### **New Output Viewer**

### **View Multiple Plans**



1





# Calibration Scaling Factors For Transport Functions

C Scaling Factors     Transport and Mobility Scaling Factors
Transport Function Scaling Factor: 1 Increasing This Factor Increases Transport
Critical Mobility Scaling Factor: 1.2 Increasing This Factor Decreases Transport
C Parameters and Coefficients
- Hard Code Mobility Parameters and Transport Coefficents
Mobility Parameters Transport Function Coefficents
Threshold Mobility (A) 0.19 C 0.25 m 1.78
Currical Sheld's # (tau*c) 0.039 Coefficient 0.01 Power 1
Meyer-Peter Müller/Toffaleti/MPM     Critical Shield's # (tau *c)     0.047     Coefficient 8     Power     1.5
Use Wong and Parker Correction to MPM
Note: When the Wong and Parker (2006) coefficients are specified HEC-RAS excludes the form drag correction, which assumes plane bed conditions (i.e. no bed forms).
Wilcock and Crowe           Reference Shear (tau*m)         0.04
└ Limit Toffaleti Suspended Transport when u*/Fall Vel<0.4.
Defaults OK Cancel

3

# **Hiding Features**



🖏 Bed Mixing Options	_		×
Capacity Partitioning Gradation Capacity Partitioning Method: Bed Gradation Only % Inflow	Gradation	: 10	
Hiding Functions Hiding Functions None Only used for	0.6 R12 Fall Ve	el Method)	
Active Layer Opti Egiazaroff Active Layer Thid Hayashi et al Exchange Increm Parker et al Wuret al Ratio	s:	ft	
% Bedload: 70. % Active 30.			
Cover/Active Layer Gradations			
Specify Seperate Cover/Active Layer Gradations			
Copeland Method Option (test)	Cancel	Defau	lts

# Runtime Algorithm Summary and Errors/Warnings/Notes

📻 HEC-RAS Finished Computations		_						
Write Geometry Information Layer: COMPLETE								
Quasiunsteady Sediment Simulation           River:         Morthond         RS:           Reach:         Morthond         Nod           Profile:         08Oct1975 0000         Image: Control of the control of th	0 e Type: Cross Section							
Computation Messages								
Sediment Input Summary: Transport Function: Laursen (Copeland) Sorting Method: Copeland (Ex7) Fall Velocity Method: Ruby Use Krone Partheniades Global deposition/erosion methods: Veneer Deposition Method in OB plus OB update Veneer Chosion Method in OB plus OB update Veneer Chosion Method in OB Sediment Output Summary:								
The sediment boundary condition(s) include(s) a flow that is higher than the maximum flow in the sediment rating curve. HEC-RAS used the highest load in the rating curve.       Errors         At the following location(s) and first time(s).       Warnings         Morthond       10000       19JUL1975 00:00:00         The sediment rating curve.       Warnings         Notes       Notes								
Morthond Morthond 10000 01JUL 1975 00	):00:00		~					
Pause Take Snapshot of Results			Close					

# Flow Split Options Including Split Flows at a Distributary Based on Potential Instead of Flow

Initial Conditions and Transport Paramete	rameters Boundary Condi		USDA-ARS Bank Stability and Toe Erosion Model (BSTEM)		2D Bed Gradations (beta)			
Select Location for Sediment Boundary Condition								
Add Sediment Boundary Location(s) Delete Current Row Define Sediment Split at Junction								
	Sediment Boundary Condition Types							
Rating Curve S	Sediment Load Series Equilibrium Load Clear Water (no Sediment)							
Flow Weighted Sediment Split Poter	ntial Weighted Sed	d Split	Q Wtd Sed Split (Threshold)	Sediment Split by Grain C	Class			
Split Upper	101 Ra	Rating Curve						
Junction	Junction Th	nreshold F	Flow Wtd					

#### HEC-RAS Sediment Computation Options and Tolerances General 2D Computational Options Warm up: -Computational Options Bed exchange iterations per time step (SPI): 10 Min bed change before updating Cross Section (ft): 0.02 Gradation Only Min XS change before recomputation of hydraulics (ft): 0.02 ▼ Perform Volume Error Check/Carry Over: • Bathymetry Only Bed Roughness Predictor: None • • Both Gradation and Select Reaches to Average Bed Roughness Predictors Bathymetry **Decouple Unsteady** Warmup Method None hydraulic and < X the hydraulic time step ent Computation Multiplier: Warmup Duration (day Gradation Only sediment time steps Warmup Method None Bathymetry Only Gradation & Bathymetry -/armup Duration (days): Concentration (2D Only) Hide XS weights which should generally not be adjusted Defaults ... Cancel OK ≻ Show XS Weights >>

# Sediment Warmup Period

# New Output Options

	Sediment Output Options	
Added Period Averaged ← Output	Sediment Output Options Output Level:	Extern Customized Watables         Clear Variables           Long, Cum Mass Change (Total)         Long, Cum Mass Change (by CC)           Dredged Vd (Ctal)         Dredged Vd (Ctal)           Dredged Vd (Ctal)         Dredged Vd (Ctal)
User Option to Turn Off Steady Flow Output if it Gets Too	Number of Increments Between XS Outputs: 1 Sedment Hotstart Institute Data from Sedment Output File Hotstart Type: Gradation and XS Browse Hostart Date: Hostart Time: CLegacy Gradational Hotstart (Backnard Compatability) Write Bed Gradations to an Output File Read Gradational Hotstart File Browse	Create Geometry Files from Sediment Results
User Option to Turn Off Large Legacy	White Classic Output (WSE Profile etc O file)  White Legacy Binary Output White Sedment CSS Output by Grain Class Daily Flux Set RS to White DSS Sedment Output	Specific Gage Plot Select Steady Flow File: Compute Specific Gage Select Summary Reach (Reservoir) OK Cancel Defaults

# Customized User Output Options

7



### New Output Options

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## New Output Options



# **New Output Options**

	Sediment Output Options	
	Sediment Output Options	Clear Variables
	Output Level: 4	Long. Cum Mass Change (Total) Long. Cum Mass Change (by GC) Dredged Vol (Total) Dredged Vol(by GC)
	Primary Output Interval (Multiple of Output Increment) 1 Bed Related Output for 2D 2D Water Column Output Interval (Mult. of Out. Increment) 1 Only Used For 2D	
Hotstart bathymetry and/or gradation from	Cross Section Bed Change Output Number of Increments Between XS Outputs:  Sedment Hotstart  Initialize Data from Sediment Output File	
any time step of any	Holstart Type: Gradation and XS  Browse Hostart Date: Hostart Time:	
sediment output me	Legacy Gradational Hotstart (Backward Compatability)  Write Bed Gradations to an Output File  Read Gradational Data from Hotstart File  Recommend	Create Geometry Files from Sediment Results
	Write Classic Output (WSE Profile etc O file)  Write Leasarc Brazy Cuthurt	Specific Gage Plot Select Steady Flow File:
	Write Sedment DSS Output by Grain Class Paily Flux Set RS to Write DSS Sedment Output	Select Summary Reach (Reservoir)
		, OK Cancel Defaults

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# Flux Weighted Capacity Partitioning

We have always partitioned capacity based on the grain class distribution in the bed:

Gs(i) = P(i)\*Pot(i)

But if the inflowing load includes grain classes not in the bed, they deposit. This feature partitions capacity partially based mostly on the bed but also based on the inflowing load.

So if:

P(i) = % of grain class in the bed

f(i) = % of grain class in upstream flux (mass in)

F% = User specified percent (e.g. 18% in the figure, default 10%)

Pot(i) = the transport potential of the grain class

Then Capacity (Gs(i)) would be:

Gs(i) = ((100-F%)/100)\*P(i)\*Pot(i) + (F%/100)\*f(i)\*Pot(i)

Bed Term

Upstream Flux Term

5, Transport Model and AD Par	ameters: — 🗆 🗙
1D Methods: Routing Method (1D):	Continuity
Sediment Junction Split Method:	Flow Weighted 🔹
Pool Pass Through Method:	Flow Weighted
2D Methods:	
AD Parameters Erosio	n Parameters
Load Correction Factor	
Total-load Correction Facto	r
Bed-Load Correction Factor:	No Correction
Suspended-Load Correction:	No Correction
Diffusion Coefficient	
Diffusion Method:	None
	K ft2/s
Susp Diffusion Method:	None
	K ft2/s
Bed Load Diffusion Method:	None
	K [#2/a
	1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1
L	
	OK Cancel



## Sediment File Description and Option Flags

# Area-Volume Conversion Methods

Previous versions of HEC-RAS followed HEC 6 using the Simpson rule to covert Volume to Area for bed change and a simple, rectangular control volume to account for the volume-area change in the bed mixing algorithms. This led to mass errors and, in extreme cases, depositing cross sections that were losing mass. We retained this area-volume change option to maintain backward compatibility, but provided options to make the Area-Volume computations consistent between the two algorithms. New models use the Simpson rule by default in both places, but users can also chose a simplified control volume or a new end-area method.

Ov	erbank Mas	s Method	Unifor	m	Ŧ		
M	ove Mobile Bed L	imits to XS Exte	, nt if the Cl	nannel Fil	ls —		
Red	Change Options						
Deu	Change Options						
0	Global Bed	d Change (	Options				
		Ch	annel		0	verbank	
	Deposition	Veneer		-	None		•
	Frosion	Veneer		•	None		•
	LIOSION	Treneer			prone		
0	XS Specific	Bed Chang	je Optio	ons			
Rive	(All Divers)		Reach:			-	
_	(All Rivers)					<u> </u>	
<u> </u>				Dep	osition	Erosion	Deposition
1	River	Reach	RS	C	iannel	Channel	Over Bank
+	Morthond	Monthond	10000	-			
2	Morthood	Morthood	9500				
-	Morthond	Morthond	9000				
-	Morthond	Morthond	8000				
6	Morthond	Morthond	7500				-
7	Morthond	Morthond	7000				
8	Morthond	Morthond	6500				
9	Morthond	Morthond	6000				
10	Morthond	Morthond	5500				
11	Morthond	Morthond	5000				
12	Morthond	Morthond	4500				
13	Morthond	Morthond	4000				
14	Morthond	Morthond	3500				
15	Morthond	Morthond	3000				
16	Morthond	Morthond	2500				
rea l	Widen channel a Method	fter it incises to ward Compatib	the bottor	n of the s	ediment cor	ntrol volume.	

# Dimensional or Dimensionless Erodibility Options (i.e. M or Kd Cohesive Options)



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# Runtime Sediment Budget Summary

🚟 HEC-RA	S Finished Con	nputations		-	· 🗆 🗙				
Write Geome Layer: COM	etry Information IPLETE								
Quasiunstea River: Reach: Profile:	ady Sediment Sim Morthond Morthond 08Oct1975 0000	nulation	RS: Node Type:	0 Cross Section					
Simulation:	100/100								
Computation Sediment M	n Messages ass/Volume budg	get:			^				
Morthond Morthond Morthond	Morthond Morthond Morthond	10000 10000	Mass In Cum Vol In Cum Mass Out Cum	8.4326E+06 tonnes 5.6510E+06 m^3 8.2191E+06 tonnes					
Finished Sediment Transport Simulation									
Computatio Completing Completing Quasiunstee Complete Pr	n Task Geometry Event Condition ady Sediment Co rocess	s omputations	Time(hh:mm	<u>l:ss)</u> <1 <1 <u>30</u> 31	Ţ				
Pause	Take	Snapshot of	Results		Close				

# Pool "Pass Through" Method



Computes pool capacity based on bounding cross sections to avoid inappropriate deposition but allow base level change.

C. Transport Model and AD Par	ameters: — 🗆 🗙
1D Methods: Routing Method (1D): Sediment Junction Split Method:	Continuity
Pool Pass Through Method:	Upstream Capacity
2D Methods: AD Parameters Erosio	US and Lagged DS
- Load Correction Factor	2 Methods
Total-load Correction Facto	No Correction
Suspended-Load Correction:	No Correction
Diffusion Coefficient	
Diffusion Method:	None
Susp Diffusion Method:	None
Bed Load Diffusion Method:	None 💌
	N (12/s
	OK Cancel

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# Fixed Bed – Quasi-Unsteady Hydraulic Mode

🚵 Sediment Transport .	Analysis	<b>—</b> ×
File Options Help		
Plan : Synthetic Simulati	on	Short ID Synthetic Simula
Geometry File :	Morthond	•
Quasi-Unsteady F	low Event - Overbank Flood	<b>▼</b>
Sediment Data :	Sediment Data	-
Simulation Time Window Starting Date: Ending Date:	01Jul1975	Starting Time: 0000 Ending Time: 2400
Plan Description :		
Skip Sediment		debug parameters
	Compute	

V Sediment	Data - Gravel Equ	elibrium								- D X
File Options	View Help									
Initial Condition	Initial Conditions and Transport Parameters   Boundary Conditions   USDA-ARS Bank Stability and Toe Erosion Model (BSTEM)   2D Bed Gradations (beta)									
River:	(All Rivers)		•	Transport Fu	unction: A	ckers-White	- -	Define/Edit Bed Gradation		Profile Plot Cross Section Plot
Reach:	J		<u> </u>	Sol any mea		cuve cuyer	<u> </u>	Define Lavers (	201	gravel bed - gravel bed -
Number o	f mobile bed chann	els: 1	•	Fall Velocity	Method:  Ru	uby	<u> </u>	benne easyerbinn (		
River	Reach	RS	Invert	Max Depth	Min Elev	Left Sta	Right Sta	Bed Gradation	•	+LB LB→ +RB RB→ Legend
1 gravel bed	gravel bed	10000	9	5		0	8	0 Gravel		A Ground
2 gravel bed	gravel bed	9750.00*	8.775	5		0	8	0 Gravel		18
3 gravel bed	gravel bed	9500.00*	8.55	5		0	8	) Gravel		
4 gravel bed	gravel bed	9250.00*	8.325	5		0	8	) Gravel		16 Potential Erosion
5 gravel bed	gravel bed	9000.00*	8.1	5		0	8	) Gravel		Sed Bed Sta
6 gravel bed	gravel bed	8750.00*	7.875	5		0	8	) Gravel		
7 gravel bed	gravel bed	8500.00*	7.65	5		0	8	) Gravel		14
8 gravel bed	gravel bed	8250.00*	7.425	5		0	8	) Gravel		
9 gravel bed	gravel bed	8000.00*	7.2	5		0	8	) Gravel		
10 gravel bed	gravel bed	7750.00*	6.975	5		0	8	) Gravel		
11 gravel bed	gravel bed	7500.00*	6.75	5		0	8	) Gravel		
12 gravel bed	gravel bed	7250.00*	6.525	5		0	8	) Gravel		10 \ \ / /
13 gravel bed	gravel bed	7000.00*	6.3	5		0	8	) Gravel		
14 gravel bed	gravel bed	6750.00*	6.075	5		0	8	) Gravel		
15 gravel bed	gravel bed	6500.00*	5.85	5		0	8	) Gravel		
16 gravel bed	gravel bed	6250.00*	5.625	5		0	8	) Gravel		
17 gravel bed	gravel bed	6000.00*	5.4	5		0	8	) Gravel		6-
18 gravel bed	gravel bed	5750.00*	5.175	5		0	8	) Gravel		
19 gravel bed	gravel bed	5500.00*	4.95	5		0	8	) Gravel		
20 gravel bed	gravel bed	5250.00*	4.725	5		0	8	) Gravel		
21 gravel bed	gravel bed	5000.00*	4.5	5		0	8	) Gravel	•	
						Use Banks f	or Extents	Interpolate Gradati	ions	Station •
Mixing Metho	ds Selected						P	escription :		
1							1.			

# Movable Bed Limit Adjustment Buttons

# Minimum Active Layer Thickness Option

🖏 Bed Mixing Options —		<							
Capacity Partitioning Gradation Capacity Partitioning Method: Bed Gradation Only % Inflow Gradation: 10									
Hiding Functions Hiding Function: None  Hiding Exponent: 0.8	Shape Factor 0.6	:							
Active Layer Options Active Layer Thickness: d90  Exchange Increment: Method: Toro Escober Ratio	ft								
% Bedload: 70. % Active 30.									
Cover/Active Layer Gradations									
Copeland Method Option (test) OK Cance	Defaults								

Constrains active layer to stable thickness for small particles (where 2-3 d90 isn't appropriate or stable).

# New Observed Profile Data Editor

Profile Data Editor	Pin	ar: (All Rive	rs)	▼ A	dd Observed Profiles.	. 1				File Opt	ions View Help						
					Delete Current Col				[	Initia	User Defined Grai	n Classes		Conditions   L	ISDA-ARS B	ank Stability and	Toe Erosion Mod
	_	1							_ I		Set Cohesive Opt	ions		Transport	Eunction:	Laursen (Copela	nd) 🔻
				Date	15Oct1996	15Oct1996	200ct1996	20Oct1996	- i		Bed Change Opti	ons (New).			direction in		
	-			Variable	Invert Elevation	Shear Stress	Vol Out (by GC)	Mass Cover (Total)	- 1		Transport Metho	ds		Sorting Me	:0100:	Thomas (Ex5)	
		River	Reach	the	co aro	coloctor	d from	actual .			Calibrate Transpo	ort Function	ı	Fall Velocit	ty Method:	Ruby	<u> </u>
		Celdun	Celduin	49500	se ale	selected		actual			20.0+1			ax Depth	Min Elev	Left Sta	Right Sta
		Celduin Celduin	Celduin	47615	PAS.	output	ontion	22	- 1	1	20 Options			0.2		1570	1720 Ce
		1 Celduin	Celduin	46677	INAU	output	option	29		2	Non Newtonian			0.2		1/60	1950 Ce
		5 Celduin	Celduin	45508	5	17	0.047	36			BSTEM Options			0.2		1930	2391.11 Ce
	(	5 Celduin	Celduin	43627	6	20	0.05	43		-				0.2		1890	2054 Ce
		7 Celduin	Celduin	42132	7	23	0.053	50		6	Lateral Weir Optio	ons		0.2		1980	2180 Ce
	_ 8	8 Celduín	Celduin	39446	8	26	0.056	57		7	Bed Mixing Optic	ins		0.2		1460	1630 Ce
		Celduin	Celduin	38236	9	29	0.059	64		8	Subsidence			0.2		1920	2140 Ce
	10	Celdun	Celduin	38029	10	32	0.062	71		9	Set Pass Through	Nodes		0.2		1970	2180 Ce
	-	Celduin	Celduin	27720	11	30	0.065	01		10	or in the	Troucs in		0.0		2530	2710 Ce
	-	Celduin	Celduin	37150	12	41	0.000	92		11	Observed Data		,	Profile		2530	2710 Ce
		1 Celduin	Celduin	36765	14	44	0.074	99		12 Celd	uin Celduin	37730	561.11	Time Se	ries	2370	2524 Ce
	1	Celduin	Celduin	36746	15	47	0.077	106		13 Celd	uin Celduin	37150	561.65	Rating	Curve	2930	3200 Ce
	16	Celduin	Celduin	36264	16	50	0.08	113		14 Celd	un Celdun	36765	562			1030	1300 Ce
	1	7 Celduin	Celduin	35389	17	53	0.083	120		15 Celd	uin Celduin	26264	561.05	0.2		2791	2050 Ce
	18	8 Celduín	Celduin	34739	18	56	0.086	127		17 Celd	uin Celduin	35389	561.46	0.2		22701	2590 Ce
	19	9 Celduin	Celduin	34715	19	59	0.089	134		18 Celd	uin Celduin	34739	560.83	0.2		1007.77	1240.87 Ce
	20	Celduin	Celduin	33620	20	62	0.092	141		19 Celd	uin Celduin	34715	560,43	0.2		1007.77	1240.87 Ce
	1.0	Caldrin	Caldrin	21740	21	65	0.095	148		20 Celd	uin Celduin	33620	559.7	0.2		3160	3420 Ce
	Л	··· - £:	1		22	68	0.098	155		21 Celd	uin Celduin	31749	560.69	0.2		3930	4140 Ce
L Can Attach Observed	1 F	roti	les		23	71	0.101	162		22 Celd	uin Celduin	30224	561.6	0.2		3870	4110 Ce
		. •			24	74	0.104	109		23 Celd	uin Celduin	30183	560.92	0.2		1790	2040 Ce
	-				25	80	0.107	1/0		24 Celd	uin Celduin	30132	560.23	0.2		1150	1420 Ce
<ul> <li>Io the nearest tim</li> </ul>	e	step			27	83	0.113	190		25 Celd	uin Celduin	30101	558.4	0.2		1140	1420 Ce
	-				28	86	0.116	197		26 Celd	un Celdun	30083	558.4	0.2		1140	1420 Ce
		- I- I -			29	89	0.119	204		27 Celd	uin Celduin	29902	544.94	10		1210	192.25 Ce
I o a computed va	ria	apie			30	92	0.122	211		29 Celd	uin Celduin	29853	544.45	10		5	200.37 Ce
					31	95	0.125	218		30 Celd	uin Celduin	29813	543.25	10		15	211.91 Ce
A A a Canaria Nama		11/0-	اماما	~	32	98	0.128	225		31 Celd	uin Celduin	29772	540.25	10		15.94	208.03 Ce
As a Generic Name	eo	i var	labi	e	33	101	0.131	232		32 Celd	uin Celduin	29730	540.5	10		22	204.14 Ce
				-	34	104	0.134	239		33 Celd	uin Celduin	29695	541.24	10		25	201.13 Ce
	- 26	Colduin	Colduin	20550	30	107	0.137	240		34 Celd	uin Celduin	29642	543.59	10		25	196.72 Ce
	- 31	7 Celduin	Celduin	29526	30	110	0.143	255		35 Celd	uin Celduin	29599	543.95	10		35	199.54 Ce
	3	8 Celduin	Celduin	29485	38	115	0.146	267		36 Celd	uin Celduin	29559	544.14	10		30	204.3 Ce
	39	Celduin	Celduin	29453	39	119	0.149	274		37 Celd	uin Celduin	29526	544.53	10		10.81	206.7 Ce
	40	) Celduin	Celduin	29425	40	122	0.152	281		30 Celd	uin Celduin	29465	545 14	10		35	203.84 Ce
	4	L Celduin	Celduin	29383	41	125	0.155	288		1 palced	an poedun	129400	1 242, 14	10		35	207.35 Ce
	42	2 Celduin	Celduin	29347	42	128	0.158	295								Use Banks f	or Extents In
	43	3 Celduín	Celduin	29305	43	131	0.161	302									
	4	1 Celduin	Celduin	29272	44	134	0.164	309	-								Desc
									- 1								
								UK Cancel	_ A								

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# Sediment Boundary Concentration Mode and Conversion

Rating Curve for Arghandab Dahla Dam US 19889.30									
Nu	mber of flow-load points	2 sets 💌							
	Flow (m3/s)	1	1000	-					
	Conc (mg/L)	57.87037	27777.78						
1	Clay (0.002-0.004)	0.2	0.15						
2	VFM (0.004-0.008)	0.3	0.35						
3	FM (0.008-0.016)	0.2	0.25						
4	MM (0.016-0.032)	0.2	0.07						
5	CM (0.032-0.0625)	0.1	0.07						
6	VFS (0.0625-0.125)		0.06						
7	FS (0.125-0.25)		0.05						
8	MS (0.25-0.5)								
9	CS (0.5-1)								
10	VCS (1-2)								
11	VFG (2-4)								
12	FG (4-8)								
13	MG (8-16)								
14	CG (16-32)								
15	VCG (32-64)								
16	SC (64-128)			-					
Г	Define Diversion Load	Load ( Concentration Conc<>Loa	ad Plot OK Cance						

Recent versions added the ability to specify boundary condition rating curves as concentrations (previous versions were limited to load) and provides a conversion button that automatically converts load-to-concentration or concentration-to-load.



# Power Function and Rating Curve Features For the Histograph Generator

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Model uses initial bed gradation to compute capacity when it encounters bedrock or other hard bottoms (e.g. concrete channel) to avoid zero capacity time steps and artificial deposition

# Mix and Match Overbank and Channel XS Change Options

	Bed Change Options									_
	<ul> <li>Global Bed</li> </ul>	Change Options								
		Channel		O	/erbank					
	Deposition	Reservoir	•	Reserv	oir	•				
	Erosion	Simplified CEM	•	Veneer		•	Width	10	Side 3 Slope	
Deposi	ition									
C No I	Bed Change Allowed Ou	utside of the Movable Be	ed Limi	ts						
	W Deposition Outside o	f the Movable Bed Limits king time steps.	j		→ Up (Usi	date Jally	to ( Cor	Overba rects (	ank Deposi Overestima	ition ation)
(C Res	ervoir Opuon: Deposit i	more in Deeper Part of t	ne XS		,	,				

# Define Overbank and Channel XS Change Options by Cross Section

	🖌 Sediment Data -	Gravel Equ	ielibrium			 -	×
Fi	le Options Vie	w Help					
I	nitial Conditions and	Transport Pa	arameters Boundary Conc	litions USDA-ARS Bank Stability and	d Toe Erosion Model (BSTEM)   2D Bed Gradations (beta)		
			Select Location	for Sediment Boundary Condition			
	Add Sediment Bou	ndary Locati	on(s) Delete Current Rov	Define Sediment Split at Juncti	ion		
			Sediment	Boundary Condition Types			
	Rating Cur	ve	Sediment Load Series	Equilibrium Load	Clear Water (no Sediment)		
	Flow Weighted Sec	diment Split	Potential Weighted Sed S	plit Q Wtd Sed Split (Threshold)	Sediment Split by Grain Class		
Γ							
L	gravel bed	gravel bed	10000 Clea	r Water			
I							
I							
I							
I							
I							
I							
I							
I							
I							
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I							
I							
I							
	Mixing Methods Sele	ected			Description :		
	-						 
					I		
						 	 _

# **Clear Water Boundary Condition**

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## **Temperature Plot**