

**COMMONWEALTH OF PENNSYLVANIA
DEPARTMENT OF ENVIRONMENTAL PROTECTION**

In the Matter of:

Winner Water Services, Inc.	:	FLLX Demonstration Project
32 West State Street	:	Fawn #91 CRDA
Sharon, PA 16146	:	Fawn #91
	:	Clinton Township, Butler County
	:	Winner Water Services

CONSENT ORDER AND AGREEMENT

This Consent Order and Agreement is entered into this _____ day of _____, 2014, by and between the Commonwealth of Pennsylvania, Department of Environmental Protection (hereinafter “Department”), and Winner Water Services, Inc. (hereinafter “Winner Water”).

The Department has found and determined the following:

A. The Department is the agency vested with the duty and authority to administer and enforce the Surface Mining Conservation and Reclamation Act, Act of May 31, 1945, P.L. 1198, as amended, 52 P.S. § 1396.1 et seq., (“Surface Mining Act”); The Clean Streams Law, Act of June 22, 1937, P.L. 1987, as amended, 35 P.S. § 691.1 et seq., (“Clean Streams Law”); the Bituminous Mine Subsidence and Land Conservation Act, Act of April 27, 1966, P.L. 31, 52 P.S. §§ 1406.1 et seq., (Subsidence Act); the Coal Refuse Disposal Control Act, Act of September 24, 1968, P.L. 1040, as amended, 52 P.S. § 30.51 et seq., (“Coal Refuse Disposal Act”); Section 1917-A of the Administrative Code of 1929, Act of April 9, 1929, P.L. 177, as amended, 71 P.S. §510-17, (“Administrative Code”), The Solid Waste Management Act, Act of July 7, 1980, P.L. 380, No. 97, as amended, 35 P.S. §§ 6018.101 et seq. (“SWMA”), Storage

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Tank and Spill Prevention Act, 35 P.S. §§ 6021.101 et seq., and the Rules and Regulations promulgated thereunder. The Department has been delegated the authority to administer and enforce Title V of the Federal Surface Mining Control and Reclamation Act, 30 U.S.C. § 1201 et seq. (“SMCRA”) through its approved primacy program and implements SMCRA’s Title IV program for the reclamation and restoration of abandoned mine lands through its approved Abandoned Mine Reclamation Plan (“AMR Plan”).

B. Winner Water is a Delaware corporation with a principal place of business and mailing address at 32 West State Street, Sharon, Pennsylvania 16146 whose business includes water management solutions for the oil and gas and mining industries.

C. Pristine Resources, Inc. (“PRI”) is a Delaware corporation with a mailing address of P.O. Box 36, Revloc, Pennsylvania 15948.

D. The Department issued PRI CDRA Permit 10743701 for a coal refuse disposal site known as Fawn #91 CRDA and Underground Mine Permit 10841302 for a bituminous coal mine known as Fawn #91. PRI acquired the mine and coal refuse disposal area from International Steel Group which had acquired the sites from Bethlehem Steel Corporation. No active mining or coal refuse disposal has occurred since PRI acquired the sites.

E. PRI operates and maintains a treatment system (“PRI Treatment System”) that treats mine drainage associated with the Fawn #91 CRDA and Fawn #91 sites pursuant to NPDES Permit 0215635. The PRI Treatment System discharges to Lardintown Run, a tributary of Bull Creek and a sub-tributary of the Allegheny River. PRI’s obligation to operate and maintain this treatment system is set forth in a Post-Mining Treatment Trust Consent Order and Agreement dated June 10th, 2004.

F. In 2013, the Department announced the availability of a document known as

“White Paper: Utilization of Mine Influenced Water for Natural Gas Extraction Activities” (hereinafter “MIW White Paper”). The MIW White Paper facilitates the treatment of mine influenced water by enabling the use of such water for natural gas extraction. The MIW White Paper establishes a process for evaluating the proposed use of mine influenced water for natural gas extraction and addresses potential solutions to long-term liability issues. One option provided in the MIW White Paper for addressing long-term liability issues is to use a consent order and agreement to limit liability for the use of mine influenced water for natural gas extraction activities. Winner Water proposed the consent order and agreement option identified in the MIW White Paper to limit liability for the long-term treatment of mine influenced water emanating from the site.

G. Winner Water has proposed to supplement the treatment of some of the mine influenced water using its patented water treatment technology known as flotation liquid-liquid extraction (“FLLX”) which will produce higher-quality water for beneficial reuse in the extraction of oil and gas and thereby conserve water resources within the Commonwealth. Winner Water has proposed to market and sell the mine influenced water it treats using the FLLX system. Winner Water has provided a more detailed description of FLLX which is attached as Exhibit A. An aerial photograph and accompanying narrative describes how the FLLX System will be deployed at the PRI Treatment System, (Exhibit B).

H. The FLLX treatment system will be installed in parallel to the PRI Treatment System and will consist of commercial oil/water separator, a 2000 gallon post-process tank used to remove residual extractant from processed water, two 3000 pound granular activated carbon (GAC) vessels, and a 150,000 gallon processed water storage tank. As such, the FLLX treatment system is considered a flow-through process tank that is not subject to the Storage Tank and Spill

Prevention Act. The FLLX treatment system will not create a new discharge or result in an increase of pollutants from the PRI Treatment System. Any treated water not beneficially reused will be recirculated from the water storage tanks to the beginning of PRI Treatment System treatment pond which receives the current mine discharge. Thus, the FLLX treatment system will result in cleaner water entering the PRI Treatment system.

I. In 2008, Winner Water conducted a field demonstration which used a FLLX pilot system in St. Michael, Pennsylvania. During the demonstration, the Department conducted water quality sampling of both the raw and treated water which showed the presence of the following volatile organic compounds (“VOCs”) in either the raw water and/or the treated water: trimethylbenzene, 2-butanone (MEK), 2-hexanone, 4-methyl-2-pentanone (MIBK), acetone, m/p-xylene, o-xylenes, tetrahydrofuran (THF), and toluene. Winner Water analyzed the commercial products used to assemble the plant components and to pre-clean the used tank deployed in the FLLX pilot system which found that the VOCs detected were either constituents of the solvent used to weld the PVC piping during hardware assembly or of the cleaning solvent used to clean the used tank prior to operation of the FLLX system. Winner Water also reviewed the Material Safety Data Sheets (MSDSs) for the sodium carbonate reagent and the petroleum distillate extractant used in the FLLX process, which revealed that none of the VOCs detected by the Department are constituents in the FLLX process. For this reasons, Winner Water does not believe that any of the VOCs detected during the pilot testing of the FLLX process are intrinsic to the FLLX process but rather were the result of residual compounds left-over from construction of the system. In order to address potential VOCs, Winner Water has agreed to add two granular activated carbon (“GAC”) units to the FLLX process prior to discharge and to conduct focused, limited VOC monitoring to verify that VOCs are not present in the treatment system. Upon

confirmation that VOCs are not present above the acceptable water quality criteria in the FLLX treatment system, Winner will discontinue VOC monitoring and the use of the GAC units.

J. The FLLX process generates ferrous sulfate and sodium sulfate. The ferrous sulfate can be used as a coagulant or flocculant in municipal and industrial water treatment, odor control to minimize hydrogen sulfide release, phosphorus removal, and sludge thickening, conditioning and dewatering agent. The sodium sulfate can be used as a hardness removal agent in municipal and industrial water treatment (flowback water treatment primary target), fertilizer additive, soap and detergent filler, paper production, and refining agent in the glass industry. Winner Water has agreed that the ferrous sulfate and sodium sulfate will not be stored onsite in excess of 30 days after being generated (30-day period) and will be disposed of at the expiration of the 30-day period.

K. Winner Water shall submit an engineer's report fully satisfying the requirements set forth at 25 Pa. Code § 91.23.

L. Winner Water has not been involved with any coal mining activities at the Fawn #91 CRDA or Fawn #91 sites and is not and has not been a related party to the previous operators or owners of the Fawn #91 CRDA or Fawn #91 sites. Neither Winner Water nor any of its agents, associates, affiliates, subsidiaries, or partners has a prior nexus or connection to the Fawn #91 CRDA or Fawn #91 sites and has not created the Fawn #91 CRDA or Fawn #91 sites. In addition, Winner Water has no past or present responsibility to operate, maintain and/or fund the PRI treatment system.

M. Winner Water is not now and has never been an "operator" of the Fawn #91 CRDA or Fawn #91 sites or the PRI Treatment System as the term "operator" is defined under the laws and regulations set forth in Paragraph A of this Consent Order and Agreement.

N. The Department is executing this Consent Order and Agreement to authorize Winner Water to conduct the actions required by this Consent Order and Agreement and to provide Winner Water with protection from liability for the treatment of mine influenced water from the Fawn #91 CRDA or Fawn #91 sites. Furthermore, the Department has advised Winner Water that the Department does not believe that it could impose liability upon Winner Water customers and would not do so even if it could.

O. Winner Water may immediately commence marketing and selling of mine influenced water emanating from the Fawn #91 CRDA or Fawn #91 sites. Within 30 days of this Consent Order and Agreement, Winner Water shall submit to the Department a Water Management Plan (8000-PM-OOG0087) attached hereto as Exhibit C.

P. The activities proposed by Winner Water herein are in the interest of the environment and the public. The proposed activities benefit the environment and public by utilizing an impaired water to substitute for and thereby reduce the demand for fresh water resources. The proposed transfer of water quality information is expected to assist the Department in improving the water quality in and around the Fawn #91 CRDA or Fawn #91 sites.

Q. Winner Water is authorized to treat, store, withdraw, and sell water emanating from the mine drainage treatment system on the Fawn #91 property in accordance with the required Water Management Plan, and purchasers of such water may store such water as fresh water in centralized impoundments authorized by 25 Pa. Code Chapter 105 or in on-site fresh water pits as authorized by 25 Pa. Code Chapter 78.

R. Prior to taking final action on any Water Management Plan pursuant to this Consent Order and Agreement, the Department shall provide public notice of the proposed

project in a newspaper of general circulation, published in the locality of the proposed project, once a week for four consecutive weeks, and shall give public notice in the Pennsylvania Bulletin.

After full and complete negotiation of all matters set forth in this Consent Order and Agreement and upon mutual exchange of covenants contained herein, the parties, desiring to be legally bound, hereby AGREE, and the Department so ORDERS Winner Water as follows:

1. **Authority.** This Consent Order and Agreement is an Order of the Department authorized and issued pursuant to Section 5 of The Clean Streams Law, 35 P.S. § 691.5; and Section 1917-A of the Administrative Code, supra.

2. **Findings.**

Winner Water agrees that the findings in Paragraphs A through R are true and correct and, in any matter or proceeding involving Winner Water and the Department, Winner Water shall not challenge the accuracy or validity of these findings.

3. **Engineer's Report.**

Within thirty (30) days of the execution of this Consent Order and Agreement, Winner Water shall submit an Engineers Report pursuant to 25 Pa. Code 91.23 showing what is proposed and permitting the basis of design for the FLLX system.

4. **Sampling Protocols and Frequency.**

a. Winner Water shall conduct limited VOC sampling and analysis of the raw water and treated water to confirm that VOCs are not contributed by the FLLX process according to the following schedule and parameters:

- (1) First Baseline Sampling Event: Within thirty (30) days of

commencing operation of the FLLX system, Winner Water shall conduct baseline sampling of the influent to the FLLX, the effluent from the FLLX immediately after the GAC system and the effluent from the PRI Treatment System and shall analyze the samples for the following VOCs: 1,2,4-trimethylbenzene, 2-butanone (MEK), 2-hexanone, 4-methyl-2-pentanone (MIBK), acetone, m/p-xylene, o-xylenes, tetrahydrofuran (THF), and toluene (hereinafter the “First Baseline Sampling”).

(2) Second Baseline Sampling Event: Within sixty (60) days of commencing operation of the FLLX system, Winner Water shall conduct baseline sampling of the influent to the FLLX, the effluent from the FLLX immediately after the GAC system and the effluent from the PRI Treatment System and shall analyze the samples for the following VOCs: 1,2,4-trimethylbenzene, 2-butanone (MEK), 2-hexanone, 4-methyl-2-pentanone (MIBK), acetone, m/p-xylene, o-xylenes, tetrahydrofuran (THF), and toluene (hereinafter the “Second Baseline Sampling”).

(3) If either of the First Baseline Sampling or Second Baseline Sampling indicate that any of the above-referenced VOCs are present in the treated water prior to the GAC units at concentrations exceeding applicable water quality criteria, then Winner Water shall continue to operate the GAC units.

(4) If the above-referenced VOCs are not detected at concentrations above applicable water quality criteria, then Winner Water may discontinue use of the GAC units.

5. Residuals Storage and Disposal.

a. The ferrous sulfate and sodium sulfate may be excluded from the definition of “residual waste” and “waste” under the Department’s Residual Waste Regulations at 25 Pa.

Code § 287.1 so long as the ferrous sulfate and sodium sulfate are used or reused as an ingredient in an industrial process to make a product or employed in a particular function or application as an effective substitute for a commercial product, provided they are not being reclaimed, and provided they do not fall within the provisions of section (iii) of the “waste” definition set forth at 25 Pa. Code § 287.1, which will assist Winner Water in its efforts to sell or beneficially reuse these waste materials.

b. Ferrous sulfate and sodium sulfate from the operation of the FLLX process will not be stored onsite in excess of 30 days after being generated (30-day period) and will be properly disposed of at the expiration of the 30-day period. Disposal of the ferrous sulfate and sodium sulfate shall be done in accordance with the Department’s Residual Waste Regulations.

c. Winner Water shall provide the Department with a monthly report detailing storage, sale, and/or disposal of the ferrous sulfate and sodium sulfate.

d. Winner Water shall post a bond within thirty (30) days in an amount and as a form, acceptable to the Department, to provide for the disposal of the residuals and for the decommissioning and removal of the FLLX system and extractant.

6. **Water Management Plan Implementation.**

a. Winner Water shall treat, market, sell, and allow the withdrawal of water emanating from the Fawn #91 CRDA or Fawn #91 sites in accordance with the Water Management Plan approved by the Department and set forth in Exhibit C.

b. Commensurate with commencement of the operations proposed by Winner Water described herein, Winner Water shall initiate and diligently undertake the monitoring and other water management requirements identified by the Water Management Plan.

c. Within fourteen (14) days of receipt of the water quality and quantity data

collected in accordance with Paragraph 6.b., Winner Water shall submit copies of any such data to the Department.

7. **Liability of Winner Water.**

a. The Department will not assert in any form or proceeding that Winner Water is responsible for treatment of the water emanating from the Fawn #91 CRDA, the Fawn #91 or the PRI Treatment System.

b. The Department will not require Winner Water to pay for or otherwise fund the treatment of the water emanating from the Fawn #91 CRDA, the Fawn #91 or the PRI Treatment System.

c. The Department will not assert that Winner Water is an “operator of a mine” or an “occupier of land” under Section 315 or 316 of the Clean Streams Law, 35 P.S. §§ 691.315 or 691.316 or the Surface Mining Act or any regulations promulgated thereunder.

d. The limitations on liability afforded to Winner Water in this Paragraph are also intended to extend fully to Winner Water’s parents, subsidiaries, affiliates, members, directors, officers, managers, authorized persons, contractors, representatives and agents.

8. **Correspondence with the Department.**

Joseph Koricich, District Mining Manager
DEP California District Mining Office
25 Technology Drive
California Technology Park
Coal Center, PA 15423

9. **Correspondence with Winner Water.**

Dr. John Ontiveros
President and CEO
Winner Water Services
32 West State Street
Sharon, PA 16146

Service of any notice or any legal process for any purpose under this Consent Order and Agreement, including its enforcement, may be made by mailing a copy by first class mail to the above address.

10. **Severability.** The paragraphs of this Consent Order and Agreement shall be severable and should any part hereof be declared invalid or unenforceable, the remainder shall continue in full force and effect between the parties.

11. **Entire Agreement.** This Consent Order and Agreement shall constitute the entire integrated agreement of the parties. No prior or contemporaneous communication or prior drafts shall be relevant or admissible for purposes of determining the meaning or extent of any provisions herein in any litigation or any other proceeding.

12. **Attorney Fees.** The parties shall bear their respective attorneys' fees, expenses, and other costs in the prosecution or defense of this matter or any related matters, arising prior to execution of this Consent Order and Agreement.

13. **Modifications.** No changes, additions, modifications, or amendments of this Consent Order and Agreement shall be effective unless they are set out in writing and signed by the parties hereto.


14. **Titles.** A title used at the beginning of any paragraph of this Consent Order and Agreement may be used to aid in the construction of that paragraph, but shall not be treated as controlling.

15. **Termination.** Winner Water Services obligations under this Consent Order and Agreement shall terminate on December 31, 2015. The liability protections hereunder shall not terminate.

16. **Counterparts.** This Consent Order and Agreement or amendments thereto may be executed in multiple counterparts, each of which shall be deemed an original agreement, and all of which shall constitute one agreement between the parties.

IN WITNESS WHEREOF, the parties hereto have caused this Consent Order and Agreement to be executed by their duly authorized representatives. The undersigned representatives of Winner Water certify under penalty of law, as provided by 18 Pa. C.S. § 4904, that they are authorized to execute this Consent Order and Agreement on behalf of Winner Water and that Winner Water consents to the entry of this Consent Order and Agreement as final ORDER of the Department.

Signature by Winner Water’s attorney certifies only that the agreement has been signed after consulting with counsel.

<p>FOR WINNER WATER SERVICES, INC.</p> <p>By: _____</p> <p>Name: John Ontiveros</p> <p>Title: President and CEO</p>	<p>FOR THE COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION:</p> <p>By:  _____</p> <p>Name: Joe Kocic</p> <p>Title: Director of Mining Matters C.E.D.O.</p>
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APPROVED AS TO FORM:

By: _____
Name: Peter J. Fontaine
Title: Counsel to Winner Water Services

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<p>FOR WINNER WATER SERVICES, INC.</p> <p>By: _____</p> <p>Name: John Ontiveros</p> <p>Title: President and CEO</p>	<p>FOR THE COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION:</p> <p>By: <u>M.A. Schellou</u></p> <p>Name: <u>MARTIN A. SCHLOTTEN JR</u></p> <p>Title: <u>Senior Counsel for Special Projects</u></p>
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APPROVED AS TO FORM:

By: _____
 Name: Peter J. Fontaine
 Title: Counsel to Winner Water Services

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FOR WINNER WATER SERVICES, INC. By:  Name: John Ontiveros Title: President and CEO	FOR THE COMMONWEALTH OF PENNSYLVANIA DEPARTMENT OF ENVIRONMENTAL PROTECTION: By: _____ Name: Title:
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APPROVED AS TO FORM:

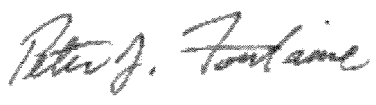

By: _____
Name: Peter J. Fontaine
Title: Counsel to Winner Water Services

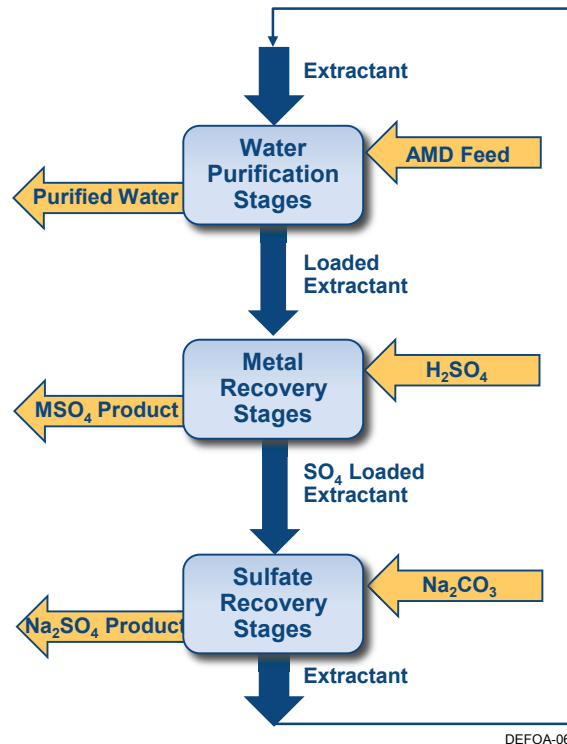
EXHIBIT A

Exhibit A. Hydro Flex Treatment System

WWS is installing a transportable, semi-mobile AMD treatment system using Battelle's patented Hydro Flex process, US Patent 8,585,903, at Arcelor Mittal's site in Sarver, PA. A 100 gallon per minute treatment system will be installed adjacent to Arcelor Mittal's existing NaOH-based AMD treatment system. The Arcelor Mittal treatment system has a Maelstrom Aerator unit with a NaOH feed drip, an Oxidizing pond, and a Polishing pond. The resulting effluent from their treatment system is low in iron but high in sulfates. We're going to treat their effluent, using the Hydro Flex system, to reduce the concentration of sulfates and provide the treated water to the oil and gas companies. Significant drilling is occurring in Butler and Armstrong counties which are located close to the treatment site.

Winner Water's Hydro Flex process provides an efficient means of removing metal cations, as well as, sulfate, phosphorous, and nitrogen anions from wastewater. The Hydro Flex process "mines" contaminants for resale, reuse, or disposal and leaves clean (nearly potable) process water. As compared to reverse osmosis (RO), the Hydro Flex process is significantly less expensive while providing similar removal efficiencies. As compared to simple lime beds, it is slightly more expensive but has the additional advantage of removing sulfates which conventional lime bed treatment does not remove.

Hydro Flex is a platform technology based on well understood and widely applied solvent extraction processes. As shown in the figure, it has three distinct stages—water purification, metal recovery, and sulfate recovery—and produces three distinct and potentially useful byproducts. Solvent extraction has been practiced in the mining industry for decades to recover copper, uranium, and other metals from leach solutions. In all cases, an organic extractant is used to pull metals or other charged compounds from aqueous solution into an organic phase by mixing. The organic phase splits from the aqueous phase in a settler, and is drawn, along with the metals, into a separate stripping section. Typically in this section, the organic phase is contacted with an aqueous stream that has higher or lower pH than the leach stream, which causes the metals to be stripped back into an aqueous solution. High recycle rates in the stripping section allow for metals to be concentrated many times over to a recoverable level. The stripping section also regenerates the organic phase such that it can be recycled in the process, reducing cost and waste.



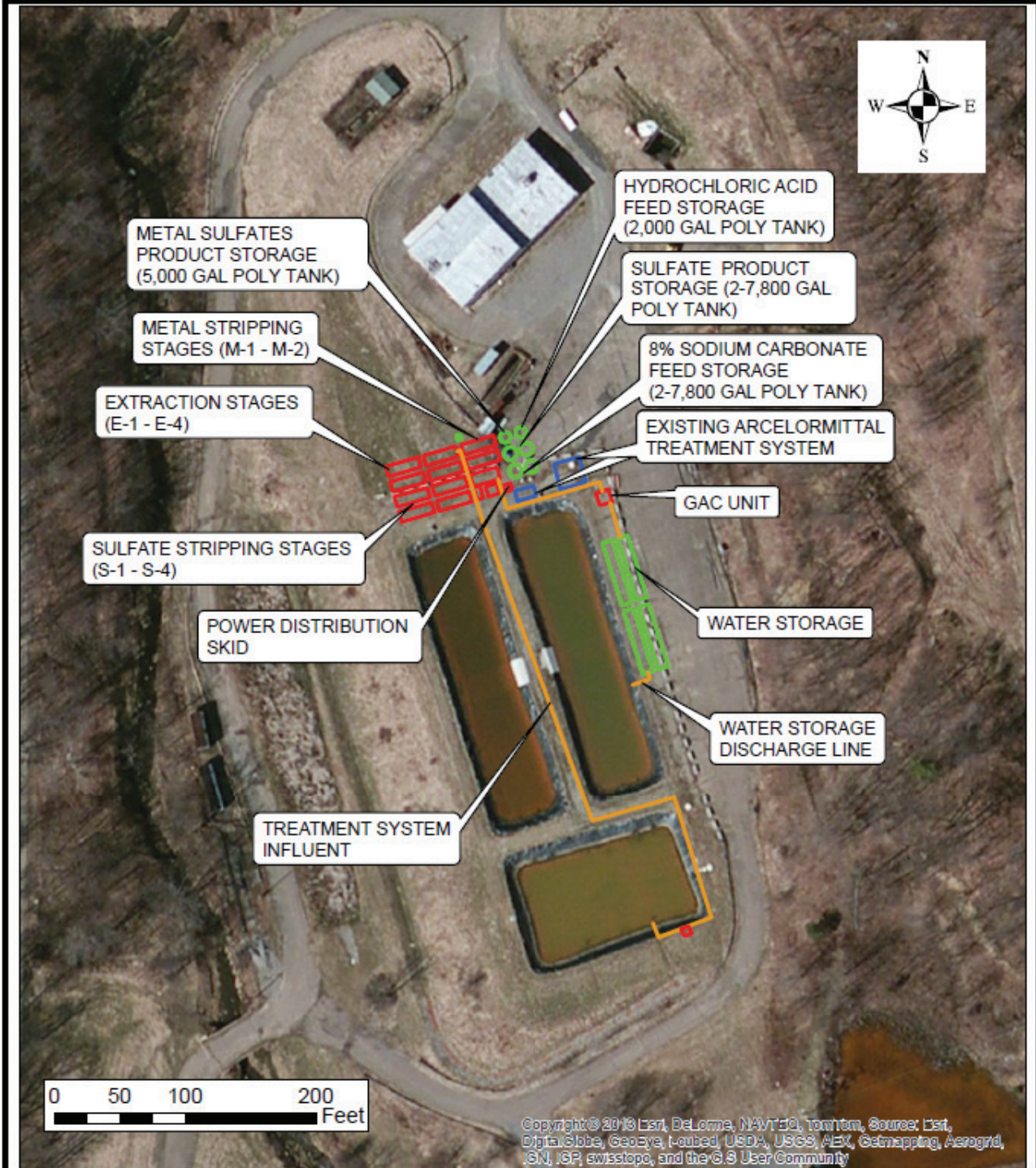
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EXHIBIT B

Exhibit B. Hydro Flex Site Description

Winner Water plans on using the existing discharge point for Fawn Mine #91, NPDES PA 0002780. We discussed placement of our treatment system with Arcelor Mittal and are placing it at the north end next to the ponds. Figure 1 shows an aerial view of the existing Arcelor Mittal treatment system and the proposed location of the FLLX system. Figure 2 shows a revision to the site layout revised due to property line dimensions and future Arcelor Mittal plans for the site. The actual configuration may differ slightly as the system is installed. The water will be withdrawn from the bottom pond, treated in the FLLX system and discharged to water storage tanks and/or the first treatment pond. During the project, one of the goals is to identify and provide customers who could use the treated water for hydraulic fracturing.

Any treated water not provided for beneficial use will be discharged to the Arcelor Mittal treatment pond located near the top of the photo. The current mine discharge enters the Arcelor Mittal treatment system at this point; flows to the bottom pond; exits from this pond down the hill to a final pond; and discharges into Lardintown Run.



ArcelorMittal Site
Sarver, PA

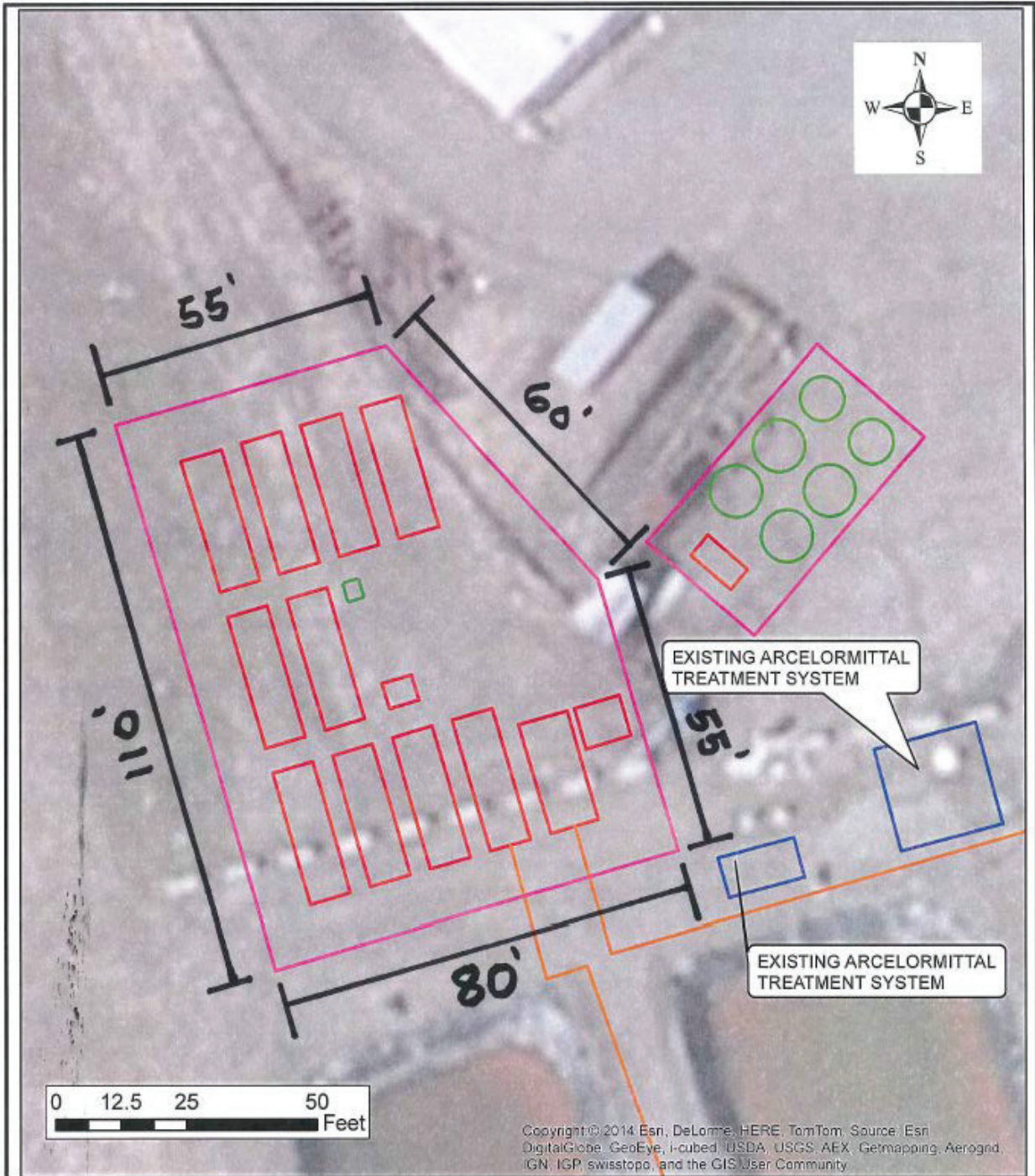
Winner Water Services HydroFlex Acid Mine Water Treatment System



FIGURE 1
Site Layout

Figure 1. Overview of FLLX Placement at Sarver

DATE: February 07, 2014 PROJECT NO.: 14-0000 REVISION NO.: 1



ArcelorMittal Site
Sarver, PA

Winner Water Services HydroFlex Acid Mine Water Treatment System


	FIGURE 1 Site Layout	
	DATE: February 27, 2014	PROJECT NO.: 11231
		REVISION NO.: 0

Figure 2. Expanded view of FLLX placement

EXHIBIT C



WATER MANAGEMENT PLAN FOR MARCELLUS SHALE GAS WELL DEVELOPMENT EXAMPLE FORMAT

Operator and Plan Coverage Information:

Well Operator Winner Water Services, Inc	DEP ID# NA	Address 32 West State St Sharon, PA 16146
Contact Name/Title Todd Beers, COO	Contract Phone (814) 590-4323	Contact E-mail beerst@winnerh2o.com
Area Covered; This Water Management Plan applies to wells located in the following counties: Allegheny, Armstrong, Butler		

General Water Source Information:

Section A. List of Water Sources

	Source Name	Location			Amount		Type of Source (check)			
		Municipality / County	Watershed HUC 8 Code	Major River Basin*	Average Daily Quantity (gpd)	Max. Withdrawal Rate (gpm)	Surface Water	Groundwater	Wastewater, Mine Water, Cooling Water Discharge	Public Water Supply
1	Fawn Mine #91	Clinton TWP Butler CNTY	05010009	Ohio	144,000	100	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>	<input type="checkbox"/>
2							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
3							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
4							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
5							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
6							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
7							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
8							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
9							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
10							<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

* Major River Basins = (1) Delaware; (2) Great Lakes (including Genesee River Basin; (3) Ohio; (4) Potomac; or (5) Susquehanna

Section B. Water Source and Use Monitoring / Act 220 Water Use Registration and Reporting

For sources in Susquehanna River Basin, refer to a water withdrawal and consumptive use metering and monitoring plan meeting SRBC requirements. For sources in Delaware River Basin, refer to a water withdrawal and use monitoring plan meeting DRBC requirements. ***Water withdrawal and use monitoring plans approved meeting SRBC and DRBC requirements may be incorporated by reference and are accepted by DEP.***

For sources in other basins, provide a water source and use monitoring plan.

Will the total water withdrawn from listed sources and other sources operated by the gas well operator in same watershed exceed an average rate of 10,000 gpd in any 30-day period? If yes, note that an Act 220 registration must be filed within 30 days of initiating a water withdrawal or use.	<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No
--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------	---------------------------------------------------------------------

Section C. Surface Water Sources				
<i>The following types of information would be provided for each surface water source.</i>				
C.1 Source Identification & Notification				
§ A Source #	Name of Stream or Other Surface Water Body	Location of Proposed Withdrawal Point:		
		HUC-8 Code	County	Municipality
				Lat: ____° ____' ____"
				Long: ____° ____' ____"
<i>Attach copy of USGS 7½ Minute Quadrangle map indicating location of proposed source</i>				
C.2 River Basin Commission Approvals				
If the source is located in the Delaware or Susquehanna River Basin, have you obtained DRBC or SRBC approval <input type="checkbox"/> Yes <input type="checkbox"/> No				
Date application submitted: _____		Anticipated approval date: _____		
SRBC or DRBC Approval No.: _____		Date issued: _____		
C.3 Low Flow Analysis				
a. Drainage area at point of withdrawal (in square miles):		Describe or attach basis of calculation:		
b. Q ₇₋₁₀ low flow at point of withdrawal (in gpd):		Describe or attach basis of calculation (e.g., <i>StreamStats printout</i>)		
c. Average daily flow of stream at point of withdrawal (in gpd):		Describe or attach basis of calculation (e.g., <i>StreamStats printout</i>)		
d. Is proposed maximum rate of withdrawal greater than 10% of Q ₇₋₁₀ at point of withdrawal? <input type="checkbox"/> Yes <input type="checkbox"/> No				
C.4 Stream Classification and Uses				
a. Designated use classification per 25 Pa. Code. Ch. 93:				
b. PaDEP existing use determinations: <i>(if different than designated uses in Ch. 93)</i>				
c. Is the proposed source a special protection water (High Quality or Exceptional Value)? <input type="checkbox"/> Yes <input type="checkbox"/> No				
d. Is stream classified by the Pa. Fish & Boat Commission as a Wild Trout Stream? <input type="checkbox"/> Yes <input type="checkbox"/> No				
If yes, what classification of wild trout stream? <input type="checkbox"/> Class A <input type="checkbox"/> Not Class A If known: <input type="checkbox"/> Class B <input type="checkbox"/> Class C <input type="checkbox"/> Class D				
C.5 PA Natural Diversity Inventory (PNDI)				
Attach results of a PNDI search with respect to the proposed surface water source and supporting documentation of conflict resolution, if applicable.				
C.6 Withdrawal Impacts Analysis				
A narrative withdrawal impact analysis which addresses anticipated impacts on the following items, and describes the methods proposed to avoid or mitigate impacts (such as proposed passby flow conditions). The description of anticipated impacts would indicate impacts anticipated <i>after</i> giving effect to the proposed avoidance or mitigation measures.				
Impact questions:				
a. <i>Attach a plan indicating how the surface water withdrawal intake will be designed and operated to minimize entrainment and impingement of fish and other aquatic life.</i>				
b. <i>Are there any wetlands in the floodplain downstream of the proposed withdrawal where the withdrawal is anticipated to have a material impact on the elevation or duration of water levels in the wetland? If yes, identify the wetlands, describe their functions and values, and the proposed method for avoiding or mitigating such impact on the values or functions of the affected wetlands.</i>				
c. <i>Is the proposed withdrawal anticipated to significantly affect the available habitat of fish species at or below the withdrawal point? (If a passby flow is proposed consistent with SRBC's Guidelines for Determining Passby Flows and Conservation Releases, the impact on fish species is assumed to be acceptable, and further analysis is not required.)</i>				
d. <i>Is the operator aware of any significant downstream wastewater discharges to the stream, where the proposed withdrawal is anticipated to reduce the assimilative capacity of the stream to accept those discharges without exceeding applicable instream water quality standards?</i>				
e. <i>Is the withdrawal from a stream that is listed as being water quality impaired; and would the withdrawal materially exacerbate the water quality conditions leading to the impaired designation?</i>				

C.6 Withdrawal Impacts Analysis (continued)					
<p>f. Is the operator aware of any significant thermal discharge (such as a power plant) that is downstream of the proposed withdrawal where the proposed withdrawal would diminish the capacity to assimilate that discharge without exceeding instream thermal standards?</p> <p>g. If the withdrawal affects a special protection stream (HQ or EV), describe how the withdrawal will be managed to protect existing water quality and uses.</p> <p>h. Is the operator aware of any downstream potable water supply source where the proposed withdrawal is anticipated to impair the amount of water available to meet the demands of such potable water supply?</p> <p>i. Describe any impact avoidance or mitigation plans you are proposing, such as seasonal withdrawals or passby flows.</p>					
Section D. Groundwater Sources					
The following types of information would be provided for each groundwater source.					
D.1 Source Identification & Notification					
§ A Source #	Name / Address of Site	Location of proposed withdrawal point			
		HUC-8 Code	County	Municipality	
					Lat: _____° _____' _____"
					Long: _____° _____' _____"
		Attach copy of USGS 7½ Minute Quadrangle map indicating location of proposed source			
D.2 River Basin Commission Approvals					
If the source is located in the Delaware or Susquehanna River Basin, have you obtained DRBC or SRBC approval? <input type="checkbox"/> Yes <input type="checkbox"/> No					
Date application submitted: _____			Anticipated approval date: _____		
SRBC or DRBC Approval No.: _____			Date issued: _____		
D.3 Stream Impact and Low Flow Analysis					
a. Is the proposed groundwater withdrawal anticipated to affect the low flow of any stream in the vicinity? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, identify the name of the affected stream and complete questions b-e below, and item D.4.					
b. Drainage area at point of withdrawal (in square miles):			Describe or attach basis of calculation:		
c. Q ₇₋₁₀ low flow at point of withdrawal (in gpd):			Describe or attach basis of calculation (e.g., StreamStats printout)		
d. Average daily flow of stream at point of withdrawal (in gpd):			Describe or attach basis of calculation (e.g., StreamStats printout)		
e. To the extent that the groundwater withdrawal affects stream flow, is the proposed maximum rate of stream flow impact greater than 10% of Q ₇₋₁₀ at point of withdrawal? <input type="checkbox"/> Yes <input type="checkbox"/> No					
D.4 Stream Classification and Uses					
a. Designated use classification per 25 Pa. Code. Ch. 93:					
b. PaDEP existing use determinations: (if different than designated uses in Ch. 93)					
c. Is the proposed source a special protection water (High Quality or Exceptional Value)? <input type="checkbox"/> Yes <input type="checkbox"/> No					
d. Is stream classified by the Pa. Fish & Boat Commission as a Wild Trout Stream? <input type="checkbox"/> Yes <input type="checkbox"/> No If yes, what classification of wild trout stream: <input type="checkbox"/> Class A <input type="checkbox"/> Not Class A If known: <input type="checkbox"/> Class B <input type="checkbox"/> Class C <input type="checkbox"/> Class D					
D.5 PA Natural Diversity Inventory (PNDI)					
Attach results of PNDI search with respect to the proposed groundwater source site and supporting documentation of conflict resolution, if applicable.					

D.6 Withdrawal Impacts Analysis

A narrative withdrawal impact analysis which addresses the following issues, and describes the methods proposed to avoid or mitigate impacts (such as proposed passby flow conditions). The description of anticipated impacts should indicate impacts anticipated *after* giving effect to the proposed avoidance or mitigation measures.

Impact questions:

- a. Are there any wetlands within the zone of drawdown/influence (> 2' drawdown) of the proposed groundwater withdrawal well? If yes, identify the wetlands, describe their hydrology (supporting source of water) and whether the groundwater withdrawal will affect that hydrology. To the extent that the hydrology of wetlands are affected, identify the wetland's functions and values, and the proposed method for avoiding or mitigating such impact on the values or functions of the affected wetlands.
- b. Describe the extent to which the proposed groundwater withdrawal is anticipated to affect the low flow of streams or other surface bodies of water in the vicinity? (If a passby flow is proposed consistent with SRBC's Guidelines for Determining Passby Flows and Conservation Releases, the impact on fish species is assumed to be acceptable, and further analysis is not required.)
- c. Is the proposed groundwater withdrawal anticipated to significantly affect stream flow and the available habitat of fish species at or below the withdrawal point?
- d. To the extent that the groundwater withdrawal affects streamflow, is the operator aware of any significant downstream wastewater discharges (including thermal discharges) to the stream, where the proposed withdrawal is anticipated to reduce the assimilative capacity of the stream to accept those discharges without exceeding instream water quality standards.
- e. Is the withdrawal from a watershed that is listed as being water quality impaired; and would the withdrawal materially exacerbate the water quality conditions leading to the impaired designation?
- f. Does the proposed groundwater withdrawal involve the diversion of groundwater recharge or spring water from a cold water stream? If yes, how would the withdrawal affect thermal conditions in the stream?
- g. To the extent that the groundwater withdrawal affects streamflow, if the withdrawal affects a special protection watershed (HQ or EV), describe how the withdrawal will be managed to protect existing water quality and uses.
- h. Is the operator aware of any potable water supply source in the vicinity where the proposed groundwater withdrawal is anticipated to impair the amount of water available to meet the demands of such potable water supply?
- i. Describe any impact avoidance or mitigation plans you are proposing, such as seasonal withdrawals or passby flows.

Section E. Wastewater, Cooling Water, and Mine Water Diversion Sources

The following types of information would be provided for each source.

E.1 Source Identification & Notification

§ A Source #	Wastewater Discharge Source Name	Location of proposed withdrawal point Sykesville Borough			
		HUC-8 Code	County	Municipality	
1	Fawn Mine #91	05010009	Butler	Clinton TWP	Lat: <u>40° 41' 39"</u> Long: <u>79° 48' 37"</u>
	NPDES Permit No. for Existing Discharge: PA0002780	<i>Attach copy of USGS 7½ Minute Quadrangle map indicating location of proposed source</i>			
	Receiving stream for existing discharge: Lardintown Run				

E.2 River Basin Commission Approvals

If the source is located in the Delaware or Susquehanna River Basin, have you obtains DRBC or SRBC approval? Yes No
 Date application submitted: _____ Anticipated approval date: _____
 SRBC or DRBC Approval No.: _____ Date issued: _____

E.3 Wastewater, Cooling Water, or Mine Water Diversion Impact Analysis

A narrative impact analysis which addresses the following issues, and describes the methods proposed to avoid or mitigate impacts.

Impact questions:

- a. Does the existing discharge represent a significant portion of the low flow of the receiving stream below the permitted point of discharge? If significant, describe the degree to which the diversion of wastewater would affect the low flow of the receiving stream, and include a discussion addressing the following issues as relevant:

E.3 Wastewater, Cooling Water, or Mine Water Diversion Impact Analysis (continued)

- b. Are there any wetlands in the floodplain downstream of the existing discharge point where the diversion of wastewater, cooling water or mine water is anticipated to have a material impact on the elevation or duration of water levels in the wetland? *If yes, identify the wetlands, describe their functions and values, and the proposed method for avoiding or mitigating such impact on the values or functions of the affected wetlands.*
- c. Is the proposed diversion of wastewater anticipated to significantly affect the available habitat of fish species at or below the withdrawal point?
- d. Is the operator aware of any significant downstream wastewater discharges to the stream, where the proposed diversion of wastewater, cooling water, or mine water from the proposed source is anticipated to reduce the assimilative capacity of the stream to accept those discharges without exceeding applicable instream water quality standards?
- e. Is the source on a stream that is listed as having water quality impaired; and would the proposed diversion of wastewater, cooling water or mine water materially exacerbate the water quality conditions leading to the impaired designation?
- f. Is the proposed diversion upstream of a known significant thermal discharge (such as a power plant), or would the proposed wastewater, cooling water or mine water diversion diminish the capacity to assimilate that discharge without exceeding instream thermal standards?
- g. Describe any impact avoidance or mitigation plans you are proposing, such as seasonal withdrawals or passby flows.

Section F. Public Water Supply Sources

The following types of information would be provided for each source.

F.1 Source Identification


§ A Source #	Public Water Supplier Name and System Name	Location of proposed withdrawal point:			
		HUC-8 Code	County	Municipality	
					Lat: _____° _____' _____"
					Long: _____° _____' _____"
	PADWIS Identification #:	<i>Attach copy of USGS 7½ Minute Quadrangle map indicating location of proposed source</i>			

Section G. SIGNATURE

I certify under penalty of law that I have the authority to submit this Water Management Plan on behalf of the Operator, and that the information set forth in this plan and all attachments is true and accurate to the best of my knowledge.

John Ontiveros
 Name (type or print legibly)

CEO
 Title


 Signature

20 June 2014
 Date

Applicant's telephone number: (614) 424-4851

Winner Water Services, Inc.
32 West State St
Sharon PA 16146
Phone 724-981-1152

SECTION E.3 - WASTEWATER, COOLING WATER, OR MINE WATER DIVERSION IMPACT ANALYSIS

a. *Does the existing discharge represent a significant portion of the low flow of the receiving stream below the permitted point of discharge? If significant, describe the degree to which the diversion of wastewater would affect the low flow of the receiving stream, and include a discussion addressing the following issues as relevant:*

The requested withdrawal does not represent a significant portion of the low flow in Lardintown Run the receiving stream of the discharge.

Low flow stream discharge rates for Lardintown Run below the existing mine discharge were computed using the U.S. Geological Survey Stream Stats website at: <http://streamstats.usgs.gov/pastreamstats/index.asp>. The Q710 low flow near the discharge is 21.06 gallons per minute (gpm) (0.0469 cubic feet per second (cfs)) and the average daily flow (ADF) is approximately 969,408 gallons per day (gpd).

Winner Water proposes to withdraw the mine influenced water at a rate of 100 gpm (144,000 gpd). For use in the Ohio River basin, volumes removed will be measured by the number of trucks per day times their respective volume.

b. *Are there any wetlands in the floodplain downstream of the exiting discharge point where the diversion of wastewater, cooling water or mine water is anticipated to have a material impact on the elevation or duration of water levels in the wetland? If yes, identify the wetlands, describe their functions and values and the proposed method for avoiding or mitigating such impact on the value or functions of the affected wetlands.*

Impacts to wetlands are not anticipated as a result of this proposed diversion of mine water. Winner Water conducted wetland review at the proposed Fawn Mine Discharge site on March 7, 2014. During the field visit, no wetlands were identified within the immediate vicinity of the proposed site.

c. *Is the proposed diversion of wastewater anticipated to significantly affect the available habitat of fish species at or below the withdrawal point?*

The diversion is not anticipated to affect the available habitat of fish species.

d. Is the operator aware of any significant downstream wastewater discharges to the stream, where the proposed diversion of wastewater, cooling water or mine water from the proposed source is anticipated to reduce the assimilative capacity of the stream to accept those discharges without exceeding applicable instream water quality standards?

No impact is expected to assimilative capacity.

e. Is the source on a stream that is listed as being water quality impaired; and would the proposed diversion of wastewater, cooling water or mine water materially exacerbate the water quality conditions leading to the impaired designation?

Sections of Lardintown run are listed as impaired due to mine drainage. The proposed project will not negatively impact the receiving stream.

f. Is the proposed diversion upstream of a known thermal discharge (such as a power plant) or would the proposed wastewater, cooling water or mine water diversion diminish the capacity to assimilate that discharge without exceeding instream thermal standards?

A review of PA DEP's eMap was conducted by Winner Water and no significant thermal discharges were noted.

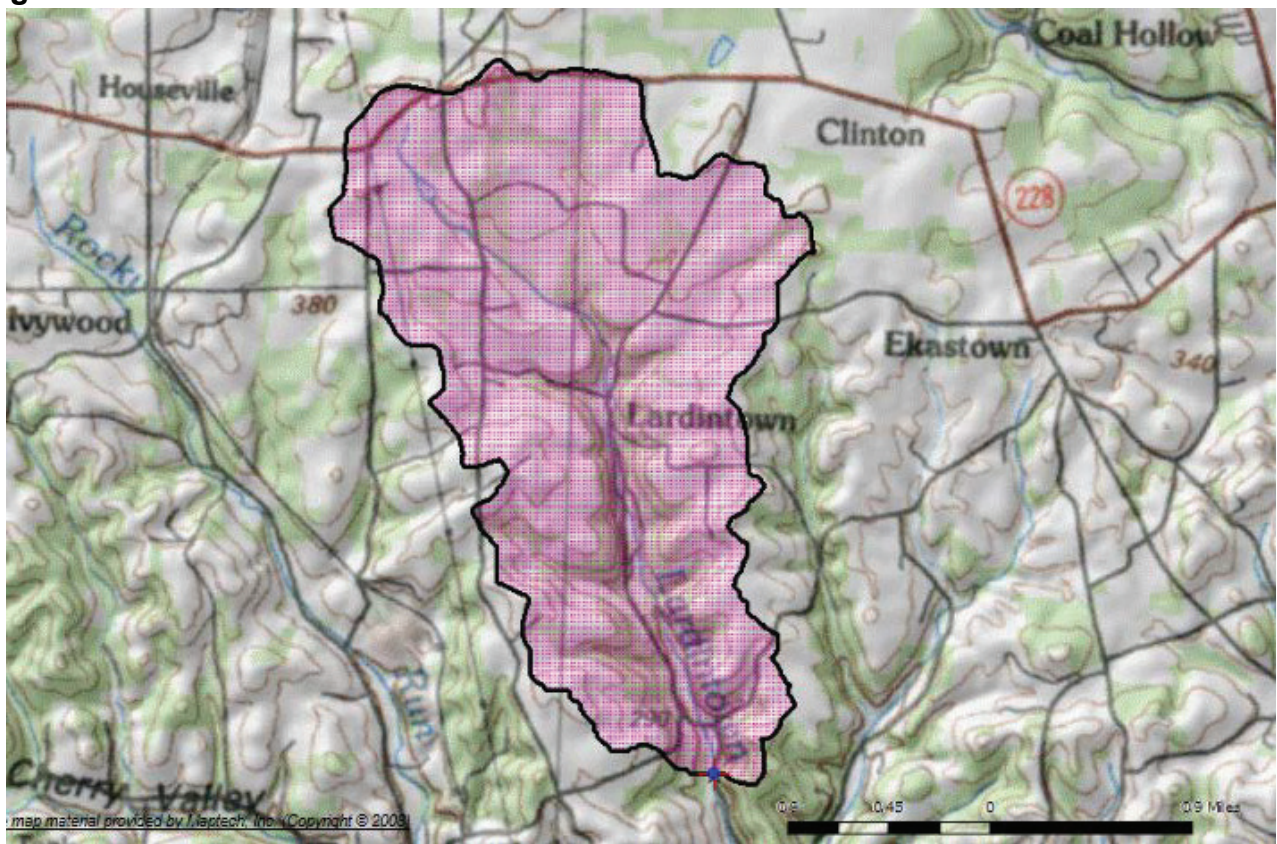
g. Describe any impact avoidance or mitigation plans you are proposing, such as seasonal withdrawals or passby flows.

No impact avoidance or mitigation plans are proposed.

Source 14 – Fawn Mine # 91 Discharge NPDES# PA0002780

Section E.3 Low Flow Analysis Calculations

Figure 1. Watershed Basis for Low Flow Calculations



Streamstats Ungaged Site Report

Date: Mon Mar 10 2014 06:45:56 Mountain Daylight Time

Site Location: Pennsylvania

NAD27 Latitude: 40.6815 (40 40 53)

NAD27 Longitude: -79.8036 (-79 48 13)

NAD83 Latitude: 40.6816 (40 40 54)

NAD83 Longitude: -79.8034 (-79 48 12)

Drainage Area: 4.09 mi²

Percent Urban: 6.0 %

Percent Impervious: 1.0 %

Low Flow Basin Characteristics			
100% Low Flow Region 4 (4.09 mi²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	4.09	2.26	1400
Mean Basin Elevation (feet)	1212.4	1050	2580

Mean/Base-flow Basin Characteristics			
100% Statewide Mean and Base Flow (4.09 mi²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	4.09	2.26	1720
Mean Basin Elevation (feet)	1212.4	130	2700
Mean Annual Precipitation (inches)	39.0	33.1	50.4
Percent Carbonate (percent)	0.0	0	99
Percent Forest (percent)	42.0	5.1	100
Percent Urban (percent)	0.0	0	89

Peak Flow Basin Characteristics			
100% Peak Flow Region 4 (4.09 mi²)			
Parameter	Value	Regression Equation Valid Range	
		Min	Max
Drainage Area (square miles)	4.09	0.92	1720
Mean Basin Elevation (feet)	1212.4	533	2700
Percent Carbonate (percent)	0.0	0	42
Percent Urban (percent)	0.0	0	67
Percent Storage (percent)	0.0	0	2.4

Low Flow Streamflow Statistics

Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
M7D2Y	0.14	43			
M30D2Y	0.25	38			
M7D10Y	0.0469	66			
M30D10Y	0.0905	54			
M90D10Y	0.17	41			

Mean/Base-flow Streamflow Statistics

Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
QA	4.95	12			
QAH	0.75	38			
BF10YR	1.5	21			
BF25YR	1.3	21			
BF50YR	1.18	23			

Peak Flow Streamflow Statistics

Statistic	Flow (ft ³ /s)	Prediction Error (percent)	Equivalent years of record	90-Percent Prediction Interval	
				Minimum	Maximum
PK2	219	28	4		
PK5	389	26	7		
PK10	532	28	10		
PK50	937	33	13		
PK100	1150	38	13		
PK500	1760	49	12		