TMDL Final Visit Form

STREAM VERIFICATION >>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>>						**Reviewers Initials**			
Stream Name (with location)									
AN-Code		**Date**		**Time**		**Geo**		**Bio**	
Basin		**County**		**Quad**					
GPS Type		**EPE**		**XY's Proofed**				**By**	
Field Lat X-site	**N**			**Field Lon X-site**	**W**				
Corrected Lat	**N**			**Corrected Lon**	**W**				
Sampled	**☐ Yes ☐ No**	**If not, why?**	**☐ No Access-Physical Barrier (☐ *Permanent* / ☐ *Temporary*)** **☐ No Access-Landowner Denial (☐ *Verbal Denial* / ☐ *Posted* / ☐ *Fenced* / ☐ *Private*)** **☐ Too Deep (☐ *Permanent-Not Wadeable* / ☐ *Temporary*) ☐ Dry ☐ Filled ☐ Impounded** **☐ Other:**						
Sample Type	**☐ YSI ☐ Fecal ☐ Comprehensive ☐ AMD ☐ Acid Rain ☐ TDS Ions ☐ Sedimentation ☐ Nutrients** **☐ Orthophosphate ☐ Flow ☐ Other:**								
Duplicate type	**☐ None ☐ Lab ☐ Fecal**	**Duplicate WQ ID**		**Was site moved?**	**☐ Yes ☐ No**				
Explanation?									
Directions To Site									

Sketch of Assessment Reach and Comments: **Indicate North with (↑), indicate flow direction, indicate water sample (wq), indicate lat and long site with (X). Draw the sketch with a coarse resolution to give an overall idea of the sample area beyond the typical 100m reach. PLEASE DRAW A SKETCH IF THE SAMPLE SITE HAS CHANGED SINCE THE FIRST VISIT!!!!!**

Notes		**Single WQ Sample ID**	

Reviewers Initials		*ACTIVITIES AND DISTURBANCES >>>*			
Local Watershed Erosion		☐ None	☐ Slight	☐ Moderate	☐ Heavy
Recent Stream Scouring		☐ None	☐ Slight	☐ Moderate	☐ Heavy

Atmospheric Odors (Rate 0-4 or NR)		Odor Description	

Local NPS Pollution	☐ None ☐ Potential ☐ Obvious	If obvious, magnitude?	☐ Slight ☐ Moderate ☐ Heavy
Specify Obvious or Potential NPS (feedlot, etc.) other than Siltation/Sedimentation!			

Point Source Discharges	☐ Yes ☐ No	Pt. Source(s)	

Stream Reach Activities & Disturbances (Rate 1-Low, 2-Moderate, 3-High, 4-Extreme In Each Box That Applies)

Residential		Recreational		Agricultural		Industrial		Management	
	Residences		Parks/ Campground		Annual Row crops		Industrial Plants		Liming
	Lawns		Parking Lots		Pasture		Surface Mine		Rip/Rap or Bank Stabilization
	Power Lines		Boat Access/ Dock		Hay Production		Deep Mine		Dredging
	Construction		Swimming		Orchards		Coal Prep		Channelized
	Pipes/Drains		Fishing		Poultry		Quarries		Fill
	Bridges/Culverts		Pipes/Drains		Livestock Access		Railroad		Dams/Impounded
Width	Surf Type / Road Intensity		Foot Trails		Irrigation		Logging	Multipurpose State or County Maintained Roads	
			ATV, Horse, Bike Trails		Pipes/Drains		Power lines	Width	
Codes for Width and Surface Type are Displayed on the Right Under Multipurpose State or County Maintained Roads.			Bridges/Culverts		Bridges/Culverts		Woodyards/ Sawmills		A=Single Lane
		Width	Surf Type / Road Intensity	Width	Surf Type / Road Intensity		Sanitary Landfill		B=Double Lane
							Waste H2O Treatment		C=Multi-Lane
Elaborate on any of the Stream Reach Activities & Disturbances checked above. Which of the above is the greatest detriment to the stream?							Drinking H2O Treatment	Surface Type	
							Pipes/Drains		A=Dirt
							Parking Lots		B=Rutted Dirt
							Bridges/Culverts		C=Applied Limestone
							Gas/Oil Well		D=Applied Non-Limestone
							Gas/Oil Lines		E=Asphalt
						Width	Surf Type / Road Intensity		F=Concrete
									Road Intensity

If known, what is the predominant land use(s) in this stream's drainage? Is it mostly forested, agriculture, mining, logging, houses, urban? If mining present, is it active or abandoned, deep or strip, valley fills, etc. What is the predominant NPS pollution? Are there point sources above the reach? Indicate if you used maps (GIS) or field verified comments. DO NOT LEAVE THIS BOX BLANK!

Road Notes:

SEDIMENT>>>		**Reviewers Initials**	
AN-Code		**Date**	

Sediment Odors		**Sediment "Oils"**		**Sediment Deposits**			
	Normal		**Absent**		**Overall Silt**		**Relic Shells**
	Sewage		**Slight**		**Overall Sand**		**Marl (See Note at Left)**
	Petroleum		**Moderate**		**Overall Fine Gravel**		**Limestone Chunks or Fines**
	Chemical		**Profuse**		**Coal Chunks and Fines**		**Paper Fiber**
	Anaerobic (Septic)	**Rate Sediment Deposits: 0-None, 1-Low, 2-Moderate, 3-High, 4-Extreme, NR-Not Rated**			**Red Dog**		**Sludge**
	Other:				**Iron (Orange Hydroxide)**	**<u>Probable</u> Source:** ☐ **Mining** ☐ **Natural** ☐ **Other**	
Note: Marl (crumbly, grayish, lightweight) * Potomac Direct Drains Only*****					**Aluminum (White Hydroxide)**	**<u>Probable</u> Source:** ☐ **Mining** ☐ **Natural** ☐ **Other**	
					Manganese (Black Hydroxide)	**<u>Probable</u> Source:** ☐ **Mining** ☐ **Natural** ☐ **Other**	
					Other:		

Sediment Notes & Comments (Describe other or intensity):

☐ **Too Turbid/Deep to Determine** ☐ **Too Turbid to Determine** ☐ **Too Deep to Determine** ☐ **Surface Frozen=Cannot Determine**

Substrate Particle Layer Profile

Location[1]	**Habitat Type[2]**	**Substrate Particle[3]**	**Sand & Silt Thickness in cm[4]**	**Top**
				↓
Special Instructions: 1) Sample riffle habitat if available. 2) The location (left, middle, or right) is to be kept consistent for each consecutive visit if possible (e.g., High Flows).				
				Bottom
R RDB M L LDB				**Box above is 1cm wide**

Dominant Substrate Particle Type - Site Characterization

Dominant Substrate Particle [5]	**Estimated Percent of Dom[6]**	***Determined within the general area of the X-site & sample collection area.**

Substrate Particle Codes and Descriptions

Substrate Particles	**Particle Codes**	**Size Class**
Bedrock	**BR**	**Smooth surface rock/hardpan (>4000 mm – bigger than a car)**
Boulder	**BL**	**Basketball to car (>250-4000 mm)**
Cobble	**CB**	**Tennis ball to basketball (>64-250 mm)**
Coarse Gravel	**CG**	**Marble to tennis ball (>16-64 mm)**
Fine Gravel	**FG**	**Ladybug to marble (>2-16 mm)**
Sand	**SA**	**Gritty – up to ladybug (>0.06-2 mm)**
Silt & Fines	**ST**	**Fine – not gritty (<0.06 mm)**
Clay	**CL**	**Slick/ hard clay or hard-pan clay**
Metal Hydroxide	**MH**	**Any Metal Hydroxide Deposits (Use only in the Substrate Layer Profile)**

1. Location (left, middle, right) along a transect across the stream at the X-site. 2. Habitat type (riffle, run, pool). 3. Substrate Particle (use Particle Codes) is determined by removing one particle at a time (documenting each as a separate layer) starting from the uppermost layer and working down to the bottom. Only one layer profile is required per visit. 4. The thickness in cm of the sand & silt layers present in the profile. *<u>DO NOT LABEL TWO CONSECUTIVE LAYERS OF SAND OR SILT (e.g., 1-Sand, 2-Sand or 1-Silt, 2-Silt)</u>!!!!!* 5. Dom Substrate/Substrate Particle (use Particle Codes) encompasses the general area around the X-site and sample collection area. 6. Estimated percent of Dominant Substrate Particle encompasses the general area around the X-site and sample collection area.

Reviewers Initials		*FIELD WATER & FLOW>>*

Stream Debris (0=None, 1=Low, 2=Moderate, 3=Heavy, 4=Extreme, NR-Not Rated)

- ☐ Too Turbid/Deep to Determine
- ☐ Too Turbid to Determine
- ☐ Too Deep to Determine
- ☐ Surface Frozen=Cannot Determine

Debris	Rating
Dead Fish	
Garbage	
Gas Bubbles	
Ice Cover	
Oil-Grease	
Sewage	
Sludge	

Other:

Notes:

Periphyton		Filamentous Algae	

Periphyton/Algae Notes:

WQ Sample Location	☐ Mid-Stream ☐ Bank (☐ Left ☐ Right) ☐ Thalweg (☐ Left ☐ Mid ☐ Right) ☐ Left Channel ☐ Right Channel ☐ Cross Section ☐ Other:	WQ Type	☐ Single ☐ Profile ☐ Other:
Sonde Method	☐ Grab ☐ Sample Tube ☐ Bucket	Lab Water Method	☐ Grab ☐ Sample Tube ☐ Bucket

Flag	Physicochemical Parameters			Seasonal Water Level		Water Odors		Surface "Oils"		Turbidity
		Temperature °C		Below Normal		Normal		None		Clear
		pH (std. Units)		Normal		Sewage (Not Septic)		Flecks		Slightly Turbid
		Dissolved Oxygen (mg/L)		Above Normal		Petroleum		Sheen		Moderately Turbid
		Conductivity (μmhos/cm)		Flooding		Chemical		Globs		Highly Turbid
Sonde I.D. #:________ If any problems occur with the Water Meter or any readings are suspect, record notes in the space to the right.			Notes:			Anaerobic (septic)		Slick	Water color:	
						Other:				
					Foam/Suds (Rate 0-4 or NR)					

ABOVE: Record readings in box for corresponding physicochemical parameter. Insert a √ in the box for other categories.

Precipitation Status and History

Current		Past 24 Hours (If Known)		Major Rain Event in past week?	☐ Yes ☐ No

If it is raining or has rained recently, which of the following best describes the peak runoff (flush) condition of the stream at the site when water samples were collected? If the runoff condition is in response to snowmelt, please indicate as such above.

N/A		< 1 Hour		1 to 4 Hours		4 to 12 Hours		12 to 24 Hours		1 to 2 Days		2 to 4 Days		4 to 7 Days		Unknown	

Is the stream level in the process of rising or falling at the time of visit? ☐ Baseflow ☐ Rising ☐ Falling

Field Water Notes and Precipitation Comments:

FLOW INFORMATION	If using an OTT MF Pro meter, then record information here. If using a Marsh-McBirney meter or conducting a gage reading, put info on a Flow Appendix sheet.

<u>No Flow?:</u> If a flow was scheduled for the site and not performed, then indicate if one of the following applies: ☐ Dry ☐ Low Flow ☐ Too Deep/Too Fast ☐ Instrument Failure ☐ Frozen/Ice ☐ Safety ☐ Substrate

Profile Name		Measurer		Flow Method	☐ Flow Meter ☐ Timed-Bucket ☐ Gage ☐ Estimate	Flow Meter ID	
File Name		Time					

Do you think that this flow measurement is comparable?	☐Yes ☐No	If not comparable, Why? (Write Below)	Final Discharge Reading (cfs or ft^3/s)=	

Flow Notes:

TMDL RBP PARAMETERS >>>				Reviewers Initials	
AN-Code				**Date**	

2. EMBEDDED-NESS	Gravel, cobble and boulder particles are between **0 and 25%** surrounded by **fine sediment**; layering of cobble provides a diversity of niche space. **NOTE: Clean Bedrock is not considered embedded!**	Gravel, cobble, and boulder particles are between **25 and 50%** surrounded by **fine sediment.**	Gravel, cobble and boulder particles are between **50 and 75%** surrounded by **fine sediment.**	Gravel, cobble and boulder particles are **over 75%** surrounded by **fine sediment**.
	Rate in Riffles or Runs	**Remember to consult with Biomorph**		
SCORE:	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
☐ Too Turbid/Deep to Determine ☐ Too Turbid to Determine ☐ Too Deep to Determine ☐ Surface Frozen=Cannot Determine				
5. SEDIMENT DEPOSITION	**Little or no** enlargement of island or point **bars** and **less than 5%** of the bottom is affected by sediment deposition.	**Some new** increase in **bar** formation, mostly from **gravel, sand, or fine sediment**; **5 to 30%** of the bottom is affected; slight deposition in pools.	**Moderate** deposition of **new gravel, sand or fine sediment** on **old and new bars**; **30-50%** of bottom is affected; sediment deposits at obstructions, constrictions, and bends; moderate deposition in pools prevalent.	**Heavy** deposits of fine material; increased bar development; **more than 50%** of bottom is changing frequently; pools almost absent due to substantial sediment deposition.
	Rate in Pools & Depositional Areas			
SCORE:	20 19 18 17 16	15 14 13 12 11	10 9 8 7 6	5 4 3 2 1 0
☐ Too Turbid/Deep to Determine ☐ Too Turbid to Determine ☐ Too Deep to Determine ☐ Surface Frozen=Cannot Determine				
8. BANK STABILITY	Banks stable; evidence of erosion or bank failure **absent or minimal**; little potential for future problems (**<5%** of bank affected).	Moderately stable; **infrequent, small areas** of erosion mostly healed over; **5-30%** of bank in reach has areas of erosion.	Moderately unstable; **30-60%** of bank in reach has areas of erosion; **high potential** during floods.	Unstable; many eroded areas; **"raw" areas frequent** along straight sections and bends; obvious bank sloughing; **60-100%** of bank has erosional scars.
TOTAL SCORE:	**Determine left/right by facing downstream**			
LEFT:	10 9	8 7 6	5 4 3	2 1 0
RIGHT:	10 9	8 7 6	5 4 3	2 1 0
9. BANK VEGETATIVE PROTECTION	**More than 90%** of the stream bank surfaces and immediate riparian zones (**crest-over**) covered by **native vegetation** including trees, understory shrubs, and non-woody plants (herbs, grasses, ferns, mosses); vegetative **disruption** through grazing or mowing minimal or **not evident**; almost all plants allowed to grow naturally.	**70-90%** of the stream bank surfaces are covered by **native vegetation**, but **one class of plants is not well represented**; **disruption evident**, but not affecting plant growth potential to any great extent; **more than one-half** of the **potential plant** stubble height remaining.	**50-70%** of the stream bank surfaces are covered by **native vegetation**; **disruption obvious**; **patches of bare soil or closely cropped vegetation common**; **less than one-half** of the potential **plant stubble** height remaining.	**Less than 50%** of the stream bank surfaces are covered by **native vegetation**; **disruption** of stream bank vegetation **very high**; **vegetation has been removed to 2 inches or less in average stubble height**.
	Rate Non-Native/Invasive Vegetation lower than Native Vegetation			
TOTAL SCORE:	**Rate from bottom of bank to crest-over at top of bank-large roots count**			
LEFT:	10 9	8 7 6	5 4 3	2 1 0
RIGHT:	10 9	8 7 6	5 4 3	2 1 0
10. WIDTH OF UNDISTURBED VEG. ZONE	Width of undisturbed vegetative zone is **>18 meters**; **human activities** (parking lots, roadbeds, clear cuts, lawns, or crops) have **not impacted** this zone.	Zone width is between **12 and 18 meters**; **human activities** have only **minimally impacted** this zone.	Zone width is between **6 and 12 meters**; **human activities** have **impacted** the zone a **great deal**.	Width of zone is **less than 6 meters**; **little or no un-disturbed** vegetation due to **man-induced activities**.
	Rate from top of bank crest-over out into the flood plain/adjacent areas			
TOTAL SCORE:	**Undisturbed veg. is trees, shrubs, & non-woody macro-phytes**			
LEFT:	10 9	8 7 6	5 4 3	2 1 0
RIGHT:	10 9	8 7 6	5 4 3	2 1 0

Is Site A Potential Reference?	**☐ Yes ☐ No (Consider Water Chemistry, Benthos, Habitat, Human Disturbance, Location (i.e., Ecoregion), Level I vs. Level II Reference Condition, etc.)**
If not a Potential Reference, why?	
Stressor Info (Check all that apply and only those that are definite stressors)	**☐ Sediment ☐ Fecal ☐ Nutrients ☐ Metals ☐ pH ☐ Sulfate ☐ Conductivity ☐ Other:**

Reviewers Initials		*LANDOWNER/STAKEHOLDER INFORMATION, RECON, & PHOTOS >>>>>>>>>>>>>>>>>>>>>>*	
Landowner/ Stakeholder Name		**Landowner/ Stakeholder Name**	
Address		**Address**	
1°Phone #	( )	**1°Phone #**	( )
ALT #	( )	**ALT #**	( )
Stream Data Requested [ ]	**WS Report Requested [ ]**	**Stream Data Requested [ ]**	**WS Report Requested [ ]**
Other Pertinent Landowner Information (e.g., email) & Comments:		**Other Pertinent Landowner Information (e.g., email) & Comments:**	

Discuss the accessibility to the site including accessibility, posted property, fenced, beside road, long walk over treacherous terrain, hike length, 4 x 4 needed, get key from landowner, etc.

Check all that apply:	☐ Easy Access ☐ Difficult Access ☐ Public Property ☐ Private Property ☐ Posted ☐ Fenced ☐ Gated ☐ Get Key from Landowner ☐ Beside Road ☐ Short Hike ☐ Long Hike ☐ 4x4 Needed ☐ Other (explain)

Recon/Accessibility Notes:

Photography Log >>>>>>>>>>>>>>>>>	**Camera Type**		**Camera Number**	

#	Photo ID (office)	Disk Photo # (field)	Stream Name and/or AN-Code	Photo Description (Use Key Words)	Date	Photographer
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						
11						
12						