

FOURTH FIVE-YEAR REVIEW REPORT FOR TONOLLI CORPORATION SUPERFUND SITE NESQUEHONING, PENNSLYVANIA

ORIGINAL



Prepared by

U.S. Environmental Protection Agency Region 3 Philadelphia, Pennsylvania

Karen Melvin, Director

Hazardous Site Cleanup Division EPA Region 3

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Date

Table of Contents
LIST OF ABBREVIATIONS & ACRONYMS
I. INTRODUCTION4
FIVE-YEAR REVIEW SUMMARY FORM5
II. RESPONSE ACTION SUMMARY5
Basis for Taking Action5
Response Actions6
Status of Implementation
Institutional Controls Summary Table8
Systems Operation & Maintenance
III. PROGRESS SINCE THE LAST REVIEW 10
IV. FIVE-YEAR REVIEW PROCESS11
Community Notification, Involvement & Site Interviews
Data Review11
Site Inspection
V. TECHNICAL ASSESSMENT
QUESTION A: Is the remedy functioning as intended by the decision documents?
QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial
action objectives used at the time of the remedy selection still valid?
QUESTION C: Has any other information come to light that could call into question the
protectiveness of the remedy?
VI. ISSUES/RECOMMENDATIONS
VII. PROTECTIVENESS STATEMENT
VIII. NEXT REVIEW
APPENDIX A – REFERENCE LIST
APPENDIX B – CHRONOLOGY OF SITE EVENTS
APPENDIX C – CONTAMINANTS OF CONCERN
APPENDIX D – GROUND WATER MONITORING DATA/GRAPHS21
APPENDIX E –SURFACE WATER AND PORE WATER DATA
APPENDIX F – LANDFILL LEACHATE
Figures
- 18 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1 - 1
Figure 1 Site Location Map
Figure 2 Site Map with location of ground water monitoring wells
Figure 3 Site map depicting parcels
Figure 4 Site map depicting extent of landfill cap
Tables
Table 1 Parcel Numbers
Table 2 Summary of Implemented Institutional Controls
Table 3 Protectiveness Determinations/Statements from the 2013 FYR

Table 4	Status of Recommendations from the 2013 FYR
Table 5	List of monitoring wells
Table 6	Summary of ground water monitoring results

LIST OF ABBREVIATIONS & ACRONYMS

AOC Administrative Order on Consent

ARAR Applicable or Relevant and Appropriate Requirement

CERCLA Comprehensive Environmental Response, Compensation and Liability Act

CD Consent Decree

E&S Erosion and Sedimentation EPA Environmental Protection Agency ESD Explanation of Significant Differences

FS Feasibility Study

GPRA Governmental Performance and Results Act

HRS Hazard Ranking System

IEUBK Integrated Exposure Uptake Biokinetic Model

MCL Maximum Contaminant Level MSC Medium Specific Concentration

MW Monitoring well

NCP National Contingency Plan
NPL National Priorities List
O&M Operations and Maintenance

OSWER Office of Solid Waste and Emergency Response

OU Operable Unit

PADEP Pennsylvania Department of Environmental Protection PADER Pennsylvania Department of Environmental Resources

PPB Part per billion PPM Parts per million

PP&L Pennsylvania Power and Light PRP Potentially Responsible Party

RA Remedial Action

RAO Remedial Action Objective

RCRA Resource Conservation and Recovery Act

RD Remedial Design
RI Remedial Investigation
ROD Record of Decision

RPM Remedial Project Manager SDWA Safe Drinking Water Act

SWRAU Site Wide Ready for Anticipated Use

TPH Total petroleum hydrocarbons UAO Unilateral Administrative Order

USACE United States Army Corps of Engineers

UST Underground Storage Tank

I. INTRODUCTION

The purpose of a Five-Year Review (FYR) is to evaluate the implementation and performance of a remedy to determine if the remedy is and will continue to be protective of human health and the environment. The methods, findings, and conclusions of reviews are documented in FYR reports such as this one. In addition, FYR reports identify issues found during the review, if any, and document recommendations to address them.

The U.S. Environmental Protection Agency (EPA) is preparing this FYR pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) Section 121, consistent with the National Oil and Hazardous Substances Pollution Contingency Plan (40 Code of Federal Regulations Section 300.430(f)(4)(ii)), and considering EPA policy.

This is the fourth FYR for the Tonolli Corporation Superfund Site (the Site). The triggering action for this statutory FYR is the completion date of the previous FYR on June 10, 2013. The FYR has been prepared because hazardous substances, pollutants, or contaminants remain at the Site above levels that allow for unlimited use and unrestricted exposure.

Site Background

The Site is located north of state road 54, on Tonolli Road, in the Borough of Nesquehoning, Carbon County, Pennsylvania, as shown on Figure 1. The Site is approximately 30 acres. The Site is depicted in Figures 3 and 4. Figure 3 generally identifies the Site parcels, and Figure 4 depicts the parcels of land overlaid with the boundaries of the landfill.

The Site is currently open space with a vegetated closed and capped landfill located in the eastern portion of the Site, and is surrounded by a chain-link fence with a locked gate. A small unused office building is located on the Site. Additionally, an underground storage tank (UST) is the collection point for landfill leachate from three sumps located within the landfill.

Nesquehoning Creek lies adjacent to the south of the majority of the Site. However, a small parcel formerly owned by Tonolli Corporation, lies to the south of the Nesquehoning Creek. To the west of the Site lies several residences and vacant land belonging to the Lansford Coaldale Water Authority. To the north and east of the Site lie piles of coal mine spoil materials and a power plant.

There are two identified aquifers present at the Site, an overburden aquifer and a bedrock aquifer. The shallow overburden aquifer is found in the alluvium and mine spoil material underlying the Site. The deeper bedrock aquifer underlying the Site is found in the Mauch Chunk formation. Although the bedrock aquifer is not used at the Site and has been demonstrated to be unaffected by the Site (see below), this aquifer is a current source of drinking water. The Lansford Coaldale Water Authority supplies drinking water from the bedrock aquifer to approximately 20,000 residents in the area. EPA is unaware of private domestic wells in-use near the Site. The direction of ground water flow in the bedrock aquifer is generally to the east.

FIVE-YEAR REVIEW SUMMARY FORM

		SITE IDI	ENTIFICATION		
Site Name: Tonolli	Corporatio	n Superfu	nd Site		
EPA ID: PAD07	3613663				
Region: 3	State: PA		City/County: Nesquehoning/Ca	rbon	
		SIT	E STATUS		
NPL Status: Final				1	
Multiple OUs?		Has the s	ite achieved construction complete	tion?	
		RFVI	EW STATUS		
Lead agency: EPA	*				
Author name (Federal	or State Pr	oject Man	ager): Mitch Cron	·	
Author affiliation: EPA Remedial Project Manager					
Review period: 8/29/20	Review period: 8/29/2017 - 3/30/2018				
Date of site inspection:	8/29/2017			·, · · · · · · · · · · · · · · · · · ·	
Type of review: Statuto	ry				
Review number: 4					
Triggering action date: 6/10/2013					
Due date (five years after triggering action date): 6/10/2018					

II. RESPONSE ACTION SUMMARY

Basis for Taking Action

The Site operated as a secondary lead smelter and lead-acid battery recycling facility between August 1974 and January 1986. The operations at the Site included the storage, breaking, processing and smelting of spent batteries, battery components, and other lead-bearing materials.

On September 19, 1989, 46 potentially responsible parties (PRPs) entered into an Administrative Order on Consent (AOC) with EPA to conduct the Remedial Investigation/Feasibility Study (RI/FS). The results of the RI/FS indicated that lead was the most abundant, widespread, and concentrated contaminant of concern present on the Site.

Response Actions

Between February and August of 1987, EPA completed three site assessment and sampling activities. In 1989, EPA completed removal actions involving the excavation, treatment and disposal of liquids and sludges in a lagoon, treatment and disposal of liquids from a 500,000-gallon storage tank, construction of a storm water collection and treatment system, and repair of the fence to limit Site access. On December 17, 1991, EPA issued a Unilateral Administrative Order (UAO) to the 46 PRPs requiring them to operate and maintain an on-Site storm water treatment system. On February 22, 1996, EPA signed an AOC with a group of PRPs to begin removing battery chips and other reclaimable wastes from the Site for off-Site recycling.

The remedy for the Site is contained in a Record of Decision (ROD) issued in September 1992 and five Explanations of Significant Differences (ESDs): issued in 1993, 1997, 1999, 2005 and 2014. The remedy consists of the following:

- off-Site transport and treatment of battery wastes by resource recovery at a secondary lead reclamation facility;
- excavation of all soils with greater than 1,000 parts per million of lead from on-Site areas and 500 parts per million of lead in off-Site residential areas;
- on-Site stabilization of all soils with greater than 10,000 parts per million of lead;
- consolidation of lead contaminated soil at the Site in the landfill and closure of the landfill;
- cleanup of contaminated sediment in the Nesquehoning Creek;
- treatment of landfill leachate;
- treatment of contaminated overburden ground water with a limestone trench;
- decontamination of the on-Site buildings;
- addressing USTs; and
- establishing institutional controls at the Site.

The 1992 ROD stated that the cleanup level for lead in on-Site soils was 1,000 parts per million (ppm). Additionally, the ROD also stated that a cleanup objective for the remedy was to prevent exposure of residents to soils with a lead concentration greater than 500 ppm. The ground water remediation performance standards (ground water remediation standards) at the Site are antimony at 6 parts per billion (ppb), arsenic at 10 ppb, cadmium at 5 ppb, and lead at 5 ppb.

The five ESDs revised the remedy in the following ways:

The ESD in December 1993 revised the design criteria to meet the Pennsylvania hazardous and residual waste regulations for landfills and to clarify technical matters.

The ESD on January 7, 1997 addressed the distance between the ground water table and the landfill liner. The minimum distance of four feet required by Pennsylvania code was not always present between the sub-base of the landfill and the seasonal high-water table. EPA determined that an equivalent standard of performance had been met, however, the Pennsylvania Department of Environmental Protection (PADEP) did not concur.

The ESD in March 12, 1999 clarified the following: 1) to demolish and remove the former smelter building's concrete walls and foundations; 2) to excavate an increased volume of lead contaminated soils; 3) to expand the landfill to accommodate an increased volume of soil; 4) to pump and treat an increased

volume of landfill leachate; 5) to bioremediate petroleum-contaminated soil; and 5) to modify the final grading plan for the Site.

The ESD in March 24, 2005 changed the ground water remediation standards to Maximum Contaminant Levels (MCLs) for antimony, arsenic and cadmium; and the Pennsylvania Act 2 Medium Specific Concentration for lead.

The ESD on September 8, 2014 established and clarified the land and ground water use restrictions at the Site.

The remedial action objectives (RAOs) outlined in the ROD for the cleanup of the Site were to:

- Prevent exposure (inhalation, ingestion) to on-Site waste piles (byproduct materials, dust, contaminated buildings) and soils having a lead concentration greater than 1,000 parts per million.
- Prevent direct contact with battery casing piles and sump sediments having lead concentrations greater than 1,000 parts per million.
- Prevent direct contact with landfill contents and reduce the potential for leachate leakage.
- Prevent exposure of residents to soils situated to the immediate west of the Tonolli property boundary having a lead concentration greater than 500 parts per million.
- Reduce concentrations of contaminants present in the overburden aquifer to background levels and prevent the migration of contaminants to the bedrock aquifer.
- Prevent migration of contaminated storm water to off-Site areas, specifically Nesquehoning Creek, in excess of discharge limits established under the NPDES program.
- Prevent migration of contaminants that would result in sediment contamination in excess of cleanup levels for lead, arsenic, and cadmium, copper and zinc. Appropriate cleanup levels were to be determined by the performance of sediment bio-assays.
- Prevent exposure to surface water, ground water, runoff and leachate containing Site contaminants above health-based standards.

Status of Implementation

EPA approved the final Remedial Design (RD) for the Site on February 20, 1998. EPA and the Pennsylvania Department of Environmental Protection (PADEP) entered into a CD with a group of the PRPs on May 7, 1998.

Construction activities included the decontamination, demolition, and asbestos abatement of the former smelter and crusher buildings, operational buildings and tanks. Fourteen buildings and all aboveground structures were demolished. The office building was decontaminated and is suitable for reuse.

Excavated soil and debris were consolidated into the landfill including: soil containing lead concentrations above 1,000 ppm; soil and wastes containing lead concentrations above 10,000 ppm; soil from residential areas containing lead concentrations above 500 ppm; sediment from Nesquehoning Creek with lead concentrations above 300 ppm; treated sludge and lagoon soils; drums of melted plastic, and the concrete walls and foundations from the demolished buildings.

Excavations in residential areas were backfilled with topsoil, seeded, and restored to original condition. Excavations at the Tonolli property were backfilled with lime amended culm, re-graded, and covered with six inches of topsoil and seeded. The landfill was closed in accordance with Resource Conservation and Recovery Act (RCRA) closure regulations for hazardous waste landfills. A fence was constructed around the Tonolli property to restrict access.

An UST collects leachate from the landfill which is periodically transported to an off-Site facility for treatment and disposal.

A limestone trench was constructed to treat the overburden ground water. The trench was constructed parallel to the Nesquehoning Creek. Monitoring wells on the upgradient and downgradient sides of the trench monitor the quality of the ground water before it discharges to the Nesquehoning Creek.

EPA signed the Preliminary Close-Out Report (PCOR) on December 13, 1999 to document the completion of construction.

Institutional Controls

The Site consists of three primary parcels.

Table 1: Parcel Numbers

Parcel Number	Parcel acreage	Current Owner	History/Notes
122-44-A8.01	19.937	NSC Corporation	This parcel was purchased by NSC
			Corporation on January 6, 2003. This parcel
			lies on the north side of Nesquehoning
	1.		Creek and consists of level ground, an office
			building, and the westernmost portion of the landfill.
122-44-A8.02	Approximately	A private citizen	This parcel consists primarily of the landfill.
	11 acres		
122B-44-B2.02	0.284	Kovatch	This parcel was purchased by Kovatch
		Enterprises, Inc.	Enterprises, Inc. on April 22, 2003. This
			small parcel lies on the south side of
			Nesquehoning Creek.

In addition, survey mapping work performed in 2012 to support implementation of institutional controls (ICs) at the Site revealed that a portion of the Site landfill extends eastward on to a fourth and fifth parcel, Parcel Number 114-44-A5.10, and 122-44-A8, which are owned by Kovatch Enterprises, Inc. The ICs were implemented in 2016 through Environmental Covenants as summarized in Table 2. The Environmental Covenants address prohibited land uses at the Site, prohibited activities on the landfill cap, and restrictions on ground water use.

Figure 3 identifies the Site parcels and Figure 4 depicts the parcels of land overlaid with the boundaries of the landfill.

Table 2: Summary of Implemented ICs

Media, engineered controls, and areas that do not support UU/UE based on current conditions	ICs Needed	ICs Called for in the Decision Docume nts	Impacted Parcel(s)	IC Objective	Title of IC Instrument Implemented and Date (or planned)
			122 - 44- A8 .01	Land use restrictions for entire Site	
land use (soil), ground water, and constructed landfill cap	and Yes Yes		122-44-A8.02	Ground water use	Environmental Covenants
		122-44- A8	restriction within ground water use restriction area	Various dates	
		114-44-A5.10		in 2016	
			122B-44-B2.02	Restriction of activities on landfill cap	

Systems Operations/Operation & Maintenance

The PRPs perform the majority of the operation and maintenance (O&M) activities in accordance with the O&M Plan, dated February 2002, which include: operation and maintenance of the leachate collection and storage system that includes the UST; periodic inspections of the landfill cap, the leachate collection system, and the fence; ground water monitoring; and disposal of landfill leachate from the UST to a disposal facility. The owner of the parcel of the Site that includes most of the landfill (designated as parcel 122-44-A8.02) mows the grass on this parcel.

The PRPs indicated that during the 2013 to 2018 annual costs for O&M activities were approximately \$115,000.

Ground Water Monitoring

The PRPs perform ground water sampling, analysis and reporting activities at the Site in accordance with the Long-Term Ground Water Monitoring Plan dated January 2001, revised May 2001. The objectives of the long-term ground water monitoring program at the Site are to:

- 1. Perform Site-wide ground water monitoring to determine if the ground water contaminant levels have reached the performance standards for the contaminants in the overburden aquifer.
- 2. Perform post-closure monitoring associated with the landfill by collecting ground water samples from one upgradient monitoring well and three downgradient wells in accordance with 25 PA Code Chapter 264.1, Subchapter F.
- 3. Monitor the effectiveness of the permeable limestone trench by monitoring the shallow ground water quality of both the upgradient and downgradient sides of the trench.
- 4. Monitor ground water quality in the bedrock aquifer beneath the Site.

III. PROGRESS SINCE THE LAST REVIEW

This section includes the protectiveness determinations and statements from the last FYR.

Table 3: Protectiveness Determinations/Statements from the 2013 FYR

OU #	Protectiveness Determination	Protectiveness Statement
Site wide	Protective	The remedy at the Site currently protects human health and the environment because: Contaminated soil and waste have been contained in the landfill or were disposed of off-Site. The vegetated landfill cover prevents contact between receptors and the buried waste. The Site fence prevents trespassers from entering the Site. Review of the ground water monitoring results reveals that Site contaminants of concern were not identified in the bedrock aquifer at concentrations that exceed performance standards. The bedrock aquifer that lies beneath the Site has been identified as a potential source of drinking water. Review of the ground water monitoring results reveal that Site contaminants of concern (antimony, arsenic, cadmium, and lead) were identified in the overburden aquifer at concentrations that exceed performance standards. However, the overburden aquifer that lies beneath the Site is not used as source of drinking water. EPA policy relevant to the performance standard for lead in residential soil has been revised since the ROD was issued in 1992. This revision lowered the protective limit for lead in residential soil to 400 parts per million, based on the most current toxicity data. EPA review of soil sampling results indicates that the lead in soil concentrations that remain in residential areas to the southwest of the Site meet the current screening level (400 parts per million). Therefore, as implemented, the remedy is protective of human health with regard to the excavation of lead-contaminated soil from residential areas located to the southwest of the Site. Surface water and sediment data collected in the Nesquehoning Creek did not indicate that an unacceptable risk to the environment was being caused by seepage of contaminated ground water into the Nesquehoning Creek.
		However, in order for the remedy to be protective in the long-term, the following actions need to be taken to ensure long-term protectiveness: • As required by the ROD, institutional controls must be established at the Site. • Continue ground water monitoring and ground water contamination trend analysis to evaluate progress toward ground water cleanup.

Table 4: Status of Recommendations from the 2013 FYR

OU#	Issue	Recommendations	Current Status	Current Implementation Status Description	Completion Date (if applicable)
00	ICs have not been implemented	Implement ICs	Completed	ICs have been implemented through environmental covenants	11/23/2016
00	Ground water contamination present in overburden aquifer	Continue monitoring and evaluation of progress toward cleanup	Completed	Monitoring and evaluation of ground water contamination are on-going	01/18/2018

IV. FIVE-YEAR REVIEW PROCESS

Community Notification, Involvement & Site Interviews

EPA notified the PRPs and PADEP about the start of the Review in August 2017. A public notice was published in the Times-News on January 5, 2018 stating that the FYR was underway and inviting the public to submit comments to EPA.

During the FYR, EPA spoke with two residents who live adjacent to the Site; an official with the Borough of Nesquehoning; a project coordinator for the PRPs; and a project officer for PADEP. The interviewees did not identify specific concerns. PADEP commented on the cleanup progress in the shallow aquifer and suggested sediment sampling in the Nesquehoning Creek to verify protectiveness.

This Five-Year Review report will be made available online (https://www.epa.gov/superfund/search-superfund-five-year-reviews) and at the following information repositories:

EPA Administrative Records Room, Attention: Administrative Coordinator 1650 Arch Street Philadelphia, PA (215) 814-3157

Borough of Nesquehoning 114 W. Catawissa Street Nesquehoning, PA 18240

Data Review

Review of Ground Water Data

EPA reviewed ground water monitoring data reported during 2013-2018. The monitoring network consists of nine shallow monitoring wells in the overburden aquifer and five deep monitoring wells in the bedrock aquifer. The monitoring wells are depicted in Figure 2.

Table 5: List of monitoring wells

Shallow monitoring wells	Deep monitoring wells
MW-11SR	MW-11DR
MW-12SR	
MW-13SR	_
MW-14SR	MW-14DR
MW-15S	MW-15D
MW-16SR	MW-16DR
MW-17SR	MW-17D
MW-20S	
MW-21S	

Tabular ground water monitoring data and contaminant concentration versus time graphs for ground water monitoring wells are included in Appendix D.

Review of the ground water monitoring data collected between 2013 and 2018 reveals the following:

- Ground water contaminants of concern (COCs) were not detected above ground water remediation standards in the following bedrock monitoring wells: MW-11DR; MW-12SR; MW-14DR; MW-15D; MW-16DR.
- Ground water COCs were not detected above ground water remediation standards in the following overburden monitoring wells: MW-17SR; MW-17D; MW-20S
- Ground water COCs were detected above ground water remediation standards in the following overburden monitoring wells:

Table 6: Summary of ground water monitoring results

Monitoring well	Contaminant	2013-2018 concentration	Ground water remediation standard	Contaminant trend
MW-11SR	cadmium	5-10 ppb	5 ppb	Declining
MW-13SR	cadmium	6-17 ppb	5 ppb	Declining
MW-14SR	antimony	8-21 ppb	6 ppb	Declining
MW-14SR	arsenic	16-57 ppb	10 ppb	Static or slightly increasing
MW-15S	arsenic	11-86 ppb	10 ppb	static
MW-16SR	cadmium	6-12 ppb	5 ppb	declining
MW-21S	cadmium	13-15 ppb	5 ppb	static

Based on this data, a plume of ground water contamination, consisting of metals such as cadmium, antimony, and arsenic, is present in the overburden aquifer downgradient of the landfill, and to the west of the landfill in the formerly industrial portion of the Site. The deeper bedrock aquifer, which is used as a source of drinking water, does not exhibit COCs above ground water remediation standards.

EPA notes that during the 2013 to 2018 FYR period, EPA implemented ICs at the Site which prohibit the installation of wells and use of contaminated ground water for potable purposes. EPA also notes that the limestone trench located to the south of the landfill does not appear to significantly reduce ground water COC concentrations as shallow contaminated ground water passes through the trench en route to the Nesquehoning Creek, as evidenced by a comparison of monitoring wells MW-13SR (immediately upgradient of trench) and MW-21S (immediately downgradient of trench). During the FYR period both wells consistently exhibited cadmium concentrations above the ground water remediation standard of 5 ppb (see above). Ground water monitoring at the Site will continue to verify the extent of the ground water contamination plume, and to evaluate progress toward achieving ground water remediation standards.

Review of Surface Water and Pore Water Results

In August 2017, the PRP sampled the surface water and pore water in the Nesquehoning Creek. Pore water is water located between the grains of sediment. Surface water and pore water samples were

collected to determine if contaminated ground water at the Site is discharging to the Nesquehoning Creek at concentrations that could pose an unacceptable risk to human health and the environment. The sampling results of the surface water and pore water did not indicate the presence of significant levels of contaminants. The surface water and pore water results are included as Appendix E. Sampling of the surface water and pore water will continue to verify that Nesquehoning Creek is not impacted by the discharge of ground water into the Creek will continue.

Site Inspection

A Site inspection was performed on August 29, 2017 by EPA and PADEP representatives and representatives from the PRP group. The purpose of the inspection was to assess the protectiveness of the remedy, including the presence of a fence with a locked gate to restrict access, the integrity of the cap, and the condition of the landfill leachate collection system. The vegetative cover on the landfill cap appeared properly established, and erosion was not evident. The Site fence was in satisfactory condition. A shed was constructed on the Site by the PRPs to provide shelter for the leachate collection monitoring system. The shed and electrical components of the leachate collection system were in satisfactory condition during the Site inspection.

During the FYR period (2013-2018) one parcel of land comprising most of the landfill was purchased by a private citizen. The parcel of land is identified as tax parcel number: 122-44-A8.02. During and subsequent to the FYR inspection EPA determined that the private citizen had placed several camping tents on this parcel of land, which is part of the Site. The tents were not located on the landfill cap. EPA notified the owner that overnight camping is inconsistent with the land use restrictions in the 2014 ESD as well as in the Environmental Covenant which was entered into by EPA and the private citizen. Specifically, Section 4 of the Environmental Covenant states, "...The Property shall not be developed or used for any residential purposes.... or outdoor recreational areas..." During the performance of the FYR the private citizen agreed to remove the camping tents during the 2018 calendar year. In addition, the private citizen has informed EPA that he intends to construct a shed on this parcel to store lawn mowing equipment, and to place a trailer to store personal effects that he will use during his grass mowing. The private citizen performs certain O&M activities on-Site, primarily grass mowing on this parcel.

A summary of leachate generation in the landfill is included in Appendix F. Generally, leachate generation has decreased since the landfill was capped. Recently, landfill leachate generation has increased. This recent increase is being evaluated by the PRPs to determine if follow-up action is necessary.

V. TECHNICAL ASSESSMENT

QUESTION A: Is the remedy functioning as intended by the decision documents?

Yes. Based on a review of decision documents, including the ROD, ESDs and PCOR, O&M documents, ground water and surface water monitoring results, results of interviews, and the Site inspection, the remedy is functioning as intended.

The RAOs are being achieved. Contaminated soil and waste from the Site is contained within the landfill, and the landfill cap was observed to be in good condition. Battery casing waste from the Site was

recycled at an off-Site location. The landfill cap minimizes rainfall infiltration into the landfill and the generation of landfill leachate, although recently an increase in leachate has been observed. The PRPs are evaluating the increase in leachate to determine if follow-up action is needed to further reduce infiltration of precipitation into the landfill. Landfill leachate is collected in an UST and periodically transported off-Site for disposal. Soil cleanup performed in the residential area was re-evaluated during this FYR and confirmed to be protective of human health and the environment. Migration of ground water contaminants to the bedrock aquifer has not occurred as demonstrated by ground water sampling of bedrock monitoring wells, and ground water contamination levels in most monitoring wells in the overburden aquifer exhibit a decreasing trend. Ground water monitoring of the bedrock and overburden aquifer will continue to evaluate the progress of the ground water cleanup. Surface water and pore water samples collected from Nesquehoning Creek, which lies immediately to the south of the landfill, did not reveal a significant Site impact, and future sampling of Nesquehoning Creek will continue.

Institutional controls were implemented in 2016 through Environmental Covenants for the Site to prohibit land uses at the Site, protect the landfill cap, and restrict use of ground water use.

QUESTION B: Are the exposure assumptions, toxicity data, cleanup levels, and remedial action objectives used at the time of the remedy selection still valid?

Yes, the cleanup levels and RAOs are still considered valid. The MCLs and MSC used for ground water remediation standards are still valid. The activities to achieve RAOs are discussed in Question A above. Further evaluation of lead in soil is included below.

Lead in residential soil

EPA verified that the soil cleanup to address lead at residential properties adjacent to the Tonolli property remains protective of human health.

The ROD established a residential soil cleanup value for lead of 500 ppm. This lead cleanup value was based on Office of Solid Waste and Emergency Response (OSWER) Directive 9355.4-02 dated September 1989.

On December 22, 2016, EPA's Office of Land and Emergency Management (previously known as OSWER) issued the memorandum titled, <u>Updated Scientific Considerations for Lead in Soil Cleanups</u>. This memorandum highlights several updated factors to assist in evaluating lead exposure at Superfund sites.

EPA re-evaluated soil lead levels at three properties (two residential and one consisting of wooded vacant property) located adjacent to the Site. The average post-excavation and post-remediation lead concentrations in soil at these properties upon completion of remedial activities were significantly lower than EPA's 500 ppm cleanup standard for off-site residential properties. (Refer to the table below.) Further, a subsequent risk evaluation of the residual lead concentrations at these properties revealed predicted blood-lead levels of less than 4 microgram per deciliter (ug/dL), based on the IEUBK Model. Version 2.0, build 1.

Property	Average Post-Excavation Lead Concentrations in Soil *	Average Post-Remediation Lead Concentrations in Soil **
residential property	135 ppm	69 ppm
residential property	91 ppm	72 ppm
non-residential property	104 ppm	96 ppm

^{*}The average lead concentrations represent the levels that remained in place upon completion of soil excavation activities and *prior* to backfilling the excavated areas with topsoil.

QUESTION C: Has any **other** information come to light that could call into question the protectiveness of the remedy?

No. The remedy continues to be protective of human health and the environment.

VI. ISSUES/RECOMMENDATIONS

Issues and Recommendations Identified in the Five-Year Review:

No significant issues regarding the protectiveness of the remedy were revealed during the Five-Year Review.

VII. PROTECTIVENESS STATEMENT

Site w	e Protectiveness Statement
Protectiveness Determination: Protective	Planned Addendum Completion Date:
·	$\epsilon_{\rm c}$ Click here to enter a date

Protectiveness Statement:

The Site's remedy is protective of human health and the environment. Contaminated soil and waste from the Site have been consolidated in the landfill. Battery casing wastes have been recycled at an off-Site facility. The landfill has been closed and capped, which prevents exposure to contaminated soil and waste, and reduces infiltration of rainwater into the landfill and the generation of landfill leachate. Soil cleanup in residential areas is complete and has been verified as protective of human health. Ground water in the bedrock aquifer has not been impacted by the Site; and contaminated ground water in the

^{**}The average post-remediation lead concentrations represent the levels that remained in place upon completion of soil excavation and backfilling with clean topsoil.

overburden aquifer continues to be monitored and progress toward the achievement of ground water remediation standards continues to be evaluated. Institutional controls have been established to limit land use, to prevent damage to the landfill, and to restrict ground water use. Sampling and analysis in Nesquehoning Creek did not reveal unacceptable risk.

Government Performance and Results Act (GPRA) Measure Review

As part of this FYR the GPRA Measures have also been reviewed. The GPRA Measures and their status are provided as follows:

Human Health: HEPR - Current Human Exposure Controlled and Protective Remedy in Place Ground water Migration: GMUC - Contaminated Ground Water Migration Under Control

Site-wide Ready for Anticipated Use (SWRAU): The Site achieved Site-wide RAU on January 24, 2017.

VIII. NEXT REVIEW

The next FYR will be completed no later than five years after the signature date of this FYR report.

APPENDIX A – REFERENCE LIST

- PRP Contractor. 2017. Ground Water Monitoring Report October 2017 Semi-Annual Sampling Event and 2017 Annual Summary
- PRP Contractor. 2017. Results of Surface Water and Pore Water Sampling of Nesquehoning Creek.
- U.S. Environmental Protection Agency (EPA). 1992. Record of Decision, Tonolli Corporation Superfund Site.
- U.S. EPA. 1995. Explanation of Significant Differences #1 (ESD #1), Tonolli Corporation Superfund Site.
- U.S. EPA. 1997. ESD #2, Tonolli Corporation Superfund Site.
- U.S. EPA. 1998. ESD #3, Tonolli Corporation Superfund Site.
- U.S. EPA. 1999. Preliminary Close Out Report, Tonolli Corporation Superfund Site.
- U.S. EPA. 2005. ESD #4, Tonolli Corporation Superfund Site.
- U.S. EPA. 2014. ESD #5, Tonolli Corporation Superfund Site.

APPENDIX B - CHRONOLOGY OF SITE EVENTS

Date	Event
Early 1920's to 1972	Site used as a disposal area for coal mine spoils and incinerator ash from a nearby Pennsylvania Power and Light (PP&L) power generating station.
1972	Tonolli Corporation (Tonolli) purchased a portion of the Site.
1974 to ~1985	Tonolli operated a lead-acid battery recycling and secondary lead reclamation facility at the Site.
Late 1985	Tonolli filed for bankruptcy and abandoned the Site.
May to December, 1989	EPA performed Removal Response actions at the Site to stabilize Site conditions.
September 19, 1989	46 Potentially Responsible Parties (PRPs) entered into an Administrative Order on Consent (AOC) with EPA to perform the Remedial Investigation/Feasibility Study (RI/FS) for the Site.
October 1989	Site was placed on the National Priorities List (NPL) by EPA.
September 3, 1991	PRPs submitted the Remedial Investigation to EPA.
December 17, 1991	EPA issued a Unilateral Administrative Order (UAO) to a group of PRPs for operating and maintaining the on-Site storm water treatment system.
January 1992	PRPs submitted the FS to EPA.
July 1992	EPA entered into a de minims settlement with 170 PRPs.
September 30, 1992	EPA issued the Record of Decision (ROD) for the Site.
September 30, 1993	EPA issued an AOC to the PRPs for the performance of a Remedial Design (RD).
April 20, 1994	EPA entered into a second de minimis settlement with an additional 31 PRPs.
February 1995	EPA issued the Explanation of Significant Differences (ESD) #1 in response to Pennsylvania Department of Environmental Resources (PADER) comments regarding the applicability of Pennsylvania hazardous and residual waste regulations to the remedy.
February 1996	EPA signed an AOC with a group of PRPs for removal of battery case materials and other reclaimable wastes from the Site for off-Site recycling.

January 7, 1997	EPA issued ESD #2 to address the isolation distance between the ground water table and the landfill liner.
February 20, 1998	EPA approved the Final RD.
March 4, 1998	EPA and the Commonwealth of Pennsylvania entered into a Consent Decree (CD) with a group of PRPs. The CD was lodged with the United States District Court for the Middle District of Pennsylvania on March 4, 1998 and entered by the Court on May 7, 1998.
April 20, 1998	Construction of the Remedy outlined in the ROD and subsequent ESDs began.
March 12, 1999	EPA issued ESD #3, expanding the scope of the remedial action (described further below)
November 29, 1999	The pre-final inspection of the Site was performed by representatives of EPA, the United States Army Corps of Engineers (USACE), which performed oversight for EPA, ENTACT (construction contractor), the PRPS, and the Pennsylvania Department of Environmental Protection (PADEP).
December 13, 1999	Preliminary Close-Out Report signed.
August 2001	Leed Environmental provided EPA with the Interim Remedial Action Report for the Site.
July 8, 2003	EPA issued first Five-Year Review report
March 24, 2005	EPA issued ESD #4 for the Site, changing the ground water remediation performance standards.
June 11, 2008	EPA issued second Five-Year Review report
June 10, 2013	EPA issued third Five Year Review report
September 8, 2014	EPA issued ESD #5, detailing institutional controls for the Site

APPENDIX C – CONTAMINANTS OF CONCERN

Soil:

Primarily lead

Ground water:

Lead (identified in ROD)

Cadmium (identified in ROD)

Arsenic (identified in ROD)

Antimony (added to ground water monitoring plan due to concentrations in landfill leachate)

APPENDIX D – GROUND WATER MONITORING DATA/GRAPHS

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-11SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location		F-7		N.	W-11	SR	N.	4W-11	SR	N.	1W-11	SR	M	1W-11	SR		1W-11	
Sample Date	SDWA	PA Act 2			/13/20		5	/24/20	01	0.00	9/6/200	01	1	1/21/20	001	2	/27/20	
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	IQI	MDL
Total Metals	7 0	3 8	- B-	S 2	-	F F		38.5	B B	4. 9.		2. 2.			1		1	0.0004
Antimony	0.006		mg/l	0.0011	J	0.00076		U	0.0024		U	0.0024		U	0.0024	2	U	0.0024
Arsenic	0.012		mg/l	0.0014	3	0.0012		UJ	0.0014		U	0.0014		U	0.0014		U	0.0014
Cadmium	0.005		mg/l	0.0168		0.0036	0.012	U	0.00064	0.0181	U	0.00064	0.0189	3	0.00064	0.0201		0.00064
Lead	0.005	0.005	mg/I	0.0078		0.0019		U	0.0018		U	0.0018		UJ	0.0018		U	0.0018
Dissolved Metals	- 1	1 N	2 1		23		8 6	- 1	21 0	1	- 6		A.A.	1	8 18	8	3.	3.16
Antimony	0,006		mg/l		NA			NA			NA		4	NA			NA	
Arsenic	0.012		mg/l		NA			NA			NA			NA		1000	NA	
Cadmium	0.005		mg/l	0.0173		0.0036	0.0019	J	0.00064	0.0178		0.00064	0.0187		0.00064	0.0201		0.00094
Lead	0.005	0.005	mg/l	0.0051	J	0.0019		NA	200	-	NA			NA			NA	
Conventionals	8 3	1 6	- 8-	N 0	The same	1 1	1		101	4.3	1	1		8				- 8.
Sulfate ¹	250		mg/l	67		6	59		3	78	J	3	67		7.5	73		6

Sample Location	ana.	I		, I	4W-11	SR	N	W-11	SR	M	(W-11	SR		1W-11			4W-11	
Sample Date	SDWA	PA Act 2			/29/20	02	5	/28/20	03		5/6/200	04		5/4/20	05	5	/19/20	
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	8 9	2 2	. B.	E. L	A.	1 1	2 2	8.	5 5	1. R.	B.	1			6 B 1	- E -	1	
Antimony	0.006		mg/l		U	0.00096	1	UJ	0.0025		UJ	0.001	0.00046	U	0.00009		U	0.000038
Arsenic	0.012		mg/l		U	0.0014		UJ	0.0014		UJ	0.00085	1.70	U	0.00066		U	0.00033
Cadmium	0.005		mg/l	0.024	1	0.00094	0.0153		0.00087	0,0111		0.00076	0.0089		0.000087	0.016		0.000099
Lead	0.003	0.005	mg/l	0.0025	1	0.0012		UJ	0.0012		U	0.00099	0.00094	U	0.00021	0.00085	U	0.000047
Dissolved Metals	- 1	0.000	1 1	9. 1	100	0 0	7 1	. 1	5 5	3 8	- 1	1 1	1.1	L	3 3	3 3	夏	1 1
Antimony	0.006		mg/l		NA	- 6 4	100	NA			NA			NA		1	NA	
Arsenic	0.012	1	mg/l		NA	1000	The same	NA		1 - 1	NA			NA			NA	
Cadmium	0.005		mg/l	0.023		0.00094	0.0157		0.00087	0.0116		0.00076	0.0089		0.000087	0.0155		0.000099
Lead	0,000	0.005	mg/l		NA		3.000	NA			NA			NA			NA	
Conventionals	1 1	2 5	- 5	8 8	180	E I	8 8	1	1. 1	1 1	ž.,	1 6	- 8	B		0.1		0.00
Sulfate ¹	250	,	mg/l	78		6	126		6	74		3	95.4		6	78.3		6

Sample Location	onw.			N	(W-11	SR	N	4W-11	SR	l N	1W-11	SR		(W-11			1W-11	
Sample Date	SDWA	PA Act 2		5	/16/20	007	5	/22/20	08	5	/13/20	09	5	/25/20	10	5	/25/20	011
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	2. 2	R. &	. 8.	100	8.			8.,	4 . 6		8	Ru Au	- 9 -	ill.		2.02.1		San Park
Antimony	0.006	2000	mg/l		U	0.000044		U	0.0003	75.7	U	0.0003		U	0.0003		U	0.0003
Arsenic	0.012		mg/l		U	0.0007		U	0.00095	10000	U	0.00095		U	0.00095		U	0.00095
Cadmium	0.005		mg/l	0.0083	U	0.000099	0.0087		0.00021	0.0123		0.00021	0.0069		0.0002	0.0081		0.0002
Lead	0,000	0.005	mg/l	0.00066	J	0.000037	0.002		0.00005	0.00081	J	0.00005	0.00074	J	0.00005	0.0014	J	0.000052
Dissolved Metals	1		H _ 0	- 1 - 1		W N	0 0		. 1 . 1	1 1	. 8	1 1	是一里	38.	- B - B	1 1	1	W W
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA			NA	1000		NA		4	NA	Tro-	1	NA	
Cadmium	0.005	1.5	mg/l		NA		0.0093		0.00021	0.0128		0.0002	0.0068		0.0002	0.0085		0.0002
Lead	130.33	0.005	mg/l	E3=000	NA			NA		A. Committee	NA			NA			NA	
Conventionals	9 8.	JA _ 6	_ 80	To the	18.	$R = R_{\infty}$	B_ L_	E.	1 1	R. B.	1	8. 8.	100	R.	1. 1.	18-	100	1 1
Sulfate ¹	250		mg/I	65		10	70.9		1.5	71.1	J	1.5	54		6	98.1	J	3

Sample Location	and the same of	50.00		N	(W-11	SR	M	W-11	SR	N.	1W-11	SR	N	1W-11	SR		1W-11	
Sample Date	SDWA	PA Act 2		5	/21/20	12	4	/22/20	13	4	/22/20	14	4	/22/20		5	/23/20	
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	2	2 5 2 5	- E	B B	3 4	4	No. No.	25	Say Say	No. No.	8 76	C M C M	Sec. 5. 10.	N. St.	R W. C.		-	4 7 4
Antimony	0.006		mg/l		U	0.00042		U	0.00034		U	0.00034		U	0.00033		U	0.00033
Arsenic	0.012		mg/l		U	0.00095	0.00077	J	0.00042		U	0.00078		U	0.00082		U	0.00054
Cadmium	0.005		mg/l	0.0064		0.0002	0.0055	150	0.00023	0.0075		0.00023	0.0098	10	0.00017	0.0062		0.0002
Lead	Mont	0.005	mg/l	0.0021	100	0.00008	0.0015		0.000073	0.0016		0.000085	0.0024		0.000082	0.0011		0.000130
Dissolved Metals	U.B.	200	0 1	400	5	40.00	A	w 2	18.0	100	4	2 2	0.0	. 1	5 6	4 5	18.	3
Antimony	0.006		mg/I		NA		1	NA			NA			NA		pace.	NA	
Arsenic	0.012		mg/l	S could	NA			NA			NA			NA	(=		NA	
Cadmium	0.005		mg/l	0.0066		0.0002	0.0055		0.00012	0.0075		0.00023	0.0102		0.00017	0.0062		0.0002
Lead		0.005	mg/l		NA		5-0-0-	NA			NA		13/8	NA		000000000000000000000000000000000000000	NA	-240
Conventionals	4	4 1	a. W.,	E 95	A	200	E	0	5.0	4.4	2.0		200	0	E	man and	100	4.0
Sulfate ¹	250		mg/l	49.9		1.5	42.7		1.5	42.9		1.5	51.8		1.5	41.2		1.5

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated

Q - Qualifier, MDL - Nethod detection limit, or Fiot detection and production of the metal concentration exceeded Performance Standards.

1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-11SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2	. (3.5)	1	MW-11	SR
Sample Date	MCL	MSC	1	STATE OF STATE	5/24/20	17
Parameter	MCL	MSC	Units	Result	Q	MDL
Total Metals	B		384	B . B .		
Antimony	0.006		mg/l		U	0.00048
Arsenic	0.012		mg/l		U	0.00068
Cadmium	0.005	1 3 3 3 15	mg/l	0.0072		0.00019
Lead		0.005	mg/l	0.0007	J	0.00009
Dissolved Metals			1	3110 - 600		
Antimony	0.006		mg/l		NA	
Arsenic	0.012	0.8388	mg/l		NA	
Cadmium	0.005		mg/l	0.0078		0.00019
Lead		0.005	mg/l	250000	NA	
Conventionals			1			1 1
Sulfate ¹	250		mg/l	50.5	J	1.5

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-12SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location				N	1W-12	SR	N	4W-12	SR	N.	1W-12	SR	, N	IW-12	SR		1W-12	
Sample Date	SDWA	PA Act 2	U King	2	/13/20	01		5/24/20	01		9/6/200	01	1	1/21/20	001	2	/26/20	02
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals		B B	C 187	4.1	- 1		B - B	6.	200		8	A	1	100	8 8 4	- 8		3
Antimony	0.006	105	mg/l		U	0.00076		U	0.0024		U	0.0024		U	0.0024		U	0.0024
Arsenic	0.012		mg/l	0.0028	J	0.0012		UJ	0.0014	0.00	U	0.0014		U	0.0014	3500	U	0.0014
Cadmium	0.005		mg/l	0.0068	J	0.0036	0.0066	U	0.00064	0.0058	J	0.00064	0.0052	3	0.00064	0.0051	J	0.00064
Lead	-	0.005	mg/l	0.0058		0.0019		UJ	0.009		U	0.0018		UJ	0.0018		U	0.0018
Dissolved Metals	-1	- 8	1	100		10.16	6 3		- 11	1	-		3.7	1	8 8	8 8	18	18.73
Antimony	0.006		mg/l		NA			NA			NA		100	NA			NA	
Arsenic	0.012	U.S.	mg/l		NA			NA	1000		NA		Day of	NA		0.00	NA	
Cadmium	0.005		mg/l	0.0072	J	0.0036	0.006	3	0.00064	0.0057	J	0.00064	0.0052	1	0.00064	0.0056	3	0.00094
Lead		0.005	mg/l		UJ	0.0095	0.0024	J	0.0018		NA		000	NA			NA	
Conventionals	1 1	1 1	- 8:	18		B B				1 1	E		1 1		9			
Sulfate ¹	250		mg/l	780		75	700		50	660	1	3	520	(3)	75	420		30

Sample Location	CDWA	D4 4-12		- 1	1W-12	SR	N	4W-12	SR	N	1W-12	SR	N	MW-12	SR		1W-12	47.7
Sample Date	SDWA	PA Act 2	1	5	/30/20	02		9/4/20)2	1	1/25/20	002		5/28/20	03	1	1/25/20	003
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	\$ 5.5	8 8	0.000	E - 2	- 85	1			B B	B B	ALC:	S B	4 4	1		0.0	1	
Antimony	0.006		mg/l	0.0019	J	0.00096		U	0.00096	0.00096	U	0.00096	100	UJ	0.0025		U	0.0025
Arsenic	0.012		mg/l		U	0.0014	0.0047	U	0.0014	0.0018	UJ	0.0014		U	0.0014	0.0045	J	0.0014
Cadmium	0.005		mg/l	0.007	J	0.00094	0.0055	3	0.00094	0.0061	J	0.00094	0,0079	J	0.00087	0.0075		0.00087
Lead	50000	0.005	mg/l	0.002	J	0.0012	0.0016	J	0.0012		U	0.0012	3000	UJ	0.0012	0.0014	J	0.0012
Dissolved Metals	- E -	2020	8					331				9 1	3 3		1 1	8 8		
Antimony	0.006		mg/l		NA			NA			NA		Person	NA	100	N. Comment	NA	
Arsenic	0.012		mg/l		NA			NA			NA	5,000	2	NA	F-87-8	1000	NA	
Cadmium	0.005		mg/l	0.0075	J	0.00094	0.0051	J	0.00094	0.0057	J	0.00094	0.0085	J	0.00087	0.0085	J	0.00087
Lead	7.5	0.005	mg/l		NA			NA			NA			NA		1000	NA	
Conventionals	8 8	10.1	- 8	1 1	- IE	1.1	1 1	1	E- E-		100	1 10	8.	8	0. 6.			
Sulfate ¹	250		mg/l	570	0	38	580		30	620		30	857		75	1330		75

Sample Location	on me			N	4W-12	SR	N	1W-12	SR	l N	/W-12	SR	N	1W-12	SR	M	W-12	SR
Sample Date	SDWA	PA Act 2	100		5/6/200	14	1	1/23/20	004		5/3/20	05	1	1/22/2	005	5	/18/20	006
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	RL	Result	Q	MDL
Total Metals	8. 3.	B. B	a Ba	A. A.	180	F F	4, 4,	, N.	E . E .	F. F.	E.,	1.1.		E.	0 0 0	- 1-1		
Antimony	0.006	-	mg/l		UJ	0.001		UJ	0.01		U	0.00009	0.00016	U	0.000064	0.000066	J	0.000038
Arsenic	0.012		mg/l		UJ	0.00085	0.0013	J	0.00085		U	0.00066	0.00068	J	0.00066	0.0013	1	0.00033
Cadmium	0.005		mg/l	0.0069		0.00076	0.0051		0.00076	0.0043		0.000087	0.0047		0.000087	0.0043		0.000099
Lead		0.005	mg/l		UJ	0.00099		UJ	0.00099	0.00088	U	0.00021	0.00059	J	0.00018	0.0012	U	0.000047
Dissolved Metals	200	2 , 2 ,	B u		100		. 8 . 1	100	_ 8 _ 8	, F , S	_ A	_ R _ R	R . R	y 8	20 20	200	(5)	2 . 2
Antimony	0.006	-	mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l	-,00	NA			NA			NA		Edward.	NA			NA	
Cadmium	0.005		mg/l	0.0068		0.00076	0.0052		0.00076	0.0042		0.000087	0.0045		0.000087	0.0042		0.000099
Lead		0.005	mg/l		NA			NA			NA			NA			NA	
Conventionals	E . E	2.50.5	S. 85	W W.	, B	Parts.	E a F	2	ALC: N	Sa Sa	-	English Roy	No. Con	-	Fig. Say	450	-	45.0
Sulfate ¹	250		mg/l	1080		75	807		75	636		30	574		30	600		75

Sample Location	CO.III.4	24.4.2		N	IW-12	SR	N	IW-12	SR	N	4W-12	SR	N	1W-12	SR	N	fW-12	SR
Sample Date	SDWA	PA Act 2	1.5	11	1/21/2	006		/16/20	07	1	1/20/20	007	5	/21/20	08	11	1/24/20	008
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	100	1513	10 m	53.51	(5)	0.0	70 0	5.	70.00	4	5.5	The Tile	79.704	70	5 m 7 m		No.	12.00
Antimony	0.006		mg/l	0.00011	U	0.000038	0.00005	J	0.000044		U	0.000044		U	0.0003		U	0.0003
Arsenic	0.012		mg/l	0.00096	J	0.00067	0.001		0.0007	0.0011	J	0.0007	0.0026		0.00095		U	0.00095
Cadmium	0.005		mg/l	0.0039		0.000099	0.0035		0.000099	0.0029		0.000099	0.0028		0.00021	0.0021		0.00021
Lead	40.000	0.005	mg/l	0.0021	03	0.000047	0.00047	J	0.000037	0.0012		0.000047	0.0057		0.00005	0.00064	J	0.00005
Dissolved Metals	W . W	4 4 4 4	4.0	W. R. W.	54.	200	2 A 2 V	4.0		10.00	2.0	4.0	0 0	m 8	g 0 g 0			245
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA			NA			NA			NA			NA	
Cadmium	0.005		mg/l	0.0038		0.000099		NA			NA		1000	NA		0.0021		0.00021
Lead	120	0.005	mg/l		NA			NA			NA		0.0037	100	0.00005	1000	NA	
Conventionals	Rose B	g 5 g 8	25	Co Si	. 5.	9 0 0	59.53		200		54	Br. Br.	to the	Way.	Fig. Sec.	2 32	1	7.7
Sulfate ¹	250		mg/I	464	0.00	30	469		50	384		15	361		15	290	J	30

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

- a Antimony was reanalyzed at a lower reporting limit of 0.000090 mg/l and the results were below the detection limit.

 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-12SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2	1	1	MW-12	SR	N.	IW-12	SR	1	4W-12	SR		4W-12	SR	N	4W-12	SR
Sample Date	MCL	MSC			5/13/20	09	1	1/23/2	009		5/24/20	10	1	1/22/2	010	1	/25/20	11
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	0	MDL	Result	O	MDL
Total Metals	2 2	8 6		1 1	19.	E - E	6 B	8.			75		1 6	1	1 1			
Antimony	0.006		mg/l		U	0.0003	United.	U	0.0003		U	0.0003	-	U	0.0003		U	0.0003
Arsenic	0.012	882	mg/l	0.0014	J	0.00095	0.0011	1	0.00095		U	0.00095	0.0012	1	0.00095	0.0020	J	0.00095
Cadmium	0.005		mg/l	0.0031	100	0.00021	0.0023		0.0002	0.0023		0.0002	0.002		0.0002	0.0022		0.0002
Lead		0.005	mg/l	0.0012		0.00005	0.0011		0.00005	0.0031		0.00005	0.0063		0.000052	0.0025	1	0.000052
Dissolved Metals		99	1		8 7				9 1	7 7	- 12	THE RES	1 1	- 1	10.00	8 8	70	9 9
Antimony	0.006		mg/l		NA		0	NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA		JE ST	NA			NA		1	NA			NA	
Cadmium	0.005	100	mg/l		NA		8	NA			NA			NA			NA	
Lead		0.005	mg/l		NA			NA			NA		0.0056		0.000052		NA	
Conventionals	1.1	2. 1	- 8		. 8		1 1	18.	1-1-	1 1	8	1 1		9			100	
Sulfate ¹	250		mg/l	445	J	15	334		15	325		30	247		15	443	1	15

Sample Location	SDWA	PA Act 2		N	/W-12	SR	N	4W-12	SR	1	4W-12	SR	N	4W-12	SR	N	4W-12	SR
Sample Date	MCL	MSC	1	1	1/21/20	011		/21/20	12	1	1/19/20	012	4	/23/20	013	1	0/21/2	013
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	O	MDL	Result	0	MDL	Result	Tol	MDL
Total Metals	LI	E 1	- 8	1 1	- 8	1			F 0	100	8.	A E			8 8 1	. 16	100	DOM:
Antimony	0.006	AC - C.	mg/l		U	0.00042		U	0.00042	20 PC	U	0.00033	17-365	U	0.00034		U	0.00034
Arsenic	0.012		mg/l	0.0024		0.00095	Mr. 103	U	0.00095	0.0012	J	0.0004	0.0015	J	0.00042	0.0011	U	0.00042
Cadmium	0.005	"C Code	mg/l	0.0022		0.0002	0.0027		0.0002	0.0024		0.000082	0.0025		0.00023	0.0024		0.00023
Lead		0.005	mg/l	0.0024		0.00008	0.0022		0.00008	0.0016		0.000047	0.0053		0.000073	0.0030		0.000085
Dissolved Metals		1 1	8 7			1				-1-1	- 8	3 0	1 1	3	200	0 0		B . II
Antimony	0.006		mg/l		NA			NA			NA			NA	2		NA	
Arsenic	0.012		mg/l		NA			NA		La Co	NA			NA	£ 52.45	233	NA	
Cadmium	0.005		mg/l		NA		100	NA			NA			NA	Dame.		NA	
Lead		0.005	mg/l	3	NA			NA			NA		0.0037		0.000047	200	NA	
Conventionals	1 1		- 8-				B. B.	18	1 1	9. 1	B.	F		1				
Sulfate ¹	250	1000	mg/l	374	J	30	386		30	392		15	447		15	385		15

Sample Location	SDWA	PA Act 2		1	4W-12	SR	N.	4W-12	SR	N	4W-12	SR	N	1W-12	SR	l N	4W-12	SR
Sample Date	MCL	MSC		4	/22/20)14	1	0/22/2	014	4	1/23/20	15	10	0/19/2	015		/23/20	16
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	IOI	MDL	Result	0	MDL	Result	O	MDL
Total Metals	80.0	3 8 8	_ 8:	E_E	. 8	SE-Ro	E. E.	80	100	D. B.	18.	50.00	W 18	100	S 4			0.00
Antimony	0.006	55.50	mg/l		U	0.00034		U	0.00033	200	U	0.00033		U	0.00033	100	U	0.00033
Arsenic	0.012		mg/l	0.001	J	0.00078	0.0011	J	0.00082	0.0012	J	0.00082	1	U	0.00054	0.0014	1	0.00054
Cadmium	0.005		mg/l	0.0026		0.00023	0.0019		0.00017	0.002		0.00017	0.0016		0.00023	0.0019		0.0002
Lead	100-3	0.005	mg/I	0.0030		0.000085	0.0031		0.000082	0.0032		0.000082	0.00083	1	0.00013	0.00270		0.00013
Dissolved Metals		1215	3.00		0.00	2 2 2 2	1100	100	1 2	0 B - 1 B	- 10	2 2	1 0	- 8	11 11	1 1	TE.	
Antimony	0.006	375	mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA		FERRE	NA			NA			NA		1100	NA	
Cadmium	0.005		mg/l		NA			NA			NA		-	NA			NA	
Lead	Description of the second	0.005	mg/l	0.00	NA		No. of the last	NA		×	NA			NA			NA	
Conventionals	ALC: IE		- 60	8 8	-36	1	ALC:	187	1010	00 Ho	Thos	80102	1 1		R R			
Sulfate ¹	250	330	mg/l	387		15	300		15	339	13.	15	326	1	15	288		15

Sample Location	SDWA	PA Act 2		1	W-12	SR		иW-12	SR		4W-12	SR
Sample Date	MCL	MSC		1	0/10/20	016		5/24/20	17	-1	0/23/20	017
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	4.4		_ B.	A B	_ B.	100	2.2.	OF S	R	9.00	2	ALC: AL
Antimony	0.006	-5-5-	mg/l		U	0.00048		U	0.00048		U	0.00045
Arsenic	0.012		mg/l	0.0015	1	0.00068	0.0011	J	0.00068	0.5	U	0.00072
Cadmium	0.005		mg/l	0.0015		0.00019	0.0019	100	0.00019	0.0012	100	0.00015
Lead		0.005	mg/l	0.003	133	0.00009	0.0013		0.00009	0.0014		0.00011
Dissolved Metals	216	ROES.			E ::-1		100			_ B _ B	. 3	
Antimony	0.006		mg/l		NA		18000	NA		3	NA	
Arsenic	0.012	25.	mg/l		NA			NA			NA	
Cadmium	0.005		mg/l		NA			NA			NA	
Lead		0.005	mg/l	-33	NA	-0-000	Hoc S	NA			NA	-30-00C-
Conventionals	To all	, E . E		U_ U	. 1		E.E.	, E.	P	1. B.	P.,	R. E.
Sulfate ¹	250	F 5 1 5 5	mg/l	257	150	15	255	J	6	212		6

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated

- Q Qualither, MDL Method detection limit, U Not detected, J Estimated mg/l milligrams per liter, NA Not analyzed, NS Not sampled Shaded values indicate that the metal concentration exceeded Performance Standards.

 a Antimony was reanalyzed at a lower reporting limit of 0.000990 mg/l and the results were below the detection limit.

 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-13SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	CDWA	D4 4-12		N	4W-13	SR	N.	1W-13	SR	N.	4W-13	SR	N	4W-13	SR	N	MW-13	SR
Sample Date	SDWA	PA Act 2	5-5-	2	/13/20	01	5	/23/20	01		9/5/200	01	1	1/20/20	001	2	2/26/20	02
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	1. 1			T. L.	-11-		1. 1.	8.	E E	S. S.	8	1 1	- 8 -	8.00	B B I		B-11	100
Antimony	0.006		mg/l		U	0.00076		U	0.0024		U	0.0024	-	U	0.0024	-25	U	0.0024
Arsenic	0.012	-	mg/l		U	0.0012		UJ	0.0014	1.8 Charles	U	0.0014	-	U	0.0014		U	0.0014
Cadmium	0.005		mg/l	0.034		0.0036	0.0304	J	0.00064	0.0234		0.00064	0.022		0.00064	0.0228		0.00064
Lead		0.005	mg/l	0.0042		0.0019	100	U	0.0018		U	0.0018	500	U	0.0018		U	0.0018
Dissolved Metals	18.7	8	8 1		1.7				10.00	19 19		1 1	3 3	31		1 2	18.	
Antimony	0.006		mg/l		NA			NA			NA			NA	5 - 3		NA	75.00
Arsenic	0.012		mg/l	0.00	NA			NA	×		NA			NA		1	NA	200
Cadmium	0.005	-	mg/l	0.0355		0.0036	0.0288	3	0.00064	0.0245		0.00064	0.0215		0.00064	0.0229		0.00094
Lead		0.005	mg/l		NA			NA			NA			NA			NA	
Conventionals	1. 1	B B		1. 1		3 8	8 8	1	1 5	1 2								
Sulfate ¹	250		mg/l	127		15	142		7.5	135	J	15	137		7.5	138		6

Sample Location	CDWA	D. 4.42		N	1W-13	SR	- N	IW-13	SR	N	4W-13	SR	1	AW-13	SR	N.	MW-1.	SSR
Sample Date	SDWA	PA Act 2		5	/30/20	02	5	/28/20	03		5/6/200)4		5/4/20	05	10000	5/19/2	006
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals			- B		18.		ei ei	BC					1		8 8 1			0 1
Antimony	0.006		mg/l		U	0.00096		UJ	0.0025	0.0017	UJ	0.001	1	U	0.00009		U	0.000038
Arsenic	0.012		mg/l		U	0.0014		U	0.0014		UJ	0.00085	1000 T	U	0.00066		U	0.00033
Cadmium	0.005		mg/l	0.0438		0.00094	0.0321		0.00087	0,0482		0.00076	0.0425	12	0.000087	0.0247		0.000099
Lead		0.005	mg/l	0.0029	J	0.0012		UJ	0.0012		UJ	0.00099	0.0014	150	0.00021	0.00047	U	0.000047
Dissolved Metals	- 1	9 - 9 -	8-11		100	1 1	2.0	.63	1.1			1 1	8 5	1	1 5	0 8	. 3	
Antimony	0.006		mg/l		NA		100.00	NA			NA	- A	7.0	NA			NA	
Arsenic	0.012		mg/l	3.00	NA	12.	F	NA			NA		1000	NA			NA	
Cadmium	0.005		mg/l	0.0425		0.00094	0.0324		0.00087	0.044		0.00076	0.0424		0.000087	0.0243		0.000099
Lead		0.005	mg/l		NA		15.00	NA			NA	0	15.54	NA			NA	
Conventionals	1	1 1	- B.	5-4	- 8-	8.	1 1		1	1 1	100	L L	Ass Bar	8.	1 1		0	
Sulfate ¹	250		mg/l	142		6	156		6	135		6	117		6	108		6

Sample Location	COM	84.442		M	W-13	SR	N	1W-13	SR	N.	1W-13	SR	N.	4W-13	SR	N	1W-13	SR
Sample Date	SDWA	PA Act 2		5.	/16/20	007		/22/20	08	5	/13/20	09	5	/25/20	10		/25/20	11
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	0.0		. 10	E 2 E 2	alle,	1	B C B	JE,	Real Control					£	5 5 1			
Antimony	0.006		mg/l	0.000052	J	0.000044		U	0.0003		U	0.0003		U	0.0003		U	0.0003
Arsenic	0.012		mg/l		U	0.0007		U	0.00095	10000	U	0.00095		U	0.00095		U	0.00095
Cadmium	0.005		mg/l	0.0135		0.000099	0.0098		0.00021	0.0224		0.00021	0.0076	100	0.0002	0.0331	0	0.0002
Lead		0.005	mg/l	0.00037	J	0.000037	0.0019		0.00005	0.0011		0,00005	0.0021		0.00005	0.0013	J	0.000052
Dissolved Metals	- 1	1 1	1 1			13838	2.4	- 1	8 8		1.0	8 1	1 1	- 11	1 1	8 8	1.	
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA	1	10.0	NA			NA			NA		1000	NA	
Cadmium	0.005	1	mg/l	0.0125	20	0.000099	0.0106		0.00021	0.024		0.0002	0.0078		0.0002	0.0340	1	0.0002
Lead		0.005	mg/l		NA			NA			NA	rie man all		NA		II C	NA	
Conventionals	\$. B	1 1		A. B.		. 8 . 8 .	8 8	180	ALC:U	ho. ho.	1	1	L 1	1				
Sulfate ¹	250		mg/l	110		10	123		3	122	J	3	95.2		6	147	J	3

Sample Location	SDWA	PA Act 2		N	1W-13	SR	N	/W-13	SR	N.	1W-13	SR	N	4W-13	SR		AW-13	
Sample Date	- F-10000	lecender e	5	- 5	/22/20	12	4	1/23/20	13	4	/22/20	14	. 4	/23/20	15		5/24/20	16
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	2 . 2	10.0	1	E.E.	. 10	Charles And	E	25	图 图	(F)	\$ 10	F. E.		k.,	Roy Roy 1		100	B 7
Antimony	0.006		mg/l		U	0.00042		U	0.00034	-	U	0.00034		U	0.00033		U	0.00033
Arsenic	0.012		mg/l		U	0.00095		U	0.00042		U	0.00078		U	0.00082		U	0.00054
Cadmium	0.005		mg/l	0.0149		0.0002	0.0064		0.00023	0.0172	4	0.00023	0.0168	110	0.00017	0.0040		0.0002
Lead		0.005	mg/I	0.0016		0.00008	0.0022		0.000073	0.0036		0.000085	0.0008	J	0.000082	0.002		0.000130
Dissolved Metals	. 8	1000	4		-	1 1 1							A CAL	. I	100	1	, E.,	
Antimony	0.006		mg/l	L.	NA			NA			NA	5 - 33		NA			NA	
Arsenic	0.012		mg/l		NA		The Part of	NA		Land (NA		S	NA	L		NA	
Cadmium	0.005		mg/l	0.0150		0.0002	0.0061	100	0.00012	0.0174		0.00023	0.0165		0.00017		NA	
Lead	1	0.005	mg/l	V	NA		E0 2	NA			NA			NA			NA	
Conventionals	1	R 1	_ B.	D. B.	T.,	B. B.	E II.,	1	R. R.	E. E.	R.	R. R.	60 Bu	1	E E I	_0_	01	
Sulfate ¹	250		mg/l	90.6		3	83.1	U.S.	3	80.8	30	3	92		3	74.6		3

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-13SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2		N	4W-13	SR
Sample Date	MCL	MSC	1000	5	/24/20	17
Parameter	MCL	MSC	Units	Result	Q	MDL
Total Metals	B 1				· Mer	
Antimony	0.006		mg/l	The same	U	0.00048
Arsenic	0.012		mg/l		U	0.00068
Cadmium	0.005		mg/l	0.0082		0.00019
Lead		0.005	mg/l	0.00073	J	0.00009
Dissolved Metals	1910		ILL.			1
Antimony	0.006	A	mg/l		NA	
Arsenic	0.012		mg/l		NA	
Cadmium	0.005	Na Table	mg/l	0.0079		0.00019
Lead	Chick	0.005	mg/l		NA	
Conventionals			- 8-	1	1	
Sulfate ¹	250		mg/l	79.4	J	3

- SDWA MCL Safe Drinking Water Act Maximum Contaminant Levels
 PA Act 2 MSC Pennsylvania Act 2 Medium Specific Concentrations
 Q Qualifier, MDL Method detection limit, U Not detected, J Estimated
 mg/l milligrams per liter, NA Not analyzed, NS Not sampled
 Shaded values indicate that the metal concentration exceeded Performance Standards.

 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-14SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	CDIVA	D4 4-12		N.	IW-145	SR	N	fW-14	SR	N	fW-14	SR	N	4W-14	SR	N	1W-14	SR
Sample Date	SDWA	PA Act 2	2.0	- 2	/14/200	01	5	/24/20	01		9/6/200)1	1	1/21/20	001	2	/27/20	02
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	B - B	2 8	. 1	10.0		100	2 8	4			The same		100					
Antimony	0.006		mg/l	0.127		0.0038	0.0689		0.0024	0.117	J	0.012	0.0947		0.012	0.0636		0.0024
Arsenic	0.012		mg/l	0.084		0.0024	0.0902	J	0.007	0.0772		0.0014	0.137		0.007	0.0483		0.0014
Cadmium	0.005		mg/l	0.0345		0.0036	0.006	U	0.00064	0.0226		0.00064	0.0122		0.00064	0.0085	J	0.00064
Lead		0.005	mg/l		U	0.0019		U	0.0018	0.0071	U	0.0018		UJ	0.0018		U	0.0018
Dissolved Metals	- 9	1 1	8	100	1 2		18.72	100		B 8		8 6	8 8	- 1	8. 8	7.78	18	8
Antimony	0.006		mg/l	0.0883	J	0.0076	0.017		0.0024	0.0598	1	0.0048	0.063		0.0048	0.0418		0.0024
Arsenic	0.012		mg/l	0.0728		0.003	0.0722	100	0.0028	0.0643		0.0014	0.134		0.014	The same	NA	
Cadmium	0.005		mg/l	0.0209		0.0036	0.00091	J	0.00064	0.0092	J	0.00064	0.0048	J	0.00064	0.004	J	0.00094
Lead		0.005	mg/l		NA		1000	NA		0.0029	J	0.0018	1	NA			NA	
Conventionals	1 1		- 8	1 1		E E	1 1	4.	LL	1.1	30	LE		II.	8 8 3	. 3		1.3
Sulfate ¹	250		mg/l	232	\Box	15	163		7.5	130	J	6	126		7.5	187		15

Sample Location	SDWA	D4 442	USUN	N	W-14	SR	N	IW-14	SR	N	1W-14	SR	N	AW-14	SR	N.	AW-14	SR
Sample Date	100000000000000000000000000000000000000	MSC 2	1	5	/31/20	02		9/4/200)2	1	1/25/2	002		5/29/20	03	1	1/25/20	003
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	Box B	1. 1		1-1	160	-B - B -	B B	16	B B		8		8	8		- 1		(C)
Antimony	0.006		mg/l	0.0149		0.00096	0.0586		0.00096	0.0310	J	0.00096	0.0733	0.3	0.0025	0.0456		0.0025
Arsenic	0.012		mg/l	0.0377	1	0.0014	0.0440		0.0014	0.0541	3	0.0014	0.2890	J	0.007	0.2380	J	0.007
Cadmium	0.005		mg/l	0.0072	J	0.00094	0.0198		0.00094	0.0119		0.00094	0.0436		0.00087	0.0338		0.00087
Lead		0.005	mg/l		U	0.0012		U	0.0012		U	0.0012		UJ	0.0012	0.0041		0.0012
Dissolved Metals	100	N TR	1						9. 8		- 6	11.1		- 1		5 5	- 10	10.78
Antimony	0.006		mg/l	0.0143		0.00096	0.0439		0.00096	0.0169	9	0.00096	0.0266	J	0.0025	0.0043	J	0.0025
Arsenic	0.012		mg/l	0.0302		0.0014	0.0457		0.0014	0.0502		0.0014	0.0110	100	0.0014	0.0047	J	0.0014
Cadmium	0.005		mg/l	0.0055	J	0.00094	0.0131		0.00094		U	0.00094	0.0393		0.00087	0.0327		0.00087
Lead		0.005	mg/l		NA			NA			NA			NA			NA	
Conventionals	1. 1	8 8	- BX	Book.			6	181	LE	9	3		1	1			1	
Sulfate ¹	250		mg/l	168		7.5	96		6	153		6	142		6	115		6

Sample Location	SDWA	PA Act 2		N	(W-14	SR	N	4W-14	SR	M	fW-14	4SR	N	4W-14	SR	N	IW-14	SR
Sample Date	Control of the last of the las	100000000000000000000000000000000000000			5/6/20	04	1	1/23/20	004	Contract of the Contract of th	5/4/20	005	1	1/23/2	005	5	/19/2	006
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	RL	Result	Q	MDL
Total Metals	E E	1.1	_3k;	E. I.	, A.,	March L	A	/ NEC	1 1	0 2	B	100		B.	E E	R		1 1 1
Antimony	0.006		mg/l	0.0173	J	0.001	0.0016	UJ	0.001	0.0111		0.00009	0.0072	J	0.000064	0.0144	280	0.000038
Arsenic	0.012		mg/l	0.0668	J	0.00085	0.0364		0.00085	0.0827		0.00066	0.1330		0.00066	0.0933		0.00033
Cadmium	0.005		mg/l	0.1990	1.0	0.00076	0.0251		0.00076	0.1230		0.000087	0.0018	J	0.000087	0.0090		0.000099
Lead		0.005	mg/l	0.0163	U	0.00099		UJ	0.00099	0.0121		0.00021		U	0.00018	0.00031	U	0.000047
Dissolved Metals	. 1				100				_ B _ B	0 0	_ 1	B (B)	B	5 K	1000	11 11		ROR.
Antimony	0.006	600	mg/l	0.0067		0,001		UJ	0.001	0.0022		0,00009	0.0075	J	0.000064	0.0063		0.000038
Arsenic	0.012		mg/l	0.0063		0.00085	0.0154		0.00085	0.0018	J	0.00066	0.1360		0.0033	0.0504		0.00033
Cadmium	0.005		mg/l	0.1690		0.00076	0.0184		0.00076	0.1150	100	0.000087	0.0021	J	0.000087	0.00078		0.000099
Lead	V.	0.005	mg/l		U	0.00099		NA		0.00034	J	0.00021		NA			U	0.000047
Conventionals	A. B	10.0	(B)	10.1	. 5.	20.2	\$5.To	100	1 1	B. B.	E.	R. R.	to the	R.	2 2 1	L 84.1		1.1.1
Sulfate ¹	250	1000	mg/l	139		6	141		7.5	125		6	124		7.5	154		6

Sample Location	cours	24.4.2		N	W-14	SR	N	fW-14	SR	N	1W-14	ISR	N	4W-14	ISR	N	1W-14	SR
Sample Date	SDWA	PA Act 2	25.18	11	1/21/20	006	5	/16/20	07	1	1/21/2	007	-	/16/20	800	5	/22/20	08
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	0	U 8 U A	U.S.,	Aug Au			B _ B _	4	A B	E. L.	4.	B _ B _	0.0	200	E. Said		5	A. R.
Antimony	0.006		mg/l	0.0090		0.000038	0.0081		0.000044	0.1100		0.000044	0.0201	100	0.000044	0.0197		0.0003
Arsenic	0.012	300	mg/l	0.0595	34	0.00067	0.0631	100	0.0007	0.0995		0.0007	0.1500		0.0007	0.2020		0.00095
Cadmium	0.005	100	mg/l	0.0298		0.000099	0.0378	100	0.000099	0.0205		0.000099	0.0055	05.5	0.000099	0.0080		0.00021
Lead	1000	0.005	mg/l	0.00032	J	0.000047	0.00052	J	0.000037	0.00024	J	0.000047	0.00025	J	0.000047	0.00051	J	0.00005
Dissolved Metals		A. L.	201					621		1 1	, I			, I		0 0	ж,	1 11
Antimony	0.006		mg/l	0.0026		0.000038	0.0023		0.000044	0.0967		0.000044		NA		0.0041	10	0.0003
Arsenic	0.012		mg/l	0.0272		0.00067	0.0084		0.0007	0.0941		0.0007		NA		0.0859		0.00095
Cadmium	0.005	2000	mg/l	0.0154		0.000099	0.0338		0.000099	0.0014		0.000099		NA		0.00078	176	0.00021
Lead	U-7 (10)-1	0.005	mg/l		NA			NA			NA			NA			NA	
Conventionals	B _ B	U 8 L 8	., 2.,	R. B.	. 8.	E E	P T	B.,	1 1 1	R. R.	P.,	B. B.	T II	10	100	100	10	L. R.
Sulfate ¹	250		mg/l	162		30	107		10	98.1		3		NA		140		6

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-14SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2		N	4W-14	SR	N.	4W-1	4SR	N.	AW-14	SR	1	4W-14	SR	l N	1W-14	ISR
Sample Date	MCL	MSC		1	1/25/20	800	5	/14/2	009	1	1/24/20	009		5/26/20	10	1	1/23/2	010
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	2 2	F 8	- A-	R - B -		4 4	B		B. 18	A COL		1 10		100			100	
Antimony	0.006	1000	mg/l	0.0384		0.0003	0.0123	J	0.0003	0.0186		0.0003	0.0476		0.0003	0.0178		0.0003
Arsenic	0.012	1000	mg/l	0.2650	5.4	0.00095	0.0577	100	0.00095	0.0994		0.00095	0.3450		0.00095	0.1360	100	0.00095
Cadmium	0.005		mg/l	0.0188	0.3	0.00021	0.0107		0.00021	0.0190		0.0002	0.0290		0.0002	0.0200		0.0002
Lead		0.005	mg/l	0.002		0.00005	0.00067	J	0.00005	0.00041	U	0.00005	0.00490		0.00005	0.00087	J	0.000052
Dissolved Metals			9	28.0		1 8 2	TO B 175	100	1 1	10 10	1	8 8			0.0	1	1	8 8
Antimony	0.006		mg/l	0.0329		0.0003	0.0043		0.0003	0.0054		0.0003	0.0076		0.0003	0.0019	U	0.0003
Arsenic	0.012		mg/l	0.1940		0.00095	0.0498	15.5	0.00095	0.0192		0.00095	0.0084		0.00095	0.1110	1.7	0.00095
Cadmium	0.005		mg/l		U	0.00021	0.0029		0.0002	0.0203		0.0002	0.0191	100	0.0002	0.00025	J	0.0002
Lead		0.005	mg/l		NA			NA			NA			NA		1000	NA	
Conventionals			3.1		18.	8 8		4.	1 4		0.	B E	1 1	100	6 8 1			
Sulfate ¹	250		mg/l	119	1	6	128	J	6	126	П	6	107		6	94.9		6

Sample Location	SDWA	PA Act 2	100	N	fW-14	SR	N	fW-14	SR	N	W-14	SR	N	MW-14	SR	. 1	1W-14	SR
Sample Date	MCL	MSC	-	5	/26/20	11	1	1/22/20	011	5	/22/20	12	1	1/20/2	012	1 - 1 - 1	/23/20	13
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	0	MDL
Total Metals	H E	1 1	- 8	B		8 8	8 8	18.	8 8	8 8	8	8 8	1	W.	0 2 1	- B		200
Antimony	0.006	125.47	mg/l	0.0034		0.0003	0.0056		0.00042	0.0086	J	0.00042	0.297*	J	0.00033	0.0409		0.00033
Arsenic	0.012	. 10	mg/l	0.0241		0.00095	0.0199	J	0.00095	0.0496		0.00095	0.403*	J	0.0004	0.0439		0.0004
Cadmium	0.005	THE REAL	mg/l	0.0069		0.00021	0.0220		0.0002	0.0029		0.0002	0.440*	J	0.000082	0.0060	J	0.00012
Lead		0.005	mg/l	0.000072	UJ	5.2E-05	0.000093	J	0.00008	0.00017	J	0.00008	0.0011*	J	0.000047	0.0010		0.000073
Dissolved Metals		1 -1 -	8 1				0.8 2.8		1 1	2 3	21	7	8 1	0.B	1 1	3 1	18	8 8
Antimony	0.006		mg/l		NA			NA		0.0061		0.00042	0.0119		0.00033	0.0210		0.00033
Arsenic	0.012		mg/l	0.0164		0.00095	0.0064		0.00095	0.0509		0.00095	0.0553	150	0.0004	0.0348		0.0004
Cadmium	0.005		mg/l	0.0055		0.0002	0.0248		0.0002		NA		0.0017		0.000082	D. Maria	U	0.00012
Lead		0.005	mg/l		NA			NA			NA			NA			U	0.000073
Conventionals	8 - 8		- 8		1		3 3	1		1 1		3 8		8.	B 8		20	
Sulfate ¹	250		mg/l	117	1	3	103	1	3	97.5		3	93.1		6	West of	NA	

Sample Location	SDWA	PA Act 2	1	N	/W-14	SR	N	AW-14	SR	N	4W-14	SR	N	4W-14	SR	N.	4W-14	SR
Sample Date	MCL	MSC	1000	4	/24/20	113	1	0/22/2	013	4	/23/20	014	1	0/23/2	014	4	/23/20	15
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	O	MDL	Result	Q	MDL	Result	0	MDL
Total Metals	L. I.	. I. I			310	○事心果!	T. I.	E.	A B		10.	B K	8 B	B.	8 8 1	801		
Antimony	0.006		mg/l	0.0214		0.00034	0.0214		0.00034	0.0232		0.00034	0.0170		0.00033	0.0229	13	0.00033
Arsenic	0.012		mg/l	0.0192		0.00042	0.0174	100	0.00042	0.0359		0.00078	0.0569	9	0.00082	8.0428		0.00082
Cadmium	0.005		mg/l	0.0010		0.00023	0.00026	J	0.00023	0.00084		0.00023	0.00026	J	0.00017	0.00100		0.00017
Lead	100	0.005	mg/l	0.00011	J	0.000073	0.00027	U	0.000085	0.00010	J	0.000085	0.00013	1	0.000082	0.00034	J	0.000082
Dissolved Metals			B 1	200	1.50	0 2 7	8 1		8 1	3 2		1 1	8 8	31	100	1	1	1 1
Antimony	0.006		mg/l	0.0150		0.00033	0.0166		0.00034	0.0203		0.00034	0.0129		0.00033	0.0197		0.00033
Arsenic	0.012		mg/l	0.0194	1	0.0004	0.0169		0.00078	0.0306		0.00078	0.0573		0.00082	0.0359		0.00082
Cadmium	0.005	V. W.	mg/l		NA			NA			NA			NA		7 (10)	NA	
Lead	70000	0.005	mg/l		NA		390000	NA	19.		NA			NA		9	NA	
Conventionals	10.1	S & B	8.1	1 5		8 8	BOLL	1	The Real Property of the Party		2	1		No.	6 6 1	10.0		- 80
Sulfate ¹	250	13.3	mg/l	82.6		3	79.3		6	86.1	П	3	80.9		6	79.3	П	3

Sample Location	SDWA	PA Act 2	100	N	1W-14	SR.	N	1W-14	SR	N	1W-14	SR	l N	1W-14	SR	N	fW-14	SR
Sample Date	MCL	MSC	1.00	10	0/20/20	115	5	/25/20	16	10	0/11/20	016	5	/25/20	17	10	0/24/2	017
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	0	MDL	Result	O	MDL
Total Metals			C180	0_0	. 9	8 8	B_R_		ALC: NO	E E	Mr.	1	Car Bay	R.	0 0 0			
Antimony	0.006		mg/l	0.0140		0.00033	0.0143		0.00033	0.0120		0.00048	0.0098		0.00048	0.0137		0.00045
Arsenic	0.012		mg/l	0.0580	I	0.00054	0.0310	10	0.00054	0.0164		0.00068	0.0314		0.00068	0.0386		0.00072
Cadmium	0.005	1	mg/l	0.00055		0.00023	0.00095	J	0.0002	0.00064		0.00019	0.00059		0.00019	0.00044	J	0.00015
Lead		0.005	mg/l		U	0.00013	0.00058	I	0.00013	0.00032	J	0.00009	0.000093	1	0.00009	0.00012	I	0.00011
Dissolved Metals				0.801	150			0	10 10		. 5	. 4 . 4	C E C S	_8		TO B		
Antimony	0.006		mg/l	0.0118		0.00033	0.0101		0.00033	0.0109		0.00048	0.0087		0.00048	0.0094		0.001
Arsenic	0.012		mg/l	0.0547		0.00054	0.0313		0.00054	0.0167		0.00068	0.0356		0.00068	0.0349		0.002
Cadmium	0.005	Let a	mg/l		NA			NA			NA			NA			NA	
Lead		0.005	mg/l	A Toward	NA			NA		\$2-34	NA		15 1	NA			NA	
Conventionals	1 1	200	J. B.	0 0	SE:	2 2		2	Bu Bu		IL.	0_0_	0_0_	9.00	0_0_1	4.1	100	
Sulfate ¹	250		mg/l	81	J	3	84.2		3	38	J	3	77.9	1	3	64.7	18	3

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estima

- Q Qualifier, MDL Method detection limit, U Not detected, J Estimated mg/l milligrams per liter, NA Not analyzed, NS Not sampled Shaded values indicate that the metal concentration exceeded Performance Standards.

 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

 * Total metals results for the MW-14SR November 2012 sample qualified as Estimated due to significantly lower total metals concentrations detected in the duplicate sample. MW-14SRD (duplicate) sample results for antimony = 0.134 mg/l, arsenic = 0.195 mg/l, cadmium = 0.196 mg/l, lead = 0.0005 mg/l.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-15S



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location				N	4W-15	S		MW-15	S		MW-15	S		MW-15	SS		MW-1:	S
Sample Date	SDWA	PA Act 2	Eor	2	/13/20	01		/22/20	01		9/5/200	01	1	1/19/20	001		/25/20	02
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	E .: E	- B - B	7.87	1 1	-8-	1	TO B	1			L	5 6		8	B - B -	1 1		100
Antimony	0.006		mg/l	0.0019	1	0.00076	0.0037	U	0.0024	0.0049	U	0.0024		U	0.0024		U	0.0024
Arsenic	0.012		mg/l	0.0088	J	0.0012	0.0044	UJ	0.0014	0.0531		0.0014	0.0692		0.0028	0.0591		0.0014
Cadmium	0.005		mg/l		U	0.0036		U	0.00064		U	0.00064	4.5		0.00064		U	0.00064
Lead		0.005	mg/l		U	0.0019		UJ	0.009	-	U	0.009		1 = 1	0.0018	0.0028	1	0.0018
Dissolved Metals	-		151	- 8 - 3		F - 3	- 9 -	153	- 1 -	7 1	- 8	16 16	8 8	- 1	3 8		- 1	1 2
Antimony	0.006		mg/l		NA			NA	×		NA			NA		120	NA	
Arsenic	0.012		mg/l		NA			NA		0.0563	-3	0.0014	0.0396		0.0014	0.0747	J	0.0014
Cadmium	0.005		mg/l		NA	1		NA		188	NA			NA		The Till	NA	200
Lead		0.005	mg/l		NA			NA			U	0.0036	0000	NA			NA	
Conventionals	0. 8.	1 1	- II.	1 1	18.	1 1	S. I.	18.	100	B. B.	100	1. 6.	2 2	4.	B B	1	ã.	8-18-
Sulfate ¹	250		mg/l	1080	1	75	890		75	1250	1	75	1370		75	1450		75

Sample Location	CDUVA			N	4W-15	S		MW-15	SS		MW-15	S		MW-1:	S		MW-1:	SS
Sample Date	SDWA	PA Act 2		5	/30/20	02	- 54	9/4/200)2	1	1/25/20	002	5	/29/20	03	1	1/25/20)03
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	Eq. R.	A 10		E., E.	. E.,	1	E. E.	, R.			200	B B	B B	352	E. E.		E.,	E. B.
Antimony	0.006		mg/l	0.0014	J	0.00096	0.0012	J	0.00096	0.0041	U	0.00096		UJ	0.0025		U	0.0025
Arsenic	0.012		mg/l	0.0061		0.0014	0.0583		0.0014	0.0095	UJ	0.0014	0.0028	J	0.0014		U	0.0014
Cadmium	0.005		mg/l		U	0.00094		U	0.00094		U	0.00094		U	0.00087		U	0.00087
Lead		0.005	mg/l		U	0.0012		U	0.0012	0.000	U	0.0024		UJ	0.0012		U	0.0012
Dissolved Metals			1 1			1				. 8 . 1	- 9	2 R	B . B		7 7	10 10	_ F	8 2
Antimony	0.006	C. O. A.	mg/l		NA			NA			NA			NA	10000		NA	
Arsenic	0.012		mg/l	0.0067	U	0.0014	0.0512		0.0014	0.0066		0.0014	0.0058	J	0.0014	0.0035	J	0.0014
Cadmium	0.005		mg/l		NA			NA			NA			NA			NA	1.00
Lead		0.005	mg/l		NA			NA		30-00	NA		0	NA			NA	
Conventionals	1. 1.	, R , R	. 2.	A. A.	8.	3.1	ALC: U	. F.	見しまし	ii ii	E	L L	0.0	R.,	1.1.		E.	R R
Sulfate ¹	250		mg/l	740		75	1370		75	1080		75	720		75	521		30

Sample Location	CDIVA	D		N.	4W-15	S		MW-1:	SS	1	MW-1:	5S	1	MW-1	5S	(Table 1	MW-1	5S
Sample Date	SDWA	PA Act 2	5-5-7	5	/6/200	4	1	1/22/20	004	L-0-14	5/3/200	05	1.	1/22/2	005	5	/19/20	06
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	RL	Result	Q	MDL	Result	Q	RL	Result	Q	MDL
Total Metals	5-5	Sec. 5.		50.50	. 55	2. 2.	Roy Ro	. 50	Sec. 250	F . T .	100	200		2.5	Š	-	5.0	200
Antimony	0.006		mg/l	0.0017	1	0.001		UJ	0.005	0.000097	U	0.00009	0.0021		0.000064	0.00038	J	0,000038
Arsenic	0.012		mg/l	0.0017	J	0.00085	0.0062		0.00085	0.0034		0.00066	0.0269	10.00	0.0033	0.0077		0.00033
Cadmium	0.005		mg/l		U	0.00076		U	0.00076		U	0.000087	0.00041		0.000087		U	0.000099
Lead		0.005	mg/l	2000	U	0.00099		UJ	0.00099	0.00027	U	0.00021	0.0034		0.00018	0.00069	U	0.000047
Dissolved Metals	20.0	1.0	E	20.00			m = m		11.	20.00	_ H	100		n. N		i i	, R	
Antimony	0.006		mg/l		NA	1		NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA		0.0029	1	0.00085		NA		0.0141		0.00066		NA	
Cadmium	0.005		mg/l	3	NA	1		NA			NA			NA			NA	
Lead		0.005	mg/l	disco-	NA		Con man of	NA		- Marchine	NA			NA			NA	
Conventionals	E E	200	- 50	5 . 5	, E.,	15.0	A-25	0.50	Fig. 5.4	E. S.	5.	24.54	5.0	R. of	E. R.	4.00	R.	Electrical
Sulfate ¹	250		mg/l	512		49.5	561		30	534		30	542		30	594		30

Sample Location	SDWA	PA Act 2		N	1W-15	SS		MW-1:	5S	-	MW-1:	5S		MW-1	5S		MW-1:	S
Sample Date		2.122.000	100	11	/21/20	006	5	/15/20	07	1	1/20/20	007	1	/16/20	800	5	/21/20	08
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	200	355	m Sign			1	20.00	150	100	9	5.0	78.78	0.70	7.0	The Title	0.0	Na.	200
Antimony	0.006		mg/l	0.00011	U	0.000038	0.00057	1	0.000044	0.0022		0.000044	0.00019	UJ	0.000044	0.00069	J	0.0003
Arsenic	0.012		mg/l	0.0067		0.00067	0.0109		0.0007	0.207	3.5	0.0007	0.0126	J	0.0007	0.0131		0.00095
Cadmium	0.005		mg/l		U	0.000099		U	0.000099	0.00017	J	0.000099		U	0.000099		U	0.00021
Lead	To and	0.005	mg/l	0.0001	J	0.000047	0.0012		0.000037	0.0011	16.	0.000047	0.00014	UJ	0.000047	0.00083	J	0.00005
Dissolved Metals	100	9.7.2	S R *	400	10.		A 10	10	0.00	200	20			#.5	200		4.5	
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l	0.0064		0.00067	0.0033		0.0007	0.222		0.0035		NA		0.0055		0.00095
Cadmium	0.005		mg/l		NA			NA			NA	5141145		NA		200	NA	
Lead		0.005	mg/l		NA			NA			NA			NA			NA	1.10
Conventionals	Sec. Se	100	2 1	200	3.		3 3	150	0000	1000	2.0	200	100	200	Da Ta	58.54	Ψa.	74.73
Sulfate ¹	250		mg/l	577		30	501		50	480		15		NA		502		15

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-15S



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2		N	4W-15	S		MW-1:	S	7-3-31	MW-15	S	1	MW-1:	S		MW-1.	5S
Sample Date	MCL	MSC	75.7	11	/24/20	08	5	/14/20	09	1	1/23/20	09	5	/24/20	10	1	1/23/2	010
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals			- B		1		1 1			B B					E	2 0	1	6
Antimony	0.006	3	mg/l	0.00067	1	0.0003		U	0.0003	0.00044	U	0.0003		U	0.0003	0.002	U	0.0003
Arsenic	0.012		mg/l	0.137		0.00095	0.0093		0.00095	0.0171		0.00095	0.0048		0.00095	0.113		0.00095
Cadmium	0.005	X 1000	mg/l	7-3-2	U	0.00021		U	0.00021		U	0.0002		U	0.00021		U	0.0002
Lead		0.005	mg/l	0.00046	1	0.00005	0.000081	1	0.00005	0.0005	U	0.00005	0.00012	J	0.00005	0.0014		0.000052
Dissolved Metals		1.5	9 - 9	23.25				0			-		- B					
Antimony	0.006		mg/l	1.00	NA		550000	NA			NA			NA			NA	
Arsenic	0.012		mg/l	0.133	190	0.00095	3	NA		0.0068		0.00095	54 D. S	NA	1.3	0.111		0.00095
Cadmium	0.005		mg/l		NA			NA			NA			NA			NA	
Lead		0.005	mg/l	00-01	NA	1000000		NA			NA		100	NA		0.50	NA	S. Santa
Conventionals	1 1	THE R	- 图	TO L			1	1	8 8		18.0	L E		15		1 6	8	5. 1.
Sulfate ¹	250		mg/l	612	J	30	468	J	15	491		15	426		30	352		15

Sample Location	SDWA	D4 4-12		N	4W-15	S		MW-1:	5S		MW-1:	SS		MW-I	5S	1	MW-1	5S
Sample Date	MCL	PA Act 2 MSC	100	5/	/26/20	11	1	1/21/20	011		5/22/20	12	- 1	1/20/2	012	4	/24/20	113
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	6 - 1b		- 12	E 5	. 0	- E- E-	T 1		0. 8.	1. 1.	8	8- 8-	B. B.			S .	8	100
Antimony	0.006		mg/l	12000	U	0.0003		U	0.00042	0.0018	U	0.00042		U	0.00033	Total Par	U	0.00034
Arsenic	0.012		mg/l	0.0047		0.00095	0.0036		0.00095	0.0165	100	0.00095	0.0083	1	0.0004	0.0036		0.00042
Cadmium	0.005	Carrie	mg/l	70-511	U	0.0002		U	0.0002	0.0002	J	0.0002		U	0.000082		U	0.00023
Lead	22-	0.005	mg/l	0.000081	UJ	0.000052	0.000081	1	0.00008	0,003		0.00008	0.00013	J	0.000047	0.00048	J	0.000073
Dissolved Metals	. 0 . 1		8 - 1	E 0	-3		778.77	100		-1-7	100	0 8		- 1	- E	1 1	18	1 1
Antimony	0.006	200	mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA			NA	V.F.	0.0059	53	0.00095		NA			NA	1
Cadmium	0.005	10000	mg/l	45-333-4	NA	7		NA			NA			NA			NA	
Lead		0.005	mg/l		NA			NA			NA			NA			NA	
Conventionals		E. E.		\$ - B -	18.			E				B B-	8 8	B	B- B-	1	B-	
Sulfate ¹	250		mg/l	564	J	15	418	J	30	324		15	334	150	15	347	ME.	15

Sample Location	SDWA	PA Act 2		N	4W-1:	5S		MW-1	5S		MW-1:	SS		MW-1	5S		MW-1	SS
Sample Date	MCL	MSC		10	/21/20	013	4	/21/20	14	1	0/22/20	014	4	/23/20	15	1	0/19/20	015
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	ALC: N				18.	B . B .	1.1.	J.B.					fi IS	II.	1 1	I _ B _ I	200	AL BU
Antimony	0.006		mg/l	0.00095	U	0.00034		U	0.00034	0.0018	U	0.00033	0.00067	1	0.00033	0.00092	1	0.00033
Arsenic	0.012		mg/l	0.0740		0.00042	0.0126		0.00078	0.0849		0.00082	0.0188		0.00082	0.0726	1	0.00054
Cadmium	0.005		mg/l		U	0.00023		U	0.00023		U	0.00017		U	0.00017		U	0.00023
Lead		0.005	mg/l	0.00094	J	0.000085	0.00009	J	0.000085	0.00097	J	0.000082	0.00037	J	0.000082	0.00068	J	0.00013
Dissolved Metals	- 1 - 1		1 7					031	1 1			- B - E	9 1		1 1			
Antimony	0.006		mg/l		NA			NA		1	NA			NA			NA	
Arsenic	0.012		mg/l	0.0662	132	0.00078	0.0071	-31	0.00078	0.0652	265	0.00082	0.0117		0.00082	0.0771	11.5	0.00054
Cadmium	0.005	8.00	mg/l		NA			NA			NA			NA			NA	
Lead		0.005	mg/l		NA			NA			NA			NA		200	NA	
Conventionals	1 . 1	T. L			. 10	A	100	1	10.6		1	8 8	8 8	E.	1 1		N.	
Sulfate ¹	250		mg/l	366	137	15	318	13.3	15	331	100	15	30.5	1 -	1.5	386	1	15

Sample Location	SDWA	B. 4-12	1	1	MW-15	S		MW-15	S		MW-1:	SS		MW-15	S
Sample Date	CCC 1987	PA Act 2		. 5	/23/20	16	- 10	0/10/20	16	5	/23/20	17	1	0/23/20	17
Parameter	MCL	MSC	Units	Result	IQI	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	Roy Roy	. B., k	0.80	L.E.	. 10	2. 2.	B _ B .	, E5	Barrier Barrier	B_B_	R.	8,80		800	ALL R.
Antimony	0.006		mg/l		U	0.00033	0.0012		0.00048	177	U	0.00048	0.0016		0.00045
Arsenic	0.012		mg/l	0.0053	199	0.00054	0.0651	190	0.00068	0.0090		0.00068	0.1000		0.00072
Cadmium	0.005	1700	mg/l	124	U	0.0002		U	0.00019	100	U	0.00019		U	0.00015
Lead		0.005	mg/l		U	0.00013	0.00062	J	0.00009	0.00012	J	0.00009	0.00110	15.4	0.00011
Dissolved Metals			201	28.7	131			100						(B	
Antimony	0.006	300	mg/l		NA			NA	16370		NA	54		NA	
Arsenic	0.012	100	mg/l		NA		0.0598		0.00068		NA		0.0863		0.002
Cadmium	0.005	3-24	mg/l		NA			NA			NA			NA	1.000
Lead		0.005	mg/l	-	NA	1500	200	NA	Property of	1000	NA			NA	
Conventionals		1 1		A 20		0_6,	\$. B.	B.	Aug Bo	B. B.	AL.	B_ B_	B _ B _	2.	ES ES
Sulfate ¹	250		mg/l	324	17.	15	382		15	296	1	6	310		15

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-16SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	com.		100	N	AW-16	SR	N	4W-16	SR	N	1W-16	SR	N	AW-16	SR	N	AW-16	SR
Sample Date	SDWA	PA Act 2	1 1 5		2/13/20	01		/23/20	01		9/5/200)1	1	1/20/20	001	2	2/26/20	02
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	1 1	1 6	18.	1 1	- 1	8 1		78.0	B. B.		E	1 1	1	B				- 1
Antimony	0.006		mg/l	0.00081	J	0.00076		U	0.0024		U	0.0024		U	0.0024		U	0.0024
Arsenic	0.012		mg/I		U	0.0012	200	UJ	0.0014		U	0.0014		U	0.0014	-	U	0.0014
Cadmium	0.005		mg/l	0.0084	3	0.0036	0.0197	U	0.00064	0.0148		0.00064	0.0128		0.00064	0.0109		0.00064
Lead		0.005	mg/l	0.0056		0.0019		U	0.0018		U	0.0018		UJ	0.0018		U	0.0018
Dissolved Metals		1 1	8.7	- 1		27 70	78.7				71	- 1 - 2	8 . 8	78	100		10	3 7
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA		- 84	NA		STORY OF	NA		Service of	NA		1.00	NA	
Cadmium	0.005		mg/l	0.0082	J	0.0036		NA		0.015		0.00064	0.013		0.00064	0.0114	24.0	0.00094
Lead		0.005	mg/l	0.0028	J	0.0019		NA			NA			NA			NA	
Conventionals	1 1			1 1			2 8	3 1	1 1				1.1					
Sulfate ¹	250		mg/l	75		6	69	150	6	46	J	3	40		3	35		6

Sample Location	CDWA	B4 4-42		N.	1W-16	SR	N	AW-16	SR	N	AW-16	SR	N	1W-16	SR	N	1W-16	SR
Sample Date	SDWA	PA Act 2		5	/30/20	02	5	/29/20	03		5/6/200	14		5/4/20	05	5	/19/20	006
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	1	1.1			11.	BC B.	1	180	8 2	0 8	10.0	B - B -			B B 1	- B 1		E 1 1
Antimony	0.006		mg/l	0.0024	J	0.00096		UJ	0,0025		UJ	0.001	1-0-30	U	0.00009	0.000058	J	0.000038
Arsenic	0.012		mg/l		U	0.0014		UJ	0.0014		UJ	0.00085	1751 60	U	0.00066	0.00094	J	0.00033
Cadmium	0.005	-	mg/l	0.0136		0.00094	0.0265		0.00087	0.029		0.00076	0.019	170	0.000087	0.0182	100	0.000099
Lead		0.005	mg/l		U	0.0012		UJ	0.0012		U	0.00099	0.00053	U	0.00021	0.0016	U	0.000047
Dissolved Metals	- 1		10 1				-	553	200	施 · · · · · · · · · · · · · · · · · · ·	1.0			- 1				
Antimony	0.006	4	mg/l		NA			NA			NA		B. X	NA			NA	
Arsenic	0.012		mg/l	Section 1	NA			NA			NA	30%		NA			NA	
Cadmium	0.005		mg/l	0.0128		0.00094	0.0268		0.00087	0.0276		0.00076	0.0188	25	0.000087	0.0173		0,000099
Lead	Same	0.005	mg/l		NA			NS		15.	NA		Fe. ZE	NA			NA	
Conventionals	ALC: N	2134	. 8.	5 5		4.1	10.8		1. 1.	8 - 8	1	0 0	6 8	0.				B B I
Sulfate ¹	250	10.00	mg/l	58	131	3	127		6	110		6	100		6	76.8		6

Sample Location	SDWA	B4 442	100	N	1W-16	SR	N	1W-16	SR	l M	IW-16	SR	N	4W-16	SR	N.	4W-16	SR
Sample Date		PA Act 2	150	5	/16/20	007	5	/21/20	08	5	/13/20	09	5	/25/20	10		/25/20	011
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	E E	. 6 8	C. B.	4. 1.	, III,	ALC: N		8.	2 2		8.0				ALC: NO	a de	5	No. Report
Antimony	0.006	100	mg/l		U	0.000044		U	0.0003		U	0.0003		U	0.0003		U	0.0003
Arsenic	0.012		mg/l		U	0.0007		U	0.00095		U	0.00095		U	0.00095	0.0011	J	0.00095
Cadmium	0.005		mg/l	0.0133	U	0.000099	0.0162		0.00021	0.0134		0.00021	0.0148		0.0002	0.0086		0.0002
Lead		0.005	mg/l	0.00055	J	0.000037	0.00079		0.00005	0.00098	J	0.00005	0.0024		0.00005	0.0012	J	0.000052
Dissolved Metals	0.00	1 1	3 1			1 1 1			_ 8 _ 8	60 90	_1	18 (18)			R R.		. 1	0 0
Antimony	0.006		mg/l		NA		1	NA			NA	-		NA			NA	
Arsenic	0.012		mg/l		NA			NA			NA			NA			NA	
Cadmium	0.005		mg/l	0.0125		0.000099	0.0173	1	0.00021	0.0142		0.0002	0.0153		0.0002	0.0083	25	0.0002
Lead		0.005	mg/l		NA			NA			NA		Howard	NA		44	NA	
Conventionals	B. B.			ALC: U	. 1	8 8	E. B.	B.	BC B.	No. No.	B.C.			No.				
Sulfate ¹	250		mg/l	72.7		25	81.3	13	3	84.5	J	3	77.1		6	99.4	1	6

Sample Location	SDWA PAACIZ			N	W-16	SR.	N	/W-16	SR	N	IW-16	SR	N	4W-16	SR	N	IW-16	SR
Sample Date	1000	The second second		5	/22/20	12	4	/23/20	13	4	/22/20)14	4	1/22/20	15	- 5	/24/20	16
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	N	. A 1	- E,	A ST	, E.,		1. 1.	1	E. E.	V	E.,	R. R.		8.4	E E 3	ú	600	5.0
Antimony	0.006		mg/l		U	0.00042		U	0.00034		U	0.00034	4000	U	0.00033	Carlo Commo	U	0,00033
Arsenic	0.012		mg/l		U	0.00095		U	0.00042	1	U	0.00078		U	0.00082	100	U	0.00054
Cadmium	0.005		mg/l	0.0114		0.0002	0.0116		0.00023	0.0093		0.00023	0.0072		0.00017	0.0088	100	0.0002
Lead		0.005	mg/l	0.0014		0.00008	0.0016		0.000073	0.0021		0.000085	0.0015		0.000082	0.00059	J	0.000130
Dissolved Metals	2.5	1. 1.					0.00	_ 8	1 1		5.A	T. F. T.	4	ĢП.	1	ij	а.	T T
Antimony	0.006		mg/l		NA		- ac	NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA		10.00	NA		40000	NA		1000	NA			NA	
Cadmium	0.005		mg/l	0.0113		0.0002	0.0123		0.00012	0.0093		0.00023	0.0076		0.00017	0.0089	355	0.0002
Lead		0.005	mg/l		NA			NA			NA		Alte.	NA			NA	
Conventionals	R. R.	. R. R	a R.	第二条	E.	A	E., E.,	E.	2 2	\$ F.	3.	B B	Carl Carl	8.4	200	100		
Sulfate ¹	250	18.50	mg/l	64.6	181	3	67.5		3	55		1.5	54.9		1.5	56.5		1.5

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

Sulfate is accordary contaminant MCL, but a performance standard was not established in the ROD.
 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-16SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2	77.0	N	4W-16	SR
Sample Date	MCL	MSC	104	5	/24/20	17
Parameter	MCL	MSC	Units	Result	Q	MDL
Total Metals			1		18	8 8
Antimony	0.006		mg/l		U	0.00048
Arsenic	0.012		mg/l	and the same	U	0.00068
Cadmium	0.005	16 - 6	mg/l	0.0065		0.00019
Lead		0.005	mg/l	0.00044	J	0.00009
Dissolved Metals	100	1 S. T. S.	100		100	THUS - TH
Antimony	0.006		mg/l		NA	
Arsenic	0.012	TO ACT	mg/l		NA	
Cadmium	0.005	Jan T	mg/l	0.0069		0.00019
Lead		0.005	mg/l		NA	
Conventionals					- 18	
Sulfate ¹	250	1010	mg/l	56.4	J	1.5

- SDWA MCL Safe Drinking Water Act Maximum Contaminant Levels
 PA Act 2 MSC Pennsylvania Act 2 Medium Specific Concentrations
 Q Qualifier, MDL Method detection limit, U Not detected, J Estimated
 mg/l milligrams per liter, NA Not analyzed, NS Not sampled
 Shaded values indicate that the metal concentration exceeded Performance Standards.

 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-17SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	COM			l l	4W-17	SR	N	1W-17	SR	N.	IW-17	SR	M	W-17	SR	A	AW-17	SR
Sample Date	SDWA	PA Act 2			/13/20	01	5	/21/20	01		9/4/200	01	11	/19/20	01	2	2/25/20	02
Parameter	MCL	MSC	Units	Result	Q	RL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	1 1	1 1	8.	1 1	- 1	9 8	1 1	- 0	1 1	B - B	1	B - B -					100	
Antimony	0.006		mg/l		U	0.00076		U	0.0024		U	0.0024		U	0.0024		U	0.0024
Arsenic	0.012		mg/l		U	0.0012		UJ	0.0014		U	0.0014		U	0.0014		U	0.0014
Cadmium	0.005		mg/l	Part .	U	0.0036	0.0019	U	0.00064	0.00066	J	0.00064	0.00076	J	0.00064	0.0016	U	0.00064
Lead		0.005	mg/l	0.004		0.0019		U	0.0018		U	0.0018		U	0.0018	0.002	J	0.0018
Dissolved Metals	- 8	1 1	B	- 6	1 1		-1 -1		0.7		- 8	0.0	18	Э.				1 1
Antimony	0.006		mg/l		NA			NA			NA		18	NA			NA	
Arsenic	0.012		mg/l		NA			NA			NA			NA			NA	
Cadmium	0.005		mg/l		NA			NA			NA			NA			NA	
Lead		0.005	mg/l		NA			NA			NA			NA			NA	
Conventionals	1-1	E B	- 11-	1 1			8 8	8	1 2	B E	1	8 8	1 1			- 8		- 8
Sulfate ¹	250		mg/l	15.2		1.5	27.3		1.5	7.8	J	1.5	22.5		1.5	26.6		1.5

Sample Location	SDWA	B4 4-12		N	1W-17	SR	N	4W-17	SR	1	4W-17	SR	N	1W-17	SR	M	IW-17	SR
Sample Date		PA Act 2		5	/29/20	02		5/28/20	03		5/5/200	04		5/3/20	05	5	/18/20	06
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	88	3 3	S2-86	8. 8.			B. S.		B . B .		-	0 0			8 8 1	F-8-1	220	1000
Antimony	0.006		mg/l	0.00096	J	0.00096		UJ	0.0025	0.0013	J	0.001		U	0.00009	0.000057	J	0.000038
Arsenic	0.012	12-	mg/l		U	0.0014	1	U	0.0014		UJ	0.00085	C	U	0.00066		U	0.00033
Cadmium	0.005		mg/l	0.0028	J	0.00094	0.0019	J	0.00087	0.0013	J	0.00076	0.0014		0.000087	0.0012	10.1	0.000099
Lead		0.005	mg/l	0.0019	J	0.0012	0.0042	I	0.0012		U	0.00099	0.00052	U	0.00021	0.00025	U	0.000047
Dissolved Metals		1 1 1	9 /					- 1			- 8			1	1 1	8 8	1	9 9
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	1000
Arsenic	0.012	1	mg/l	3	NA			NA			NA			NA		1	NA	
Cadmium	0.005		mg/l		NA			NA		100	NA	P 6 - 1		NA			NA	
Lead		0.005	mg/l		NA			NA			NA	-		NA			NA	
Conventionals	B. 2	-8-1	0.00	2 2	- Br	Br. Bo		12	8.80	8 8		B B	E - B -		2 9		550	E-1
Sulfate ¹	250		mg/l	60		3	34.8		1,5	25.6		1.5	27.6		1.5	20.8	-	1.5

Sample Location	SDWA	PA Act 2		M	W-17	SR	A	4W-17	SR	N.	IW-17	SR	N.	1W-17	SR	N	IW-17	SR
Sample Date		- Call 2000 Colors	+	5	15/20	007	5	/21/20	08	5	/13/20	09	5	/24/20	10	5	/25/20	11
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	T. E.	J. F E.		E 2	E.	1		200	To the		1	Burke.	E B	B	2 2 1	2.5	1	200
Antimony	0.006		mg/l	0.000062	J	0.000044		U	0.0003		U	0.0003		U	0.0003		U	0.0003
Arsenic	0.012		mg/l		U	0.00033	A Territory of	U	0.00095		U	0.00095		U	0.00095		U	0.00095
Cadmium	0.005		mg/l	0.0018	U	0.000099	0.0014		0.00021	0.0012		0.00021	0.00091		0.0002	0.00140	1.4	0.0002
Lead		0.005	mg/l	0.00032	J	0.000037	0.00095	J	0.00005	0.00035	J	0.00005	0.0011		0.00005	0.0008	J	0.000052
Dissolved Metals	1.0	1 . F .	1					_ 1			Z.F	_B _B,	B	, š.		0 9	· E	1 1
Antimony	0.006		mg/l		NA			NA		27	NA			NA			NA	
Arsenic	0.012		mg/l		NA	-	a contract	NA			NA			NA			NA	
Cadmium	0.005		mg/I		NA	Q		NA			NA			NA			NA	
Lead	20000 W	0.005	mg/l		NA			NA	0000		NA			NA			NA	
Conventionals	1.1	. 5 . 0	_ U.	B., B.,	. 8.	8.8.	To the	. B.,	Burk.	1. 1.	B.	E E	1. 1	2	2. 2.	12.85		2.0
Sulfate ¹	250	11	mg/l	31.9		2.5	19.2		1.5	22.7	1	1.5	18.1		1.5	37.6	J	1.5

Sample Location	SDWA	PA Act 2			IW-17			IW-17			1W-17		-	1W-17			IW-17	
Sample Date	1000	4.647.7545.0		5	/21/20	12	4	/23/20	13	4	/22/20	14	4	/22/20	015	5	/24/20	16
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	E A.	. B . B		A	3.85	200	Harmon Street	R. W	B. B.	Bar Bar	All years	R. B. H.	Time Water	E h	E B T	A	100	-
Antimony	0.006		mg/l		U	0.00042		U	0.00034		U	0.00034		U	0.00033		U	0.00033
Arsenic	0.012		mg/l		U	0.00095	5-3-8	U	0.00042	1	U	0.00078		U	0.00082		U	0.00054
Cadmium	0.005	1000	mg/l	0.00077		0.0002	0.00075	16	0.00023	0.00087		0.00023	0.00090		0.00017	0.00076		0.0002
Lead	15.05	0.005	mg/l	0.00065	J	0.00008	0.0007	J	0.000073	0.00075	J	0.000085	0.0012		0.000082	0.0025	1.0	0.00013
Dissolved Metals	40.00	1	8.4	A		_ 1 _ 1	1 1 1	- 1	2 8	N. A.	4.1	48.4	9	43.	· 毕 · 市 ·	0 0		1 . 1
Antimony	0.006		mg/l	1000	NA	4		NA			NA			NA			NA	1000
Arsenic	0.012		mg/l	4	NA			NA			NA			NA			NA	
Cadmium	0.005	1	mg/l		NA			NA			NA			NA			NA	
Lead		0.005	mg/l		NA			NA			NA			NA		- 0	NA	
Conventionals	E B	. 5 . 5	- B	R. B.	П.	R. R.	图1. 图1.	B.	E. E.	R. R.	B.,	E. E.	1	R.	B. B.	A 10 m	1	San Bland
Sulfate ¹	250		mg/l	11.3		1.5	14.4		1.5	16.7		1.5	17.3	15	1.5	16.5		1.5

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estima

| Sulfate is a secondary contaminant MCL, but a performance standards was not established in the ROD.
| Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
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TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-17SR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2	400	N	4W-17	SR
Sample Date	MCL	MSC	Torre	5	/24/20	17
Parameter	MCL	MSC	Units	Result	Q	MDL
Total Metals	1		100			
Antimony	0.006		mg/l		U	0.00048
Arsenic	0.012	100	mg/l		U	0.00068
Cadmium	0.005		mg/l	0.00092		0.00019
Lead	1 691	0.005	mg/l	0.00038	J	0.00009
Dissolved Metals	701	12/12/12	1	-4017		Children in
Antimony	0.006		mg/l		NA	
Arsenic	0.012		mg/l		NA	
Cadmium	0.005		mg/l		NA	
Lead		0.005	mg/l	ELIT I	NA	is of la
Conventionals					-	1 1
Sulfate ¹	250		mg/l	22.4	J	1.5

- SDWA MCL Safe Drinking Water Act Maximum Contaminant Levels

 PA Act 2 MSC Pennsylvania Act 2 Medium Specific Concentrations

 Q Qualifier, MDL Method detection limit, U Not detected, J Estimated

 mg/l milligrams per liter, NA Not analyzed, NS Not sampled

 Shaded values indicate that the metal concentration exceeded Performance Standards.

 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-20S



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2			MW-20	OS .	1	MW-2	S		MW-20)S		MW-20	OS		MW-2	
Sample Date	1000000	F-1-1-2-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-1-	lod.	2	/13/20	01	5	/23/20	01		9/5/200)1	1	1/20/20	001	2	2/26/20	02
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	8 1	- B B		1 6		9	4 4	4	E - E -			1 1		8	B	- B 1	9 (- B-
Antimony	0.006		mg/l		U	0.00076		U	0.0024	V	U	0.0024		U	0.0024		U	0.0024
Arsenic	0.012		mg/l		U	0.0012		UJ	0.0014		U	0.0014		U	0.0014		U	0.0014
Cadmium	0.005		mg/l		U	0.0036	0.002	U	0.00064	0.0021	J	0.00064	0.0022	1	0.00064	0.0016	U	0.00064
Lead		0.005	mg/l	0.0065		0.0019	0.005	U	0.0018	0.0029	U	0.0018	0.0019	U	0.0018	0.0039		0.0018
Dissolved Metals	-	1 1	8 1	18.77		1 1	9 5	- 18	1 8		-1	1 1			2 2	8	-84	7 7
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	5
Arsenic	0.012		mg/l		NA			NA			NA			NA			NA	
Cadmium	0.005		mg/l		NA			NA			NA			NA			NA	100
Lead		0.005	mg/l	0.0045	J	0.0019	0.0093	J	0.0018		NA	7		NA			NA	
Conventionals	1 1	1 1	- 10	B B	- 11		1. 1.	1			8	1 1	- E	1		100	ha	
Sulfate ¹	250		mg/l	297		15	310		30	299	J	15	310			330		30

Sample Location	anw.				MW-20	S		MW-20	S		MW-20	OS	100	MW-2	OS .	1	MW-20	S
Sample Date	SDWA	PA Act 2		5	/30/20	02		9/4/200)2	1	1/25/20	002		5/29/20	03	1	1/25/20	003
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	3 . 1	B B	B/.	ALC: N	. 11.	B B	8_8_	T.,	101	0 0	8	BC BC	50 B	Back.	0 0 1		0_0	
Antimony	0.006	-	mg/l	0.0016	U	0.00096		U	0.00096	0.002	U	0.00096		UJ	0.0025		U	0.0025
Arsenic	0.012		mg/l		U	0.0014	0.0025	U	0.0014		UJ	0.0014		UJ	0.0014	1000	U	0.0014
Cadmium	0.005		mg/l	0.0026	J	0.00094	0.002	U	0.00094	0.0016	J	0.00094	0.002	J	0.00087	0.0021	J	0.00087
Lead		0.005	mg/l	0.0049		0.0012	0.0056		0.0012	0.0043		0.0012	0.003	J	0.0012	0.0047	100	0.0012
Dissolved Metals	5-8-5	8 8	2 3	23800	1 1	5 5	2.1		9 0	8 8			100		1 1			1 1
Antimony	0.006		mg/l		NA			NA			NA			NA			NS	
Arsenic	0.012		mg/l		NA			NA			NA			NA			NS	
Cadmium	0.005		mg/l		NA		1-20	NA			NA			NA			NS	
Lead		0.005	mg/l		NA	7000	0.0035		0.0012		NA			NA			NS	
Conventionals	B. B.	3 1	- B.	2 , E	18.	1, 1,	Rock.	B.	BUR.	U_U_U	A.	E. E.	L 0	B.,	1,1,1	UBU	1	. 8.
Sulfate ¹	250		mg/l	400		30	390		30	402		30	379		30	530		30

Sample Location	en m.			34	MW-20	OS		MW-2)S		MW-2	0S		MW-2	0S		MW-2	0S
Sample Date	SDWA	PA Act 2		Local	5/5/200	04	1	1/22/20	004		5/3/20	05	1	1/22/2	005	5	/19/20	06
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	RL	Result	Q	MDL
Total Metals	Sec. A.	2 mg 10	W 8/4	S 2		A	F- F-	3.	200	200	E .	1	a Con	5.4	D. P.		100	500
Antimony	0.006		mg/l	0.002	IJ	0.001		UJ	0.005	0.00031	U	0.00009		U	0.000064		U	0.000038
Arsenic	0.012		mg/l		UJ	0.00085	0.0018	J	0.00085	100	U	0.00066		U	0.0033	0.00048	3	0.00033
Cadmium	0.005		mg/l	0.002	J	0.00076	0.0019	U	0.00076	0,002		0.000087	0.0022		0.000087	0.0017		0.000099
Lead		0.005	mg/l	0.0026	U	0.00099	0.0042	UJ	0.00099	0.0041		0.00021	0.0051		0.00018	0.0036	- 3	0.000047
Dissolved Metals	2 R V	1.1.	A	- B -	1	1000	100	-1	2 1	2.0	n. III	P P P P P P P P P P P P P P P P P P P		, P.		,	. 30	, R . R .
Antimony	0.006		mg/I		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA			NA	9		NA			NA			NA	
Cadmium	0.005		mg/l		NA			NA	-		NA	- 1		NA		- 11	NA	2
Lead		0.005	mg/l		NA			NA	2-20-02		NA		0.0049	·	0.00018		NA	
Conventionals	F . S	2 5 2 5	20	E_{in} E_{in}	, E.,		Starte	E.,	A. Bay	K., F.,	2-	0.0	100	R	E_E_	4.70	1	Sec. 54.
Sulfate ¹	250		mg/l	519		75	522		30	501		30	513	(3)	30	502		30

Sample Location	money.	B4 4-12			MW-2	0S		MW-2	0S		MW-2	0S		MW-20	0S	1	MW-2	0S
Sample Date	SDWA	PA Act 2	1		1/21/2	006		/15/20	007	- 1	1/20/2	007	3	5/21/20	08	1	1/24/2	008
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	Car S	5 Z & Z	g -50	35	150	100	100	7.9		100	100	4		500	5 a 5 a 1		1	100
Antimony	0.006		mg/l		U	0.000038		U	0.000044		U	0.000044		U	0.0003		U	0.0003
Arsenic	0.012		mg/l		U	0.00067	0.00073	J	0.0007		U	0.0007		U	0.00095	0.00099	J	0.00095
Cadmium	0.005		mg/l	0.0016		0.000099	0.0014	U	0.000099	0.0016		0.000099	0.0013		0.00021	0.0014		0.00021
Lead		0.005	mg/l	0.004		0.000047	0.003	5	0.000037	0.0028		0.000047	0.0029		0.00005	0.0041	-	0.00005
Dissolved Metals	4.7	4 6	4.5	2.5	1	+ + +	9 9	10.0	4	% ()	20	4.4		B . W	2 2 2 2		()	2.2
Antimony	0.006	200	mg/l		NA			NA		100	NA			NA			NA	
Arsenic	0.012		mg/l		NA			NA		100	NA			NA			NA	4
Cadmium	0.005		mg/l		NA			NA			NA			NA			NA	
Lead		0.005	mg/l	-	NA			NA			NA	An and		NA			NA	iccic-
Conventionals	Par 2	9.50	a *)	200	(5)	200	Ra Ha	20	50 50	27.2	0.00	200	2.72	20	May May	252	200	20.00
Sulfate ¹	250		mg/l	434		30	431		50	420		15	385	1	15	381	J	15

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-20S



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2	1	10	MW-2	0S	HE MODE	MW-2	0S		MW-20	0S	13 - 5	MW-2	OS S		MW-2	0S
Sample Date	MCL	MSC			/14/20	09	1	1/23/2	009		5/24/20	10	1	1/22/2	010	5	/25/20	11
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals		1 1			18.		E B		B B .		H	5 8				- 1		
Antimony	0.006		mg/l		U	0.0003		U	0.0003		U	0.0003		U	0.0003		U	0.0003
Arsenic	0.012		mg/l	Y463	U	0.00095		U	0.00095	0.0043		0.00095		U	0.00095	0.0015	1	0.00095
Cadmium	0.005		mg/l	0.0013		0.00021	0.00096		0.0002	0.0011		0.0002	0.0012		0.0002	0.00093		0.0002
Lead		0.005	mg/l	0.0035		0.00005	0.0034		0.00005	0.0098		0.00005	0.0029	-	0.000052	0.0044	J	0.000052
Dissolved Metals	-1		8 7				18.78	- T	0 0				1 1	1		1 1	110	
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA			NA			NA			NA		4	NA	
Cadmium	0.005		mg/l	DOM:	NA			NA		16000	NA		1000	NA		52-53	NA	
Lead		0.005	mg/l	76.30	NA			NA		0.0047	91 =	0.00005		NA			NA	
Conventionals	LIL	1 5	18:	E E		1 1	9	1	8 8		8	1	3.	1				L B
Sulfate ¹	250		mg/l	365	J	15	355		15	367		30	308		15	406	J	15

Sample Location	SDWA	PA Act 2	100		MW-2	0S		MW-2	0S		MW-2	0S		MW-2	0S		MW-2	0S
Sample Date	MCL	MSC		1	1/21/2	011	5	/21/20)12	1	1/19/20	012	4	/24/20	113	10	0/21/2	013
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	3 . 3	1.1	18	10.00	8	8 6	-	18:		B - B	1	8 6	9	16	5 5 7			
Antimony	0.006		mg/l	2957	U	0.00042		U	0.00042	E	U	0.00033		U	0.00034		U	0.00034
Arsenic	0.012	- 50	mg/l	0.0017	J	0.00095		U	0.00095	0.00046	1	0.0004		U	0.00042	10000	U	0.00042
Cadmium	0.005	-	mg/l	0.00083	*	0.0002	0.00095	100	0.0002	0.001		0.000082	0.00071		0.00023	0.00095		0.00023
Lead	-	0.005	mg/l	0.0052		0.00008	0.005	15	0.00008	0.0052		0.000047	0.0055	131	0.000073	0.0029		0.000085
Dissolved Metals	- 8	9 7		1		1 1 1	18.1	3.5	8 8	1 8		W H	8 8			4 6	. 15	1 1
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA			NA			NA			NA		F-5-2	NA	
Cadmium	0.005		mg/l	CT-01-0	NA		No comment	NA			NA		5.00	NA			NA	
Lead		0.005	mg/l	0.0036		0.00008	0.0043		0.00008	0.0054		0.000047	0.0054	130	0.000047		NA	
Conventionals	8 8	1 1	- 3-	B - B		1 2	1 1	1		1 1	2	B B		1				- 1-
Sulfate ¹	250	100	mg/l	328	J	30	354	10	30	373		7.5	343		15	296	100	6.0

Sample Location	SDWA	PA Act 2			MW-2	0S		MW-2	0S		MW-2	0S		MW-2	OS		MW-2	OS
Sample Date	27.000	MSC		4	/21/20	14	10	0/22/2	014	4	/23/20	15	10	0/19/20	015	5	/23/20	16
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	1 1	. B. B.	○ 80	1 1	. II.		8. 3.	1		8 U	B.C.	B. B.		No.	BOOK TO SERVICE		bir I	1.
Antimony	0.006		mg/l		U	0.00034		U	0.00033		U	0.00033	-	U	0.00033		U	0.00033
Arsenic	0.012		mg/l		U	0.00078	10000	U	0.00082	100	U	0.00082	1000	U	0.00054	0.00	U	0.00054
Cadmium	0.005	12.32	mg/l	0.00100		0.00023	0.00087	(3)	0.00017	0.00100		0.00017	0.00082		0.00023	0.00080		0.0002
Lead		0.005	mg/l	0.0032		0.000085	0.0034		0.000082	0.0027		0.000082	0.0039		0.00013	0.0026	7	0.00013
Dissolved Metals	- 1					1 2 1	1 1		1.1	1 1		1 1	8 8			2 5	. 8	TI
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	
Arsenic	0.012	100	mg/I		NA			NA			NA			NA			NA	
Cadmium	0.005		mg/l		NA			NA			NA		1000	NA			NA	
Lead		0.005	mg/l	1000	NA			NA			NA			NA	1 1		NA	
Conventionals	B . B	P 8	-9-	1. 1.		1 1	8 1	II.	1 1		40		. 6		B L			
Sulfate ¹	250		mg/I	298		15	286	13	7.5	332		15	332	J	15	299		15

Sample Location	SDWA	PA Act 2			MW-20)S		MW-20	OS .		MW-20)S
Sample Date		4444		10	0/10/20	116	5	/23/20	17	10	0/23/20	017
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	No. 1	. 1 . 1	1	E E.	æ,	1. 1.		36.	in the	P. P.	8	R., B.,
Antimony	0.006		mg/l		U	0.00048		U	0.00048		U	0.00045
Arsenic	0.012		mg/l	0.001	J	0.00068		U	0.00068		U	0.00072
Cadmium	0.005		mg/l	0.00083	150	0.00019	0.00089		0.00019		U	0.00015
Lead		0.005	mg/l	0.0032		0.00009	0.0023		0.00009	0.0040		0.00011
Dissolved Metals		R LIL		_ 8 _ 1		- DEC 8	_ 8 _ 8	_ 18	1		5.0	
Antimony	0.006	200	mg/l		NA	100		NA			NA	
Arsenic	0.012		mg/l		NA		I Constitution	NA	S. Bartin		NA	
Cadmium	0.005		mg/l		NA			NA			NA	
Lead		0.005	mg/l		NA	Y		NA			NA	-
Conventionals	AL R	_ 0_ D	(B)	北上北	al.		R. E.	1	The state of		84	B B _
Sulfate ¹	250		mg/l	301	П	15	333	1	15	300		15

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estim

Q - Qualiter, MDL - Netholo detection limit, 0 - Not neticeta, 2 - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-21S



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2			MW-21			MW-2			MW-21			MW-21			MW-2	
Sample Date		MSC	100	2	/14/200	01	5	/23/20	01	11	9/5/200	01	1	1/20/20	001	2	/26/20	02
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	1 1	10.8	200		6.	9	8 8	8.	8 8	8	1	B		8-0		- 8- 1		6
Antimony	0.006		mg/l	0.00076	U	0.00076		U	0.0024		U	0.0024		U	0.0024		U	0.0024
Arsenic	0.012		mg/l		U	0.0012		UJ	0.0014	The same	U	0.0014	10.3	U	0.0014	0.0017	J	0.0014
Cadmium	0.005	1	mg/l	0.015		0.0036	0.0136	U	0.00064	0.0157		0.00064	0.0191	0.0	0.00064	0.019		0.00064
Lead		0.005	mg/l	0.00019	U	0.0019	0.0019	U	0.0018		U	0.0018	0.0031	UJ	0.0018	0.002	J	0.0018
Dissolved Metals		1 1	8 7	- B 1	1. 8		3. 1		3 5	1	T.E.	1 1	2 3		5 1	20 00	T.	8 6
Antimony	0.006		mg/l		NA			NA			NA		000	NA			NA	
Arsenic	0.012	1	mg/l		NA			NA			NA		200 L	NA			NA	
Cadmium	0.005		mg/l	0.0157		0.0036		NA		0.0149		0.00064	0.0188	24	0.00064	0.0198		0.00094
Lead	1000	0.005	mg/l		NA			NA			NA		(P)	UJ	0.0018		NA	
Conventionals	1. 1	1. 1	11.	Land.		100	8 8	-		1.1	1			E		3.0	. 3	
Sulfate ¹	250		mg/l	54		3	51		3	56	J	3	71		3	66	(16)	7.5

Sample Location	SDWA	PA Act 2	1		MW-21	S		MW-21	S		MW-2	IS		MW-2	1S		MW-2	1S
Sample Date		100000000000000000000000000000000000000	100	5	/31/20	02		5/29/20	03		5/6/200)4		5/3/20	05	5	/19/20	06
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	1 1	10.1	. 16:	8 8	. 9.	8 1	10	84	1		1	1. 1.		1				
Antimony	0.006		mg/l		U	0.00096		UJ	0.0025	100	UJ	0.001	2	U	0.00009	0.00038	J	0.000038
Arsenic	0.012		mg/l		U	0.0014		U	0.0014	200	UJ	0.00085		U	0.00066	0.0017	J	0.00033
Cadmium	0.005		mg/l	0.015		0.00094	0.0134		0.00087	0.0135		0.00076	0.0134	145	0.000087	0.0184	65	0.000099
Lead		0.005	mg/l	0.0015	J	0.0012		UJ	0.0012		U	0.00099	0.00085	U	0.00021	0.0025	U	0.000047
Dissolved Metals	0.00	1 1	B		1 1	1 1	- 11 - 1		8 8	2 0		1 To	4		0 0	1 5		8 8
Antimony	0.006		mg/l		NA			NA	25		NA			NA		1000	NA	100
Arsenic	0.012		mg/l		NA	19.0	52209	U	0.0014	200	NA		18 000	NA			NA	
Cadmium	0.005		mg/l	0.0147		0.00094	0.0133		0.00087	0.0133		0.00076	0.0129	1.83	0.000087	0.0187		0.000099
Lead		0.005	mg/l		NA			NA			NA			NA			NA	
Conventionals	1	E 8	18.	8 1		B - B	B - B -	180	1 1	1 1		6 6	F 16:	16.5	8 8 1		1	
Sulfate ¹	250		mg/l	50		3	49.9	NS	3	49.9		3	53.4		7.5	64.8		6

Sample Location	SDWA	PA Act 2	100		MW-2	18		MW-2	S		MW-2	IS		MW-2	18	100	MW-2	15
Sample Date	MCL	MSC	1	5	/16/20	007	5	/22/20	08	5	/13/20	09	5	/25/20	10	5	/26/20	11
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	9.0	J. B. B.	○ 80	B B	10.	0 0	E. E.		B. B.		R.	1	L B	B.C.				100
Antimony	0.006	-	mg/l		U	0.000044		U	0.0003		U	0.0003		U	0.0003		U	0.0003
Arsenic	0.012		mg/l		U	0.0007		U	0.00095		U	0.00095		U	0.00095	10000	U	0.00095
Cadmium	0.005		mg/l	0.0157	U	0.000099	0.0161		0.00021	0.0184		0.00021	0.0148		0.0002	0.0139		0.0002
Lead		0.005	mg/l	0.00077	J	0.000047	0.0012		0.00005	0.0012		0.00005	0.0016		0.00005	0.00079	J	0.000052
Dissolved Metals		1 1	1						0 4	1 1		9 0	0 0	- 1	100	B B		1
Antimony	0.006		mg/l		NA			NA			NA			NA			NA	-
Arsenic	0.012		mg/l		NA			NA			NA			NA			NA	
Cadmium	0.005		mg/l	0.0148		0.000099	0.0168		0.00021	0.0184		0.0002	0.0144		0.0002	0.0133		0.0002
Lead		0.005	mg/l	17.77	NA			NA			NA		1000	NA			NA	
Conventionals	2. 2	1. 1	- B.	B. B.			8_8.	Be	L. L.					0_				1 1
Sulfate ¹	250		mg/l	54.6	3	10	59.4		1.5	61.9	J	1.5	64.7		6	82.8	J	3

Sample Location	SDWA	D. 4.42			MW-21	IS		MW-2	IS		MW-2	1S		MW-2	1S		MW-2	IS
Sample Date	1000	PA Act 2		5	/22/20	12	4	/24/20	13	4	/22/20	014	4	/23/20	15		5/24/20	16
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	R. B.	18.1	_ B.	E. P.	. 10.	2 2	A. A.	0	Roy Roy		B.,	E. E.		5			e	and the second
Antimony	0.006		mg/l		U	0.00042		U	0.00034		U	0.00034		U	0.00033		U	0.00033
Arsenic	0.012		mg/l		U	0.00095		U	0.00042		U	0.00078	0.00098	J	0.00082		U	0.00054
Cadmium	0.005		mg/l	0.0135		0.0002	0.0139		0.00023	0.0142		0.00023	0.0173	100	0.00017	0.0144		0.0002
Lead		0.005	mg/l	0.00096	J	0.00008	0.0016		0.000073	0.0022		0.000085	0.0018		0.000082	0.0012		0.00013
Dissolved Metals		H_H_	8 . 1		1		- N - N		2 2	A ROLL		10.0	100	_ 1	8 6			1.1
Antimony	0.006		mg/l		NA			NA		30.30	NA			NA			NA	
Arsenic	0.012	1	mg/l		NA		100	NA			NA			NA	0.00		NA	
Cadmium	0.005		mg/l	0.0146	100	0.0002	0.0136		0.00012	0.0141	10.0	0.00023	0.0159		0.00017	0.0139		0.0002
Lead		0.005	mg/l		NA			NA			NA			NA			NA	
Conventionals	ALC: N	3 B	(2 B)	BC N	. 4.	B _ B _	R. H.	A.	B B		R.	B B	E. B.	200	2 2 1		100	
Sulfate ¹	250		mg/l	52.4	130	3	51.8		1.5	44.9		1.5	57.5		1.5	48.9		1.5

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-21S



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2			MW-21	S
Sample Date	MCL	MSC		5	/25/20	17
Parameter	MCL	MSC	Units	Result	Q	MDL
Total Metals			100			
Antimony	0.006		mg/l		U	0.00048
Arsenic	0.012	Carrier.	mg/l		U	0.00068
Cadmium	0.005		mg/l	0.0139		0.00019
Lead		0.005	mg/l	0.00069	J	0.00009
Dissolved Metals	100			1 417		COLUMN TO
Antimony	0.006	J. 100	mg/l		NA	
Arsenic	0.012	Total Co	mg/l		NA	
Cadmium	0.005	4364	mg/l	0.0139	36	0.00019
Lead		0.005	mg/l		NA	
Conventionals		1 1				
Sulfate	250		mg/l	51.6	J	1.5

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels

- SDWA MCL Safe Drinking Water Act Maximum Contaminant Levels
 PA Act 2 MSC Pennsylvania Act 2 Medium Specific Concentrations
 Q Qualifier, MDL Method detection limit, U Not detected, J Estimated
 mg/l milligrams per liter, NA Not analyzed, NS Not sampled
 Shaded values indicate that the metal concentration exceeded Performance Standards.

 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-11DR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2		N	W-11	DR	. N	(W-11	DR	N	4W-11	DR	N	(W-11)	DR
Sample Date	4.4000000	MSC	4.0		5/22/20	01		/29/20	02		5/28/20	03		5/4/200)4
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	6.		-										- N-		0.0
Antimony	0.006		mg/l		U	0.0024		U	0.00096		U	0.0025		UJ	0.001
Arsenic	0.012	No.	mg/l		UJ	0.0014		U	0.0014		U	0.0014		UJ	0.00085
Cadmium	0.005		mg/l		U	0.00064		U	0.00094	Lend	U	0.00087		U	0.00076
Lead		0.005	mg/l		U	0.0018		U	0.0012		U	0.0012		U	0.00099
Dissolved Metals	9 9	8 8	-				8 8	18/15			9			0	
Antimony	0.006		mg/l		NA		0.00	NA			NA			NA	
Arsenic	0.012		mg/l		NA			NA			NA			NA	
Cadmium	0.005		mg/l		NA			NA		7. 18.	NA			NA	
Lead		0.005	mg/l		NA			NA			NA			NA	
Conventionals								0.0							1
Sulfate ¹	250		mg/l		U	1.5		U	1.5		U	1.5		U	1.5

Sample Location	SDWA	D4 4-12		N	W-11	DR	N	1W-11	DR	M	W-11	DR	N	IW-11	DR
Sample Date	10.75 72.22 9 7 0	PA Act 2			5/3/20	05		/18/20	06	5	/15/20	007		5/21/20	08
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	0.00	B-18-0	8000			SE28			- E- E			3 L	5 5	3 B	2 1
Antimony	0.006	1	mg/l		U	0.00009	100000000000000000000000000000000000000	U	0.000038	5000	U	0.000044		U	0.0003
Arsenic	0.012		mg/l		U	0.00066		U	0,00033		U	0.0007		U	0.00095
Cadmium	0.005		mg/l	Tar. 14	U	0.000087		U	0.000099		U	0.000099		U	0.00021
Lead		0.005	mg/l	0.00031	J	0.00021	0.00017	U	0.000047	0.000085	J	0.000037	0.00013	U	0.00005
Dissolved Metals	8 1	10.00	9.	11	11	W	B. 38.3	35.0	1	1 1	200	1 1		100	15 E.S.
Antimony	0.006		mg/l		NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA		200	NA			NA			NA	
Cadmium	0.005		mg/l	100	NA			NA		4	NA			NA	1
Lead	1	0.005	mg/l		NA			NA			NA			NA	
Conventionals	Section.	foods:	6. 1	- 5	100	6.1	>300B		- B - B	- B - B	- B	5 E	1 1	- 1	1. 1.
Sulfate ¹	250		mg/l	1	U	1.5		U	1.5	The state of	U	0.25	1.8	J	1.5

Sample Location	SDWA	PA Act 2		N	1W-11	DR	N	4W-11	DR
Sample Date	MCL	MSC		4	/22/20	13		5/24/20	17
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL
Total Metals		B. B.	10/2 0	Total Biographic	1	B B	_ B 1	. 8	
Antimony	0.006		mg/l		U	0.00034		U	0.00048
Arsenic	0.012		mg/l		U	0.00042		U	0.00068
Cadmium	0.005	COC. 16.39	mg/l		U	0.00023		U	0.00019
Lead		0.005	mg/l	0.00023	J	0.000073	Law Lond	U	0.00009
Dissolved Metals	8 8					1 1		1	1 1
Antimony	0.006		mg/l		NA			NA	
Arsenic	0.012		mg/l		NA		100	NA	
Cadmium	0.005		mg/l		NA			NA	
Lead		0.005	mg/l		NA			NA	
Conventionals					0_1			- 8	
Sulfate ¹	250	7	mg/l		U	1.5	2.4	J	1.5

- SDWA MCL Safe Drinking Water Act Maximum Contaminant Levels
 PA Act 2 MSC Pennsylvania Act 2 Medium Specific Concentrations
 Q Qualifier, MDL Method detection limit, U Not detected, J Estimated
 mg/l milligrams per liter, NA Not analyzed, NS Not sampled
 Shaded values indicate that the metal concentration exceeded Performance Standards.

 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-14DR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2		N	/W-14	DR	N	4W-14	DR		AW-14	DR	N	MW-14	DR
Sample Date	MCL	MSC			5/22/20	01		5/29/20	02		5/28/20	03		5/5/200	04
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	TO	MDL
Total Metals			0.7	- 3					F - F	15		B B.	1 E	2.	1. 1
Antimony	0.006		mg/l		U	0.0024	0.0022	U	0.00096		U	0.0025	0.0011	UJ	0.001
Arsenic	0.012		mg/l		UJ	0,0014		U	0.0014		U	0.0014		UJ	0.00085
Cadmium	0.005	15 - 7	mg/l	0.0011	U	0.00064		U	0.00094		U	0.00087		U	0.00076
Lead		0.005	mg/l	Sc-0-3	U	0.0018		U	0.0012		U	0.0012		U	0,00099
Dissolved Metals		10.00	~8×	10.0	18.0	8	8.78.7	9	8-8-0	1.78.7	9	100	18.1	H 7	
Antimony	0.006		mg/l		NA		5	NA	T-ICO-I	1	NA		- 20	NA	
Arsenic	0.012		mg/l	-	NA			NA			NA			NA	
Cadmium	0.005		mg/l		NA	100000		NA			NA			NA	
Lead		0.005	mg/l		NA			NA			NA		1000	NA	
Conventionals	1.2		2001			- 8. 1	- 8 - 1		8- 3	12 2	- 2	5-8-508-2	1 1	. 10	1 1
Sulfate ¹	250		mg/l	28.5		1.5	148		7.5	81.3		6	32.5		1.5

Sample Location	SDWA	PA Act 2	1	N	W-14	DR	N	1W-14	DR	M	W-14	DR	N	4W-14I	DR
Sample Date	MCL	MSC			5/2/20	05		5/18/20	06	5	/14/20	007		5/20/20	08
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	O	MDL
Total Metals			8-28							0.8400.85			10.00	. 8.	- E - E
Antimony	0.006		mg/l	0.00026	U	0.00009		U	0.000038	0.000057	J	0.000044		U	0.0003
Arsenic	0.012	77.78	mg/l		U	0.00066		U	0.00033		U	0.00033		U	0.00095
Cadmium	0.005	100	mg/l		U	0.000087	Mr. Sangar	U	0.000099		U	0.000099		U	0.00021
Lead		0.005	mg/l	0.0013	U	0.00021	0.00048	U	0.000047	0.00047	J	0.000037	0.0015		0.00005
Dissolved Metals	TO E	The state of	- 12	1 1		1	8.080	8.0	1 1	0 0	100	1 1	1.5	0	- 8
Antimony	0.006		mg/l		NA			NA			NA			NA	
Arsenic	0.012		mg/l		NA			NA			NA			NA	
Cadmium	0.005		mg/l		NA	P		NA			NA			NA	
Lead		0.005	mg/l	122	NA	-		NA			NA		A	NA	
Conventionals			8 1	2.5		8 1	1 1		2.8-18	18.71	- 1	B - E	1 1	180	1. 1
Sulfate ¹	250	7-2000	mg/l	57.1		6	31.8		1.5	31.2	150	10	35.5	1.27	1.5

Sample Location	SDWA	PA Act 2		N	1W-14	DR	N	fW-14	DR
Sample Date	MCL	MSC			1/24/20	13	5	/25/20	17
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL
Total Metals	_ 5 _	是一三	2 1	0.50	100	5 6 3	- 2 - 3	38	
Antimony	0.006	7	mg/l	951	U	0.00034		U	0.00048
Arsenic	0.012		mg/l		U	0.00042		U	0.00068
Cadmium	0.005		mg/l		U	0.00023		U	0.00019
Lead		0.005	mg/l	0.00073	1	0.000073	0.00026	J	0.00009
Dissolved Metals	2 - 1	. R . R	0.18.5			2 4	B - B -	4	
Antimony	0.006		mg/l		NA			NA	1000
Arsenic	0.012	1	mg/l		NA			NA	
Cadmium	0.005	Land	mg/l		NA			NA	10000
Lead	ploc	0.005	mg/l	-	NA	200000	C-C-34	NA	
Conventionals	×3-1		200	12番点		F 20 1	28 B	- B	. 1
Sulfate ¹	250		mg/I	30.5		1.5	33.9	1	1.5

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not provided to the control of th

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-15D



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2	1	1	MW-15	SD .	1	MW-15	D	TORS H	MW-15	D		MW-1:	SD.	1	MW-1	5D
Sample Date	MCL	MSC	11-11	5	/22/20	01	5	/29/20	02		5/27/20	03		5/4/20	04		5/3/20	05
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	B - B	1 1	1.0	E	100	1 1	1. 1.		1. 1.	B. B.		8 8		8.		8-		E - E
Antimony	0.006		mg/l	1000	U	0.0024	0.00099	U	0.00096		U	0.0025	0.001	UJ	0.001		U	0.00009
Arsenic	0.012	V P	mg/l		UJ	0.0014	3000	U	0.0014		U	0.0014		UJ	0.00085		U	0.00066
Cadmium	0.005		mg/l	0.0073	U	0.00064	0.0042	J	0.00094	0.0038	UJ	0.00087	0.0038	1	0.00076	0.0039		0.000087
Lead		0.005	mg/l		U	0.0018		U	0.0012		UJ	0.0012		U	0.00099	0.00079	U	0.00021
Dissolved Metals	- 8 -		1				- 10 10		- B - E	3 3	71	1 1		-1		4	1	1 1
Antimony	0.006		mg/l		NA			NA			NA			NA	0.00	1000	NA	the D
Arsenic	0.012		mg/l	1000	NA			NA			NA			NA			NA	
Cadmium	0.005	10-6	mg/l	0.0052	J	0.00064		NA			NA			NA			NA	
Lead		0.005	mg/l		NA			NA			NA			NA			NA	discourse the same
Conventionals	3 8		- E	E E			1. 1.				1	B - B -		8		8 8	0	8 8
Sulfate ¹	250	1	mg/l	45		3	41		3	39		3	41.5		3	38.2		6

Sample Location	SDWA	PA Act 2		N	AW-15	5D	1	MW-1	5D	1	MW-15	D	1	MW-15	D	N.	4W-15	D
Sample Date	MCL	MSC	3.3	5	/19/20	06	5	5/15/20	007	5	/20/20	08	5	/12/20	09	5	/24/20	10
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	O	MDL
Total Metals	B B	10.10	_ 8/	1 0		-15-31	1 0	. 0	1000		1	100	5 B	2: -	B B			100
Antimony	0.006		mg/l	0.0013		0.000038	0.00028	J	0.000044		U	0.0003		U	0.0003		U	0.0003
Arsenic	0.012		mg/l	0.00039	J	0.00033		U	0.0007		U	0.00095		U	0.00095		U	0.00095
Cadmium	0.005	CLER	mg/l	0.0039		0.000099	0.0034	U	0.000099	0,0032		0.00021	0.0025		0.00021	0.0024		0.0002
Lead		0.005	mg/l	0.0121*		0.000047	0.00036	J	0.000037	0.00044	J	0.00005	0.00018	J	0.00005	0.000068	J	0.00005
Dissolved Metals			100		100	-1-1	-	100	8 8	8 8		1 1	8 8		1 1	7 7	0	0.0
Antimony	0.006	X	mg/l	25.35	NA			NA			NA			NA	100	- DC	NA	
Arsenic	0.012	March 1	mg/l		NA	125-2-1		NA			NA			NA			NA	
Cadmium	0.005	-	mg/l	-	NA	100000		NA		-	NA		100	NA			NA	
Lead	Sec. 450.75	0.005	mg/l	0.0068*		0.000047		NA			NA	A December 1		NA			NA	
Conventionals	6 8	1 8	18:	高 意	. 18-	1 1	1 1	9	8.	F 1	8.	6 8		8-	B - B	- 1 - 1		- 1-
Sulfate ¹	250		mg/l	37.3		3	37.4	131	5	36.9		1.5	38.3	J	1.5	38.7		1.5

Sample Location	SDWA	PA Act 2	1	, I	MW-15	D		MW-15	D		MW-1:	SD O		MW-1.	5D		MW-1	5D
Sample Date	MCL	MSC	100	5	/26/20	11		5/23/20	12	4	1/24/20	113	4	1/21/20)14	- 4	/23/20	15
Parameter	MCL	Mac	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	A N.	E. B	G 107	E E	, Alt.	R_R_	R. R.	- 80	2 2	R R	2	ALC: NO	A	B.	E. R.	100	D. C.	
Antimony	0.006		mg/l		U	0.0003		U	0.00042		U	0.00034	2000	U	0.00034		U	0.00033
Arsenic	0.012		mg/l		U	0.00095		U	0.00095	1	U	0.00042	Sec.	U	0.00078		U	0.00082
Cadmium	0.005		mg/l	0.0024		0.0002	0.0022		0.0002	0.0022		0.00023	0.0021		0.00023	0.0021		0.00017
Lead		0.005	mg/l	0.000068	UJ	0.000052		U	0.00008	0.00008	1	0.000073		U	0.000085	0.00031	J	0.000082
Dissolved Metals	- A -		B								- 1	. 8 . 1	3 . 3			1.1		1 1
Antimony	0.006		mg/l	0.0	NA			NA			NA			NA		-	NA	
Arsenic	0.012		mg/l		NA			NA	-		NA			NA			NA	
Cadmium	0.005	100	mg/l		NA			NA			NA			NA			NA	
Lead	11.	0.005	mg/l		NA		02	NA			NA			NA		1	NA	
Conventionals	3. 3				-60	AL BO	LE	1	E.E.		1.	E_ E_	L. L.	16	E	to the r	Ø	1.2.
Sulfate ¹	250	1100	mg/l	45.5	1	1.5	37.0	100	1.5	36.7		1.5	31.5	100	1.5	35.7	100	1.5

Sample Location	SDWA	PA Act 2			MW-15	D		MW-15	D
Sample Date	MCL	MSC	100		5/23/20	16	5	/23/20	17
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL
Total Metals	200	, E. S.	- R.	E., E.	. 4.	Star Star	Barrier St.	Hillian	S. R.
Antimony	0,006		mg/l		U	0.00033		U	0,00048
Arsenic	0.012		mg/l		U	0.00054		U	0.00068
Cadmium	0.005		mg/l	0.0017		0.0002	0.0016		0.00019
Lead		0.005	mg/l		U	0.00013		U	0.00009
Dissolved Metals	-	I LAU	1	-	01			_ 1	
Antimony	0.006		mg/l		NA			NA	
Arsenic	0.012		mg/l		NA			NA	
Cadmium	0.005		mg/l		NA			NA	
Lead	2000	0.005	mg/l		NA			NA	
Conventionals	R. R.	THE R	B/	E E	, b.	至_年_	A. E.	E.	E &
Sulfate ¹	250		mg/l	33.8		1.5	34.4	J	1.5

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels

PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.

- Snaucu values instead that the metal concentration exceeded reformance Standards.

 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

 * During the May 2006 sampling event, the groundwater sample from MW-15D could not be collected using a peristaltic pump (as in previous events) and was collected with a bailer. The sampling technique is believed to have caused an increase in turbidity and lead concentration.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-16DR



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2	4	N	4W-16	DR									
Sample Date	MCL	MSC	100		5/22/20	01		5/29/20	02		5/28/20	003		5/4/200)4
Parameter	MCL	MSC	Units	Result	Q	MDL									
Total Metals		1.1	1 1			. 1 . 1						1. 1.		5 B2	1 1
Antimony	0.006		mg/l		U	0.0024		U	0.00096		U	0.0025	0.0011	UJ	0.001
Arsenic	0.012		mg/l		UJ	0.0014		U	0.0014		U	0.0014		UJ	0.00085
Cadmium	0.005		mg/l	0.006	U	0.00064	154	U	0.00094	1.38	U	0.00087		U	0.00076
Lead		0.005	mg/l	1122	U	0.0018		U	0.0012		U	0.0012		U	0.00099
Dissolved Metals	8 8	8 8	100	1 1	- 6	8 . 8 .	8 9	1	1 1			B 100		8 7	
Antimony	0.006		mg/l		NA			NA			NA		1000	NA	
Arsenic	0.012		mg/l		NA		0.50	NA			NA			NA	
Cadmium	0.005		mg/l		UJ	0.00064		NA			NA			NA	
Lead		0.005	mg/l		NA		LL S	NA	- 1		NA			NA	
Conventionals			8-3			- L - B	18.18	- 4	1		0	1		1	1 1
Sulfate ¹	250	11111111	mg/l		U	1.5	1.8	U	1.5		U	1.5		U	1.5

Sample Location	SDWA	MW-16DR MW-16E					DR	M	W-16	DR	MW-16DR					
Sample Date	MCL	MSC			5/2/20	05		/18/20	06	5	/14/20	007	5/21/2008			
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	
Total Metals			B	0.00		1 1		- 1		5 5	- 1	9 8			8 1	
Antimony	0.006		mg/l		U	0.00009		U	0.000038		U	0.000044		U	0.0003	
Arsenic	0.012		mg/l	Line	U	0.00066		U	0.00033		U	0.0007		U	0.00095	
Cadmium	0.005		mg/l	0.0	U	0.000087		U	0.000099	400	U	0.000099		U	0.00021	
Lead		0.005	mg/l	0.00083	U	0.00021		U	0.000047	0.000081	1	0.000037	0.00024	U	0.00005	
Dissolved Metals	8 8	4 1	3	20 10 10	1		100	1	1 2		10	# 1 -		177	SIL	
Antimony	0.006		mg/l		NA			NA			NA		- 25 P	NA		
Arsenic	0.012		mg/l		NA			NA			NA			NA		
Cadmium	0.005	1000	mg/l		NA		Belleville	NA			NA			NA		
Lead		0.005	mg/l		NA		2000	NA			NA			NA		
Conventionals	100		1		0.1	- 1 1	1 1	() j	B. B.					- 82	09	
Sulfate ¹	250		mg/l		U	1.5		U	1.5	DRG-5	U	2.5		U	1.5	

Sample Location	SDWA	PA Act 2	1	N	4W-16	MW-16DR							
Sample Date	MCL	MSC			1/23/20	13	5	/25/20	17				
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL				
Total Metals	- h-	B - B - C	200		11				C 8				
Antimony	0.006		mg/l	1 3 3	U	0.00034		U	0.00048				
Arsenic	0.012	1	mg/l		U	0.00042		U	0.00068				
Cadmium	0.005		mg/l		U	0.00023	1	U	0.00019				
Lead	-	0.005	mg/l	0.0003	1	0.000073	0.00017	1	0.00009				
Dissolved Metals		8 8		8 8	- 8	100	100	8.5	101				
Antimony	0.006		mg/l		NA			NA					
Arsenic	0.012		mg/l		NA			NA	- 1				
Cadmium	0.005		mg/l		NA			NA					
Lead	5.000	0.005	mg/l	0	NA	E-3		NA	1000				
Conventionals	3.E	15 E	801		6	- 6 - 9	2 E-1	C-1					
Sulfate ¹	250		mg/l		U	1.5	2.1	1	1.5				

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels
PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations
Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated
mg/l - milligrams per liter, NA - Not analyzed, NS - Not sampled
Shaded values indicate that the metal concentration exceeded Performance Standards.
1 - Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.
2 - SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

TABLE 3 TOTAL AND DISSOLVED METAL AND SULFATE DATA SUMMARY TABLE 2001-2017 MW-17D



Tonolli Corporation Superfund Site Nesquehoning, Pennsylvania

Sample Location	SDWA	PA Act 2		1	MW-17	D D		MW-17	D		MW-17	7D		MW-17	/D
Sample Date	MCL	MSC		5	/21/20	01		02		5/27/20	03	5/5/2004			
Parameter		MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL
Total Metals	100		8 8			I I	B B		10.0	8 8	. 1				I L
Antimony	0.006		mg/l		U	0.0024	0.0017	U	0.00096		UJ	0.0025	11 3	UJ	0.001
Arsenic	0.012		mg/l		UJ	0.0014		U	0.0014		U	0.0014		UJ	0.00085
Cadmium	0.005		mg/l		U	0.00064	1000	U	0.00094		U	0.00087		U	0.00076
Lead		0.005	mg/l	0.0293	J	0.0018	0.004		0.0012	0.0013	J	0.0012	0.0022	U	0.00099
Dissolved Metals	8 9	8.08	78.3	8 8		製工業の	日で日	1		FORES	8 1		2801	0.00	100
Antimony	0.006		mg/l		NA		-	NA			NA			NA	
Arsenic	0.012	25	mg/l		NA			NA			NA		78	NA	
Cadmium	0.005	1000	mg/l	A.C.	NA			NA			NA		71-	NA	
Lead		0.005	mg/l	0.0059	J	0.0018	Charles .	NA			NA		100 200	NA	
Conventionals	1		1.04	4 1			B B	1	10.00		E.	1		1	1-1
Sulfate ¹	250		mg/l		U	1.5	1.7		1.5	Maria S	U	1.5		U	1.5

Sample Location	SDWA	DWA PA Act 2 MW-17D MW-					MW-1	7D	11000	7D	MW-17D						
Sample Date	MCL	MSC			5/3/20	05	5	/18/20	06		5/15/20	007	5/21/2008				
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL		
Total Metals					_ B _ B	40.00	of the state of		B B	第二章三章三章三章							
Antimony	0.006		mg/l		U	0.00009		U	0.000038		U	0.000044		U	0.0003		
Arsenic	0.012	16.00	mg/l		U	0.00066		U	0.00033		U	0.0007	0.0016	J	0.00095		
Cadmium	0.005		mg/l		U	0.000087	Barre	U	0.000099	0.000	U	0.000099	E-STS	U	0.00021		
Lead		0.005	mg/l	0.0014	1	0.00021	0.00088	U	0.000047	0.001	U	0.000037	0.001		0.00005		
Dissolved Metals	N W	10 日	- 8	B - B -	II.			B.		E-25	9.30				- 60		
Antimony	0.006		mg/l		NA			NA			NA			NA			
Arsenic	0.012		mg/l		NA		The same	NA			NA			NA			
Cadmium	0.005	1/5	mg/l		NA			NA			NA	1		NA			
Lead		0.005	mg/l		NA		1	NA			NA	No.	. 271	NA			
Conventionals	in the st		0 1	_ B B				- N	B - B	100	- 10		1		B B:		
Sulfate ¹	250		mg/l		U	1.5		U	1.5		U	2.5		U	1.5		

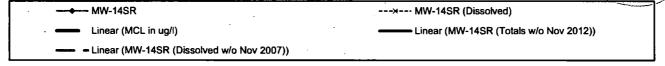
Sample Location	SDWA	PA Act 2		1	MW-17	7D	1	MW-17	D
Sample Date	10000000	PO20003000	-	4	/23/20	13	5	/24/20	17
Parameter	MCL	MSC	Units	Result	Q	MDL	Result	Q	MDL
Total Metals			Bran R	. 1 . 1	J. 1	二年二年	W _ W	. 6	
Antimony	0.006		mg/l		U	0.00034	F-2-3-7	U	0.00048
Arsenic	0.012		mg/l	0.00056	J	0.00042		U	0.00068
Cadmium	0.005		mg/l		U	0.00023		U	0.00019
Lead		0.005	mg/l	0.00071	J	0.000073	0.00051	J	0.00009
Dissolved Metals	R D	H R	, W.,	H. S.	H .		男 三田 三		
Antimony	0.006		mg/l		NA			NA	
Arsenic	0.012		mg/l		NA	-	-	NA	
Cadmium	0.005		mg/l		NA			NA	
Lead		0.005	mg/l	200	NA			NA	
Conventionals	2841		1 _ 1	_ R _ R	_ B	_ 8_ 8	. R. R	_ B	
Sulfate ¹	250	200	mg/l		U	1.5	2.1	J	1.5

- SDWA MCL Safe Drinking Water Act Maximum Contaminant Levels
 PA Act 2 MSC Pennsylvania Act 2 Medium Specific Concentrations
 Q Qualifier, MDL Method detection limit, U Not detected, J Estimated
 mg/l milligrams per liter, NA Not analyzed, NS Not sampled
 Shaded values indicate that the metal concentration exceeded Performance Standards.

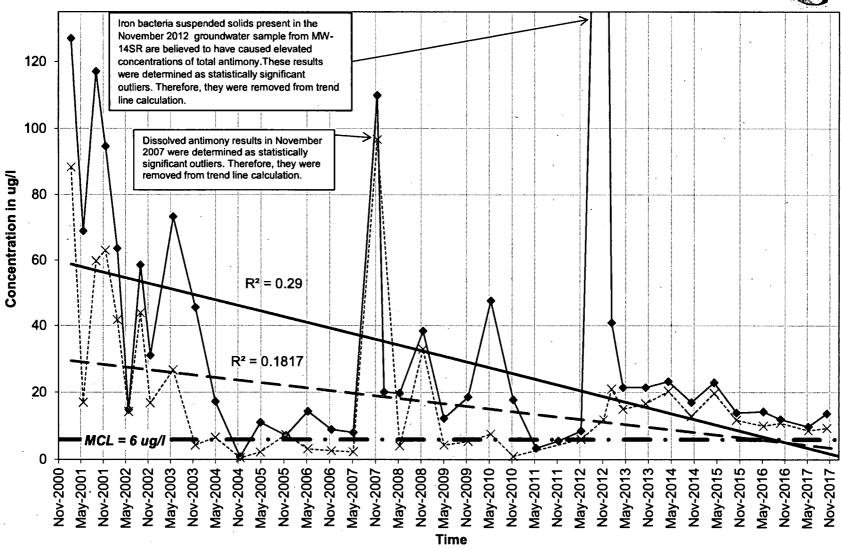
 1 Sulfate is a secondary contaminant MCL, but a performance standard was not established in the ROD.

 2 SDWA MCL for arsenic changed from 0.05 mg/l to 0.01 mg/l in January 2006. Exceedence shading was not updated to reflect this change for data collected prior to January 2006.

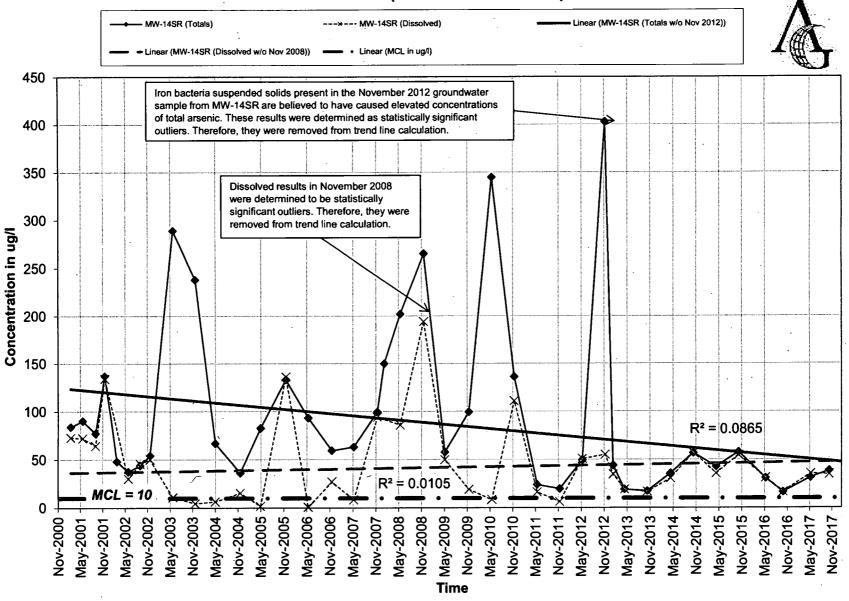
Variation in Antimony Concentration (Total and Dissolved) vs Time at MW-14SR



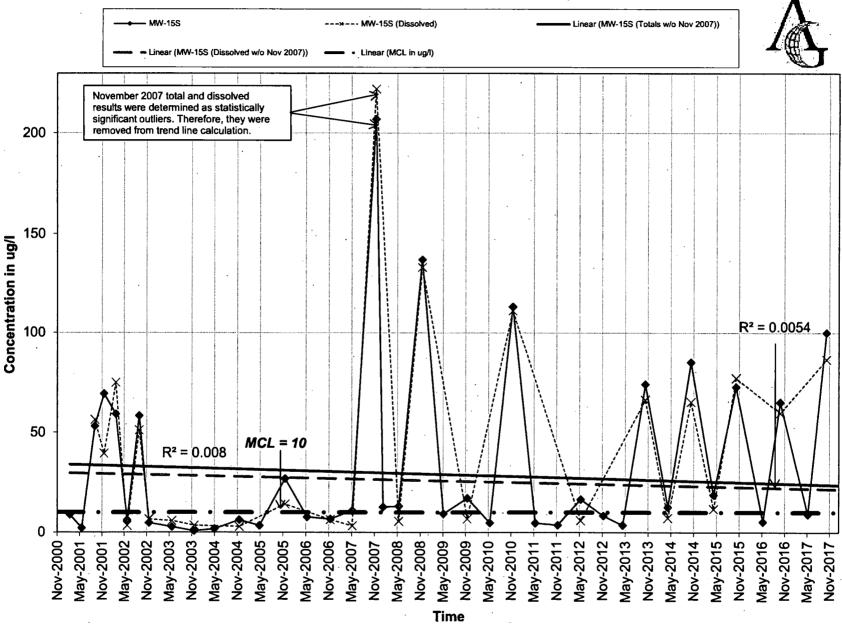




Variation in Arsenic Concentration (Total and Dissolved) vs Time at MW-14SR

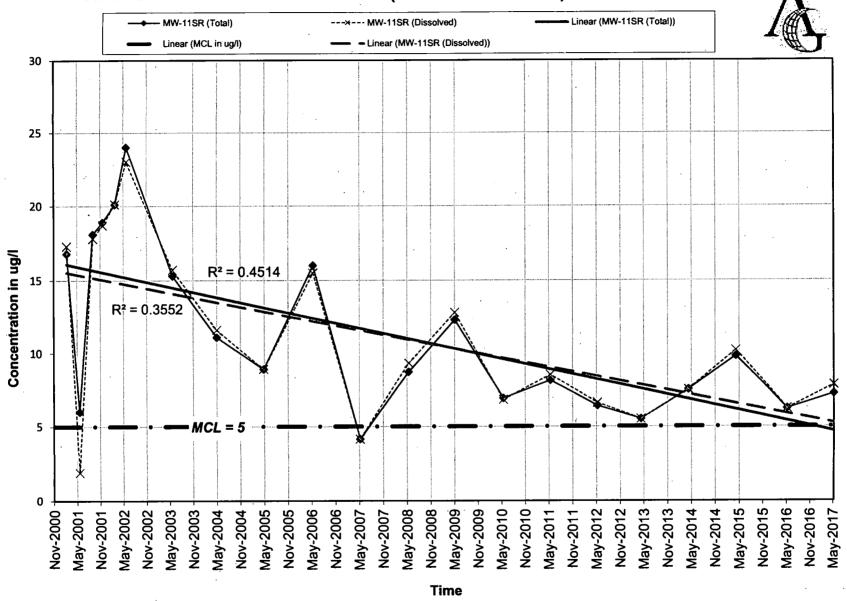


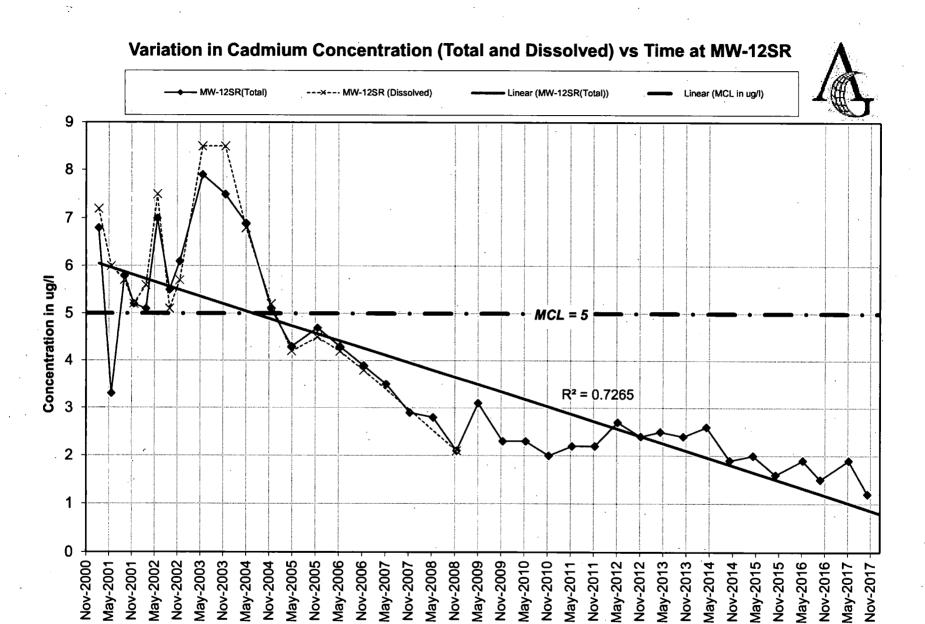
Variation in Arsenic Concentration (Total and Dissolved) vs Time at MW-15S



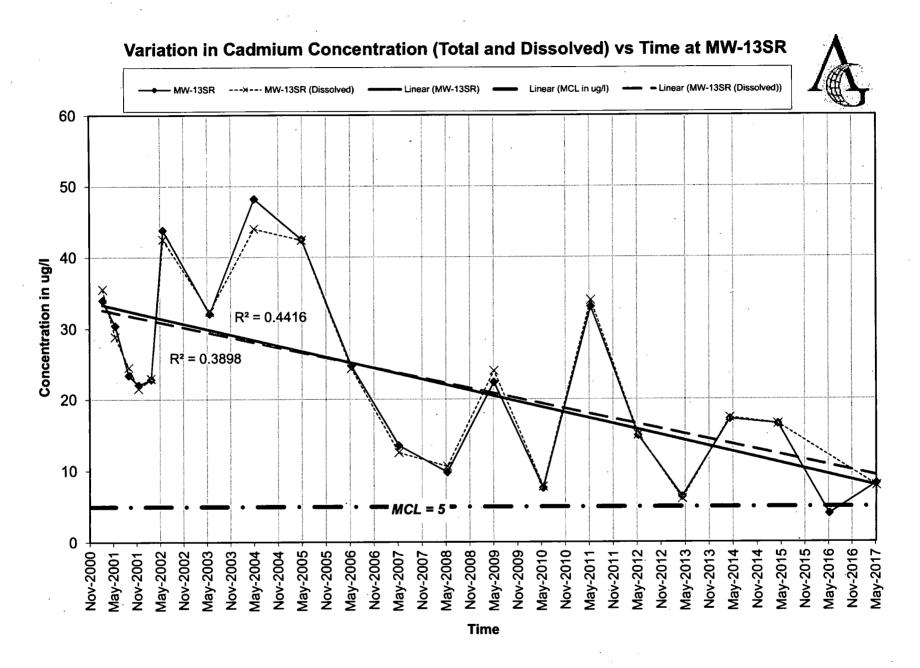
Note: For purposes of drafting the dissolved trend line, total results were included for sample dates when no dissolved results were available.

Variation in Cadmium Concentration (Total and Dissolved) vs Time at MW-11SR



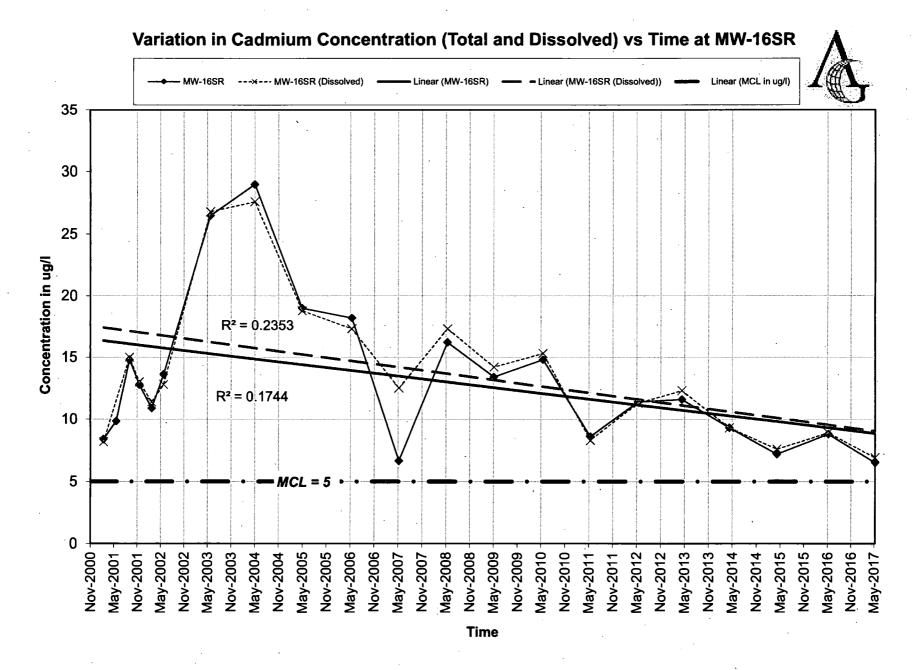


Time



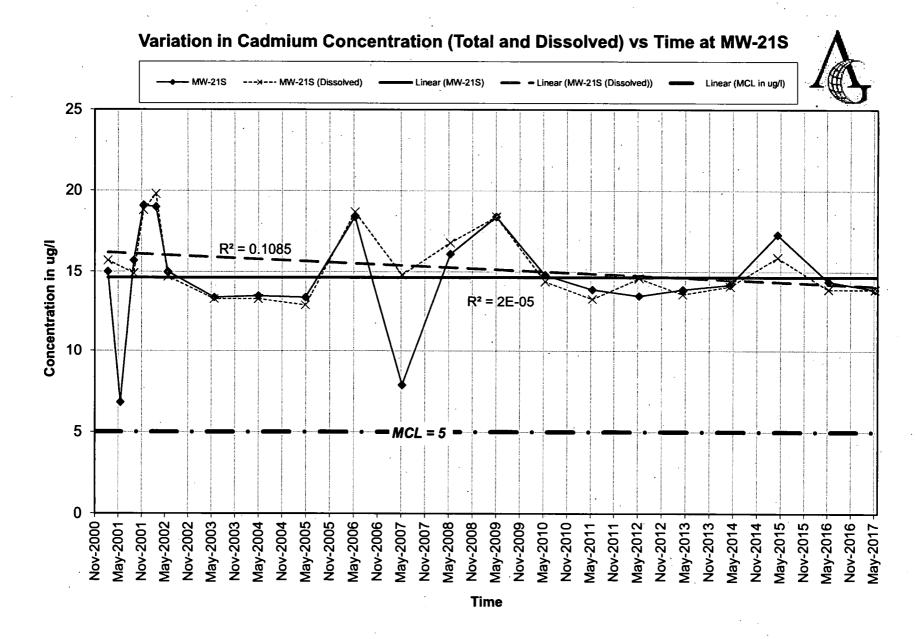
Variation in Cadmium Concentration (Total and Dissolved) vs Time at MW-14SR - MW-14SR Linear (MW-14SR (Totals w/o Nov 2012)) ---x--- MW-14SR (Dissolved) - Linear (MW-14SR (Dissolved w/o May 2004)) -Linear (MCL in ug/l) 200 Iron bacteria suspended solids present in the November 2012 groundwater sample from MW-14SR are believed to have 180 caused elevated concentrations of total cadmium. Result = 440 ug/l, was determined as a statistically significant outlier. Therefore, it was removed from 160 trend line calculation. 140 Concentration in ug/l 120 May 2004 dissolved result was determined as a statistically significant outlier. Therefore, it was removed from trend line calculation. 100 80 MCL = 5 $R^2 = 0.0144$ 60 40 $R^2 = 0.11444$ 20 May-2003 Nov-2005 -May-2006 Nov-2013 -May-2009 May-2011 Nov-2015 Nov-2000 May-2005 Nov-2008 May-2012 May-2013 May-2002 Nov-2002 Nov-2003 Nov-2004 Nov-2006 May-2008 Nov-2009 Nov-2010 Nov-2012 May-2015 May-2016 May-2001 May-2004 May-2007 Nov-2007 May-2010 Nov-2011 May-2014 Nov-2014 Nov-2016 May-2017

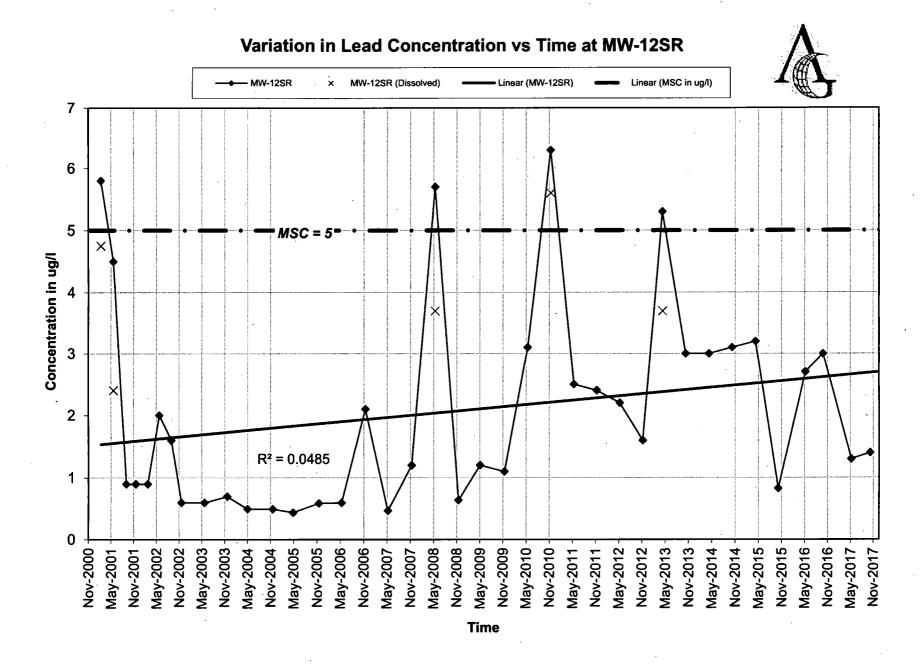
Time



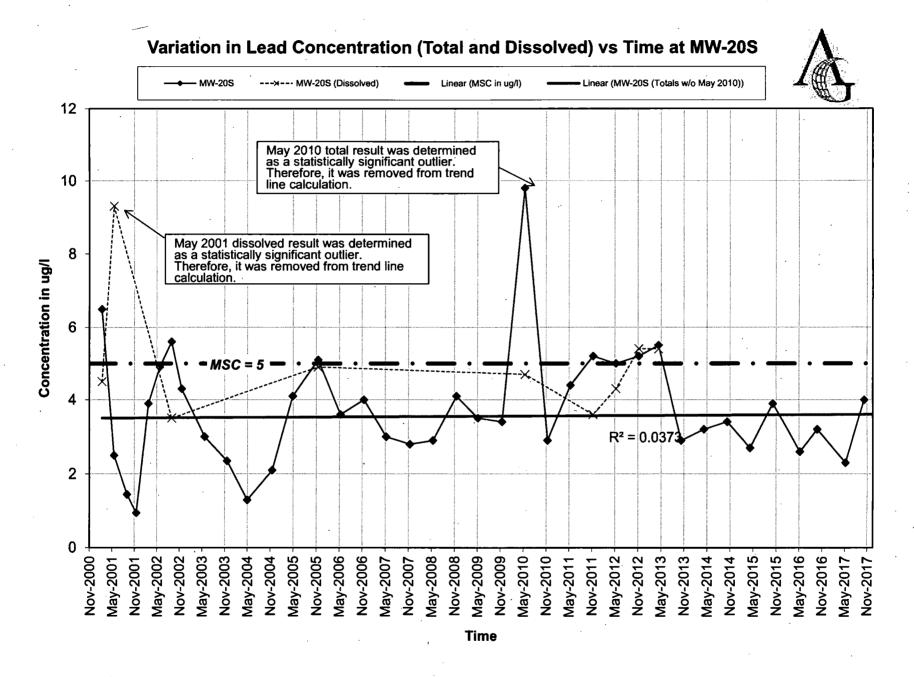
Note: For sampling results which were less than the detection limit, results were assumed to be half of the detection limit to plot the trend lines.

G:Projects\1996\96248-Tonolli Carp Superfund Site\Work Documents\Qrty, GW Sampling\2017\2nd Half 2017\A





Variation in Lead Concentration (Total and Dissolved) vs Time at MW-14SR - MW-14SR ---x--- MW-14SR (Dissolved) Linear (MW-14SR (Total w/o May 2005)) Linear (MSC in ug/l) 14 12 May 2005 total result was determined to be stastically significant outlier. Therefore, it was removed from trend September 2001 dissolved result was determined as a 10 line calculation. statistically significant outlier. Concentration in ug/l 8 6 MSC = 52 $R^2 = 0.0533$ May-2010 -May-2008 May-2003 Nov-2008 Nov-2002 May-2006 Nov-2009 Nov-2010 May-2012 Nov-2012 May-2013 Nov-2013 May-2015 Nov-2015 Nov-2000 Nov-2003 May-2005 Nov-2005 Nov-2006 May-2009 May-2011 Nov-2014 May-2016 Nov-2016 May-2002 May-2004 May-2007 Nov-2011 Aay-2014 May-2017 Nov-2001 Nov-2004 Nov-2007 Time



APPENDIX E –SURFACE WATER AND PORE WATER DATA

TABLE 2 AUGUST 2017 SURFACE WATER RESULTS AND PADEP CRITERIA



Tonolli Superfund Site Nesquehoning, Pennsylvania

			Sample Location		-	W-	1 1	Trib	utai	rv-1	S	W-	2	S	W-	3		SW	4	SW-5		.5
			Lab ID		918621			918621	_	•	918621	3-9	186214	918621	1-9	186212	91862	209-9	186210	918620	<u>)9-9</u>	186210
						9/20		8/29					017	8/2	9/2	017	8/	29/2	017	8/2	29/2	017
			Sample Date			Surface Water			Surface Water			_	Water	Surfa	ce '	Water	Surface Water			Surface Wat		Water
Fish and Aquatic Life					Suria	ice v	Water	<u> </u>	-	W ALC:	Duile				-							
Crite			Remarks			<u> </u>	N/DT	TD 14	مَ	MDI	Degul	ച	MDI	Desult	តា	MDL	Result Q MDL			Result O N		MDL
Continuous	Maximum	Criteria	Parameter	Units	Result	Q	MDL	Result	Ų	MDL	Result	Ų.	MDL	Result	V)	MIDL	IXCSUI	IX	IVEDE	1100411	~1	-
			Total Metals												7.1	0.00046	_	1 7 7	0.00045		TT.	0.00045
0.22	1.1	0.0056	Antimony	mg/L		U	0.00045			0.00045		_	0.00045		_	0.00045			0.00045		-	
0.15	0.34	0.01	Arsenic	mg/L		U	0.00072		U	0.00072			0.00072			0.00072		-	0.00072	·	_	0.00072
0.000072	0.00036	NC	Cadmium	mg/L		U	0.00015		U	0.00015		_	0.00015		_	0.00015			0.00015			0.00015
0.00035	TOW AND ADDRESS OF THE P.	NC	Lead	mg/L		U	0.00011	0.0046		0.00011		Ü	0.00011		U	0.00011		JU	0.00011		U	0.00011
3.50.00033(3.6)	0.003033		Dissolved Metals								-										_	
0.22	1.1	0.0056	Antimony	mg/L		U	0.00045		U	0.00045		U	0.00045		U	0.00045			0.00045			0.00045
0.15	0.34	0.01	Arsenic	mg/L		U	0.00072		U	0.00072		U	0.00072		U	0.00072		_	0.00072		-	0.00072
£0.000072	20,00036	NC	Cadmium	mg/L		Ū	0.00015		U	0.00015		U	0.00015		U	0.00015		_	0.00015			0.00015
0.00035		NC	Lead	mg/L		U	0.00011	0.0036		0.00011		U	0.00011		U	0.00011		U	0.00011		U	0.00011
**************************************			Conventionals																		_	
	Γ .	· -	Hardness, as CaCO3	mg/L	17.1	П	3	34.5	Г	3	13.3		3	15.9		3	16	Ι	3	19.7	$oldsymbol{ol}}}}}}}}}}}}}}}}}}$	3_

Hardness Value Upstream = 17.1

Gray shaded cells indicate calculations that reference the Hardness Value of upstream (background) surface water sample (SW-1)

Bold print indicate criteria exceedence

Q - Qualifier

MDL - Minimum Detection Limit

U - Not Detected

mg/l - milligram per liter

NC - Criteria not developed

TABLE 3 AUGUST 2017 PORE WATER RESULTS AND SITE CRITERIA Tonolli Superfund Site Nesquehoning, Pennsylvania



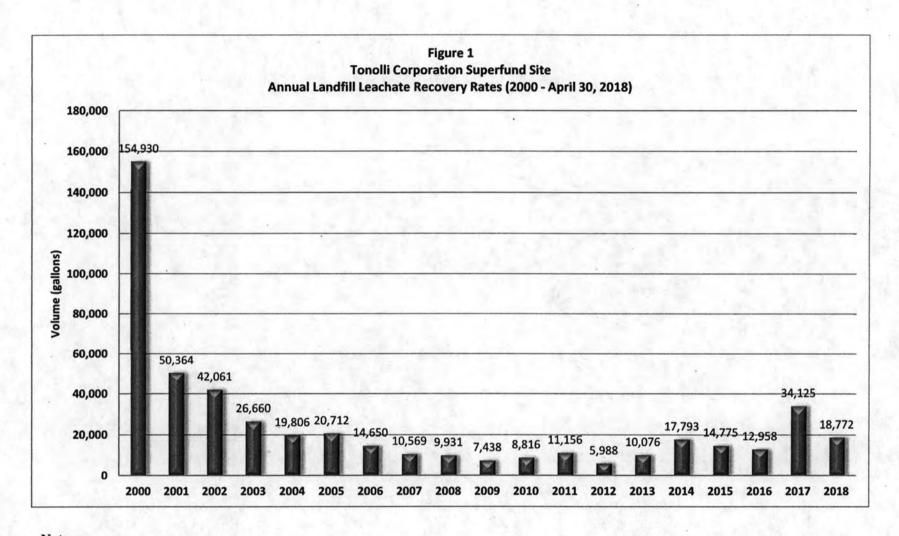
					177	- 1		PW-1D		D	W-	,	1	PW-	3	
		Sample Location			<u>W-</u>											
		Lab ID		918622	<u>3-9</u>	186224	9186	<u> 225-9186</u>	5226	918622					186220	
SDWA	PA Act 2	Sample Date		8/2	9/20	017	{	3/29/2017	<u>'</u>	8/2	9/2	017	8/2	017		
MCL	MSC	Matrix		Pore Water			P	ore Wate	Г	Pore	<u> W</u>	ater	Pore Water			
		Notes		-				Duplicate of PW-1								
		Parameter	Units	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	Result	Q	MDL	
		Total Metals									_			 -		
0.006		Antimony	mg/L	0.009	J	0.00045	0.0165	J	0.00045		U	0.00045		—	0.00045	
0.01		Arsenic	mg/L	0.0041	J	0.00072	0.0078	J	0.00072	0.0012	J	0.00072		-	0.00072	
0.005		Cadmium	mg/L	0.0021	J	0.00015	0.0032	J	0.00015			0.00015			0.00015	
	0.005	Lead	mg/L	0.0907	J	0.00011	0.154	J	0.00011	0.00047	J	0.00011		U	0.00011	
		Dissolved Metals												<u>. </u>		
0.006		Antimony	mg/L	0.0049		0.00045	0.0050		0.00045		U	0.00045		+ +	0.00045	
0.01			mg/L	0.0017	J	0.00072	0.0017	J	0.00072	0.001	J	0.00072		-	0.00072	
0.005	-	Cadmium	mg/L	0.0018		0.00015	0.0017		0.00015		U	0.00015			0.00015	
	0.005	Lead	mg/L	0.0048		0.00011	0.0051		0.00011	0.00012	J	0.00011		U	0.00011	
		Conventionals									_	· ·		—		
		Hardness, as CaCO3	mg/L	112		3	108		3	18.9	<u> </u>	3	46.5	ليا	3	

SDWA MCL - Safe Drinking Water Act Maximum Contaminant Levels PA Act 2 MSC - Pennsylvania Act 2 Medium Specific Concentrations

Q - Qualifier, MDL - Method detection limit, U - Not detected, J - Estimated mg/l - $milligrams\ per\ liter$

Bold values indicate that the metal concentration exceeded the MCL or MSC

APPENDIX F – LANDFILL LEACHATE



Notes:

- 1) Approximately 154,930 gallons of leachate were recovered from the closed landfill, treated on-site, and discharged into Nesquehoning Creek during a period of about one year from 12/8/1999 to 12/13/2000.
- 2) The leachate recovery rate for 2018 includes the time period from 1/1/2018 through 4/30/2018.



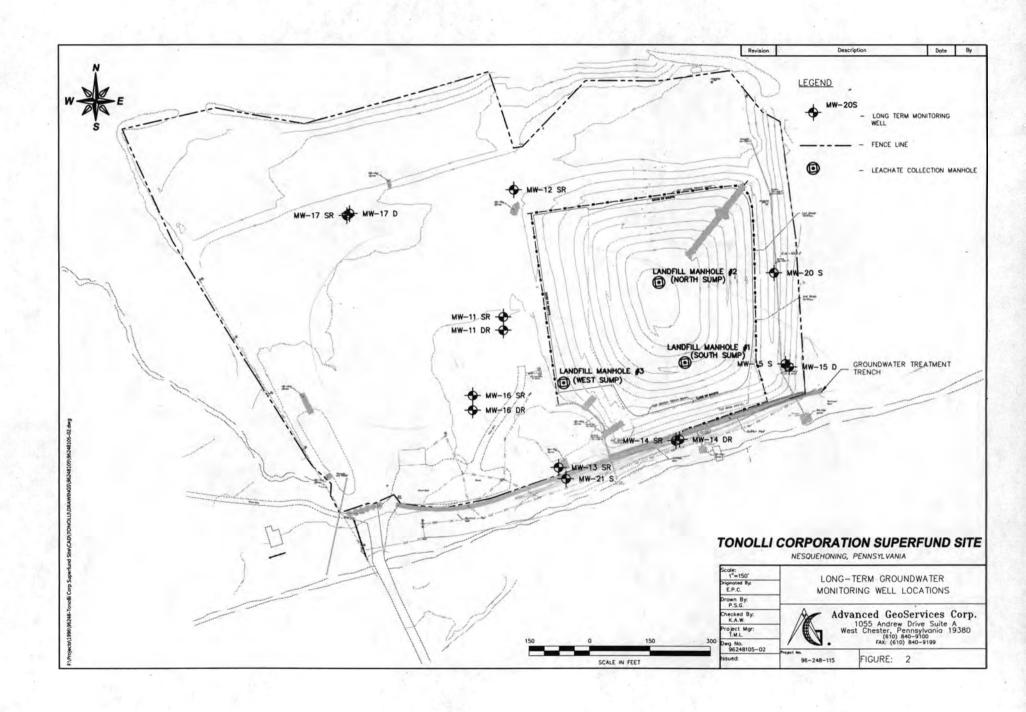


Figure 3 Site map depicting parcels

