

WATERSHED PROJECT FINAL REPORT

Pomme de Terre Pre-WRAPS Project



Prepared by:

The Pomme de Terre River Association in partnership with the Counties and SWCD's of West Otter Tail, Grant, Douglas, Stevens, Swift, Big Stone, and the Minnesota Pollution Control Agency

Grant project summary

Project title: Pomme de Terre Pre-Wraps Project

Organization (Grantee): Pomme de Terre River Association

Project start date: 02/10/2017 Project end date: 12/31/18 Report submittal date: 1/08/2019

Grantee contact name: Stephanie Adams Title: JPB Project Coordinator

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City: Morris State: MN Zip: 56267

Phone number: (320) 589-4886 Fax: Email: stephanie.adams@pdtriver.org

Basin /Watershed & 8 digit HUC: Pomme de Terre River Watershed 07020002 County: Otter Tail, Grant, Douglas, Stevens, Big Stone, Swift

Project type (check one):

- ☐ Clean Water Partnership
- ☒ Total Maximum Daily Load (TMDL)/Watershed Restoration or Protection Strategy (WRAPS) Development
- ☐ 319 Demonstration, Education, Research
- ☐ TMDL/WRAPS/319 Implementation

Grant Funding

Final grant amount: \$52,000.00 Final total project costs: \$46,182.00

Matching funds: Final cash: Final in-kind: Final Loan:

MPCA project manager: Paul Wymar

For TMDL/WRAPS Implementation Projects

Impaired reach name(s):

AUID or DNR Lake ID(s):

Listed pollutant(s):

AUID = Assessment Unit ID

DNR = Minnesota Department of Natural Resources

WATERSHED

The Pomme de Terre River watershed is located in West Central Minnesota and includes portions of Otter Tail, Douglas, Grant, Stevens, Swift, and Big Stone County. Its 3 major tributaries (Pelican, Muddy, and Dry Wood Creek) and main flow through a changing landscape from the Northern Hardwood Forest and Northern Glaciated plains, 81% of which is agricultural, and contributes directly to the Minnesota River, just south of Appleton.

EXISTING CONDITIONS

The Pomme de Terre River and associated lakes are listed on the 303(d) impaired waters list for numerous impairments that include turbidity, excess nutrients, dissolved oxygen and biology (Table 1). With just under 750 total miles of rivers, streams, tributaries, and numerous lakes, the risk of impairment is fairly high. Three Total Maximum Daily Load reports (TMDL) have been completed. The impairments of the Pomme de Terre River are listed below.

Waterbody Name	ID	Impaired Use	Impairment Cause
PdT R: Muddy Cr to Minnesota R (Marsh Lk)	07020002-501	Aquatic Life & Recreation	Aquatic Macroinvertebrate Bioassessments, Fecal Coliform, Fish IBI, Dissolved Oxygen, Turbidity
Pelican Cr: T130 R41W S4, north line to PdT R	07020002-506	Aquatic Life	Aquatic Macroinvertebrate Bioassessments
Unnamed creek: Unnamed cr to Unnamed cr	07020002-551	Aquatic Life	Fishes Bioassessments
Dry Wood Cr: Dry Wood Lk to PdT R	07020002-556	Aquatic Life & Recreation	Aquatic Macroinvertebrate Bioassessments, E.coli, fish IBI, Dissolved Oxygen, Turbidity
PdT R: Perkins Lk to Muddy Cr	07020002-562	Aquatic Life	Fishes Bioassessments
PdT R: Barrett Lk to North Pomme de Terre Lk	07020002-563	Aquatic Life	Fishes Bioassessments
Christina: ASHBY	21-0375-00	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators
North Turtle: UNDERWOOD	56-0379-00	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators
Perkins: 10 MI N OF MORRIS	75-0075-00	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators
Unnamed Wetland	75-0175-00	Aquatic Life	Aquatic Plant and Macroinvertebrate Bioassessments
Hattie: 5 MIS OF ALBERTA	75-0200-00	Aquatic Recreation	Nutrient/Eutrophication Biological Indicators
Unnamed Wetland	75-0375-00	Aquatic Life	Aquatic Plant and Macroinvertebrate Bioassessments

Table 1: Watershed Impairments

PARTNERSHIPS

The Pomme de Terre River Association (PDTRA) is made up of a Joint Powers Board including County Commissioners and SWCD Supervisors and a Technical Advisory Committee including SWCD staff from each of the 6 Counties (West Otter Tail, Douglas, Grant, Stevens, Swift, and Big Stone County). Guidance and support are also given by a mix of State and Federal Agencies. Local Government staff members utilized matching State funding from the Clean Water Fund program to provide project development and technical assistance to landowners interested in participating in the implementation of best management practices.

PROJECT GOALS, OBJECTIVES, AND ACTIVITIES

Purpose:

Intensive watershed monitoring will begin in Pomme de Terre River (PdTR) watershed in 2017. This monitoring work expands on the previous cycle one intensive watershed monitoring which included water quality sampling, flow gaging, extensive fish and aquatic invertebrate surveys. Following completion of this round of intensive watershed monitoring (cycle 2), subsequent steps include assessment of the monitoring data, identification of stressors, development of Total Maximum Daily Loads (TMDLs), computer modeling, and a public participation process. Strategies to restore impaired waters and protect unimpaired waters will be developed and implemented by state and local governments, citizen organizations, businesses, and individuals moving toward the One Watershed, One Plan process.

In this first phase of the Pre-WRAPs process, the four primary objectives will be Project Planning, development of a Public Participation Process, and Project Administration. The WRAPS process will establish a guide for PDTRA, County staff, SWCD staff, and state agencies, to use for their involvement in the WRAPS process over the next four years in the PdT watershed.

Additionally, Gap Monitoring is an added objective. Gaps have been identified in the Intensive Watershed Monitoring plan that will make assessment and stressor identification difficult. To prevent these gaps from slowing the timely completion of the WRAPS process a monitoring component is included in this workplan. This monitoring plan has four goals: 1) to collect sufficient samples for assessment, 2) to meet the WRAPS/IWM timeline and provide data on time to meet a 4-year project completion goal, 3) to provide Stressor Identification (SID) with a two-year data set collected during the same time that biological samples are collected and 4) to provide useful data for targeting BMPs.

Goal:

The goal is to establish a framework with PDTRA, County staff, SWCD staff, and state agencies that will outline their involvement throughout the development of the Watershed Restoration and Protection Strategy (WRAPS) for the Pomme de Terre River watershed with consideration of the ongoing One Watershed, One Plan for the watershed.

WORKPLAN

		Year 2017												Year 2018											
		J	F	M	A	M	J	J	A	S	O	N	D	J	F	M	A	M	J	J	A	S	O	N	D
OBJ.1: WRAPS PROJECT PLANNING																									
	Project Coordination	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
OBJ.2: PUBLIC PARTICIPATION PROCESS																									
	Stakeholder Involvement Planning	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
OBJ.3: GAP MONITORING																									
	Collection of Water Quality Samples	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X
OBJ.4: PROJECT ADMINISTRATION																									
	Project Organization and Oversight	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X	X

Table 2: Timeline from Project Workplan



Minnesota Pollution
Control Agency

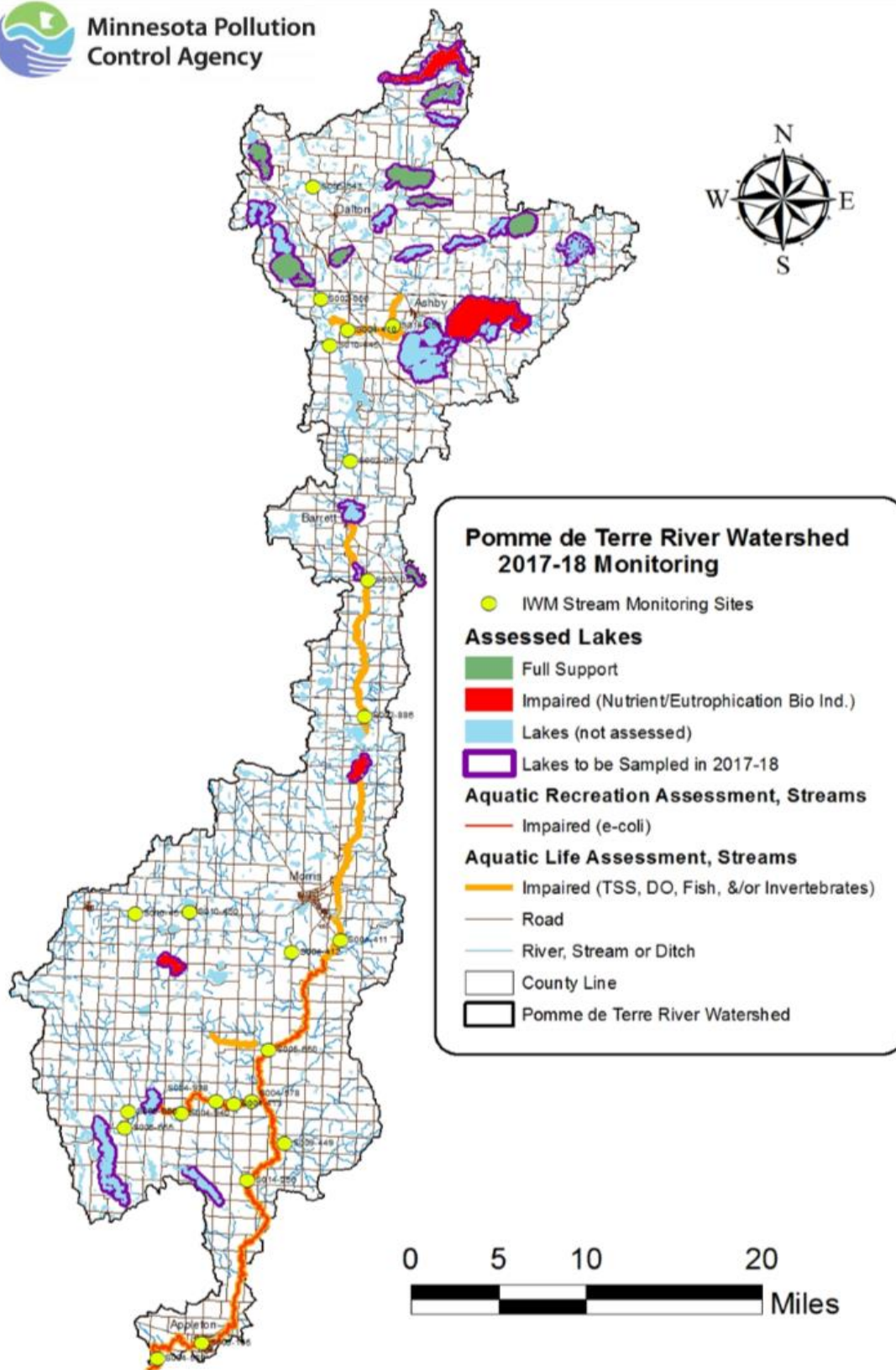


Figure 1: WRAPS Cycle II Map of impaired reaches and 2017-2018 monitoring sites

WORKPLAN CHANGES

- Change Order #1 – 3/9/2018: Due to unforeseen circumstances, \$5,200 (130hrs at a rate of \$40/hr. to ~148.5 hours at a rate of \$35/hr.) has been shifted between Obj.1, Task A to Obj.3, Task A. Timeline for Obj.1 and Obj.2 also extended to July 2018. There was no loss of scope or product.

OBJECTIVE 1: Project Planning

ACTIVITIES

- **Project Coordination for Pre-WRAPs plan**

PDTRA will coordinate with MPCA and partners to determine process and steps necessary for development and completion of WRAPS for the Pomme de Terre River Watershed with the goal of completing a WRAPS workplan.

Timeline: February 2017 – July 2018

Budget: \$ 8,400.00

Deliverables: A detailed four-year Pre-WRAPs work plan to complete the Pomme de Terre River WRAPS process, plan due June 30, 2018.

RESULTS:

PDTRA coordinated meeting with watershed partners and MPCA staff to discuss the development of the WRAPS Cycle II workplan. MPCA has determined that they, or a consultant, will take the roll of writing the WRAPS report following the completion of the Intensive Watershed Monitoring phase. A final workplan was submitted and approved by MPCA on July 31st, 2018.

OBJECTIVE 2: Public Participation Process

ACTIVITIES

- **Project Stakeholder Involvement Planning**

Establish a Local Work Group (LWG) and through consultation of this group develop a Public Participation Process for the WRAPS

Timeline: February 2017 – July 2018

Budget: \$ 3,600.00

Deliverables: Establish a Local Working Group to develop a Public Participation Process for the WRAPS. This Public Participation Process will be a component of the overall WRAPS work plan.

RESULTS:

PDTRA coordinated monthly meetings and subcommittee groups for the development of a workplan for WRAPS along with County staff, SWCD staff, and state agency partners by identifying and gathering the information needed to develop the Public Participation WRAPS workplan. Activities include conducting one-on-one interviews with landowners to discuss reasons for or against implementation, increase networking with watershed stakeholders, hosting soil health field days, and creating working groups of small sub watersheds.. A final workplan was submitted and approved by MPCA on July 31st, 2018. Work outlined within the WRAPS Public Participation Grant will continue to be a collaborative effort between PDTRA, local, state, and federal partnerships

OBJECTIVE 3: Gap Monitoring

ACTIVITIES

➤ Collection of Water Quality Samples

Samples were taken from 17 sites identified by the MPCA project manager in the Pomme de Terre River watershed. Collection will occur from May through September in 2017 and 2018 twice a month (10 samples/year/site).

S005-643	PDT R at Dalton Rd.	S010-450	Trib. To Muddy Ck. Downstream of Hwy 28
S002-056	PDT R at CR-51 BRG	S004-411	PDT R at MN-9
S014-255	Pelican Ck	S005-650	PDT at CR-58
S010-455	Trib to Muddy Ck. upstream of CR 14	S005-656	UNN St. at CSAH-8/CSAH-27
S002-057	PDT R on CR-47 BRG	S005-655	Artichoke Ck. at CSAH-10
S002-058	PDT R at Brg on UNN Rd.	S009-449	JD2 at 170th Ave.
S010-445	PDT R downstream of CR 4	S014-256	Trib. To PDT R UNN St. W of 40th St. NW
S010-451	Muddy Ck. upstream of 580th Ave.	S004-580	PDT on CR-51

Table 3: S-codes of water quality sample sites listed North to South.

2017 and 2018 ^{1,3}	May		Jun		Jul		Aug		Sep	
	Early	Late	Early	Late	Early	Late	Early	Late	Early	Late
Total phosphorus ¹			X	X	X	X	X	X		
Chlorophyll-a			X	X	X	X	X	X		
Total Suspended Solids	X		X		X		X		X	
Nitrate Nitrite	X	X	X	X	X	X	X	X	X	X
Secchi	X	X	X	X	X	X	X	X	X	X
Temperature ³	X	X	X	X	X	X	X	X	X	X
Conductivity ³	X	X	X	X	X	X	X	X	X	X
DO ²	X	X	X	X	X	X	X	X	X	X
pH	X	X	X	X	X	X	X	X	X	X
upstream photo	X	X	X	X	X	X	X	X	X	X
Rec. suitability, appearance, stage est.	X	X	X	X	X	X	X	X	X	X

Table 4: Water Quality Sampling Schedule

¹An additional set of bottles were taken during July 2017 for QA/QC.

²DO measurements are best taken before 9 AM.

³Sampler blank were collected at the first monitoring location of July 2017 sampling.

Timeline: February 2017 – December 2018 **Budget:** \$ 35,200.00

Deliverables: Water quality monitoring data collected and submitted to the MPCA following proper quality assurance and quality control guidelines laid out in the QAPP for the monitoring sites.

RESULTS:

PDTRA collected data and water quality samples from the listed sampling sites. RMB was contracted for the analysis of water samples. Field Parameters were recorded using a YSI Sonde and notes regarding the physical properties of stream/river sites were recorded on Field Data Sheets along with pictures taken at each site. In 2017 and 2018 PDTRA hired a Seasonal Technician to complete sampling and data entry. Official data was submitted to EQUIS for approval.

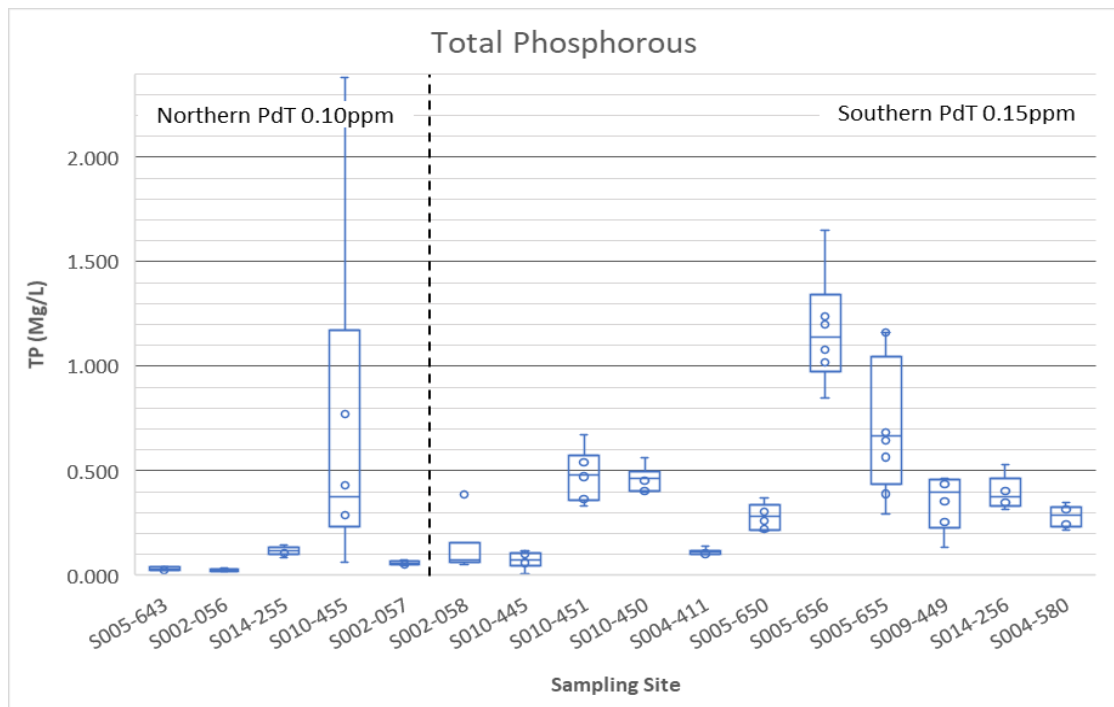


Figure 2: Preliminary Water Quality Sampling Results

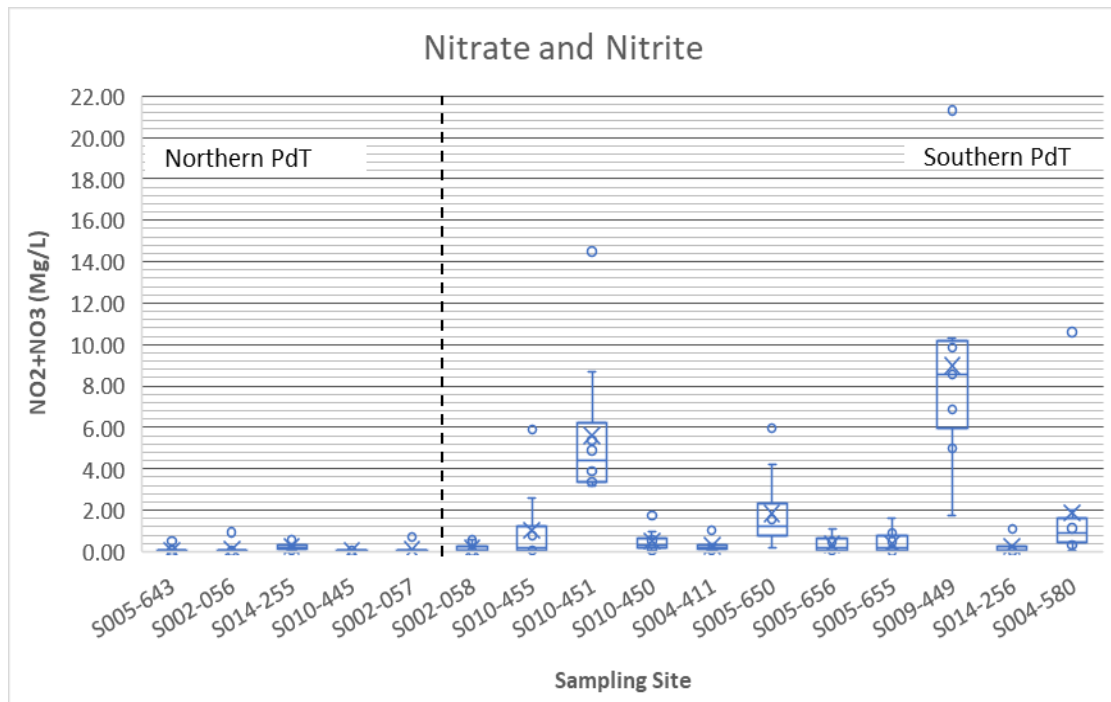


Figure 3: Preliminary Water Quality Sampling Results

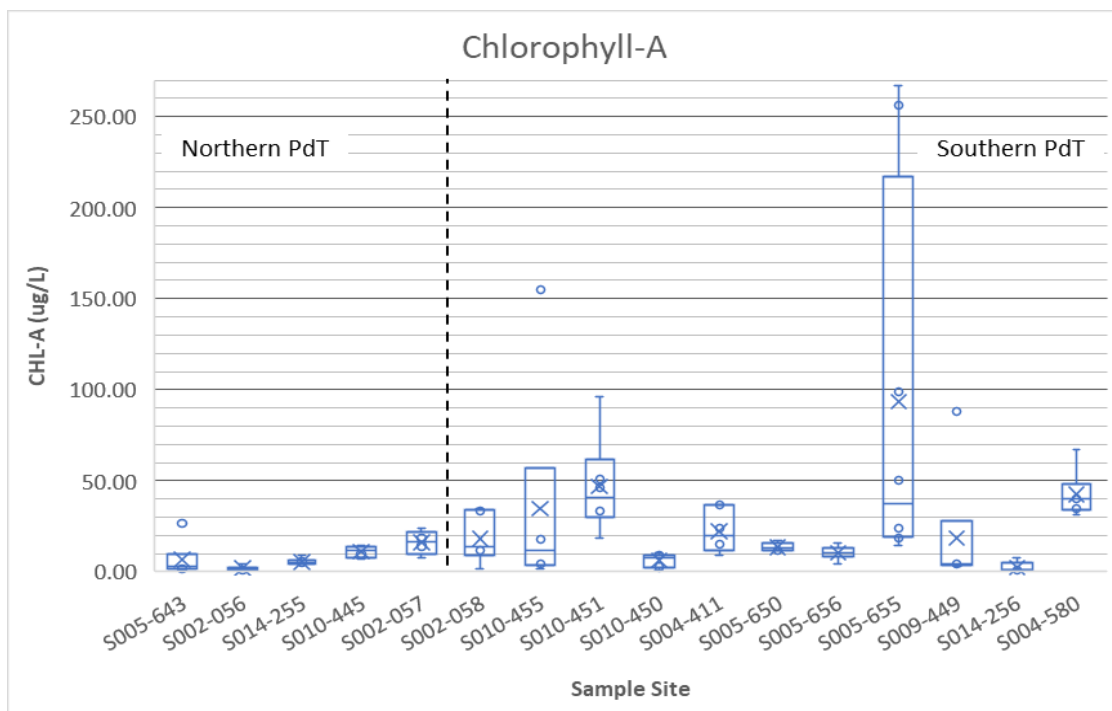


Figure 4: Preliminary Water Quality Sampling Results

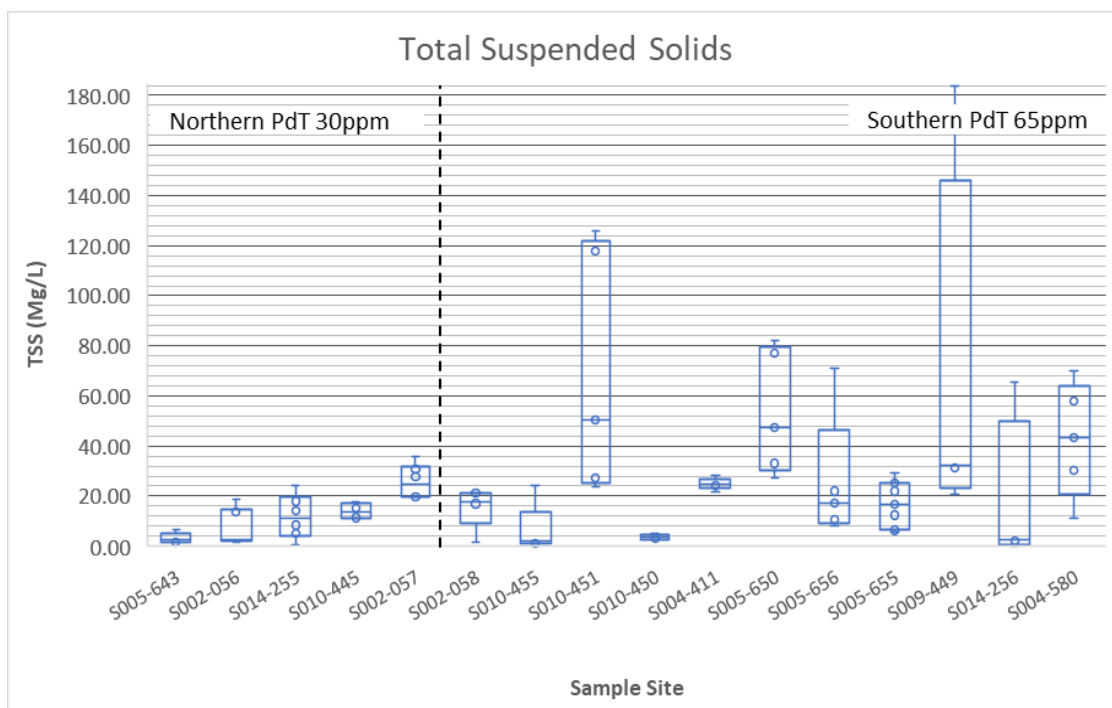


Figure 5: Preliminary Water Quality Sampling Results

OBJECTIVE 4: Project Administration

ACTIVITIES

➤ Project Organization and Oversight

The PDTRA will oversee and report the work and fiscal management that is being done in this grant.

Timeline: February 2017 – December 2018 **Budget:** \$ 4,800.00

Deliverables: Payment Requests, Semi-annual Reports, Final Fiscal and Progress Report

RESULTS: Interim reports, invoices, and related receipts are accounted for and have been submitted and approved by the MPCA Project Manager.

- 7/20/2017: Interim report and Invoice #1 submitted.
- 1/04/2018: Interim report and Invoice #2 submitted.
- 7/17/2018: Interim report and Invoice #3 submitted.
- 1/08/2019: Final report and final invoice submitted.

FINAL EXPENDATURES

	Budget	Actual Expenditure	Remaining
Objective 1			
Project Coordination	\$ 8,400.00	\$ 8,400.00	\$ -
Objective 2			
Stakeholder Involvement Planning (Staff Time)	\$ 3,600.00	\$ 3,600.00	\$ -
Objective 3			
Monitoring (Staff Time)	\$ 17,520.00	\$ 17,520.00	\$ -
Lab Analysis (Subcontracted)	\$ 11,900.37	\$ 9,201.00	\$ 2,699.37
Monitoring Equipment	\$ 201.63	\$162.51	\$ 38.67
Mileage	\$ 4,088.00	\$3,901.10	\$186.90
Shipping	\$ 1,490.00	\$997.39	\$492.61
Objective 4			
Admin (Staff Time)	\$ 2,400.00	\$ 2,400.00	\$ -
Mileage	\$ 2,400.00	\$ -	\$ 2,400.00
TOTAL	\$ 52,000.00	\$46,182.00	\$5,818.00

Table 4: Final Expenditure Overview. Details of expenditures can be found in the final Budget-Expense Report