### W-E30

### **Wetland Photograph Page**

### Wetland ID W-E30



Photograph Direction NW

Date: 05/02/2015

Comments: 2015 wetland delineation.



Photograph Direction WSW

Date: \_\_09/25/2018

Comments: 2018 revisit; permanent impact from access road construction

Project/Site: MVP		City/C	ounty: Webster		Sampling Date: 05/02/2015	
Applicant/Owner: MVP			,		Sampling Point: W-E30	
Investigator(s): S Ryan, L Harloe, H Heist Section, Township, Range: N/A						
Landform (hillslope, terrace, etc					Slone (%): 2	
Subregion (LRR or MLRA): LF					Datum: NAD 83	
Soil Map Unit Name: Atkins le						
•					·	
Are climatic / hydrologic condition		•				
Are Vegetation, Soil	, or Hydrology	significantly disturb	ped? Are "Normal	Circumstances" p	resent? Yes No	
Are Vegetation, Soil	, or Hydrology	naturally problema	tic? (If needed, e	explain any answe	rs in Remarks.)	
SUMMARY OF FINDING	3S – Attach sit	e map showing sam	pling point location	ns, transects	, important features, etc.	
Lhudranhutia Wanatatian Dasaa		✓ No.				
Hydrophytic Vegetation Prese Hydric Soil Present?	nt? Yes Yes	No No	Is the Sampled Area	./		
Wetland Hydrology Present?	Yes	<u>✓ No</u>	within a Wetland?	Yes	No	
Remarks:						
Cowardin Code: PEM H	GM: Riverine	WT: RPWWN				
Information listed on this permanent access road and hydric soils was una	form represent was constructed ble to be confire	s the data collected in d through this area. T med because of cons	n 2015. The wetland he presence of wetl truction activity with	d was revisited and hydrology in the road.	on 09/25/2018 when a , hydrophytic vegetation,	
HYDROLOGY						
Wetland Hydrology Indicato	rs:			Secondary Indica	tors (minimum of two required)	
Primary Indicators (minimum o	of one is required; o	check all that apply)		Surface Soil	` '	
Surface Water (A1)		True Aquatic Plants (I	314)	Sparsely Veg	getated Concave Surface (B8)	
High Water Table (A2)		Hydrogen Sulfide Odd	· ·	Drainage Pat		
Saturation (A3)		✓ Oxidized Rhizosphere	• , ,	Moss Trim Li	` ′	
Water Marks (B1)		Presence of Reduced	` ,	_ ′	Water Table (C2)	
Sediment Deposits (B2)		Recent Iron Reduction	` ,	Crayfish Burn	` ′	
Drift Deposits (B3)		Thin Muck Surface (C			sible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)		Other (Explain in Ren	narks)		tressed Plants (D1)	
Iron Deposits (B5) Inundation Visible on Aeri	ial Imagany (P7)			Geomorphic Shallow Aqui		
Water-Stained Leaves (B					phic Relief (D4)	
Aquatic Fauna (B13)	5)			FAC-Neutral	' '	
Field Observations:						
Surface Water Present?	Yes No	Depth (inches):				
Water Table Present?		Depth (inches):				
Saturation Present?		Depth (inches):		lydrology Presen	t? Yes 🗸 No	
(includes capillary fringe)					100	
Describe Recorded Data (stre	am gauge, monitori	ing well, aerial photos, pre	vious inspections), if ava	ilable:		
Remarks: 2015 notes: Surface water present, b road and S-E30. Possible	ut not in pit. Co	ntinues outside of acquarbage dumping.	cess road ROW. Th	is area is distu	rbed and sits between	

/EGETATION (Four Strata) – Use scientific na	ames of	plants.		Sampling Point: W-E30
30'	Absolute		Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:30')	% Cover	Species?	Status	Number of Dominant Species
1		-		That Are OBL, FACW, or FAC:3 (A)
2				Total Number of Dominant
3				Species Across All Strata:3 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC: 100% (A/B)
6				Prevalence Index worksheet:
7				Total % Cover of: Multiply by:
0		= Total Co		OBL species x 1 =
50% of total cover: 0	20% of	total cove	r: <u> </u>	
Sapling/Shrub Stratum (Plot size: 15' )				FACW species x 2 = FAC species x 3 =
1				FACU species x 4 =
2				UPL species x 5 =
3				
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 <sup>1</sup>
		= Total Co		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
50% of total cover: 0	20% of	total cove	r: <u> </u>	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5' )	00			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
1. Juncus effusus			FACW_	<u> </u>
2. Packera aurea	5		FACW_	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
3. Poa palustris	15		F <u>ACW</u>	be present, unless disturbed or problematic.
4. Voila cucullata	10		F <u>ACW</u>	Definitions of Four Vegetation Strata:
5. Impatiens capensis	5		_ F <u>ACW_</u>	The Manda desta control of the Control of
6. Carex Iurida	20		OBL	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				<b>Herb</b> – All herbaceous (non-woody) plants, regardless
		= Total Co		of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>37.5</u>	20% of	total cove	r: <u>15</u>	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15' )				height.
1				
2				
3				
4				Hydrophytic
5				Vegetation
	0	= Total Co	ver	Present? Yes V No No
50% of total cover:0	20% of	total cove	r: <u> </u>	
Remarks: (Include photo numbers here or on a separate s	heet.)			•

W-E30

Depth	cription: (Describe of Matrix	to the dep		x Features		or commi	tile absence	of malcators.
(inches)	Color (moist)	%	Color (moist)	<u> </u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-10	10 YR 4/1	85	10 YR 3/6	15	С	M/PL	CL	
10-20	10 YR 5/2	98	10 YR 3/6	2	С	M	CL	
								· <del>-</del>
-								
					С			
1Type: C-C	oncentration, D=Dep	letion RM-	-Reduced Matrix MS	S-Maskad	Sand G	raine	<sup>2</sup> Location: P	PL=Pore Lining, M=Matrix.
Hydric Soil		ielion, Kivi=	Reduced Matrix, Mc	3=IVIASKEU	Sanu G	iaiiis.		eators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface	(97)				2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		ce (S8) <b>(</b> I	MI RA 147.		Coast Prairie Redox (A16)
	istic (A3)		Thin Dark Su		. , .		,	(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye			, <b>.,</b>	F	Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma		,			(MLRA 136, 147)
	uck (A10) (LRR N)		Redox Dark		6)		\	/ery Shallow Dark Surface (TF12)
Deplete	d Below Dark Surface	e (A11)	Depleted Dar	k Surface	(F7)		(	Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	Mucky Mineral (S1) <b>(L</b>	.RR N,	Iron-Mangan		es (F12)	(LRR N,		
	A 147, 148)		MLRA 13	-			2	
	Gleyed Matrix (S4)		Umbric Surfa					dicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					etland hydrology must be present,
	Matrix (S6)		Red Parent N	/laterial (F	21) <b>(MLF</b>	KA 127, 147	) un	nless disturbed or problematic.
	Layer (if observed):							
Type: No								
Depth (in	ches):		<u> </u>				Hydric Soi	I Present? Yes No
Remarks:								

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.441535	Lon.	-80.550864
STREAM/SITE ID AND SITE DESCR	RIPTION:			Wetland (W-E30), 27.44a	c wate	ershed, HUC 12 watershed Headwate	rs Laure	el Creek, riverine,
(% stream slope, watershed size {a	RPWWN, palustrine	emer	gent wetland adjacent to existing dir	t road a	long stream			
FORM OF MITIGATION:		Mitiga	ition Bank					
DATE:	02-N	May-16	WEATHER CONDITIONS:					
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-E30	Emergent	0.0316	Emergent					
						PART III - Advanced I	Mitigatio	on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		у
Total Impact		0.0316						
		Unit Scores				Estimated		
	assification	•	Replacement Unit(s)			ILF Costs		
Total Emergent			0.0316					
Total Scrub-Shrub			0			\$1,896.00		
Total Forested			0					
Total Open Water			0					

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Long-term F % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

Temporal Loss-Maturity								
*Note: Period between completion of compensatory mitig	gation measures and the time required							
for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).								
% Add. Mitigation Temporal Loss-Maturity (Years)								
% Aud. Miligation	Temporal Loss-Maturity (Tears)							
<b>0</b> %								
Sub-Total	0							

Long-term Protection								
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)							
0 + 5/10 Year Monitoring	Perpetual							
Sub-Total	0							

Extended Upland Buffer Zone					
*Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation					
Average Buffer Width	Mitigation Type				
0	0-50	None			
0	51-150 None				

PART V - Final Unit Score								
Wetland Classification	Replacement Index	Form of Mitigation	rm of Mitigation Adjusted Final Unit Score to Offset (Debit)		Balance			
Emergent	0.0316		0.0316		-0.0316			
Scrub-Shrub	0	Restoration	0		0			
Forested	0	Restoration	0		0			
Open Water	0		0		0			
Net-Total	0.0316		0.0316	#DIV/0!	#DIV/0!			

### W-F40



Photograph Direction NE

Comments:	

Project/Site: MVP		City/0	County: Webster		Sampling Date: 05/04/2015			
Applicant/Owner: MVP		•			Sampling Point: W-F40			
Investigator(s): A. Flake, D. McCullough, E. Strohmaier Section, Township, Range: N/A								
Landform (hillslope, terrace, etc.			·		Slope (%): 0			
Subregion (LRR or MLRA): LI					Datum: NAD 83			
Soil Map Unit Name: Cotaco								
Are climatic / hydrologic conditi	ions on the site ty	pical for this time of year?	res No (	(If no, explain in R	emarks.)			
Are Vegetation, Soil	, or Hydrolog	gy significantly distu	rbed? Are "Normal	Circumstances" p	oresent? Yes No			
Are Vegetation, Soil								
_	•				, important features, etc.			
Hydrophytic Vegetation Prese	ent? Yes	✓ No_						
Hydric Soil Present?		✓ No	Is the Sampled Area within a Wetland?	Yes 🗸	No			
Wetland Hydrology Present?	Yes	<b>✓</b> No	within a wettand?	Tes				
Remarks:			l					
Cowardin Code: PSS								
HGM: RIVERINE								
WT: RPWWD								
HYDROLOGY								
Wetland Hydrology Indicato	ors:			Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum	of one is required	; check all that apply)		Surface Soil	Cracks (B6)			
Surface Water (A1)	•	True Aquatic Plants			getated Concave Surface (B8)			
High Water Table (A2)		Hydrogen Sulfide Oc		Drainage Par				
Saturation (A3)		Oxidized Rhizospher		Moss Trim Li				
Water Marks (B1)		Presence of Reduce	d Iron (C4)	Dry-Season Water Table (C2)				
Sediment Deposits (B2)		Recent Iron Reduction	on in Tilled Soils (C6)	Crayfish Buri	rows (C8)			
Drift Deposits (B3)		Thin Muck Surface (	C7)	Saturation Vi	sible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)		Other (Explain in Re	marks)	Stunted or S	tressed Plants (D1)			
Iron Deposits (B5)				Geomorphic	Position (D2)			
Inundation Visible on Aer				Shallow Aqui	itard (D3)			
Water-Stained Leaves (B	39)			Microtopographic Relief (D4)				
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)			
Field Observations:		.,						
Surface Water Present?		Depth (inches):	40					
Water Table Present?	Yes No		16					
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	0 Wetland H	lydrology Presen	it? Yes <u>/</u> No			
Describe Recorded Data (stre	eam gauge, monit	oring well, aerial photos, pre	I evious inspections), if ava	ilable:				
Remarks:								

### VEGETATION (Four Strata) - Use scientific names of plants.

30'

Sapling/Shrub Stratum (Plot size: 15' ) 1. Alnus serrulata

3. Ranunculus acris

Tree Stratum (Plot size: \_\_

Herb Stratum (Plot size: \_\_\_5'

1. Iris pseudacorus

2. Polygonum sp.

4. Poa palustris

\_\_\_\_)

50% of total cover: \_\_\_0 \_\_\_20% of total cover:\_\_\_0

50% of total cover: 15 20% of total cover: 6

50% of total cover: 45 20% of total cover: 18

50% of total cover: 0 20% of total cover: 0

nes of	plants.		Sampling	Point: W-F40	
solute			Dominance Test workshee	t:	
Cover	Species?	Status	Number of Dominant Species That Are OBL, FACW, or FA		(A)
			Total Number of Dominant Species Across All Strata:	2	(B)
			Percent of Dominant Species That Are OBL, FACW, or FA	100	(A/E
			Prevalence Index workshee	et:	
0 .	= Total Cov		Total % Cover of:	Multiply by:	
	total cover:		OBL species	x 1 =	_
20 /0 01	total cover.		FACW species	x 2 =	
30	~	OBL	FAC species	_	
		ODL	· -	x 4 =	
	-		·	x 5 =	_
			Column Totals:	· · · · · · · · · · · · · · · · · · ·	– (B)
	-		Oolullii Totais.		(D
			Prevalence Index = B/A	A =	_
	-		Hydrophytic Vegetation Inc	dicators:	
			1 - Rapid Test for Hydro	phytic Vegetation	
	-		✓ 2 - Dominance Test is >:	50%	
			3 - Prevalence Index is s	≤3.0 <sup>1</sup>	
	= Total Cov		4 - Morphological Adapta	ations¹ (Provide sup	portir
20% of	total cover:	6	data in Remarks or o		
10			Problematic Hydrophytic	•	
10		OBL		( )	,
10	-	ND	<sup>1</sup> Indicators of hydric soil and	wetland hydrology i	must
10		FAC	be present, unless disturbed		
60		F <u>ACW</u>	Definitions of Four Vegetat	ion Strata:	
			Tree – Woody plants, exclud more in diameter at breast he height.		
			Sapling/Shrub – Woody pla than 3 in. DBH and greater th m) tall.		
	= Total Cov	40	Herb – All herbaceous (non- of size, and woody plants les		rdles
20% of	total cover:	18	Woody vine – All woody vine height.	es greater than 3.28	3 ft in
	= Total Cov	^	Hydrophytic Vegetation Present? Yes	No	

Remarks: (Include photo numbers here or on a separate sheet.)

Woody Vine <u>Stratum</u> (Plot size: 15')

ND - Not Determined

SOIL Sampling Point: W-F40

Profile Desc	ription: (Describe t	o the dep	th needed to docur	nent the	indicator	or confirn	n the absen	ce of indicators.)
Depth	Matrix			x Feature				
(inches) 0-4	Color (moist) 10YR 3/3	<u>%</u> 100	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture SiLo	Remarks
4-10	2.5Y 3/2	85	10YR 3/6	15	С		SiLo	
10-16	2.5Y 4/2	80	7.5YR 5/8	20	C	M	SaSiLo	
10-10	2.51 4/2		7.511( 5/6		<u> </u>	IVI	Jasie	<u> </u>
			-		-			
¹Type: C=Co	oncentration, D=Depl	etion RM	=Reduced Matrix MS	S=Masker	d Sand Gr	ains	<sup>2</sup> Location:	PL=Pore Lining, M=Matrix.
Hydric Soil		Otion, rtivi-	-readoca Matrix, Me	<u>J-Masket</u>	a Garia Gi	unio.	Inc	licators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface	e (S7)				2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		ice (S8) <b>(N</b>	ILRA 147		Coast Prairie Redox (A16)
	stic (A3)		Thin Dark Su			47, 148)		(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye		(F2)			Piedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma		-0)			(MLRA 136, 147)
	ick (A10) <b>(LRR N)</b> d Below Dark Surface	Δ (Δ11)	Redox Dark	•			_	Very Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	(7(11)	Redox Depre					Other (Explain in Remarks)
	lucky Mineral (S1) <b>(L</b>	RR N,	Iron-Mangan			LRR N,		
	A 147, 148)		MLRA 13					
	Sleyed Matrix (S4)		Umbric Surfa					Indicators of hydrophytic vegetation and
-	Redox (S5)		Piedmont Flo					wetland hydrology must be present,
	Matrix (S6)  Layer (if observed):		Red Parent N	viateriai (F	·21) (WLR	A 127, 14	<i>(</i> )	unless disturbed or problematic.
Type:	Layer (ii observed).							
Depth (inc	chas).						Hydric S	oil Present? Yes No
Remarks:							Tiyane o	on resent: res No
Remarks.								

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.421461	Lon.	-80.570007
STREAM/SITE ID AND SITE DESCR	RIPTION:			Wetland F40 (W-F40), 202.561 ac watershed, HUC 12 watershed Upper Birch River,				Birch River,
(% stream slope, watershed size {a	creage}, unaltered	l or impairments)	1			rine, RPWWD, scrub shrub wetland		
FORM OF MITIGATION:		Mitiga	ition Bank					
DATE:	04-N	lay-16	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-F40	Scrub-Shrub	0.0188	Emergent					
				-		PART III - Advanced	Mitigati	on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		n
Total Impact		0.0188						
		Unit Scores				Estimated	<u> </u>	
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.0188	-		\$1,128.00		
Total Forested			0			<b>\$1,120.00</b>		
Total Open Water			0					

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Temporal Loss-Construction Long-term F \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years O Sub-Total O

Temporal Loss-Maturity						
*Note: Period between completion of compensatory mitig	gation measures and the time required					
for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).						
% Add. Mitigation Temporal Loss-Maturity (Years)						
0%						
Sub-Total	0					

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone					
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation					
Average Buffer Width	rage Buffer Width Mitigation Type				
0	0-50	None			
U	51-150	None			

PART V - Final Unit Score							
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance		
Emergent	0.0400		0.0188	willigation (Credit)	-0.0188		
- J	0.0188		0.0100		-0.0100		
Scrub-Shrub	0	Restoration	U		U		
Forested	0	11001011011	0		0		
Open Water	0		0		0		
Net-Total	0.0188		0.0188	#DIV/0!	#DIV/0!		

### **W-E18-PSS**

### Wetland Photograph Page

Wetland ID  $\underline{\text{W-E18-PSS}}$  Date  $\underline{\text{04/29/201}}$ 5



Photograph Direction SE

Comments:		

Project/Site: MVP	City/County: Webster	Sampling Date: 04/29/2015
Applicant/Owner: MVP		State: WV Sampling Point: W-E18-PSS
Investigator(s): S Ryan, AJ Grech, H Heist	Section, Township, Range: N	· -
Landform (hillslope, terrace, etc.): Depression		
Subregion (LRR or MLRA): LRRN		.612127 Datum: NAD83
Soil Map Unit Name: Clifftop channery silt loa		
	_	
Are climatic / hydrologic conditions on the site typic		
Are Vegetation, Soil, or Hydrology	significantly disturbed? Are "Normal	Circumstances" present? Yes No
Are Vegetation, Soil, or Hydrology _	naturally problematic? (If needed, e	explain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site	e map showing sampling point location	ons, transects, important features, etc.
Hydrophytic Vegetation Present? Yes	No Is the Sampled Area	
Hydric Soil Present? Yes	Is the Sampled Area	Yes No
Wetland Hydrology Present? Yes	No within a Wetland?	Yes No
Remarks:		
Cowardin Code: PSS		
HGM: RIVERINE		
WT: RPWWD		
HYDROLOGY		
Wetland Hydrology Indicators:		Secondary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; c		Surface Soil Cracks (B6)
Surface Water (A1)	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
High Water Table (A2) Saturation (A3)	<ul><li>Hydrogen Sulfide Odor (C1)</li><li>Oxidized Rhizospheres on Living Roots (C3)</li></ul>	✓ Drainage Patterns (B10)
Water Marks (B1)	Oxidized Knizospheres on Living Roots (C3)      Presence of Reduced Iron (C4)	Moss Till Lines (B16) Dry-Season Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
Drift Deposits (B3)	Thin Muck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
	Other (Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)		✓ Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)
Water-Stained Leaves (B9)		Microtopographic Relief (D4)
Aquatic Fauna (B13)		FAC-Neutral Test (D5)
Field Observations:	<b>V</b> 5 4 6 4 3	
	Depth (inches): 11	
	Dopin (monos)	Hydrology Present? Yes <u>✓</u> No
Saturation Present? Yes No (includes capillary fringe)	Depth (inches): wetland F	Hydrology Present? Yes No
Describe Recorded Data (stream gauge, monitori	ng well, aerial photos, previous inspections), if ava	ailable:
Remarks:		
ixemarks.		

Sampling	Point: W-E18-PSS
Januaria	1 01111. 11 - 10 1 00

30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )		Species?	Status	Number of Dominant Species That Are OBL, FACW, or FAC: 2 (A)
2		-		Total Number of Dominant
3				Species Across All Strata:3 (B)
4				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:66 (A/B)
6				Prevalence Index worksheet:
7	0			Total % Cover of: Multiply by:
50% of total cover: 0		= Total Cov	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' )	20% 01	total cover		FACW species x 2 =
. Carpinus caroliniana	60	~	FAC	FAC species x 3 =
			1 10	FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4				Column Totals (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7	-			1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9		-		3 - Prevalence Index is ≤3.0 <sup>1</sup>
		= Total Cov		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
50% of total cover: 30	20% of	total cover	12	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5' )	40			Problematic Hydrophytic Vegetation (Explain)
1. Barbarea vulgaris	10		OBL	Troblematic Hydrophytic Vogotation (Explain)
2. Impatiens capensis	15		FACW_	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
3. Juncus effusus	10		FACW_	be present, unless disturbed or problematic.
4. Viola septentrionalis	20		F <u>ACU</u>	Definitions of Four Vegetation Strata:
5. Packera aurea	40		F <u>ACW</u>	
<sub>6.</sub> Fragaria virginiana	5		F <u>ACU</u>	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				One line of Ohmeth - Wander day and a standard in a single standard
9				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11.				Herb – All herbaceous (non-woody) plants, regardless
	100	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover:50	20% of	total cover	20	<b>W</b> 1
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				noight.
2.				
3				
4				
5.				Hydrophytic Vegetation
	0	= Total Cov	er	Present? Yes V No No
50% of total cover: 0		total cover	_	
Remarks: (Include photo numbers here or on a separate s	·			
a comparation	/			
				I

SOIL Sampling Point: W-E18-PSS

Profile Desc	ription: (Describe t	o the dep	th needed to docun	nent the i	ndicator	or confirn	n the abs	sence of indicate	ors.)
Depth	Matrix		Redox	x Feature:	S				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Text		Remarks
8-0	7.5YR 4/2	90	7.5YR 5/6	10	С	M	SA/L	_O	
8-20	Gley1 3/10Y	100					SA/L	_O	
							-		_
								<u> </u>	
							'		_
									_
							-		
1Tupo: C-Co	oncentration, D=Depl	otion DM	- Poduced Metrix MS		L Cond Cr		<sup>2</sup> L conti	on: PL=Pore Lini	ing M-Matrix
Hydric Soil I		elion, Rivi=	Reduced Matrix, MS	s=iviasked	Sand Gra	airis.	Locali	Indicators for P	roblematic Hydric Soils <sup>3</sup> :
-			Dork Surface	(87)					•
Histosol	ipedon (A2)		Dark Surface Polyvalue Be		co (S9) <b>(N</b>	II DA 147	1/0\		A10) <b>(MLRA 147)</b> e Redox (A16)
Black His			Thin Dark Su				, 140)	Coast Prairie	
	n Sulfide (A4)		Loamy Gleye			47, 140)			oodplain Soils (F19)
	Layers (A5)		Depleted Mat		1 2)			(MLRA 13	, ,
	ck (A10) <b>(LRR N)</b>		Redox Dark \$		·6)				v Dark Surface (TF12)
	Below Dark Surface	(A11)	Depleted Dar						nin in Remarks)
	rk Surface (A12)	(****)	Redox Depre						,
	ucky Mineral (S1) (L	RR N,	Iron-Mangane			LRR N,			
	147, 148)	•	MLRA 130		( )(	•			
	leyed Matrix (S4)		Umbric Surfa		MLRA 13	6, 122)		<sup>3</sup> Indicators of h	ydrophytic vegetation and
	edox (S5)		Piedmont Flo				48)		plogy must be present,
-	Matrix (S6)		Red Parent M						ped or problematic.
Restrictive L	ayer (if observed):								
Type: No	ne								
Depth (inc	ches):						Hydri	c Soil Present?	Yes 🗸 No
Remarks:	,								
remano.									

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.367284	Lon.	-80.612248
STREAM/SITE ID AND SITE DESCR	IPTION:			Wetland E18 (W-E18)	, 52.64	ac watershed, HUC 12 watershed Bi	ig Laure	Creek-Gauley
% stream slope, watershed size {a	creage}, unaltered	d or impairments		River, ri	verine,	RPWWD, scrub-shrub wetland alo	ng strea	m
FORM OF MITIGATION:		Mitiga	ation Bank					
PATE:	29-Apr-16 WEATHER CONDITIONS:					PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
V-E18-PSS	Scrub-Shrub	0.0538	Emergent					
						PART III - Advanced	Mitigati	on
						Sustainable Determination Made o Advanced Mitigation (Y or N)	n	n
Total Impact		0.0538						
		Unit Scores				Estimated		
Wetland Cla	assification		Replacement Unit(s)			ILF Costs	i	
otal Emergent			0.0538	_		\$3,228.00		
otal Scrub-Shrub otal Forested			0			\$3,228.00	,	
otal Open Water			0	<del> </del>				

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Temporal Loss-Construction Long-term P \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years O Sub-Total O

Temporal Loss-Maturity						
*Note: Period between completion of compensatory mitigation measures and the time required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).						
% Add. Mitigation Temporal Loss-Maturity (Years)						
0%						
Sub-Total 0						

Long-term Protection			
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)		
0 + 5/10 Year Monitoring	Perpetual		
Sub-Total	0		

Extended Upland Buffer Zone						
*Note1: Reference Instruction	*Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation					
Average Buffer Width	Mitigation Type					
0	0-50	None				
0	51-150	None				

PART V - Final Unit Score							
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score	Applicant Input	Balance		
			to Offset (Debit)	Mitigation (Credit)			
Emergent	0.0538		0.0538		-0.0538		
Scrub-Shrub	0	Restoration	0		0		
Forested	0	Restoration	0		0		
Open Water	0		0		0		
Net-Total	0.0538		0.0538	#DIV/0!	#DIV/0!		

### W-E13



Photograph Direction South

Comments:			

Project/Site: MVP		(	City/County: Webster		Sampling Date: 04/28/2015	
Applicant/Owner: MVP			, ,		Sampling Point: W-E13	
Investigator(s): S Ryan, AJ	Grech, H Heis	t	Section, Township, Range: N			
Landform (hillslope, terrace, etc					Slone (%)· 0	
Subregion (LRR or MLRA): LF			Long: <u>-80</u>		Datum: NAD83	
Soil Map Unit Name: Pope-P						
				NWI classific		
Are climatic / hydrologic conditi	ons on the site typ	pical for this time of year				
Are Vegetation, Soil	, or Hydrolog	y significantly	disturbed? Are "Norma	Il Circumstances" p	present? Yes No	
Are Vegetation, Soil	, or Hydrolog	y naturally pro	blematic? (If needed,	explain any answe	rs in Remarks.)	
SUMMARY OF FINDING	GS – Attach s	ite map showing	sampling point location	ons, transects	, important features, etc.	
Lhudaanhutia Vanatatian Daasa		✓ Na				
Hydrophytic Vegetation Prese Hydric Soil Present?	ent? Yes _ Yes		Is the Sampled Area	./		
Wetland Hydrology Present?	Yes	✓ No No	within a Wetland?	Yes	No	
Remarks:		110				
Cowardin Code: PFO						
HGM: DEPRESSION WT: RPWWN						
HYDROLOGY						
Wetland Hydrology Indicato	ors:			Secondary Indica	tors (minimum of two required)	
Primary Indicators (minimum	of one is required:	check all that apply)		Surface Soil	Cracks (B6)	
Surface Water (A1)		True Aquatic Pla	ants (B14)	Sparsely Vegetated Concave Surface (B8)		
High Water Table (A2)		Hydrogen Sulfid	le Odor (C1)	Drainage Pa	tterns (B10)	
Saturation (A3)		Oxidized Rhizos	spheres on Living Roots (C3)	Moss Trim Li	ines (B16)	
Water Marks (B1)		Presence of Re	duced Iron (C4)	Dry-Season	Water Table (C2)	
Sediment Deposits (B2)		Recent Iron Rec	duction in Tilled Soils (C6)	Crayfish Buri	rows (C8)	
Drift Deposits (B3)		Thin Muck Surfa	ace (C7)	Saturation Vi	sible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)		Other (Explain i	n Remarks)	Stunted or S	tressed Plants (D1)	
Iron Deposits (B5)				Geomorphic	` '	
Inundation Visible on Aer	ial Imagery (B7)			Shallow Aqui	itard (D3)	
✓ Water-Stained Leaves (B)	,9)			Microtopogra	aphic Relief (D4)	
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)	
Field Observations:						
Surface Water Present?		Depth (inches):				
Water Table Present?		Depth (inches):			_	
Saturation Present? (includes capillary fringe)	Yes No	Depth (inches):	:0 Wetland I	Hydrology Presen	nt? Yes <u>/</u> No	
Describe Recorded Data (stre	am gauge, monito	oring well, aerial photo	s, previous inspections), if ava	ailable:		
·						
Remarks:						
Surface water present b				st likely associa	ited with historic road	
construction. Several up	land trees with	ıın delineated boui	ndary.			

Samr	olina	Point:	W-E	13

30'	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species _
1. Quercus alba	40		FACU_	That Are OBL, FACW, or FAC:5 (A)
2. Fraxinus pensylvanicum	20		FACW_	Total Number of Dominant
3. Acer rubrum	35		FAC	Species Across All Strata: 8 (B)
4				Description of Description
5				Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/B)
6				
7				Prevalence Index worksheet:
	95	= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover: 47.5				OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' )				FACW species x 2 =
1. Acer rubrum	30	<b>/</b>	FAC	FAC species x 3 =
2. Quercus rubra	10		FACU	FACU species x 4 =
3. Carpinus carolinensis				UPL species x 5 =
· · ·			FAC	
4				Column Totals: (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				
	4 -	= Total Cov	er	3 - Prevalence Index is ≤3.0 <sup>1</sup>
50% of total cover: <u>22.5</u>				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
Herb Stratum (Plot size: 5' )				data in Remarks or on a separate sheet)
1. Packera aurea	15	<b>✓</b>	FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Solidago rugosa	10		FAC	
3. Fragaria virginiana			FACU	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
			F <u>ACU</u>	be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7				height.
8				Sanling/Shrub Woody plants evaluding vines loss
9				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11.				Have All have account (non-woods) plants, regardless
	30	= Total Cov		<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 15		total cover:	_	, , , , , , , , , , , , , , , , , , , ,
Woody Vine Stratum (Plot size: 15' )				<b>Woody vine</b> – All woody vines greater than 3.28 ft in
1 Smilax rotundifolium	10	~	FACU	height.
			<u>raco</u>	
2				
3				
4				Hydrophytic
5				Vegetation
	10	= Total Cov	er	Present? Yes No
50% of total cover:5	20% of	total cover:	2	
Remarks: (Include photo numbers here or on a separate s	heet.)			1
	,			

SOIL Sampling Point: W-E13

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the	indicator	or confirn	n the absence	of indicators.)
Depth	Matrix			x Feature	s			
(inches)	Color (moist)	<u></u> %	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	<u>Remarks</u>
0-6	2.5Y 2.5/1	100					SI/L	Gravely
6-12	10YR 3/1	95	7.5YR 3/3	5	С	M	SA/L	
12-20	2.5Y 5/4	95	10YR 5/6	5	С	M	SI/SA	
				-				
							-	
¹Type: C=Cc	oncentration, D=Depl	etion RM-	Reduced Matrix MS	S-Masker	d Sand Gr	aine	<sup>2</sup> Location: P	L=Pore Lining, M=Matrix.
Hydric Soil I		elion, Kivi=	reduced Matrix, Mc	3=IVIASKE	a Sanu Gr	aii 15.		ators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface	(S7)				cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		ice (S8) <b>(N</b>	ILRA 147,		Coast Prairie Redox (A16)
Black His			Thin Dark Su				,	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		(F2)		P	Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma					(MLRA 136, 147)
	ck (A10) (LRR N)	(/////	Redox Dark	,	,			/ery Shallow Dark Surface (TF12)
	l Below Dark Surface irk Surface (A12)	: (A11)	Depleted Date Redox Depreted					Other (Explain in Remarks)
	lucky Mineral (S1) <b>(L</b>	RR N.	Iron-Mangan			LRR N,		
	147, 148)	,	MLRA 13		· / ·	,		
	leyed Matrix (S4)		Umbric Surfa					licators of hydrophytic vegetation and
-	edox (S5)		Piedmont Flo					etland hydrology must be present,
	Matrix (S6)		Red Parent N	/laterial (F	-21) <b>(MLR</b>	A 127, 147	<b>7)</b> un	less disturbed or problematic.
Type: No	ayer (if observed):							
,. <u> </u>							Hardela Oall	D
Depth (inc	cnes):		<u>—</u>				Hydric Soil	Present? Yes No
Remarks:								

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.364017	Lon.	-80.616570
STREAM/SITE ID AND SITE DESCRIPTION:				Wetland E13 (W-E13),	18.067	ac watershed, HUC 12 watershed Bi	g Laure	Creek-Gauley
(% stream slope, watershed size {a	Riv	ver, De	epressional, RPWWN, forested wetla	nd				
FORM OF MITIGATION:		Mitiga	ition Bank					
DATE:	28-4	\pr-16	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-E13	Forested	0.0107	Emergent					
				•		PART III - Advanced I	Mitigatio	n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		у
Total Impact		0.0107						
		Unit Scores				Estimated		
Wetland Cla	assification		Replacement Unit(s)	_		ILF Costs		
Total Emergent Total Scrub-Shrub			0.0107 0	+		\$642.00		
Total Forested			0	†		ψ0-12.00		
Total Open Water			0	İ				

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Temporal Loss-Construction Long-term P \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years O Sub-Total O

Temporal Loss-Maturity							
*Note: Period between completion of compensatory mitig	gation measures and the time required						
for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).							
% Add. Mitigation Temporal Loss-Maturity (Years)							
<b>0</b> %							
Sub-Total	0						

Long-term Protection			
O/ Add Miller Control Maritain Desired	Law Town Brotostine (Venns)		
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)		
0 + E/10 Voor Monitoring	Pornotual		
0 + 5/10 Year Monitoring	Perpetual		
Sub-Total	0		

Extended Upland Buffer Zone  *Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation					
Average Buffer Width	Mitigation Type				
0	0-50	None			
U	51-150	None			

PART V - Final Unit Score							
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance		
Emergent	0.0107		0.0107	-	-0.0107		
Scrub-Shrub	0	Restoration	0		0		
Forested	0		0		0		
Open Water	0		0		0		
Net-Total	0.0107		0.0107	#DIV/0!	#DIV/0!		

### W-FF6-PSS

### Wetland Photograph Page

Wetland ID  $\underline{\text{W-FF06-WP}}$  Date  $\underline{\text{07/29/201}}$ 5



Photograph Direction North

Comments:	
Comments.	

Project/Site: MVP		Citv/C	County:		Sampling Date: 07/29/2015		
Applicant/Owner: EQT			,	State: WV	Sampling Point: W-FF06-WP-PSS		
Investigator(s): A. Flake. E strohma	aier. A curra						
Landform (hillslope, terrace, etc.):					Slope (%):		
Subregion (LRR or MLRA): LRRN							
Soil Map Unit Name:							
Are climatic / hydrologic conditions on the			_				
		· ·					
Are Vegetation, Soil, or							
Are Vegetation, Soil, or				explain any answe			
SUMMARY OF FINDINGS – A	ttach site r	nap showing san	npling point location	ons, transects	, important features, etc.		
Hydrophytic Vegetation Present?		No	Is the Sampled Area				
Hydric Soil Present?		No	within a Wetland?	Yes 🗸	No		
Wetland Hydrology Present?	Yes	No					
Remarks: Cowardin Code: PSS HGM: SLOPE/FLAT WT: RPWWD							
HYDROLOGY							
Wetland Hydrology Indicators:				Secondary Indica	tors (minimum of two required)		
Primary Indicators (minimum of one is	required; chec	ck all that apply)		Surface Soil	Cracks (B6)		
Surface Water (A1)		True Aquatic Plants	(B14)	Sparsely Vegetated Concave Surface (B8)			
High Water Table (A2)	_	Hydrogen Sulfide Od	. ,	Drainage Pa			
Saturation (A3)	<u> </u>	•	res on Living Roots (C3)				
Water Marks (B1)	_	Presence of Reduce	, ,	Dry-Season			
Sediment Deposits (B2) Drift Deposits (B3)	<u></u>	Thin Muck Surface (	on in Tilled Soils (C6)	Crayfish Burrows (C8) Saturation Visible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)		Other (Explain in Re	•		tressed Plants (D1)		
Iron Deposits (B5)			.,	Geomorphic			
Inundation Visible on Aerial Image	ery (B7)			Shallow Aquitard (D3) Microtopographic Relief (D4)			
Water-Stained Leaves (B9)							
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)		
Field Observations:							
Surface Water Present? Yes	4	_ Depth (inches):	44				
Water Table Present? Yes	No	_ Dopui (inones)	11		.4		
Saturation Present? Yes (includes capillary fringe)	No	_ Depth (inches):	0 Wetland	Hydrology Presen	it? Yes V No		
Describe Recorded Data (stream gaug	e, monitoring	well, aerial photos, pre	evious inspections), if ava	ailable:			
Remarks:							
Upland plot is W-FF06-UP							

Sampling Point:	W-FF06-WP-PSS
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Tree Stratum (Plot size: 30'	Absolute	Dominant		Dominance Test worksheet:	
Tree etratam (Flot size.		Species?		Number of Dominant Species	
1				That Are OBL, FACW, or FAC:	_ (A)
2				Total Number of Dominant	
3				Species Across All Strata: 0	_ (B)
4				Develop of Deminent Charles	
5				Percent of Dominant Species That Are OBL, FACW, or FAC:  0	(A/B)
6					_ (,,,_)
7				Prevalence Index worksheet:	
	_	= Total Cov	<u></u>	Total % Cover of: Multiply by:	
50% of total cover: 0			_	OBL species x 1 =	
Sapling/Shrub Stratum (Plot size: 15' )				FACW species x 2 =	
1				FAC species x 3 =	
				FACU species x 4 =	
2				UPL species x 5 =	
3				Column Totals: (A)	
4				Column Totals (A)	(D)
5				Prevalence Index = B/A =	
6				Hydrophytic Vegetation Indicators:	
7				1 - Rapid Test for Hydrophytic Vegetation	
8				2 - Dominance Test is >50%	
9				3 - Prevalence Index is ≤3.0¹	
	0 :	= Total Cov	er		
50% of total cover:0	20% of	total cover:	0	4 - Morphological Adaptations <sup>1</sup> (Provide su	
Herb Stratum (Plot size: 5')				data in Remarks or on a separate shee	′
1				Problematic Hydrophytic Vegetation <sup>1</sup> (Exp	ain)
2.					
				<sup>1</sup> Indicators of hydric soil and wetland hydrology	must
3				be present, unless disturbed or problematic.	
4				Definitions of Four Vegetation Strata:	
5				Tree – Woody plants, excluding vines, 3 in. (7.	6 cm) or
6				more in diameter at breast height (DBH), regar	
7				height.	
8				Sapling/Shrub – Woody plants, excluding vine	e lees
9				than 3 in. DBH and greater than or equal to 3.2	28 ft (1
10				m) tall.	·
11				Herb – All herbaceous (non-woody) plants, reg	ardless
	0	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.	aruiess
50% of total cover:0		total cover:			
Woody Vine Stratum (Plot size: 15')		•		<b>Woody vine</b> – All woody vines greater than 3.2	28 ft in
1				height.	
2		-			
3					
4				Hydrophytic	
5				Vegetation No.	
•		= Total Cov	_	Present? Yes No	1
50% of total cover:0	20% of	total cover:	0		
Remarks: (Include photo numbers here or on a separate s	heet.)				

Sampling Point: W-FF06-WP-PS

SOIL

Profile Desc	ription: (Describe t	o the dept	h needed to docun	nent the	indicator	or confirm	n the absence	of indicate	ors.)	
Depth	Matrix		Redox	x Feature	s					
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>		Remarks	
0-3	2.5y3/1	100					Mucky Si			
3-7	2.5y2.5/1	90	5yr3/4	10	С	M/PL	SiLo			
7-11	2.5y3/2	90	2.5y4/4	10	С	M	SiLo			
11-16	2.5y4/1	85	10yr3/4	15	С	М	SiLo			
										_
										_
					· ——			-		
					· <del></del>					
					·					
	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	d Sand Gr	ains.			ng, M=Matrix.	3
Hydric Soil I									roblematic Hyd	
Histosol			Dark Surface		(00) (				A10) (MLRA 14	17)
	pipedon (A2)		Polyvalue Be				, <b>148)</b> C		e Redox (A16)	
Black Hi	stic (A3) n Sulfide (A4)		Thin Dark Su Loamy Gleye			147, 148)	D	(MLRA 14	57, 1 <b>48)</b> Dodplain Soils (	E10)
	l Layers (A5)		Depleted Mat		(1-2)			(MLRA 13		119)
	ick (A10) <b>(LRR N)</b>		Redox Dark S		F6)		V		v Dark Surface	(TF12)
	Below Dark Surface	(A11)	Depleted Dar						in in Remarks)	,
Thick Da	ark Surface (A12)		Redox Depre	ssions (F	8)					
	lucky Mineral (S1) <b>(L</b>	RR N,	Iron-Mangan		ses (F12) (	(LRR N,				
	A 147, 148)		MLRA 130				2			
	leyed Matrix (S4)		Umbric Surfa						ydrophytic vege	
	edox (S5)		Piedmont Flo					-	logy must be p	
	Matrix (S6)  -ayer (if observed):		Red Parent N	riateriai (F	-21) (IVILR	A 127, 147	7) uni	iess disturb	ed or problema	IIIC.
Type: No										
Depth (inc							Hydric Soil	Present?	Yes_ 🗸	No
Remarks:			<del></del>				Tiyano con			
rtomanto.										

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.337803	Lon.	-80.658933
STREAM/SITE ID AND SITE DESCR	RIPTION:			Wetland FF6-PSS (W-F	F6-PS	S), 25.98ac watershed, HUC 12 water	shed Bi	g Laurel Creek-
(% stream slope, watershed size {a	creage}, unaltere	d or impairments)		Gauley River, slope, I	RPWW	N, scrub-shrub wetland surrounded	by eme	rgent wetland
FORM OF MITIGATION:	FORM OF MITIGATION: Mitigation Bank							
DATE:	30-	30-Jul-16 WEATHER CONDITIONS				PRECIPITATION PAST 48 HRS:		
PART I - Wetland Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-FF6-PSS	Scrub-Shrub	0.0333	Emergent					
				_				
						PART III - Advanced	Mitigatio	on
						Sustainable Determination Made on		
						Advanced Mitigation (Y or N)		у
						,		
				-				
Total Impact		0.0333						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0333			<u> </u>		
Total Scrub-Shrub			0			\$1,998.00		
Total Forested			0					
Total Open Water			0					

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Long-term F % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

Temporal Loss-Maturity							
*Note: Period between completion of compensatory mitig	nation measures and the time required						
for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).							
9/ Add Mitigation	O/ Add Mitiration						
% Add. Mitigation Temporal Loss-Maturity (Years)							
0%							
Sub-Total	0						

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone						
*Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation						
Average Buffer Width		Mitigation Type				
0-50 None						
U	51-150	None				

PART V - Final Unit Score							
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance		
Emergent	0.0333		0.0333		-0.0333		
Scrub-Shrub	0	Restoration	0		0		
Forested	0	Restoration	0		0		
Open Water	0		0		0		
Net-Total	0.0333		0.0333	#DIV/0!	#DIV/0!		

### W-A15



Photograph Direction South

Comments:	

Project/Site: MVP		City/C	county: Nicholas	Sampling Date: 04/30/2015
Applicant/Owner: MVP				VV Sampling Point: W-A15
Investigator(s): J.Cook, J.Hei	ule, K.Lew	Section		
• • • •			ief (concave, convex, none): Conc	cave Slope (%): 2
				Datum: NAD 83
Soil Map Unit Name: Lily Ioa			NWI c	
	•	•	es No (If no, expla	,
Are Vegetation, Soil	, or Hydrolog	gy significantly distur	bed? Are "Normal Circumsta	nces" present? Yes No
Are Vegetation, Soil	, or Hydrolog	gynaturally problemate	atic? (If needed, explain any	answers in Remarks.)
SUMMARY OF FINDIN	GS – Attach s	site map showing san	npling point locations, tran	sects, important features, etc.
Lhadronhadia Vanatatian Dusa		✓ Na		
Hydrophytic Vegetation Present?	ent? Yes Yes		Is the Sampled Area	•
Wetland Hydrology Present?	-	<del></del>	within a Wetland? Yes	No
Remarks:				
Cowardin Code: PSS				
HGM: RIVERINE				
WT: RPWWD	.,			
Fringe between pss and pe	∍m. Veg is obvic	ously disturbed by grazing	g. When it transitions to forest in	the east, no longer wetland.
HYDROLOGY				
Wetland Hydrology Indicate	ors:		Secondary	y Indicators (minimum of two required)
Primary Indicators (minimum	of one is required			ce Soil Cracks (B6)
Surface Water (A1)		True Aquatic Plants (		sely Vegetated Concave Surface (B8)
High Water Table (A2)		Hydrogen Sulfide Od	<del></del>	age Patterns (B10)
Saturation (A3)		✓ Oxidized Rhizospher	• • • • • • • • • • • • • • • • • • • •	Trim Lines (B16)
Water Marks (B1)		Presence of Reduced		leason Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction		ish Burrows (C8)
Drift Deposits (B3) Algal Mat or Crust (B4)		Thin Muck Surface (0 Other (Explain in Rer		ation Visible on Aerial Imagery (C9) ed or Stressed Plants (D1)
Iron Deposits (B5)		Other (Explain in Nei		norphic Position (D2)
Inundation Visible on Ae	rial Imagery (R7)			ow Aquitard (D3)
Water-Stained Leaves (E	• • • •			topographic Relief (D4)
Aquatic Fauna (B13)	,5)			Neutral Test (D5)
Field Observations:				1001101 1001 (20)
Surface Water Present?	Yes No.	Depth (inches):		
Water Table Present?	Yes V No	Depth (inches):	20	
Saturation Present?		Depth (inches):		Present? Yes V No
(includes capillary fringe)				1103cm: 103 110
Describe Recorded Data (stre	∍am gauge, monit	toring well, aerial photos, pre	vious inspections), if available:	
Remarks:				
Geomorphic position wit	th oxidized rhiz	zospheres and nearby/	abutting stream	
			-	

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species
1				That Are OBL, FACW, or FAC: 4 (A)
2				
				Total Number of Dominant Species Across All Strata: 5 (B)
3		-		Species Across All Strata:5 (B)
4		-	· <del></del>	Percent of Dominant Species
5		-		That Are OBL, FACW, or FAC:80 (A/B)
6				
7				Prevalence Index worksheet:
	0	= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover:0		total cover	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' )				FACW species x 2 =
1. Rosa multiflora	3		FACU	FAC species x 3 =
2. Prunus serotina	15			FACU species x 4 =
			FACU_	
3. Acer rubrum	12		FAC	UPL species x 5 =
4				Column Totals: (A) (B)
5				
6				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators:
/·		-	· <del></del>	1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 <sup>1</sup>
	30	= Total Cov	er	4 - Morphological Adaptations¹ (Provide supporting
50% of total cover: 15	20% of	total cover	6	
Herb Stratum (Plot size: 5'				data in Remarks or on a separate sheet)
1. Impatiens capensis	10	<b>~</b>	FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Juncus effusus	25		FACW	
3. Lamium amplexicaule	4			<sup>1</sup> Indicators of hydric soil and wetland hydrology must
			ND	be present, unless disturbed or problematic.
4. Viola sororia	10		F <u>AC</u>	Definitions of Four Vegetation Strata:
5. Taraxacum officinale	2		FACU_	
6. Trifolium repens	4		FACU_	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7. Symphotrichium sp.	8		F <u>ACW</u>	more in diameter at breast height (DBH), regardless of height.
8. Fragaria virginiana	1		FACU	
g. Andropogons glomeratus	9			Sapling/Shrub – Woody plants, excluding vines, less
		-	F <u>ACW</u>	than 3 in. DBH and greater than or equal to 3.28 ft (1
10		-	· <del></del>	m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	73	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>36.5</u>	20% of	total cover	14.6	Was developed Allows do also assessed to the control of
Woody Vine Stratum (Plot size: 15' )				<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1				noight.
2				
		-		
3				
4				Hydrophytic
5				Vegetation
	0	= Total Cov	er	Present? Yes No
50% of total cover: 0	20% of	total cover	0	
Remarks: (Include photo numbers here or on a separate s	heet.)			1
Veg is grazed and disturbed.	,			
veg is grazed and disturbed.				
ND - Not Determined				

SOIL Sampling Point: W-A15

Profile Desc	ription: (Describe t	o the dep	th needed to docur	nent the i	ndicator	or confirn	n the absence	of indicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-9"	10YR 4/1	96	10YR 3/6	4	С	PL	SiCL	Oxidized rhizospheres
9-20"	10YR 5/1	90	10YR 5/8	10	С	PL	SiC	Pore lining
							-	
							·	
							-	
					'			
1Typo: C-C	oncentration, D=Depl	otion PM	-Poducod Matrix MS	S-Mackad	d Sand Gr	——	<sup>2</sup> Location: D	L=Pore Lining, M=Matrix.
Hydric Soil		ellon, Kivi:	=Reduced Matrix, Mi	5=IVIASKEC	i Sanu Gr	ali 15.	Indic	ators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface	e (S7)				cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147,		Coast Prairie Redox (A16)
Black Hi			Thin Dark Su				, <u>—</u>	(MLRA 147, 148)
Hydroge	n Sulfide (A4)		Loamy Gleye	ed Matrix (	F2)		P	Piedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Ma					(MLRA 136, 147)
	ck (A10) (LRR N)		Redox Dark		•			/ery Shallow Dark Surface (TF12)
	Below Dark Surface	e (A11)	Depleted Da				c	Other (Explain in Remarks)
	ark Surface (A12) lucky Mineral (S1) <b>(L</b>	DD N	Redox Depre Iron-Mangan			I DD N		
	147, 148)	KK N,	MLRA 13		es (F12) <b>(</b>	LKK N,		
	sleyed Matrix (S4)		Umbric Surfa		MLRA 13	6. 122)	<sup>3</sup> Ind	licators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					etland hydrology must be present,
-	Matrix (S6)		Red Parent N					lless disturbed or problematic.
Restrictive L	ayer (if observed):							
Type:								
Depth (ind	ches):						Hydric Soil	Present? Yes 🗸 No
Remarks:	-							
Good wetla	and soil							

USACE FILE NO./Project Name:		Mountain Vall	ey Pipeline Project	COORDINATES:	Lat.	38.323735	Lon.	-80.670118
STREAM/SITE ID AND SITE DESCR	RIPTION:			Wetland A15 (W-A15),	11.54a	c watershed, HUC 12 watershed Big	Beaver	Creek, riverine,
(% stream slope, watershed size {a	creage}, unaltered	d or impairments	1	, ,		VWD, disturbed grazed understory		
FORM OF MITIGATION:		Mitiga	ation Bank					
DATE:	29-4	\pr-16	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-A15	Scrub-Shrub	0.0891	Emergent					
						PART III - Advanced I	Mitigati	on
						Sustainable Determination Made on		<b></b>
						Advanced Mitigation (Y or N)		n
Total Impact		0.0891						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0891			45.44.00		
Total Scrub-Shrub			0			\$5,346.00		
Total Forested			0					
Total Open Water			0					

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Temporal Loss-Construction Long-term P \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total O \*\*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit).

Temporal Loss-Maturity							
*Note: Period between completion of compensatory mitig	*Note: Period between completion of compensatory mitigation measures and the time required						
for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).							
O( A LI AFF and a line of the O( and )							
% Add. Mitigation	Temporal Loss-Maturity (Years)						
0%	0						
Sub-Total	0						

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
gg	
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone				
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation				
Average Buffer Width	Mitigation Type			
0	0-50	None		
0	51-150	None		

PART V - Final Unit Score							
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score	Applicant Input	Balance		
			to Offset (Debit)	Mitigation (Credit)			
Emergent	0.0891		0.0891		-0.0891		
Scrub-Shrub	0	Restoration	0		0		
Forested	0	Restoration	0		0		
Open Water	0		Õ		0		
Net-Total	0.0891		0.0891	#DIV/0!	#DIV/0!		

### W-A14

Project/Site: MVP		City/C	county: Nicholas		Sampling Date: 04/29/2015	
Applicant/Owner: MVP				State: WV	Sampling Point: W-A14	
Investigator(s): J.cook, J.Heule, K.Lew			Section, Township, Range: N/A			
Landform (hillslope, terrace, etc.): Hillside Local			ief (concave, convex, non	<sub>ie):</sub> None	Slope (%): 3	
Subregion (LRR or MLRA): LRRN	t: 38.321467					
Soil Map Unit Name: Dekalb channe	ry sandy loar	n, 15 to 35 percent s	lopes, extremely stony	(D NWI classific	cation: None	
Are climatic / hydrologic conditions on t	he site typical	for this time of year? Y	′es No (	If no, explain in F	Remarks.)	
Are Vegetation, Soil, or						
Are Vegetation, Soil, or						
SUMMARY OF FINDINGS – A						
Hydrophytic Vogotation Procent?	Yes_	No				
Hydrophytic Vegetation Present? Hydric Soil Present?	Yes 🗸		Is the Sampled Area	V	NI-	
Wetland Hydrology Present?	Yes 🗸		within a Wetland?	Yes	No	
Remarks:		<u> </u>				
Cowardin Code: PFO HGM: Riverine WT: RPWWD						
HYDROLOGY						
Wetland Hydrology Indicators:				Secondary Indicate	ators (minimum of two required)	
Primary Indicators (minimum of one is	required; che	ck all that apply)		Surface Soil	Cracks (B6)	
Surface Water (A1)		_ True Aquatic Plants (		Sparsely Ve	getated Concave Surface (B8)	
High Water Table (A2)		_ Hydrogen Sulfide Od		=	atterns (B10)	
Saturation (A3)			es on Living Roots (C3)	Moss Trim L		
Water Marks (B1)		Presence of Reduced	, ,		Water Table (C2)	
Sediment Deposits (B2)		Recent Iron Reduction		Crayfish Bu		
Drift Deposits (B3)	_	Thin Muck Surface (0			risible on Aerial Imagery (C9)	
Algal Mat or Crust (B4)		Other (Explain in Rer	narks)		Stressed Plants (D1)	
Iron Deposits (B5)	on/ (P7)				Position (D2)	
<ul><li>Inundation Visible on Aerial Imag</li><li>Water-Stained Leaves (B9)</li></ul>	ery (b/)			Shallow Aqu	aphic Relief (D4)	
Aquatic Fauna (B13)				FAC-Neutra	, ,	
Field Observations:				TAO Neulla	1 1 (53 (53)	
	No 🗸	Depth (inches):				
			18			
Saturation Present? Yes		Depth (inches):	10	ydrology Prese	nt? Yes ✔ No	
(includes capillary fringe)					103 <u></u>	
Describe Recorded Data (stream gau	ge, monitoring	well, aerial photos, pre	vious inspections), if avai	ilable:		
Remarks:						
Oxidized rhizospheres. Near st	ream.					

Sampling	Point:	W-A1	4

30,	Absolute	Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' )		Species?		Number of Dominant Species
1. Tsuga canadensis	30		FACU_	That Are OBL, FACW, or FAC:3 (A)
2. Acer rubrum	10		FAC	Total Number of Dominant
3				Species Across All Strata:5 (B)
4	-	-		Percent of Dominant Species
5				That Are OBL, FACW, or FAC:60 (A/B)
6				Bassalan as Indoorsalah ad
7				Prevalence Index worksheet:
		= Total Cov		Total % Cover of: Multiply by:
50% of total cover: 20	20% of	total cover	8	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'				FACW species x 2 =
1. Rosa multiflora	7		<u>FACU</u>	FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				
6				Prevalence Index = B/A =
7		-		Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9	7			3 - Prevalence Index is ≤3.0 <sup>1</sup>
50% of total cover: <u>3.5</u>		= Total Cover		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
E!	20% 01	total cover		data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5 )  1. Viola sorroria	20	~	<b>F</b> AC	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	5		F <u>AC</u>	
2. Polystichum acrostichoides			F <u>ACU</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
3. Osumunda cinnamonea	5		FACW_	be present, unless disturbed or problematic.
4. Impatiens capensis	8		F <u>ACW</u>	Definitions of Four Vegetation Strata:
5				Trace Manda plante avaluation visco 2 in (7.0 cm) or
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	38	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover:19		total cover		Was desired Allowed by Section 1997 (1997)
Woody Vine Stratum (Plot size: 15')				Woody vine – All woody vines greater than 3.28 ft in height.
1				g.m
2.				
3				
4		-		
5.				Hydrophytic Vegetation
<u> </u>	0	= Total Cov		Present? Yes V No No
50% of total cover: 0		total cover	_	
Remarks: (Include photo numbers here or on a separate s				
		d manla		
Forested wetland dominated by eastern hemloc	k and rec	л таріе.		

SOIL Sampling Point: W-A14

Profile Desc	ription: (Describe t	o the dep	th needed to docur	nent the i	ndicator	or confirn	n the absence	of indicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-8"	2.5 Y 6/1	90	7.5 YR 4/6	10	С	PL	Clay loam	Charcoal at 2 inches
8-20"	10 YR 5/2	90	10 YR 5/8	10	С	PL	Clay loam	
			<del></del>					
					-			
							-	
-								
1Type: C=C	oncentration, D=Depl	etion PM-	-Peduced Matrix MS	S-Masker	4 Sand Gr	nine	<sup>2</sup> Location: P	L=Pore Lining, M=Matrix.
Hydric Soil I		ellori, Kivi=	=Reduced Matrix, Mc	5=IVIASKEC	i Sanu Gr	ali 15.		ators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface	(97)				c cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be		ce (S8) <b>(N</b>	II RA 147		Coast Prairie Redox (A16)
Black Hi			Thin Dark Su				0	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			,,	Р	Piedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Ma		,			(MLRA 136, 147)
2 cm Mu	ick (A10) (LRR N)		Redox Dark	Surface (F	<del>-</del> 6)		v	/ery Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Dar				c	Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) <b>(</b>	LRR N,		
	147, 148)		MLRA 13		/MI DA 40	0 400\	31	Parton of budger by Carrent Carrent
	ileyed Matrix (S4)		Umbric Surfa					licators of hydrophytic vegetation and
-	edox (S5) Matrix (S6)		Piedmont Floor Red Parent N					etland hydrology must be present, lless disturbed or problematic.
	_ayer (if observed):		Neu Faieill II	nateriai (i	Z1) (WILK	A 121, 14	, un	liess disturbed of problematic.
Type:	Luyer (ii observeu).							
	-h \ .						Hydric Soil	Present? Yes V No
Depth (inc	mes).						nyaric Soil	Present? resNo
Remarks:								
Good wetla	and soils							



Photograph Direction North

Comments:	

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.321643	Lon.	-80.670901
STREAM/SITE ID AND SITE DESCRIPTION:			Wetland A14 (W-A14),	Wetland A14 (W-A14), 18.05ac watershed, HUC 12 watershed Big Beaver Creek, River				
(% stream slope, watershed size {acreage}, unaltered or impairments)					RPWWD, mature woodland			
FORM OF MITIGATION: Mitigation Bank								
DATE:	29-4	29-Apr-16 WEATHER CONDITIONS:				PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-A14	Forested	0.0374	Emergent					
						PART III - Advanced I	Mitigati	on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		у
Total Impact		0.0374						
	PART II -	Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0374					
Total Scrub-Shrub	<u> </u>		0			\$2,244.00		
Total Forested			0					
Total Open Water			0					

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Long-term F % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

Temporal Loss-Maturity						
*Note: Period between completion of compensatory mitig	nation measures and the time required					
for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).						
% Add. Mitigation Temporal Loss-Maturity (Years)						
0%						
Sub-Total 0						

Long-term Protection				
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)			
0 + 5/10 Year Monitoring	Perpetual			
Sub-Total	0			

Extended Upland Buffer Zone						
*Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation						
Average Buffer Width	Mitigation Type					
0	0-50	None				
0	51-150	None				

PART V - Final Unit Score							
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance		
Emergent	0.0374		0.0374		-0.0374		
Scrub-Shrub	0	Restoration	0		0		
Forested	0	Restoration	0		0		
Open Water	0		0		0		
Net-Total	0.0374		0.0374	#DIV/0!	#DIV/0!		

### **W-I7**



Photograph Direction North

Comments:	

Project/Site: MVP	City/C	City/County: Nicholas Sampling					
Applicant/Owner: MVP		Sampling Point: W-I7					
Investigator(s): R Sparhawk, A Hatfield, M Brice Section, Township, Range: N/A							
Landform (hillslope, terrace, etc.): Swale Local relief (concave, convex, none): Concave Slope (%): 2							
Subregion (LRR or MLRA): LRRN Lat: 38.293451 Long: -80.676911 Datum: NAD							
	Subregion (LRR or MLRA): LRRN Lat: 38.293431 Long: -60.076911 Datum: NAD 63  Soil Map Unit Name: Clifftop channery silt loam, 15 to 35 percent slopes, very stony (Cn NWI classification: None						
•			=				
Are climatic / hydrologic conditions on the site							
Are Vegetation, Soil, or Hydro			cumstances" p	resent? Yes No			
Are Vegetation, Soil, or Hydro	ogy naturally problema	atic? (If needed, expl	ain any answer	s in Remarks.)			
SUMMARY OF FINDINGS – Attach	site map showing san	pling point locations	, transects,	important features, etc.			
Hydrophytic Vegetation Present? Ye	sNo						
, , , ,	s / No	Is the Sampled Area within a Wetland?	Yes 🗸	No			
Wetland Hydrology Present? Ye	s / No	within a Wetland:	169				
Remarks:							
Cowardin Code: PFO							
HGM: Slope							
WT: RPWWD							
HYDROLOGY							
Wetland Hydrology Indicators:		Se	condary Indicat	tors (minimum of two required)			
Primary Indicators (minimum of one is requir	ed: check all that apply)		Surface Soil (	_			
✓ Surface Water (A1)	True Aquatic Plants (		=	etated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide Od		Drainage Pat				
Saturation (A3)		es on Living Roots (C3)	Moss Trim Lir				
Water Marks (B1)	Presence of Reduced	d Iron (C4)	Dry-Season V	Vater Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction	n in Tilled Soils (C6)	Crayfish Burre	ows (C8)			
Drift Deposits (B3)	Thin Muck Surface (0	<u> </u>	Saturation Vis	sible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Rer	marks)	Stunted or St	ressed Plants (D1)			
Iron Deposits (B5)			Geomorphic I				
Inundation Visible on Aerial Imagery (B7	·)		Shallow Aquit	tard (D3)			
Water-Stained Leaves (B9)				phic Relief (D4)			
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)			
Field Observations:  Surface Water Present? Yes	No Depth (inches):(	).5					
Water Table Present? Yes	No Depth (inches):	<del></del>					
	No Depth (inches):	2	rology Present	t? Yes 🗸 No			
(includes capillary fringe)	vo Deptii (iliches)	Welland Hydi	lology Fresen	tr res No			
Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, pre	vious inspections), if availab	le:				
Remarks:							

Sampling	Point: W-I7
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	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species	
1. Tsuga canadensis	30		<u>FACU</u>	That Are OBL, FACW, or FAC:4 (A)	
2. Quercus rubra	25		FACU_	Total Number of Deminent	
3. Acer rubrum	20		FAC	Total Number of Dominant Species Across All Strata: 6* (B)	
4. Fagus grandifolia	15		<u>FACU</u>		
5				Percent of Dominant Species That Are OBL, FACW, or FAC:  (A/B)	
6				That Ale ODE, I AOW, OI I AO.	
7.				Prevalence Index worksheet:	
	90	= Total Cov	er	Total % Cover of: Multiply by:	
50% of total cover: 45		total cover	4.0	OBL species x 1 =	
Sapling/Shrub Stratum (Plot size: 15' )				FACW species x 2 =	
1. Crataegus sp.	5	<b>~</b>	ND	FAC species x 3 =	
2				FACU species x 4 =	
3		-		UPL species x 5 =	
				Column Totals: (A) (B)	
4					
5				Prevalence Index = B/A =	
6				Hydrophytic Vegetation Indicators:	
7		-		1 - Rapid Test for Hydrophytic Vegetation	
8				✓ 2 - Dominance Test is >50%	
9				3 - Prevalence Index is ≤3.0 <sup>1</sup>	
0.5		= Total Cov		4 - Morphological Adaptations <sup>1</sup> (Provide supporting	
50% of total cover: 2.5	20% of	total cover		data in Remarks or on a separate sheet)	
Herb Stratum (Plot size: 5')	4			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
1. Osmunda cinnamomea			F <u>ACW</u>	resistant ryarophyno regetation (Explain)	
2. Carex lurida	1		<u>OBL</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must	
3. Mimulus ringens	1		<u>OBL</u>	be present, unless disturbed or problematic.	
4				Definitions of Four Vegetation Strata:	
5					
6				<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of	
7				height.	
8					
9				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1	
10				m) tall.	
11.				Hank All bonk account (non-unadia) plants na condicas	
	3	= Total Cov	er er	<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.	
50% of total cover: 1.5					
Woody Vine Stratum (Plot size: 15' )				<b>Woody vine</b> – All woody vines greater than 3.28 ft in	
1				height.	
2					
3					
4				Hydrophytic	
5	^			Vegetation Present? Yes ✓ No	
50% of total cover: 0		<ul><li>Total Cover total cover</li></ul>	_	105 <u> </u>	
		total cover			
Remarks: (Include photo numbers here or on a separate s	neet.)				
ND - Not Determined					
*\/a notation not identified down to analise not included in devaluation					
*Vegetation not identified down to species not in	ıcıuaea II	ı domina	nce test.		

SOIL Sampling Point: W-I7

Profile Desc	ription: (Describe t	o the dept	h needed to docur	nent the i	indicator	or confirm	the absence	of indicators.)
Depth	Matrix		Redo	x Feature	s			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-10	10YR 4/2	90	10YR 4/6	10	С	M/PL	SL	
								-
			•					
1Tupo: C-C	ancontration D_Donl	otion DM-	Paduaad Matrix MS		- Cond Cr	roine	<sup>2</sup> Location: D	L=Pore Lining, M=Matrix.
Hydric Soil	oncentration, D=Depl	ellon, Rivi=	Reduced Matrix, Mi	s=iviaskec	a Sand Gi	ams.		ators for Problematic Hydric Soils <sup>3</sup> :
-			Davida Courte an	(07)				· · · · · · · · · · · · · · · · · · ·
Histosol			Dark Surface		(00) (	MI DA 44-		cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be		. , .		148) C	coast Prairie Redox (A16)
Black Hi			Thin Dark Su			147, 148)	_	(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye		(F2)		P	iedmont Floodplain Soils (F19)
	d Layers (A5)		Depleted Ma		>			(MLRA 136, 147)
	ick (A10) (LRR N)	(4.4.4)	Redox Dark	,	,			ery Shallow Dark Surface (TF12)
	d Below Dark Surface	e (A11)	Depleted Dai				0	other (Explain in Remarks)
	ark Surface (A12)		<u>✓</u> Redox Depre			(I DD 11		
	Mucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) (	(LRR N,		
	A 147, 148)		MLRA 13	-			3	
	Gleyed Matrix (S4)		Umbric Surfa					icators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo					tland hydrology must be present,
	Matrix (S6)		Red Parent N	/laterial (F	21) <b>(ML</b> R	RA 127, 147	7) un	less disturbed or problematic.
	Layer (if observed):							
Type:								
Depth (inc	ches):						Hydric Soil	Present? Yes V No No
Remarks:							•	

USACE FILE NO./Project Name:		Mountain Valley Pipeline Project			Lat.	38.293453	Lon.	-80.677084
STREAM/SITE ID AND SITE DESC	Wetland I7, (W-I7), 8.45a		ershed, HUC 12 watershed Big Beave	r Creek	slope, NRPWW,			
(% stream slope, watershed size {			mature woodland along stream					
FORM OF MITIGATION:		Mitiga	ition Bank					
DATE:	23-/	Apr-16	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-I7	Forested	0.0333	Emergent					
				-				
						PART III - Advanced I	/litigation	on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		у
						· · · · · · · · · · · · · · · · · · ·		
Total Impact		0.0333						
		Unit Scores				Estimated		
	Classification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0333					
Total Scrub-Shrub	<u>-                                    </u>	·	0	_		\$1,998.00		
Total Forested			0			·		·
Total Open Water		-	0					

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Long-term F % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

Temporal Loss-Maturity							
*Note: Period between completion of compensatory mitig	nation measures and the time required						
for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).							
O/ Add Missasian							
% Add. Mitigation	Temporal Loss-Maturity (Years)						
0%	0						
Sub-Total	0						

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone						
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation						
Average Buffer Width	Mitigation Type					
0	0-50	None				
U	51-150	None				

PART V - Final Unit Score								
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance			
Emergent	0.0333		0.0333		-0.0333			
Scrub-Shrub	0	Restoration	0		0			
Forested	0	Restoration	0		0			
Open Water	0		0		0			
Net-Total	0.0333		0.0333	#DIV/0!	#DIV/0!			



Photograph Direction East

Date: 04/23/2015

Comments: 2015 wetland delineation.



Photograph Direction South

Date: 10/11/19

Comments: 2019 wetland delineation confirmation.

Project/Site: MVP		Sampling Date: 04/23/2015				
Applicant/Owner: MVP		Sampling Point: W-J8				
Investigator(s): P Johnson L McCarrell C Sapusek						
-	-	relief (concave, convex, none): None Slope (%): 5				
Subregion (LRR or MLRA): LRRN La			Datum: NAD 83			
Soil Map Unit Name: Clifftop-Buchanan complex, 35 t						
Are climatic / hydrologic conditions on the site typical	for this time of year? Yes ✓ No	(If no, explain in Re	emarks.)			
Are Vegetation, Soil, or Hydrology						
Are Vegetation, Soil, or Hydrology		explain any answer				
SUMMARY OF FINDINGS – Attach site r						
1	No Luis Constate					
Hydrophytic Vegetation Present? Yes   Hydric Soil Present? Yes   ✓	— Is the Sampled Area	/				
Wetland Hydrology Present?	No within a Wetland?	Yes	No			
Remarks:						
Information listed on this form represents the data col hydrophytic vegetation, and hydric soils was confirme cleared of woody vegetation within LOD as part of Prepresent in the wetland prior to the start of construction	ed using the USACE EMP Regional Supplemen oject construction in 2018. Vegetation listed on	t delineation method	dology. The wetland was			
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicat	ors (minimum of two required)			
Primary Indicators (minimum of one is required; chec	ck all that apply)	Surface Soil (	Cracks (B6)			
	True Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)				
	_ Hydrogen Sulfide Odor (C1)	✓ Drainage Patt	terns (B10)			
	Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lir				
	Presence of Reduced Iron (C4)		Vater Table (C2)			
•	Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burro				
1	Thin Muck Surface (C7)		sible on Aerial Imagery (C9)			
_	Other (Explain in Remarks)	· <del></del>	ressed Plants (D1)			
Iron Deposits (B5)		Geomorphic F				
Inundation Visible on Aerial Imagery (B7) Water-Stained Leaves (B9)		Shallow Aquit				
Aquatic Fauna (B13)		<pre> Microtopographic Relief (D4) FAC-Neutral Test (D5)</pre>				
Field Observations:		1710 1104444	1031 (20)			
1	_ Depth (inches):1					
Water Table Present? Yes No ✓	Depth (inches):					
Saturation Present? Yes   ✓ No	Depth (inches): 4 Wetland	Hydrology Present	t? Yes ✓ No			
(includes capillary fringe)	•					
Describe Recorded Data (stream gauge, monitoring	well, aeriai photos, previous inspections), ir ava	allable:				
Remarks:						

Camr	lina	Point:	۱Λ/	18
Sallik	JIII IQ	Politi.	vv	-00

	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species _
1. Acer rubrum	20		FAC	That Are OBL, FACW, or FAC:7 (A)
2. Betula allegheniensis	20		FACW_	Tatal Neurolean of Dansin and
<sub>3.</sub> Ulmus rubra	20	✓	FAC	Total Number of Dominant Species Across All Strata: 8* (B)
4.				(6)
5				Percent of Dominant Species That Are OBL FACW, or FAC: 88 (A/B)
6				That Are OBL, FACW, or FAC: 88 (A/B)
7				Prevalence Index worksheet:
T	60	= Total Cov		Total % Cover of: Multiply by:
50% of total cover: 30		total cover:		OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' )	20 % 01	total cover		FACW species x 2 =
1. Acer rubrum	20	./	FAC	FAC species x 3 =
	20			FACU species x 4 =
2. Betula allegheniensis			FACW_	i i
3. Ulmus rubra			FAC	UPL species x 5 =
4. Sambucus nigra	5		F <u>AC</u>	Column Totals: (A) (B)
5	-			Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				
8				1 - Rapid Test for Hydrophytic Vegetation
9.				✓ 2 - Dominance Test is >50%
	65	= Total Cov	er	3 - Prevalence Index is ≤3.0 <sup>1</sup>
50% of total cover: <u>32.5</u>				4 - Morphological Adaptations <sup>1</sup> (Provide supporting
Herb Stratum (Plot size: 5' )		10101 00101		data in Remarks or on a separate sheet)
1. Dryopteris intermedia	15	1	FACU	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Packera aurea	10			
	25		FACW_	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
3. Acer rubrum	10		F <u>AC</u>	be present, unless disturbed or problematic.
4. Viola sp				Definitions of Four Vegetation Strata:
<sub>5.</sub> Solidago sp	10	-		Too Manda de alante avaludina vina 2 in (7 C am) an
6. Poa sp	3			<b>Tree</b> – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of
7				height.
8				Continue/Charaka Manda da manda a calculina a cina a la ca
9				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10.				m) tall.
11				Hands All leads according to the control of the con
	73	= Total Cov		<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 36.5				or size, and woody plants less than 5.25 it tall.
Woody Vine Stratum (Plot size:15')	20,0 0.	total oover		Woody vine – All woody vines greater than 3.28 ft in
. Vitio on	5	1	ND	height.
			IND	
2		-		
3				
4				Hydrophytic
5				Vegetation
		= Total Cov		Present? Yes No
50% of total cover: 2.5	20% of	total cover	1	
Remarks: (Include photo numbers here or on a separate s	heet.)			•
ND - Not Determined				
*Vegetation not identified down to species not in	icluded ii	n domina	nce test.	

SOIL Sampling Point: W-J8

Profile Desc	ription: (Describe t	o the depth	needed to docur	nent the i	indicator	or confirm	the abse	nce of indicators.)
Depth	Matrix			x Feature				
(inches)	Color (moist)	<u></u> %	Color (moist)	%	<u>Type</u> <sup>1</sup>	<u>Loc<sup>2</sup></u>	<u>Textur</u>	
0-6	10YR 4/2	95	10YR 5/6	5	С	PL	SCL	
								<u> </u>
1							2	
	oncentration, D=Depl	etion, RM=R	educed Matrix, MS	S=Masked	d Sand G	rains.		n: PL=Pore Lining, M=Matrix.
Hydric Soil I							Ir	ndicators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface				_	_ 2 cm Muck (A10) (MLRA 147)
	ipedon (A2)		Polyvalue Be				148) _	_ Coast Prairie Redox (A16)
Black His			Thin Dark Su			147, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		(F2)			_ Piedmont Floodplain Soils (F19)
Stratified	l Layers (A5)		✓ Depleted Ma	trix (F3)				(MLRA 136, 147)
2 cm Mu	ck (A10) (LRR N)		Redox Dark	Surface (F	<sup>-</sup> 6)		_	Very Shallow Dark Surface (TF12)
Depleted	l Below Dark Surface	e (A11)	Depleted Da	rk Surface	e (F7)			_ Other (Explain in Remarks)
Thick Da	ırk Surface (A12)		Redox Depre	essions (F	8)			
Sandy M	lucky Mineral (S1) <b>(L</b>	RR N,	Iron-Mangan	ese Mass	es (F12)	(LRR N,		
	\ 147, 148)		MLRA 13					
	leyed Matrix (S4)		Umbric Surfa		(MLRA 1	36, 122)		<sup>3</sup> Indicators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo				18)	wetland hydrology must be present,
-	Matrix (S6)		Red Parent M					unless disturbed or problematic.
	_ayer (if observed):					•	Í	'
Type: Ro								
J			<u> </u>					
Depth (inc	ches): 0		_				Hydric	Soil Present? Yes No
Remarks:								

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.263168	Lon.	-80.687930
STREAM/SITE ID AND SITE DESCR	Wetland J8 (W-J8), 63	.07ac v	watershed, HUC 12 watershed Panth	er Creek	-Gauley River,			
(% stream slope, watershed size {a	d or impairments		sl	ope, R	PWWD, forested wetland along stream	am		
FORM OF MITIGATION:		Mitiga	ation Bank					
DATE: 23-Apr-16			WEATHER CONDITIONS:	PRECIPITATION PAST 48 HRS:				
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-J8	Forested	0.0533	Emergent					
				+		PART III - Advanced	Mitigatio	on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		у
Total Impact	•	0.0533						
		Unit Scores				Estimated		
	assification		Replacement Unit(s) 0.0533	_		ILF Costs		
Total Emergent Total Scrub-Shrub			0.0533	+		\$3,198.00		
Total Forested			0	†		\$3,130.00		
Total Open Water			0	<u>†</u>				

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Temporal Loss-Construction Long-term P \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years O Sub-Total O

Temporal Loss-Maturity					
*Note: Period between completion of compensatory mitigation measures and the time required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).					
% Add. Mitigation	Temporal Loss-Maturity (Years)				
<b>0</b> %					
Sub-Total 0					

Long-tern	Long-term Protection			
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)			
0 + 5/10 Year Monitoring	Perpetual			
Sub-Total	0			

Extended Upland Buffer Zone						
*Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation						
Average Buffer Width	Mitigation Type					
0	0-50	None				
U	51-150	None				

PART V - Final Unit Score								
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance			
Emergent	0.0533		0.0533	Jan L. C. Land	-0.0533			
Scrub-Shrub	0	Restoration	0		0			
Forested	0	Restoration	0		0			
Open Water	0		0		0			
Net-Total	0.0533		0.0533	#DIV/0!	#DIV/0!			

### **W-J7**



Photograph Direction North

Comments:	

Project/Site: MVP		City/C	ounty: Nicholas		Sampling Date: 04/21/2015		
Applicant/Owner: MVP	pplicant/Owner: MVP State: V						
Investigator(s): P Johnson L McCarrell C Sapusek Section, Township, Range: N/A							
Landform (hillslope, terrace, etc.): Depression Local relief (concave, convex, none): Concave Slope (%): 2							
Subregion (LRR or MLRA): LRRN Lat: 38.233295 Long: -80.708058  Soil Map Unit Name: Buchanan channery fine sandy loam, 15 to 35 percent slopes, extr. NWI classification: Non							
•			_	<del></del>			
Are climatic / hydrologic conditions on t							
Are Vegetation, Soil, or				l Circumstances" p	present? Yes No		
Are Vegetation, Soil, or	Hydrology	naturally problema	atic? (If needed, e	explain any answe	ers in Remarks.)		
SUMMARY OF FINDINGS – A	ttach site n	nap showing sam	pling point location	ons, transects	, important features, etc.		
Hydrophytic Vegetation Present?	Yes 🗸	No					
Hydric Soil Present?	Yes 🗸	No	Is the Sampled Area	Yes 🗸	NI -		
Wetland Hydrology Present?	Yes 🗸	No	within a Wetland?	Yes	No		
Remarks:							
Cowardin Code: PFO							
HGM: SLOPE							
WT: RPWWD							
HYDROLOGY							
Wetland Hydrology Indicators:				Secondary Indica	ators (minimum of two required)		
Primary Indicators (minimum of one is	required; chec	ck all that apply)		Surface Soil	` '		
Surface Water (A1)	<u>—</u>	True Aquatic Plants (			getated Concave Surface (B8)		
High Water Table (A2)		Hydrogen Sulfide Odd	. ,	Drainage Pa			
Saturation (A3)	·	Oxidized Rhizosphere Presence of Reduced	es on Living Roots (C3)	Moss Trim L	` '		
Water Marks (B1)		Water Table (C2)					
Sediment Deposits (B2)	Crayfish Bur						
Drift Deposits (B3)		Thin Muck Surface (C			isible on Aerial Imagery (C9)		
Algal Mat or Crust (B4)		Other (Explain in Ren	narks)		tressed Plants (D1)		
Iron Deposits (B5) Inundation Visible on Aerial Imag	on/ (B7)			✓ Geomorphic Shallow Aqu			
✓ Water-Stained Leaves (B9)	ы (Б <i>Г)</i>			·	aphic Relief (D4)		
Aquatic Fauna (B13)				FAC-Neutral			
Field Observations:					. 551 (2-5)		
	✓ No	_ Depth (inches):	0				
		Depth (inches):	6				
			0 Wetland H	lydrology Preser	nt? Yes 🗸 No		
(includes capillary fringe)			_				
Describe Recorded Data (stream gau	ge, monitoring v	well, aerial photos, pre	vious inspections), if ava	ilable:			
Remarks:							

Samplin	na Poin	nt·W-J	7
Jannun	IU F UII	ונ. יי ט	•

	Absolute	Dominant	Indicator	Dominance Test worksheet:	$\overline{}$
Tree Stratum (Plot size: 30')		Species?		Number of Dominant Species	
1. Acer rubrum	35	<b>/</b>	FAC	That Are OBL, FACW, or FAC: 6	)
2. Fraxinus pennsylvanica	5		FACW	(v.	,
3. Ulmus americana	10		FACW	Total Number of Dominant	,
3. Omido amonodia			<u>FACVV</u>	Species Across All Strata: 7 (B)	)
4		-		Percent of Dominant Species	
5					/B)
6				December of the december of	
7				Prevalence Index worksheet:	
	50	= Total Cov	er	Total % Cover of: Multiply by:	
50% of total cover:25	20% of	total cover	10	OBL species x 1 =	
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =	
1. Acer rubrum	15	<b>~</b>	FAC	FAC species x 3 =	
2. Fraxinus pennsylvanica	15		FACW	FACU species x 4 =	
			r <u>ACW</u>	UPL species x 5 =	
3				Column Totals: (A) (I	D)
4				Coldifiir Totals (A) (i	رد
5				Prevalence Index = B/A =	
6				Hydrophytic Vegetation Indicators:	
7					
8				1 - Rapid Test for Hydrophytic Vegetation	
9.				✓ 2 - Dominance Test is >50%	
9	30	T		3 - Prevalence Index is ≤3.0 <sup>1</sup>	
50% - (1-1-)		= Total Cov	_	4 - Morphological Adaptations <sup>1</sup> (Provide support	ting
50% of total cover: 15	20% of	total cover	6	data in Remarks or on a separate sheet)	
Herb Stratum (Plot size: 5' )	00			Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)	
1. Packera aurea	30		FACW_	1 Toblematio Tryatophytic Vegetation (Explain)	
2. Viola sp	10		ND	1	
3. Acer rubrum	5		FAC	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.	t
4. Impatiens capensis	5		F <u>ACW</u>		
- Sambucus nigra	1		FAC	Definitions of Four Vegetation Strata:	
-		-	1 // /	Tree – Woody plants, excluding vines, 3 in. (7.6 cm)	or
6		-		more in diameter at breast height (DBH), regardless	of
7				height.	
8				Sapling/Shrub – Woody plants, excluding vines, les	20
9				than 3 in. DBH and greater than or equal to 3.28 ft (	
10				m) tall.	
11.				Herb – All herbaceous (non-woody) plants, regardle:	.00
	51	= Total Cov	or .	of size, and woody plants less than 3.28 ft tall.	55
50% of total cover: 25.					
Woody Vine Stratum (Plot size: 15' )				<b>Woody vine</b> – All woody vines greater than 3.28 ft in	า
1. Smilax laurifolia	3	~	ODI	height.	
	3		OBL		
2. Multiflora rosa			<u>FACU</u>		
3					
4				Hydrophytic	
5.				Vegetation	
	6	= Total Cov	er	Present? Yes V No No	
50% of total cover: 3		total cover			
Remarks: (Include photo numbers here or on a separate s					
	incot.)				
ND - Not Determined					

SOIL Sampling Point: W-J7

Profile Desc	ription: (Describe t	o the dep	th needed to docur	nent the	indicator	or confirn	n the absenc	e of indicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-1"	10YR 5/3	100					SCL	
1-6"	10YR 5/2	95	10YR 4/6	5	С	PL	SCL	
6-18"	10YR 6/2	85	10YR 5/6	15	С	M/PL	SCL	
							-	
							-	
							-	
1- 0.0							21	
Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, M	S=Masked	d Sand Gra	ains.		PL=Pore Lining, M=Matrix. cators for Problematic Hydric Soils <sup>3</sup> :
-			Douls Confood	(07)				•
Histosol	(A1) pipedon (A2)		Dark Surface Polyvalue Be		oo (S9) <b>(N</b>	II DA 147		2 cm Muck (A10) (MLRA 147) Coast Prairie Redox (A16)
Histic Ep			Polyvalue Be				140)	(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye	•	. •	47, 140)		Piedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Ma		(· <del>-</del> )			(MLRA 136, 147)
	ick (A10) (LRR N)		Redox Dark		<del>-</del> 6)			Very Shallow Dark Surface (TF12)
Depleted	d Below Dark Surface	(A11)	Depleted Da	rk Surface	(F7)			Other (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	lucky Mineral (S1) (L	RR N,	Iron-Mangan		es (F12) <b>(</b>	LRR N,		
	147, 148)		MLRA 13			0 400)	3,	
	ileyed Matrix (S4)		Umbric Surfa					ndicators of hydrophytic vegetation and
-	edox (S5) Matrix (S6)		Piedmont Florent New Parent Ne					vetland hydrology must be present, inless disturbed or problematic.
	_ayer (if observed):		Neu Faleilt i	viateriai (i	ZI) (WILK	H 121, 141	1) 0	inless disturbed of problematic.
Type:	zayer (ii observea).							
Depth (inc	shoc):						Hydric Sc	oil Present? Yes <u>✓</u> No
							riyuric 30	on Fresent: Tes NO
Remarks:								

USACE FILE NO./Project Name:		ey Pipeline Project	COORDINATES:	Lat.	38.233731	Lon.	-80.708250			
STREAM/SITE ID AND SITE DESCR	TREAM/SITE ID AND SITE DESCRIPTION:					Wetland J7 (W-J7), 17.73ac watershed, HUC 12 watershed Panther Creek-Gauley Rive				
% stream slope, watershed size {acreage}, unaltered or impairments)				5	slope, R	PWWD, forested wetland along stre	eam			
FORM OF MITIGATION:		Mitiga	ation Bank							
DATE:	21-Apr-16 WEATHER CONDITIONS:					PRECIPITATION PAST 48 HRS:				
	PART I - Wetl	and Indicators								
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification							
W-J7	Forested	0.0693	Emergent							
						PART III - Advanced		on		
						Sustainable Determination Made of Advanced Mitigation (Y or N)	n	у		
Total Impact		0.0693		2						
		Unit Scores				Estimated				
	assification		Replacement Unit(s)	_		ILF Costs	3			
Total Emergent Total Scrub-Shrub			0.0693	+		\$4,158.00	)			
Total Forested			0	<del>-</del>		Ψ+,100.00	•			
Total Open Water			0	†						

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Temporal Loss-Construction Long-term F \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years O Sub-Total O

Temporal Loss-Maturity							
*Note: Period between completion of compensatory mitigation measures and the time required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).							
% Add. Mitigation Temporal Loss-Maturity (Years)							
<b>0</b> %							
Sub-Total	0						

Long-term Protection					
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)				
0 + 5/10 Year Monitoring	Perpetual				
Sub-Total	0				

Extended Upland Buffer Zone						
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation						
Average Buffer Width	Mitigation Type					
0	0-50	None				
0	51-150	None				

PART V - Final Unit Score								
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance			
Emergent	0.0693	Posterstion .	0.0693		-0.0693			
Scrub-Shrub	0		0		0			
Forested	0	Restoration	0		0			
Open Water	0		0		0			
Net-Total	0.0693		0.0693	#DIV/0!	#DIV/0!			

### W-**H35**

Project/Site: MVP	City/County: Nicholas		9	Sampling Date: 04/20/2015					
Applicant/Owner: MVP	State: WV								
Investigator(s): A.Stott, A.Grech, D.McCullough Section, Township, Range: N/A									
Landform (hillslope, terrace, etc.): Terrace			oncave	Slope (%): 0-4%					
Subregion (LRR or MLRA): LRRN Lat:									
Soil Map Unit Name: Buchanan channery fine sandy loam, 15 to 35 percent slopes, extremely stony (BvE) NWI classification: None									
Are climatic / hydrologic conditions on the site typical for this time of year? Yes ✓ No (If no, explain in Remarks.)									
Are Vegetation, Soil, or Hydrology significantly disturbed?									
Are Vegetation, Soil, or Hydrology naturally problematic? (If needed, explain any answers in Remarks.)									
SUMMARY OF FINDINGS – Attach site map showing sampling point locations, transects, important features, etc.									
	· ·								
Hydrophytic Vegetation Present? Yes   ✓ Hydric Soil Present? Yes  ✓	_ No _ No	Is the Sampled Area	,						
Wetland Hydrology Present? Yes   ✓	No No	within a Wetland?	Yes <u> </u>	No					
Remarks:									
Cowardin Code: PEM HGM: slope WT: RPWWN									
Information listed on this form represents the data collected in 2015. The wetland was revisited on 10/16/2019. Presence									
of wetland hydrology, hydrophytic vegetation, and hydric soils was confirmed using the USACE EMP Regional									
Supplement delineation methodology.									
HYDROLOGY									
Wetland Hydrology Indicators:		Secon	ndary Indicato	ors (minimum of two required)					
Primary Indicators (minimum of one is required; check	all that apply)	S	urface Soil C	racks (B6)					
✓ Surface Water (A1)	True Aquatic Plants (I	B14) <u>✓</u> S	parsely Vege	tated Concave Surface (B8)					
✓ High Water Table (A2)	Hydrogen Sulfide Odd	or (C1) D	rainage Patte	erns (B10)					
✓ Saturation (A3) — Oxidized Rhizospheres on Living Roots (C3) — Moss Trim Lines (B16)									
Water Marks (B1)	Presence of Reduced	Iron (C4) D	ry-Season W	ater Table (C2)					
Sediment Deposits (B2)	Recent Iron Reduction	n in Tilled Soils (C6) C	rayfish Burro	ws (C8)					
Drift Deposits (B3)	aturation Visi	n Visible on Aerial Imagery (C9)							
Algal Mat or Crust (B4) Other (Explain in Remarks) Stunted or Stressed Plants (D1)									
Iron Deposits (B5)			eomorphic P						
Inundation Visible on Aerial Imagery (B7) Shallow Aquitard (D3)									
Water-Stained Leaves (B9) Microtopographic Relief (D4)									
Aquatic Fauna (B13)		F,	AC-Neutral T	est (D5)					
Field Observations:  Surface Water Present? Yes   ✓ No	Donth (inches).	.5"							
Water Table Present? Yes ✓ No	Depair (inches).	<u>)"</u>							
	Deptit (inches).	O" Wetland Hydrold	any Procont	? Yes ✓ No					
(includes capillary fringe)	Deptit (inches):	Welland Trydroid	by Fresent	163 <u>-v</u> NO					
Describe Recorded Data (stream gauge, monitoring well, aerial photos, previous inspections), if available:									
Remarks:									
Heavy rain previous day									

#### VEGETATION (Four Strata) – Use scientific names of plants.

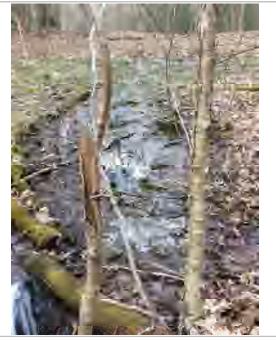
/EGETATION (Four Strata) – Use scientific na	ames of	plants.		Sampling Point: W-H35
201		Dominant		Dominance Test worksheet:
Tree Stratum (Plot size: 30' ) 1)		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:2 (A)
2				Total Number of Dominant
3				Species Across All Strata:3 (B)
5				Percent of Dominant Species That Are OBL, FACW, or FAC:66(A/B)
6				That Are OBE, I AGW, OF AG.
7				Prevalence Index worksheet:
		= Total Cov		
50% of total cover: 0	20% of	total cover:	0	OBL species x 1 = FACW species x 2 =
Sapling/Shrub Stratum (Plot size: 15' )  1 Betula lenta	10	./	FACU	FAC species x 3 =
··			1 <u>ACO</u>	FACU species x 4 =
2				UPL species x 5 =
4				Column Totals: (A) (B)
5				Durantana katan BIA
6				Prevalence Index = B/A =
7				Hydrophytic Vegetation Indicators: 1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 <sup>1</sup>
		= Total Cov		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
50% of total cover: 5	20% of	total cover:	2	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5° )  1 Scirpus atrovirens	10	./	OBL	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Viola cucullata	10		FAC	
3			r <u>AC</u>	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4				be present, unless disturbed or problematic.
5				Definitions of Four Vegetation Strata:
6.				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7				more in diameter at breast height (DBH), regardless of height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
500/ aftered access 10		= Total Cov total cover:		of size, and woody plants less than 3.28 ft tall.
50% of total cover: 10 <u>Woody Vine Stratum</u> (Plot size: 15' )	20% 01	total cover:		Woody vine – All woody vines greater than 3.28 ft in
1				height.
2.				
3				
4				Hydrophytic
5				Vegetation
•		= Total Cov	_	Present? Yes <u>√</u> No
50% of total cover: 0		total cover:	0	
Remarks: (Include photo numbers here or on a separate s	heet.)			

SOIL Sampling Point: W-H35

Profile Desc	ription: (Describe to	o the dep	th needed to docu	ment the i	ndicator	or confirn	n the absence	of indicators.)
Depth	Matrix			x Feature:				
(inches)	Color (moist)	%	Color (moist)	%	<u>Type<sup>1</sup></u>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0-3"	2.5y 2/1	100					GrS	Coal slag
3-12"	10yr 5/1	95	10yr 5/6	5	C	M	Gr	
12+"					<u> </u>			Refusal: CF
								— Neiusai. OF
					-			
<sup>1</sup> Type: C=Co	oncentration, D=Deple	etion, RM:	=Reduced Matrix, M	S=Masked	I Sand Gra	ins.	<sup>2</sup> Location: P	L=Pore Lining, M=Matrix.
Hydric Soil I							Indica	ators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface	e (S7)				cm Muck (A10) <b>(MLRA 147)</b>
	oipedon (A2)		Polyvalue Be		ce (S8) <b>(N</b>	ILRA 147.		Coast Prairie Redox (A16)
Black Hi	•		Thin Dark S					(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gley			,,	F	riedmont Floodplain Soils (F19)
	l Layers (A5)		✓ Depleted Ma		/		<del></del> ·	(MLRA 136, 147)
	ick (A10) <b>(LRR N)</b>		Redox Dark		6)		V	'ery Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Da					Other (Explain in Remarks)
	ark Surface (A12)	( ,	Redox Depr					(
	lucky Mineral (S1) <b>(L</b> l	RR N.	Iron-Mangar			LRR N.		
	\ 147, 148)		MLRA 13		( / (			
	leyed Matrix (S4)		Umbric Surfa		MLRA 13	6, 122)	<sup>3</sup> Ind	icators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					etland hydrology must be present,
-	Matrix (S6)		Red Parent	•				less disturbed or problematic.
	ayer (if observed):			<u> </u>			1	·
Type:	•							
Depth (inc	chae):						Hydric Soil	Present? Yes ✓ No
= = = = = = = = = = = = = = = = = = = =							Tiyune 3011	riesent: res_vNo
Remarks:								

# **Wetland Photograph Page**

### Wetland ID W-H35



Photograph Direction North

Date: 04/20/2015

Comments: 2015 wetland delineation.



Photograph Direction NW

Date: 10/16/19

 $\label{eq:comments:comments:} 2019 \ \text{wetland delineation confirmation}.$ 

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.124117	Lon.	-80.736018
STREAM/SITE ID AND SITE DESCR	RIPTION:			Wetland I	H35 (W	-H35) is an emergent wetland. Slope	RPWW	N.
(% stream slope, watershed size {a								
FORM OF MITIGATION:		Mitiga	ition Bank					
DATE:	13-F	eb-18	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-H35	Emergent	0.0177	Emergent					
						PART III - Advanced	Mitigatio	n
						Sustainable Determination Made on		
						Advanced Mitigation (Y or N)		N
					•	· · · · · · · · · · · · · · · · · · ·		
Total Impact		0.0177			. <u>-</u>			
		Unit Scores				Estimated		
Wetland Cl	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0177					
Total Scrub-Shrub			0			\$1,062.00		
Total Forested			0					
Total Open Water			0					

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Long-term F % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

Temporal Loss-Maturity						
*Note: Period between completion of compensatory mitigation measures and the time required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).						
% Add. Mitigation	Temporal Loss-Maturity (Years)					
0%						
Sub-Total <b>0</b>						

Long-term Protection						
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)					
0 + 5/10 Year Monitoring	Perpetual					
Sub-Total	0					

Extended Upland Buffer Zone						
*Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation						
Average Buffer Width	Mitigation Type					
0	0-50	None				
0	51-150	None				

PART V - Final Unit Score								
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance			
Emergent	0.0177		0.0177		-0.0177			
Scrub-Shrub	0	Restoration	0		0			
Forested	0	Restoration	0		0			
Open Water	0		0		0			
Net-Total	0.0177		0.0177	#DIV/0!	#DIV/0!			

# W-M22

# **Wetland Photograph Page**

### Wetland ID W-M22



Photograph Direction North

Date: 04/23/2015

Comments: 2015 wetland delineation.



Photograph Direction NE

Date: 10/17/19

 $\label{eq:comments:comments:} 2019 \ \text{wetland delineation confirmation}.$ 

Project/Site: MVP	City/County: Greenbrier Sampling Date: 04/23/2015					
Applicant/Owner: MVP	State: WV Sampling Point: W-M22					
Investigator(s): A. Jennrich, J. Kovacs, M. Shaffe	er Section, Township, Ran					
Landform (hillslope, terrace, etc.): Hillslope	Local relief (concave, conve	ex, none): Flat to slightl	y concave Slope (%):_5			
Subregion (LRR or MLRA): LRRN Lat:			Datum: NAD 83			
Soil Map Unit Name: Gilpin channery silt loam, 3	-		· · · · · · · · · · · · · · · · · · ·			
Are climatic / hydrologic conditions on the site typical for		<u></u>	·			
Are Vegetation, Soil, or Hydrology	•	•	,			
Are Vegetation, Soil, or Hydrology		eded, explain any answer				
SUMMARY OF FINDINGS – Attach site ma						
/						
Hydrophytic Vegetation Present? Yes	Is the Sampled I	Area				
Hydric Soil Present? Yes   Wetland Hydrology Present? Yes   ✓	No within a Wetland	d? Yes <u>▼</u>	No			
Remarks:	140	_				
Cowardin Code: PSS HGM: Slope WT: NRP	M/M/					
Information listed on this form represents the		etland was revisited	on 10/17/2019 Presence			
of wetland hydrology, hydrophytic vegetation						
Supplement delineation methodology.	•	J	9			
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indica	tors (minimum of two required)			
Primary Indicators (minimum of one is required; check a	all that apply)	Surface Soil (	Cracks (B6)			
✓ Surface Water (A1) T	rue Aquatic Plants (B14)		etated Concave Surface (B8)			
<u> </u>	lydrogen Sulfide Odor (C1)	Drainage Pat				
	Oxidized Rhizospheres on Living Roots					
	resence of Reduced Iron (C4)		Water Table (C2)			
Sediment Deposits (B2) R	Recent Iron Reduction in Tilled Soils (C	6) Crayfish Burr	ows (C8)			
Drift Deposits (B3) T	hin Muck Surface (C7)	Saturation Vi	sible on Aerial Imagery (C9)			
Algal Mat or Crust (B4) C	ther (Explain in Remarks)	Stunted or St	ressed Plants (D1)			
Iron Deposits (B5)		Geomorphic	Position (D2)			
Inundation Visible on Aerial Imagery (B7)		Shallow Aqui	tard (D3)			
✓ Water-Stained Leaves (B9)		Microtopographic Relief (D4)				
Aquatic Fauna (B13)		FAC-Neutral	Test (D5)			
Field Observations:	0					
Surface Water Present? Yes No I						
Water Table Present? Yes No I			,			
Saturation Present? Yes   ✓ No I (includes capillary fringe)	Depth (inches): 0 Wet	land Hydrology Presen	t? Yes <u>√</u> No			
Describe Recorded Data (stream gauge, monitoring we	II, aerial photos, previous inspections),	, if available:				
Remarks:						
Kendiks.						

#### VEGETATION (Four Strata) – Use scientific names of plants.

/EGETATION (Four Strata) – Use scientific na	ames of	plants.		Sampling Point: W-M22
30'		Dominant		Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:) 1)		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC: (A)
2				Total Number of Deminent
3				Total Number of Dominant Species Across All Strata: 3 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 67 (A/B)
6				That Are OBL, I ACW, OF I AC.
7.				Prevalence Index worksheet:
	0	= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover:0		total cover:	_	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'	<u> </u>			FACW species x 2 =
1. Sambucus nigra	50	✓	FAC	FAC species x 3 =
2. Rubus allegheniensis	35	<u> </u>	FACU_	FACU species x 4 =
3		<del>`</del>	1.7100	UPL species x 5 =
				Column Totals: (A) (B)
4				
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9	85			3 - Prevalence Index is ≤3.0 <sup>1</sup>
50% of total cover: _ <b>42.</b> 5		= Total Cov		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
<u></u>	<u>20% or</u>	total cover:		data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5' ) 1 Juncus effusus	40	./	EA C\A/	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
	5		FACW_	
2. Viola spp	<u>5</u>		ND	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
3. Impatiens capensis			F <u>ACW</u>	be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10	-			m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>25</u>	20% of	total cover:	10	<b>Woody vine</b> – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size:15')				height.
1				
2				
3				
4				Hydrophytic
5				Vegetation
		= Total Cov		Present? Yes <u>√</u> No
50% of total cover:0	20% of	total cover:	0	
Remarks: (Include photo numbers here or on a separate s	heet.)			
ND - Not Determined				

Sampling Point: W-M22

OIL								Sampling Point: W-M22
Profile Des	cription: (Describe	to the dept	th needed to docur	nent the	indicato	or or confirm	the absence	
Depth	Matrix			x Feature				
(inches)	Color (moist)	%	Color (moist)	%	Type	Loc <sup>2</sup>	<u>Texture</u>	<u>Remarks</u>
0-1	10YR 2/2	_100_					L	
1-5	10YR 3/2	_100_					L	
5-7	10YR 4/2	95	10YR 3/6	5	С	PL	L	
7-8	10YR 4/2	90	5YR 4/6	10	C	M/PL	CL	
8-11	10YR 4/4	95	10YR 4/6	5	C	PL	CL	
11-15	10YR 5/2	91	10YR 2/1	5	. <u>D</u>	_ <u>M</u>	CL	
			10YR 5/6	4	<u>C</u>	<u>M</u>		
15-17	10YR 4/2	96	10YR 4/6	4	С	М	CL	
							2 –	
	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	S=Maske	d Sand (	Grains.		PL=Pore Lining, M=Matrix.
•	Indicators:							ators for Problematic Hydric Soils <sup>3</sup> :
Histoso			Dark Surface					2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be				<b>148)</b> C	Coast Prairie Redox (A16)
Black H	istic (A3)		Thin Dark Sι			A 147, 148)		(MLRA 147, 148)
Hydroge	en Sulfide (A4)		Loamy Gleye	ed Matrix	(F2)		P	Piedmont Floodplain Soils (F19)
Stratifie	d Layers (A5)		✓ Depleted Ma	trix (F3)				(MLRA 136, 147)
2 cm Mı	uck (A10) (LRR N)		Redox Dark	Surface (	F6)		V	/ery Shallow Dark Surface (TF12)
Deplete	d Below Dark Surface	e (A11)	Depleted Da	rk Surface	e (F7)		C	Other (Explain in Remarks)
Thick D	ark Surface (A12)		Redox Depre	essions (F	8)			
Sandy N	/lucky Mineral (S1) <b>(L</b>	.RR N,	Iron-Mangan	ese Mass	ses (F12	) (LRR N,		
MLR	A 147, 148)		MLRA 13	6)				
Sandy (	Gleyed Matrix (S4)		Umbric Surfa	ace (F13)	(MLRA	136, 122)	<sup>3</sup> Ind	dicators of hydrophytic vegetation and
Sandy F			Piedmont Flo	odplain S	Soils (F1	9) <b>(MLRA 14</b>	<b>8)</b> we	etland hydrology must be present,
	l Matrix (S6)		Red Parent N	Material (I	-21) <b>(ML</b>	.RA 127, 147	) un	nless disturbed or problematic.
Restrictive	Layer (if observed):							
Type:								
J	ches):						Hydric Soil	I Present? Yes <u>√</u> No
Remarks:	<u> </u>						- Tryuno con	103 <u> </u>
(emarks:								

Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.060661	Lon.	-80.722616
ION:			Wetland M22 (W-M22),	5.55ac	watershed, HUC 12 watershed Anglins	Creek,	slope, NRPWW
age}, unaltered or	r impairments)						
FORM OF MITIGATION: Mitigation Bank							
23-A <sub>l</sub>	or-16	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
PART I - Wetla	nd Indicators						
Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
Scrub-Shrub	0.0039	Emergent					
					PART III - Advanced N	Mitigatio	n
							n
	0.0039			ĺ			
	nit Scores	Deplecement Unit/s					
Silication					ILF Costs		
					\$224.00		
					<b>\$234.00</b>		
		0					
	23-Al  PART I - Wetla  Impact Wetland Classification Scrub-Shrub	23-Apr-16  PART I - Wetland Indicators  Impact Wetland (acreage)  Classification  Scrub-Shrub  0.0039  PART II - Unit Scores	Mitigation Bank  23-Apr-16 WEATHER CONDITIONS:  PART I - Wetland Indicators  Impact Wetland (acreage) Wetland Classification  Scrub-Shrub 0.0039 Emergent  0.0039  PART II - Unit Scores	Mitigation Bank  23-Apr-16 WEATHER CONDITIONS:  PART I - Wetland Indicators  Impact (acreage) Wetland Classification  Scrub-Shrub 0.0039 Emergent  0.0039  PART II - Unit Scores  sification Replacement Unit(s) 0.0039 0	Mitigation Bank  23-Apr-16 WEATHER CONDITIONS:  PART I - Wetland Indicators  Impact Impacts Wetland (acreage) Wetland Classification  Scrub-Shrub 0.0039 Emergent  0.0039  PART II - Unit Scores  sification Replacement Unit(s) 0.0039 0	Mitigation Bank  23-Apr-16 WEATHER CONDITIONS:  PART I - Wetland Indicators  Impact Wetland (acreage) Wetland Classification  Scrub-Shrub 0.0039 Emergent  PART II - More and indicators  Sustainable Determination Made on Advanced Mitigation (Y or N)  PART II - Unit Scores  Impact Wetland Classification  PART III - Advanced Indicators  Sustainable Determination Made on Advanced Mitigation (Y or N)  Estimated ILF Costs  0.0039  PART III - Unit Scores  ILF Costs  0.0039  Salando April II - Unit Scores  Sification Replacement Unit(s)  0.0039  Salando April II - Unit Scores   Mitigation Bank  23-Apr-16 WEATHER CONDITIONS: PRECIPITATION PAST 48 HRS:  PART I - Wetland Indicators Impacts Wetland (acreage) Wetland Classification  Scrub-Shrub 0.0039 Emergent  PART III - Advanced Mitigation (Y or N)  PART III - Advanced Mitigation (Y or N)  Estimated ILF Costs  ILF Costs  1 0.0039  \$234.00	

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). \*\*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). \*\*Years Sub-Total \*\*Output \*\*Description\*\* \*\*Add. Mitigation and Monitoring Period\*\* \*\*Sub-Total \*\*Output \*\*Description\*\* \*\*Sub-Total \*\*Output \*\*Description\*\* \*\*Description\*\* \*\*Sub-Total \*\*Description\*\* 
Temporal Loss-Maturity						
*Note: Period between completion of compensatory mitigation measures and the time required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).						
% Add. Mitigation	Temporal Loss-Maturity (Years)					
0%						
Sub-Total 0						

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone						
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation						
Average Buffer Width	Mitigation Type					
0	0-50	None				
0	51-150	None				

PART V - Final Unit Score							
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance		
Emergent	0.0039		0.0039		-0.0039		
Scrub-Shrub	0	Restoration	0		0		
Forested	0	Restoration	0		0		
Open Water	0		0		0		
Net-Total	0.0039		0.0039	#DIV/0!	#DIV/0!		



Photograph Direction NW

Comments:	

Project/Site: MVP	City/County: _	Greenbrier	Sampling Date: 04/20/2015			
Applicant/Owner: MVP		Sampling Point: W-J6				
Investigator(s): P Johnson L McCarrell C Sapusek Section, Township, Range: N/A						
Landform (hillslope, terrace, etc.): Depression			Slope (%): 2			
Subregion (LRR or MLRA): LRRN		Long: -80.731699				
Soil Map Unit Name: Cookport loam, 3 to 8		NWI classifi				
Are climatic / hydrologic conditions on the site typi						
	·					
Are Vegetation, Soil, or Hydrology						
Are Vegetation, Soil, or Hydrology		(If needed, explain any answ				
SUMMARY OF FINDINGS – Attach si	te map snowing sampling	point locations, transect	s, important features, etc.			
Hydrophytic Vegetation Present? Yes	✓ No Is the	Sampled Area				
Hydric Soil Present? Yes _	✓ No	a Wetland? Yes	, No			
Wetland Hydrology Present? Yes _	✓ No					
Remarks:						
Cowardin Code: PFO						
HGM: Slope WT: RPWWD						
WI. RPWWD						
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indic	cators (minimum of two required)			
Primary Indicators (minimum of one is required;	check all that apply)	Surface Soi				
✓ Surface Water (A1)	✓ True Aquatic Plants (B14)		egetated Concave Surface (B8)			
✓ High Water Table (A2)	Hydrogen Sulfide Odor (C1)		atterns (B10)			
Saturation (A3)	Oxidized Rhizospheres on Liv	ving Roots (C3) 👱 Moss Trim I	Lines (B16)			
Water Marks (B1)	4) Dry-Season	Water Table (C2)				
Sediment Deposits (B2)	ed Soils (C6) Crayfish Bu					
Drift Deposits (B3)		Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Other (Explain in Remarks)		Stressed Plants (D1)			
Iron Deposits (B5)		<u>✓</u> Geomorphic				
<ul><li> Inundation Visible on Aerial Imagery (B7)</li><li>✓ Water-Stained Leaves (B9)</li></ul>	Shallow Aqu					
Aquatic Fauna (B13)		Microtopographic Relief (D4) ✓ FAC-Neutral Test (D5)				
Field Observations:			11 1001 (20)			
_	Depth (inches):1					
	Depth (inches): 0					
	Depth (inches): 0	Wetland Hydrology Prese	ent? Yes 🗸 No			
(includes capillary fringe)						
Describe Recorded Data (stream gauge, monito	ring well, aerial photos, previous in	spections), if available:				
Remarks:						

Samn	lina	Point:	W-J6
Janio	III IU	ı Ollit.	

Troo Stratum (Plot size: 30'	Absolute	Dominant		Dominance Test worksheet:
Tiee Stratum (Fiot Size.		Species?	Status	Number of Dominant Species
1. Acer rubrum	25		FAC	That Are OBL, FACW, or FAC:3 (A)
2. Betula lenta	5		FACU_	Total Number of Danissant
3				Total Number of Dominant Species Across All Strata:3 (B)
4				Specifica / for odd / fin official.
				Percent of Dominant Species
5				That Are OBL, FACW, or FAC:100 (A/B)
6				Prevalence Index worksheet:
7				
		= Total Cov		Total % Cover of: Multiply by:
50% of total cover: 15	20% of	total cover:	6	OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15')				FACW species x 2 =
1 Betula lenta	5		FACU	FAC species x 3 =
2. Acer rubrum	25		FAC	FACU species x 4 =
				UPL species x 5 =
3. Betula alleghaniensis			F <u>AC</u>	
4				Column Totals: (A) (B)
5				Provolence Index - P/A -
6				Prevalence Index = B/A =
				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 <sup>1</sup>
		= Total Cov		4 - Morphological Adaptations¹ (Provide supporting
50% of total cover:17.5	20% of	total cover:	7	
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Osmundastrum cinnamomeum	40	<b>/</b>	FACW	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Sphagnum sp	10			
			ND	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
3. Sambucus nigra			F <u>AC</u>	be present, unless disturbed or problematic.
4. Rubus sp	1		ND	Definitions of Four Vegetation Strata:
5				
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7				more in diameter at breast height (DBH), regardless of
				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	56	= Total Cov	er	
		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover:28		= Total Cov total cover:		of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in
50% of total cover: 28  Woody Vine Stratum (Plot size: 15' )	20% of	total cover:	11.2	of size, and woody plants less than 3.28 ft tall.
50% of total cover:28	20% of	total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in
50% of total cover: 28  Woody Vine Stratum (Plot size: 15' )	20% of	total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in
50% of total cover:28  Woody Vine Stratum (Plot size:15')  1	20% of	total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in
50% of total cover:	20% of	total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.
50% of total cover:28  Woody Vine Stratum (Plot size:15')  1	20% of	total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic
50% of total cover:	20% of	total cover:		of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation
50% of total cover:	20% of	total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic
50% of total cover:		total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation
50% of total cover:		total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation
50% of total cover:		total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation
50% of total cover:		total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation
50% of total cover:		total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation
50% of total cover:		total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation
50% of total cover:		total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation
50% of total cover:		total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation
50% of total cover:		total cover:	11.2	of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation

SOIL Sampling Point: W-J6

Profile Desc	ription: (Describe t	o the dept	th needed to docur	nent the i	ndicator	or confirm	the absence	e of indicators.)
Depth	Matrix		Redo	x Features	S			
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	Texture	Remarks
0-6	10YR 5/4	100					SC	
6-18	10YR 5/2	60	10YR 5/6	40	_	M/DI	SC	
0-10	1011 5/2	- 60	10111 5/6	40	<u>C</u>	M/PL		·
					-		-	
					-			
								-
<sup>1</sup> Type: C=Co	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	Sand Gr	rains.	<sup>2</sup> Location: F	PL=Pore Lining, M=Matrix.
Hydric Soil			·					cators for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface	(S7)				2 cm Muck (A10) <b>(MLRA 147)</b>
	pipedon (A2)		Polyvalue Be	. ,	ca (S8) <b>(1</b>	MI RΔ 147		Coast Prairie Redox (A16)
Black Hi	. , ,		Thin Dark Su					(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye			147, 140)		Piedmont Floodplain Soils (F19)
	l Layers (A5)		Depleted Ma	,	ΓZ)		— '	(MLRA 136, 147)
					-0)		,	. ,
	ick (A10) (LRR N)	(111)	Redox Dark	•	,			Very Shallow Dark Surface (TF12)
	d Below Dark Surface	(A11)	Depleted Date		. ,		— '	Other (Explain in Remarks)
	ark Surface (A12)	DD 11	Redox Depre			(I DD N		
	lucky Mineral (S1) (L	KK N,	Iron-Mangan		es (F12) (	(LKK N,		
	147, 148)		MLRA 13	-	(BB) BA 44		3,	
	sleyed Matrix (S4)		Umbric Surfa					dicators of hydrophytic vegetation and
-	edox (S5)		Piedmont Flo					etland hydrology must be present,
	Matrix (S6)		Red Parent N	Material (F	21) <b>(ML</b> R	RA 127, 147	<u>')</u> ur	nless disturbed or problematic.
Restrictive I	ayer (if observed):							
Type:								
Depth (inc	ches):						Hydric Soi	il Present? Yes ✓ No
Remarks:								
rtomanto.								

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	38.053361	Lon.	-80.732198	
STREAM/SITE ID AND SITE DESCR	IPTION:			Wetland J6 (W-J6), 7.7	71ac wa	atershed, HUC 12 watershed Meadow	/ Creek-	Meadow River,	
(% stream slope, watershed size {acreage}, unaltered or impairments)				slope, RPWWD, forested wetland surrounded by woodland and crossed by an existing					
FORM OF MITIGATION:		tion Bank			access road culvert				
DATE:	20-Apr-16 WEATH		WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:			
	PART I - Wetl	and Indicators							
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification						
W-J6	Forested	0.0744	Emergent						
						PART III - Advanced I	Mitigatio	on	
						Sustainable Determination Made on Advanced Mitigation (Y or N)		у	
Total Impact		0.0744							
		Unit Scores				Estimated			
Wetland Cla	assification		Replacement Unit(s)			ILF Costs			
Total Emergent Total Scrub-Shrub			0.0744	-		\$4,464.00			
Total Forested			0	+		\$4,464.00			
Total Open Water			0	+					

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Temporal Loss-Construction Long-term P \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years O Sub-Total O

Temporal Loss-Maturity						
*Note: Period between completion of compensatory mitigation measures and the time required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).						
% Add. Mitigation	Temporal Loss-Maturity (Years)					
0%	0					
Sub-Total	0					

Long-term Protection				
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)			
0 + 5/10 Year Monitoring	Perpetual			
Sub-Total	0			

Extended Upland Buffer Zone							
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation							
Average Buffer Width	Mitigation Type						
0	0-50 None						
U	51-150	None					

PART V - Final Unit Score						
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score	Applicant Input	Balance	
			to Offset (Debit)	Mitigation (Credit)		
Emergent	0.0744		0.0744		-0.0744	
Scrub-Shrub	0	Restoration	0		0	
Forested	0	Restoration	0		0	
Open Water	0		0		0	
Net-Total	0.0744		0.0744	#DIV/0!	#DIV/0!	

# W-HS1



Photograph Direction North

Comments:		

Project/Site: MVP	City/County: Greenbrier	Sampling Date: 04/17/2018
Applicant/Owner: MVP		e: WV Sampling Point: W-HS1
• •	Section, Township, Range: N/A	
	Local relief (concave, convex, none):	Concave Slope (%): 0
Subregion (LRR or MLRA): LRR N Lat:		118 Datum: NAD 83
Soil Map Unit Name: Macove-Gilpin complex, 35 to		
•	_	
Are climatic / hydrologic conditions on the site typical for	-	·
Are Vegetation, Soil, or Hydrology		
Are Vegetation, Soil, or Hydrology	naturally problematic? (If needed, explain	any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site m	nap showing sampling point locations, t	ransects, important features, etc.
Hydrophytic Vegetation Present? Yes   ✓	No Is the Sampled Area	
Hydric Soil Present? Yes   ✓	is the Sampled Area	Yes ✓ No
Wetland Hydrology Present? Yes	No	Yes No
Remarks: Cowardin Code: PEM	HGM: Depressional Water Type: NRP	M/M
Cowarani Codo.   Elvi	Trem. Bepressional Water Type. Mil	V V V
HYDROLOGY		
Wetland Hydrology Indicators:		ndary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; chec		Surface Soil Cracks (B6)
		Sparsely Vegetated Concave Surface (B8)
1		Orainage Patterns (B10)
Saturation (A3) Water Marks (B1)	·	Moss Trim Lines (B16) Dry-Season Water Table (C2)
Sediment Deposits (B2)		Crayfish Burrows (C8)
1		Saturation Visible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Stunted or Stressed Plants (D1)
Iron Deposits (B5)		Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)
✓ Water-Stained Leaves (B9)	N	/licrotopographic Relief (D4)
Aquatic Fauna (B13)	<u>√</u> F	AC-Neutral Test (D5)
Field Observations:	4.0	
Surface Water Present? Yes   ✓ No	Depth (inches): 1-8	
Water Table Present? Yes No✓	Depth (inches):	
	Depth (inches): Wetland Hydrol	ogy Present? Yes No
(includes capillary fringe)  Describe Recorded Data (stream gauge, monitoring v	vell, aerial photos, previous inspections), if available:	
Remarks:		

#### VEGETATION (Four Strata) – Use scientific names of plants.

/EGETATION (Four Strata) – Use scientific na	ames of	plants.		Sampling Point: W-HS1
201	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30' ) 1)		Species?	<u>Status</u>	Number of Dominant Species That Are OBL, FACW, or FAC:4 (A)
2				Total Number of Deminent
3				Total Number of Dominant Species Across All Strata: 4 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
6				That Ale Obe, I Aew, of I Ae. (Alb)
7.				Prevalence Index worksheet:
-	0	= Total Cov	er	Total % Cover of: Multiply by:
50% of total cover:0				OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15'	_		-	FACW species x 2 =
1. Salix nigra	5	✓	OBL	FAC species x 3 =
2				FACU species x 4 =
3				UPL species x 5 =
4				Column Totals: (A) (B)
5				
				Prevalence Index = B/A =
6 7				Hydrophytic Vegetation Indicators:
				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
ə	5	= Total Cov		3 - Prevalence Index is ≤3.0 <sup>1</sup>
50% of total cover: 2.5				4 - Morphological Adaptations (Provide supporting
Herb Stratum (Plot size: 5' )	2070 01	total cover.		data in Remarks or on a separate sheet)
1. Typha latifolia	30	1	OBL	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2. Scirpus cyperinus	20	<u> </u>	FACW	
3. Juncus effusus	15		FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Dichanthelium clandestinum	10			be present, unless disturbed or problematic.
·		-	FAC	Definitions of Four Vegetation Strata:
5		· -		Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
6				more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11,				<b>Herb</b> – All herbaceous (non-woody) plants, regardless
500/ (1.1.)		= Total Cov		of size, and woody plants less than 3.28 ft tall.
50% of total cover: <u>37.5</u>	<u>)                                    </u>	total cover:	13	Woody vine – All woody vines greater than 3.28 ft in
Woody Vine Stratum (Plot size: 15')				height.
1				
2				
3	<u> </u>			
4				Hydrophytic
5				Vegetation Present? Yes _ ✓ No
		= Total Cov		Present? Yes <u>√</u> No
50% of total cover: 0		total cover:		
Remarks: (Include photo numbers here or on a separate s	heet.)			

	-	o the depth i	needed to document the inc	dicator or confirm	1 the absence	of indicate	ors.)	
Depth (inches)	Matrix Color (moist)	%	Redox Features Color (moist) %	Type <sup>1</sup> Loc <sup>2</sup>	Texture		Remarks	
0-1	7.5YR 2.5/1	100			Mk			
1-5	N 2.5/0	100			_		Coal Fine	
5+	112.070					Refusa	I - Compacte	
						Tterasa	Oompacie	od Oddi i ilic
						-		
								_
1					2, ,			
		etion, RM=Re	educed Matrix, MS=Masked S	and Grains.			ng, M=Matrix. roblematic Hyd	trio Soils³.
Hydric Soil I			Dark Curfood (C7)				_	
Histosol	(AT) iipedon (A2)	-	<ul><li>Dark Surface (S7)</li><li>Polyvalue Below Surface</li></ul>	(S8) (MI RA 147			A10) <b>(MLRA 14</b> e Redox (A16)	11)
Black His	•	-	Thin Dark Surface (S9) <b>(</b>		. 10, 0	MLRA 14)		
	n Sulfide (A4)	- -	Loamy Gleyed Matrix (F2		P		oodplain Soils (	F19)
<del></del>	Layers (A5)	-	Depleted Matrix (F3)			(MLRA 13		
	ck (A10) (LRR N)	-	Redox Dark Surface (F6)				Dark Surface	(TF12)
•	Below Dark Surface	e (A11)	Depleted Dark Surface (I	-7)	_ 0	ther (Expla	in in Remarks)	
	irk Surface (A12) lucky Mineral (S1) <b>(L</b>	RR N	<ul><li>Redox Depressions (F8)</li><li>Iron-Manganese Masses</li></ul>	(F12) <b>(I RR N</b>				
	147, 148)	,	MLRA 136)	(112) (211111)				
	leyed Matrix (S4)		Umbric Surface (F13) <b>(M</b>	LRA 136, 122)	<sup>3</sup> Ind	icators of h	ydrophytic vege	etation and
	edox (S5)	-	Piedmont Floodplain Soi				logy must be p	
	Matrix (S6)	-	Red Parent Material (F2	i) <b>(MLRA 127, 14</b> 7	7) un	less disturb	ed or problema	tic.
	ayer (if observed):	inoo						
J	mpacted Coal F	ines	_					
Depth (inc	thes): 3+				Hydric Soil	Present?	Yes <u>√</u>	No
Remarks:								

USACE FILE NO./Project Name:		Mountain Valley Pipeline Project			Lat.	37.986454	Lon.	-80.758418
STREAM/SITE ID AND SITE DESCR	RIPTION:			Wetland HS1 (W-HS1),	0.86 a	cre watershed, HUC 12 watershed M	III Creek	-Meadow River,
(% stream slope, watershed size {a	(% stream slope, watershed size {acreage}, unaltered or impairments)					depressional, RPWWN.		
FORM OF MITIGATION: Mitigation Bank								
DATE:	4/20	4/20/2016 WEATHER CONDITIONS:				PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-HS1	Emergent	0.036	Emergent					
						PART III - Advanced	Mitigatio	on
						Sustainable Determination Made or Advanced Mitigation (Y or N)		у
Total Impact		0.036		2				
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.036			<b>.</b>		
Total Scrub-Shrub			0			\$2,160.00		
Total Forested			0					
Total Open Water			0					

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.)

*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit).				
Years	0			
Sub-Total	0			

Temporal Loss-Maturity

Temporal Loss-Construction

required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).				
% Add. Mitigation	Temporal Loss-Maturity (Years)			
0%	0			
Sub-Total	0			

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone				
*Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation				
Average Buffer Width	Mitigation Type			
0	0-50	None		
	51-150	None		

PART V - Final Unit Score							
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance		
Emergent	0.036		0.036		-0.036		
Scrub-Shrub	0	Restoration	0		0		
Forested	0	Restoration	0		0		
Open Water	0		0		0		
Net-Total	0.036		0.036	#DIV/0!	#DIV/0!		

# W-QR2



Photograph Direction West

Comments:		

Project/Site: MVP	City/C	county: Greenbrier		Sampling Date: 04/20/2016			
Applicant/Owner: MVP				Sampling Point: W-QR2			
Investigator(s): D Hadersbeck, J McGu	irk, C Sapusek Section	on Township Range N					
Landform (hillslope, terrace, etc.): Slope				Slone (%): 5			
Subregion (LRR or MLRA): LRR N				Slope (76) Datum:_NAD 83			
		-					
Soil Map Unit Name: Po - Pope fine sandy				·			
Are climatic / hydrologic conditions on the site							
Are Vegetation, Soil, or Hydro	ology significantly distur	bed? Are "Normal	Circumstances" p	present? Yes V No No			
Are Vegetation, Soil, or Hydro	ology naturally problema	atic? (If needed, e	explain any answe	rs in Remarks.)			
SUMMARY OF FINDINGS – Attack	h site map showing san	npling point location	ns, transects	, important features, etc.			
Hadarahadia Vanadadian Basasado	<b>V</b> N.						
7 7	es No es No	Is the Sampled Area					
,	es No No	within a Wetland?	Yes	No			
Demonstration		Motor Typo	DDWWD				
Cowardin Code. PEM	HGM: Slope	Water Type:	RPWWD				
Abuts S-I29.							
HYDROLOGY							
Wetland Hydrology Indicators:			Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of one is requi	red; check all that apply)		Surface Soil	Cracks (B6)			
Surface Water (A1)	True Aquatic Plants (	B14)	Sparsely Veg	getated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide Od		✓ Drainage Par	tterns (B10)			
Saturation (A3)	Oxidized Rhizosphere	es on Living Roots (C3)	Moss Trim Li	ines (B16)			
Water Marks (B1)	Presence of Reduced	d Iron (C4)	Dry-Season	Water Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction	n in Tilled Soils (C6)	Crayfish Burrows (C8)				
Drift Deposits (B3)	Thin Muck Surface (0	27)	Saturation Visible on Aerial Imagery (C9)				
Algal Mat or Crust (B4)	Other (Explain in Rer	narks)	Stunted or Stressed Plants (D1)				
Iron Deposits (B5)			Geomorphic Position (D2)				
Inundation Visible on Aerial Imagery (B	7)		Shallow Aquitard (D3)				
Water-Stained Leaves (B9)			Microtopographic Relief (D4)				
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)			
Field Observations:							
Surface Water Present? Yes	No Depth (inches):						
	No Depth (inches):						
Saturation Present? Yes (includes capillary fringe)	No Depth (inches):	Wetland H	lydrology Preser	nt? Yes / No			
Describe Recorded Data (stream gauge, mo	onitoring well, aerial photos, pre	vious inspections), if ava	ilable:				
Remarks:							

#### VEGETATION (Four Strata) – Use scientific names of plants.

Sampling Point: W-QR2

30'		Absolute	Dominant		Dominance Test worksheet:		
Tree Stratum (Plot size: 30'	)	% Cover	Species?	Status	Number of Dominant Species	4	
1			-		That Are OBL, FACW, or FAC:	1	_ (A)
2					Total Number of Dominant	_	
3					Species Across All Strata:	1	_ (B)
4					Percent of Dominant Species		
5					That Are OBL, FACW, or FAC:	100	_ (A/B)
6					Prevalence Index worksheet:		
7						N.A. aldim landers	
	_		= Total Cov		Total % Cover of:		
	50% of total cover: 0	20% of	total cover:	0	OBL species x		
Sapling/Shrub Stratum (Plot siz	e:)				FACW species x		
1. Rosa multiflora		4		<u>FACU</u>	FAC species x		
2					FACU species x		
3					UPL species x		
4					Column Totals: (A	n)	(B)
5					Prevalence Index = B/A =		
6					Hydrophytic Vegetation Indica		
7					1 - Rapid Test for Hydrophy		
8							
9					2 - Dominance Test is >50%		
			= Total Cov	er	3 - Prevalence Index is ≤3.0		
	50% of total cover: 2				4 - Morphological Adaptation		-
Herb Stratum (Plot size: 5'	)				data in Remarks or on a	•	•
1. Packera aurea	·	50	<b>~</b>	FACW	Problematic Hydrophytic Ve	getation' (Expl	ain)
2. Viola sp.	_	10		ND			
3. Verbesina alternifolia		5		FAC	<sup>1</sup> Indicators of hydric soil and wet		must
4 Carex sp		15		ND	be present, unless disturbed or p		
- lungua offugua		15		FACW	Definitions of Four Vegetation	Strata:	
6					Tree - Woody plants, excluding		
					more in diameter at breast heigh height.	nt (DBH), regar	dless of
7					neight.		
8					Sapling/Shrub – Woody plants,		
9					than 3 in. DBH and greater than m) tall.	or equal to 3.2	28 ft (1
10					, i		
11		95			Herb – All herbaceous (non-woo	ody) plants, reg	ardless
	50% of total cover: 47.5		= Total Cov		of size, and woody plants less th	ian 3.26 it taii.	
Woody Vine Stratum (Plot size:		20 /0 01	iolai covei.		Woody vine - All woody vines g	greater than 3.2	28 ft in
4					height.		
1							
2							
3							
4	_				Hydrophytic		
5					Vegetation Present? Yes	No	
	500/ // /		= Total Cov	_	Present? Yes V	NO	
	50% of total cover: 0	-	total cover:	0			
Remarks: (Include photo number	•	neet.)					
No trees rooted in wetland							

ND - Indicator Status Not Determined

Plants not identified to species were not used in the dominance test

Sampling Point: W-QR2

SOIL

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)								
Depth	Matrix		Redox	K Features	3	. 2	_	
(inches)	Color (moist)	%	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0-12	10YR 4/1	85	7.5YR 5/6	15_	С	M/PL	CIL	
					-			
					-			
					-			
<sup>1</sup> Type: C=Co	oncentration, D=Deple	etion, RM=R	educed Matrix, MS	=Masked	Sand Gr	ains.		L=Pore Lining, M=Matrix.
Hydric Soil I	ndicators:						Indica	ators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Dark Surface	(S7)			2	cm Muck (A10) (MLRA 147)
Histic Ep	ipedon (A2)		Polyvalue Bel	low Surfac	ce (S8) <b>(N</b>	ILRA 147,	<b>148)</b> C	coast Prairie Redox (A16)
Black Hi			Thin Dark Su			47, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		F2)		P	liedmont Floodplain Soils (F19)
	Layers (A5)		Depleted Mat		0)			(MLRA 136, 147)
	ck (A10) (LRR N) Below Dark Surface	(/11)	Redox Dark S Depleted Dar	,	,			ery Shallow Dark Surface (TF12) Other (Explain in Remarks)
	ark Surface (A12)	(Д11)	Redox Depre				_ `	otter (Explain in Nemarks)
	lucky Mineral (S1) <b>(Li</b>	RR N.	Iron-Mangane			LRR N.		
	147, 148)	,	MLRA 136		, ,	,		
Sandy G	leyed Matrix (S4)		Umbric Surfa	ce (F13) <b>(</b> I	MLRA 13	6, 122)	<sup>3</sup> Ind	icators of hydrophytic vegetation and
Sandy R	edox (S5)		Piedmont Flo	odplain So	oils (F19)	(MLRA 14	<b>8)</b> we	etland hydrology must be present,
	Matrix (S6)		Red Parent M	laterial (F2	21) <b>(MLR</b>	A 127, 147	) un	less disturbed or problematic.
Restrictive I	ayer (if observed):							
Type:								
Depth (inc	ches):						Hydric Soil	Present? Yes V No No
Remarks:								

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	37.983978	Lon.	-80.756817
STREAM/SITE ID AND SITE DESCRIPTION: % stream slope, watershed size {acreage}, unaltered or impairments)			Wetland QR2 (W-QR2),		ac watershed, HUC 12 watershed Mope, RPWWD, emergent wetland	lill Creel	-Meadow River	
FORM OF MITIGATION:	FORM OF MITIGATION: Mitigation Bank							
DATE:	4/20	4/20/2016 WEATHER CONDITIONS:				PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
V-QR2	Emergent	0.001	Emergent					
						PART III - Advanced		on
						Sustainable Determination Made or Advanced Mitigation (Y or N)	ו	у
Total Impact		0.001						
Western LO		Unit Scores	Depleasment Huit/->			Estimated		
Total Emergent	assification		Replacement Unit(s) 0.001			ILF Costs		
otal Scrub-Shrub			0.001			\$60.00		
Total Forested			0			φο		
Total Open Water			0	<b>1</b>				

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total O MITIGATION BANKING and ILF.) Long-term F % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

Temporal Loss-Maturity							
, , , , , , , , , , , , , , , , , , , ,	*Note: Period between completion of compensatory mitigation measures and the time						
required for maturity, as it relates to function (i.e. matur	, ,						
matter and detritus within riparian stream or	r wetiand butter corridor).						
% Add. Mitigation Temporal Loss-Maturity (Years)							
<b>0</b> %							
Sub-Total 0							

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	n Crpetual
อนม-างเลเ	U

Extended Upland Buffer Zone					
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation					
Average Buffer Width	Average Buffer Width Mitigation Type				
0	0-50	None			
0	51-150	None			

PART V - Final Unit Score								
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance			
Emergent	0.001		0.001		-0.001			
Scrub-Shrub	0	Restoration	0		0			
Forested	0	Restoration	0		0			
Open Water	0		Õ		0			
Net-Total	0.001		0.001	#DIV/0!	#DIV/0!			

# W-IJ47



Photograph Direction WSW

Comments:		

Project/Site: MVP		City/Cou	<sub>ınty:</sub> Greenbrier		Sampling Date: 08/13/2016
Applicant/Owner: MVP			,	State: WV	Sampling Point: W-IJ47-PEM
Investigator(s): E. Foster, S. Ryai	n, A. Carrano	Section.	Township, Range: N		
Landform (hillslope, terrace, etc.): FI					Slope (%): 0-3
Subregion (LRR or MLRA): LRR N					Datum: NAD 83
Soil Map Unit Name: McC-Macove of			-		
Are climatic / hydrologic conditions on					
Are Vegetation, Soil, c					<u> </u>
Are Vegetation, Soil, c				explain any answe	,
SUMMARY OF FINDINGS -	Attach site m	ap snowing samp	ling point location	ons, transects	, important features, etc.
Hydrophytic Vegetation Present?	Yes		s the Sampled Area		
Hydric Soil Present?	Yes	NI <sub>0</sub>	vithin a Wetland?	Yes_	No
Wetland Hydrology Present?	Yes	_ No			
Remarks: Cowardin Code: P	'EM	HGM: Riverine	Water Type:	RPWWD	
HYDDOLOOY					
HYDROLOGY  Wetland Hydrology Indicators:				Sacandan/Indiaa	tora (minimum of two required)
Primary Indicators (minimum of one	is required; check	k all that apply)		· ·	tors (minimum of two required)
Surface Water (A1)	-	True Aquatic Plants (B1	4)	Surface Soil	getated Concave Surface (B8)
High Water Table (A2)		Hydrogen Sulfide Odor		Sparsely veg	
Saturation (A3)		Oxidized Rhizospheres			
Water Marks (B1)		Presence of Reduced Ir	-		Water Table (C2)
Sediment Deposits (B2)		Recent Iron Reduction i		Crayfish Burn	
Drift Deposits (B3)		Thin Muck Surface (C7)		Saturation Vi	sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)		Other (Explain in Rema	rks)	Stunted or St	tressed Plants (D1)
Iron Deposits (B5)				Geomorphic	
Inundation Visible on Aerial Image	gery (B7)			Shallow Aqui	
Water-Stained Leaves (B9)					phic Relief (D4)
Aquatic Fauna (B13)				FAC-Neutral	Test (D5)
Field Observations: Surface Water Present? Yes	No.	Depth (inches):			
		Depth (inches):			
		Depth (inches):		Hydrology Presen	t? Yes 🗸 No
(includes capillary fringe)					n: res No
Describe Recorded Data (stream ga	uge, monitoring w	vell, aerial photos, previo	ous inspections), if ava	ailable:	
Remarks:					
Recent historic floods in Gree			evalent sediment	deposits and di	rainage patterns not
included as indicators due to r	ecent floods.	Abuts S-IJ53.			

0.01	Absolute	Dominant	Indicator	Dominance Test worksheet:
Tree Stratum (Plot size: 30')	% Cover	Species?	Status	Number of Dominant Species
1,				That Are OBL, FACW, or FAC: 2 (A)
2		-		Total Number of Dominant
3				Species Across All Strata: 2 (B)
4				
5				Percent of Dominant Species That Are OBL, FACW, or FAC: 100 (A/B)
6.				That Are OBE, I AGW, OF I AG.
7.		-		Prevalence Index worksheet:
	0	= Total Cov	or.	Total % Cover of: Multiply by:
50% of total cover: 0				OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' )	2070 01	total oover	·	FACW species x 2 =
1				FAC species x 3 =
2		-		FACU species x 4 =
2				UPL species x 5 =
3				Column Totals: (A) (B)
4				Column Totals (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8				✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0¹
	0	= Total Cov	er	
50% of total cover:0	20% of	total cover	0	4 - Morphological Adaptations <sup>1</sup> (Provide supporting
Herb Stratum (Plot size: 5')				data in Remarks or on a separate sheet)
1. Eleocharis microcarpa	60	<b>✓</b>	OBL	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)
2 Vernonia noveboracensis	40	~	FACW	
3. Lobelia cardinalis	15	-	FACW	<sup>1</sup> Indicators of hydric soil and wetland hydrology must
4. Viola sp.	4		ND	be present, unless disturbed or problematic.
5. Hypericum mutilum	3		FACW	Definitions of Four Vegetation Strata:
6. Pseudognaphalium obtusifolium	3		UPL	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
			UPL	more in diameter at breast height (DBH), regardless of
7				height.
8				Sapling/Shrub – Woody plants, excluding vines, less
9				than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				Herb – All herbaceous (non-woody) plants, regardless
	125	= Total Cov	er	of size, and woody plants less than 3.28 ft tall.
50% of total cover: 62.5	5_ 20% of	total cover	25	Woody vine All woody vines greater than 2.29 ft in
Woody Vine Stratum (Plot size: 15' )				<b>Woody vine</b> – All woody vines greater than 3.28 ft in height.
1				
2				
3				
4				
5				Hydrophytic Vegetation
<u> </u>	0	= Total Cov	· · · · · · · · · · · · · · · · · · ·	Present? Yes V No No
50% of total cover: 0		total cover	_	
Remarks: (Include photo numbers here or on a separate s		10101 00101	·	
Tremarks. (include photo numbers here of our a separate s	neet.)			

Sampling Point: W-IJ47-PEM

SOIL

Profile Desc	ription: (Describe t	o the dept	h needed to docum	ent the i	ndicator	or confirm	the absence	of indicators.)
Depth	Matrix			Feature		. 2		-
(inches) 0-10	Color (moist) 10YR 4/2	<u>%</u> 80	Color (moist) 7.5YR 4/6	<u>%</u> 20	Type <sup>1</sup>	Loc <sup>2</sup> M/PL	Texture SiL	Remarks
						<del></del>		
10-20	10YR 4/2	80	7.5YR 4/6	20_	<u>C</u>	M/PL	SaL	very fine sandy loam
1Type: C=Cc	oncentration, D=Depl	etion RM-	Reduced Matrix MS	-Maskad	Sand Gr	aine	<sup>2</sup> l ocation: Pl	
Hydric Soil I		Cuon, ruii–	reduced Matrix, Me	- Waskee	Carlo Or	airio.		tors for Problematic Hydric Soils <sup>3</sup> :
Histosol			Dark Surface	(S7)				cm Muck (A10) <b>(MLRA 147)</b>
Histic Ep	pipedon (A2)		Polyvalue Be				148) C	oast Prairie Redox (A16)
Black His			Thin Dark Su			47, 148)		(MLRA 147, 148)
	n Sulfide (A4) I Layers (A5)		Loamy Gleye  Depleted Mat	,	F2)		Pi	iedmont Floodplain Soils (F19) (MLRA 136, 147)
	ck (A10) <b>(LRR N)</b>		Redox Dark S		<del>-</del> 6)		Ve	ery Shallow Dark Surface (TF12)
	Below Dark Surface	(A11)	Depleted Dar					ther (Explain in Remarks)
	ark Surface (A12)		Redox Depre					
	lucky Mineral (S1) <b>(L</b> <b>\ 147, 148)</b>	RR N,	Iron-Mangane		es (F12) <b>(</b>	LRR N,		
	leyed Matrix (S4)		Umbric Surfa	-	MLRA 13	6. 122)	<sup>3</sup> Indi	cators of hydrophytic vegetation and
	edox (S5)		Piedmont Flo					tland hydrology must be present,
	Matrix (S6)		Red Parent M	laterial (F	21) <b>(MLR</b>	A 127, 147	) unl	ess disturbed or problematic.
	ayer (if observed):							
Type:								
	ches):						Hydric Soil	Present? Yes No
Remarks:								

USACE FILE NO./Project Name:		Mountain Valley Pipeline Project			Lat.	37.916255	Lon.	-80.743867	
STREAM/SITE ID AND SITE DESCR % stream slope, watershed size {a		l or impairments)		Wetland IJ47-PEM, 208.593 ac watershed, HUC 12 watershed Sewell Creek, Riveri RPWWD, emergent and forested wetland					
FORM OF MITIGATION:		Mitiga	tion Bank	Multiple wetland crossing impacts combined on SWVM form Additional impact location: 37.916423, -80.743551					
ATE:	8/13	8/13/2016 WEATHER CONDITIONS:				PRECIPITATION PAST 48 HRS:			
	PART I - Wetl	and Indicators							
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification						
/-IJ47-PEM /-IJ47-PEM	Emergent Emergent	0.052 0.0113	Emergent Emergent	-					
						PART III - Advanced		n	
						Sustainable Determination Made of Advanced Mitigation (Y or N)	ו	n	
otal Impact		0.0633							
		Jnit Scores				Estimated			
	assification		Replacement Unit(s)			ILF Costs			
otal Emergent otal Scrub-Shrub			0.0633	+		\$3,798.00			
otal Forested			0						
otal Open Water			0	1					

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Temporal Loss-Construction Long-term P \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total O \*\*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit).

Temporal Loss-Maturity								
*Note: Period between completion of compensatory mitigation measures and the time required								
for maturity, as it relates to function (i.e. maturity of tree detritus within riparian stream or wetla								
A( A L L A B)	I							
% Add. Mitigation	Temporal Loss-Maturity (Years)							
0%								
Sub-Total	0							

Long-term Protection					
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)				
0 + 5/10 Year Monitoring	Perpetual				
Sub-Total	0				

Extended Upland Buffer Zone					
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation					
Average Buffer Width	Mitigation Type				
0	0-50	None			
0	51-150	None			

	PART V - Final Unit Score									
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score	Applicant Input	Balance					
			to Offset (Debit)	Mitigation (Credit)						
Emergent	0.0633		0.0633		-0.0633					
Scrub-Shrub	0	Restoration	0		0					
Forested	0	Restoration	0		0					
Open Water	0		0		0					
Net-Total	0.0633		0.0633	#DIV/0!	#DIV/0!					

## W-UV4



Photograph Direction SW

Comments:		

Project/Site: MVP	City/C	ounty: Greenbrier		Sampling Date: 06/11/2016
Applicant/Owner: MVP			State: WV	Sampling Point: W-UV4
Investigator(s): C.Stoliker, L.McCarrell,	J. Niergarth Section	on, Township, Range: N		
Landform (hillslope, terrace, etc.): Hillslope				Slope (%): 3-5
Subregion (LRR or MLRA): LRR N	Lat: 37 854417	Long: -80	.755145	Datum: NAD 83
Soil Map Unit Name: Shouns channery silt				
				<u></u>
Are climatic / hydrologic conditions on the site				
Are Vegetation, Soil, or Hydro				
Are Vegetation, Soil, or Hydro	logy naturally problema	atic? (If needed, e	explain any answe	rs in Remarks.)
SUMMARY OF FINDINGS – Attach	site map showing sam	pling point location	ons, transects	, important features, etc.
Hydrophytic Vegetation Present? Ye	es <u>/</u> No			
, , , ,	es No	Is the Sampled Area within a Wetland?	Yes 🗸	No
	es No	within a wettand?	res	NO
Remarks: Cowardin Code: PSS	HGM: Slope	Water Type:	RPWWD	
Open ended to the east, char				
Open chaca to the east, that	igos to i Livi			
HADBOLOGA				
HYDROLOGY  Wetland Hydrology Indicators:			Socondary Indica	ators (minimum of two required)
Primary Indicators (minimum of one is requir	and: chack all that apply)		Surface Soil	
		P14)		, ,
Surface Water (A1)  High Water Table (A2)	True Aquatic Plants ( Hydrogen Sulfide Ode		✓ Drainage Pa	getated Concave Surface (B8)
Saturation (A3)		es on Living Roots (C3)	Moss Trim L	
Water Marks (B1)	Presence of Reduced	-		Water Table (C2)
Sediment Deposits (B2)	Recent Iron Reductio		Crayfish Bur	
Drift Deposits (B3)	Thin Muck Surface (C			isible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	Other (Explain in Ren			tressed Plants (D1)
Iron Deposits (B5)	• • • • • • • • • • • • • • • • •			Position (D2)
Inundation Visible on Aerial Imagery (B7	7)		Shallow Aqu	
Water-Stained Leaves (B9)	,			aphic Relief (D4)
Aquatic Fauna (B13)			FAC-Neutral	Test (D5)
Field Observations:				
	No Depth (inches):			
	No Depth (inches):	6		
	No Depth (inches):	3 Wetland H	Hydrology Preser	nt? Yes <u>/</u> No
(includes capillary fringe)  Describe Recorded Data (stream gauge, mo	nitoring well, aerial photos, pre	vious inspections), if ava	ailable:	
, , ,	J 1, 11 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1 1			
Remarks:				

/EGETATION (Four Strata) – Use scientific na		Sampling Point: W-UV4				
30'	Absolute	Dominant		Dominance Test worksheet:		
		Species?		Number of Dominant Species		
1				That Are OBL, FACW, or FAC:3 (A)		
2				Total Number of Dominant		
3				Species Across All Strata:3 (B)		
4				Percent of Dominant Species		
5				That Are OBL, FACW, or FAC: 100% (A/B)		
6						
7				Prevalence Index worksheet:		
	0	= Total Cov	er	Total % Cover of: Multiply by:		
50% of total cover:0	20% of	total cover	. 0	OBL species x 1 =		
Sapling/Shrub Stratum (Plot size: 15' )				FACW species x 2 =		
1. Salix nigra	85		OBL	FAC species x 3 =		
2. Rosa multiflora	5		FACU_	FACU species x 4 =		
3				UPL species x 5 =		
4				Column Totals: (A) (B)		
5						
6				Prevalence Index = B/A =		
7				Hydrophytic Vegetation Indicators:		
8		-		1 - Rapid Test for Hydrophytic Vegetation		
				✓ 2 - Dominance Test is >50%		
9		= Total Cov		3 - Prevalence Index is ≤3.0 <sup>1</sup>		
50% of total cover: 45				4 - Morphological Adaptations <sup>1</sup> (Provide supporting		
Herb Stratum (Plot size: 5' )	2070 01	total cover		data in Remarks or on a separate sheet)		
1. Carex Iurida	50	<b>~</b>	OBL	Problematic Hydrophytic Vegetation <sup>1</sup> (Explain)		
2. Carex scoparia	35	<u> </u>	FACW			
3 Carex stricta	15		OBL	<sup>1</sup> Indicators of hydric soil and wetland hydrology must		
o		· <del></del>	OBL	be present, unless disturbed or problematic.		
4				Definitions of Four Vegetation Strata:		
5			. ——	Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or		
6			· ——	more in diameter at breast height (DBH), regardless of		
7		-		height.		
8				Sapling/Shrub – Woody plants, excluding vines, less		
9				than 3 in. DBH and greater than or equal to 3.28 ft (1		
10				m) tall.		
11				<b>Herb</b> – All herbaceous (non-woody) plants, regardless		
		= Total Cov		of size, and woody plants less than 3.28 ft tall.		
50% of total cover: 50	20% of	total cover	20	Woody vine – All woody vines greater than 3.28 ft in		
Woody Vine Stratum (Plot size:15')				height.		
1						
2						
3						
4				Hydrophytic		
5				Vegetation		
	0	= Total Cov	er	Present? Yes No		
50% of total cover:0		total cover	_			
Remarks: (Include photo numbers here or on a separate sh	heet.)					
	,					

Depth	ription: (Describe t		Redo	x Features					
inches)	Color (moist)	<u>%</u>	Color (moist)	·			exture	Remarks	
0-10	7.5YR 4/2	70	10YR 5/8	10	<u>C N</u>		SICL_		
	7.5YR 5/2	20							
							<del></del>		
							<del></del>		
			_						
vpe: C=C	oncentration, D=Depl	etion. RM=	Reduced Matrix, MS	S=Masked S	and Grains	<sup>2</sup> l oc	ation: PL=Pore Lir	ning M=Matrix	
	Indicators:	ouon, run	rtoadood Matrix, Me	J-Macked C	ana Oramo		Indicators for F		
_ Histosol			Dark Surface	(S7)				(A10) <b>(MLRA 1</b>	
	pipedon (A2)		Polyvalue Be		(S8) <b>(MLR</b>	A 147, 148)		ie Redox (A16)	
Black Hi			Thin Dark Su				(MLRA 1		
	n Sulfide (A4)		Loamy Gleye	. , .		•		loodplain Soils	(F19)
	d Layers (A5)		Depleted Mat				(MLRA 1		
_ 2 cm Mu	ick (A10) (LRR N)		Redox Dark S	Surface (F6)			Very Shallo	w Dark Surface	e (TF12)
_ Depleted	d Below Dark Surface	(A11)	Depleted Dar	k Surface (F	7)		Other (Expl	ain in Remarks)	)
	ark Surface (A12)		Redox Depre	ssions (F8)					
	lucky Mineral (S1) <b>(L</b>	RR N,	Iron-Mangan		(F12) <b>(LRF</b>	! N,			
	A 147, 148)		MLRA 13	•			2		
	Sleyed Matrix (S4)		Umbric Surfa					hydrophytic veg	
	tedox (S5)		Piedmont Flo					ology must be p	
	Matrix (S6)		Red Parent N	1aterial (F21	) <b>(MLRA 1</b> :	27, 147)	unless distur	bed or problem	atic.
	_ayer (if observed):								
	ourse fragments								
Depth (in	ches): <u>10</u>		<u></u>			Hye	dric Soil Present?	Yes	No
emarks:									

USACE FILE NO./Project Name:		Mountain Valley Pipeline Project			Lat.	37.854391	Lon.	-80.755038
STREAM/SITE ID AND SITE DESCR	RIPTION:			Wetland UV4 (W-UV4)	26.071	ac watershed, HUC 12 watershed Otter	Creek-	Meadow River,
(% stream slope, watershed size {acreage}, unaltered or impairments)				, ,		pe, RPWWD, scrub shrub wetland		
FORM OF MITIGATION:		Mitiga	tion Bank					
DATE:	6/11/	/2016	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetla	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-UV4	Scrub-Shrub	0.0885	Emergent					
						PART III - Advanced N	// litigatio	n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		n
Total Impact		0.0885						
		Init Scores				Estimated		
	Classification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.0885					
Total Scrub-Shrub			0			\$5,310.00		
Total Forested			0					
Total Open Water			0					

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total O MITIGATION BANKING and ILF.) \*Add. Mitigation and Monitoring Period 
Temporal Loss-Maturity							
*Note: Period between completion of compensatory	mitigation measures and the time						
required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).							
% Add. Mitigation Temporal Loss-Maturity (Years)							
0%							
Sub-Total	0						

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone						
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation						
Average Buffer Width	Mitigation Type					
0	0-50	None				
U	51-150	None				

PART V - Final Unit Score								
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance			
Emergent	0.0885		0.0885		-0.0885			
Scrub-Shrub	0	Restoration	0		0			
Forested	0	Restoration	0		0			
Open Water	0		0		0			
Net-Total	0.0885		0.0885	#DIV/0!	#DIV/0!			

## W-I10

## **Wetland Photograph Page**

#### Wetland ID W-I10



Photograph Direction North

Date: <u>04/25/2015</u>

Comments: 2015 wetland delineation.



Photograph Direction East

Date: 10/22/19

 $\label{eq:comments:comments:} 2019 \ \text{wetland delineation confirmation}.$ 

Project/Site: MVP	City/C	county: Summers	Sampling Date: 04/25/2015			
Applicant/Owner: MVP State: WV Sampling Point: W-I						
Investigator(s): RS AH MB			. •			
Landform (hillslope, terrace, etc.): Ridge/			Slope (%): 3			
Subregion (LRR or MLRA): LRRN						
Soil Map Unit Name: Lily loam, 3 to 8 p		NWI classific				
Are climatic / hydrologic conditions on the s						
Are Vegetation, Soil _ ✓, or Hyd			,			
Are Vegetation, Soil, or Hyd	**					
SUMMARY OF FINDINGS – Atta	5.					
Hydrophytic Vegetation Present?	Yes _ ✓ _ No					
, , ,	Yes <u>√</u> No	Is the Sampled Area	No			
'	Yes ✓ No	within a Wetland? Yes <u>√</u>	No			
Remarks:						
Cowardin Code: PEM HGM: DEPI	RESSIONAL WT: NRPWW	,				
Information listed on this form repr						
of wetland hydrology, hydrophytic		s was confirmed using the USACE	EMP Regional			
Supplement delineation methodolo	ogy.					
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indica	ators (minimum of two required)			
Primary Indicators (minimum of one is req	uired; check all that apply)	Surface Soil	Cracks (B6)			
✓ Surface Water (A1)	True Aquatic Plants (I	B14) <u>✓</u> Sparsely Ve	getated Concave Surface (B8)			
High Water Table (A2)	Hydrogen Sulfide Odd	or (C1) Drainage Pa	itterns (B10)			
✓ Saturation (A3)	Oxidized Rhizosphere	es on Living Roots (C3) Moss Trim L	ines (B16)			
✓ Water Marks (B1)	Presence of Reduced	l Iron (C4) Dry-Season	Water Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction	n in Tilled Soils (C6) Crayfish Bur	rows (C8)			
Drift Deposits (B3)	Thin Muck Surface (C	C7) Saturation V	isible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Ren	narks) $\underline{\checkmark}$ Stunted or S	tressed Plants (D1)			
Iron Deposits (B5)		Geomorphic	Position (D2)			
Inundation Visible on Aerial Imagery (	(B7)	Shallow Aqu	itard (D3)			
✓ Water-Stained Leaves (B9)		Microtopogra	aphic Relief (D4)			
Aquatic Fauna (B13)		FAC-Neutra	Test (D5)			
Field Observations:						
Surface Water Present? Yes   ✓	No Depth (inches): 2	<u>2-4                                    </u>				
	No _ V Depth (inches):		/			
Saturation Present? Yes (includes capillary fringe)	No Depth (inches):	Wetland Hydrology Presei	nt? Yes <u>√</u> No			
Describe Recorded Data (stream gauge, r	monitoring well, aerial photos, pre-	vious inspections), if available:				
Remarks:						
Wetland area is highly disturbed a	nd dissected with road cuts	s and past logging activities.				

#### **VEGETATION** (Four

Tree Stratum (Plot size: 30' )	0.01	Absolute	Dominant	Indicator	Dominance Test worksheet:	
Total Number of Dominant Species Aross Al Strata: 4 (B) Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW, or FAC: 75 (AVB Percent of Dominant Species That Are OBL, FACW Species				<u>Status</u>		0
Species Across All Strata: 4 (B)  Percent of Dominant Species That Are OBL. FACW. or FAC: 75 (A/B  That Are OBL. FACW. or FAC: 75 (A/B  Prevalence Index worksheet:  Total % Cover of: Multiply by: OBL species x1 = FACW species x2 = FACW species x3 = FACW species x4 = UPL species				·	That Are OBL, FACW, or FAC:	3 (A)
Percent of Dominant Species That Are OBL, FACW, or FAC: Total Accover of FACW, or						4
That Are OBL_FACW, or FAC: 75 (AB  Prevalence Index worksheet:  Total % Cover of: Multiply by:  OBL Species x 1 = FACW species x 3 = FAC species x 3 = FAC species x 3 = FAC species x 4 = UPL species x 5 = Column Totals: (A) (B)  Prevalence Index = BIA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals: (A) (B)  Prevalence Index = STA = FACW species x 5 = Column Totals  Index Total SCOW of Index = STA = FACW species x 5 = Column Totals  Index Total SCOW of Index = STA = FACW species x 5 = Column Total STA = Index					Species Across All Strata:	4 (B)
Solve of total cover   Solve of total cove						75
Prevalence Index workshee:  50% of total cover:  5					That Are OBL, FACW, or FAC:	/5(A/B)
Total Cover of Multiply by:    Solid total cover:					Prevalence Index worksheet:	
So% of total cover: 0 20% of total cover: 0 PACW species			Total Cox		Total % Cover of:	√lultiply by:
FACW species	50% of total cover: 0				OBL species x 1 =	=
FACU		2070 01	total cover			
FACU species	Dogo multiflore	2	✓	FACU		
UPL species x 5 = Column Totals:					FACU species x 4 =	=
Column Totals:					UPL species x 5 =	=
Prevalence Index = B/A =					Column Totals: (A)	(B)
Hydrophytic Vegetation Indicators:  1 Rapid Test for Hydrophytic Vegetation  2 Total Cover 3 Prevalence Index is \$3.0¹ 4 FACW  Carex lurida 10 ✓ OBL  Typha spp 4 ✓ FACW  Viola cucullata 3 FACW  Viola cucullata 50% of total cover:  21 Total Cover 50% of total cover:						
Typic   Typ						
2 = Total Cover   20% of total cover: 0.4   2 = Total Cover   3 - Prevalence Index is ≤3.0°   3 - Prevalence Index is ≤3.0°   4 - Morphological Adaptations¹ (Provide supporting data in Remarks or on a separate sheet)   - Problematic Hydrophytic Vegetation¹ (Explain)   - VogLation   - VogLatio					' ' '	
2 = Total Cover 20% of total cover:						vegetation
Tree - Woody plants, excluding vines, 3 in. (7.6 cm) of item cover in tall.    A - Morphological Adaptations   (Provide supporting data in Remarks or on a separate sheet)						
data in Remarks or on a separate sheet)  Juncus effusus  Carex lurida  10  VoBL Typha spp  4  VoBL Viola cucullata  3  FACW  Definitions of Four Vegetation 1 (Explain)  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine Stratum (Plot size: 15')  50% of total cover: 0  50% of total cover: 0  20  21  Total Cover 4.2  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation 1 (Explain)  Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.  Definitions of Four Vegetation Strate:  Tree – Woody plants, excluding vines, as in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation Present? Yes V No		2	= Total Cov	er		<b>(5.11</b>
A	50% of total cover:1	20% of	total cover	0.4	, , , ,	
Carex lurida  Typha spp  4   VoBL  Viola cucullata  3   FACW  Viola cucullata  5   Comparison of Four Vegetation Strata:  Tree - Woody plants, excluding vines, 3 in. (7.6 cm) on more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine Stratum (Plot size: 15' )  Tree - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vine - All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation Present? Yes ✓ No	erb Stratum (Plot size: 5' )					
Typha spp  Viola cucullata  3  FACW  OBL Viola cucullata  3  FACW  Definitions of Four Vegetation Strata:  Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine Stratum (Plot size:  50% of total cover:  10.5  20% of total cover:  4.2  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation Present?  Yes ✓ No  Hydrophytic Vegetation Present?  Yes ✓ No	Juncus effusus	4		FACW_	Problematic Hydrophytic Veget	ation' (Explain)
Viola cucullata   3   FACW   Definitions of Four Vegetation Strata:   Tree - Woody plants, excluding vines, 3 in. (7.6 cm) of more in diameter at breast height (DBH), regardless of height.   Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.   Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.   Woody vine - All woody vines greater than 3.28 ft in height.   Hydrophytic Vegetation   Hydrophytic Vegetation   Present?   Yes ✓ No	Carex Iurida	10	. <u> </u>	<u>OBL</u>	1	
Viola cucullata  3 FACW  Definitions of Four Vegetation Strata:  Tree - Woody plants, excluding vines, 3 in. (7.6 cm) o more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine Stratum (Plot size: 15')  Definitions of Four Vegetation Strata:  Tree - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb - All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vine - All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation Present? Yes ✓ No	Typha spp	4	. <u> </u>	OBL		
Tree – Woody plants, excluding vines, 3 in. (7.6 cm) o more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation Present?  Yes No	Viola cucullata	3		FACW_		
more in diameter at breast height (DBH), regardless of height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation Present?  Yes No						
height.  Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine Stratum (Plot size: 15' )  Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation Present?  Hydrophytic Vegetation Present?  Yes ✓ No						
Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine Stratum (Plot size: 15' )  Woody Vine – All woody vines greater than 3.28 ft in height.  Hydrophytic Vegetation Present? Yes Ves No					1	JBI I), regardless of
than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall.  Herb – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.  Woody Vine Stratum (Plot size: 15' )  Voody Vine Stratum (Plot size: 0 = Total Cover of total cover: 0 = Total Cover of total					Sanling/Shrub Waadu planta au	raludina vinas Jasa
11					than 3 in. DBH and greater than or	equal to 3.28 ft (1
21   = Total Cover   50% of total cover:   10.5   20% of total cover:   4.2   Woody vine - All woody vines greater than 3.28 ft tall.   Woody vine - All woody vines greater than 3.28 ft in height.	)					,
21	1				Herb – All herbaceous (non-woody	) plants, regardless
Woody Vine Stratum (Plot size:		~ 4	= Total Cov	er er		
Moody Vine Stratum (Plot size:)   height.   he		<u>5</u> 20% of	total cover	<u>: 4.2 </u>	Woody vine All woody vines gray	ator than 2.28 ft in
	oody Vine Stratum (Plot size:15')					1161 than 5.20 it iii
Thydrophytic Vegetation Present? Yes ✓ No						
					Hydrophytic	
50% of total cover: 0 20% of total cover: 0					Vegetation	
					Dracout? Vac s/	
emarks: (Include photo numbers here or on a separate sheet.)		^	= Total Cov	er er	Present? Yes	No
Similarios (iniciado prioto namboro noro or on a soparato sinota)		0		_	Present? Yes	No

SOIL Sampling Point: W-I10

Profile Desc	ription: (Describe	to the dept	h needed to docun	nent the	indicator	or confirm	the absenc	e of indicators.)
Depth	Matrix		Redo	x Feature	S			
(inches)	Color (moist)	<u>%</u>	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Texture</u>	Remarks
0-4	5Y 5/2	80	10YR 4/6	_20	<u>C</u>	M/PL	C	
4-12	5Y 5/2	100					C	
				-				
				-				
<sup>1</sup> Type: C=Co	oncentration, D=Dep	letion, RM=	Reduced Matrix, MS	S=Masked	d Sand Gr	ains.		PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:						Indi	cators for Problematic Hydric Soils <sup>3</sup> :
Histosol	(A1)		Dark Surface	(S7)				2 cm Muck (A10) (MLRA 147)
	oipedon (A2)		Polyvalue Be				148)	Coast Prairie Redox (A16)
Black Hi			Thin Dark Su			147, 148)		(MLRA 147, 148)
	n Sulfide (A4)		Loamy Gleye		(F2)		_	Piedmont Floodplain Soils (F19)
	d Layers (A5)		✓ Depleted Mat					(MLRA 136, 147)
	ick (A10) <b>(LRR N)</b>	(0.44)	Redox Dark S					Very Shallow Dark Surface (TF12)
	d Below Dark Surfac	e (ATT)	Depleted Dar				_	Other (Explain in Remarks)
	ark Surface (A12) Iucky Mineral (S1) <b>(I</b>	DD N	✓ Redox Depre			I DD N		
	147, 148)	LIXIX IN,	MLRA 13		C3 (1 12) (	LIXIX IN,		
	Gleyed Matrix (S4)		Umbric Surfa		(MLRA 13	36, 122)	<sup>3</sup> In	dicators of hydrophytic vegetation and
	tedox (S5)		Piedmont Flo					vetland hydrology must be present,
	Matrix (S6)		Red Parent N					nless disturbed or problematic.
	_ayer (if observed):	:						·
Туре:								
	ches):						Hvdric So	il Present? Yes No
Remarks:							<b>,</b>	
Kemarks.								

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	37.783907	Lon.	-80.718899
STREAM/SITE ID AND SITE DESCR	STREAM/SITE ID AND SITE DESCRIPTION:				9.42ac	watershed, HUC 12 watershed Otter	Creek-l	Meadow River,
% stream slope, watershed size {acreage}, unaltered or impairments)				depressional, NRPW\	N, eme	rgent wetland highly disturbed from	past lo	gging activities
FORM OF MITIGATION:		Mitiga	ition Bank					
DATE:	25-4	\pr-16	WEATHER CONDITIONS:			PRECIPITATION PAST 48 HRS:		
	PART I - Wetl	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-I10	Emergent	0.055	Emergent					
						PART III - Advanced		on
				-		Sustainable Determination Made on Advanced Mitigation (Y or N)		n
Total Impact		0.055						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)			ILF Costs		
Total Emergent Total Scrub-Shrub			0.055			\$3,300.00		
Total Forested			0			φ3,300.00		
Total Open Water			0					

# PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Temporal Loss-Construction Long-term F \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years O Sub-Total O

Temporal Loss-Maturity							
*Note: Period between completion of compensatory mitig	gation measures and the time required						
for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).							
% Add. Mitigation Temporal Loss-Maturity (Years)							
0%							
Sub-Total	Ō						

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone							
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation							
Average Buffer Width	Mitigation Type						
0	0-50	None					
U	51-150	None					

PART V - Final Unit Score						
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance	
Emergent	0.055		0.055		-0.055	
Scrub-Shrub	0	Restoration	0		0	
Forested	0	Restoration	0		0	
Open Water	0		0		0	
Net-Total	0.055		0.055	#DIV/0!	#DIV/0!	

## **W-MM20PFO**



Photograph Direction North

Comments:			

Project/Site: MVP	City/County: Summers		Sampling Date: 12/11/2015			
Applicant/Owner: MVP			Sampling Point: W-MM20			
	Section, Township, Range: N					
			Slope (%); 0-5%			
Subregion (LRR or MLRA): LRRN	1 at: 37.681389   1 ong: -80		Datum: NAD 83			
	Soil Map Unit Name: Kanawha fine sandy loam (Ka), Lobdell loam (Lo), Udifluvents and Psamments (Ud)  NWI classification: None					
Are climatic / hydrologic conditions on the site typic						
			_			
Are Vegetation, Soil, or Hydrology						
Are Vegetation, Soil, or Hydrology, SUMMARY OF FINDINGS – Attach site		explain any answers				
			•			
Hydrophytic Vegetation Present? Yes Hydric Soil Present? Yes	No Is the Sampled Area	•				
Wetland Hydrology Present? Yes	No within a Wetland?	Yes	No			
Remarks:						
Cowardin Code: PFO						
HGM: Depressional						
WT: RPWWD						
HYDROLOGY						
Wetland Hydrology Indicators:		Secondary Indicate	ors (minimum of two required)			
Primary Indicators (minimum of one is required; c	check all that apply)	Surface Soil C				
✓ Surface Water (A1)	True Aquatic Plants (B14)		etated Concave Surface (B8)			
1 7	Hydrogen Sulfide Odor (C1)	Drainage Patte				
✓ Saturation (A3)	Oxidized Rhizospheres on Living Roots (C3)	Moss Trim Lin	es (B16)			
Water Marks (B1)	Presence of Reduced Iron (C4)	Dry-Season W	/ater Table (C2)			
Sediment Deposits (B2)	Recent Iron Reduction in Tilled Soils (C6)	Crayfish Burro	ows (C8)			
Drift Deposits (B3)	Thin Muck Surface (C7)	Saturation Vis	ible on Aerial Imagery (C9)			
Algal Mat or Crust (B4)	Other (Explain in Remarks)		essed Plants (D1)			
Iron Deposits (B5)		Geomorphic P				
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)				
✓ Water-Stained Leaves (B9)		Microtopographic Relief (D4) ✓ FAC-Neutral Test (D5)				
Aquatic Fauna (B13)		FAC-Neutral I	est (D5)			
Field Observations: Surface Water Present? Yes ✓ No	Depth (inches):					
Water Table Present? Yes No	Depth (inches):					
Saturation Present? Yes No		Hydrology Present	? Yes ✔ No			
(includes capillary fringe)			: Tes NO			
Describe Recorded Data (stream gauge, monitori	ing well, aerial photos, previous inspections), if ava	ailable:				
Remarks:						

'EGETATION (Four Strata) – Use scientific r	iames of	piants.		Sampling Pol	Ut. AA-IAIIAISO	
Tree Stratum (Plot size: 30' )	Absolute % Cover	Dominant Species?		Dominance Test worksheet:		
1 Acer saccharinum	15	Species:	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:	3	(A)
2. Acer rubrum	10		FAC	That Are OBL, FACW, or FAC.		(A)
3 Acer negundo	5	· <u> </u>	FAC	Total Number of Dominant	3*	<b>(D)</b>
		· <del></del>	r <u>AC</u>	Species Across All Strata:		(B)
4				Percent of Dominant Species	400	
5				That Are OBL, FACW, or FAC:	100	(A/B)
6		<u> </u>		Prevalence Index worksheet:		
7	30			Total % Cover of:	Multiply by:	
50% of total cover: 15		= Total Cov	_	OBL species x		
4 = 1	20% 0	i lolai covei.		FACW species x		
Sapling/Shrub Stratum (Plot size: 15' )  1 Lindera benzoin	30	~	FAC	FAC species x		
<u> </u>			1 // /	FACU species x		
2				UPL species x		
3				Column Totals: (A		
4				Column Totals (A	/	(D)
5				Prevalence Index = B/A =		_
6				Hydrophytic Vegetation Indica		
7				1 - Rapid Test for Hydrophyt		
8		<del></del>		2 - Dominance Test is >50%	-	
9		<u> </u>		3 - Prevalence Index is ≤3.0		
4-6		= Total Cov		4 - Morphological Adaptation	ns <sup>1</sup> (Provide sup	porting
50% of total cover:15	20% o	f total cover:	6	data in Remarks or on a s		
Herb Stratum (Plot size: 5' )	10			Problematic Hydrophytic Ve		
<sub>1.</sub> Carex sp.	10		ND		(	,
2		<del></del>		<sup>1</sup> Indicators of hydric soil and wetl	and hydrology r	must
3		<del></del>		be present, unless disturbed or p		
4		<del></del>		<b>Definitions of Four Vegetation</b>	Strata:	
5		· ——		Tree – Woody plants, excluding	vinas 2 in (7.6	ama) a #
6		· ——		more in diameter at breast heigh		
7				height.	,, ,	
8				Sapling/Shrub – Woody plants,	excluding vines	. less
9		<u> </u>		than 3 in. DBH and greater than		
10		<u> </u>		m) tall.		
11		<u> </u>		Herb – All herbaceous (non-woo	dy) plants, rega	ırdless
		= Total Cov		of size, and woody plants less th	an 3.28 ft tall.	
50% of total cover: 5	20% o	f total cover:	2	Woody vine – All woody vines g	reater than 3.28	3 ft in
Woody Vine Stratum (Plot size: 15' )				height.		
1		. <u> </u>				
2						
3						
4				Hydrophytic		
5		<u> </u>		Vegetation		
	0	= Total Cov		Present? Yes	No	
50% of total cover:0	20% o	f total cover:	0			
Remarks: (Include photo numbers here or on a separate self-looded wetland from 4 culverts crossing road ND - Not Determined	sheet.)					
Vegetation not identified down to species not i	ncluded i	n dominar	nce test.			

SOIL Sampling Point: W-MM20

Profile Desc	ription: (Describe t	o the dept	h needed to docun	nent the i	ndicator	or confirm	the abs	sence of indicators.)	
Depth	Matrix			x Feature					
(inches)	Color (moist)		Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>	<u>Textu</u>	ure Remarks	
0-20"	7.5yr 4/1	88	5yr 4/6	12	С	M/PL	L		
					-		-		
<sup>1</sup> Type: C=C	oncentration, D=Depl	etion, RM=	Reduced Matrix, MS	S=Masked	d Sand Gr	ains.	<sup>2</sup> Locatio	ion: PL=Pore Lining, M=Matrix.	
Hydric Soil								Indicators for Problematic Hydric S	Soils³:
Histosol	(A1)		Dark Surface	(S7)				2 cm Muck (A10) (MLRA 147)	
	oipedon (A2)		Polyvalue Be		ce (S8) (N	ILRA 147,	148)	Coast Prairie Redox (A16)	
	stic (A3)		Thin Dark Su				- '	(MLRA 147, 148)	
Hydroge	en Sulfide (A4)		Loamy Gleye					Piedmont Floodplain Soils (F19)	
Stratified	d Layers (A5)		Depleted Mat					(MLRA 136, 147)	
2 cm Mu	ıck (A10) (LRR N)		Redox Dark S	Surface (F	<del>-</del> 6)			Very Shallow Dark Surface (TF1:	2)
Deplete	d Below Dark Surface	(A11)	Depleted Dar	k Surface	(F7)			Other (Explain in Remarks)	
Thick Da	ark Surface (A12)		Redox Depre	ssions (F	8)				
Sandy N	lucky Mineral (S1) (L	RR N,	Iron-Mangan	ese Mass	es (F12) <b>(</b>	LRR N,			
MLR	A 147, 148)		MLRA 13	6)					
	Gleyed Matrix (S4)		Umbric Surfa					<sup>3</sup> Indicators of hydrophytic vegetatio	
Sandy F	Redox (S5)		Piedmont Flo	odplain S	oils (F19)	(MLRA 14	l8)	wetland hydrology must be preser	nt,
	Matrix (S6)		Red Parent N	/laterial (F	21) <b>(MLR</b>	A 127, 147	7)	unless disturbed or problematic.	
Restrictive	Layer (if observed):								
Type:									
Depth (in	ches):		<u>—</u>				Hydrid	ic Soil Present? Yes 🖊 No	
Remarks:							- L		

USACE FILE NO./Project Name:		Mountain Valley Pipeline Project		COORDINATES:	Lat.	37.68158902	Lon.	-80.72880882
STREAM/SITE ID AND SITE DESCR	RIPTION:			Wetland MM20-P	FO (W	-MM20-PFO), HUC 8 - Little Kanawha	Green	brier River,
(% stream slope, watershed size {a	acreage}, unaltere	d or impairments)			DEPRI	ESSIONAL, RPWWD, forested wetlan	d	
FORM OF MITIGATION:		Mitiga	ition Bank					
DATE:	13-F	Feb-18	WEATHER CONDITIONS:	Cloudy/Dry		PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-MM20-PFO	Forested	0.299	Emergent					
				İ		PART III - Advanced	Mitigati	on
						Sustainable Determination Made on Advanced Mitigation (Y or N)		Υ
Total Impact		0.299						
		Unit Scores				Estimated		
	lassification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.299					
Total Scrub-Shrub			0			\$17,940.00	)	
Total Forested			0					
Total Open Water			0	1				

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Long-term Page 1 % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

Temporal Loss-Maturity						
*Note: Period between completion of compensatory mitig	nation measures and the time required					
for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).						
% Add. Mitigation Temporal Loss-Maturity (Years)						
, on point 2000 materials ( context)						
0% <b>0</b>						
Sub-Total 0						

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone				
*Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation				
Average Buffer Width	Mitigation Type			
0	0-50	None		
	51-150	None		

PART V - Final Unit Score						
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance	
Emergent	0.299		0.299	0.3	0.001	
Scrub-Shrub	0	Restoration	0		0	
Forested	0	Restoration	0	1.75	1.75	
Open Water	0		0		0	
Net-Total	0.299		0.299	2.05	1.751	

## W-A13



Photograph Direction East

Comments:		

Project/Site: MVP	City/County: Monroe	Sampling Date: 04/10/2015
Applicant/Owner: MVP		tate: WV Sampling Point: W-A13
Investigator(s): S.Yarbrough, C.Stoliker, J.Heule		
Landform (hillslope, terrace, etc.): Valley bottom		Concave Slope (%): 3-5%
Subregion (LRR or MLRA): LRRN Lat: 37.5		
Soil Map Unit Name: Udifluvents-Fluvaquents comple		NWI classification: None
·		
Are climatic / hydrologic conditions on the site typical for this t	-	
Are Vegetation, Soil, or Hydrology sig		
Are Vegetation, Soil, or Hydrology nat	urally problematic? (If needed, expl	ain any answers in Remarks.)
SUMMARY OF FINDINGS – Attach site map si	nowing sampling point locations	, transects, important features, etc.
Hydrophytic Vegetation Present? Yes   ✓ No	Is the Sampled Area	
	is the Sampled Area	Yes ✓ No
Wetland Hydrology Present? Yes No	within a wettand:	Yes NO
Remarks:		
Cowardin Code: PEM		
HGM: Slope		
WT: RPWWD		
HYDROLOGY		
Wetland Hydrology Indicators:		condary Indicators (minimum of two required)
Primary Indicators (minimum of one is required; check all that		Surface Soil Cracks (B6)
	Aquatic Plants (B14)	Sparsely Vegetated Concave Surface (B8)
	gen Sulfide Odor (C1)	Drainage Patterns (B10)
	nce of Reduced Iron (C4)	Moss Trim Lines (B16) Dry-Season Water Table (C2)
<del></del>	t Iron Reduction in Tilled Soils (C6)	Crayfish Burrows (C8)
· · · · · · · · · · · · · · · · · · ·	fluck Surface (C7)	Saturation Visible on Aerial Imagery (C9)
· ·	(Explain in Remarks)	Stunted or Stressed Plants (D1)
Iron Deposits (B5)	·	Geomorphic Position (D2)
Inundation Visible on Aerial Imagery (B7)		Shallow Aquitard (D3)
Water-Stained Leaves (B9)	<u> </u>	Microtopographic Relief (D4)
✓ Aquatic Fauna (B13)	<u> </u>	FAC-Neutral Test (D5)
Field Observations:	2	
Surface Water Present? Yes No Deptl		
Water Table Present? Yes No Deptl	i (iliches)	,
Saturation Present? Yes   ✓ No Deptl (includes capillary fringe)	n (inches): 0 Wetland Hyd	rology Present? Yes No
Describe Recorded Data (stream gauge, monitoring well, ae	rial photos, previous inspections), if availab	le:
Remarks:		
Wetland associated with ephemeral stream S-A6	0 & A61. Amphibian egg masses r	present.
Westerna decediated man optionioral esteam e 710	o a manungg massa p	

#### VEGETATION (Four Strata) - Use scientific names of plants.

Sampling Point: W-A13 Absolute Dominant Indicator Dominance Test worksheet: \_\_\_) 30' Tree Stratum (Plot size: \_\_ % Cover Species? Status **Number of Dominant Species** 1\_\_\_\_ (A) That Are OBL, FACW, or FAC: **Total Number of Dominant** 1\* \_ (B) Species Across All Strata: Percent of Dominant Species 100% \_ (A/B) That Are OBL, FACW, or FAC: Prevalence Index worksheet: Total % Cover of: Multiply by: 0 \_\_ = Total Cover OBL species \_\_\_\_ x 1 = \_\_\_\_ 50% of total cover: \_\_\_0 \_\_ 20% of total cover:\_\_\_ 0 FACW species \_\_\_\_\_ x 2 = \_\_\_\_ Sapling/Shrub Stratum (Plot size: 15') FAC species \_\_\_\_\_ x 3 = \_\_\_\_ FACU species \_\_\_\_\_ x 4 = \_\_\_\_ UPL species \_\_\_\_\_ x 5 = \_\_\_\_ Column Totals: \_\_\_\_\_ (A) \_\_\_\_\_ (B) 4.\_\_\_\_\_ Prevalence Index = B/A = \_\_\_\_\_ 6.\_\_\_\_\_\_ \_\_\_\_ \_\_\_\_\_ Hydrophytic Vegetation Indicators: \_\_\_ 1 - Rapid Test for Hydrophytic Vegetation ✓ 2 - Dominance Test is >50% \_\_\_ 3 - Prevalence Index is ≤3.0<sup>1</sup> 0 = Total Cover \_\_\_ 4 - Morphological Adaptations<sup>1</sup> (Provide supporting 50% of total cover: \_\_\_0 20% of total cover: data in Remarks or on a separate sheet) Herb Stratum (Plot size: \_\_\_ Problematic Hydrophytic Vegetation<sup>1</sup> (Explain) ✓ FACW 2. Poa sp. \_\_\_\_\_ \_ <sup>1</sup>Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic. **Definitions of Four Vegetation Strata:** Tree - Woody plants, excluding vines, 3 in. (7.6 cm) or more in diameter at breast height (DBH), regardless of height. Sapling/Shrub - Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1 m) tall. **Herb** – All herbaceous (non-woody) plants, regardless = Total Cover of size, and woody plants less than 3.28 ft tall. 50% of total cover: 30 20% of total cover: 12 Woody vine - All woody vines greater than 3.28 ft in Woody Vine Stratum (Plot size: 15') height. Hydrophytic Vegetation Yes <u>√</u> No \_\_\_\_ 0 = Total Cover Present? 50% of total cover: 0 20% of total cover:

Remarks: (Include photo numbers here or on a separate sheet.)

ND - Not Determined.

1. Juncus effusus

\* Vegetation not ID'd to species level not included in dominance test.

SOIL Sampling Point: W-A13

Profile Des	cription: (Describe t	o the depth	n needed to docur	nent the i	ndicator	or confirm	the abs	sence of indicators.)
Depth	Matrix		Redo	x Features				
(inches)	Color (moist)	%	Color (moist)	%	Type <sup>1</sup>	Loc <sup>2</sup>		ure Remarks
0-14"	2.5Y 6/1	70	7.5YR 5/8	30	С	M/PL	SIC	L
			_					
					-			
								<u> </u>
			-					<del></del>
								<del></del>
			_					
					-			<del></del>
	Concentration, D=Depl	etion, RM=f	Reduced Matrix, MS	S=Masked	Sand Gra	ains.		on: PL=Pore Lining, M=Matrix.
Hydric Soil	Indicators:							Indicators for Problematic Hydric Soils <sup>3</sup> :
Histoso			Dark Surface					2 cm Muck (A10) (MLRA 147)
	pipedon (A2)		Polyvalue Be				148)	Coast Prairie Redox (A16)
	listic (A3)		Thin Dark Su			47, 148)		(MLRA 147, 148)
	en Sulfide (A4)		Loamy Gleye		F2)			Piedmont Floodplain Soils (F19)
	ed Layers (A5)		✓ Depleted Ma		_,			(MLRA 136, 147)
	uck (A10) (LRR N)	(0.4.4)	Redox Dark					Very Shallow Dark Surface (TF12)
•	ed Below Dark Surface	(A11)	Depleted Date					Other (Explain in Remarks)
	ark Surface (A12) Mucky Mineral (S1) <b>(L</b>	DD N	Redox Depre Iron-Mangan			DD N		
	A 147, 148)	KK IV,	MLRA 13		35 (F 12) <b>(</b>	LKK IV,		
	Gleyed Matrix (S4)		Umbric Surfa		MI DΔ 13	6 122)		<sup>3</sup> Indicators of hydrophytic vegetation and
	Redox (S5)		Piedmont Flo				8)	wetland hydrology must be present,
-	d Matrix (S6)		Red Parent N					unless disturbed or problematic.
	Layer (if observed):			natorial (i	, <b>(</b>		Í	unico distanza el presionidas.
Type:	-							
J	nches):						Hydri	c Soil Present? Yes No
	iciies).		<del></del> :				Hydri	C 30II FTESEIII: TES NO
Remarks:								

USACE FILE NO./Project Name:		ley Pipeline Project	COORDINATES:	Lat.	37.559332	Lon.	-80.709734	
STREAM/SITE ID AND SITE DESCR % stream slope, watershed size {ac		r impairments)		Wetland A13 (W-A13)	, 3.474 a	74 ac watershed, HUC 12 watershed Middle Indian (		
FORM OF MITIGATION: Mitigati			ation Bank					
DATE:	10-A	pr-16			PRECIPITATION PAST 48 HRS:			
	PART I - Wetla	and Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
/-A13	Emergent	0.0228	Emergent					
						PART III - Advanced I	<b>Mitigatio</b>	n
						Sustainable Determination Made on Advanced Mitigation (Y or N)		n
						·		
otal Impact		0.0228						
Motley d C	PART II - L	Init Scores	Replacement Unit(s)			Estimated		
otal Emergent	iassification		0.0228			ILF Costs		
otal Scrub-Shrub			0.0220			\$1,368.00		
otal Forested			0			Ţ 1,000.00		
otal Open Water			0					

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Long-term F % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

*Note: Period between completion of compensatory mitigation measures and the time required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).								
% Add. Mitigation	Temporal Loss-Maturity (Years)							
0%	0							
Sub-Total	0							

Temporal Loss-Maturity

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone								
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation								
Average Buffer Width		Mitigation Type						
0	0-50	None						
U	51-150	None						

PART V - Final Unit Score										
Wetland Classification Replacement Index		Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance					
Emergent	0.0228		0.0228		-0.0228					
Scrub-Shrub	0	Restoration	0		0					
Forested	0	Restoration	0		0					
Open Water	0		0		0					
Net-Total	0.0228		0.0228	#DIV/0!	#DIV/0!					

## **W-MN18 PFO**



Photograph Direction South

Comments:		

Project/Site: MVP		City/County:	Monroe		Sampling Date: 01/08/2018
Applicant/Owner: MVP					Sampling Point: W-MN18-PFO
Investigator(s): S. Ryan, J. F	Potrikus	Section, Tov	wnship, Range: N/		
Landform (hillslope, terrace, etc.					Slope (%): 3-5
Subregion (LRR or MLRA): LF	,	•	Long: <u>-80.</u>	,	Datum: NAD 83
Soil Map Unit Name: CIE	<u></u> L				
Are climatic / hydrologic condition		•			
Are Vegetation, Soil	, or Hydrology _	significantly disturbed?	Are "Normal	Circumstances" p	resent? Yes No
Are Vegetation, Soil	, or Hydrology _	naturally problematic?	(If needed, e	explain any answe	s in Remarks.)
SUMMARY OF FINDING	SS – Attach site	map showing sampling	g point locatio	ons, transects	important features, etc.
Hydrophytic Vegetation Prese Hydric Soil Present? Wetland Hydrology Present?	nt? Yes Yes Yes	Is the	e Sampled Area in a Wetland?	Yes	No
Remarks: Cowardin Co		HGM: Riverine	Water Type: I	DDWWD	
HYDROLOGY					
Wetland Hydrology Indicato	rs:			Secondary Indica	tors (minimum of two required)
Primary Indicators (minimum of		eck all that apply)		Surface Soil	
Surface Water (A1)		True Aquatic Plants (B14)			etated Concave Surface (B8)
High Water Table (A2)	<del>-</del>	Hydrogen Sulfide Odor (C1)	)	Drainage Pat	
Saturation (A3)		Oxidized Rhizospheres on L		Moss Trim Li	
Water Marks (B1)	<u>-</u>	Presence of Reduced Iron (	C4)	Dry-Season \	Vater Table (C2)
Sediment Deposits (B2)	<del>-</del>	Recent Iron Reduction in Til	led Soils (C6)	Crayfish Burr	ows (C8)
Drift Deposits (B3)	_	Thin Muck Surface (C7)			sible on Aerial Imagery (C9)
Algal Mat or Crust (B4)	=	Other (Explain in Remarks)		<del></del>	ressed Plants (D1)
Iron Deposits (B5)	(57)			Geomorphic	
Inundation Visible on Aeri				Shallow Aqui	phic Relief (D4)
Water-Stained Leaves (Bi Aquatic Fauna (B13)	9)			FAC-Neutral	
Field Observations:			<del></del>	TAO Neutral	1031 (23)
Surface Water Present?	Yes No	Depth (inches):			
Water Table Present?	Yes No	Depth (inches):			
Saturation Present?		Depth (inches):		lydrology Presen	t? Yes ✔ No
(includes capillary fringe)					
Describe Recorded Data (stre	am gauge, monitorin	g well, aerial photos, previous i	nspections), if ava	ıılable:	
Remarks:					

Sampling F	Point: W-MN18-PFO
------------	-------------------

	Absolute	Dominant	Indicator	Dominance Test worksheet:
<u>Tree Stratum</u> (Plot size:)		Species?		
1. Ulmus americana	25	~	FACW	Number of Dominant Species That Are OBL, FACW, or FAC:  (A)
2. Fraxinus pennsylvanica	20	~	FACW	
3 Carpinus caroliniana	15		FAC	Total Number of Dominant Species Across All Strata: 7 (B)
4		·	1_7.0	Species Across Air Strata.
5		· -		Percent of Dominant Species That Are OBL FACW or FAC: 86% (A/B)
6				That Are OBL, FACW, or FAC: 86% (A/B)
7	-			Prevalence Index worksheet:
<i>'</i>	60	= Total Cov		Total % Cover of: Multiply by:
50% of total cover:30				OBL species x 1 =
Sapling/Shrub Stratum (Plot size: 15' )	2070 01	total oover.		FACW species x 2 =
1. Carpinus caroliniana	10	~	FAC	FAC species x 3 =
2. Aesculus flava	7		FACU	FACU species x 4 =
		· <del></del>	FACU_	UPL species x 5 =
3				Column Totals: (A) (B)
4				Goldmin Totals (A) (B)
5				Prevalence Index = B/A =
6				Hydrophytic Vegetation Indicators:
7				1 - Rapid Test for Hydrophytic Vegetation
8			-	✓ 2 - Dominance Test is >50%
9				3 - Prevalence Index is ≤3.0 <sup>1</sup>
		= Total Cov		4 - Morphological Adaptations <sup>1</sup> (Provide supporting
50% of total cover: 8.5	20% of	total cover:	3.4	data in Remarks or on a separate sheet)
Herb Stratum (Plot size: 5' )				Problematic Hydrophytic Vegetation¹ (Explain)
1. Rosa multiflora	30		FAC	1 Toblematic Hydrophytic Vegetation (Explain)
2. Packera aurea	15		FACW	1 Indicators of hydric call and watland hydrology must
3. Carex sp.	5		ND	<sup>1</sup> Indicators of hydric soil and wetland hydrology must be present, unless disturbed or problematic.
4				Definitions of Four Vegetation Strata:
5				
6				Tree – Woody plants, excluding vines, 3 in. (7.6 cm) or
7				more in diameter at breast height (DBH), regardless of height.
8				
9				Sapling/Shrub – Woody plants, excluding vines, less than 3 in. DBH and greater than or equal to 3.28 ft (1
10				m) tall.
11				
	50	= Total Cov		<b>Herb</b> – All herbaceous (non-woody) plants, regardless of size, and woody plants less than 3.28 ft tall.
50% of total cover: 25		total cover:		or oze, and recay plante loss than oze it tail.
Woody Vine Stratum (Plot size: 15' )	2070 01	total covor.		<b>Woody vine</b> – All woody vines greater than 3.28 ft in
				height.
1				
2				
3				
4				Hydrophytic
5	_	· ——		Vegetation Present? Yes ✓ No
0		= Total Cov	_	Present? Yes No
		total cover:	0	
Remarks: (Include photo numbers here or on a separate sl				
Delineation outside of the growing season limits characteristic vegetative anatomy. Documented calculations.				

US Army Corps of Engineers

Profile Desc	ription: (Describe to	the depth n	eeded to docur	nent the ir	ndicator	or confirm	the absence	of indicate	ors.)		
Depth	Matrix			x Features							
(inches)	Color (moist)	<u> %</u> (	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Texture		Remark	(S	
·							•				
· ——								· -			_
·											
<u> </u>											
							-				
·			_				•				
·			-				-				
	ncentration, D=Deple	etion, RM=Re	duced Matrix, MS	S=Masked	Sand Gra	ins.	<sup>2</sup> Location: F				
Hydric Soil I	ndicators:						Indic	ators for P	roblematic	Hydric Soils <sup>3</sup> :	
Histosol		_	Dark Surface						(A10) <b>(MLR</b>		
	ipedon (A2)	_	Polyvalue Be		. , .		148) (		e Redox (A1	16)	
Black His		_	Thin Dark Su	, ,	•	47, 148)		(MLRA 14			
	n Sulfide (A4)	_	Loamy Gleye		<del>-</del> 2)		F		oodplain So	ils (F19)	
	Layers (A5)	_	Depleted Ma		_,			(MLRA 13			
	ck (A10) (LRR N)		Redox Dark						w Dark Surfa		
	Below Dark Surface	(A11) _	Depleted Da				_ (	Jtner (Expla	ain in Remai	rks)	
	rk Surface (A12) ucky Mineral (S1) <b>(Ll</b>	DD NI	Redox Depre Iron-Mangan			DD N					
	ucky Milleral (31) <b>(Li</b> . <b>147, 148)</b>	XK N, _	iion-wangan MLRA 13		5 (F 12) <b>(1</b>	-KK N,					
	leyed Matrix (S4)		Umbric Surfa	-	MI RA 13	6 122)	3Inc	dicators of h	vdrophytic v	vegetation and	
	edox (S5)	_	Piedmont Flo						ology must b		
	Matrix (S6)	_	Red Parent N					-	ped or proble		
	ayer (if observed):			natorial (12	- 1 / <b>(</b>		, u.	nooo diotaik	ou or probit	orridio.	
Type:	,										
	hoo):		=				Hydric Soi	I Drocont?	Voc	No. V	
	:hes):		-				nyuric 30i	i Fresent?	162	No	_
Remarks:	a.a.d :	_									
Son nozen	and impenetrable	<b>ð.</b>									

USACE FILE NO./Project Name:	Mountain Valley Pipeline Project			COORDINATES:	Lat.	37.487442	Lon.	-80.681752
STREAM/SITE ID AND SITE DESCR	RIPTION:			Wetland MN18 (W-	-MN18-	PFO), HUC 8 - Upper New, Headwate	rs Blue	Lick Creek,
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)	1		RIV	ERINE, RPWWD, Forested wetland		
FORM OF MITIGATION:								
DATE:	13-F	Feb-18	WEATHER CONDITIONS:	Cloudy/Dry		PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-MN18-PFO	Forested	0.175	Emergent					
				-				
						PART III - Advanced	Mitigatio	on
						Sustainable Determination Made or Advanced Mitigation (Y or N)		Υ
						,		
Total Impact		0.175						
		Unit Scores				Estimated		
	assification		Replacement Unit(s)	1		ILF Costs		
Total Emergent			0.175					
Total Scrub-Shrub			0			\$10,500.00	)	
Total Forested			0					
Total Open Water			0	1				

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Long-term Page 1 % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

Temporal Loss-Maturity							
*Note: Period between completion of compensatory mitigation measures and the time required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).							
% Add. Mitigation Temporal Loss-Maturity (Years)							
0%							
Sub-Total	0						

Long-tern	n Protection
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)
0 + 5/10 Year Monitoring	Perpetual
Sub-Total	0

Extended Upland Buffer Zone						
*Note1: Reference Instructional handout for the definitions of the Buffer Zone Mitigation						
Average Buffer Width	Mitigation Type					
0	0-50	None				
0	51-150	None				

PART V - Final Unit Score									
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance				
Emergent	0.175		0.175	0.3	0.125				
Scrub-Shrub	0	Restoration	0		0				
Forested	0	Restoration	0	1.75	1.75				
Open Water	0		0		0				
Net-Total	0.175		0.175	2.05	1.875				

## W-CV25 PSS 1

## Wetland Photograph Page

Wetland ID  $\underline{\text{W-CV25-PS}}$  Date  $\underline{\text{01/09/201}}$ 8



Photograph Direction South

Comments:		

Project/Site: MVP		City/C	<sub>County:</sub> Monroe		Sampling Date: 01/09/2018		
Applicant/Owner: MVP		State: WV Sampling Point: W-CV25-PS					
		Section, Township, Range: N/A					
Landform (hillslope, terrace, etc.					Slope (%): 2-3		
Subregion (LRR or MLRA): LR							
Soil Map Unit Name: Ernest sil			Long				
Are climatic / hydrologic conditio							
Are Vegetation, Soil							
Are Vegetation, Soil	-						
SUMMARY OF FINDING	- Attach Site	map snowing san	ipling point location	ons, transects,	important features, etc.		
Hydrophytic Vegetation Preser			Is the Sampled Area				
Hydric Soil Present?		No	within a Wetland?	Yes 🗸	No		
Wetland Hydrology Present?	Yes	No					
Remarks: Cowardin Coo	de: PSS	HGM: Slope	Water Type:	RPWWD			
HYDROLOGY							
Wetland Hydrology Indicator	s:			Secondary Indicat	tors (minimum of two required)		
Primary Indicators (minimum o	f one is required; che	eck all that apply)		Surface Soil 0	Cracks (B6)		
Surface Water (A1)	<u> </u>	_ True Aquatic Plants (	B14)	Sparsely Veg	etated Concave Surface (B8)		
High Water Table (A2)		_ Hydrogen Sulfide Od		Drainage Patt			
Saturation (A3)			es on Living Roots (C3)	Moss Trim Lir			
Water Marks (B1)		_ Presence of Reduced			Vater Table (C2)		
Sediment Deposits (B2)		_ Recent Iron Reduction		Crayfish Burrows (C8)			
Drift Deposits (B3)		_ Thin Muck Surface ((			sible on Aerial Imagery (C9)		
Algal Mat or Crust (B4) Iron Deposits (B5)	_	Other (Explain in Rer	narks)	<ul><li>Stunted or Stressed Plants (D1)</li><li>Geomorphic Position (D2)</li></ul>			
Inundation Visible on Aeria	al Imagery (B7)			Shallow Aquitard (D3)			
Water-Stained Leaves (B9				Microtopographic Relief (D4)			
Aquatic Fauna (B13)	,			FAC-Neutral Test (D5)			
Field Observations:					· ,		
Surface Water Present?	Yes No	Depth (inches):					
Water Table Present?		Depth (inches):					
Saturation Present?		Depth (inches):		Hydrology Present	t? Yes 🗸 No		
(includes capillary fringe)  Describe Recorded Data (streat	om gauge monitoring	well periol photos pro	vious inspections) if ava	ilabla:			
Describe Necorded Data (stream	in gauge, monitoring	well, aerial priotos, pre	ivious irispections), ii ava	mable.			
Remarks:							
Due to consistent below f	reezing temperat	tures unable to ver	ify subsurface hydro	ology indicators			

Sampling Point: W-CV25-PSS
----------------------------

Tree Stratum (Plot size: 30'	Absolute	Dominant		Dominance Test worksheet:		
Tiec otratum (Flot size.	·	Species?		Number of Dominant Species	4	
1				That Are OBL, FACW, or FAC:		(A)
2				Total Number of Dominant	_	
3				Species Across All Strata:	5	(B)
4				Percent of Dominant Species		
5				That Are OBL, FACW, or FAC:	80	(A/B)
6				Prevalence Index worksheet:		
7				Total % Cover of:	Multiply by:	
		= Total Cov	_	OBL species x 1		
50% of total cover: 0 Sanling/Shrub Stratum (Plot size: 15')	20% of	total cover:	0	FACW species x 2		
Oaphing/Ornab Ottatum (1 lot 3izo)	15		<b>-</b> 4011	FAC species x 3	·	
1. Lonicera tatarica	15		FACU_	1		
2. Acer negundo			F <u>AC</u>	FACU species x 4		
3. Cornus florida	5		F <u>ACU</u>	UPL species x 5		
4				Column Totals: (A)	-	(B)
5				Prevalence Index = B/A =		
6				Hydrophytic Vegetation Indicat		
7				1 - Rapid Test for Hydrophyti		
8				2 - Dominance Test is >50%	o vegetation	
9				3 - Prevalence Index is ≤3.0 <sup>1</sup>		
		= Total Cov		4 - Morphological Adaptation	e <sup>1</sup> (Provide sur	porting
50% of total cover: 15	20% of	total cover:	6	data in Remarks or on a s		
Herb Stratum (Plot size: 5' )						
1. Onoclea sensibilis	15		FACW	Problematic Hydrophytic Veg	etation (Expla	ain)
2. Agrimonia parviflora	15		FACW	1		
3. Packera aurea	10		FACW	<sup>1</sup> Indicators of hydric soil and wetla be present, unless disturbed or pre-		must
4. Juncus effusus	5		FACW	Definitions of Four Vegetation		
5. Hypericum prolificum	5		FACU	Definitions of Four Vegetation (	Juata.	
6				Tree - Woody plants, excluding v		
7				more in diameter at breast height height.	(DBH), regard	less of
8						
9				Sapling/Shrub – Woody plants, e		
10				than 3 in. DBH and greater than on the minute of the minut	or equal to 3.20	סוג (ו
11.				,		
···-	50	= Total Cov		<b>Herb</b> – All herbaceous (non-wood of size, and woody plants less that		ardless
50% of total cover: 25		total cover:		or size, and woody plants less the	111 5.20 It tall.	
Woody Vine Stratum (Plot size: 15' )	2070 0.	10141 00101		Woody vine – All woody vines gr	eater than 3.28	8 ft in
1				height.		
		-				
2						
3						
4				Hydrophytic		
5		T		Vegetation Present? Yes ✓	No	
50% of total cover: 0		= Total Cov total cover:	•	- 1000mi		
		total cover.				
Remarks: (Include photo numbers here or on a separate s	neet.)					

Profile Description: (Describe to the depth needed to document the indicator or confirm the absence of indicators.)										
Depth	Matrix			x Features		-				
(inches)	Color (moist)	<u> </u>	Color (moist)	<u>%</u>	Type <sup>1</sup>	Loc <sup>2</sup>	Textur	<u>e</u>	Remarks	
										_
										-
	entration, D=Deple	etion, RM=Red	duced Matrix, MS	S=Masked S	Sand Gra	ins.		n: PL=Pore Lini		2
Hydric Soil Ind	icators:						lr	ndicators for Pr	roblematic Hy	dric Soils³:
Histosol (A	1)	_	_ Dark Surface	(S7)			_	2 cm Muck (/	A10) <b>(MLRA 1</b> 4	17)
Histic Epipe	edon (A2)		Polyvalue Be	low Surface	(S8) <b>(M</b>	LRA 147,	148) _	Coast Prairie	e Redox (A16)	
Black Histic	(A3)		Thin Dark Su	rface (S9) (I	MLRA 1	47, 148)		(MLRA 14	17, 148)	
Hydrogen S	Sulfide (A4)		Loamy Gleye	d Matrix (F2	2)		_	Piedmont Flo	oodplain Soils (	F19)
Stratified La	ayers (A5)		Depleted Ma					(MLRA 13	36, 147)	
2 cm Muck	(A10) (LRR N)		Redox Dark	Surface (F6)	)			Very Shallow	v Dark Surface	(TF12)
	elow Dark Surface	(A11)	Depleted Dar	k Surface (F	<del>-</del> 7)		•	Other (Expla	in in Remarks)	` '
Thick Dark	Surface (A12)		Redox Depre							
	ky Mineral (S1) (LI	RR N,	Iron-Mangan			.RR N,				
MLRA 1		_	MLRA 13		, , ,					
	red Matrix (S4)		Umbric Surfa	•	LRA 136	6, 122)		<sup>3</sup> Indicators of h	vdrophytic vege	etation and
Sandy Red		_	Piedmont Flo				8)		logy must be p	
Stripped Ma			Red Parent N					-	ed or problema	
	ver (if observed):		_	,	/ (		Í			
_	. ( 0.000. 100).									
Type:	`						l	0.11.0	v v	
Depth (inche	·s):						Hydric	Soil Present?	Yes	No
Remarks:		_	_							
Due to consis	stent below free	ezing tempe	eratures unab	le to test	soil.					

USACE FILE NO./Project Name:		ey Pipeline Project	COORDINATES:	Lat.	37.46295334	Lon.	-80.66957561	
STREAM/SITE ID AND SITE DESCR	Wetland CV25-PSS-1 (	W-CV2	25-PSS-1), HUC 8 - Upper New, Heady	waters I	Blue Lick Creek,			
(% stream slope, watershed size {a	creage}, unaltered	d or impairments)			Slo	pe, RPWWD, scrub-shrub wetland		
FORM OF MITIGATION:		Mitiga	tion Bank					
DATE:	13-F	eb-18	WEATHER CONDITIONS:	Cloudy/Dry		PRECIPITATION PAST 48 HRS:		
	PART I - Wet	land Indicators						
Impact Wetland ID:	Impact Wetland Classification	Impacts (acreage)	Mitigation Wetland Classification					
W-CV25-PSS-1	Scrub-Shrub	0.027	Emergent					
				-		PART III - Advanced	Mitigati	on
						Sustainable Determination Made or Advanced Mitigation (Y or N)		Υ
						,		
Total Impact		0.027						
		Unit Scores				Estimated		
Wetland Cl	assification		Replacement Unit(s)			ILF Costs		
Total Emergent			0.027	1				
Total Scrub-Shrub			0	1		\$1,620.00		
Total Forested			0					
Total Open Water			0					

# \*Note: Reflects duration of aquatic functional loss between the time of an impact (debit) and completion of compensatory mitigation (credit). Years Sub-Total PART IV- Factors (See instruction page for default values for MITIGATION BANKING and ILF.) Long-term Page 1 % Add. Mitigation and Monitoring Period % Add. Mitigation and Monitoring Period

Temporal Loss-Maturity							
*Note: Period between completion of compensatory mitigation measures and the time required for maturity, as it relates to function (i.e. maturity of tree stratum to provide organic matter and detritus within riparian stream or wetland buffer corridor).							
% Add. Mitigation Temporal Loss-Maturity (Years)							
0%							
Sub-Total	0						

Long-term Protection					
% Add. Mitigation and Monitoring Period	Long-Term Protection (Years)				
- July 19 19 19 19 19 19 19 19 19 19 19 19 19					
0 + 5/10 Year Monitoring	Perpetual				
Sub-Total	0				

Extended Upland Buffer Zone					
*Note <sup>1</sup> : Reference Instructional handout for the definitions of the Buffer Zone Mitigation					
Average Buffer Width	Mitigation Type				
0	0-50	None			
	51-150	None			

PART V - Final Unit Score						
Wetland Classification	Replacement Index	Form of Mitigation	Adjusted Final Unit Score to Offset (Debit)	Applicant Input Mitigation (Credit)	Balance	
Emergent	0.027		0.027	0.3	0.273	
Scrub-Shrub	0	Restoration	0		0	
Forested	0		0	1.75	1.75	
Open Water	0		0		0	
Net-Total	0.027		0.027	2.05	2.023	