

DEPARTMENT OF THE ARMY GALVESTON DISTRICT, CORPS OF ENGINEERS P. O. BOX 1229 GALVESTON TX 77553-1229

SEP 1 6 2010

Policy Analysis Section

SUBJECT: SWG-2007-00768; STP Nuclear Operating Company, Permit Determination

Mr. Scott Head Manager, Regulatory Affairs South Texas Project, Units 3 & 4 4000 Avenue F, Suite A Bay City, Texas 77414

Dear Mr. Head:

By letter dated June 10, 2010, the U.S. Army Corps of Engineers (Corps) requested a stream functional assessment, such as the Unified Stream Methodology, be conducted on the relatively permanent waters to determine if compensatory mitigation is required. Enclosed you will find a copy of the Unified Stream Methodology assessment conducted by the Corps on the relatively permanent waters located at the South Texas Project south of Bay City, along the Colorado River, in Matagorda County, Texas.

The stream functional assessment concluded that the proposed impacts to the 265 linear feet of relatively permanent waters is a moderate to severe impact that may require up to 136 debits of compensatory mitigation. Compensatory mitigation may include on-site permittee responsible mitigation, off-site permittee responsible mitigation, Mill Creek Mitigation Bank or a combination of all three. In order to evaluate a proposed mitigation plan, a plan in accordance with 33 CFR 332.4(c) must be submitted for review.

We are ready to assist you in whatever way possible. We can even arrange a meeting between you and the concerned parties if that is your desire. Please call Jayson Hudson at 409-766-3108 if you need help.

Sincerely,

Casey Cutler Chief, Policy Analysis Section

Enclosure

Copy Furnished w/encl:

U.S. Nuclear Regulatory Commission, c/o Ms. Jessie Muir M/S T7-E30, 11555 Rockville Pike, Rockville, MD 20852

MEMORANDUM FOR THE FILE



SUBJECT: SWG-2007-00768; South Texas Project, Bay City, Matagorda County, Texas

- 1. A stream assessment, in accordance with the Unified Stream Methodology, was conducted to assist in the determination of the current condition and function of several unnamed relatively permanent waters located at the South Texas Project Nuclear Power Plant located southwest of Bay City, Matagorda County, Texas
- 2. A desk review was completed on 13 July 2010. The desk review consisted of an examination of the following information:
- 1952 (1972 photo-revised) U.S.G.S Blessing SE topographic quadrangle
- 1943, 1965, 2009 aerial photography
- 3. A review of the historical aerials and topographic map indicate that no natural stream existed prior to the construction of the nuclear power plant in the late 1970s. The Corps exerted jurisdiction as a water of the United States over the manmade conveyances due to their relatively permanent flow of water. The applicant is proposing to install culverts in 6 waters, 3 of which are new work and three of which are expansions to existing culverts.
- 4. A site visit was conducted on 14 July 2010. During the site visit, the Unified Stream Methodology was utilized to determine the condition of the waters. The waters were divided into 5 stream assessment reaches (SAR) based on the location of the crossings. The waters were characterized in the field as an intermittent to perennial.

Three SARs, SAR A, B and F are all new work and will result in impacts to 80 linear feet of waters. These SARs were assessed with an impact factor of 1.0, or severe, as a result of the new impacts. SARs A and B were characterized as having: severe channel conditions due to their vertical banks, incised flow located well below rooting depth and riprap banks; high poor buffer due to the mowing and maintenance poor in-stream habitat since none of the habitat types were present; and a severe channel alteration because of the straight, trapezoid channel alignment. SAR F scored similarly, with the exception of having a high marginal riparian buffer score resulting from the lack of mowing and subsequent presence of a scrub/shrub story.

SARs C and D are areas where culverts currently exist, but will need to be enlarged to accommodate the new haul roads. Because of the existing impacts to these waters, an impact factor of 0.5 was assessed. SARs C and D were characterized as: having severe channel conditions due to their vertical banks, incised flow located well below rooting depth and riprap banks; and a severe channel alteration because of the straight, trapezoid channel alignment. SAR C had a mixed score buffer resulting from the presence of maintained area and a road present within the buffer. SAR F had a a high poor buffer due to the mowing and maintenance; poor instream habitat since none of the habitat types were present

5. Based on the Unified Stream Methodology, SARs A, B and D scored a Reach Condition Index (RCI) of 0.52 out of a maximum of 1.5; SAR C scored an RCI of 0.51, and SAR F scored an RCI of 0.57. Based on the current proposed project of the construction of culverted crossings,



the Unified Stream Methodology's Impact Factor (IF) score for SARs A, B and F was determined to be a Severe (which is equal to a 1) and SARs C and D were determined to be Moderate (which is equal to 0.5). This IF score, when combined with the RCI and linear feet of impact, results in a need to mitigate for 136 debits.

Jayson M. Hudson

Regulatory Project Manager

Policy Analysis Section



STP Unit 3 & 4 -Culvert Placement and Barge Slip Expansion Proposed Project Impacts SWG-2007-786

Block 22

Culvert Impacts

Culvert	Impact Type	JD Width of Stream (ft) ¹	Width of Proposed Culvert (ft) ²	Existing Culvert Linear (ft) ³	Total Stream Impact (sq ft) ⁴	New Impact Linear (ft) ⁵	New Stream Impact (sq ft) ⁶	Amount of Dredge/Fill Material (cu yd) ⁷
Α	New	21	80	0	1,680	80	1,680	62
В	New	6	80	0	480	80	480	17
С	Replace	13	80	7 5	1,040	5	65	38
D	Replace	20	80	60	1,600	20	400	59
E	Replace	11	80	80	880	0	0	32
F	New	21	80	0	1,680	80	1,680	62
G	None	0	80	0	0	0	0	
					7,360 ~0.17 ac	265	4,305 ~0.10 ac	

¹ Width of Bed and Bank as measured in stream (jurisdictional width) - measured in field

Barge Slip Impacts

Existing Length (ft)	Existing Width (ft)	Additional Width (ft)	New Width (ft)	Total Barge Slip Area (sq ft)	Barge Slip New Impacts (sq ft)	Amount of Dredge/Fill Material (cu yd)
500	60	20	80	40,000	10,000	11,851
200	60	20	80	16,000	4,000	8,296
		-		56,000	14,000	

56,000 14,000 ~1.29 ac ~0.32 ac

² All road beds expected to be 80 ft wide - engineering design

³ Linear ft of existing culverts (old impacts) - measured in field

⁴ Total stream area impacted by culverts (old and new)

⁵ Linear ft of new culverts in JD areas (new impacts)

⁶ Surface area of new culverts in JD areas (total new impacts)

⁷ Cubic yards is based on a 1 ft excavation

Stream Assessment Form (Form 1) Unified Stream Methodology for use in Virginia For use in wadeable channels classified as intermittent or perennial Impact/SAR Impact Cowardin **Project Name** HUC SAR# Locality Project # length Factor Class. 14 July 10 1 80 12 A South Texas Project Units 3&4 STP Riverine WG-2007-0076 Steam Name and Information Name(s) of Evaluator(s) **Unnamed Relatively Permanent Water** 1. Channel Condition: Assess the cross-section of the stream and prevailing condition (erosion, aggradation) Severe Marginal Poor Optimal Suboptimal vertical/lateral instability. Severe incision, flow contained within the Slightly incised, few areas of active rosion or unprotected banks. Majority Often incised, but less than Severe or Poor. Banks more stable than Severe Vertically/laterally unstable. Likely to iden further. Majority of both banks re near vertical. Erosion present on ery little incision or active erosion: 8 Channel of banks are stable (60-80%). banks. Streambed below average 100% stable banks. Vegetative surface protection or natural rock egetative protection or natural rock Erosion may be present on 40-60% of rooting depth, majority of banks vertical/undercut. Vegetative Condition both banks. Vegetative protection on 40-60% of banks. Streambanks may 60-80% of banks. Vegetative prominent (60-80%) AND/OR protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the prominent (80-100%). AND/OR Depositional features contribute to otection present on less than 20% of able point bars/bankfull benches a present. Access to their original ertical or undercut. AND/OR 40stability. The bankfull and low flow channels are well defined. Stream banks, is not preventing erosion Obvious bank sloughing present 60% of stream is covered by stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability floodplain or fully developed wide sediment. Sediment may be temporary/transient, contribu likely has access to bankfull benche Erosion/raw banks on 80-100%. bankfull benches. Mid-channel bars, and transverse bars few. Transient AND/OR Aggrading channel. Greater than 80% of stream bed is covered by deposition, contributing to instability. My developed floodplains along portions of the reach. Transient diment covers 10-40% of the stream bility. Deposition that contribute stability, may be forming/present. AND/OR V-shaped channels have sediment deposition covers less than AND/OR V-shaped channels have vegetative protection is present on > 40% of the banks and stable sedimen 10% of bottom Multiple thread channels and/or CI vegetative protection on > 40% of the banks and depositional features which subterranean flow deposition is absent 1.6 1.0 2 2.4 3 Score Cobble riprap along entirety of bank. Channel excavated,straightened, and uniform. Flow contained within banks and below surrounding root zone NOTES>> 2. RIPARIAN BUFFERS: Assess both bank's 100 foot riparian areas along the entire SAR. (rough measurements of length & width may be acceptable) **Conditional Category** NOTES>>Actively mowed and maintained Suboptimal Marginal Optimal on both sides. Cobble Low Marginal: High Poor: w Suboptimal Non-maintained riprap along much of the High Marginal: ense herbaceou Riparian areas and maintained Low Poor: Riparian areas buffer. with tree stratum Non-maintained vegetation, with tree stratum (dbh > 3 inches) areas, nurseries Impervious surfaces, mine (dbh > 3 inches) se herbaceou no-till cropland: esent, with 30% to 60% tree cking shrub and spoil lands, enuded surface Tree stratum (dbh > 3 inches) preser present, with 30% Riparian either a shrub tree stratum, hay with > 60% tree canopy cover. Wetlands located within the riparian to 60% tree mopy cover ar pasture, sparsely anopy cover and a maintained layer or a tree roduction, pond vegetated non-maintained area, recently seeded and stabilized, or **Buffers** row crops, active open water. If present, tree eed lots trails or containing both inches) present understory. herbaceous and stratum (dbh >3 Recent cutover with <30% tree shrub layers or a conditions. (dense vegetation). inches) present with <30% tree canopy cover other comparable condition. non-maintained understory. canopy cover wit maintained High Low High Low High Low Condition 0.5 0.6 1.1 0.85 0.75 1.2 1. Delineate riparian areas along each stream bank into Condition Categories and Condition Scores using the Ensure the sums Determine square footage for each by measuring or estimating length and width. Calculators are provided for you of % Riparian Blocks equal 100 Enter the % Riparian Area and Score for each riparian category in the blocks below. 100% 100% % Riparian Area> Right Bank 0.6 Score > CI= (Sum % RA * Scores*0.01)/2 100% Rt Bank CI > CI 100% % Riparian Area> Left Bank Lt Bank Cl > 0.60 0.60 0.6 3. INSTREAM HABITAT: Varied substrate sizes, water velocity and depths; woody and leafy debris; stable substrate; low embeddeness; shade; NOTES>> No shade, woody debris, root mats, indercut banks; root mats; SAV; riffle poole complexes, stable features Conditional Category riffle/pool complexes Poor Optimal Suboptimal Marginal present. Some SAV. Instream Habitat/ Habitat elements listed above are Stable habitat elements are typically lacking or are unstable. Habitat Available present in 30-50% of the reach and labitat elements are typically prese present in 10-30% of the reach and are adequate for maintenance of ents are typically present in less in greater than 50% of the reach. Cover than 10% of the reach. populations. populations. CI

0.9

1.2

0.5

0.50

Score

1.5

Channel Alteration Character or tunal SCORE	should be rounded to 2 decimal places.	Mir Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.3 CONDITION III	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.1 NDEX and \$	al Category Mod 40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If atroam has been channelized, normal stable stream meander pattern has not 0.9 STREAM CO	erate 60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not 10.7	Greater than 80% of by any of the channe in the parameter g 80% of banks sh riprap, or	of reach is disrupted reach is disrupted reach is disrupted uitedlines AND/OR ored with gabion, or cernent. S REACH THE REACH RC COMPENSAT	CONDITION IN	drainage a straight th cobble oth sides	0.5
Channel Alteration Channel Alteration Channel Channel Channel Alteration Channel Chann	ALTERATION Stream cross I piles, constrictions, livestock Negligible thannelization, dredging, alteration, r hardening absent. Stream has an naîtered pattern or has naturalized. 1.5 REACH C should be rounded to 2 decimal places. OS:	Mir Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.3 CONDITION III	Conditions or 20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.1 NDEX and S	al Category Mod 40 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not 0.9	erate 80 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not 0.7	Set of part of the parameter graph of the parameter graph of the channel in the parameter graph of the parameter g	of reach is disrupted nel alterations listed uidelines AND/OR ored with gabion, reement.	NOTES>>CI engineered ditch with a channel wit riprap on be	drainage a straight th cobble oth sides	0.5
Channel Alteration Charten una SCORE WOTE: The Cis and RCI sh	Negligible Negligible hannelization, dredging, alteration, r hardening absent. Stream has an nattered pattern or has naturalized. 1.5 REACH C should be rounded to 2 decimal places.	Mir Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.3 CONDITION III	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.1 NDEX and \$	al Category Mod 40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If atroam has been channelized, normal stable stream meander pattern has not 0.9 STREAM CO	erate 60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not 10.7	Greater than 80% of by any of the chann in the parameter g 80% of banks sh riprap, or	of reach is disrupted reach is disrupted reach is disrupted uitedlines AND/OR ored with gabion, or cernent. S REACH THE REACH RC COMPENSAT	engineered ditch with a channel wit riprap on be	drainage a straight th cobble oth sides	0,5
Channel Alteration Channel or I una SCORE	Negligible thannelization, dredging, alteration, r hardening absent. Stream has an nattered pattern or has naturalized. 1.5 REACH C should be rounded to 2 decimal places.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.3 CONDITION II	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	Mod 40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not 0.9	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not the channel stable stream of the channel stable stream meander pattern has not the channel of the	n greater than 80% of by any of the chain in the parameter g 80% of banks sh riprap, or	of reach is disrupted net alterations listed uidelines AND/OR cored with gabion, or cement. .5 IS REACH THE REACH RC COMPENSAT	CONDITION IN	straight th cobble oth sides NDEX (RCI) >> CI's)/5	0.5
SCORE OTE: The Cls and RCl sh	channelization, dredging, alteration, r hardening absent. Stream has an naltered pattern or has naturalized. 1.5 REACH C ahould be rounded to 2 decimal places.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.3 CONDITION II	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.1 NDEX and \$	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If at the channel stable stream meander pattern has not 0.9	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not the channel stable stream of the channel stable stream meander pattern has not the channel of the	n greater than 80% of by any of the chain in the parameter g 80% of banks sh riprap, or	of reach is disrupted net alterations listed uidelines AND/OR cored with gabion, or cement. .5 IS REACH THE REACH RC COMPENSAT	CONDITION IN	oth sides NDEX (RCI) >> CI's)/5	0.8
SCORE SCORE NOTE: The Cls and RCI sh	r hardening absent. Stream has an naitered pattern or has naturalized. 1.5 REACH C should be rounded to 2 decimal places.	the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.3 CONDITION II	stream reach is disrupted by any of the channel alterations listed in the parameter guidelines. 1.1 NDEX and S	is disrupted by any of the channel alterations listed in the parameter guidelines. If stroam has been channelized, normal stable stream meander pattern has not 0.9	is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not 0.7	y Greater than 80% of by any of the chann in the parameter g 80% of banks sh riprap, or	nel alterations listed uidelines AND/OR ored with gabion, or cement. .5 IS REACH THE REACH RC COMPENSAT	CONDITION IN	NDEX (RCI) >>	0.8
NOTE: The Cls and RCI sh	REACH C should be rounded to 2 decimal places. OS:	CONDITION II	NDEX and S	STREAM CO			IS REACH THE REACH RC COMPENSAT	I= (Sum of all C	Cl's)/5	0.9
INSERT PHOTO	should be rounded to 2 decimal places.	. The CR should be rou			NDITION UN	NITS FOR TH	THE REACH RC COMPENSAT	I= (Sum of all C	Cl's)/5	
INSERT PHOTO	OS:		unded to a whole nun	nber.			RC COMPENSAT	I= (Sum of all C	Cl's)/5	
		inction.					COMPENSAT	ION REQUIRE		42
		inction.								· · · · · ·
		inction.								
9										

DESCRIBE PROPOSED IMPACT:

The applicant proposes to place an culvert in 80 linear feet of stream. This resulted in an impact factor of 1.0

	ASSESS Unified Stream Me	ethodology fo	or use in Virg	inia	n 1)	((P
Project Name	Locality	Cowardin Class.	HUC	Date	SAR#	Impact/SAR length	Impact Factor	ш
th Texas Project Units 3&	84 STP	Riverine	12	14 July 10	В	80	11 1	
	Name and Informati	ion		51 24 5 6	Service Control			
ludson Unname	ned Relatively Perma	anent Water						
1: Assess the cross-section of the s					PERMIT			
Optimal S	Suboptimal	onditional Categor Marg		Pod	or	Seve	ere	
Slightly in	incised, few areas of active	Often incised, but le	ass than Severe or	Overwidene	d/incised.	vertical/lateral inst	ability Sayera	
cision or active erosion; ao dable banks. Vegetative rotection or natural rock, nt (80-100%). AND/OR t bars/bankfull benches are Access to their original or fully developed wide anches. Mid-channel bars, verse bars few. Transient	unprotected banks. Majority nks are stable (60-80%), we protection or natural rock inent (60-80%) AND/OR ional features contribute to. The bankfull and low flow is are well defined. Stream access to bankfull banches, relevaling the order in the protection of the order in the oreceived in the order in the order in the order in the order in th	Poor. Banks more : or Poor due to loc Erosion may be pre both banks. Veget 40-60% of banks. I bevertical or under 60% of stream sediment. Sed temporary/trans instability. Depositic stability, may be AND/OR V-shape	od, but less than Severe or its more stable than Severe to some stable than Severe to the to lower bank slopes. Its plant protection on banks. Streambanks may or undercut. AND/OR A0-80 of banks. Vegetative protection on banks. Streambanks may or undercut. AND/OR A0-80 of banks. Vegetative protection present on 20-40% of banks, and is insufficient to prevent erosion. AND/OR 60-80% of the stream is covered by sediment. Sediment is temporary/transient in nature, and contributing to instability. AND/OR Agrading channel. Greater than 80% of stream bed is covered by deposition at features which		CI			
3	2.4	banks and deposition	onal features which	deposition	is absent.			1.0
nel excavated, straightene		water v	ery still.				little flow,	
	Conditional Categ						ively	
Optimal	Suboptimal		ginal	-4.		NOTES>>Actively mowed and maintained		
			ī		OI .			
High Subo Riparian with tree s (dbh > 3 inches) present, 60% tree canopy cover. located within the riparian areas.	in areas with tree stratum (dish > 3 inches) with 10% tree cover and ing both sous and yers or a maintained understory. Recent cutover (dense instained understory.	High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.	lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vogetated non- maintained area, recently seeded and stabilized, or other comparable condition.	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.	on both sides		
Riparian with tree s (pths > 3 inches) present, incated within the riparian areas. Riparian with tree s (pths > 3 inches) present, w to 60% canopy co containing herbaceos shrub laye non-mailing the pronon-mailing the pron	Riparian areas with tree stratum with 10% of the strat	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vogetated non- maintained area, recently seeded and stabilized, or other comparable	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable			
Riparian with tree s (dbh > 3 inches) present, e (dbh > 60% tree canopy cover. located within the riparian areas. Riparian with tree s (dbh > 2 inches) present, w to 60% canopy corontainin herbacees shrub laye non-main unders	Riparian areas with tree stratum with 10% of the strat	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory.	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vogetated non- maintained area, recently seeded and stabilized, or other comparable condition.	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.			
Riparian with tree s (dbh > 3 inches) present, w to 60% tree canopy cover. located within the riparian areas. 1.5 1.5 1.5 1.5 1.6 Riparian with tree s (dbh > 3 inches) present, w to 60% canopy co containinherbaceo shrub laye non-main unders High salong each stream bank into Con age for each by measuring or estim rea and Score for each riparian cat	Riparian areas with tree stratum (dibt > 3 inches) with 30% for 50 for 5	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % F	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5			
Riparian with tree s (dbh > 3 inches) present, which can be canopy cover. I coated within the riparian areas. I coated within the riparian areas. High 1.5 1.3 1.3 s along each stream bank into Con age for each by measuring or estimate and Score for each riparian cat in Area 100%	Riparian areas with tree stratum (dibt > 3 inches) with 30% for 50 for 5	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % F	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5			
Riparian with tree s (dbh > 3 inches) present, w to 60% tree canopy cover. located within the riparian areas. 1.5 1.5 1.5 1.5 1.6 Riparian with tree s (dbh > 3 inches) present, w to 60% canopy co containinherbaceo shrub laye non-main unders High salong each stream bank into Con age for each by measuring or estim rea and Score for each riparian cat	Riparian areas with tree stratum (dibt > 3 inches) with 30% for 50 for 5	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % F	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100%	on both sides	Soores*0.01)/2	
Riparian with tree a (dbh > 3 inches) present, with ree a (dbh > 3 inches) present, with ree as (dbh > 3 inches) present, with located within the riparian areas. Control C	Riparian areas with tree stratum (dibt > 3 inches) with 30% for 50 for 5	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % F	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5	On both sides Cl= (Sum % RA* S Rt Bank Cl >	Scores*0.01)/2	CI
Riparian with tree a (oth > 3 inches) present, who can be	Riparian areas with tree stratum with tree strat	Non-maintained, dense herbaceous vegetation with either a shrub layer or a free layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85 Indition Scores us calculators are provinced to the condition of the cond	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 Sing the	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % F Blocks 6	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100%	On both sides Cl= (Sum % RA * S Rt Bank Cl > Lt Bank Cl >	Goores*0.01)/2 0.60 0.60	Ci 0.6
Riparian with tree second containing the factor of the factor of the containing the factor of the factor of the containing the factor of the factor of the factor of the containing the factor of the factor	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% foreour and ing both sous and sous and spous and spous and status (dense vegetation). Igh Low 1.2 1.1 Indicate the stratum (dbh > 3 inches) present, with 30% foreour and a maintained and ingressor a dintained extensive stratum (dense vegetation). Igh Low I.2 1.1 Indicate the stratum (dbh > 3 inches) present, with 30% foreour sous and a maintained understory. Recent cutover and indicate the stratum of the stra	Non-maintained, dense herbaceous vegetation with either a shrub layer or a free layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85 Indition Scores us Calculators are provided to the control of	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 Sing the	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stablized, or other comparable condition. High 0.6 Ensure of % F Blocks 6	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100%	CI= (Sum % RA * S Rt Bank CI > Lt Bank CI >	cores*0.01)/2 0.60 0.60 0 shade, s, root mats, emplexes	
Riparian with tree s (dbh > 3 inches) present, who can be	Riparian areas with tree stratum (dbh > 3 inches) with 30% free canopy cover and ing both cours and inguitable canopy cover and a maintained story. Recent cutover (dense vegetation). Recent cutover and understory. Recent cutover and existence (dense vegetation).	Non-maintained, dense herbaceous vegetation with either a shrub layer or a free layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85 Indition Scores us calculators are provided to the condition of the condi	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 sing the ovided for you	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % F Blocks 6	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100%	CI= (Sum % RA * S Rt Bank CI > Lt Bank CI > NOTES >> No woody debri riffle/pool co present. Sor	cores*0.01)/2 0.60 0.60 0 shade, s, root mats, emplexes	and the same of th

Project#	Applicant		Locality	Cowardin Class.	HUC	Date	Data Point	SAR length Impact Factor	
WG-2007-00766	South Texas Project I	Inits 3&4	STP	Riverine	12	14 July 10	В	80 1	/ [
	ALTERATION: Stream cross							NOTES>>Channel is	
bankments, s	poil piles, constrictions, livestock	La production of the second		24			7444 - S	engineered drainage	
	Negligible	Mir	nor	al Category Mod	derate	Sev	ere	ditch with a straight channel	
Channel Alteration	Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If	60 - 80% of reach is disrupted by any of the channel		f reach is disrupted el alterations listed uidelines AND/OR pred with gabion,		
SCORE	1.5	1.3	1.1	0.9	0.7	0	Aveliable of the expension		
	REACH C	ONDITION	NDEX and S	STREAM CO	NDITION UN	IITS FOR TH	SREACH		
TE: The Cls and F	RCI should be rounded to 2 decimal places.	The CR should be roo	anded to a whole num	nber.				CONDITION INDEX (RCI) >>	
								I= (Sum of all Cl's)/5	
								ION REQUIREMENT (CR) >>	
ISERT PHO	TOS:	-							1
	vailable due to camera malfu	nction							
<u>.</u>									
								W	
DECODIDE	DRODOSED IMPACT.								4
DESCRIBE	PROPOSED IMPACT:			****					٦
					#8				
	The applicant pr	oposes to plac	e an culvert ir	n 80 linear feet	of stream. This	s resulted in an	impact factor	r of 1.0	
									- 1

	•	Stre		ed Stream Me	ethodology f	or use in Virg	jinia	n 1)	(0	P
					els classified as Cowardin	intermittent or p			Impact/SAR	Impact	П
Project #	Proje	ect Name		Locality	Class.	HUC	Date	SAR#	length	Factor	
WG-2007-00799	South Texas			STP	Riverine	12	14 July 10	. C	5	0.5	
	e(s) of Evaluator(s		Steam Name								
	Jayson M Hudson		Unnamed Rel	atively Perma	anent Water						
. Channel C	Condition: Assess th	e cross-sect	ion of the stream		ndition (erosion, a						
	Optimal		Subop		Marg	-	Po	or	Seve	ere	
			Slightly incised, fev	warran of arthur	Often incised, but l	ess than Severe or	Overwidens	ad/incised.	vertical/lateral inst		
Channel Condition	surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches an present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.		100% stable banks. Vegetative your author of banks are strated (60-80%). AND/OR table point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than				Vertically/laterally uniden further. Maja are near vertical. E 60-80% of bank protection prese banks, and is insu erosion. AND/Of stream is covere Sediment is temp nature, and contrit AND/OR V-shape	unstable. Likely to ority of both banks trosion present on ss. Vegetative int on 20-40% of fficient to prevent R 60-80% of the od by sediment, orary/transient in outing to instability.	incision, flow control banks. Streambed rooting depth, ma vertical/undercul protection present or banks, is not prev Obvious bank slot Erosion/raw bank AND/OR Aggrading than 80% of stream deposition, contribut	ined within the below average jority of banks t. Vegetative less than 20% of enting erosion. John 80-100%. channel. Greater bed is covered by	
		n.	botto	om.	vegetative protection banks and deposition	ed channels have on on > 40% of the onal features which	deposition	nd stable sediment is absent.	Multiple thread cl subterrane	nannels and/or an flow	CI
Score	3		2.	.4		2	1.	.6	1		1.0
Riparian Buffers	Tree stratum (dbh > 3 in with > 60% tree cand Wetlands located within areas.	opy cover.	High Suboptimat: Riparian areas with tree stratum (dth > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	Low Suboptimat: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).	High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3	Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded	Low Poor: impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable	crossing for road that runs parallel to the channel. Upstream the road is on the north side of the channel, downstream it is located on the south side of the channel. The remainder of the buffer is mowed		
			1			inches) present, with <30% tree canopy cover with	and stabilized, or other comparable condition.	conditions.	of the buffer and maintain	is mowed	
						inches) present, with <30% tree canopy cover with maintained understory.	other comparable condition.	conditions.		is mowed	
Condition			High	Low	High	inches) present, with <30% tree canopy cover with maintained understory.	other comparable condition.	conditions.		is mowed	
Condition Scores	1.5		High 1.2		High 0.85	inches) present, with <30% tree canopy cover with maintained understory.	other comparable condition.	conditions.		is mowed	
Scores 1. Delineate rip descriptors. 2. Determine s below.	parian areas along each quare footage for each Riparian Area and Sco	by measuring	1.2 Ik into Condition Cong or estimating leading iparian category in	Low 1.1 Categories and Congth and width. Co	0.85 ondition Scores us	inches) present, with 430% tree canopy cover with maintained understory. Low 0.75	other comparable condition. High 0.6 Ensure of % I	Low 0.5 the sums Riparian		is mowed	
Scores 1. Delineate rip descriptors. 2. Determine s below.	parian areas along each quare footage for each Riparian Area and Sco	by measurin	1.2 k into Condition C	Low 1.1 Categories and Congth and width. Co	0.85 ondition Scores us	inches) present, with 430% tree canopy cover with maintained understory. Low 0.75	other comparable condition. High 0.6 Ensure of % I	Low 0.5 the sums	and maintain	is mowed ed	
Scores 1. Delineate rip descriptors. 2. Determine si below. 3. Enter the %	parian areas along each quare footage for each Riparian Area and Scot Riparian Area> Score>	by measuring for each rise for each rise 50%	1.2 Ik into Condition C Ig or estimating ler Iparian category in 50% 0.5	Low 1.1 Categories and Congth and width. Co	0.85 ondition Scores us	inches) present, with 430% tree canopy cover with maintained understory. Low 0.75	other comparable condition. High 0.6 Ensure of % I	Low 0.5 the sums Riparian equal 100 100%	and maintain	is mowed ed	
Scores 1. Delineate rip descriptors. 2. Determine si below. 3. Enter the %	parian areas along each quare footage for each Riparian Area and Scot % Riparian Area> Score>	by measuring re for each rise 50% 0.6	1.2 Ik into Condition C Ig or estimating ler Iparian category in 50% 0.5	Low 1.1 Categories and Congth and width. Co	0.85 ondition Scores us	inches) present, with ncs.ncs/ conopy cover with maintained understory. Low 0.75	other comparable condition. High 0.6 Ensure of % I	Low 0.5 the sums Riparian	and maintain Cl= (Sum % RA*S Rt Bank Cl>	is mowed ed	CI
Scores 1. Delineate rip descriptors. 2. Determine sibelow. 3. Enter the % Right Bank Left Bank 3. INSTREA	parian areas along each quare footage for each Riparian Area and Scot Riparian Area> Score>	by measuring for each rise for each rise 50% 0.6 0.6 d substrate s	1.2 Ik into Condition Cong or estimating leading inparian category in 50% 0.5 50% 0.5	Low 1.1 Categories and Congth and width. Congth blocks below by and depths; wo res.	0.85 Indition Scores us Calculators are prov.	inches) present, with <30% tree canopy cover with maintained understory. LoW 0.75 sing the rovided for you	other comparable condition. High 0.6 Ensure of % I Blocks	Low 0.5 the sums Riparian equal 100 100%	and maintain CI= (Sum % RA*S Rt Bank CI> Lt Bank CI> NOTES>>No woody debri	is mowed ed cores*0.01//2 0.55 0.55 shade, s, root mats,	0.5
Scores 1. Delineate rip descriptors. 2. Determine subelow. 3. Enter the % Right Bank Left Bank 3. INSTREA	arian areas along each quare footage for each Riparian Area and Score % Riparian Area> Score> % Riparian Area> Score> MRiparian Area> Score>	by measuring re for each rise	1.2 Ik into Condition Cong or estimating let iparian category in 50% 0.5 50% 0.5 izes, water velocit exes, stable feature.	Low 1.1 Sategories and Congth and width. Congth and width. Congth and depths; wo res. Condition	0.85 Indition Scores us Calculators are prov.	inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 sing the rovided for you bris; stable substr	other comparable condition. High 0.6 Ensure of % I Blocks of	Low 0.5 the sums Riparian equal 100 100%	and maintain CI= (Sum % RA * S Rt Bank CI > Lt Bank CI > NOTES>No woody debri riffle/pool co	is mowed ed cores*0.01//2 0.55 0.55 shade, s, root mats, emplexes	
Scores 1. Delineate rip descriptors. 2. Determine sibelow. 3. Enter the % Right Bank Left Bank 3. INSTREA	arian areas along each quare footage for each Riparian Area and Score > % Riparian Area> Score > % Riparian Area> Score > M Riparian Area> Score > M Riparian Area> Core > M Riparian Area> Score > M Riparian Area> Score > M Coptima	by measuring for each rise for	1.2 Ik into Condition C Ing or estimating ler Iparian category in 50% 0.5 50% 0.5 Izes, water velocit exes, stable featur Subo Stable habitat ele present in 30-5 are adequate fo are adequate fo	Low 1.1 Categories and Congth and width. Congth blocks below by and depths; wo res.	0.85 Indition Scores us Calculators are prov. Indition Scores us Calculators are prov. Indition Scores us Calculators are provided at Category Ma Stable habitat elepresent in 10-33 are adequate for a calculate for a	inches) present, with <30% tree canopy cover with maintained understory. LoW 0.75 sing the rovided for you	other comparable condition. High 0.6 Ensure of % I Blocks of the comparable condition.	Low 0.5 the sums Riparian equal 100 100% 100%	and maintain CI= (Sum % RA * S Rt Bank CI > Lt Bank CI > NOTES>>No woody debri riffle/pool co present. Sor	is mowed ed cores*0.01//2 0.55 0.55 shade, s, root mats, emplexes	

Project #	Applicant		Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor	
WG-2007-00799	South Texas Project I	Jnits 3&4	STP	Riverine	12	14 July 10	С	5	0.5	Ц
	ALTERATION:Stream cross poil piles, constrictions, livestock	ings, riprap, concr		32-7-6	traightening of ch	annel, channeliza	tion,	NOTES>>C engineered	drainage	
				al Category		Sev		ditch with a		
	Negligible	Mir	nor	Contraction of the Contraction o	erate 60 - 80% of reach	Sev	ere	channel wit	100	
Channel Alteration	Channelization, dredging, alteration, or hardening absent Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel	is disrupted by any of the channel alterations listed in the parameter guidelines, If	is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not	Greater than 80% o by any of the chann in the parameter gi 80% of banks she riprap, or	el alterations listed uidelines AND/OR ored with gabion, cement.		otn sides	
SCORE	1.5	1.3	1.1	0.9	0.7	0.	.5			0.5
	REACH C	ONDITION	NDEX and S	TREAM CO	NDITION UN	ITS FOR TH	SREACH	The state		
OTE: The Cle and E	RCI should be rounded to 2 decimal places	The CR should be rou	anded to a whole num	nber.			THE REACH	CONDITION II	NDEX (RCI) >>	0.5
JIE. TIN OIS and P	to another production in a second production						RC	I= (Sum of all	Cl's)/5	
							COMPENSAT	ION REQUIRE	EMENT (CR) >>	1
							CR = RC	XLFXIF		

INSERT PHOTOS:

No pictures available due to camera malfunction

DESCRIBE PROPOSED IMPACT:

The applicant proposes to remove the existing 75-foot culvert anreplace it with an 80-foot culvert, resulting in an additional 5 feet of culvert. This resulting in an impact factor score of 0.5 due to its moderate affect on the channel.

	Stre	Unifi	ied Stream M	ethodology fo	Form or use in Virg	inia	n 1)	(
				els classified as Cowardin	intermittent or p		2129	Impact/SAR	Impact	
Project#	Project Name		Locality	Class.	HUC	Date	SAR#	length	Factor	
VG-2007-00799	South Texas Project L	Jnits 3&4	STP	Riverine	12	14 July 10	D	20	0.5	
	e(s) of Evaluator(s)	Steam Name				KIND DEPOSIT		10 11 20		
	Jayson M Hudson	Unnamed Re	latively Perm	anent Water						
Channel C	Condition: Assess the cross-sec	tion of the stream		ndition (erosion, a			100			
	Optimal	Subor		Marg		Po	or	Sev	ere	2.5
	" What was	Slightly incised, fe	w areas of active	Often incised, but le		Overwidene		vertical/lateral ins	tability. Severe	
Channel Condition	Very little incision or active erosion; 80- 100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfulf benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than 10% of bottom.		able (60-80%). ion or natural rock 80%) AND/OR ures contribute to ikfull and low flow I defined. Stream o bankfull benches, d floodplains along each. Transient 1-40% of the stream	stability, may be AND/OR V-shape	wer bank slopes. seent on 40-60% of attive protection on Streambanks may cut. AND/OR 40- is covered by imment may be sient, contribute on that contribute to forming/present. ad channels have	Vertically/laterally \(\) widen further. Maighare near vertical. E 60-80% of banh protection preset banks, and is insu erosion. AND/OF stream is cover Sediment is temp nature, and contrib AND/OR V-shap vegetative protecti 40% of the banks a	wity of both banks rosion present on s. Vegetative at on 20-40% of fifcient to prevent t 60-80% of the d by sediment, orany/transient in uting to instability, at channels have on is present on >	incision, flow cont banks. Streambe- rooting depth, mr vertical/undercu- protection present of banks, is not pre Obvious bank slo Erosion/raw ban AND/OR Aggrading than 80% of stream deposition, contribu Multiple thread of	tained within the d below average ajority of banks at. Vegetative n less than 20% of eventing erosion. uppling present. ks on 80-100%, o channel. Greater ibed is covered by uting to instability. channels and/or	CI
				banks and deposition	on on > 40% of the onal features which	deposition	is absent.	subterran		
Score	3	2	.4		2	1.	6	1		1.0
	1	Sold and the second sec			Low Marginal:	High Door		on both side	5.	
Riparian Buffers	Tree stratum (dbh > 3 inches) present, with > 60% tree canopy cover. Wetlands located within the riparian areas.	High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	canony cover and	High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition.	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.	on both side	5.	
	with > 60% tree canopy cover. Wetlands located within the riparian	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with	Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable	Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable	on both side	5.	
Buffers	with > 60% tree canopy cover. Wetlands located within the riparian	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <a>30 % tree canopy cover with maintained understory.	Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition.	Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.	on both side	5.	
Condition Scores Delineate rip escriptors. Determine so elow.	with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 Darian areas along each stream bar quare footage for each by measuriir. Riparian Area and Score for each two Riparian Area 100%	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition (drug or estimating leading the strategy of the strategy o	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation). Low 1.1 Categories and Coordingth and width. (dense and coordingth and width. (dength and width and width. (dength and width and width. (dength and width and w	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75	Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % I	Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, traits, or other comparable conditions.	on both side	5.	
Condition Scores Delineate rip escriptors. Determine scelow. Enter the %	with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 Darian areas along each stream bar quare footage for each by measuring Riparian Area and Score for each to the Riparian Area a	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition (drug or estimating leading the strategy of the strategy o	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation). Low 1.1 Categories and Coordingth and width. (dense and coordingth and width. (dength and width and width. (dength and width and width and width and width and width and width. (dength and width and w	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75	Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % I	Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, traits, or other comparable conditions. Low 0.5 the sums Riparian	Ci= (Sum % RA *		
Condition Scores Delineate rip escriptors. Determine scelow. Enter the %	with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 Darian areas along each stream bar quare footage for each by measuriir. Riparian Area and Score for each two Riparian Area 100%	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition (drug or estimating leading the strategy of the strategy o	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation). Low 1.1 Categories and Coordingth and width. (dense and coordingth and width. (dength and width and width. (dength and width and width and width and width and width and width. (dength and width and w	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75	Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % I	Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, traits, or other comparable conditions. Low 0.5 the sums Riparian	CI= (Sum % RA *: Rt Bank CI >	Scores*0.01)/2 0.60	CI
Condition Scores Delineate rip secriptors. Determine scalow. Enter the % I	with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 Darian areas along each stream bar quare footage for each by measuring Riparian Area and Score for each for the street of the street	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition Cong or estimating legislating areas category in the category in t	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation). Low 1.1 Categories and Covernity and width. (In the blocks below th	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85 Ondition Scores us Calculators are province with the condition of the con	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 sing the ovided for you	Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % I Blocks of	Impervious surfaces, mine spoil lands, denuded surfaces, cow crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100%	CI= (Sum % RA * : Rt Bank CI > Lt Bank CI > NOTES>No woody debr	Scores*0.01)/2 0.60 0.60 0.shade, is, root mats,	C1 0.60
Condition Scores Delineate ripscriptors. Determine solow. Enter the % Right Bank Left Bank INSTREA	with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 Darian areas along each stream bar quare footage for each by measuring Riparian Area and Score for each for Riparian Area and Score Score > 0.6 % Riparian Area > 100% Score > 0.6 M HABITAT: Varied substrate street in the street of the street	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ak into Condition C ang or estimating le riparian category i	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation). Low 1.1 Categories and Covered and width. (In the blocks below the	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85 Indition Scores us Calculators are provided to the condition of the canopy www.	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 sing the ovided for you	Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % I Blocks of the comparable condition of the comparable condition.	Impervious surfaces, mine spoil lands, denuded surfaces, cow crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100%	CI= (Sum % RA *: Rt Bank CI > Lt Bank CI > WOOdy debr	Scores*0.01y2 0.60 0.60 0.shade, ris, root mats, omplexes	
Condition Scores Delineate rip secriptors. Determine scalow. Enter the % I	with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 Darian areas along each stream bar quare footage for each by measuring Riparian Area and Score for each for the street of the street	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbacoous and shrub layers or a non-maintained understory. High 1.2 It into Condition (december of the condition of the conditi	Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation). Low 1.1 Categories and Covernity and width. (In the blocks below th	Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85 Indition Scores us Calculators are production of the condition of the con	Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 sing the ovided for you	Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non-maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % I Blocks of the comparable condition of the comparable condition.	Impervious surfaces, mine spoil lands, denuded surfaces, cow crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100% 100%	CI= (Sum % RA*; Rt Bank CI> Lt Bank CI> NOTES>>No woody debr riffle/pool co present. Soi	Scores*0.01y2 0.60 0.60 0.shade, ris, root mats, omplexes	

Project #	Applicant		Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor	$U \sqcup$
SWG-2007-00799	South Texas Project	Units 3&4	STP	Riverine	12	14 July 10	D	20	0.5	
	ALTERATION: Stream cross poil piles, constrictions, livestock	sings, riprap, concr	rete, gabions, or o	concrete blocks, s	traightening of ch	annel, channeliza	lion,	NOTES>>Cl engineered		
				al Category				ditch with a		
	Negligible	Mi	nor	Mod 40 - 60% of reach	erate 60 - 80% of reach	Sev	ere	channel wit		
Channel Alteration	Channelization, dredging, alteration, or hardening absent. Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	of the channel	is disrupted by any of the channel alterations listed in the parameter guidelines. If	is disrupted by any of the channel	Greater than 80% of by any of the chann in the parameter gu 80% of banks sho riprap, or	el alterations listed uidelines AND/OR ored with gabion, cement.		oth sides	
SCORE	1.5	1.3	1.1	0.9	0.7	0.	.5			0.50
NAME OF TAXABLE PARTY.	REACH O	CONDITION	NDEX and S	TREAM CO	NDITION UN	ITS FOR TH	SREACH			
OTF: The Cls and I	RCI should be rounded to 2 decimal places	. The CR should be ro	unded to a whole num	nber.			THE REACH	CONDITION IN	IDEX (RCI) >>	0.52
							RC	= (Sum of all (Cl's)/5	
							COMPENSAT	ION REQUIRE	MENT (CR) >>	5
							CR = RC	IXLFXIF	9 8 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1	

No pictures	s available due to camera m	alfunction.				
			*:			

DESCRIBE PROPOSED IMPACT:

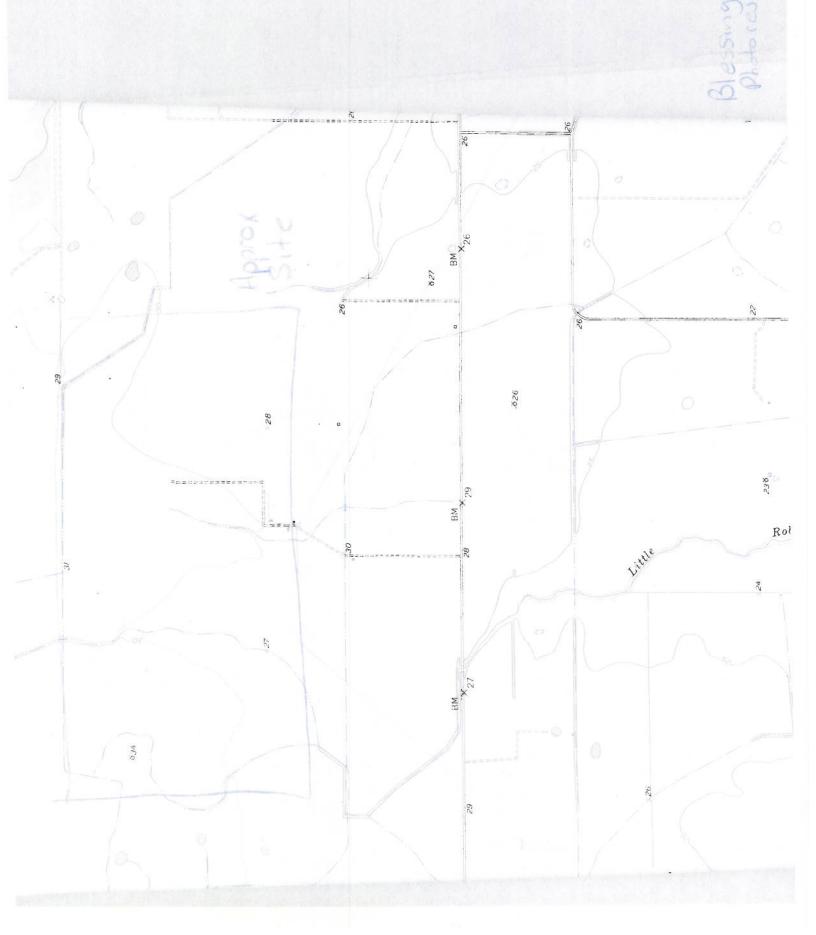
The applicant proposes to remove the existing 60-foot culvert anreplace it with an 80-foot culvert, resulting in an additional 5 feet of culvert. This resulting in an impact factor score of 0.5 due to its moderate affect on the channel.

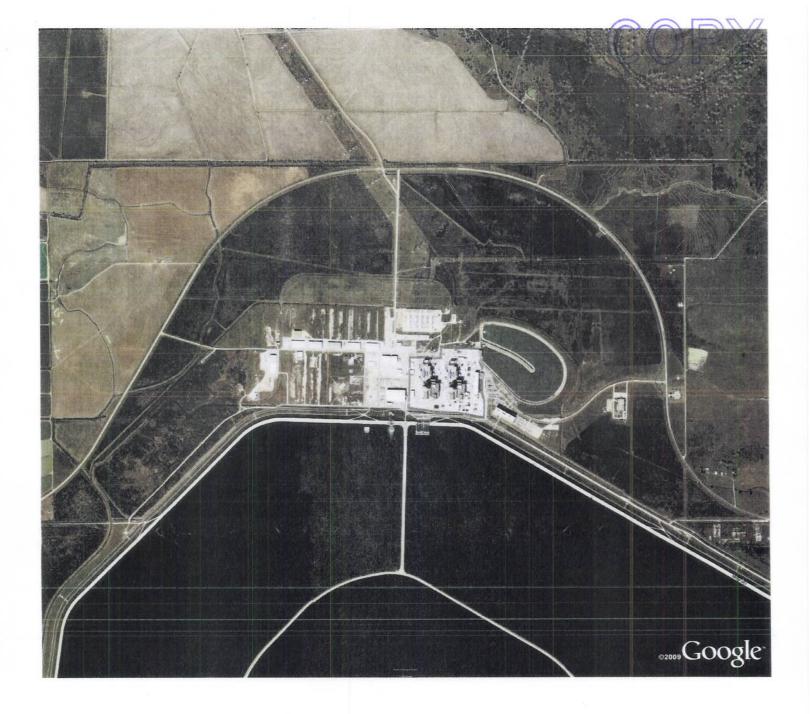
			ed Stream Me	ethodology fo	or use in Virg	inia		_(((())	J) \
Project #	Project Name		Locality	Cowardin Class.	HUC	Date	SAR#	Impact/SAR Iength	Impact Factor	
-2007-007	South Texas Project L	Jnits 3&4	STP	Riverine	12	14 July 10	F	80	1	
Name	e(s) of Evaluator(s)	Steam Name	and Informati	ion					tin and	
	Jayson M Hudson	Unnamed Rel	latively Perma	anent Water						
Channel C	Condition: Assess the cross-sec	tion of the stream	and prevailing cor	ndition (erosion, a	aggradation)					
	Optimal	Subop		Marg		Po	or	Seve	еге	
		Slightly incised, fer	w areas of active	Often incised, but k	ass than Severe or	Overwidene	ad/incised.	vertical/lateral inst	ability Severe	
Channel Condition	Very little incision or active erosion; 80 100% stable banks. Vegetative surface protection or natural rock, prominent (80-100%). AND/OR Stable point bars/bankfull benches are present. Access to their original floodplain or fully developed wide bankfull benches. Mid-channel bars, and transverse bars few. Transient sediment deposition covers less than	erosion or unprotect of banks are str Vegetative protective prominent (60-8 Depositional featus stability. The bank channels are well likely has access to or newly developed portions of the re	ted banks. Majority able (60-80%), on or natural rock 30%) AND/OR ures contribute to kfull and low flow defined. Stream bankfull benches, if floodplains along sach. Transient	Poor. Banks more or Poor due to lo Erosion may be pre both banks. Veget 40-60% of banks. bevertical or under 60% of stream sediment. Sed temporary/trans instability. Depositic stability, may be	stable than Severe wer bank slopes, issent on 40-60% of ative protection on Streambanks may rout. AND/OR 40-is covered by iment may be sient, contribute on that contribute to	Vertically/laterally used further. Maja are near vertical. E 60-80% of bank protection prese banks, and is insu erosion. AND/OF stream is covere Sediment is temp nature, and contril. AND/OR V-shape	ority of both banks incision present on its. Vegetative int on 20-40% of fficient to prevent R 60-80% of the bid by sediment, orary/transient in suting to instability.	incision, flow conti- banks. Streamber rooting depth, ma vertical/undercu- protection present or banks, is not prev Obvious bank sloi Erosion/raw bank AND/OR Aggrading than 80% of stream	ained within the I below average ajority of banks t. Vegetative n less than 20% of renting erosion. ughing present. ts on 80-100%. channel. Greater bed is covered by	
	10% of bottom.	sediment covers 10 botte		AND/OR V-shape	ed channels have on on > 40% of the	vegetative protecti 40% of the banks a deposition	on is present on > nd stable sediment	deposition, contribu Multiple thread of subterrane	hannels and/or	CI
Score	3	2.	.4		2	1.	.6	1		1.0
	Optimal		ditional Cate		ginal Low Marginal:	Po High Poor:	oor	maintained s with dense h		
Riparian Buffers	Optimal Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian areas.	High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained			Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, with <30% tree	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.	maintained s with dense h layer	crub/shrub	
	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian	Subol High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense	High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable	maintained s with dense h layer	crub/shrub	
	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian	High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense	High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable	maintained s with dense h layer	crub/shrub	
	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian	Subo High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory.	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vegetation).	Mar High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover.	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory.	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vogetated non- maintained area, recently seeded and stabilized, or other comparable condition.	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.	maintained s with dense h layer	crub/shrub	
Condition Scores Delineate riplescriptors. Determine selow.	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 parian areas along each stream basquare footage for each by measuris Riparian Area and Score for each % Riparian Area 100%	Subo High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition Cong or estimating leading to the strategy of the strategy	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vogetation). Low 1.1 Categories and Covering and width.	Mar High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, tree stratum (30% tree canopy cover with maintained understory. Low 0.75	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of %	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions.	maintained s with dense h layer	crub/shrub	
Condition Scores Delineate ripescriptors. Determine selow.	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 parian areas along each stream basquare footage for each by measuris Riparian Area and Score for each % Riparian Area 100%	Subo High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition Cong or estimating leading to the strategy of the strategy	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vogetation). Low 1.1 Categories and Covering and width.	Mar High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, tree stratum (30% tree canopy cover with maintained understory. Low 0.75	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of %	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100	maintained s with dense h layer	crub/shrub erbaceous	
Condition Scores Delineate rip escriptors. Determine s elow. Enter the %	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 parian areas along each stream basquare footage for each by measuring Riparian Area and Score for each W. Riparian Area> 100% Score > 0.85	Subo High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition Cong or estimating leading to the strategy of the strategy	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vogetation). Low 1.1 Categories and Covering and width.	Mar High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, tree stratum (30% tree canopy cover with maintained understory. Low 0.75	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of %	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100	maintained s with dense h layer	crub/shrub erbaceous	CI
Condition Scores Delineate ripescriptors. Determine selow. Enter the %	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 parian areas along each stream basquare footage for each by measuring Riparian Area and Score for each Score > 0.85	Subo High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition Cong or estimating leading to the strategy of the strategy	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory. Recent cutover (dense vogetation). Low 1.1 Categories and Covering and width.	Mar High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh > 3 inches) present, tree stratum (30% tree canopy cover with maintained understory. Low 0.75	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vegetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of %	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100%	maintained s with dense h layer	crub/shrub erbaceous	
Condition Scores Delineate ripescriptors. Determine selow. Enter the % Right Bank Left Bank INSTREA	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 parian areas along each stream basquare footage for each by measuring Riparian Area and Score for each Wingarian Area 100% Score > 0.85	Subo High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition Cong or estimating legistration category in parian category in the category	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory, Recent cutover (dense vegetation). Low 1.1 Categories and Co ength and width. (in the blocks below the control of the co	Mar High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85 andition Scores u Calculators are present.	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 sing the	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vogetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % Blocks	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100%	maintained s with dense h layer CI= (Sum % RA *) Rt Bank CI > Lt Bank CI > woody debr	Scores 0.01//2 0.85 0.85 0.85 0.85 0.85	CI 0.85
Condition Scores Delineate ripescriptors. Determine selow. Enter the % Right Bank Left Bank Left Bank	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 parian areas along each stream basquare footage for each by measuring Riparian Area and Score for each within the riparian areas. Riparian Area and Score for each by measuring Riparian Area and Score of each within the riparian areas. Riparian Area and Score for each within the riparian areas along each stream basquare footage for each by measuring Riparian Area and Score of each within the riparian areas.	Subo High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 Ink into Condition Cong or estimating le riparian category in sizes, water velociblexes, stable features	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory, Recent cutover (dense vegetation). Low 1.1 Categories and Co ength and width. (in the blocks below the control of the co	Mar High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85 Indition Scores u Calculators are provided to the control of the control	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 sing the	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vogetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % Blocks	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100%	maintained s with dense h layer CI= (Sum % RA * S Rt Bank CI > Lt Bank CI > NOTES>>NO	Scores 0.01//2 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85	
Condition Scores Delineate ripescriptors. Determine selow. Enter the % Right Bank Left Bank INSTREA	Tree stratum (dbh > 3 inches) present with > 60% tree canopy cover. Wetlands located within the riparian areas. 1.5 parian areas along each stream basquare footage for each by measuring Riparian Area and Score for each Score > 0.85 % Riparian Area > 100% Score > 0.85 AM HABITAT: Varied substrate is; root mats; SAV; riffle poole comp	Subo High Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and containing both herbaceous and shrub layers or a non-maintained understory. High 1.2 nk into Condition C ng or estimating le riparian category i sizes, water veloci lexes, stable feati Subo Stable habitat eli present in 30-55 are adequate f	Low Suboptimal: Riparian areas with tree stratum (dbh > 3 inches) present, with 30% to 60% tree canopy cover and a maintained understory, Recent cutover (dense vegetation). Low 1.1 Categories and Co ength and width. (in the blocks below the	High Marginal: Non-maintained, dense herbaceous vegetation with either a shrub layer or a tree layer (dbh > 3 inches) present, with <30% tree canopy cover. High 0.85 andition Scores u Calculators are present are present in 10-34 Stable habitat el present in 10-34 are adequate in 10-3	Low Marginal: Non-maintained, dense herbaceous vegetation, riparian areas lacking shrub and tree stratum, hay production, ponds, open water. If present, tree stratum (dbh >3 inches) present, tree stratum (dbh >3 inches) present, with <30% tree canopy cover with maintained understory. Low 0.75 sing the rovided for you	High Poor: Lawns, mowed, and maintained areas, nurseries; no-till cropland; actively grazed pasture, sparsely vogetated non- maintained area, recently seeded and stabilized, or other comparable condition. High 0.6 Ensure of % Blocks	Low Poor: Impervious surfaces, mine spoil lands, denuded surfaces, row crops, active feed lots, trails, or other comparable conditions. Low 0.5 the sums Riparian equal 100 100% 100%	maintained s with dense h layer CI= (Sum % RA * ' Rt Bank CI > Lt Bank CI > woody debr riffle/pool co present. Soi	Scores 0.01//2 0.85 0.85 0.85 0.85 0.85 0.85 0.85 0.85	

Project #	Applicant		Locality	Cowardin Class.	HUC	Date	Data Point	SAR length	Impact Factor	
G-2007-007	South Texas Project I	Jnits 3&4	STP	Riverine	12	14 July 10	F	80	1	_
	ALTERATION:Stream cross poil piles, constrictions, livestock	ings, riprap, concr			traightening of ch	annel, channeliza	tion,	NOTES>>Cl engineered		
		l Mir		al Category	erate	Sev		ditch with a		
Channel Alteration	Negligible Channelization, dredging, alteration, or hardening absent Stream has an unaltered pattern or has naturalized.	Less than 20% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	20-40% of the stream reach is disrupted by any of the channel alterations listed in the parameter guidelines.	40 - 60% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If	60 - 80% of reach is disrupted by any of the channel alterations listed in the parameter guidelines. If stream has been channelized, normal stable stream meander pattern has not		f reach is disrupted el alterations listed uidelines AND/OR ored with gabion,	channel wit riprap on be	(1) (1) (1) (1) (1) (1) (1) (1) (1) (1)	
SCORE	1.5	1.3	1.1	0.9	0.7	0.	5			0.50
	REACH C	ONDITION II	NDEX and S	TREAM CO	NDITION UN	ITS FOR THI	S REACH	Title 1		
TE: The Cls and R	RCI should be rounded to 2 decimal places.	. The CR should be rou	nded to a whole num	nber.			THE REACH	CONDITION IN	IDEX (RCI) >>	0.57
							RC	l= (Sum of all (Cl's)/5	
							COMPENSAT	ION REQUIRE	MENT (CR) >>	46
							CR = RC	IXLFXIF		
ISERT PHO	OTOS:									
o pictures a	vailable due to camera malfu	nction								

ctures available due to camera malf	unction				
**					
	80				
SCRIBE PROPOSED IMPACT:					2.18
SCRIBE PROPOSED IMPACT.					
	*** The state of t				
The applicant of	proposes to place an cuvert in 8	0 linear feet of stream.	This resulted in an impact fac	or of 1.0	
	9 MAY 13 - 54		50		

COPY





January 2009



