TAC 213.4(e). Please know that the review and approval time is directly impacted by the quality and completeness of the initial application that is received. In order to conduct a timely review, it is imperative that the information provided in an Edwards Aquifer application include final plans, be accurate, complete, and in compliance with <u>30 TAC 213</u>.

#### **Administrative Review**

1. <u>Edwards Aquifer applications</u> must be deemed administratively complete before a technical review can begin. To be considered administratively complete, the application must contain completed forms and attachments, provide the requested information, and meet all the site plan requirements. The submitted application and plan sheets should be final plans. Please submit one full-size set of plan sheets with the original application, and half-size sets with the additional copies.

To ensure that all applicable documents are included in the application, the program has developed tools to guide you and web pages to provide all forms, checklists, and guidance. Please visit the below website for assistance: <u>http://www.tceq.texas.gov/field/eapp</u>.

- 2. This Edwards Aquifer Application Cover Page form (certified by the applicant or agent) must be included in the application and brought to the administrative review meeting.
- 3. Administrative reviews are scheduled with program staff who will conduct the review. Applicants or their authorized agent should call the appropriate regional office, according to the county in which the project is located, to schedule a review. The average meeting time is one hour.
- 4. In the meeting, the application is examined for administrative completeness. Deficiencies will be noted by staff and emailed or faxed to the applicant and authorized agent at the end of the meeting, or shortly after. Administrative deficiencies will cause the application to be deemed incomplete and returned.

An appointment should be made to resubmit the application. The application is re-examined to ensure all deficiencies are resolved. The application will only be deemed administratively complete when all administrative deficiencies are addressed.

- 5. If an application is received by mail, courier service, or otherwise submitted without a review meeting, the administrative review will be conducted within 30 days. The applicant and agent will be contacted with the results of the administrative review. If the application is found to be administratively incomplete, it can be retrieved from the regional office or returned by regular mail. If returned by mail, the regional office may require arrangements for return shipping.
- 6. If the geologic assessment was completed before October 1, 2004 and the site contains "possibly sensitive" features, the assessment must be updated in accordance with the *Instructions to Geologists* (TCEQ-0585 Instructions).

#### **Technical Review**

- 1. When an application is deemed administratively complete, the technical review period begins. The regional office will distribute copies of the application to the identified affected city, county, and groundwater conservation district whose jurisdiction includes the subject site. These entities and the public have 30 days to provide comments on the application to the regional office. All comments received are reviewed by TCEQ.
- 2. A site assessment is usually conducted as part of the technical review, to evaluate the geologic assessment and observe existing site conditions. The site must be accessible to our staff. The site boundaries should be

clearly marked, features identified in the geologic assessment should be flagged, roadways marked and the alignment of the Sewage Collection System and manholes should be staked at the time the application is submitted. If the site is not marked the application may be returned.

- 3. We evaluate the application for technical completeness and contact the applicant and agent via Notice of Deficiency (NOD) to request additional information and identify technical deficiencies. There are two deficiency response periods available to the applicant. There are 14 days to resolve deficiencies noted in the first NOD. If a second NOD is issued, there is an additional 14 days to resolve deficiencies. If the response to the second notice is not received, is incomplete or inadequate, or provides new information that is incomplete or inadequate, the application must be withdrawn or will be denied. Please note that because the technical review is underway, whether the application is withdrawn or denied **the application fee will be forfeited**.
- 4. The program has 90 calendar days to complete the technical review of the application. If the application is technically adequate, such that it complies with the Edwards Aquifer rules, and is protective of the Edwards Aquifer during and after construction, an approval letter will be issued. Construction or other regulated activity may not begin until an approval is issued.

#### **Mid-Review Modifications**

It is important to have final site plans prior to beginning the permitting process with TCEQ to avoid delays.

Occasionally, circumstances arise where you may have significant design and/or site plan changes after your Edwards Aquifer application has been deemed administratively complete by TCEQ. This is considered a "Mid-Review Modification". Mid-Review Modifications may require redistribution of an application that includes the proposed modifications for public comment.

If you are proposing a Mid-Review Modification, two options are available:

- If the technical review has begun your application can be denied/withdrawn, your fees will be forfeited, and the plan will have to be resubmitted.
- TCEQ can continue the technical review of the application as it was submitted, and a modification application can be submitted at a later time.

If the application is denied/withdrawn, the resubmitted application will be subject to the administrative and technical review processes and will be treated as a new application. The application will be redistributed to the affected jurisdictions.

Please contact the regional office if you have questions. If your project is located in Williamson, Travis, or Hays County, contact TCEQ's Austin Regional Office at 512-339-2929. If your project is in Comal, Bexar, Medina, Uvalde, or Kinney County, contact TCEQ's San Antonio Regional Office at 210-490-3096

Please fill out all required fields below and submit with your application.

1. Regulated Entity N	ame: Hi	ills Pu	ımp Sta	2. Regulated Entity No.:							
3. Customer Name: San Antonio Water System							<b>4. Customer No.:</b> 600529069				
5. Project Type: (Please circle/check one)	New	$\bigcup$	Modif	icatior	1	Extension		Exception			
6. Plan Type: (Please circle/check one)	WPAP	CZP	SCS	UST	AST	EXP	EXT	Technical Clarification	Optional Enhanced Measures		
7. Land Use: (Please circle/check one)	Residen	tial 🤇	Non-r	esiden	tial		8. Sit	te (acres): 0.62 ac			
9. Application Fee:	\$3,000.	00	10. P	ermai	nent I	BMP(	s):	Vegetative Filter Strips			
11. SCS (Linear Ft.):	N/A		12. A	ST/US	ST (No	o. Tar	nks):	N/A			
13. County:	Bexar		14. W	aters	hed:			Leon Creek			

## **Application Distribution**

Г

Instructions: Use the table below to determine the number of applications required. One original and one copy of the application, plus additional copies (as needed) for each affected incorporated city, county, and groundwater conservation district are required. Linear projects or large projects, which cross into multiple jurisdictions, can require additional copies. Refer to the "Texas Groundwater Conservation Districts within the EAPP Boundaries" map found at:

http://www.tceq.texas.gov/assets/public/compliance/field\_ops/eapp/EAPP%20GWCD%20map.pdf

For more detailed boundaries, please contact the conservation district directly.

Austin Kegion										
County:	Hays	Travis	Williamson							
Original (1 req.)										
Region (1 req.)										
County(ies)										
Groundwater Conservation District(s)	Edwards Aquifer Authority Barton Springs/ Edwards Aquifer Hays Trinity Plum Creek	Barton Springs/ Edwards Aquifer	NA							
City(ies) Jurisdiction	Austin Buda Dripping Springs Kyle Mountain City San Marcos Wimberley Woodcreek	Austin Bee Cave Pflugerville Rollingwood Round Rock Sunset Valley West Lake Hills	Austin Cedar Park Florence Georgetown Jerrell Leander Liberty Hill Pflugerville Round Rock							

San Antonio Region										
County:	Bexar	Comal	Kinney	Medina	Uvalde					
Original (1 req.)	<u>_X</u>	_								
Region (1 req.)	<u>_X</u> _									
County(ies)	<u>_X</u>									
Groundwater Conservation District(s)	_X_ Edwards Aquifer Authority _X_ Trinity-Glen Rose	Edwards Aquifer Authority	Kinney	EAA Medina	EAA Uvalde					
City(ies) Jurisdiction	Castle Hills Fair Oaks Ranch Helotes Hill Country Village Hollywood Park X_San Antonio (SAWS) Shavano Park	Bulverde Fair Oaks Ranch Garden Ridge New Braunfels Schertz	NA	San Antonio ETJ (SAWS)	NA					

I certify that to the best of my knowledge, that the application is complete and accurate. This application is hereby submitted to TCEQ for administrative review and technical review.

## Saqib Shirazi

Print Name of Customer/Authorized Agent

Forther .

Signature of Customer/Authorized Agent

9-3-2023

Date

**FOR TCEQ INTERNAL USE ONLY**							
Date(s)Reviewed:		Date Administratively Complete:					
Received From:		Correct N	Number of Copies:				
Received By:		Distribution Date:					
EAPP File Number:	:						
Admin. Review(s) (No.):		No. AR R	counds:				
Delinquent Fees (Y/N):		Review Time Spent:					
Lat./Long. Verified:		SOS Cust	tomer Verification:				
Agent Authorization Complete/Notarized (Y/N):		Fee	Payable to TCEQ (Y/N):				
Core Data Form Complete (Y/N):		Check:	Signed (Y/N):				
Core Data Form Incomplete Nos.:			Less than 90 days old (Y/N):				

# General Information Form (TCEQ-0587)

## **General Information Form**

**Texas Commission on Environmental Quality** 

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

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

## Signature

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:

Print Name of Customer/Agent: Dr. Saqib Shirazi, P.E., PMP

Date: September 2023

Signature of Customer/Agent:

**Project Information** 

- 1. Regulated Entity Name: Hills Pump Station
- 2. County: <u>Bexar</u>
- 3. Stream Basin: \_\_\_\_\_
- 4. Groundwater Conservation District (If applicable): <u>Trinity Glen Rose/Edwards Aquifer</u> <u>Authority</u>
- 5. Edwards Aquifer Zone:



6. Plan Type:

**WPAP** 

SCS

TCEQ-0587 (Rev. 02-11-15)

_	Modification AST	UST Exception Request
7.	Customer (Applicant): Contact Person: <u>Dr. Saqib Shirazi, P.E., PMP</u> Entity: <u>San Antonio Water System</u> Mailing Address: <u>2800 U.S. Hwy 281 N.</u> City, State: <u>San Antonio, TX</u> Telephone: <u>(210) 233-3840</u> Email Address: <u>Saqib.Shirazi@saws.org</u>	Zip: <u>78212</u> FAX:
8.	Agent/Representative (If any): Contact Person: <u>Mark Medina, P.E.</u> Entity: <u>Moreno Cardenas Inc.</u> Mailing Address: <u>9601 McAllister Freeway #507</u> City, State: <u>San Antonio, TX</u> Telephone: <u>(210) 314-3553</u> Email Address: <u>MMedina@morenocardenas.com</u>	Zip: <u>78216</u> FAX:
9.	Project Location:	
	<ul> <li>The project site is located inside the city limits</li> <li>The project site is located outside the city limits jurisdiction) of</li> <li>The project site is not located within any city's</li> </ul>	of <u>San Antonio</u> . s but inside the ETJ (extra-territorial limits or ETJ.
10.	The location of the project site is described bel detail and clarity so that the TCEQ's Regional st boundaries for a field investigation.	ow. The description provides sufficient aff can easily locate the project and site
	Project is located approx. 0.53 miles north of the	ne intersection of 1604 E and Babcock Rd.
11.	Attachment A – Road Map. A road map showi project site is attached. The project location an the map.	ng directions to and the location of the disite boundaries are clearly shown on
12.	Attachment B - USGS / Edwards Recharge Zon USGS Quadrangle Map (Scale: 1" = 2000') of th The map(s) clearly show:	<b>e Map</b> . A copy of the official 7 ½ minute e Edwards Recharge Zone is attached.
	<ul> <li>Project site boundaries.</li> <li>USGS Quadrangle Name(s).</li> <li>Boundaries of the Recharge Zone (and Tran</li> <li>Drainage path from the project site to the boundaries of the section of the project site to the boundaries of the section of the project site to the boundaries of the section of the project site to the boundaries of the section of the project site to the boundaries of the section of the project site to the boundaries of the section of the project site to the boundaries of the section of the project site to the boundaries of the section of the project site to the boundaries of the section of the project site to the boundaries of the section of the project site to the boundary of the project site to t</li></ul>	sition Zone, if applicable). ooundary of the Recharge Zone.

13. The TCEQ must be able to inspect the project site or the application will be returned. 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.

- Survey staking will be completed by this date: <u>TBD</u>
- 14. Attachment C Project Description. Attached at the end of this form is a detailed narrative description of the proposed project. The project description is consistent throughout the application and contains, at a minimum, the following details:
  - Area of the site
     Offsite areas
     Impervious cover
     Permanent BMP(s)
     Proposed site use
     Site history
     Previous development
     Area(s) to be demolished
- 15. 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: Drinking water, Pump Station

## **Prohibited Activities**

- 16. 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).
  - (6) New municipal and industrial wastewater discharges into or adjacent to water in the state that would create additional pollutant loading.
- 17. 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

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

For a Water Pollution Abatement Plan or Modification, the total acreage of the site where regulated activities will occur.

For an Organized Sewage Collection System Plan or Modification, the total linear footage of all collection system lines.

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

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.
- 19. 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)

- 20. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
- 21. 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.

## Attachment A – Road Map



## Attachment B – USGS / Edwards Recharge Zone Map



# Attachment C – Project Description

### Attachment C – Project Description

#### PROJECT DESCRIPTION

The Hills Pump Station is located at 15659 Babcock San Antonio, TX 78255. Its main function is a pump station. Existing features also include an instrument building, an electrical vault, a CPS transformer, an electrical duct bank as well as a paved road. The proposed improvements include new concrete foundations and asphalt paved road. The foundations are for the installation of new natural gas metering stations, electrical switchboard and gear, electrical communications building, transformer, and generators. The project also includes electrical conduit, natural gas pipes, and electrical poles. The improvement will increase the impervious area by 0.08 acres.

#### AREA OF THE SITE, SITE HISTORY, AND PREVIOUS DEVELOPMENT

The project site is 0.62 acres. The location of the site is approximately 0.53 miles north of the intersection of 1604 E and Babcock Rd. N. This site lies within Leon Creek, not located within the 100-yr floodplain. No naturally occurring sensitive geological features are identified in the Geological Assessment performed on 05/19/2023. Based on the as-built records, the Hills Pump Station was built in 1985 and has since been operating as a high-service pump station.

All construction plans and design calculations for the proposed permanent BMP(s) and measures have been prepared by or under the direct supervision of a Texas Licensed Professional Engineer, and are signed, sealed, and dated.

#### OFFSITE AREAS

The surrounding areas comprise the following:

- A vacant property neighboring the south, east, and west of the site.
- Residential homes and the High View off-campus living apartments are located on the north side of the project site.

#### IMPERVIOUS COVER

Hills Pump Station has an existing impervious cover of 0.19 acres. The proposed improvements to this site will have an increase of impervious cover of 0.08 acres. As a result, the post-development impervious cover is 0.27 acres.

The Hills Pump Station has two on-site watersheds, the table below shows a summary of each of the drainage areas, pre-development impervious cover (IC), post-development IC, and the increase in IC.

	DA-1	DA-2	TOTAL
DRAINAGE AREA (AC)	0.28	0.34	0.62
PRE-DEVELOPMENT IC (AC)	0.07	0.12	0.19
POST-DEVELOPMENT IC (AC)	0.13	0.14	0.27
IC INCREASE (AC)	0.06	0.02	0.08
TSS LOAD (LBS)	91	62	153

### PERMANENT BMPS

The permanent BMPs for the site include a vegetative filter strip. Refer to TCEQ-0600, Attachment F - Construction Plans for the location of the vegetative filter strip.

PROPOSED SITE USE The site will remain a pump station facility.

### AREAS TO BE DEMOLISHED

Clearing and grubbing along with demolition of existing paved areas are expected for this project. Refer to TCEQ-0600, Attachment F – Construction Plans.

## Geologic Assessment Form (TCEQ-0585)



## Narrative Description of Site-Specific Geology for the San Antonio Water System - Hills Pump Station Site Located in San Antonio, Bexar County, Texas

Prepared for:

## ADAMS ENVIRONMENTAL

Prepared by:

**CAMBRIAN ENVIRONMENTAL** 

August 11th, 2023

## NARRATIVE DESCRIPTION OF SITE-SPECIFIC GEOLOGY FOR THE SAN ANTONIO WATER SYSTEM - HILLS PUMP STATION SITE LOCATED IN SAN ANTONIO, BEXAR COUNTY, TEXAS

Prepared for:

### Adams Environmental, Inc. 12521 Nacogdoches Road Suite 102 San Antonio, TX 78217

Prepared by:

Craig Crawford, P.G.

## **Cambrian Environmental**

4422 Pack Saddle Pass Suite 204 Austin, Texas 78745

TX Geoscience Firm Registration #50484

As a licensed professional geoscientist, I attest that the contents of this report are complete and accurate to the best of my knowledge.



## **Geologic Assessment**

## **Texas Commission on Environmental Quality**

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

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

## Signature

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.

Print Name of Geologist: Craig Crawford, PG

Telephone: 512.705.5541

Fax:

AST

UST

Date: <u>11 August 2023</u>

Representing: <u>Cambrian Environmental (TBPG Firm # 50484)</u> (Name of Company and TBPG or TBPE registration number)

Signature of Geologist:

Regulated Entity Name: SAWS Hills Pump Station

## **Project Information**

- 1. Date(s) Geologic Assessment was performed: 22 February 2023
- 2. Type of Project:
  - 🖂 WPAP 🗌 SCS
- 3. Location of Project:

Recharge Zone
 Transition Zone
 Contributing Zone within the Transition Zone

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- 4. Attachment A Geologic Assessment Table. Completed Geologic Assessment Table (Form TCEQ-0585-Table) is attached.
- 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.

## Table 1 - Soil Units, InfiltrationCharacteristics and Thickness

Soil Name	Group*	Thickness(feet)			
Crawford & Bexar (Cb)	D	< 4			
Eckrant (TaD)	D	< 6			

- \* 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.
- 6. Attachment B Stratigraphic Column. A stratigraphic column showing formations, members, and thicknesses is attached. The outcropping unit, if present, should be at the top of the stratigraphic column. Otherwise, the uppermost unit should be at the top of the stratigraphic column.
- 7. Attachment C Site Geology. A narrative description of the site specific geology including any features identified in the Geologic Assessment Table, a discussion of the potential for fluid movement to the Edwards Aquifer, stratigraphy, structure(s), and karst characteristics is attached.
- 8. Attachment D Site Geologic Map(s). 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'' = 20'Site Geologic Map Scale: 1'' = 20'Site Soils Map Scale (if more than 1 soil type): 1'' = 50'

9. Method of collecting positional data:

Global Positioning System (GPS) technology.

Other method(s). Please describe method of data collection:

- 10. The project site and boundaries are clearly shown and labeled on the Site Geologic Map.
- 11. 🖂 Surface geologic units are shown and labeled on the Site Geologic Map.

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- 12. 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.
- 13. The Recharge Zone boundary is shown and labeled, if appropriate.
- 14. All known wells (test holes, water, oil, unplugged, capped and/or abandoned, etc.): If applicable, the information must agree with Item No. 20 of the WPAP Application Section.
  - 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.
  - There are no wells or test holes of any kind known to exist on the project site.

## Administrative Information

15. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.



# Attachment A – Geological Assessment Table (TCEQ-0585-Table)

EULUGIC	ASSESSME	NITABLE					PR	JJE	<b>CINA</b>	INIF	:: SA	WS H	IIS P	ump Sta	tion		_	-		
	LOCATION			FEATURE CHARACTERISTICS							EVALUATION PHYS				CAL SETTING					
1A	1B *	1C*	2A	2B	3		4		5	5A	6	7	8A	8B	9	9 10		11		12
FEATURE ID	REID LATITUDE LONGITUDE FEATURE POINTS FORMATION DIMENSIONS (FEET) TREND 5		DOM	DENSITY (NO/FT)	APERTURE (FEET) INFILL RELATIVE INFILL INFILTRATION RATE		TOTAL	TOTAL SENSITIVITY		CATCHMENT AREA (ACRES) TOPOGRAF		TOPOGRAPHY								
						х	Y	Z		10						<40	<u>&gt;40</u>	<1.6	<u>&gt;1.6</u>	
No Geologio	or Manmade	Features wer	e identi	fied						-								+	$\left  \right $	
												_								
			<b> </b>																$\left  \right $	
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		1								+						-		+		
										$\vdash$										
												_								
TUM: WGS84	_															at S	al an			
TYPE		TYPE		2	<b>B POINTS</b>						84	INFILLI	NG							
	Cave				30	N None, exposed bedrock														
	Solution cavity				20	C Coarse - cobbles, breakdown, sand, gravel														
	Solution-enlarg	ed fracture(s)			20	O Loose or soft mud or soil, organics, leaves, sticks, dark colors														
	Fault				20		F	Fines	, compac	ted c	lay-rich	sediment	, soil pro	ofile, gray or r	red colo	rs				
	Other natural b	edrock features			5	V Vegetation. Give details in narrative description														
	Manmade featu	ire in bedrock			30		FS	Flow	stone, cen	nents	s, cave o	eposits								
1	Swallow hole	Swallow hole 30						X Other materials												
	Sinkhole				20					46	TODOC	DADUN			1					
	Non-karst close	ed depression			5	12 TOPOGRAPHY														
	Zone, clustered or aligned features 30						Cim, Hillop, 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 by 30 TAC Chapter 213.

mark

Date 11 August 2023

Sheet 1 of 1



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

# Attachment B – Stratigraphic Column

## Stratigraphic Column

\*Area shaded gray represents the lithology directly underlying the project site

				Navarro and Taylor Groups, undivided; 600 feet thick						
aceous	Upper Confining Units			Austin Group; 130-150 feet thick						
per Cret				Eagle Ford Group; 30-50 feet thick						
Up				Buda Limestone; 40-50 feet thick						
				Del Rio Clay; 40-50 feet thick						
	I			Georgetown Formation	10-40 feet thick					
	П			Person Formation;	Cyclic and Marine member, undivided					
	111	<u>د</u>		170 200 foot thick	Leached and Collapsed member, undivided					
sno	IV	s Aquife	dno	170-200 leet thick	Regional Dense member					
Cretace	v	Edwards	/ards Gi	Kainer Formation;	Grainstone member					
Lower (	VI		Еdv	260-310 feet thick	Kirschberg Evaporite member					
	VII				Dolomitic member					
	VIII				Basal Nodular member					
	Lower Confining Units			Upper member of Glen Rose Limestone; 350-500 feet thick						

## **Attachment C – Site Geology**



## NARRATIVE DESCRIPTION OF SITE-SPECIFIC GEOLOGY FOR THE SAN ANTONIO WATER SYSTEM – HILLS PUMP STATION SITE LOCATED IN SAN ANTONIO, BEXAR COUNTY, TEXAS

### INTRODUCTION

This narrative Geologic Assessment accompanies the Texas Commission on Environmental Quality (TCEQ) Geologic Assessment Form TCEQ-0585 completed for the San Antonio Water Systems (SAWS) Hills Pump Station site located on the west side of Babcock Road, approximately 0.5 miles north of the intersection with Loop 1604, in San Antonio, Bexar County, Texas (see Site Location Map). The tract consists of a previously built SAWS pump station facility that is currently in operation.

### METHODOLOGY

A Cambrian Environmental Registered Professional Geoscientist (Texas License #10791) conducted a field survey for a Geologic Assessment on the 22<sup>nd</sup> of February 2023. The pedestrian survey was completed by walking parallel transects spaced approximately 50 feet apart as directed by the TCEQ in the <u>Instructions to Geologists for Geologic Assessments on the Edwards Aquifer Recharge/Transition Zones</u> (Rev. 10-01-04). Closer spacing was used where vegetation inhibited clear observation. The project site was thoroughly examined for the presence of potential karst features, including depressions, holes, and animal burrows. A number of techniques can be used for this effort, including probing with a digging implement to determine the thickness and consistency of fill material and feeling for the presence of air flow, which may indicate the presence of a sub-surface void space. Other techniques include making observations of any notable characteristics of the feature site such as the presence of various types of vegetation or a semi-circular burrow mound produced by the activities of small mammals.

### RESULTS

### <u>Soils</u>

Soils mapped on the property consist of the Crawford and Bexar stony soils (Cb) and the Eckrant-Rock outcrop association (TaD) series soils<sup>1</sup> (see Site Soils Map). The Crawford and Bexar, and Eckrant-Rock outcrop series soils are both within the "D" classification of the hydrologic soil groups. Type "D" soils have a very slow infiltration rate (very high runoff potential) when thoroughly wet.

The Crawford and Bexar soils occur as large areas, and form a nearly continuous belt extending westward from the northeastern part of the county to a little south of Helotes. The Crawford soils are stony clay in texture, with the surface layer being very dark gray to dark reddish brown, noncalcareous clay. Many chert and limestone fragments are present. The Bexar soils have a surface layer that ranges from cherty clay loam to gravelly loam.

The Eckrant-Rock outcrop soils occur on ridgetops and hilly to steep slopes in the northern third of the county. The Eckrant (formerly referred to as "Tarrant") series consists of stony soils that are very shallow, dark colored, and gently undulating to steep. The surface layer is very dark grayish-brown, calcareous clay loam. Bedrock outcrops make up 15 to 20 percent of this association.

<sup>&</sup>lt;sup>1</sup> United States Department of Agriculture, Natural Resource Conservation Service. Online Web Soil Survey, Bexar County, Texas. http://websoilsurvey.sc.egov.usda.gov/

### Geology

The bedrock geology underlying the project site consists of the Walnut Formation ("Kw", see Site Geologic Map). The Walnut Formation is equivalent to the Basal Nodular Member of the Kainer Formation of the Edwards Group Limestone, which is further subdivided into (bottom to top) the Basal Nodular, Dolomitic, Kirschberg Evaporite, and Grainstone members. The Walnut Formation is the bottom unit of the lithologies that comprise the Edwards Group, and serves as the lower confining unit of the aquifer. Karst features (caves, solution cavities, sinkholes, etc.) are commonly formed along joints, fractures, and bedding plane surfaces where the Edwards Group Limestone is outcropping at the surface. Additionally, a covering of Quaternary-age alluvial deposits ("Qal", see Site Geologic Map) is present on the southwest portion of the site, and these alluvial deposits can obscure any bedrock outcrops. The members of the Edwards Group Limestone are locally known to be the primary cave-forming units in Bexar County.

Recharge into the aquifer primarily occurs in areas where the Edwards Group Limestone and upper confining units are exposed at the surface. Most recharge is from direct infiltration via precipitation and streamflow loss. Recharge occurs predominantly along secondary porosity features such as faults, fractures, and karst features (caves, solution cavities, sinkholes, etc.); and these types of karst features are commonly formed along joints, fractures, and bedding plane surfaces formed within the Edwards Group Limestone. Faults can enhance the potential for cave formation; however, no faults are mapped as crossing the project site, and none were observed during the pedestrian survey. No potential recharge features were identified during the pedestrian survey.

### Site Hydrogeologic Assessment

In the absence of discrete recharge features, the likelihood of recharge occurring within the limits of the project area and contributing to the main body of the aquifer is thought to be low. Should any karst features be discovered during the construction phase of the project, they should be reported to TCEQ to determine the appropriate mitigation measures.

### **Feature Descriptions**

No karst or geologic features, or man-made features were identified on the site during the pedestrian survey. No wells are known to exist inside the pump station facility.



Photo 1. View of the project site.



Photo 2. View of the project site.



Photo 3. View of the project site.



Photo 4. View of the project site.

# Attachment D – Site Geologic Map(s)






Cinc d

Two-Foot Contours
 Kw- Walnut Formation
 Qal- Quaternary Alluvium
 100-Year Floodplain
 Study Area

Linch = 20 Feet Coordinate StateP Centration 0 20 40

Coordinate System: NAD 1983 StatePlane Texas South Central FIPS 4204 Feet 40 60 80

## Geologic Map

-1 10



## Water Pollution Abatement Plan Application Form (TCEQ-0584)

## Water Pollution Abatement Plan Application

### **Texas Commission on Environmental Quality**

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

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

## Signature

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:

Print Name of Customer/Agent: Dr. Saqib Shirazi, P.E., PMP

Date: September 2023

Signature of Customer/Agent:

Regulated Entity Name: Hills Pump Station

### **Regulated Entity Information**

- 1. The type of project is:
  - Residential: Number of Lots:\_\_\_\_
    - Residential: Number of Living Unit Equivalents:
  - Commercial
  - Industrial
  - Other:<u>Pump Station</u>
- 2. Total site acreage (size of property): 0.62 ac
- 3. Estimated projected population:
- 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	2597	÷ 43,560 =	0.06
Parking		÷ 43,560 =	
Other paved surfaces	92167	÷ 43,560 =	0.212
Total Impervious Cover	11814	÷ 43,560 =	0.27

**Table 1 - Impervious Cover Table** 

Total Impervious Cover  $\underline{0.27}$  ÷ Total Acreage  $\underline{0.62}$  X 100 =  $\underline{43.5}$ % Impervious Cover

- 5. Attachment A Factors Affecting Surface Water Quality. A detailed description of all factors that could affect surface water and groundwater quality that addresses ultimate land use is attached.
- 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 = \_\_\_\_\_  $Ft^2 \div 43,560 Ft^2/Acre = _____ acres.$ 

10. Length of pavement area: \_\_\_\_\_ feet.

Width of pavement area:feet.L x W = $Ft^2 \div 43,560 Ft^2/Acre =$ acres.Pavement areaacres ÷ R.O.W. areaacres 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 detailed description of the volume (quantity) and character (quality) of the stormwater runoff which is expected to occur from the proposed project is attached. The estimates of stormwater runoff quality and quantity are based on the 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:

% Domestic	Gallons/day
% Industrial	Gallons/day
% Commingled	Gallons/day
TOTAL 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 from this site. The appropriate
licensing authority's (authorized agent) written approval is attached. It states that
the land is suitable for the use of private sewage facilities and will meet or exceed
the requirements for on-site sewage facilities as specified under 30 TAC Chapter 285
relating to On-site Sewage Facilities.
Each lot in this project/development is at least one (1) acre (43.560 square feet) in

J 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.

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

### Site Plan Requirements

### Items 17 – 28 must be included on the Site Plan.

17.  $\square$  The Site Plan must have a minimum scale of 1" = 400'.

Site Plan Scale: 1" = <u>20</u>'.

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): Panel Number 48026C0210G, Sep 29, 2010

19. The layout of the development is shown with existing and finished contours at appropriate, but not greater than ten-foot contour intervals. Lots, recreation centers, buildings, roads, open space, etc. are shown on the plan.

The layout of the development is shown with existing contours at appropriate, but not greater than ten-foot intervals. Finished topographic contours will not differ from the existing topographic configuration and are not shown. Lots, recreation centers, buildings, roads, open space, etc. are shown on the site plan.

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 16 TAC §76.

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 geologic or manmade features identified in the Geologic Assessment are shown and labeled.
  - No sensitive geologic or manmade features were identified in the Geologic Assessment.

Attachment D - Exception to the Required Geologic Assessment. A request and justification for an exception to a portion of the Geologic Assessment is attached.

- 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).
  - 🖂 N/A
- 27. 🔀 Locations where stormwater discharges to surface water or sensitive features are to occur.
  - There will be no discharges to surface water or sensitive features.
- 28.  $\boxtimes$  Legal boundaries of the site are shown.

## Administrative Information

- 29. Submit one (1) original and one (1) copy of the application, plus additional copies as needed for each affected incorporated city, groundwater conservation district, and county in which the project will be located. The TCEQ will distribute the additional copies to these jurisdictions. The copies must be submitted to the appropriate regional office.
- 30. Any modification of this WPAP will require Executive Director approval, prior to construction, and may require submission of a revised application, with appropriate fees.

# Attachment A – Factors Affecting Surface Water Quality

### Attachment A – Factors Affecting Surface Water Quality

Factors that could affect surface water and groundwater quality:

#### **DURING CONSTRUCTION**

- Vehicle maintenance operations
- Excavation and grading
- Paving
- Human generated debris
- Construction trash and debris
- Application of excessive fertilizers, herbicides, and pesticides
- Soil and debris transported by storm water runoff

#### POST CONSTRUCTION

- Debris and contaminants tracked on site by vehicles
- Human generated debris
- Application of excessive fertilizers, herbicides, and pesticides
- Unusually heavy rainfall events
- High concentrations of metals in areas designated as vehicle operations and outdoor storage areas

## Attachment B – Volume and Character of Stormwater

#### Attachment B – Volume and Character of Stormwater

The pre-development and post-development storm water runoff conditions are in conformance with the City of San Antonio drainage development codes. The site is in the Leon Creek watershed and the Upper Leon Creek sub watershed. Its existing conditions comprise a 0.62-acre. The area has slopes beginning from the north to the south. The slopes range from 1% to 5%. The proposed project improvements consist of a new electrical switchgear, control building, gas metering station, transformers, switchboards, reinforced concrete pavement, and generators.

#### PRE-DEVELOPMENT

The existing property is 0.62 acres and owned by San Antonio Water System (SAWS). The site is developed with pump station facilities on Crawford and Bexar soils, and Eckrant-Rock outcrop per USGS Soil Survey and Field Observation. This site is part of Leon Creek watershed and Upper Leon Creek subwatershed and it is within the City of San Antonio Mandatory Detention Area. The weighted runoff coefficient for the existing conditions is 65.60 (see **Table-1**).

PROJECT SITE DRAINAGE RUNOFF AREA COMPUTATIONS						
DRAINAGE AREA NO.	DRAINAGE AREA (AC)	TIME OF CONC. (MIN)	WEIGHTED RUNOFF COEFF.	5 YEAR DISCHARGE Q5-YR (CFS)	25 YEAR DISCHARGE Q25-YR (CFS)	100 YEAR DISCHARGE Q100-YR (CFS)
1	0.28	6.35	66.85	1.4	1.9	2.5
2	0.34	6.33	64.56	1.6	2.3	2.9
Totals	0.62		65.60	3.0	4.2	5.3

#### **Table 1- Pre-Development Conditions**

#### POST-DEVELOPMENT

The proposed development consists of a new electrical switchgear, control building, gas metering station, transformers, switchboards, concrete pavement, and generators. The weighted runoff coefficient for the overall post-construction conditions is 73.96 and the ultimate conditions runoff coefficient is 85.74 (see **Table - 2** and **Table - 3**)

PROJECT SITE DRAINAGE RUNOFF AREA COMPUTATIONS						
DRAINAGE AREA NO.	DRAINAGE AREA (AC)	TIME OF CONC. (MIN)	WEIGHTED RUNOFF COEFF.	5 YEAR DISCHARGE Q5-YR (CFS)	25 YEAR DISCHARGE Q25-YR (CFS)	100 YEAR DISCHARGE Q100-YR (CFS)
1	0.28	6.45	81.24	1.7	2.4	3.0
2	0.34	6.31	67.94	1.7	2.4	3.0
Totals	0.62		73.96	3.4	4.7	6.0

#### Table 2- Post-Development Conditions

#### **Table 3- Ultimate Conditions**

PROJECT SITE DRAINAGE RUNOFF AREA COMPUTATIONS						
DRAINAGE AREA NO.	DRAINAGE AREA (AC)	TIME OF CONC. (MIN)	WEIGHTED RUNOFF COEFF.	5 YEAR DISCHARGE Q5-YR (CFS)	25 YEAR DISCHARGE Q25-YR (CFS)	100 YEAR DISCHARGE Q100-YR (CFS)
1	0.28	6.45	89.29	1.8	2.6	3.3
2	0.34	6.31	82.79	2.1	2.9	3.7
Totals	0.62		85.74	3.9	5.5	7.0

## Temporary Stormwater Section (TCEQ-0602)

## **Temporary Stormwater Section**

**Texas Commission on Environmental Quality** 

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

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

## Signature

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:

Print Name of Customer/Agent: Dr. Saqib Shirazi, P.E., PMP

Date: September 2023

Signature of Customer/Agent:

Regulated Entity Name: Hills Pump Station

### **Project Information**

### 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:

The following fuels and/or hazardous substances will be stored on the site: \_\_\_\_\_

These fuels and/or hazardous substances will be stored in:

Aboveground storage tanks with a cumulative storage capacity of less than 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.
- Fuels and hazardous substances will not be stored on the site.
- 2. Attachment A Spill Response Actions. A site specific description of the measures to be taken to contain any spill of hydrocarbons or hazardous substances is attached.
- 3. 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. A description of any activities or processes which may be a potential source of contamination affecting surface water quality is attached.

## 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 attached.

For each activity described, an estimate (in acres) of the total area of the site to be disturbed by each activity is given.

For each activity described, include a description of appropriate temporary control measures and the general timing (or sequence) during the construction process that the measures will be implemented.

6. 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: <u>Leon Creek</u>

## 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. 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 is attached:

		<ul> <li>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.</li> <li>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.</li> <li>A description of how BMPs and measures will prevent pollutants from entering surface streams, sensitive features, or the aquifer.</li> <li>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.</li> </ul>
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.
		<ul> <li>Attachment E - Request to Temporarily Seal a Feature. A request to temporarily seal a feature is attached. The request includes justification as to why no reasonable and practicable alternative exists for each feature.</li> <li>There will be no temporary sealing of naturally-occurring sensitive features on the site.</li> </ul>
9.		Attachment F - Structural Practices. A description of 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 is attached. Placement of structural practices in floodplains has been avoided.
10.	$\square$	Attachment G - Drainage Area Map. A drainage area map supporting the following requirements is attached:
		<ul> <li>For areas that will have more than 10 acres within a common drainage area disturbed at one time, a sediment basin will be provided.</li> <li>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.</li> <li>For areas that will have more than 10 acres within a common drainage area disturbed at one time, a smaller sediment basin or sediment trap(s) will be used.</li> <li>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</li> </ul>
		<ul> <li>down slope and side slope boundaries of the construction area.</li> <li>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.</li> </ul>

There are no areas greater than 10 acres within a common drainage area that will be disturbed at one time. Erosion and sediment controls other than sediment basins or sediment traps within each disturbed drainage area will be used.

- 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 have 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 attached.
  - 🛛 N/A
- 12. Attachment I Inspection and Maintenance for BMPs. A plan for the inspection of each temporary BMP(s) and measure(s) and for their timely maintenance, repairs, and, if necessary, retrofit is attached. A description of the documentation procedures, recordkeeping practices, and inspection frequency are included in the plan and are specific to the site and/or BMP.
- 13. All control measures must be properly selected, installed, and maintained in accordance with the manufacturer's specifications and good engineering practices. If periodic inspections by the applicant or the executive director, or other information indicate 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. 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.

- 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.  $\square$  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 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. 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.

## Attachment A – Spill Response Actions

#### Attachment A – Spill Response Actions

#### Site Specific:

• To respond to the event of accidental spills of hazardous materials or hydrocarbons, the contractor will be required to maintain stockpile of sand material in the construction staging area, sized according to the capacity of fuel or oil trucks. This sand material will be used to provide dikes to contain large spills and to provide an adsorbent material that can be disposed of off the Recharge Zone after the clean up process. The contractor will be required to notify the owner, who will in turn notify the TCEQ in the event of a spill. All contaminated material caused by a spill will be removed from the project and disposed of in accordance with applicable regulations off the Recharge Zone.

#### General:

- Keep People Safe
  - a) Avoid direct contact with the spilled material.
  - b) Avoid inhalation of any gases, fumes, vapors, or smoke. All personnel should stay upwind (some gases inhibit the sense of smell or may be dangerous at undetectable concentrations).
  - c) Move and keep people away from the incident scene. Contact the nearest law-enforcement authority for assistance, if necessary.
  - d) Find and, if possible, safely remove all ignition sources.
  - e) Assess the situation with regard to injuries.
  - f) Contact the appropriate authorities and responsible parties and allow them to handle the response.
- Substance Identification

If you cant determine a substance spilled from the information available at the site, call CHEMTREC at 800-424-9300 (emergency) or 800-262-8200 (non-emergency).

• Posting of Warning Signs

The threat posed by contamination from a discharge or spill may warrant the placement of Contaminated Area warning signs by TCEQ personnel on affect property.

More information on spill rules and appropriate responses is available on the TCEQ website at: <u>What to</u> <u>Do after a Spill - Texas Commission on Environmental Quality - www.tceq.texas.gov</u>

## Attachment B – Potential Sources of Contamination

### Attachment B – Potential Sources of Contamination

Per the previously approved WPAP,

Potential Source	Preventative Measure		
Asphalt products on this project	coatings, the contractor will be responsible for immediate clean-up should be an unexpected rain to occur. For the duration of the asphalt product curing time, the contractor will maintain standby personnel and equipment to contain any asphalt wash-off should an unexpected rain occur. The contractor will be instructed not to place asphalt products on the ground within 48 hours of a forecasted rain.		
Oil, grease, fuel and hydraulic fluid contamination form construction equipment and vehicle dropping.	<ul> <li>Vehicle maintenance when possible will be performed within the construction staging area.</li> <li>Construction vehicles and equipment shall be checked regularly for leaks and repaired immediately.</li> </ul>		
Accidental leaks or spills of oil, petroleum products and substances listed under 40 CFR parts 110, 117, and 302 used or stored temporarily on site.	<ul> <li>Contractor to incorporate into regular safety meetings, a discussion of spill prevention and appropriate disposal procedures.</li> <li>Contractor's superintendent or representative overseer shall enforce proper spill prevention and control measures.</li> <li>Hazardous materials and wastes shall be stored in covered containers and protected from vandalism.</li> <li>A stockpile of spill cleanup materials shall be stored on site where it will be readily accessible.</li> </ul>		
Miscellaneous trash and litter from construction workers and material wrapping.	<ul> <li>Trash containers will be placed throughout the site to encourage proper trash disposal.</li> </ul>		
Construction debris	<ul> <li>Construction debris will be monitored daily by contractor. Debris will be collected weekly and placed in disposal bins. Situations requiring immediate attention will be addressed on a case by case basis.</li> </ul>		

Spills/Overflow of waste from portable toilets

- Portable toilets will be placed away from high traffic vehicular areas and storm drain inlets.
- Portable toilets will be placed on level ground surfaces.
- Portable toilets will be inspected regularly for leaks and will be serviced and sanitized at time intervals that will maintain sanitary conditions.

## Attachment C – Sequence of Major Activities

#### Attachment C – Sequence of Major Activities

The sequence of major activities that will disturb approximately 0.5-acres of the 0.62-acre site soil during construction on this site will be divided into two stages as described below:

- Site preparation will include clearing and grubbing of vegetation where applicable.
- Construction of new pavement access road, concrete pads, vegetative filter strip, and site cleanup.

In case of tree removal, it should be in accordance with the City of San Antonio approved tree preservation plan.

- Under the Tree Preservation Ordinance, a tree permit must be obtained before any property development.
- Development activities that remove trees and disturb vegetation require a Tree Preservation Plan to be submitted with the Tree Permit application.

Implement Storm Water Protection Plan.

- Implement a temporary erosion/sedimentation control fence along the site perimeter and a construction entrance established at the project site, per the SW3P project site.
- Temporary control measures shall remain in place for the duration of construction.

## Attachment D – Temporary Best Management Practices and Measures

#### Attachment D – Temporary Best Management Practices and Measures

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.

Upgradient water will cross the site from undeveloped land northeast of the project limits. All TMBPs are adequate for the drainage areas they serve.

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

Site preparation, which is the initiation of all activity on the project, will disturb the largest amount of soil. Therefore, before any of this can begin, the clearing and grading contractor will be responsible for the installation of all on-site control measures. The methodology for pollution prevention of on-site stormwater will include: (1) designation of a vegetative filter strip along the downgradient boundary of construction activities for temporary erosion and sedimentation controls, (2) erection of silt fences alone the downgradient boundary of construction activities for temporary erosion and sedimentation controls, (3) installation of temporary erosion control, (4) Installation of stabilized construction entrance/ exit(s) to reduce the dispersion of sediment from the site, and (5) installation of construction staging area(s).

Prior to the initiation of construction, all previously installed control measures will be repaired or reestablished for their designed or intended purpose. This work, which is the remainder of all activity on the project, may also disturb additional soil. The construction contractor will be responsible for the installation of all remaining on-site control measures that includes installation of the concrete truck washout pit(s), as construction phasing warrants.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and solids within the site, they will not enter surface streams and/or sensitive features.

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

There were no naturally-occurring sensitive features observed on the site and no surface streams on, or adjacent, to the project limits.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter the surface streams and/or sensitive features.

D. A description of how, to the maximum extent practicable, BMPs and measures will maintain flow to naturally-occurring features identified to either the geological assessment, TCEQ inspections, or during excavation, blasting or construction.

There were no naturally-occurring sensitive features observed on the site and no surface streams on, or adjacent, to the project limits.

Temporary measures are intended to provide a method of slowing the flow of runoff from the construction site in order to allow sediment and suspended solids to settle out of the runoff. By containing the sediment and solids within the site, they will not enter the surface streams and/or sensitive features.

## Attachment E – Request to Temporary Seal a Feature

NOT USED

## Attachment F – Structural Practices

### Attachment F – Structural Practices

The structural measures will be installed at the initiation of construction activities or as appropriate based on the construction sequencing. The following structural measures will be installed prior to the initiation of site preparation activities:

- Designation of a vegetative filter strip along the downgradient boundary of construction activities and rock berms with silt fence for secondary protection.
- Erection of silt fences along the downgradient boundary of construction activities for temporary erosion and sedimentation controls.
- Installation of stabilized construction entrance/exit(s) and construction staging area(s).
- Installation of concrete truck washout pit(s)

## Attachment G – Drainage Area Map

#### <u>Attachment G – Drainage Area Map</u>

No more than (10) acres will be disturbed within a common area at one time. All TBMPs utilized are adequate for the drainage areas served. See Drainage Area Map on Permanent Stormwater Section (TCEQ - 0600), Attachment F - Construction Plans

# Attachment H – Temporary Sediment Pond(s) Plan and Calculations

NOT USED

## Attachment I – Inspection and Maintenance for BMPs

#### Attachment I – Inspection And Maintenance For BMPs

Temporary sediment control fence

- 1) Inspections should be made weekly and after each rainfall. Repair or replacement of the temporary sediment control fence should be done promptly as needed by the contractor. Use the inspection form below. Maintain a record of inspection with an onsite copy of WPAP.
- 2) Remove sediment when the buildup reaches a depth of 6 inches. Removed sediment should be deposited in a suitable area and in such a manner that it will not erode.
- 3) Replace any torn fabric or install a second line of fencing parallel to the torn section.
- 4) Replace or repair any sections crushed or collapsed during construction activity. If a section of fence is obstructing vehicular access, consider relocating it to a spot where it will provide equal protection, but will not obstruct vehicles. A triangular filter dike may be preferable to a temporary sediment control fence at common vehicle access points.
- 5) When construction is complete, the sediment should be disposed of in a manner that will not cause additional situations. The fence itself should be disposed of in an approved landfill.

A designated and qualified person(s) shall inspect Pollution Control Measures weekly and within 24 hours after a storm event. An inspection report that summarizes the scope of the inspection, names and qualifications of personnel conducting the inspection, date of the inspection, major observations, and actions taken as a result of the inspection shall be recorded and maintained as part of Storm Water TPDES data for a period of three years after the Notice of Termination (NOT) has been filed. A copy of the Inspection Report Form is provided in this Storm Water Pollution Prevention Plan.

As a minimum, the inspector shall observe:

- Significant disturbed areas for evidence of erosion
- Storage areas for evidence of leakage from the exposed stored materials
- Structural controls (rock berm outlets, silt fences, drainage swales, etc.) for evidence of failure of excess siltation (over 6 inches deep)
- Vehicles exit point for evidence of off-site sediment tracking
- Vehicles storage areas for signs of leaking equipment or spills
- Concrete truck rinse-out pit for signs of potential failure
- Embankment, spillways, and outlet of sediment basin (where applicable) for erosion damage
- Sediment basins (where applicable) for evidence that basin has accumulated 50% of its volume in silt. Deficiencies noted during the inspection will be corrected and documented within seven calendar days following the inspection or before the next anticipated storm event if practicable.

Contractor shall review Sections 1.3 and 1.4 of TCEQ's Technical Guidance Manual for additional BMP inspection and maintenance requirements.
Pollution		Corrective Action Required	
Prevention	d in nce	•	
Measure	ecte plia		Date
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	= 0	(use additional sheet if necessary)	
Best Management Practices			
Natural vegetation buffer strips			
Temporary vegetation			
Permanent vegetation			
Sediment control basin			
Silt fences			
Rock berms			
Gravel filter bags			
Drain inlet protection			
Other structural controls			
Vehicle exits (off-site tracking)			
Material storage areas (leakage)			
Equipment areas (leaks, spills)			
Concrete washout pits (leaks, failure)			
General site cleanliness			
Trash receptacles			
Evidence of Erosion			
Site preparation			
Roadway or parking lot construction			
Utility construction			
Drainage construction			
Building construction			
Major Observations			
Sediment discharges from site			
BMPs requiring maintenance			
BMPs requiring modification			
Additional BMPs required			

#### A brief statement describing the qualification of the inspector is included in this SWP3.

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

\*I further certify I am an authorized signatory in accordance with the provisions of 30 TAC.

Inspector's Name

Inspector's Signature

Date

# Attachment J – Schedule of Interim and Permanent Soil Stabilization Practices

#### Attachment J – Schedule of Interim and Permanent Soil Stabilization Practices

- 1. Existing areas that are disturbed will receive treatment to replace vegetation lost during construction.
- 2. 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 14<sup>th</sup> 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 the site. In areas experiencing droughts where the initiation of the stabilization measures by the 14<sup>th</sup> day after construction activity has temporarily or permanently ceased is precluded by seasonal arid conditions, stabilization measures shall be initiated as soon as practicable.
- 3. Daily records will be kept, detailing among other things, the beginning of major grading operations, cessation of construction, either temporary or permanent, and dates when stabilization measures are implemented.
- 4. It is not anticipated that interim soil stabilization practices will be required.

## Permanent Stormwater Section (TCEQ-0600)

## **Permanent Stormwater Section**

**Texas Commission on Environmental Quality** 

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

To ensure that the application is administratively complete, confirm that all fields in the form are complete, verify that all requested information is provided, consistently reference the same site and contact person in all forms in the application, and ensure forms are signed by the appropriate party.

Note: Including all the information requested in the form and attachments contributes to more streamlined technical reviews.

### Signature

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:

Print Name of Customer/Agent: Dr. Saqib Shirazi, P.E., PMP

Date: <u>September 2023</u>

Signature of Customer/Agent

Regulated Entity Name: Hills Pump Station

## Permanent Best Management Practices (BMPs)

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

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



- 2. 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: \_\_\_\_\_

N/A

3. 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.

N/A

- 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.
  - The site will be used for low density single-family residential development and has 20% or less impervious cover.
  - The site will be used for low density single-family residential development but has more than 20% impervious cover.
  - The site will not be used for low density single-family residential development.
- 5. The executive director may waive the requirement for other permanent BMPs for multifamily 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. The 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 attached.
  - The site will be used for multi-family residential developments, schools, or small business sites but has more than 20% impervious cover.
  - The site will not be used for multi-family residential developments, schools, or small business sites.
- 6. Attachment B BMPs for Upgradient Stormwater.

	<ul> <li>A description of the BMPs and measure surface water, groundwater, or stormw and flows across the site is attached.</li> <li>No surface water, groundwater or stor and flows across the site, and an explanation of the site, and an explanation of the site, and an explanation water, groundwater, or stormwater the flows across the site, and an explanation of the site,</li></ul>	es that will be used to prevent pollution of vater that originates upgradient from the site mwater originates upgradient from the site nation is attached. required to prevent pollution of surface at originates upgradient from the site and on is attached.
7.	Attachment C - BMPs for On-site Stormwa	iter.
	<ul> <li>A description of the BMPs and measure surface water or groundwater that orig pollution caused by contaminated stor</li> <li>Permanent BMPs or measures are not or groundwater that originates on-site caused by contaminated stormwater red</li> </ul>	es that will be used to prevent pollution of ginates on-site or flows off the site, including mwater runoff from the site is attached. required to prevent pollution of surface water or flows off the site, including pollution unoff, and an explanation is attached.
8.	Attachment D - BMPs for Surface Streams that prevent pollutants from entering surfa is attached. Each feature identified in the addressed.	. A description of the BMPs and measures ace streams, sensitive features, or the aquifer Geologic Assessment as sensitive has been
	⊠ N/A	
9.	The applicant understands that to the extermaintain flow to naturally occurring sensit assessment, executive director review, or extermal senses assessment.	nt practicable, BMPs and measures must ive features identified in either the geologic during excavation, blasting, or construction.
	<ul> <li>The permanent sealing of or diversion of feature that accepts recharge to the Economic abatement measure has not been proposed attachment E - Request to Seal Feature sensitive feature, that includes, for eaconable and practicable alternative</li> </ul>	of flow from a naturally-occurring sensitive lwards Aquifer as a permanent pollution losed. es. A request to seal a naturally-occurring h feature, a justification as to why no exists, is attached.
10	D. Attachment F - Construction Plans. All contribution of a Texas Licensed Profinance and Texas Licensed Profinance. The plans are attached and, if application.	nstruction plans and design calculations for sures have been prepared by or under the essional Engineer, and are signed, sealed, and icable include:
	<ul> <li>Design calculations (TSS removal calcul</li> <li>TCEQ construction notes</li> <li>All geologic features</li> <li>All proposed structural BMP(s) plans ar</li> </ul>	ations) nd specifications

11. 🔀 AI in m	ttachment G - Inspection, Maintenance, Repair and Retrofit Plan. A plan for the spection, maintenance, repairs, and, if necessary, retrofit of the permanent BMPs and beasures is attached. The plan includes all of the following:
$\geq$	Prepared and certified by the engineer designing the permanent BMPs and measures
$\succ$	$\overline{\langle}$ Signed by the owner or responsible party
$\geq$	Procedures for documenting inspections, maintenance, repairs, and, if necessary retrofit
$\geq$	A discussion of record keeping procedures
N/	/Α
12. 🗌 At re pi	ttachment H - Pilot-Scale Field Testing Plan. Pilot studies for BMPs that are not ecognized by the Executive Director require prior approval from the TCEQ. A plan for lot-scale field testing is attached.
🖂 N,	/Α
13. 🗌 At of ar ar	<b>ttachment I -Measures for Minimizing Surface Stream Contamination</b> . A description f the measures that will be used to avoid or minimize surface stream contamination nd changes in the way in which water enters a stream as a result of the construction nd development is attached. 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.

🛛 N/A

## Responsibility for Maintenance of Permanent BMP(s)

### Responsibility for maintenance of best management practices and measures after construction is complete.

14. 🖂 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.

N/A

15. 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.

X N/A

# Attachment A – 20% or Less Impervious Cover Waiver

NOT USED

## Attachment B – BMPs for Upgradient Stormwater

### Attachment B – BMPs for Upgradient Stormwater

Since the site is located on top of a hill there are no BMPs for Upgradient Stormwater.

## Attachment C – BMPs for Onsite Stormwater

#### Attachment C – BMPs for On-Site Stormwater

Vegetative filter strip (VFS) are the proposed Permanent Best Management practices (PBMPs) for this site. All PBMPs have been designed in accordance with the TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) to remove 80% of the increase in TSS from the site. The VFS will be placed around the proposed improvements and capture all sheet flow that comes from the proposed improvements.

## Attachment D – BMPs for Surface Streams

### Attachment D – BMPs for Surface Streams

No geological or man-made features were identified in the geological assessment.

# Attachment E – Request to Seal Features

NOT USED

## Attachment F – Construction Plans



PLO.

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Black & Veatch Corporation

San Antonio, Texas

**Texas Registration No. F-258** 

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Moreno Cardenas Inc.

9601 McAllister Freeway #507, San Antonio TX 78216 (210) 314-3553 Texas Board of Professional Engineers Registration No. F-000554

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SUBCONSULTANT:

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### GENERAL NOTES

ALL THE TREES WITH A DIAMETER GREATER THAN 3 INCHES AFFECTED BY CONSTRUCTION SHALL HAVE THE LIMBS AND ROOTS TRIMMED AND PRUNED ACCORDING TO ITEM No. 802. TREE PRUNING, SOIL AMENDING AND FERTILIZATION, UNLESS SPECIFIED TREES SHALL RECEIVE LEVEL 2 PROTECTION AS PER ITEM No. 802. TREES TO RECEIVE LEVEL 1 PROTECTION AS PER ITEM No. 802 ARE SHOWN ON TREE PROTECTION TABLE ON THIS SHEET.

2. ALL TREES SHALL REMAIN UNLESS NOTED ON THE PLANS. 3. NO SITE PREPARATION WORK SHALL BEGIN IN AREAS WHERE TREE PRESERVATION AND TREATMENT MEASURES HAVE NOT BEEN COMPLETED AND APPROVED.

4. TREE PROTECTION FENCING SHALL BE REQUIRED. TREE PROTECTION FENCING SHALL BE INSTALLED, MAINTAINED AND REPAIRED BY THE CONTRACTOR DURING SITE CONSTRUCTION.

5. THE CONTRACTOR SHALL AVOID CUTTING ROOTS LARGER THAN THREE INCHES IN DIAMETER WHEN EXCAVATING NEAR EXISTING TREES. EXCAVATION IN THE VICINITY OF TREES SHALL PROCEED WITH CAUTION. THE CONTRACTOR SHALL CONTACT THE CITY

6. THE ROOT PROTECTION ZONE IS THAT AREA SURROUNDING A TREE, AS MEASURED BY A RADIUS FROM THE TREE TRUNK, IN WHICH NO EQUIPMENT, VEHICLES OR MATERIALS MAY OPERATE OR BE STORED. THE REQUIRED RADIUS LENGTH IS 1 FOOT PER DIAMETER INCH OF THE TREE. FOR EXAMPLE, A 10-INCH DIAMETER TREE WOULD HAVE A 5-FOOT RADIUS ROOT PROTECTION ZONE AROUND THE TREE. ROOTS OR BRANCHES THAT ARE IN CONFLICT WITH THE CONSTRUCTION SHALL BE CUT CLEANLY ACCORDING TO PROPER PRUNING METHODS. LIVE OAK WOUNDS SHALL BE PAINTED OVER, WITHIN 20 MINUTES TO PREVENT OAK

7. ACCESS TO FENCED AREAS WILL BE PERMITTED ONLY WITH THE APPROVAL OF THE ENGINEER OR CITY INSPECTOR. 8. GRADING, IF REQUIRED, SHALL BE LIMITED TO A 3 INCH CUT OR FILL WITHIN THE FENCED ROOT ZONE AREAS. 9. TREES, SHRUBS OR BUSHES TO BE CLEARED FROM PROTECTED ROOT ZONE AREAS SHALL BE REMOVED BY HAND AS DIRECTED BY THE PROJECT MANAGER OR CITY INSPECTOR.

10. TREES DAMAGED OR LOST DUE TO CONTRACTOR'S NEGLIGENCE DURING CONSTRUCTION SHALL BE MITIGATED TO THE ENGINEER'S SATISFACTION.

11. EXPOSED ROOTS SHALL BE COVERED AT THE END OF EACH DAY USING TECHNIQUES SUCH AS COVERING WITH SOIL, MULCH OR WET BURLAP.

12. ANY TREE REMOVAL SHALL BE APPROVED BY THE CITY ARBORIST PRIOR TO ITS REMOVAL. \_\_\_\_

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## ROCK FILTER DAM USAGE GUIDELINES

ROCK FILTER DAMS SHOULD BE CONSTRUCTED DOWNSTREAM FROM DISTURBED AREAS TO INTERCEPT SEDIMENT FROM OVERLOAD RUNOFF AND / OR CONCENTRATED FLOW. THE DAMS SHOULD BE SIZED TO FILTER A MAXIMUM FLOW THRU RATE OF 60 GPM /FT SQUARED OF CROSS SECTIONAL AREA.. A 2 YEAR STORM FREQUENCY MAY BE USED TO CALCULATE THE

TYPE 1 (18" HIGH WITH NO WIRE MESH) :

TYPE 1 MAY BE USED AT THE TOE OF SLOPES, AROUND INLETS, IN SMALL DITCHES AND AT DIKE OR SWALE OUTLETS. THIS TYPE OF DAM IS RECOMMENDED TO CONTROL EROSION FROM A DRAINAGE AREA OF 5 ACRES OR LESS. TYPE 1 MAY NOT BE USED IN CONCEN-TRATED HIGH VELOCITY FLOWS (APPROXIMATELY 8 FT./SEC. OR MORE) IN WHICH AGGREGATE WASH OUT MAY OCCUR. SANDBAGS MAY BE USED AT THE EMBEDDED FOUNDATION (4" DEEP MIN.) FOR BETTER FILTERING EFFICIENCY OF LOW FLOWS IF CALLED FOR ON THE PLANS OR AS DIRECTED BY THE ENGINEER.

TYPE 2 (18" HIGH WITH WIRE MESH) :

TYPE 2 MAY BE USED IN DITCHES AND AT DIKE OR SWALE OUTLETS.

TYPE 3 (36" HIGH WITH WIRE MESH) :

TYPE 3 MAY BE USED IN STREAM FLOW AND SHOULD BE SECURED TO THE STREAM BED.

TYPE 4 MAY BE USED IN DITCHES AND SMALLER CHANNELS TO FORM AN EROSION

## GENERAL NOTES

1. IF SHOWN ON THE PLANS OR DIRECTED BY THE ENGINEER, FILTER DAMS SHOULD BE PLACED NEAR THE TOE OF SLOPES WHERE EROSION IS ANTICIPATED, UPSTREAM AND / OR DOWNSTREAM AT DRAINAGE STRUCTURES, AND IN ROADWAY DITCHES AND CHANNELS TO COLLECT SEDIMENT.

2. MATERIALS (AGGREGATE, WIRE MESH, SANDBAGS, ETC.) SHALL BE AS INDICATED BY THE SPECIFICATION FOR ROCK FILTER DAMS FOR EROSION AND SEDIMENTATION CONTROL.

3. THE ROCK FILTER DAM DIMENSIONS SHALL BE AS INDICATED ON THE STORM WATER POLLUTION PREVENTION PLANS.

4. SIDE SLOPES SHOULD BE 2 : 1 OR FLATTER. DAMS WITHIN THE SAFETY ZONE SHALL HAVE SIDE SLOPES OF 6 : 1 OR FLATTER.

5. MAINTAIN A MINIMUM OF 1' BETWEEN TOP OF ROCK FILTER DAM WEIR AND TOP OF EMBANKMENT FOR FILTER DAMS AT SEDIMENT TRAPS.

6. FILTER DAMS SHOULD BE EMBEDDED A MINIMUM OF 4" INTO THE EXISTING GROUND.

7. THE SEDIMENT TRAP FOR PONDING OF SEDIMENT LADEN RUNOFF SHALL BE OF THE DIMENSIONS SHOWN ON THE PLANS.

8. ROCK FILTER DAM TYPES 2 & 3 SHALL BE SECURED WITH 20 GAUGE GALVANIZED WOVEN WIRE MESH WITH 1" DIAMETER HEXAGONAL OPENINGS. THE AGGREGATE SHALL BE PLACED ON THE MESH TO THE HEIGHT AND SLOPES SPECIFIED. THE MESH SHALL BE FOLDED AT THE UPSTREAM SIDE OVER THE AGGREGATE AND TIGHTLY SECURED TO ITSELF ON THE DOWNSTREAM SIDE USING WIRE TIES OR HOG RINGS. IN STREAM USE, THE MESH SHOULD BE SECURED OR STAKED TO THE STREAM BED PRIOR TO AGGREGATE PLACEMENT.

9. SACK GABIONS SHOULD BE STAKED DOWN WITH 3 /4" DIA. REBAR STAKES.

10. FLOW OUTLET SHOULD BE ONTO A STABILIZED AREA (VEGETATION, ROCK, ETC.).

11. THE GUIDELINES SHOWN HEREON ARE SUGGESTIONS ONLY AND MAY BE MODIFIED BY

	JANUA	ARY 2005	
CAPITAL	CITY OF S	SAN ANTON NAGEMENT SERVICES D	IO DEPARTMENT
TEMPO WAT ME	RARY ERC ER POLLU EASURES S	SION, SEDIN ITION CONT STANDARDS	IENT & ROL 2
% SUBMITTAL	PROJECT NO .:		DATE:
N. BY: <u>V. VASQUEZ</u>	DSGN. BY:	CHKD. BY:	SHEET NO .:OF
(SCALE BAR IS 4	" AT FULL SCALE) 0	1/2 1	2 3

BLACK & VEAT	СН
Black & Veatch Corpora San Antonio, Texas	ition
Texas Registration No. F-	258
SUBCONSULTANT:	
PLANNING ENGINEERING PROJECT MAN	Inc.
9601 McAllister Freeway #507, San Antonio TX 78216 Texas Board of Professional Engineers Registration N	(210) 314-3553 o. F-000554
MARCOS MEDINA 93830 9326 930 900 900 9000 9000 9000 9000 9000 9	6/2023
THE SEAL APPEARING ON DOCUMENT WAS AUTHORIZ MARCOS MEDINA, P.E. NO. ON <b>SEPTEMBER 26, 202</b> ALTERATION OF A SEALED DO WITHOUT PROPER NOTIFICAT THE RESPONSIBLE ENGINEED OFFENSE UNDER THE TE ENGINEERING PRACTICE	THIS ED BY 93830 3 CUMENT TON TO R IS AN KAS ACT
Solution San Anto Wate Syst	nio er em
EMERGENCY PREPAREDNESS P IMPLEMENTATIC	LAN N
SAWS JOB NO. 22-0	6020
NATURAL GAS	
GENERATOR	RACT
REVISIONS AND RECORD OF IS         DESIGNED:       E. GUTIERREZ / E. C         DETAILED:       M. LIZA         CHECKED:       D. ALCORTA	SSUE COBOS
APPROVED: M. MEDINA DATE: 9/26/2023	
PROJECT NO.: 412782	
GENERAL	
CIVIL	
EROSION, SEDIME CONTROL AND SV DETAILS 2 OF 2	ENT V3P 2
C-00-507	OF

![](_page_96_Figure_0.jpeg)

IG BENCHMARK TABLE				
HING	EASTING	ELEVATION		
987.58	2086088.25	1036.89		
938.76	2086027.02	1033.28		

	LEGEND	
	PROJECT LIMITS	BLACK & VEATCH
	PROPERTY LINE	Plack & Veatch Corneration
	EXISTING UTILITY EASEMENT	San Antonio, Texas
SD SD	EXISTING STORM DRAIN LINE	
W W		Texas Registration No. F-258
		SUBCONSULIANI: PLANNING • ENGINEERING • PROJECT MANAGEMENT
4		•Moreno
	EXISTING 100-YEAR FLOODPLAIN	Cardenas Inc.
	DEMOLITION	SAN ANTONIO • EL PASO 9601 McAllister Freeway #507, San Antonio TX 78216 (210) 314-3553 Texas Board of Professional Envineers Revistration No. F-000554
	KEYED LEGEND	TSTATE OF TEAM
<b>600-A</b>	EXISTING BENCHMARK	MARCOS MEDINA 93830
	BENCHMARK	CONCENSED IN CONTRACT
BENCHMARK NO. 2300146-0 NAIL WITH WASHER STAMP NER OF THE ELECTRIC CAB ATION: 1036.91' (NAVD '88-G	05-09 PED "CP&Y NO. 9" SET ON THE EAST INETS CONCRETE PAD. GEOID 18)	9/26/2023 THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY MARCOS MEDINA, P.E. NO. 93830 ON <b>SEPTEMBER 26, 2023</b>
BENCHMARK NO. 2300146-( NAIL WITH WASHER STAMF NER OF THE ANTENNA CON NER OF SITE. ATION: 1033.31' (NAVD '88-G	05-10 PED "CP&Y NO. 10" SET ON THE EAST CRETE PAD NEAR THE SOUTHWEST GEOID 18).	ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT
	NOTES	
ANY DAMAGE/DISTURBAN EXISTING CONDITIONS OF APPROVED BY SAWS.	CE OUTSIDE OF PROJECT LIMITS TO BE RESTORED TO R BETTER AT CONTRACTOR'S EXPENSE UNLESS	(25) Can
Ε>	(ISTING UTILITIES	$\geq$ () $\land$ Antonio
EXISTING UTILITIES SHOW INFORMATION OBTAINED PROVIDED BY OTHERS. T INFORMATION HAS NOT BI FOR OBTAINING THE LOCA WITHIN THE PROJECT WO WORK.	IN ON THESE DRAWINGS ARE BASED ON FROM AS-BUILT RECORD DRAWINGS AS HE ACCURACY AND/OR COMPLETENESS OF THIS EEN VERIFIED. CONTRACTOR IS RESPONSIBLE ATIONS AND DEPTHS OF EACH UTILITY THAT IS RKING LIMITS PRIOR TO PERFORMING ANY	Water System
	SHEET KEYNOTES	
REFERENCE TREE PRESE	RVATION SHEET C-05-106 FOR TREE REMOVAL.	EMERGENCY
CONTRACTOR TO REMOV REPLACE PER 02512.	E EXISTING ASPHALT PAVEMENT PER 02050 AND	PREPAREDNESS PLAN IMPLEMENTATION
CONTRACTOR TO REMOV	E AND REPLACE CONCRETE CURB PER 02522.	SAWS JOB NO. 22-6020
		NATURAL GAS GENERATOR INSTALLATION CONTRACT
		DETAILED: M. LIZA
		CHECKED: D. ALCORTA
		DATE: 9/26/2023
		PROJECT NO.: 412782
		SITE - 05
		CIVIL
		EXISTING SITE, SURVEY CONTROL, AND DEMOLITION PLAN
		C-05-101 o⊧
BAR IS 4" AT FULL SCALE) 0	1/2 1 2 3 4	

![](_page_97_Figure_0.jpeg)

	EQUIPMENT PAD COORDINATE TA	ABLE	
POINT NO.	DESCRIPTION	NORTHING	EASTING
1	PROPOSED GENERATOR CONCRETE PAD	13763927.31	2086047.01
2	PROPOSED GENERATOR CONCRETE PAD	13763937.09	2086052.05
3	PROPOSED GENERATOR CONCRETE PAD	13763903.02	2086094.19
4	PROPOSED GENERATOR CONCRETE PAD	13763912.80	2086099.22
5	PROPOSED GAS METERING STATION CONCRETE PAD	13763900.38	2086101.50
6	PROPOSED GAS METERING STATION CONCRETE PAD	13763909.27	2086106.07
7	PROPOSED GAS METERING STATION CONCRETE PAD	13763892.60	2086116.61
8	PROPOSED GAS METERING STATION CONCRETE PAD	13763901.49	2086121.19
9	PROPOSED TRANSFORMER CONCRETE PAD	13763942.82	2086082.97
10	PROPOSED TRANSFORMER CONCRETE PAD	13763957.56	2086090.56
11	PROPOSED TRANSFORMER CONCRETE PAD	13763935.72	2086096.75
12	PROPOSED TRANSFORMER CONCRETE PAD	13763950.47	2086104.34
13	PROPOSED SWITCHBOARD CONCRETE PAD	13763933.95	2086098.68
14	PROPOSED SWITCHBOARD CONCRETE PAD	13763948.40	2086106.12
15	PROPOSED SWITCHBOARD CONCRETE PAD	13763924.91	2086116.24

		4240 6 4241 6 6 6 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7 7		20' 10' 0 20' 40' SCALE: 1"=20'
ELECTRIC VAULT PROPOSED COMMUNICATION BUILDING PAD	PROPOSED SWITCHGEAR PAD 22 20 21 21 21 21 21 21 21 21 21 21 21 21 21	A CPS TRANSFORMER PAD 34		
	20 20 20 20 20 24 <sup>-</sup> W 24 <sup>-</sup> W			
	A (16) F PROPOSED SWITCHBOARD PAD (15) PROPOSED ASPHALT PAVEMENT			$a_{1}$ $a_{2}$ $a_{3}$ $a_{4}$ $a_{5}$ $a_{1}$ $a_{2}$ $a_{3}$ $a_{2}$ $a_{3}$ $a_{4}$ $a_{5}$ $a_{2}$ $a_{2}$ $a_{3}$ $a_{4}$ $a_{5}$ $a_{2}$ $a_{3}$ $a_{4}$ $a_{5}$ $a_{2}$ $a_{2}$ $a_{3}$ $a_{4}$ $a_{5}$ $a_{2}$ $a_{4}$ $a_{5}$ a
PROPOSED GENERATOR PAD 36" M 56" M 5	PROPOSED GAS METERING STATION PAD		PROPOSED GAS PIPE BY OTHERS	1     1
EQUIPMENT PAD COORDINATE TAE	BLE	EQUIPMENT PAD COORDIN	ATE TABLE	
POINT NO. DESCRIPTION	NORTHING EASTING POINT NO	. DESCRIPTION	NORTHING EASTING	
16 PROPOSED SWITCHBOARD CONCRETE PAD	13763939.36         2086123.68         27           13763990.37         2086087.01         27	EDGE OF PAVEMENT	13763973.73     2086109.61       13763946.22     2086022.27	
17 PROPOSED COMMUNICATION BUILDING CONCRETE PAD 18 PROPOSED COMMUNICATION BUILDING CONCRETE PAD	13764009.93         2086113.84         29	PU OF 20' RADIUS	13763939.49 2086084.53	
19 PROPOSED COMMUNICATION BUILDING CONCRETE PAD	13763987.64 2086092.68 30	EDGE OF PAVEMENT	13763920.18 2086122.02	
20 PROPOSED COMMUNICATION BUILDING CONCRETE PAD	13763998.19 2086118.61 31	EDGE OF PAVEMENT	13763909.52 2086116.53	
21 PROPOSED SWITCHGEAR CONCRETE PAD	13764014.15 2086116.24 32	PROPOSED CPS TRANSFORMER PAD	13764011.99 2086164.78	
22 PROPOSED SWITCHGEAR CONCRETE PAD	13764029.08         2086152.90         33           13763008         42         2086100.05         53	PROPOSED CPS TRANSFORMER PAD	13764017.53 2086174.28	
23 PROPOSED SWITCHGEAR CONCRETE PAD 24 PROPOSED SWITCHGEAR CONCRETE PAD	13763098.42         2086122.65         34           13764013.34         2086159.31         25	PROPOSED CPS TRANSFORMER PAD	13764000 76 2086171 33	
25 EDGE OF PAVEMENT	13763938.93 2086059.41			
26 EDGE OF PAVEMENT	13763953.98 2086086.37			
CURVE DATA TABLE				
CURVE RADIUS LENGTH TANGENT CHORD DELTA (X,	Y) COORDINATE (X , Y) COORDINATE			
C1 5.00' 7.85' 5.00' 7.07' 90°00'00" 20860	82.37 , 13763946.22 2086084.53 , 13763939.49			

Sep2 F:\21 PLOT FILE:

		LEGEND	
		- PROJECT LIMITS	BLACK & VEATCH
		- PROPERTY LINE	Black & Vestch Corneration
		EXISTING UTILITY EASEMENT	San Antonio, Texas
		EXISTING STORM DRAIN LINE     EXISTING WATER LINE	Toyor Degistration No. E 259
		EXISTING UNDERGROUND ELECTRIC LINE	Texas Registration No. F-258
	985		SUBCONSULTANT:
	984	- PROPOSED MINOR CONTOUR	PLANNING • ENGINEERING • PROJECT MANAGEMENT
	985	EXISTING MAJOR CONTOUR AND ELEVATION	<b>MG?</b> Cardenas Inc.
		PROPOSED RIBBED CURB	SAN ANTONIO • EL PASO 9601 McAllister Freeway #507, San Antonio TX 78216 (210) 314-3553 Targa Board of Professional Engineers Projectuation No. E 000554
		EXISTING 100-YR FLOODPLAIN	Texas Doura of Frojessionia Engineers Registration No. 1-000554
	$\begin{array}{cccccccccccccccccccccccccccccccccccc$	PROPOSED HYDROMULCH	Use of the sun
		KEYED LEGEND	MARCOS MEDINA
	$\sim$ <sup>(1)</sup>	PROPOSED CONTROL POINT	93830 93830
	C1	CURVE DATA	9/28/2023
$\langle A \rangle$	а. а. А. а. А.,	PROPOSED CONCRETE PAD	THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY MARCOS MEDINA, P.E. NO, 93830
B		PROPOSED ASPHALT PAVEMENT	ON SEPTEMBER 28, 2023 ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS
Ċ	0	PROPOSED BOLLARD	ENGINEERING PRACTICE ACT
D		PROPOSED CANOPY	( San
E		PROPOSED VEGETATIVE FILTER STRIP	Antonio Water System
F		PROPOSED LANDSCAPING ROCK	Uyatom
	CONTRACTOR SHALL EQUIPMENT DURING	L PROVIDE VEHICULAR ACCESS TO EXISTING ALL CONSTRUCTION DURATION.	EMERGENCY PREPAREDNESS PLAN
2	2. ANY DAMAGE/DISTU RESTORED TO EXIST EXPENSE UNLESS AF	RBANCE OUTSIDE OF PROJECT LIMITS TO BE FING CONDITIONS OR BETTER AT CONTRACTORS PPROVED BY SAWS.	SAWS JOB NO 22-6020
ć	<ol> <li>ANY NATURAL GROU RESTORED WITH GR. ITEM.</li> </ol>	IND RESTORATION WITHIN PROJECT LIMITS TO BE AVEL OTHERWISE HYDROMULCH NO SEPARATE LINE	NATURAL GAS
2	. SEE SHEET C-05-103	FOR GRADING PLAN.	
ţ	5. SEE SHEET C-05-106	FOR TREE REMOVAL.	
t E	CONTRACTOR SHALL	L COORDINATE WITH CPS ENERGY FOR THE	
	INSTALLATION OF GA	AS METERING STATION PAD.	
Q	<ol> <li>THE LOCATION OF THE CONTRACTOR SHALL LOCATION.</li> </ol>	HE GAS PIPE SHOWN IS PRELIMINARY AND THE L COORDINATE WITH CPS ENERGY FOR FINAL	
		EXISTING UTILITIES	
	. EXISTING UTILITIES S	SHOWN ON THESE DRAWINGS ARE BASED ON	
	PROVIDED BY OTHEF	RS. THE ACCURACY AND/OR COMPLETENESS OF HAS NOT BEEN VERIFIED. CONTRACTOR IS	
	RESPONSIBLE FOR C UTILITY THAT IS WITH	DBTAINING THE LOCATIONS AND DEPTHS OF EACH HIN THE PROJECT WORKING LIMITS PRIOR TO	REVISIONS AND RECORD OF ISSUE
	PERFORMING ANY W	/ORK.	DESIGNED: E. GUTIERREZ / E. COBOS DETAILED: M. LIZA
			DATE: 9/26/2023
			PRUJEUT NU.: 412/82
			SITE - 05
			CIVIL
			PROPOSED SITE PLAN HORIZONTAL CONTROL AND PAVING PLAN
			C-05-102 oF
(SC	ALE BAR IS 4" AT FULL SCALE)		4

![](_page_98_Figure_0.jpeg)

PLOTTED: Sep26,2023-04:11:53PM FILE: F:\21115\DWG\C-05 HPS\05 HPS\_GraP & Drwy\_01.dwg

FLC AREAS DETERMINED	TO BE OUTSIDE THE 0.2% ANNUAL CHANCE FLOODPLAIN.	BLACK & VEATCH
FIRM - FLOOD INSURAN	ICE RATE MAP CITY OF SAN ANTONIO, BEXAR COUNTY TX.	Black & Veatch Corporation
PANEL 210 OF 785 C MAP R	OMMUNITY - PANEL NUMBER 48029C 210 G EVISED: SEPTEMBER 29, 2010	San Antonio, Texas
	LEGEND	Texas Registration No. F-258
	PROPOSED PROJECT LIMITS LINE	SUBCONSULTANT:
<b>DA - X</b>	DRAINAGE AREA IDENTIFICATION	planning.engineering.project management
984	PROPOSED MINOR CONTOUR	<b>MG2</b> Cardenas Inc.
985	EXISTING MAJOR CONTOUR AND ELEVATION	SAN ANTONIO • EL PASO 9601 McAllister Freeway #507, San Antonio TX 78216 (210) 314-3553
<b></b> -984- <b></b> -	EXISTING MINOR CONTOUR	Texas Board of Professional Engineers Registration No. F-000554
SD SD	EXISTING STORM DRAIN LINE	Misson polyin
W W	EXISTING WATER LINE	
	EXISTING UNDERGROUND ELECTRIC LINE	MARCOS MEDINA
		93830
		AND SSIONAL ENGL
	PROPOSED ASPHALT PAVEMENT	9/26/2023
	PROPOSED SWALE	THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY
$\nabla / / T / / T$	EXISTING 100-YR FLOODPLAIN	MARCOS MEDINA, P.E. NO. 93830 ON SEPTEMBER 26, 2023
	EXISTING CONCRETE PAVEMENT	WITHOUT PROPER NOTIFICATION TO
XXXX.XX	SPOT ELEVATION	OFFENSE UNDER THE TEXAS
TP	TOP OF PAVEMENT	ENGINEERING PRACTICE ACT
EG	EXISTING GROUND	
FF	FINISH FLOOR	
FG		( San
	FLOW DIRECTION	
	SHEET KEYNOTE	
PROPOSED SWITCHGEA PROPOSED TRANSFORM PROPOSED COMMUNICA S-00-102. PROPOSED CPS GAS ME DETAILS. SEE SHEET C-C CONNECT EXISTING ASP PAVEMENT PER DETAIL CONTRACTOR SHALL CO INSTALLATION OF GAS M	R CONCRETE PAD. SEE SHEET S-00-105. MER CONCRETE PAD. SEE SHEET S-00-101. ATION BUILDING CONCRETE PAD. SEE SHEET RD CONCRETE PAD. SEE SHEET STRUCTURAL ETERING STATION CONCRETE PAD AND BOLLARD 20-504. PHALT PAVEMENT TO PROPOSED ASPHALT C-00-501. DORDINATE WITH CPS ENERGY FOR THE METERING STATION PAD.	EMERGENCY PREPAREDNESS PLAN IMPLEMENTATION SAWS JOB NO. 22-6020 NATURAL GAS GENERATOR INSTALLATION CONTRACT REVISIONS AND RECORD OF ISSUE DESIGNED: E. GUTIERREZ / E. COBOS DETAILED: M. LIZA CHECKED: D. ALCORTA APPROVED: M. MEDINA DATE: 9/26/2023 PROJECT NO: 412782 SITE - 05 CIVIL
		C-05-103 OF
BAR IS 4" AT FULL SCALE) 0	1/2 1 2 3	4

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	LEGEND				
0.95			R	BLACK & VEATCH	4
983 Z/./Z///	 ]	EXISTING MINOR CONTOUR EXISTING 100-YEAR FLOOD	R DPLAIN	Black & Veatch Corporation San Antonio, Texas	on
-		FLOW DIRECTION		Texas Registration No. F-25	8
	ר ג	STAGING AREA		SUBCONSULTANT:	
		PROJECT AREA		•Moreno Cardenas In	nc.
	KEYED LEGEND		$\frown$	SAN ANTONIO • EL PASO 9601 McAllister Freeway #507, San Antonio TX 78216 (210)	314-3553
	TEMPORARY ROCK		-00-507		000554
(SILT)	TEMPORARY SEDIM		2-00-500		
	STABILIZED CONST ENTRANCE/ EXIT		-00-506	MARCOS MEDINA 93830 93830 SS/ONAL ENGINE	
	NOTES			THE SEAL APPEARING ON TH	023 IIS
ONTRACTOR SHALL BE F EMPORARY ACCESS ROA ONTRACTOR SHALL BE F OADS FOR THE DURATIO OADS SHALL BE RECONS EMOVAL.	RESPONSIBLE FOR CO ADS AND SETUP OF ST RESPONSIBLE FOR MA ON OF THE PROJECT, E STRUCTED WHEN WOF	NSTRUCTION OF AGING AREAS. INTENANCE OF ACCESS QUIVALENT TEMPORARY RK ACTIVITIES REQUIRE		MARCOS MEDINA, P.E. NO. 93 ON <b>SEPTEMBER 26, 2023</b> ALTERATION OF A SEALED DOCL WITHOUT PROPER NOTIFICATIC THE RESPONSIBLE ENGINEER I OFFENSE UNDER THE TEXA ENGINEERING PRACTICE AC	J BY 830 JMENT ON TO S AN S S T
ONTRACTOR SHALL BE F SSOCIATED WITH THE TE ISTURBED AREAS TO THI ROJECT.	RESPONSIBLE FOR REI EMPORARY ACCESS R EIR NATURAL CONDITI	MOVING ALL MATERIALS OADS AND RESTORING ON AT THE END OF THE	ſ		1
REES SHOWN ARE FOR F HE APPROVED TREE PRO LL PROTECTION REQUIR FF-SITE STAGING AREAS ONSTRUCTION.	REFERENCE ONLY. CO DTECTION PLAN FOR T EMENTS SHOWN THEF S SHALL REMAIN AND E	NTRACTOR TO REFERENCE THE SITE AND COMPLY WITH REON. ALL TREES WITHIN BE PROTECTED DURING		San Anton Water	io
ONTRACTOR SHALL BE F ND COORDINATION OF U	RESPONSIBLE FOR TEN TILITIES TO THEIR STA	MPORARY INSTALLATION AGING/ LAYDOWN AREAS.		Syste	m
ONTRACTOR SHALL BE F QUIPMENT.	RESPONSIBLE FOR SE				
ONTRACTOR TO COMPLE REAS AND SHALL BE RES ACILITIES AND RETURNIN ONDITIONS.	ETE PRE-CONSTRUCTI SPONSIBLE FOR REMO NG STAGING AREAS TO	ON SURVEY OF STAGING VING ALL TEMPORARY ) PRE-CONSTRUCTION	ŀ	EMERGENCY	
ONTRACTOR SHALL REF OLLUTION ABATEMENT P EQUIREMENTS SHOWN T	ERENCE THE APPROV PLAN FOR THE SITE AN THEREON.	ED TCEQ WATER D COMPLY WITH ALL		PREPAREDNESS PLA IMPLEMENTATION	۹N
QUIPMENT AND MATERIA	AL STORAGE YARDS TO	D BE DETERMINED IN THE		SAWS JOB NO. 22-60	20
ONTRACTOR TO POST T. TE.	C.E.Q. CONSTRUCTIO	N SITE NOTICE ON THE JOB		NATURAL GAS GENERATOR	
EDIMENT CONTROL FENO T PROPOSED GRADING L	CE TO BE LOCATED D	OWNSTREAM ROW LINE OR RECTION OF THE ENGINEER.	-	INSTALLATION CONTR	ACT
DCATION OF CONSTRUC DCATED AS PER DIRECTI	TION EXITS ARE PRELI ION OF THE ENGINEER	MINARY AND ARE TO BE			
LL DISTURBED AREAS THE E RESTORED TO PAST CO	HAT ARE NOT SHOWN	ON THIS SITE PLAN SHALL ADCAST SEEDING.			
UD OR DIRT INADVERTEI TREETS SHALL BE REMO ROOM SWEEPING.	NTLY TRACKED OFF-S VED IMMEDIATELY BY	TE AND ONTO EXISTING HAND OR MECHANICAL	-		
PON COMPLETION OF TH SUED, CONTRACTOR SH ONTROL MEASURES.	IE PROJECT AND BEFO IALL REMOVE ALL SED	ORE FINAL PAYMENT IS IMENT AND EROSION	-		
ONTRACTOR SHALL ENS ORMAL STANDARD OPEF	URE THE SITE IS ACCE RATION, INGRESS AND	ESSIBLE TO OWNER FOR EGRESS OF THE SITE.	-		
SHALL BE THE RESPONS OWNSTREAM EROSION A	SIBILITY OF THE CONT AND SILTATION DURING	RACTOR TO CONTROL G ALL PHASES OF NEORM TO THE CITY OF		DESIGNED: E. GUTIERREZ / E. COB DETAILED: M. LIZA	OS
AN ANTONIO STANDARDS ONTROL. EROSION CONT	S FOR TEMPORARY EF	ROSION AND SEDIMENT CE PRIOR TO ANY	-	CHECKED: D. ALCORTA APPROVED: M. MEDINA	
XCAVATION			ŀ	DATE:         9/26/2023           PROJECT NO.:         412782	
				SITE - 05	
			ŀ	CIVIL	
			-	CONTRACTOR STAGI EROSION AND SEDIMENT CONTRO PLAN	NG, )L
				C-05-104	OF
BAR IS 4" AT FULL SCALE) (	0 1/2 1	2 3	4		

### TEXAS COMMISSION ON ENVIRONMENTAL QUALITY WATER POLLUTION ABATEMENT PLAN (WPAP) GENERAL CONSTRUCTION NOTES:

- 1. A WRITTEN NOTICE OF CONSTRUCTION MUST BE SUBMITTED TO THE TCEQ REGIONAL OFFICE AT LEAST 48 HOURS PRIOR TO THE START OF ANY REGULATED ACTIVITIES. THIS NOTICE MUST INCLUDE:
  - -THE NAME OF THE APPROVED PROJECT; -THE ACTIVITY START DATE; AND
  - -THE CONTACT INFORMATION OF THE PRIME CONTRACTOR.
- 2. ALL CONTRACTORS CONDUCTING REGULATED ACTIVITIES ASSOCIATED WITH THIS PROJECT MUST BE PROVIDED WITH COMPLETE COPIES OF THE APPROVED WATER POLLUTION ABATEMENT PLAN (WPAP) 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.
- IF ANY SENSITIVE FEATURE(S) (CAVES, SOLUTION CAVITY, SINK HOLE, ETC.) IS DISCOVERED DURING CONSTRUCTION, 3. 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. CONSTRUCTION ACTIVITIES MAY NOT BE RESUMED UNTIL THE TCEQ HAS REVIEWED AND APPROVED THE APPROPRIATE PROTECTIVE MEASURES IN ORDER TO PROTECT ANY SENSITIVE FEATURE AND THE EDWARDS AQUIFER FROM POTENTIALLY ADVERSE IMPACTS TO WATER QUALITY.
- 4. NO TEMPORARY OR PERMANENT HAZARDOUS SUBSTANCE STORAGE TANK SHALL BE INSTALLED WITHIN 150 FEET OF A WATER SUPPLY SOURCE, DISTRIBUTION SYSTEM, WELL, OR SENSITIVE FEATURE.
- PRIOR TO BEGINNING ANY CONSTRUCTION ACTIVITY, ALL TEMPORARY EROSION AND SEDIMENTATION (E&S) CONTROL MEASURES MUST BE PROPERLY INSTALLED AND MAINTAINED IN ACCORDANCE WITH THE APPROVED PLANS AND MANUFACTURERS SPECIFICATIONS. IF INSPECTIONS INDICATE A CONTROL HAS BEEN USED INAPPROPRIATELY, OR INCORRECTLY, THE APPLICANT MUST REPLACE OR MODIFY THE CONTROL FOR SITE SITUATIONS. THESE CONTROLS MUST REMAIN IN PLACE UNTIL THE DISTURBED AREAS HAVE BEEN PERMANENTLY STABILIZED.
- 6. ANY SEDIMENT THAT ESCAPES THE CONSTRUCTION SITE MUST BE COLLECTED AND PROPERLY DISPOSED OF BEFORE THE NEXT RAIN EVENT TO ENSURE IT IS NOT WASHED INTO SURFACE STREAMS, SENSITIVE FEATURES, ETC.
- 7. SEDIMENT MUST BE REMOVED FROM THE SEDIMENT TRAPS OR SEDIMENTATION BASINS NOT LATER THAN WHEN IT OCCUPIES 50% OF THE BASIN'S DESIGN CAPACITY.
- LITTER, CONSTRUCTION DEBRIS, AND CONSTRUCTION CHEMICALS EXPOSED TO STORMWATER SHALL BE PREVENTED 8. FROM BEING DISCHARGED OFFSITE.
- ALL SPOILS (EXCAVATED MATERIAL) GENERATED FROM THE PROJECT SITE MUST BE STORED ON-SITE WITH PROPER 9. 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. IF PORTIONS OF THE SITE WILL HAVE A TEMPORARY OR PERMANENT CEASE IN CONSTRUCTION ACTIVITY LASTING LONGER THAN 14 DAYS, SOIL STABILIZATION IN THOSE AREAS SHALL BE INITIATED AS SOON AS POSSIBLE PRIOR TO THE 14TH DAY OF INACTIVITY. IF ACTIVITY WILL RESUME PRIOR TO THE 21ST DAY, STABILIZATION MEASURES ARE NOT REQUIRED. IF DROUGHT CONDITIONS OR INCLEMENT WEATHER PREVENT ACTION BY THE 14TH DAY, STABILIZATION MEASURES SHALL BE INITIATED AS SOON AS POSSIBLE.
- 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.

### SAN ANTONIO REGIONAL OFFICE

14250 JUDSON ROAD, SAN ANTONIO, TEXAS 78233-4480 PHONE (210) 490-3096, FAX (210) 545-4329

![](_page_100_Figure_22.jpeg)

![](_page_100_Figure_24.jpeg)

	DA-1	DA-2	TOTAL
DRAINAGE AREA (AC)	0.28	0.34	0.62
PRE-DEVELOPMENT IC (AC)	0.07	0.12	0.19
POST-DEVELOPMENT IC (AC)	0.13	0.14	0.27
IC INCREASE (AC)	0.06	0.02	0.08

### DRAINAGE AREA IDENTIFICATION

DRAINAGE AREA BOUNDARY

FLOW DIRECTION

PROPOSED VEGETATIVE FILTER STRIP

PROPOSED IMPERVIOUS COVER

VEGETATIVE FILTER STRIP NOTES:

- CONTRACTOR TO GRADE VEGETATIVE FILTER STRIP (VFS) TO BE FREE OF GULLIES OR RILLS AND SEE.
- 2. USE 4" TOP SOIL AND SOD TO ACHIEVE 80% VEGETATIVE COVER.
- 3. PRODUCE UNIFORM, SHALLOW OVERLAND FLOW ACROSS THE ENTIRE STRIP. 4. THE FILTER STRIP SHOULD NOT EXCEED 20%.
- 5. THE MINIMUM DIMENSION OF THE FILTER STRIP (IN THE DIRECTION OF THE FLOW) SHOULD BE NO LESS THAN 15 FEET.
- 6. THE MINIMUM VEGETATED COVER FOR ENGINEERED STRIPS IS 80%.
- THE AREA TO BE USED FOR THE STRIP SHOULD BE FREE OF GULLIES OR RILLS THAT CAN CONCENTRATE OVERLAND FLOW.
- 8. THE TOP EDGE OF THE FILTER STRIP ALONG THE PAVEMENT WILL BE DESIGNED TO AVOID THE SITUATION WHERE RUNOFF WOULD TRAVEL ALONG THE TOP OF THE FILTER STRIP, RATHER THAN THROUGH IT.
- LEADING EDGE OF THE FILTER STRIP ALONG PLACED TO AVOID THE SITUATION WHERE RUNOFF WOULD TRAVEL ALONG THE TOP OF THE FILTER STRIP, RATHER THAN THROUGH IT.
- 10. TOP EDGE OF THE FILTER STRIP SHOULD BE LEVEL.
- 11. FILTER STRIPS SHOULD BE LANDSCAPED AFTER OTHER PORTIONS OF THE PROJECT ARE COMPLETED. VEGETATION MAINTAINED WITH WATERING BY CONTRACTOR UNTIL ESTABLISHED.

![](_page_100_Picture_43.jpeg)

![](_page_101_Figure_0.jpeg)

리문

Canopy

## LEGEND

PROPERTY LINE

EXISTING CANOPY

CANOPY TO BE REMOVED

		NOTES			
	Tree Pres	servation C	Calcu	lations	
anopy	/ Within Floodpl	ain (sq ft)			
to Re	main				
to Re	move				
age of	Canopy Preserve	ed Within Flood	olain		100
anani	(Mithin Duffor (	a a ft)			01
to Re	main	sq ii)			81
to Re	move				
age of	Canopy Preserve	ed Within Buffer			96
age er					
anopy	/ Outside Flood	olain/Buffer (sq	ft)		7,23
to Re	main	· · ·			6,40
to Re	move				83
age of	Canopy Preserve	ed Outside Floo	dplain		99
	Heritage	Trees (inches)			
	Floodplain	Buffer		Jpland	Total
	0	0		54	:
e od	100%	100%		100%	100
eu	10070	100 /0		100 %	100
anopy	/ sa ft/Inches Re	auired to Be P	reserve	ed	
Withir	n Floodplain (80%	of Total Canop	v)		
Outsi	de Floodplain (25	% Required)	<b>J</b> /		1,80
e (100	% of Total)	. ,			,
	`				
ches	to Mitigate				
ant (1:'	1)				
e (3:1)					
e (1:1)					
MITIG		EMENI			
		Heritage Tre	es		
e ID	Species	DBH (inc	hes)	To Be Rem	noved?
236	Live Oak	24.0		No	
243	Live Oak	30.0		No	

![](_page_101_Picture_11.jpeg)

SITE DESCRIPTION	
PROJECT NAME AND LOCATION: SAN ANTONIO WATER SYSTEM (SAWS) HILLS PUMP STATION IMPROVEMENTS	
THE PROJECT IS LOCATED AT 15659 BABCOCK SAN ANTONIO, TEXAS.	PERMANENT PLANTIN
	× MULCHING
	SOIL RETENTION BLA
CONTACT AND PHONE NO.: MORENO CARDENAS, INC. 9601 MCALLISTER FREEWAY, SUITE 507, SAN ANTONIO, TEXAS.	BUFFER ZONES
	PRESERVATION OF N
ROJECT DESCRIPTION: THE WORK INCLUDED BUT NOT NECESSARILY LIMITED TO, FURNISHING ALL MATERIALS, LABOR AND	DISTURBED AREAS ON OR PERMANENTLY, SH
EQUIPMENT FOR THE CONSTRUCTION OF NEW ASPHALT ROAD AND CONCRETE PADS FOR THE INSTALLATION OF GAS	SCHEDULED TO RESU
ENGINE GENERATORS, SWITCHBOARD, SWITCH GEAR, AND CONTROL BUILDING .	
	SILT FENCES
	GRAVEL FILTRATION
	ROCK BERMS
	PAVED FLUMES
MAJOR SOIL DISTURBING ACTIVITIES:MAJOR SOILD DISTURBING ACTIVITIES WILL CONSIST OF	ROCK BEDDING AT
CLEARING, GRUBBING, GRADING, EXCAVATING EMBANKMENT, UNDERGROUND UTILITIES, EROSION AND SEDIMENT CONTROL	CHANNEL LINERS
	SEDIMENT BASINS
	STORM INLET SEDIM
	CURBS AND GUTTER
	GEOTEXTILES
OTAL PROJECT AREA (ACRES): .62 AC	
TOTAL PROJECT AREA (ACRES):       .62 AC         TOTAL AREA TO BE DISTURBED:       12,826 SF	NARRATIVE - SEQUEN (STORMWATER MANAG THE ORDER OF ACTIVITIES WILL
TOTAL PROJECT AREA (ACRES): .62 AC	NARRATIVE - SEQUEN (STORMWATER MANAG THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND
rotal project area (acres):       .62 AC         rotal area to be disturbed:       12,826 SF         veighted runoff coefficient:       73.96	NARRATIVE - SEQUEN (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION
TOTAL PROJECT AREA (ACRES):       .62 AC         TOTAL AREA TO BE DISTURBED:       12,826 SF         VEIGHTED RUNOFF COEFFICIENT:       73.96         EXISTING CONDITION OF SOIL, VEGETATIVE       014 00000000000000000000000000000000000	NARRATIVE - SEQUENC (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURB
TOTAL PROJECT AREA (ACRES):       .62 AC         TOTAL AREA TO BE DISTURBED:       12,826 SF         VEIGHTED RUNOFF COEFFICIENT:       73.96         VEIGHTED RUNOFF COEFFICIENT:       73.96         EXISTING CONDITION OF SOIL, VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         EXISTING CONDITION OF SOIL, VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE	NARRATIVE - SEQUEN (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE
TOTAL PROJECT AREA (ACRES):       .62 AC         TOTAL AREA TO BE DISTURBED:       12,826 SF         VEIGHTED RUNOFF COEFFICIENT:       73.96         AFTER CONSTRUCTION)       73.96         EXISTING CONDITION OF SOIL, VEGETATIVE COVER:       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         MAS NATIVE GRASSES, SHRUBS, AND TREES. SITE HAS APPROXIMATELY 90% VEGETATIVE COVER.	NARRATIVE - SEQUEN (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE A DESCRIPTION OF M PROCEDURES FOR CO
TOTAL PROJECT AREA (ACRES):       .62 AC         TOTAL AREA TO BE DISTURBED:       12,826 SF         VEIGHTED RUNOFF COEFFICIENT:       73.96         TAFTER CONSTRUCTION)       73.96         EXISTING CONDITION OF SOIL, VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         IAS NATIVE GRASSES, SHRUBS, AND TREES. SITE HAS APPROXIMATELY 90% VEGETATIVE COVER.	NARRATIVE - SEQUEN (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE ADESCRIPTION OF M PROCEDURES FOR CO DEBRIS. AND VEGETATION FR
OTAL PROJECT AREA (ACRES):62 AC         OTAL AREA TO BE DISTURBED: 12,826 SF         VEIGHTED RUNOFF COEFFICIENT: 73.96         AFTER CONSTRUCTION         ZOVER AND % OF VEGETATIVE SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE DOVER AND % OF VEGETATIVE COVER:	NARRATIVE – SEQUEN (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE A DESCRIPTION OF M PROCEDURES FOR CO DEBRIS. AND VEGETATION FF SEDIMENT AND POLLUTANT F
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OTAL PROJECT AREA (ACRES):       .62 AC         OTAL AREA TO BE DISTURBED:       12,826 SF         VEIGHTED RUNOFF COEFFICIENT:       73.96         XISTING CONDITION OF SOIL VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         XOVER AND % OF VEGETATIVE COVER:       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         XASTIVE GRASSES, SHRUBS, AND TREES. SITE HAS APPROXIMATELY 90% VEGETATIVE COVER.         XOUCENTRATED DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION:       WATER FLOWS NORTH TO SOUTH. TWO SHALLOW         XONCENTRATED DISCHARGE POINTS ALONG THE SOUTHERN SITE BORDER. REMAINDER SHEET FLOWS OFF SITE.	NARRATIVE – SEQUENA (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE AND RE-SEED ANY DISTURE DEBRIS. AND VEGETATION FF SEDIMENT AND VEGETATION FF SEDIMENT AND POLLUTANT FF AND MAINTAIN THE CONVEYA STRUCTURES.
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OTAL PROJECT AREA (ACRES):       .62 AC         TOTAL AREA TO BE DISTURBED:       12,826 SF         WEIGHTED RUNOFF COEFFICIENT:       73.96         SXISTING CONDITION OF SOIL, VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         IAS NATIVE GRASSES, SHRUBS, AND TREES. SITE HAS APPROXIMATELY 90% VEGETATIVE COVER.         DESCRIPTION OF WATER DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION:       WATER FLOWS NORTH TO SOUTH. TWO SHALLOW         DESCRIPTION OF WATERS:       EDWARDS AQUIFER	NARRATIVE - SEQUEN (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUNI 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE ADESCRIPTION OF M PROCEDURES FOR CO DEBRIS. AND VEGETATION FR SEDIMENT AND POLLUTANT FR SEDIMENT AND POLLUTANT FR AND MAINTAIN THE CONVEYA STRUCTURES. STORMWATER MANAGE RUNOFF COURSE TO FILTER
OTAL PROJECT AREA (ACRES):      62 AC         OTAL AREA TO BE DISTURBED:       12,826 SF         WEIGHTED RUNOFF COEFFICIENT:       73.96         SISTING CONDITION OF SOIL VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         SISTING CONDITION OF SOIL VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         SISTING CONDITION OF SOIL VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         IAS NATIVE GRASSES, SHRUBS, AND TREES. SITE HAS APPROXIMATELY 90% VEGETATIVE COVER.	NARRATIVE – SEQUENA (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE ADESCRIPTION OF M PROCEDURES FOR CC DEBRIS. AND VEGETATION FR SEDIMENT AND POLLUTANT F AND MAINTAIN THE CONVEYA STRUCTURES. STORMWATER MANAGE RUNOFF COURSE TO FILTER
OTAL PROJECT AREA (ACRES):62 AC         OTAL AREA TO BE DISTURBED: _12,826 SF         WEIGHTED RUNOFF COEFFICIENT:	NARRATIVE - SEQUENC (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUNI 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE ADESCRIPTION OF M PROCEDURES FOR CO DEBRIS. AND VEGETATION FR SEDIMENT AND POLLUTANT FR AND MAINTAIN THE CONVEYA STRUCTURES. STORMWATER MANAGE RUNOFF COURSE TO FILTER
OTAL PROJECT AREA (ACRES):      62 AC         OTAL AREA TO BE DISTURBED:       12,826 SF         WEIGHTED RUNOFF COEFFICIENT:      73.96         XISTING CONDITION OF SOIL, VEGETATIVE      SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         XISTING CONDITION OF SOIL, VEGETATIVE      SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         XISTING CONDITION OF SOIL, VEGETATIVE      SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         XISTING CONDITION OF WATER DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION:       WATER FLOWS NORTH TO SOUTH. TWO SHALLOW         XISTING OF WATER DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION:       WATER FLOWS NORTH TO SOUTH. TWO SHALLOW         XISTING OF RECEIVING WATERS:       EDWARDS AQUIFER         XIAME OF RECEIVI	NARRATIVE - SEQUENC (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE A DESCRIPTION OF M PROCEDURES FOR CO DEBRIS. AND VEGETATION FF SEDIMENT AND POLLUTANT F AND MAINTAIN THE CONVEYA STRUCTURES. STORMWATER MANAGE RUNOFF COURSE TO FILTER A DESCRIPTION OF P STORM WATER MANAGE
OTAL PROJECT AREA (ACRES):	NARRATIVE - SEQUENC (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE A DESCRIPTION OF M PROCEDURES FOR CO DEBRIS. AND VEGETATION FF SEDIMENT AND POLLUTANT FF SEDIMENT AND POLLUTANT FF AND MAINTAIN THE CONVEYA STRUCTURES. STORMWATER MANAGE RUNOFF COURSE TO FILTER A DESCRIPTION OF P STORM WATER MANAGE OPEN CHANNELS, WITH GEN
OTAL PROJECT AREA (ACRES):      62 AC         OTAL AREA TO BE DISTURBED:       12.826 SF         VEIGHTED RUNOFF COEFFICIENT       73.96         VEIGHTED RUNOFF COEFFICIENT       73.96         SXISTING CONDITION OF SOIL VEGETATIVE SOVER AND % OF VEGETATIVE COVER:       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP. SITE         IAS NATIVE GRASSES, SHRUBS, AND TREES. SITE HAS APPROXIMATELY 90% VEGETATIVE COVER.       SITE         DESCRIPTION OF WATER DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION:       WATER FLOWS NORTH TO SOUTH. TWO SHALLOW         VEGENERTIEN OF WATER DISCHARGE POINTS ALONG THE SOUTHERN SITE BORDER. REMAINDER SHEET FLOWS OFF SITE.         DENTIFY STORMWATER DISCHARGE POINTS: ON WEST SIDE OF SITE, WATER DISCHARGES JUST PAST THE EAST SIDE OF THE         VEGENIFY STORMWATER DISCHARGE POINTS: ON WEST SIDE OF SITE, WATER DISCHARGES JUST PAST THE EAST SIDE OF THE         VEGENIFY STORMWATER DISCHARGE POINTS: ON WEST SIDE OF SITE, WATER DISCHARGES JUST PAST THE EAST SIDE OF THE         VEGENIFY STORMWATER DISCHARGE POINTS: ON WEST SIDE OF SITE, WATER DISCHARGES JUST PAST THE EAST SIDE OF THE         VEGENIFY STORMWATER DISCHARGE POINTS: ON WEST SIDE OF SITE, WATER DISCHARGES JUST PAST THE EAST SIDE OF THE         VEGENIFY STORMWATER DISCHARGE POINTS: ON WEST SIDE OF SITE, WATER DISCHARGES PAST THE EXISTING SOUTH-EASTERN CONCRETE PAD.         ADESCRIPTION AND TIME FRAME FOR INSTALLATION OF         TABLEZATION PRACTICES IN CONJUNCTION WITH CONSTRUCTION:         EMPO'S INSTALLED PRIOR	NARRATIVE - SEQUEN (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUNI 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURE A DESCRIPTION OF M PROCEDURES FOR CC DEBRIS. AND VEGETATION FF SEDIMENT AND POLLUTANT F AND MAINTAIN THE CONVEYA STRUCTURES. STORMWATER MANAGE RUNOFF COURSE TO FILTER A DESCRIPTION OF PI STORM WATER MANAGE OPEN CHANNELS, WITH GEN TO SLOW DOWN STORMWATE
OTAL PROJECT AREA (ACRES):       -62 AC         OTAL AREA TO BE DISTURBED:       12,826 SF         WEIGHTED RUNOFF COEFFICIENT:       73.96         XISTING CONDITION OF SOIL, VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP, SITE         XISTING CONDITION OF SOIL, VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP, SITE         XISTING CONDITION OF SOIL, VEGETATIVE       SITE LIES ON CRAWFORD AND BEXAR SOILS AND ECKRANT-ROCK OUTCROP, SITE         XISTING CONDITION OF WATER DISCHARGED NOT ASSOCIATED WITH CONSTRUCTION:       WATER FLOWS NORTH TO SOUTH. TWO SHALLOW         RESCRIPTION OF WATER DISCHARGE POINTS ALONG THE SOUTHERN SITE BORDER. REMAINDER SHEET FLOWS OFF SITE.	NARRATIVE - SEQUENT (STORMWATER MANAGE THE ORDER OF ACTIVITIES WILL 3.CONSTRUCT UNDERGROUND 6. WHEN ALL CONSTRUCTION AND RE-SEED ANY DISTURB         A DESCRIPTION OF M PROCEDURES FOR CC         DEBRIS. AND VEGETATION FF SEDIMENT AND POLLUTANT F AND MAINTAIN THE CONVEYA STRUCTURES.         STORMWATER MANAGE RUNOFF COURSE TO FILTER         A DESCRIPTION OF PE STORM WATER MANAGE RUNOFF COURSE TO FILTER         OPEN CHANNELS, WITH GENT TO SLOW DOWN STORMWATER INFILTRATION INTO THE SOIL.

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EROSION AND SEDI	MENTATION CONTROLS	
PRACTICES:	OTHER EROSION AND SEDIMENTATION CONTROLS	
	MAINTENANCE:	
DING	ALL EROSION AND SEDIMENT CONTROLS WILL BE MAINTAINED IN GOOD WORKING OR IF A REPAIR IS NECESSARY, IT WILL BE DONE AT THE EARLIEST DATE POSSIBLE, BUT NO	DER. )
iting, sodding or seeding	SUFFICIENTLY TO PREVENT FURTHER DAMAGE FROM HEAVY EQUIPMENT. THE AREAS ADJACENT TO CREEKS AND DRAINAGEWAYS SHALL HAVE PRIORITY, FOLLOWED BY DEVICES PROTECTING STORM SEWER INLETS.	RED
	INSPECTION:	
	AN INSPECTION WILL BE PERFORMED BY THE CONTRACTOR EVERY 14 DAYS AS WELL /	AS AFTER E
	MAINTENANCE REPORT WILL BE MADE PER INSPECTION. BASED ON THE INSPECTION R BE CORRECTED BEFORE THE NEXT SCHEDULED INSPECTION.	ESULTS, THE
F NATURAL RESOURSES		
	WASTE MATERIALS:	
ON WHICH CONSTRUCTION ACTIVITY HAS CEASED TEMPORARILY SHALL BE STABILIZED WITHIN 14 DAYS UNLESS ACTIVITIES ARE ESUME AND DONE WITHIN 21 DAYS.	THE DUMPSTER WILL MEET ALL STATE AND LOCAL CITY SOLID WASTE MANAGEMENT RI ALL TRASH AND CONSTRUCTION DEBRIS FROM THE SITE WILL BE DEPOSITED IN THE THE DUMPSTER WILL BE EMPTIED AS NECESSARY OR AS REQUIRED BY LOCAL REGUL/ TRASH WILL BE HAULED TO A LOCAL DUMP. NO CONSTRUCTION MATERIALS WILL BE	EGULATIONS DUMPSTER. TION AND BURIED ON
ICES:		
	HAZARDOUS WASTE (INCLUDING SPILL REPORTING):	
ON BAGS	AT A MINIMUM, ANY PRODUCTS IN THE FOLLOWING CATEGORIES ARE CONSIDERED TO ACIDS FOR CLEANING MASONRY SURFACES, GASOLINE, MOTOR OIL, CLEANING SOLVENTS CHEMICAL ADDITIVES FOR SOIL STABILIZATION OR CONCRETE CURING COMPOUNDS AN EVENT OF A SPILL WHICH MAY BE HAZARDOUS AND MEETS REPORTING REQUIREMENT CENTER SHOULD BE CONTACTED AT 800-424-8802, AND ANY REQUIRED CHANGES MAD	Be hazarl 3, Asphalt F 10 Additives 8, The Natio 16 To The \$
CEPTOR OR PERIMETER DIKES	EVENT OF A LIFE THREATENING SPILL THE SAN ANTONIO FIRE DEPARTMENT SHOULD AS THE APPROPRIATE CITY INSPECTORS.	3E NOTIFIED
CEPTOR OR PERIMETER SWALES AND SWALE COMBINATIONS		
	SANITARY WASTE	
AT CONSTRUCTION EXIT (STABILIZED ENTRANCE)		
3		
DIMENT TRAP	OFFSITE EXCAVATION SOURCE LOCATION	
EDIMENT STRUCTURES		
OL STRUCTURES		
	OFFSITE FILL SOURCE LOCATION	
	OFFSITE VEHICLE TRACKING	
AGEMENT) ACTIVITIES: IL RE AS FOLLOWS: 1. INSTALL CONTROLLS 2.CLEAR, EXCAVATE AND EMBARK		
JND UTILITIES 4. CONSTRUCT CONCRETE PADS 5.CONSTRUCT DRIVES	LOADED HAUL TRUCKS TO BE COVERED WITH TARPAULIN	
ION IS COMPLETED AND THE SITE IS STABILIZED, REMOVE ALL TEMPORARY CONTROLS	EXCESS DIRT ON ROAD TO BE REMOVED DAILY	
IRBED AREAS.	STABILIZED CONSTRUCTION ENTRANCE.	
ΜΔΙΝΙΤΕΝΙΔΝΙΩΕ	OTHER:	
CONTROL MEASURES USED: VEGETATED SWALES: INSPECT & REMOVE SEDIMENT,	AND THEIR HABITAT. WHAT METHOD IS USED TO SATISFY THE ENDANGERED SPECIES REQUIREMENTS?	D ENDANG
FROM THE SWALES. MAINTAIN PROPER GRASS HEIGHT AND DENSITY TO PROMOTE		
T REMOVAL. REPAIR OR REPLACE DAMAGED OR ERODED SWALE SECTIONS. MONITOR		
EYANVE CAPACITY OF THE SWALES. ENSURE PROPER FUNCTION OF INLET & OUTLET	DEMADKQ.	
		-R THAT WI
CEMENT. CONSTRUCT VECETATED SWALES OR RUFFER STRIPS ALONG THE STORMWATER	AND CONTROL THE AMOUNT OF SEDIMENT THAT ENTERS RECEIVING WATERS. DISPOSA BE LOCATED IN ANY WETLAND, BODY OF WATER, STREAMBED OR FLOODPLAIN CONSTR	AL AREAS SI
	AND VEHICLE MAINTENANCE AREAS SHALL BE CONSTRUCTED BY THE CONTRACTOR IN THE RUNOFF OF POLLUTANTS. ALL WATERWAYS SHALL BE CLEARED AS SOON AS POS	A MANNER SIBLE OF TE
ER FOLLUTANTS AND REDUCE ERUSION.,	DURING CONSTRUCTION OPERATIONS THAT ARE NOT PART OF THE FINISHED WORK.	STRUCTION
PERMANENT		
NAGEMENI CONTROLS: PERMANENT VEGETATED SWALES ARE TYPICALLY ELONGATED,		
ENTLE SLOPES WITH TRAPEZUIDAL OR PARABOLIC CROSS SECTION. THE SWALES ARE DESIGNED		
ALLA LEVY, ALLOWING SEDIMENT AND FULLUTAINTS TO SETTLE UUT, WHILE PRUMUTING		PRE
UL. DUITEN JIMI JANE JIMATEURALET FLAVED AREAS OF NATIVE GRASSES DESIGNED TO		

R FLOW, ALLOWING SEDIMENT AND POLLUTANTS TO SETTLE OUT, WHILE PROMOTING INFILTRATION.

	BLACK & VEATCH
	Black & Veatch Corporation San Antonio, Texas
	Texas Registration No. F-258
	SUBCONSULTANT: PLANNING-ENGINEERING-PROJECT MANAGEMENT <b>PLANNING-ENGINEERING-PROJECT MANAGEMENT</b> <b>SANANTONIO</b> SAN ANTONIO PG01 McAllister Freeway #507, San Antonio TX 78216 (210) 314-3553 Texas Board of Professional Engineers Registration No. F-000554
EVERY 1/2" OR MORE AN INSPECTION AND E CONTROLS SHALL TER. 3. THE I SITE.	MARCOS MEDINA 93830 926/2023 THE SEAL APPEARING ON THIS DOCUMENT WAS AUTHORIZED BY MARCOS MEDINA, P.E. NO. 93830
DOUS: PAINTS, PRODUCTS, IS. IN THE IONAL RESPONSE SWPPP. IN THE	ON <b>SEPTEMBER 26, 2023</b> ALTERATION OF A SEALED DOCUMENT WITHOUT PROPER NOTIFICATION TO THE RESPONSIBLE ENGINEER IS AN OFFENSE UNDER THE TEXAS ENGINEERING PRACTICE ACT
	San Antonio Water System
	EMERGENCY PREPAREDNESS PLAN IMPLEMENTATION SAWS JOB NO. 22-6020 NATURAL GAS GENERATOR INSTALLATION CONTRACT
ABERED SPECIES	REVISIONS AND RECORD OF ISSUE         DESIGNED:       E. GUTIERREZ         DETAILED:       J.HERNANDEZ         CHECKED:       D. ALCORTA         APPROVED:       M. MEDINA         DATE:       9/26/2023         PROJECT NO.:       412782
JANUARY 2005	SITE - 05
CITY OF SAN ANTONIO CAPITAL IMPROVEMENTS MANAGEMENT SERVICES DEPARTMENT	CIVIL
STORM       WATER       POLLUTION         EVENTION       PLAN       (SWP3)       NARRATIVE         SUBMITTAL       PROJECT NO.:       DATE:	STORMWATER POLLUTION PREVENTION PLAN (SW3P) NARRATIVE
	C-05-107 OF
BAR IS 4" AT FULL SCALE) 0 1/2 1 2 3	4

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Hills PS Date Prepared: 9/26/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348. Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project:

Calculations from RG-348

Pages 3-27 to 3-30

Page 3-29 Equation 3.3:  $L_M = 27.2(A_N \times P)$ 

where:

 $L_{M \text{ TOTAL PROJECT}}$  = Required TSS removal resulting from the proposed development = 80% of increased load  $A_N$  = Net increase in impervious area for the project

P = Average annual precipitation, inches

Site Data: Determine Required Load Removal Based on the Entire Project	_	
County =	Bexar	
Total project area included in plan * =	0.62	acres
Predevelopment impervious area within the limits of the plan * =	0.19	acres
Total post-development impervious area within the limits of the plan* =	0.27	acres
Total post-development impervious cover fraction * =	0.44	
P =	30	inches
L <sub>M TOTAL PROJECT</sub> = * The values entered in these fields should be for the total project area. Number of drainage basins / outfalls areas leaving the plan area =	64 2	lbs.
2. Drainage Basin Parameters (This information should be provided for each	basin):	
Drainage Basin/Outfall Area No. =	1	

0.28 acres	0.28	Total drainage basin/outfall area =
0.07 acres	0.07	Predevelopment impervious area within drainage basin/outfall area =
0.13 acres	0.13	Post-development impervious area within drainage basin/outfall area =
0.48	0.48	Post-development impervious fraction within drainage basin/outfall area =
48 lbs.	48	L <sub>M THIS BASIN</sub> =

![](_page_103_Picture_14.jpeg)

#### 3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Vegetated	Filter Strips
Removal efficiency =	85	percent

Aqualogic Cartridge Filter Bioretention Contech StormFilter Constructed Wetland Extended Detention Grassy Swale Retention / Irrigation Sand Filter Stormceptor Vegetated Filter Strips Vortechs Wet Basin Wet Vault

#### 4. Calculate Maximum TSS Load Removed (L<sub>R</sub>) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7:  $L_R = (BMP \text{ efficiency}) \times P \times (A_1 \times 34.6 + A_P \times 0.54)$ 

where:

 $A_{C}$  = Total On-Site drainage area in the BMP catchment area

 $A_I$  = Impervious area proposed in the BMP catchment area

 $A_P$  = Pervious area remaining in the BMP catchment area

 $L_R$  = TSS Load removed from this catchment area by the proposed BMP

$A_{C} =$	0.28	acres
$A_I =$	0.13	acres
A <sub>P</sub> =	0.15	acres
L <sub>R</sub> =	120	lbs

#### 5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired  $L_{M THIS BASIN} = 48$  lbs.

F = 0.40

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.			Calculations from RG-348	Pages 3-34 to 3-36
Rainfall Depth = Post Development Runoff Coefficient = On-site Water Quality Volume =	= 0.29 0.35 = 103	inches cubic feet		
	Colouisticos		Decree 2, 20 to 2, 27	
	Calculations	5 IIOIII KG-348	Pages 3-36 10 3-37	
Off-site area draining to BMP =	0.00	acres		
Off-site Impervious cover draining to BMP =	• 0.00	acres		
Impervious fraction of off-site area =	= 0			
Off-site Runoff Coefficient =	= 0.00	aubia faat		
Off-site water Quality volume =	= 0	cubic feet		
Storage for Sediment =	= 21			
Total Capture Volume (required water quality volume(s) x 1.20) =	123	cubic feet		
The following sections are used to calculate the required water quality vo	olume(s) for t	he selected Bl	MP.	
The values for BMP Types not selected in cell C45 will show NA.			-	
7. Retention/Irrigation System	Designed as	s Required in R	G-348 Pages 3-4	2 to 3-46
Required Water Quality Volume for retention basin =	- NA	cubic feet		
Irrigation Area Calculations:				
Soil infiltration/permeability rate -	0.1	in/br	Enter determined permechility	virate or assumed value of 0.1
Irrigation area =	- 0.1	square feet	Enter determined permeability	
	NA	acres		
8. Extended Detention Basin System	Designed as	s Required in R	G-348 Pages 3-4	6 to 3-51
	Doolgilou a			
Required Water Quality Volume for extended detention basin =	- NA	cubic feet		
9. Filter area for Sand Filters	Designed as	s Required in R	G-348 Pages 3-5	8 to 3-63
<u></u>	<b>J</b>			
9A. Full Sedimentation and Filtration System				
Water Quality Volume for sedimentation basin =	= NA	cubic feet		
Minimum filter basin area =	= NA	square feet		
Maximum sedimentation basin area = Minimum sedimentation basin area =	NA NA	square feet square feet	For minimum water depth of 2 For maximum water depth of 8	feet 3 feet

#### 9B. Partial Sedimentation and Filtration System

	Water Quality Volume for combined basins =	NA	cubic feet		
	Minimum filter basin area =	NA	square feet		
	Maximum sedimentation basin area = Minimum sedimentation basin area =	NA NA	square feet square feet	For minimum water For maximum water	depth of 2 feet depth of 8 feet
10. Bioretention	System	Designed as	Required in R	G-348	Pages 3-63 to 3-65
	Required Water Quality Volume for Bioretention Basin =	NA	cubic feet		
11. Wet Basins		Designed as	Required in R	G-348	Pages 3-66 to 3-71
	Required capacity of Permanent Pool = Required capacity at WQV Elevation =	NA NA	cubic feet cubic feet	Permanent Pool Ca Total Capacity shou plus a second WQV	pacity is 1.20 times the WQV Id be the Permanent Pool Capacity
12. Constructed	Wetlands	Designed as	Required in R	G-348	Pages 3-71 to 3-73
12. Constructed	Wetlands Required Water Quality Volume for Constructed Wetlands =	Designed as	Required in Ro	G-348	Pages 3-71 to 3-73
<u>12. Constructed</u>	<u>Wetlands</u> Required Water Quality Volume for Constructed Wetlands = <u>Cartridge System</u>	Designed as NA Designed as	Required in R cubic feet	G-348 G-348	Pages 3-71 to 3-73 Pages 3-74 to 3-78
12. Constructed	<u>Wetlands</u> Required Water Quality Volume for Constructed Wetlands = <u>Cartridge System</u> al Guidance Manual (RG-348) does not exempt the required	Designed as NA Designed as d 20% increa	Required in R cubic feet Required in R se with mainte	G-348 G-348 enance contract with	Pages 3-71 to 3-73 Pages 3-74 to 3-78 AquaLogic <sup>™</sup> .
12. Constructed	Wetlands         Required Water Quality Volume for Constructed Wetlands =         Cartridge System         al Guidance Manual (RG-348) does not exempt the required         Required Sedimentation chamber capacity =         Filter canisters (FCs) to treat WQV =         Filter basin area (RIA <sub>F</sub> ) =	Designed as NA Designed as d 20% increa NA NA NA	Required in R cubic feet Required in R ase with mainter cubic feet cartridges square feet	G-348 G-348 enance contract with	Pages 3-71 to 3-73 Pages 3-74 to 3-78 AquaLogic <sup>™</sup> .
12. Constructed         13. AquaLogic <sup>TI</sup> ** 2005 Technic         14. Stormwater	<u>Wetlands</u> Required Water Quality Volume for Constructed Wetlands = <u>Cartridge System</u> al Guidance Manual (RG-348) does not exempt the required Required Sedimentation chamber capacity = Filter canisters (FCs) to treat WQV = Filter basin area (RIA <sub>F</sub> ) = Management StormFilter® by CONTECH	Designed as NA Designed as d 20% increa NA NA NA	Required in R cubic feet Required in R ase with mainter cubic feet cartridges square feet	G-348 G-348 enance contract with	Pages 3-71 to 3-73 Pages 3-74 to 3-78 AquaLogic <sup>™</sup> .

15. Grassy Swales		Designed as R	equired in RG-348	Pages 3-51 to 3-54
Design parameters for the swale:				
Drainage Area to be Tre Impervious C D Weighted	eated by the Swale = A = Cover in Drainage Area = Rainfall intensity = i = Swale Slope = Side Slope (z) = Pesign Water Depth = y = Runoff Coefficient = C =	0.00 0.00 1.1 0 0.00 #DIV/0!	acres acres in/hr ft/ft ft	
A <sub>CS</sub> = cross-sectiona R <sub>H</sub> = hydraulic radius of flow o n = Manning's	al area of flow in Swale = P <sub>w</sub> = Wetted Perimeter = cross-section = A <sub>CS</sub> /P <sub>w</sub> = s roughness coefficient =	#DIV/0! #DIV/0! #DIV/0! 0.2	sf feet feet	
15A. Using the Method Described in the RG-348				
Manning's Equation:	Q = $1.49 A_{CS} R_{H}^{2/3} S^{0.5}$ n			
	$b = \frac{0.134 \text{ x Q}}{\text{y}^{1.67} \text{ S}^{0.5}} - \text{zy} =$	#DIV/0!	feet	
	Q = CiA =	#DIV/0!	cfs	
To calculate the flow velocity in the swale:				
V (Velocity of Flow	v in the swale) = Q/A <sub>CS</sub> =	#DIV/0!	ft/sec	
To calculate the resulting swale length:				

L = Minimum Swale Length = V (ft/sec) \* 300 (sec) = #DIV/0! feet

If any of the resulting values do not meet the design requirement set forth in RG-348, the design parameters must be modified and the solver rerun.

#### THE SIZING REQUIREMENTS FOR THE FOLLOWING BMPs / LOAD REMOVALS ARE BASED UPON FLOW RATES - NOT CALCULATED WATER QUALITY VOLUMES
15B. Alternative Method using Excel Solver

Design Q = CiA =	#DIV/0!	cfs		
Manning's Equation Q = Swale Width=	0.00 6.00	cfs ft	Error 1 =	#DIV/0!
Instructions are provided to the right (green comments).				
Flow Velocity Minimum Length =	#DIV/0! #DIV/0!	ft/s ft		
Instructions are provided to the right (blue comments).				
Design Width =	0	ft		
Design Discharge =	0.00	cfs	Error 2 =	#DIV/0!
Design Depth =	0.33	ft		
Flow Velocity =	#DIV/0!	cfs		
Minimum Length =	#DIV/0!	ft		
resulting values do not meet the design requirement set forth	in RG-348_the	o des	sion parameters may be modifie	ed and the

If any of the resulting values do not meet the design requirement set forth in RG-348, the design parameters may be modified and the solver rerun. If any of the resulting values still do not meet the design requirement set forth in RG-348, widening the swale bottom value may not be possible.

16. Vegetated Filter Strips

Designed as Required in RG-348

Pages 3-55 to 3-57

idth occu

There are no calculations required for determining the load or size of vegetative filter strips. The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or

across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.

Texas Commission on Environmental Quality

TSS Removal Calculations 04-20-2009

Project Name: Hills PS Date Prepared: 9/18/2023

Additional information is provided for cells with a red triangle in the upper right corner. Place the cursor over the cell. Text shown in blue indicate location of instructions in the Technical Guidance Manual - RG-348. Characters shown in red are data entry fields.

Characters shown in black (Bold) are calculated fields. Changes to these fields will remove the equations used in the spreadsheet.

1. The Required Load Reduction for the total project:

Calculations from RG-348

Pages 3-27 to 3-30

Page 3-29 Equation 3.3:  $L_M = 27.2(A_N \times P)$ 

where:

 $L_{M TOTAL PROJECT}$  = Required TSS removal resulting from the proposed development = 80% of increased load  $A_N$  = Net increase in impervious area for the project

P = Average annual precipitation, inches

0.40 16

L<sub>M THIS BASIN</sub> =

lbs.

Site Data: Determine Required Load Removal Based on the Entire Project		
County =	Bexar	
Total project area included in plan * =	0.62	acres
Predevelopment impervious area within the limits of the plan * =	0.19	acres
Total post-development impervious area within the limits of the plan* =	0.27	acres
Total post-development impervious cover fraction * =	0.44	
P =	30	inches
	64	lha
►M TOTAL PROJECT =	64	IDS.
* The values entered in these fields should be for the total project area.		
Number of drainage basins / outfalls areas leaving the plan area =	2	
2. Drainage Basin Parameters (This information should be provided for each	n basin):	
Drainage Basin/Outfall Area No. =	2	
Total drainage basin/outfall area =	0.34	acres
Predevelopment impervious area within drainage basin/outfall area =	0.12	acres
Post-development impervious area within drainage basin/outfall area =	0.14	acres

Post-development impervious fraction within drainage basin/outfall area =



#### 3. Indicate the proposed BMP Code for this basin.

Proposed BMP =	Vegetated	Filter Strips
Removal efficiency =	85	percent

Aqualogic Cartridge Filter Bioretention Contech StormFilter Constructed Wetland Extended Detention Grassy Swale Retention / Irrigation Sand Filter Stormceptor Vegetated Filter Strips Vortechs Wet Basin Wet Vault

#### 4. Calculate Maximum TSS Load Removed (L<sub>R</sub>) for this Drainage Basin by the selected BMP Type.

RG-348 Page 3-33 Equation 3.7:  $L_R = (BMP \text{ efficiency}) \times P \times (A_I \times 34.6 + A_P \times 0.54)$ 

where:

 $A_{C}$  = Total On-Site drainage area in the BMP catchment area

 $A_I$  = Impervious area proposed in the BMP catchment area

 $A_P$  = Pervious area remaining in the BMP catchment area

 $L_R$  = TSS Load removed from this catchment area by the proposed BMP

$A_{C} =$	0.34	acres
$A_1 =$	0.14	acres
A <sub>P</sub> =	0.20	acres
L <sub>R</sub> =	124	lbs

#### 5. Calculate Fraction of Annual Runoff to Treat the drainage basin / outfall area

Desired  $L_{M THIS BASIN} = 64$  lbs.

F = 0.52

6. Calculate Capture Volume required by the BMP Type for this drainage basin / outfall area.			Calculations from RG-348 Pages 3-34 to 3-36		
Rainfall Depth = Post Development Runoff Coefficient = On-site Water Quality Volume =	= 0.45 0.31 = 171	inches cubic feet			
	Calculations	s from RG-348	Pages 3-36 to 3-37		
Off-site area draining to BMP = Off-site Impervious cover draining to BMP = Impervious fraction of off-site area = Off-site Runoff Coefficient =	= 0.00 = 0.00 = 0 = 0.00	acres acres			
Off-site Water Quality Volume =	= 0	cubic feet			
Storage for Sediment = Total Capture Volume (required water quality volume(s) x 1.20) = The following sections are used to calculate the required water quality vo The values for BMP Types not selected in cell C45 will show NA. 7. Potontion/Irrigation System	= 34 = 205 blume(s) for t	cubic feet he selected B	MP.	12 to 2 46	
<u>r. Retention/initgation System</u>	Designed a		-340 Fayes 3-	42 10 5-40	
Required Water Quality Volume for retention basin =	= NA	CUDIC TEET			
Irrigation Area Calculations:					
Soil infiltration/permeability rate = Irrigation area =	= <mark>0.1</mark> = NA NA	in/hr square feet acres	Enter determined permeabilit	y rate or assumed value of 0.1	
8. Extended Detention Basin System	Designed as	s Required in R	G-348 Pages 3-	46 to 3-51	
Required Water Quality Volume for extended detention basin =	= NA	cubic feet			
9. Filter area for Sand Filters	Designed a	s Required in R	G-348 Pages 3-	58 to 3-63	
9A. Full Sedimentation and Filtration System					
Water Quality Volume for sedimentation basin =	= NA	cubic feet			
Minimum filter basin area =	= NA	square feet			
Maximum sedimentation basin area = Minimum sedimentation basin area =	= NA = NA	square feet square feet	For minimum water depth of For maximum water depth of	2 feet 8 feet	

#### 9B. Partial Sedimentation and Filtration System

	Water Quality Volume for combined basins =	NA	cubic feet		
	Minimum filter basin area =	NA	square feet		
	Maximum sedimentation basin area = Minimum sedimentation basin area =	NA NA	square feet square feet	For minimum water For maximum water	depth of 2 feet depth of 8 feet
10. Bioretention	System	Designed as	Required in R	G-348	Pages 3-63 to 3-65
	Required Water Quality Volume for Bioretention Basin =	NA	cubic feet		
11. Wet Basins		Designed as	Required in R	G-348	Pages 3-66 to 3-71
	Required capacity of Permanent Pool = Required capacity at WQV Elevation =	NA NA	cubic feet cubic feet	Permanent Pool Cap Total Capacity shou plus a second WQV	pacity is 1.20 times the WQV Id be the Permanent Pool Capacity
12. Constructed	Wetlands	Designed as	Required in R	G-348	Pages 3-71 to 3-73
12. Constructed	Wetlands Required Water Quality Volume for Constructed Wetlands =	Designed as	Required in R	G-348	Pages 3-71 to 3-73
<u>12. Constructed</u>	Wetlands Required Water Quality Volume for Constructed Wetlands = Cartridge System	Designed as NA Designed as	Required in R cubic feet	G-348 G-348	Pages 3-71 to 3-73 Pages 3-74 to 3-78
12. Constructed	<u>Wetlands</u> Required Water Quality Volume for Constructed Wetlands = <u>Cartridge System</u> al Guidance Manual (RG-348) does not exempt the required	Designed as NA Designed as d 20% increa	Required in R cubic feet Required in R se with mainte	G-348 G-348 enance contract with	Pages 3-71 to 3-73 Pages 3-74 to 3-78 AquaLogic <sup>™</sup> .
12. Constructed	Wetlands Required Water Quality Volume for Constructed Wetlands = Cartridge System al Guidance Manual (RG-348) does not exempt the required Required Sedimentation chamber capacity = Filter canisters (FCs) to treat WQV = Filter basin area (RIA <sub>F</sub> ) =	Designed as NA Designed as d 20% increa NA NA NA	Required in R cubic feet Required in R ase with mainter cubic feet cartridges square feet	G-348 G-348 enance contract with	Pages 3-71 to 3-73 Pages 3-74 to 3-78 AquaLogic <sup>™</sup> .
12. Constructed         13. AquaLogic <sup>TI</sup> ** 2005 Technic         14. Stormwater	Wetlands         Required Water Quality Volume for Constructed Wetlands =         Cartridge System         al Guidance Manual (RG-348) does not exempt the required         Required Sedimentation chamber capacity =         Filter canisters (FCs) to treat WQV =         Filter basin area (RIA <sub>F</sub> ) =         Management StormFilter® by CONTECH	Designed as NA Designed as d 20% increa NA NA NA	Required in Ro cubic feet Required in Ro ase with mainto cubic feet cartridges square feet	G-348 G-348 enance contract with	Pages 3-71 to 3-73 Pages 3-74 to 3-78 AquaLogic <sup>™</sup> .

15. Grassy Swales		Designed as R	equired in RG-348	Pages 3-51 to 3-54
Design parameters for the swale:				
Drainage Area to be Tre Impervious C D Weighted	eated by the Swale = A = Cover in Drainage Area = Rainfall intensity = i = Swale Slope = Side Slope (z) = esign Water Depth = y = Runoff Coefficient = C =	0.00 0.00 1.1 0 0 0.00 #DIV/0!	acres acres in/hr ft/ft ft	
A <sub>CS</sub> = cross-sectiona R <sub>H</sub> = hydraulic radius of flow o n = Manning's	al area of flow in Swale = P <sub>w</sub> = Wetted Perimeter = cross-section = A <sub>CS</sub> /P <sub>w</sub> = s roughness coefficient =	#DIV/0! #DIV/0! #DIV/0! 0.2	sf feet feet	
15A. Using the Method Described in the RG-348				
Manning's Equation:	Q = $1.49 A_{CS} R_{H}^{2/3} S^{0.5}$ n			
	$b = \frac{0.134 \text{ x Q}}{\text{y}^{1.67} \text{ S}^{0.5}} - \text{zy} =$	#DIV/0!	feet	
	Q = CiA =	#DIV/0!	cfs	
To calculate the flow velocity in the swale:				
V (Velocity of Flow	v in the swale) = Q/A <sub>CS</sub> =	#DIV/0!	ft/sec	
To calculate the resulting swale length:				

L = Minimum Swale Length = V (ft/sec) \* 300 (sec) = #DIV/0! feet

If any of the resulting values do not meet the design requirement set forth in RG-348, the design parameters must be modified and the solver rerun.

#### THE SIZING REQUIREMENTS FOR THE FOLLOWING BMPs / LOAD REMOVALS ARE BASED UPON FLOW RATES - NOT CALCULATED WATER QUALITY VOLUMES

15B. Alternative Method using Excel Solver

Design Q = CiA =	#DIV/0!	cfs		
Manning's Equation Q = Swale Width=	0.00 6.00	cfs ft	Error 1 =	#DIV/0!
Instructions are provided to the right (green comments).				
Flow Velocity Minimum Length =	#DIV/0! #DIV/0!	ft/s ft		
Instructions are provided to the right (blue comments).				
Design Width =	0	ft		
Design Discharge =	0.00	cfs	Error 2 =	#DIV/0!
Design Depth =	0.33	ft		
Flow Velocity =	#DIV/0!	cfs		
Minimum Length =	#DIV/0!	ft		
resulting values do not meet the design requirement set forth	in RG-348_the	o des	sion parameters may be modifie	ed and the

If any of the resulting values do not meet the design requirement set forth in RG-348, the design parameters may be modified and the solver rerun. If any of the resulting values still do not meet the design requirement set forth in RG-348, widening the swale bottom value may not be possible.

16. Vegetated Filter Strips

Designed as Required in RG-348

Pages 3-55 to 3-57

idth occu

There are no calculations required for determining the load or size of vegetative filter strips. The 80% removal is provided when the contributing drainage area does not exceed 72 feet (direction of flow) and the sheet flow leaving the impervious cover is directed across 15 feet of engineered filter strips with maximum slope of 20% or

across 50 feet of natural vegetation with a maximum slope of 10%. There can be a break in grade as long as no slope exceeds 20%.

If vegetative filter strips are proposed for an interim permanent BMP, they may be sized as described on Page 3-56 of RG-348.

# Attachment G – Inspection, Maintenance, Repair and Retrofit Plan

### Attachment G – Inspection, Maintenance, Repair, And Retrofit Plan

The San Antonio Water System (SAWS) regularly has the property maintained by a landscaping service. Since the vegetative filter strip is grass vegetation, the BMP's will be mowed regularly with the rest of the site during routine landscape maintenance activities. Additional guidance can be obtained from TCEQ's Technical Guidance Manual (TGM) RG-348 (2005) Section 3.5.

The following general maintenance guidelines for the BMP's are taken from TCEQ RG-348. Once the vegetated is well established, little additional maintenance is generally necessary.

Activity	Schedule
<ul> <li>Mow strips to a height of 3" using a mulching mower (or removal of clippings). Limit vegetation height to 18 inches maximum. Grass clippings and brush debris should not be deposited on vegetated filter strip areas. Regular mowing should also include weed control practices; however, herbicide use should be kept to a minimum.</li> <li>Inspect for and remove pests.</li> </ul>	As needed (frequently seasonally, twice per year minimum)
<ul> <li>Inspect for erosion or damage to vegetation. Strip should be checked for uniformity of grass cover, debris and litter, and areas of sediment accumulation.</li> <li>Replant and/or restore bare spots and areas of erosion identified during inspection.</li> </ul>	Semi-annual (more frequent the first few years)
<ul> <li>Remove trash and other accumulated debris.</li> <li>Remove sediment buildup along the upstream boundary of the strip preventing uniform overland flow. Excess sediment should be removed by hand or with flat-bottomed shovels.</li> </ul>	4 times per year minimum
- CHAG	9-26-2023

Signature

Date

Saqib Shirazi

others

Printed Name



Permanent Stormwater Section (TCEQ-0600)

# Attachment H – Pilot-Scale Field Testing Plan

NOT USED

# Attachment I – Measures for Minimizing Surface Stream Contamination

### Attachment I – Measures Minimizing Surface Stream Contamination

To ensure that surface stream contamination is avoided or minimized during construction, the SWPPP will be followed. There will be an effort to reduce stream flashing. This will help to prevent erosion which can lead to water quality degradation. Additionally, the silt fence used as shown on the SWPPP will ensure that the water entering the stream is not impacted adversely. Overall, these measures are designed to safeguard the environment and ensure that the stream remains healthy and free from contamination.

# Agent Authorization Form (TCEQ-0599)

	Agent Authorization Form For Required Signature Edwards Aquifer Protection Program Relating to 30 TAC Chapter 213 Effective June 1, 1999	
I	Dr. Saqib Shirazi, P.E., PMP	
	Print Name	
	Manager – Operations Support Engineering Title - Owner/President/Other	
of	San Antonio Water System	,
	Corporation/Partnership/Entity Name	
have authorized	Mark Medina, P.E. Print Name of Agent/Engineer	
of	Moreno Cardenas 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 those submitting an application 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.
- 5. No person shall commence any regulated activity on the Edwards Aquifer Recharge Zone, Contributing Zone or Transition Zone until the appropriate application for the activity has been filed with and approved by the Executive Director.

SIGNATURE PAGE:

Applicant's Signature

9-12-2023

Date

THE STATE OF TEXAS §

County of BEXATE §

BEFORE ME, the undersigned authority, on this day personally appeared <u>stage</u> <u>states</u> 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 12. day of September 2023



NOTARY PUBLIC

Gilbert TC. J; MCHEB Typed or Printed Name of Notary

MY COMMISSION EXPIRES: AFIZIL 29, 2023

# Fee Application Form (TCEQ-0574)

## **Application Fee Form**

Texas Commission on Environmental Quality         Name of Proposed Regulated Entity: Hills Pump Station         Regulated Entity Location: San Antonio         Name of Customer: San Antonio Water System         Contact Person: Dr. Saqib Shizari, P.E., PMP       Phone: (210) 233-3840         Customer Reference Number (if issued):CN 600529069         Regulated Entity Reference Number (if issued):RN				
	□ <u> </u>			
San Antonio Regional Office (3362	) I ravis		illiamson	
Bexar Comal Application fees must be paid by ch	Medina Kinney neck, certified check, o	Dr money order, payab	valde le to the <b>Texas</b>	
form must be submitted with your	r fee payment. This p	ayment is being submi	itted to:	
<ul> <li>Austin Regional Office</li> <li>Mailed to: TCEQ - Cashier</li> <li>Revenues Section</li> <li>Mail Code 214</li> <li>P.O. Box 13088</li> <li>Austin, TX 78711-3088</li> <li>Ste Location (Check All That Apply):</li> </ul>				
Type of Plan		Size	Fee Due	
Water Pollution Abatement Plan, Contributing Zone Plan: One Single Family Residential Dwelling		Acres	\$	
Water Pollution Abatement Plan, Contributing Zone Plan: Multiple Single Family Residential and Parks		Acres	\$	
Water Pollution Abatement Plan, Contributing Zone		0.62 Acres	\$ 3,000	
Sewage Collection System		L.F.	\$	
Lift Stations without sewer lines		Acres	\$	
Underground or Aboveground Stor	age Tank Facility	Tanks	\$	
Piping System(s)(only)		Each	\$	
Exception		Each	\$	
Extension of Time		Each	\$	

Signature:

FAthfus)

Date: September 2023

## **Application Fee Schedule**

Texas Commission on Environmental Quality

Edwards Aquifer Protection Program 30 TAC Chapter 213 (effective 05/01/2008)

## Water Pollution Abatement Plans and Modifications

## Contributing Zone Plans and Modifications

	Project Area in	
Project	Acres	Fee
One Single Family Residential Dwelling	< 5	\$650
Multiple Single Family Residential and Parks	< 5	\$1,500
	5 < 10	\$3,000
	10 < 40	\$4,000
	40 < 100	\$6,500
	100 < 500	\$8,000
	≥ 500	\$10,000
Non-residential (Commercial, industrial, institutional,	< 1	\$3,000
multi-family residential, schools, and other sites	1 < 5	\$4,000
where regulated activities will occur)	5 < 10	\$5,000
	10 < 40	\$6,500
	40 < 100	\$8,000
	≥ 100	\$10,000

### **Organized Sewage Collection Systems and Modifications**

Project	Cost per Linear Foot	Minimum Fee- Maximum Fee	
Sewage Collection Systems	\$0.50	\$650 - \$6,500	

## 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	\$650	\$650 - \$6,500

### **Exception Requests**

Project	Fee
Exception Request	\$500

### Extension of Time Requests

Project	Fee
Extension of Time Request	\$150

## **Core Data Form (TCEQ-10400)**



## **TCEQ Core Data Form**

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

### **SECTION I: General Information**

1. Reason for Submission (If other is checked please describe in space provided.)													
New Permit, Registration or Authorization (Core Data Form should be submitted with the program application.)													
Image: Core Data Form should be submitted with the renewal form)     Image: Other													
2. Customer Reference Number (if issued)				Follow this link to searc		arch	3. Regulated Entity Reference Number (if issued)						
CN 600529069				for CN Ce	<u>l or RN</u> entral Re	numbe egistry*	<u>ers in</u> 	RN					
SECTION II: Customer Information													
4. General Cu	ustomer li	nformation	5. Effective	Date f	or Cus	stome	r Infor	matior	l Upda	t <b>es</b> (mm/dd/yyyy)			
New Cust	omer Legal Nar	ne (Verifiable wit	h the Texas S	Update Secretar	to Cus v of Sta	stomer ate or	Inform Texas	nation Comp	roller o	Change in	Regulated E	Entity Ownership	
The Custor	mer Nan	ne submitted	here mav	be up	dated	auto	matic		baseo	on what is cu	rrent and	active with the	ļ
Texas Seci	retary of	f State (SOS)	or Texas C	compti	roller	of P	ublic	Ассо	unts	(CPA).			
6. Customer	Legal Nar	me (If an individual	l, print last nam	e first: e	g: Doe,	John)		<u>If</u>	new Ci	istomer, enter prev	ious Custome	er below:	
San Anton	San Antonio Water System												
7. TX SOS/CF	PA Filing	Number	8. TX State	Tax ID (11 digits)			9	. Feder	al Tax ID (9 digits)	10. DUNS Number (if applicable)			
L			1742632	.5308				7	742632530				
11. Type of C	ustomer:	Corporati	on	🔲 Individual 🛛 🖓 Partnership: 🗔 🗘				artnership: 🗌 Gene	neral 🔲 Limited				
Government:	🛛 City 🔲 (	County 🔲 Federal 🗌	] State 🛛 Othe	r		Sole F	Propriet	torship		] Other:			
12. Number o	of Employ	ees					1	13. Independently Owned and Operated?					
0-20	] 21-100	101-250	251-500	) 🛛 501 and higher					⊠ Yes □ No				_
14. Customer	r Role (Pro	oposed or Actual) -	- as it relates to	the Reg	gulated	Entity I	isted or	n this fo	rm. Plea	ise check one of the	following		
⊠Owner		Operat	or		0	wner 8	& Opera	ator					
	nal Licens	ee 🗌 Respo	nsible Party			oluntar	y Clea	nup Ap	plicant	Other:			
15. Mailing Address:	2088 U	J.S. Hwy 281	l North										
	CitySan AntonioStateTX					ZIP         78212         ZIP + 4         3106				3106			
16. Country Mailing Information (if outside USA) 17. E-Mail Address (if applicable)													
18. Telephon	e Numbe	r		19. Ex	). Extension or Code					20. Fax Number (if applicable)			
(210)23	3-3410									( )	-		

## **SECTION III: Regulated Entity Information**

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

 New Regulated Entity
 Update to Regulated Entity Name

 Update to Regulated Entity Information

The Regulated Entity Name submitted may be updated in order to meet TCEQ Agency Data Standards (removal of organizational endings such as Inc, LP, or LLC).

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

Hills Pump Station

22 Street Address of	15659	Babcock Rd								
the Regulated Entity:		1		_		1	1		- 1	
(No PO Boxes)	City	San Antonio	State	ТΣ	Κ	ZIP	78255		ZIP + 4	
24. County	Bexar									
Enter Physical Location Description if no street address is provided.										
25. Description to Physical Location:	Project is located approx. 0.53 miles north of the intersection of 1604 E and Babcock Rd.									
26. Nearest City							State		Nea	rest ZIP Code
San Antonio							TX		782	255
27. Latitude (N) In Decim	nal:	29.594715			28. L	ongitude (V	V) In De	cimal:	-98.6300	04
Degrees	Minutes	5	Seconds		Degree	es	١	linutes		Seconds
29		35	41			98		3	7	48
29. Primary SIC Code (4 digits)       30. Secondary SIC Code (4 digits)       31. Primary NAICS Code (5 or 6 digits)       32. Secondary NAICS Code (5 or 6 digits)								ICS Code		
4941	4941 221310									
33. What is the Primary I	Business o	of this entity?	Do not repeat the SIC	or NAI	CS desc	cription.)				
Water Utility	-									
					P.O.	Box 2449				
34. Mailing										
Address:	State		ГХ	TX ZIP 78298			7IP + 4			
35 F-Mail Address							-			
36. Telepho	one Numbe	r	37. Extensio	on or (	Code		38	. Fax Nun	nber <i>(if appl</i>	icable)
( )	-							(	) -	
39. TCEQ Programs and ID form. See the Core Data Form in	Numbers	Check all Programs or additional guidan	and write in the perce.	rmits/r	egistrat	tion numbers	that will b	e affected l	by the updates	submitted on this
Dam Safety	Distric	ts	Edwards Aqu	ifer		Emissions Inventory Air Industrial Hazardous Wa				I Hazardous Waste
Municipal Solid Waste	New S	Source Review Air	OSSF		Petroleum Storage Tank			PWS		
Sludge	Storm	Water	Title V Air						Used Oil	
Voluntary Cleanup	U Waste	Water	Wastewater A	\gricul	ture	Water F	Rights		Other:	

## **SECTION IV: Preparer Information**

40. Name:	Crista Cerd	a, E.I.T.		41. Title:	Engineer	
42. Tele	phone Number	43. Ext./Code	44. Fax Number	45. E-Mail Address		
(210)	314-3553		( ) -	ccerda@	morenocardenas.com	

## **SECTION V: Authorized Signature**

**46.** By my signature below, I certify, to the best of my knowledge, that the information provided in this form is true and complete, and that I have signature authority to submit this form on behalf of the entity specified in Section II, Field 6 and/or as required for the updates to the ID numbers identified in field 39.

Company:	Moreno Cardenas Inc.	Job Title:	Engineer			
Name (In Print):	Mark Medina, P.E.	Phone:	( 210 ) 314- <b>3553</b>			
Signature:	leun lilun			Date:	9/9/2023	