

**REPORT OF THE
SPECIAL RECLAMATION FUND
ADVISORY COUNCIL**

February 8, 2018



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EXECUTIVE SUMMARY

The Special Reclamation Fund Advisory Council (the “SRFAC”) was established by the Legislature in 2001 in order to ensure the effective, efficient and financially stable operation of the Special Reclamation Fund (the Fund). (W.Va. Code § 22-1-17). According to W.Va. Code § 22-1-17 the SRFAC shall consist of eight members, including the Secretary of the West Virginia Department of Environmental Protection (DEP) or his or her designee, the Treasurer of the State of West Virginia or his or her designee, the Director of the National Mine Land Reclamation Center at West Virginia university and five members to be appointed by the governor with the advice and consent of the Senate.

The Fund is designated by the Legislature for the reclamation and rehabilitation of lands subject to permitted surface mining operations and abandoned after 1977, where the bond posted is insufficient to cover the cost of reclamation. The Fund is presently funded by a tax of 27.9 cents per ton of clean coal mined in West Virginia. From this revenue, funds based on a tax rate of 15 cents per ton are being paid into the Special Reclamation Water Trust Fund (SRWTF), while coal tax revenues based on 12.9 cents per ton are being paid into the Fund. According to W.Va. Code § 22-3-11, “Beginning with the tax period commencing on July 1, 2009, and every two years thereafter, the special reclamation tax shall be reviewed by the Legislature to determine whether the tax should be continued: *Provided*, That the tax may not be reduced until the Fund and SRWTF have sufficient moneys to meet the reclamation responsibilities of the state established in this section.”

The SRWTF was created “for the purpose of assuring a reliable source of capital to construct, operate, and maintain water treatment systems on forfeited sites.” (W.Va. Code § 22-3-11).

The Secretary of the DEP is required to conduct formal actuarial studies every two years and conduct informal reviews annually on the Fund and SRWTF. The SRFAC is also required to make a report to the Legislature every year on the financial condition of the Fund. (W.Va. Code § 22-1-17). The report is to include: “A recommendation as to whether or not any adjustments to the special reclamation tax should be made considering the cost, timeliness

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and adequacy of bond forfeiture reclamation, including water treatment [and] a discussion of the SRFAC 's required study issues.”

In accordance with the statutory requirements, the SRFAC submits the following:

1. Recommendation:

Based upon conclusions drawn from information included in this report, the SRFAC makes the following recommendations to the Legislature:

The SRFAC recommends that the present 12.9 cent per ton tax dedicated to the Fund remain in force and that the tax dedicated to the SRWTF remain at 15 cents per ton. To avoid the deficit that is projected for the SRF, occurring in 2021, the DEP will temporarily transfer funds from the SRWTF to the SRF to pay for all land capital reclamation costs. The transfer of funds will be on an as-needed basis until reclamation becomes current, at which point each fund will be dedicated toward its intended use. This spending strategy is based on the 2017 actuarial study that projects that the combined funds are solvent throughout the 35-year projection period.

The SRFAC further recommends that the State Legislature form a panel to examine the elements of our State code that result in uncontrolled liabilities, how other states deal with such issues and finally to propose a State legislative initiative to rationalize water quality regulation to meet the conditions of the Federal Clean Water Act while adding rationality and certainty to the process.

The SRFAC recommends that the Legislature continue to examine the implications of the recent court rulings and subsequent lawsuit settlements on the Special Reclamation Fund, Abandoned Mine Lands, and voluntary efforts by citizen-led watershed groups to address historic mining-reclamation related liabilities. The SRFAC further recommends that the Legislature examine the mine reclamation and bonding programs of other states and, as implemented in Tennessee, by the federal Office of Surface Mining in order to determine whether the statute and regulations creating the Fund and SRWTF in West Virginia have inappropriately interpreted SMCRA to require long-term CWA liabilities. The SRFAC further recommends the Legislature examine the separate and distinct authorities of the Clean Water Act (CWA) in assessing the eligibility of future

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forfeitures for transfer of liabilities to the SRWTF. The SRFAC is concerned about default transfer of water treatment liability to the SRWTF when opportunities exist to pursue responsible parties under the CWA per the requirements of an NPDES (CWA Section 402) permit.

2. **2017 Study issues:** The SRFAC is also required to “Identify and define problems associated with the special reclamation fund.” The SRFAC conducted two studies during 2017; one to evaluate the current and future conditions of the coal markets which ultimately impacts the revenue of the Funds and another to evaluate the solvency of the SRF and SRWTF.

Studies conducted during the 2017 report period include:

1. 2017 Consensus Coal Production Forecast for West Virginia.
2. 2017 Actuarial Analysis.

Findings of these studies are outlined in the body of the report. The complete reports can be found in Appendix B.

Membership Status of the Special Reclamation Fund Advisory Council

Currently Mike Sheehan serves as the member representing the Cabinet Secretary of the DEP. Carolyn Atkinson serves as the member representing the Treasurer of the State of West Virginia. Dr. Paul Ziemkiewicz serves as the member representing the Director of the National Mine Land Reclamation Center at West Virginia University. Christine Risch, Marshall University, Center for Business and Economic Research, serves as the Actuary/Economist member. Bill Raney serves as the member representing the interests of the coal industry. John Morgan serves as the member representing the interest of environmental protection organizations. Ronald Pauley serves as the member representing the interests of coal miners. Christopher Pence serves as the member representing the interests of the general public.

BACKGROUND ON THE SPECIAL RECLAMATION FUND

Article 1, Chapter 22 of the Code of West Virginia was amended by the West Virginia Legislature in 2001, creating an eight-member Special Reclamation Fund Advisory Council (the “SRFAC”) with the responsibility of ensuring the effective, efficient and financially stable operation of the Special Reclamation Fund. The legislation establishing the SRFAC also

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increased the tax on clean coal mined in West Virginia, from three to seven cents per ton (the “Continuing Tax”), and levied an additional seven cents per ton (the “Temporary Tax”), to be deposited into the Fund. The revenues of the Fund were designated to pay for reclamation on post-1977 bond-forfeited sites.

The 2001 legislation provided for the Temporary Tax to be in effect for thirty-nine months. As a result of a 2005 actuarial report finding that the expiration of the Temporary Tax would result in nearly immediate insolvency of the Fund, the Temporary Tax was extended by the Legislature in 2005, for an additional eighteen months. A 2007 actuarial study commissioned by the SRFAC found that the failure to extend the Temporary Tax again would result in insolvency of the Fund. Accordingly, in 2008 the Legislature, through SB 751, created the SRWTF and enacted a temporary, twelve-month tax of 7.4 cents which was to be allocated between the Fund and a SRWTF. Twelve and nine-tenths cents was dedicated to the Fund and 1.5 cents was deposited into the SRWTF. An updated actuarial study in 2008 concluded that terminating the temporary tax would result in insolvency within a few years. In response, in the 2009 legislative session, the Legislature amended W.Va. Code § 22-3-11 to remove the expiration date for the Temporary Tax and provided instead for biennial review of the Tax by the Legislature. (Acts of the Legislature 2009, chapter 216).

Based upon projections under the 2011 Actuarial Analysis performed by Pinnacle Actuarial Resources, Inc. the Fund was found to be sufficiently funded under the existing 12.9 cent tax. However, the SRFAC was concerned that as the SRWTF began making payments for water capital and ongoing water treatment in Fiscal Year 2019, as projected, the SRWTF would fall into a deficit position in the second year of operation-2020. (2011 Actuarial Valuation, page 3). Declining coal production projected by the 2011 Consensus Coal Production Forecast and the significant increase in water treatment costs resulting from court rulings in two cases were contributing factors in the projected insolvency of the SRWTF. Accordingly, in 2012 the Legislature increased the special reclamation tax to 27.9 cents per ton, 15 cents of which was to be deposited into the SRWTF.

Based upon projections under the 2013 Actuarial Analysis performed by Pinnacle Actuarial Resources, Inc. the Fund was projected to be over 100 percent funded using a 20-

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year cash flow basis and 95.7 percent funded using a 35-year cash flow basis. The SRWTF was (and is today) accumulating 15 cents per ton coal tax revenue and interest and was projected by the 2013 Actuarial Valuation to be 150.4 percent funded using a 20-year cash flow basis and 89.9 percent funded using a 35-year cash flow basis.

Based on the 2015 Actuarial Analysis conducted by Taylor & Mulder, the Fund was projected to fall to a low of \$51.5 million in 2018. This was due to paying for all reclamation cost for both land and water as well as operation and maintenance cost associated with water treatment. The Fund was projected to then slowly recover to \$187.5 million by the end of the twenty-year study period, at which point an \$8.2 million liability would remain. The SRWTF was expected to accumulate approximately \$120 million by 2018 before beginning to support water reclamation costs in 2019 (*However, it should be noted that as of December 31, 2017 the balance in the SRWTF had only reached \$104 million*). Afterwards, the SRWTF was projected to show gains, reaching \$289.8 million by the end of the twenty-year study period with a \$110.5 million liability remaining. Both funds combined were projected to total approximately \$477.3 million at the end of the twenty-year study period with a total remaining liability of \$118.7 million.

Note: A summary of the 2017 Actuarial Analysis can be found in the “Study Issues” section of this report on page 23.

FINANCES OF THE SPECIAL RECLAMATION FUND & THE SRWTF

This section of the Report to the Legislature outlines the financial status of the Fund for calendar year 2017 and provides comments regarding the future financial position of the Fund. The three key factors that have the most effect on the adequacy of the Fund are the coal production levels in West Virginia, the risk of future forfeitures, and the cost of reclaiming existing and future bond-forfeited sites.

The DEP acknowledges that future forfeitures and any water management costs associated with them could affect funding needs of the Fund and the SRWTF. DEP is currently working to compile water management and treatment costs on active (still permitted) and revoked sites in order to better inform the actuaries and policy makers in prediction of future

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water management and treatment costs associated with revoked sites. Additionally, the SRFAC is continuously looking for ways to improve upon the ability to project future forfeitures, which, as is outlined later in this report, will be a focal point of the SRFAC through 2018.

The Office of Surface Mining Reclamation and Enforcement (OSMRE) supports DEP's efforts to improve the active mine pollutional inventory to ensure the accuracy of future forfeiture cost projections.

To summarize the data and analysis that follow, it should be noted that the Fund will cover all costs for both land reclamation and water treatment through June 2018. Then starting in July 2018, the SRWTF will begin covering the cost for water treatment—both water capital costs and ongoing water treatment costs. However, based upon the conclusions derived in the 2017 actuarial study that indicates the Fund will become insolvent by 2021, the DEP, in consultation with the SRFAC, developed a spending strategy that will protect the solvency of each fund into the future. Details of the new spending strategy can be found in the recommendation section of the report.

As of December 31, 2017, the Fund has accumulated assets of \$50.3 million while the SRWTF has accumulated \$104.2 million in assets, a 30% increase over 2016 SRWTF values. Increased revenues for the SRWTF are attributed to the tax increase in 2012 as well as the improved investment strategy which was initiated in 2013 as described below.

In May of 2013, following numerous discussions between DEP personnel and members of the Investment Management Board and the Board of Treasury Investments, the SRFAC was updated on various investment options and made the following recommendations:

The first recommendation was in two parts:

1. That the current balance of the Water Quality (WQ) Trust Fund and all additional revenue of the WQ Trust Fund through Fiscal Year 2018 be invested in the Investment Management Board (IMB) Fixed Income Pool until FY 2019.
2. That DEP develops plans to maximize the return on investment for future WQ Trust revenue.

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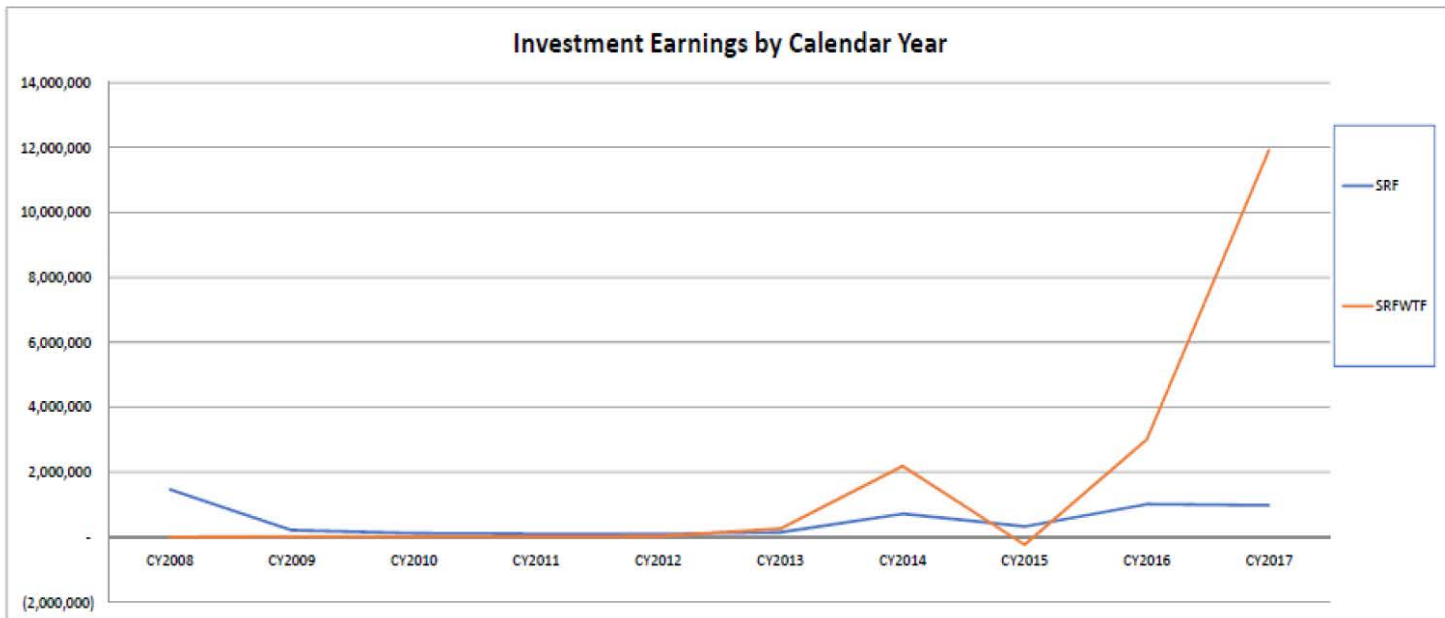
The second recommendation was also in two parts:

1. That the current balance of the Special Reclamation Fund be invested in the Board of Treasury Investments West Virginia Short Term Bond Pool with the exception of \$5 million, which should remain in the West Virginia Money Market Pool.
2. That DEP develops plans to maximize the return on investment for future SR Fund revenue.

In October of 2013 the balance of \$28 million from the SRWTF was transferred to the Investment Management Board Fixed Income Pool.

In June of 2013, with the exception of \$5 million, the balance of the Fund was transferred to the West Virginia Short Term Bond Pool. The following chart depicts the investment earnings for the previous six years prior to the new investment strategies and results of the new strategy leading up to the current year.

Department of Environmental Protection
 Special Reclamation Fund and Special Reclamation Water Trust Fund
 Investment Earnings by Calendar Year
 For Ten Full Calendar Years 2008 - 2017



	CY2008	CY2009	CY2010	CY2011	CY2012	CY2013	CY2014	CY2015	CY2016	CY2017	CY2008 - 2017
SRF	1,465,564.25	205,214.88	109,652.38	92,668.76	88,882.52	141,062.46	716,146.49	325,054.72	1,010,964.20	969,286.07	5,124,496.73
SRFWTF	415.39	6,241.45	6,701.73	7,616.86	10,706.26	250,149.78	2,181,986.49	(238,203.32)	3,005,253.10	11,917,088.46	17,147,956.20

Figure 1

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Since 2001, despite a very aggressive reclamation schedule, the Fund has been serving the people of West Virginia well through providing for the reclamation of bond-forfeited sites. At the time of the initial legislation in 2001, there were 392 forfeited permits requiring reclamation, including 122 requiring water treatment. Since passage of that legislation, an additional 202 permits have forfeited as well, bringing the total to 594 permits requiring reclamation. Of those, work has been completed on 492 permits. With regard to water treatment, the Fund is treating water at 142 sites and has an additional 49 sites under review or construction. As of December 31, 2017, the Fund has accumulated cash and investments totaling \$50.3 million, while the SRWTF had accumulated \$104.2 million.

A complete inventory of all bond forfeiture sites can be found in Appendix C, along with bond forfeiture sites that have mine drainage related problems, and a prioritized order in which they will be addressed

Graphic summaries of the status of the Funds are outlined in the following figures.

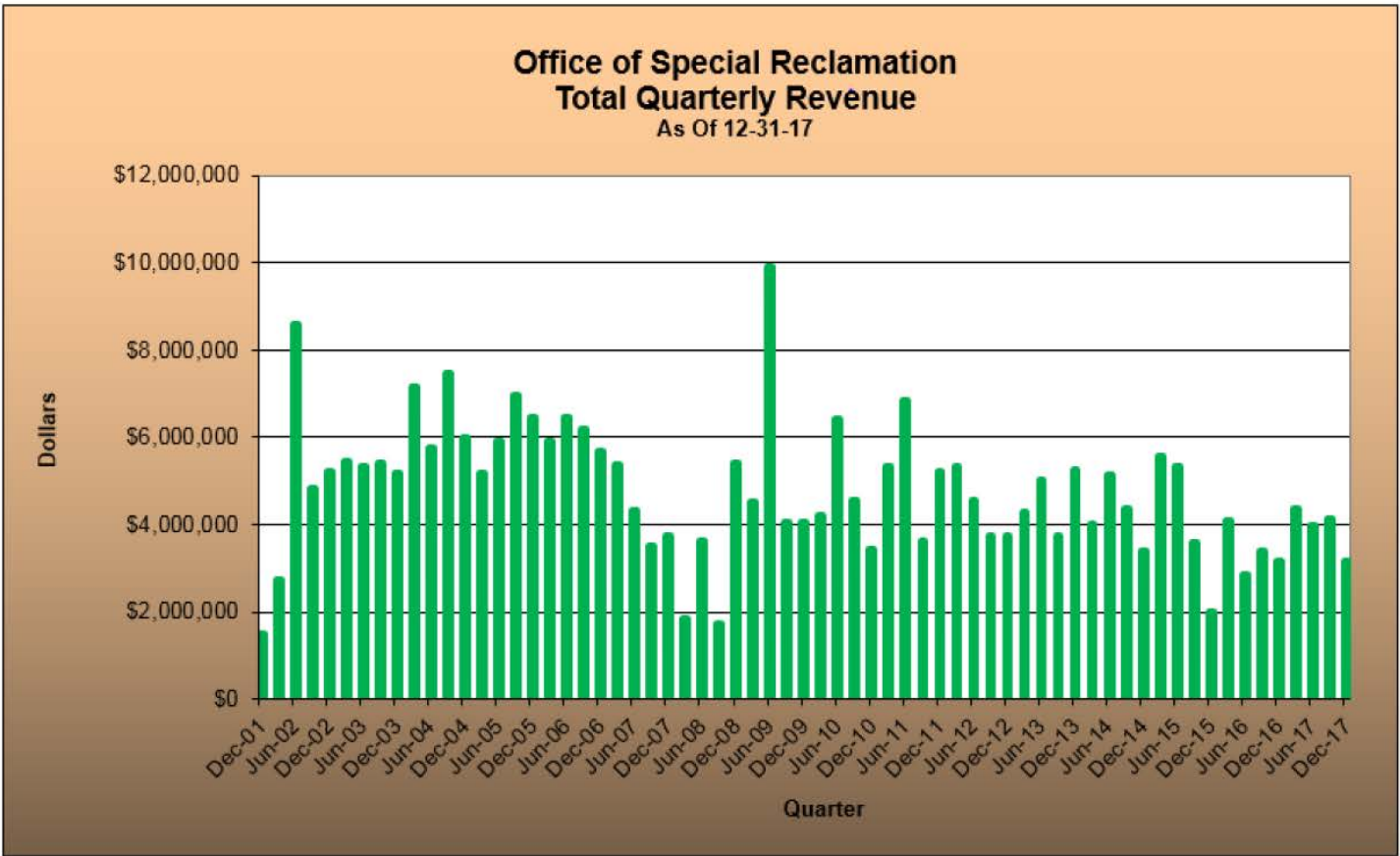
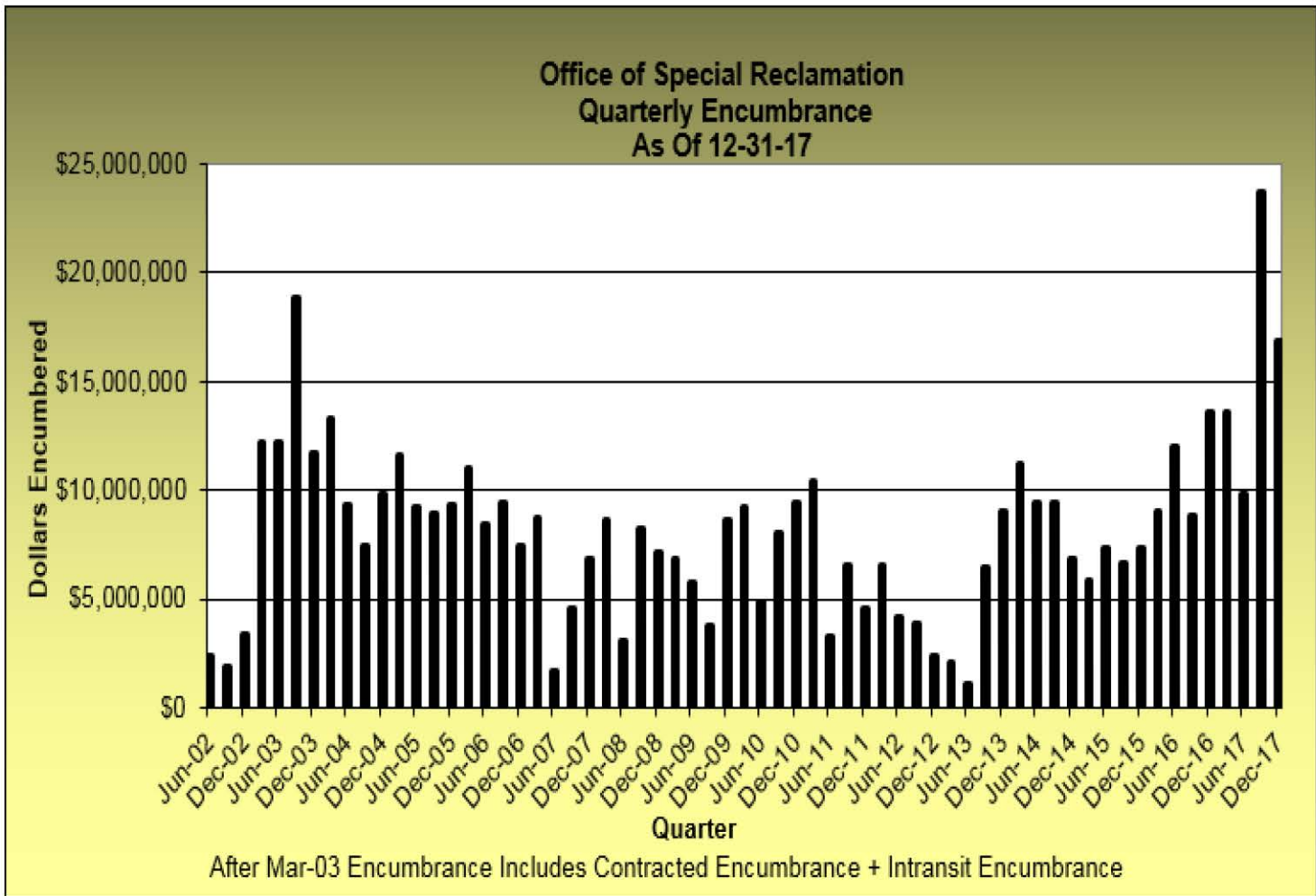


Figure 2

Figure 3



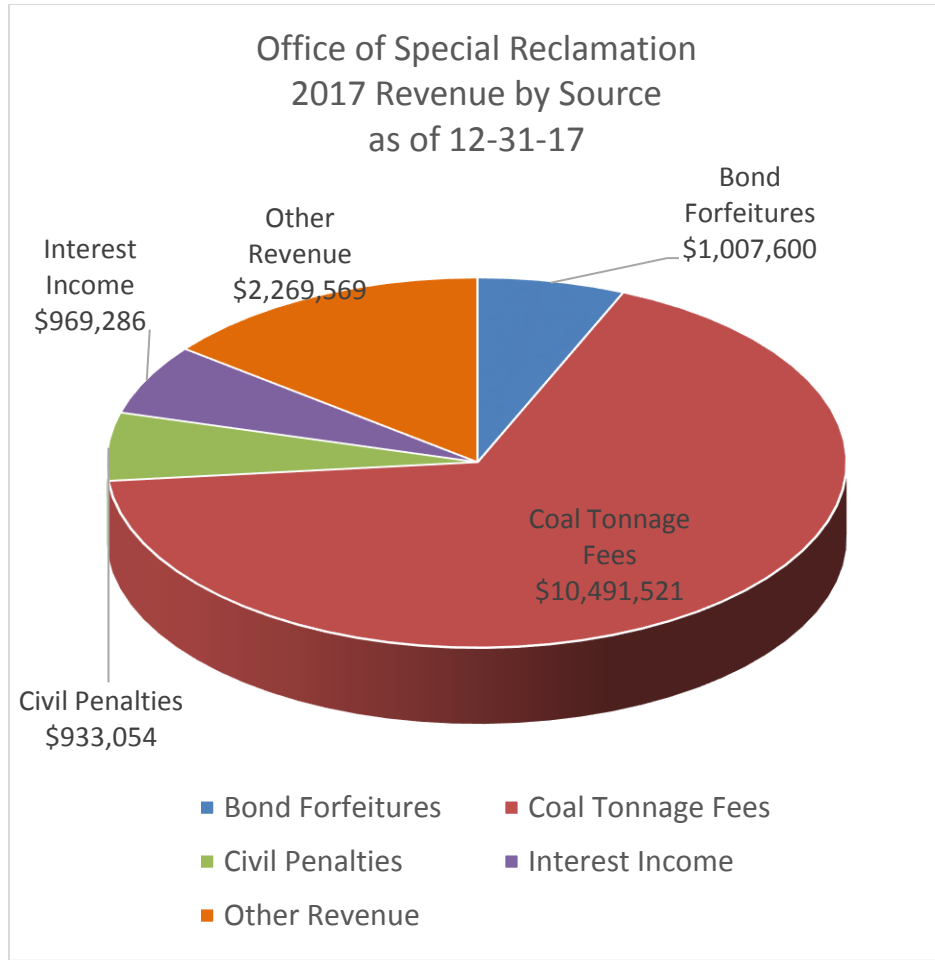


Figure 4

Water Treatment Funding

A complete inventory of bond forfeiture sites that are producing mine drainage which violate effluent limitations or applicable water quality standards, along with associated cost estimates for long-term treatment of these sites, can be found in Appendix C.

The current main funding mechanism for bond-forfeited sites is the 27.9 cent tax per ton of clean coal mined. In 2008, the Legislature authorized, but did not separately fund, the SRWTF. In reliance on the SRWTF statutory authorization, beginning in July 2008, coal tax revenues based on a tax rate of 1.5 cents per ton were being paid into the SRWTF. In addition,

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coal tax revenues based on 12.9 cents per ton were being paid into the Fund. In 2012 the Legislature increased the amount dedicated to the SRWTF to 15 cents per ton, but based on the funded status of the Fund at the time the Fund remained at 12.9 cents per ton. Unless modified in response to future legislation, for budgeting and analysis purposes, the DEP plans to continue paying all costs for both land and water reclamation work out of the Fund through FY 2018. Funding the water reclamation and treatment from the Fund will allow the SRWTF to build up assets, although it is not anticipated to remain solvent without continuing funding. The current balance in the SRWTF is \$104,169,193 as of December 31, 2017. Prior to the end of FY 2018 the DEP will evaluate reclamation progress and the financial status of both Funds to determine future payment plans for reclamation activities moving forward. The SRFAC is continuing to look at alternatives for water treatment funding.

Increased water capital cost and water treatment cost are the result of two identical lawsuits filed against the DEP. In 2011 and 2012 the DEP entered into separate consent decrees with the northern and southern district courts respectively. As will be discussed later in this report, the DEP was required to apply for and obtain NPDES permits for all the sites included in Attachment A of the consent decrees plus an additional 21 sites which were included in an earlier lawsuit, for a total of 192 sites. The DEP estimated that it will cost approximately \$35.5 million to bring bond forfeiture sites into compliance with the more stringent water quality based effluent limits. Additionally, DEP estimated that it will cost approximately \$6.7 million to operate and maintain these treatment systems on an annual basis.

DEP has fulfilled the requirements of the Consent Decree by obtaining all NPDES permits.

Additional Charges to the Fund Due to NPDES Requirements

Due to NPDES requirements, the DEP has been faced with charging more expenditures to the Fund. These include:

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- Realty – Land and/or easement purchases have been necessary to expand existing or new water treatment sites outside permit boundaries. Surveying and appraisal costs are included in these purchases:
- Hiring private consulting engineers – To meet compliance schedules associated with NPDES permits and in an attempt to maintain the land reclamation schedule, the DEP has been compelled to hire private engineering consulting firms to complete designs for projects that have historically been done in-house. DEP estimates that contractual design increases project cost by 10 to 12%.
- Increased staff – As a result of having to apply for and obtain NPDES permits at all bond forfeiture sites now and into the future, the DEP has found it necessary to incorporate an NPDES permitting section into the Office of Special Reclamation (OSR - The office responsible for reclamation of land and waters for bond forfeited sites). Five new staff members consisting of one (1) program manager and three (3) engineering technicians and one (1) environmental resource specialist have been added to fulfil the NPDES requirements for the DEP. Additionally, to reduce surveying cost associated with reality needs and design, a licensed surveyor was hired.
- NPDES permitting fees:
 - Application fees - \$1,000/application
 - Modification fees - \$500/mod.
 - Annual fees - \$1000/permit.
- Additional water sampling related to permit applications

DEP Policy Relevant to the Fund

Effective May 21, 2014 the DEP has implemented a new policy establishing a standard procedure the DEP will follow to terminate the State's jurisdiction over bond-forfeited former mining sites (Special Reclamation Sites). With a decision that the Special Reclamation Site has satisfied the applicable performance standards, DEP will terminate jurisdiction over the subject Special Reclamation Site. The policy limits the vulnerability of the State, and

consequently the Fund, by reducing the possibility of lawsuits pertaining to damages unrelated to former mining practices or reclamation practices, i.e. due to recreation, timbering, oil & gas, etc., as well as any changes to environmental laws taking effect after reclamation of the subject Special Reclamation Site. The DEP will retain jurisdiction of Special Reclamation Sites, or portions thereof, that are necessary for the effective treatment of mine discharges emanating from the subject Site.

Litigation

1. The Fund through FY 2018 and the SRWTF starting in FY 2019 has acquired liability for additional water treatment as a result of lawsuits filed against the DEP, as described below.

Identical complaints were filed in the Northern and Southern District Courts, Civil Actions No. 07-cv-87 (the “Northern District Case”) and No. 2:07-0410 (the “Southern District Case”), assigned to Judge Irene Keeley and Judge John T. Copenhaver, Jr., respectively. Both cases were styled *West Virginia Highland Conservancy and West Virginia Rivers Coalition v. Randy C. Huffman, Secretary, West Virginia Department of Environmental Protection*.

The two suits alleged that the West Virginia Department of Environmental Protection (DEP) had violated, and continues to violate, the federal Clean Water Act (the Act) by failing to obtain West Virginia National Pollutant Discharge Elimination System (WV/NPDES) permits when the DEP reclaims and treats water at bond forfeited sites as directed by state law. The Northern District Case named 18 specific bond forfeited sites and the Southern District Case named 3 sites.

On March 26, 2009, the Northern District Court entered summary judgment in favor of Plaintiffs in the Northern District Case, and granted a permanent injunction. The injunction requires DEP to apply for, process, and issue WV/NPDES permits to itself for the discharge into waters and streams of pollutants from the eighteen bond-forfeited, coal mining sites at issue in the case, whose reclamation the agency is required to manage. DEP appealed this decision to the United States Court of Appeals for the Fourth Circuit (“Fourth Circuit Court of Appeals”). By order dated November 8, 2010, the Fourth Circuit Court of Appeals affirmed the Northern District Court’s ruling.

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Similarly, a motion for summary judgment in the Southern District Case was granted by Order dated August 24, 2009. The Southern District Court found that the Secretary of the DEP was “in violation of the National Pollutant Discharge Elimination System permitting requirements of the Clean Water Act.” The Southern District Court ordered the Secretary to “apply for, and obtain, NPDES permits for all sites at issue in this action,” and the parties subsequently submitted a joint stipulation agreeing to the same injunctive relief and timeframes for compliance set forth in the Northern District litigation. The Southern District Court entered final judgment August 31, 2010.

On January 11, 2010, the same Plaintiffs (West Virginia Highlands Conservancy and West Virginia Rivers Coalition) and the Sierra Club submitted a letter giving DEP notice of their intent to sue DEP regarding discharges from 131 additional bond forfeited sites on the same legal basis as the previous suits. Based on the outcome of the previous litigation, DEP engaged in settlement negotiations with the Plaintiffs and reached agreement regarding the permitting of the 21 sites in the previous litigation and the additional 131 sites. In August 2011, the Plaintiffs filed two new suits regarding the additional sites, *West Virginia Rivers Coalition, et al v. Huffman*, Civil Action No. 1:11-cv-118 (N.D. W.Va.), and *West Virginia Rivers Coalition, et al v. Huffman*, Civil Action No. 2:11-cv-524 (S.D. W.Va.), and lodged a proposed Consent Decree with both courts. The Northern District Court entered the Consent Decree on October 12, 2011. The Southern District Court entered the Consent Decree February 10, 2012. A list of all bond forfeited sites at issue in all four suits is attached to the Consent Decree as Attachment A. As required by the Consent Decree on July 2, 2012 DEP submitted a Final Treatment Cost Report to Plaintiffs and SRFAC, in which DEP determined the capital cost and annual operating and maintenance costs for water discharges from each bond forfeiture site to meet applicable water quality based effluent limitations. The DEP estimated that these costs will amount to \$35.5 million for one-time capital construction costs and over \$6 million in annual operations and maintenance costs.

The Consent Decree resolves all four suits filed by the Plaintiffs regarding bond forfeited sites. The Consent Decree required DEP to obtain WV/NPDES permits for all 21 bond forfeiture sites cited in the initial litigation by September 1, 2011. Thereafter, DEP issued

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draft WV/NPDES permits for 50 additional sites by the end of each calendar year, beginning in 2012. By December 31, 2015 the Consent Decree required DEP to issue draft WV/NPDES permits for all bond forfeited sites listed in Attachment A of the Consent Decree and for sites that were in existence on the date the Decree was executed. Thereafter, the DEP shall exercise its best judgment on the timing of issuance of draft permits for sites forfeited after the execution of the consent decree.

Note: The final draft permit was issued December 10, 2015.

2. A third case presents potential for future litigation, should the legislature not adequately fund the Fund and SRWTF. *West Virginia Highlands Conservancy v. Secretary Salazar, DOI*, Civil Action No. 2:00-1062 (S.D. W.Va.). The West Virginia Highlands Conservancy (WVHC) had filed a motion with the U.S. District Court for the Southern District of West Virginia to reopen the case and schedule further proceedings on the grounds that the recommendations of the SRFAC were not being followed with regard to funding the Special Reclamation Fund. Based upon the Legislature's extension of funding through the Continuing and Temporary taxes, the case was placed on the court's inactive docket as of May 2008; however, the court allowed the possibility of a renewed motion if the Legislature does not continue to provide sufficient monies for the Fund to remain solvent.

In March 2011, the WVHC moved once again to have the litigation reopened alleging continuing problems with the Fund. A status conference was held on August 5, and the court ordered the filing of a joint status report. On August 25, 2011, the WVHC and the Defendants filed a joint status report with the court. The WVHC stated that the court should not delay reopening the case until the new actuarial report and SRFAC recommendations are issued, whereas the Defendants recommended that it was premature for the court to reopen this matter prior to the close of the 2012 legislative session.

On March 30, 2012, a status conference call was conducted by the Court. In light of the enactment of Senate Bill 579 that increased the special reclamation tax from 14.4 cents to 27.9 cents per ton of clean coal mined, the Plaintiff acknowledged that it would move to withdraw its Second Motion to reopen and refile it to address the changed circumstances that have occurred since the filing of its motion to reopen.

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On April 2, 2012, the WVHC filed its Motion to withdraw its Second Motion to reopen this case with the Court. On August 5, 2012, the Court issued an Order granting the Plaintiff's Motion to withdraw its Second Motion. In addition, the Court granted the WVHC leave to file an additional motion to explain deficiencies that remain, notwithstanding the recent revenue increase in the Special Reclamation Fund.

This case remains open, so the District Court can address any issue that may arise regarding the State's ABS (alternative bonding system).

3. On or about April 20, 2016, the West Virginia Highlands Conservancy, West Virginia Rivers Coalition, and Sierra Club sued the West Virginia Department of Environmental Protection's (WVDEP) Special Reclamation Program alleging it was in violation of seven West Virginia National Pollution Discharge Elimination System (WVNPDES) permits issued for sites controlled by the Special Reclamation Program, four in the United States District Court for the Northern District of West Virginia¹ and three in the Southern District². The lawsuits allege that the WVDEP had discharged and continued to discharge quantities of aluminum, iron, nitrogen ammonia, and suspended solids in excess of the effluent limitations in those permits. The lawsuits further allege discharges of effluent with pH outside of the permit range. On December 12, 2016, the parties met at WVDEP's headquarters in Charleston. The WVDEP explained to the Plaintiffs that a timetable for achieving compliance had already been established and were included in a corrective action plan required under the enforcement actions being carried out by the WVDEP's Division of Mining and Reclamation. On July 10, 2017, the parties filed a consent decree in the Northern District action. The compliance requirements found in the consent decree are based on the schedule that the WVDEP had prepared for inclusion in the corrective action plan; no new or different requirements were added as a result of the litigation. As of the date of this report, the Southern District of West Virginia has not entered a consent decree for the three sites in the south.

1. *West Virginia Highlands Conservancy, et al. v. Austin Caperton, Secretary, West Virginia Department of Environmental Protection,*

United States District Court for the Northern District of West Virginia, Civil Action No. 1:16-cv-70

2. *West Virginia Highlands Conservancy, et al. v. Austin Caperton, Secretary, West Virginia Department of Environmental Protection,*
United States District Court for the Southern District of West Virginia, Civil Action No. 2:16-cv-03769

Study Issues

1. 2017 Consensus Coal Production Forecast for West Virginia

The West Virginia Consensus Coal Production Forecast is a combined production forecast comprised of four component forecasts. A consensus approach to forecasting seeks the wisdom of the crowd in producing an expectation for output from the coal industry. The Consensus Forecast is used to provide the best expectation of tax revenues to be collected for mandatory reclamation activities conducted through the Special Reclamation Fund and the Special Reclamation Water Trust Fund.

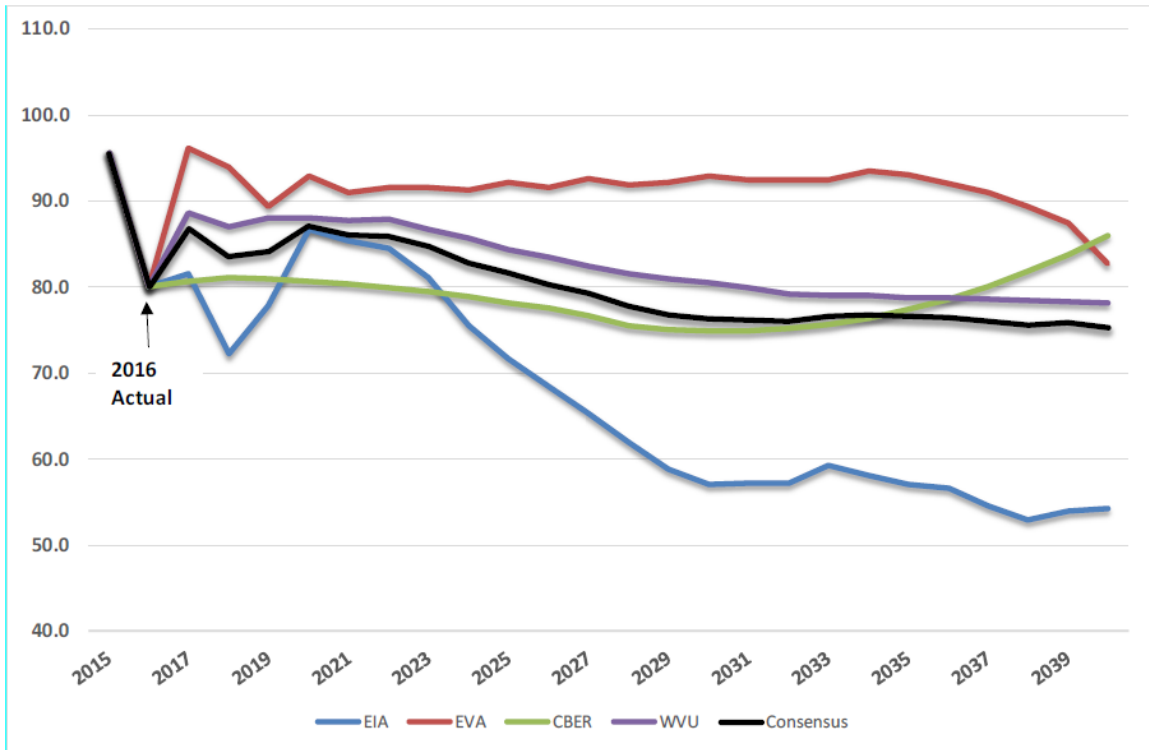
This report describes recent historical coal production trends for the State of West Virginia including the individual industries that comprise the major segments of demand for coal produced in West Virginia. Each of the component forecasts used to form the Consensus Forecast is described, with information about assumptions and resulting projected levels of production for West Virginia. The process used to produce the Consensus is also described, including the weightings applied to each of the component forecasts. The West Virginia Consensus Coal Production Forecast is calculated for the years 2017 through 2040.

In summary, the 2017 West Virginia Consensus Coal Forecast figures are higher than the 2016 Consensus. The four component models incorporate a range of possible levels of West Virginia coal production over the next 24 years, with varying forecasts that illustrate the impact of various supply and demand variables and uncertainty over the continuation of recent trends. The consensus reduces uncertainty by combining the forecasts into one aggregate projection where West Virginia coal production increases to 87 million tons in 2017, remains above 2016 levels through 2025, and then declines slowly through 2040.

As can be seen in Figure 5 below, of the four projections, the EIA's is the only one that is lower than the 2016 forecast. The other three models project higher production of West Virginia coal compared to the 2016 forecasts. The primary reason for the higher projections is

likely the assumed suspension of implementation of the Clean Power Plan (except by EIA) rule for regulating carbon dioxide emissions from power plants and recent upticks in output. The full report can be found in Appendix B.

Figure 5: Consensus and Component Forecasts 2017 (million tons)



2. 2017 Actuarial Analysis

A report prepared by Pinnacle Actuarial Resources provides the DEP with information regarding the funded status of the SRF and the SRWTF and an analysis of the SRF’s and SRWTF’s projected financial statuses under a range of operational parameters.

The valuation is a “closed” valuation in that it only considers liabilities associated with permits that have already been issued. The estimated Fund liabilities account for both known forfeitures and anticipated forfeitures from permits issued before July 1, 2017.

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Separate projections of the SRF and the SRWTF were developed to show the overall financial solvency of each fund. For the funded status, Pinnacle compared the present value of future expenditures with the current value of the Fund’s assets plus the present value of future income, using a 20-year cash-flow projection and a 35-year cash-flow projection.

As can be seen in Table 1 the SRF is projected to develop a negative balance by 2021. However, on a combined basis the two Funds maintain a positive balance throughout the projection period.

Table 1: Funded Status

Funded Status (on a present value basis)			
Fund	20 Year Projection	35 Year Projection	Year Fund Becomes Negative
SRF	97.3%	93.6%	2021
SRWTF	162.6%	151.4%	Fully Funded
Combined	123.4%	115.8%	Fully Funded

Pinnacle determined that combined transfers of \$38 million in assets from the SRWTF to the SRF would keep the SRF in a positive balance position throughout the projection period without causing the SRWTF to move to a negative balance position. Table 2 is representative of the above table if those Fund transfers were to occur.

Table 2: Funded Status with a Transfer of Funds from the SRWTF

Funded Status (on a present value basis)			
Fund	20 Year Projection	35 Year Projection	Year Fund Becomes Negative
SRF	110.9%	105.6%	Fully Funded
SRWTF	130.3%	115.7%	Fully Funded
Combined	118.6%	109.5%	Fully Funded

The full report can be found in Appendix B.

Special Projects Updates

In efforts to improve upon mine drainage treatment efficiencies and overall reclamation practices, or in one instance, explore economic development potential of a forfeited mine site, the DEP may conduct studies or enter partnerships with external entities.

The following are updates of such projects that were introduced to the Legislature in prior reports.

1. Watershed Scale Approaches to AMD Remediation: Martin Creek and Sandy Creek

This approach to treating AMD on a watershed-wide basis was included as a study in the 2016 SRFAC Annual Report. To read about this innovative NPDES permitting concept and the successes the DEP has had with this treatment approach please refer to the 2016 Annual Report.

As was discussed earlier in this report, the DEP is now required to obtain NPDES permits for all water treatment facilities on former mining sites that have had their permits revoked and bonds forfeited. In some instances, this will only lead to DEP discharging compliant waters into streams that are significantly impaired by pre-law acid mine drainage (AMD). Therefore, the DEP is pursuing an alternative NPDES permitting structure for bond forfeiture water treatment sites within the Martin Creek and Sandy Creek watersheds that will result in a large-scale benefit by treating in-stream rather than on a site-by-site basis, thereby addressing both pre-law and post-law AMD problems which will ultimately restore the streams biological integrity.

The DEP applied for a variance to water quality standards that would enable the Special Reclamation Program to treat in-stream in lieu of at-source treatment. The variance, which was part of a larger rules bundle, was included in House Bill 117 which passed on June 2, 2016 and went into effect on July 8, 2016. The variance for Martin Creek has been approved by the US Environmental Protection Agency (USEPA). The variance for Sandy Creek is currently pending approval but the DEP has been informed that the official approval is a mere formality and is forthcoming. The DEP is working with the USEPA to develop a watershed based NPDES permitting structure from within the framework of the Clean Water Act. DEP mine

drainage treatment sites within the watershed where the variance is applied would be covered by the watershed-based NPDES permit (therefore individual NPDES permits would not be required), and the DEP would be required to meet certain in-stream water quality limits at a pre-determined stream location. The reasoning behind this approach is to enable DEP to use its' money more wisely and accomplish more by treating in-stream, thereby addressing pre- and post-law AMD problems at comparable cost to what is currently being spent by treating at-source.

It should be noted that the DEP continues to partner with Southwestern Energy Production Company, LLC (SWN) on the treatment of AMD within the Martin Creek watershed. SWN is the third largest producer of natural gas in the lower 48. They are an independent energy company primarily engaged in natural gas and crude oil exploration, development and production. SWN has committed \$2,500,000 toward capital construction cost of a pipeline to convey AMD to a DEP treatment facility and \$375,000 per year for the next five years for operation and maintenance. The purpose of their involvement is to remain net neutral in their water usage. In other words, if SWN uses 300 million gallons of water for their operations they want to restore 300 million gallons.

2. Off-Grid Solar Power Installation at Former Buffalo Coal Site, Grant County, WV

The former Buffalo Coal surface mining complex is located in a rural section of western Grant County, WV approximately 4 miles from the community of Bismarck, and near Mt. Storm Lake. Buffalo Coal Company held active permits in this area since approximately 1980. Several hundred acres of surface mine land, both reclaimed and un-reclaimed, exist in the area. All surface mining activities in the area have ceased. Mining permits were revoked on Sept. 29, 2006 and associated bonds were forfeited.

AMD exists at several locations across the property. At the location of this particular project, AMD occurs year-round, with outfall flow rates from a few gallons per minute during dry weather conditions, up to several hundred gallons per minute during heavy precipitation periods. Since mining permits were revoked, AMD treatment is now under the direction and operation of the DEP.

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DEP performs AMD treatment at this location by adding lime directly to the impacted water via a mechanically operated liming station. This operation currently uses no electricity (no electricity is available to the immediate area), relying on gravity-feeding of lime and manually adjusting rates of lime addition to the outfall. After lime is added, treated water flows through a series of settling ponds, ultimately discharging into Fourmile Creek which flows into Stony Creek. In winter months, the facility uses propane for heating purposes to keep the treated AMD from freezing during the lime treatment process. Due to the extreme winter weather that occurs in this area, with heavy snow and snow drifts making access roads impassable at times, combined with the sites remote location and extensive time requirements to reach the site, accessing the location on a regular basis to monitor and adjust lime addition rates is quite challenging, expensive, and at times dangerous, for DLR workers.

Since no electric lines are in the area, and AMD treatment will be required for an unpredictable number of years, DEP began experimenting with an off-grid power supply to upgrade its liming operations. Specifically, DEP upgraded its liming facility to include a solar powered automated system capable of adjusting liming rates as needed.

This particular site has two lime silos, both of which used a water wheel as the driving force to dispense the lime. The site historically had issues keeping a consistent lime dosing rate due to frozen plumbing leading to the water wheel and/or due to the lime plugging up in the silo. Under either of these conditions treatment would cease, consequently, a second chemical, caustic soda, was needed to continue treatment. Additionally, the on-site DEP technician had to spend many hours a day regulating the chemical treatment to meet the ever-changing flows. About the time the correct chemical dose was achieved, the flows would change causing the treatment to be too high or too low.

The incorporation of solar power made it possible to use a motor to drive the lime-feed auger. To prevent the plugging issue internal and external vibrators were added to keep the hydrated lime flowing to the lime-feed auger. The purpose of the internal vibrator was to prevent any rat-holing issues from taking place inside of the silo, while the external vibrator's purpose was to address any bridging issues over the lime-feed auger. The addition of the vibrators was a great asset in maintaining constant feed to the lime-feed auger.

The Off-Grid Solar Powered Project has been a remarkable success. The solar power has allowed the DEP to eliminate the water wheel and automate the system to dose the proper chemical feed rates based on the flow and pH. The solar powered motors driving the lime auger are controlled by a signal received from the flow meter or pH meter. The motor speed increases or decreases to match the needed chemical feed rates. Due to the very consistent chemical feed rates, the DEP is able to use the first silo as the main treatment for the AMD. The second silo is now used as a polishing system.



Figure 1 Solar panels

The Off-Grid Solar Powered Project allows for fewer on-site hours by the DEP technician and for consistent treatment throughout the weekends when a technician is not present.

To summarize, the system is now self-adjusting. There are no longer issues with water wheels freezing up and ice build-up in the silos. The flow paced solar system has provided for more reliable and consistent chemical feed rates, thus, keeping the pH in compliance. Maintaining reliable feed rates has allowed the DEP technician to maintain the correct pH adjustment without the addition of caustic soda.



Figure 2: Battery box and electrical controls



Figure 3: Back-up generator

The solar system was designed to run the motors, internal and external vibrators, pH controls, flowmeter and controls from a battery bank that has the ability to be recharged with a generator in the event that there is low light conditions for more than five days. The generator has not had to charge the battery bank due to low light conditions.

3. Geomorphic Landform Design as a Reclamation Option for Royal Scot, Greenbrier County, WV

The DEP, Office of Special Reclamation, West Virginia University, the Office of Surface Mining and WestRock are working together to design a viable option to reclaim an approximate 47-acre refuse pile in Greenbrier County, WV. The site is a part of a revoked mining permit and a major water treatment site for the Office of Special Reclamation. Due to the site's mountaintop location, the area has very little topsoil available for reclamation. Therefore, an alternative means of providing a growth layer is being evaluated. Residual materials (previously labeled "Mgro") from WestRock's Covington, VA paper manufacturing facility contain available nutrients for plant growth. A mixture of the existing refuse material and residuals to form a growth layer was examined and according to laboratory testing, the mixture provides an acceptable growth medium. A Geomorphic Landform Design approach is being used to mimic the natural landscape that reduces infiltration into acid forming refuse by

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shedding water from the surface and into channels as compared to conventional refuse pile reclamation with benches. Due to the size and scope of the proposed full reclamation of the site, DEP OSR elected to construct trial Geomorphic Test Plots with the following objectives:

1. **Objective:** Determine the most efficient means of spreading and mixing the residual material. The residual's handling properties were unknown in the specific application and conditions of this site.

Result: Residuals can be spread using dozer but must be incorporated into growth layer by mechanical means such as a rototiller. Otherwise the residual material is compressed under the equipment and will not be uniformly incorporated into the refuse material.



Figure 4: Completed test plot, 9/5/2017



Figure 5: D-6 Dozer spreading residual material

2. **Objective:** Determine how much compactive effort was required to achieve 95% compaction of the refuse material. Even though laboratory tests had been performed on the material, the actual compaction of material in field conditions needed to be determined. Especially when considering the compaction of the hydraulic barrier on the slope areas where placement of a vibratory roller could be problematic.
Result: The site had not received significant rainfall for nearly two weeks prior to project however refuse material had a high moisture content that impedes compaction to 95% proctor throughout most of site. The impact of lower compaction of the impervious layer (proposed hydraulic separation layer between growth layer and remaining refuse material) may need examined to determine if the lower compaction will provide an acceptable reduction in hydraulic conductivity.

3. **Objective:** Determine the in-situ moisture and density of the refuse material as well as other subsurface conditions. Knowing the moisture content and subsurface conditions are critical in determining what compaction results can be expected and minimizing material handling issues encountered during regrading.

Result: Refuse material had a high moisture content that impedes compaction to 95% proctor throughout most of site Encountering extremely wet filter cake material in isolated area within refuse warrants additional subsurface investigation to determine the frequency and extent of other areas of this material.

4. **Objective:** Determine the success of vegetation for the individual test plots. When considering the magnitude of the full reclamation project cost and limited experience with this specific residual material use, OSR decided to construct test plots to verify laboratory results in field conditions. This also includes comparing 60:40 blend (60% refuse and 40% residuals) to an 80:20 blend (80% refuse and 20% residuals). A significant cost savings is possible if the 80:20 blend proves successful.

Result: Due to rain event at the end of construction of test plots, seeding did not occur for five days. After precipitation and drying the growth layer crusted over. This should be a consideration for full scale project. Preliminary observations indicate that the 80:20 blend is supporting vegetation as well as or better than the 60:40 blend. The 80:20 blend is on a NE facing slope whereas the 60:40 blend is on a SW facing slope.



Figure 6 Test plots with early vegetative growth; 60:40 mix left side, 80:20 right side, and no residuals applied in the middle.

5. **Objective:** Verify surface runoff from site can be managed with a retention pond. Due to the limited use of this specific material, OSR wanted to ensure, and verify other studies, that no ill-effects will result in the use of this material.

Result: Sampling of collection basins ongoing.

4. Golden Delicious Apple Orchard Project

The Central Appalachia Empowerment Zone (CAEZ) has an MOU with the WV National Guard (WVNG) and will also be partnering with West Virginia State University, West Virginia Department of Agriculture, and the Office of Coalfield Community Development, to reintroduce the Golden Delicious Apple Tree to its county of origin. With available land, water, labor and financial resources the Golden Delicious Apple presents a viable option to position Clay County as a player in national agriculture and tourism markets for West Virginia.

The reintroduction planting of the Golden Delicious Apple Trees as well as the apple industry in general in central West Virginia will create employment for a variety of positions such as marketing, picking, processing, etc. The overall goal of this project is to re-establish the Golden Delicious Apple tree in its county of origin and to bring enough apple trees in general to Central West Virginia to entice food processors and manufacturers to the region. For example, the Mott's Facility in Aspers, Pennsylvania employees nearly 550 employees and consumes 10% of Pennsylvania's apple production or 40 million pounds. To produce that many apples, 50,000 trees are needed.

The Greendale Coal Apple Orchard Project, located in Clay County, is part of the initiative of the CAEZ to diversify the economy of Central West Virginia. The WVNG approached the OSR looking for abandoned mine sites, preferably in Clay County, to use as a test orchard. OSR reviewed numerous permit files and reclamation plans with the WVNG and Greendale Coal, S-73-83 was selected as the test site. Through joint discussions between the WVNG, DEP, and the landowner, the WVNG was able to lease approximately ten (10) acres of land from within the forfeited surface mine site. The WVNG cleared and prepared the 10 acres for planting. Afterwards, one thousand five hundred (1,500) saplings were planted by

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the WVNG and inmates from the Department of Corrections. The OSR purchased one thousand three hundred (1,300) bags of top soil which was placed in each hole prior to planting the saplings. This was to increase the survivability rate of the saplings, giving them more opportunity to take root. Another enticing feature of the Greendale site is that OSR will be constructing an acid mine drainage (AMD) treatment facility on the site. The WVNG plans to experiment with irrigation on the site, using both raw, untreated AMD, and treated water. To suit the needs of the experiment OSR will incorporate access points for irrigation purposes throughout the treatment system, which could lead to potential cost benefits to the OSR considering the fact that each of the 3,000 trees planted consumes 18 gallons of water per day.

Central West Virginia's economy has been devastated by the downturn in the local coal industry. Much like the rest of the Appalachian coalfields, central West Virginia's economy was highly dependent on the extraction industries of coal and timber. With both industries struggling, it is more critical now more than ever that the area create a new industry that will help offset the highs and lows of its current economic base. It is also important that this new endeavor compliment a growing area of the economy in the region, tourism.

There were no additional trees added to the Greendale Orchard this past year (2017). The WV National Guard worked on site improvement and maintenance, in that, the three plots were mowed with a brush hog. The high tensile fencing was repaired and the access road graded to improve trafficability. The trees were left alone in order to allow them a full season to develop their root systems and minimize physiological trauma allowing for maximum growth. The survival rate for the planted seedlings is surprising high (approximately 80-85%) for the original 1,500 seedlings planted. Deer damage is a major problem adversely affecting growth rate and survivability. The soil on site is less than ideal and was supplemented with purchased topsoil. This has greatly benefited the growth rate since being added to the soil in 2016. Access to water is a limiting factor which will be relieved once the planned water treatment plant is built and part of the raw water is diverted to the orchard site. It is important to remember that this site was developed on a short time frame due to the arrival of the seedlings and proper planning and site development was not possible. The fact that apple trees

are surviving and growing in soils composed primarily of clay based mine spoil without benefit of irrigation or soil amendments proves that this is a successful project.

Additional information on the Golden Delicious Apple Projects can be obtained from Jeff Wood at jeffrey.a.wood54.nfg@mail.mil.

2018 SRFAC Study Issues

- Review of the current investment strategy
- Continue Review of DMR database:

The SRFAC is continuously looking for ways to improve the ability to project future forfeitures. The DMR database of open permits is the primary source of information used for the biennial actuarial analysis of the SRF and SRWTF. The analysis relies heavily on information obtained from forfeited permits and applied to current permits to project future forfeitures.

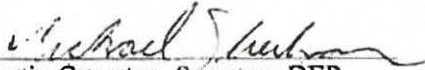
The SRF would like to explore options to increase the linkages of data from past forfeitures to open permits, to improve the predictive power of historical data. Some pieces of data that may be available in the permit databases that have not been previously utilized include:

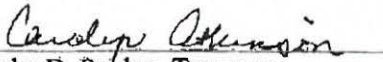
- length of time a permit had a particular status
- number of times a permit changed status
- groupings with other permits (proximity or use)
- annual coal production associated with a permit or group of permits

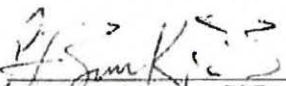
The SRFAC recognizes that not all these pieces of data are available, even in open permits, and may no longer be available for permits that forfeited many years ago, but would like to explore the ability to enhance the information available that can help quantify risk. The database will need to be cleaned and augmented prior to the appointment of the actuary.

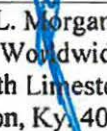
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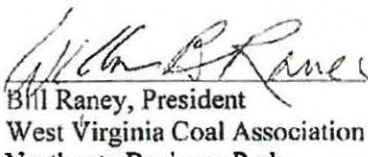
Special Reclamation Fund Advisory Council
Annual Report to the Legislature
February 8, 2018

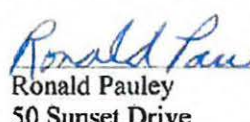

Austin Caperton, Secretary DEP
Ex Officio
Designee: Michael Sheehan
Deputy Director, Division Land Restoration
601 57th Street
Charleston, WV 25304

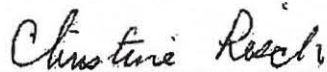

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The SRFAC would like to recognize the DEP for their conscientious management of the Fund and the SRWTF and their efforts in minimizing the impacts of bankruptcies to the Funds.

Appendices for 2017 SRFAC Annual Report
(All Appendices as of 12-31-17)

A. DEP Graphs:

Land and Water Permits Scheduled by Quarter and Projects Completed
Land Permits To Be Contracted
Land Liabilities To Be Contracted
Permits Forfeited Since 6-30-01
Reclamation Projects Started Since 6-30-01
Contract Dollars Encumbered
Cash Balance
Total Revenue
Revenue Collected by Source: Bonds, Civil Penalties, Tax

B. Reports Commissioned by the Council

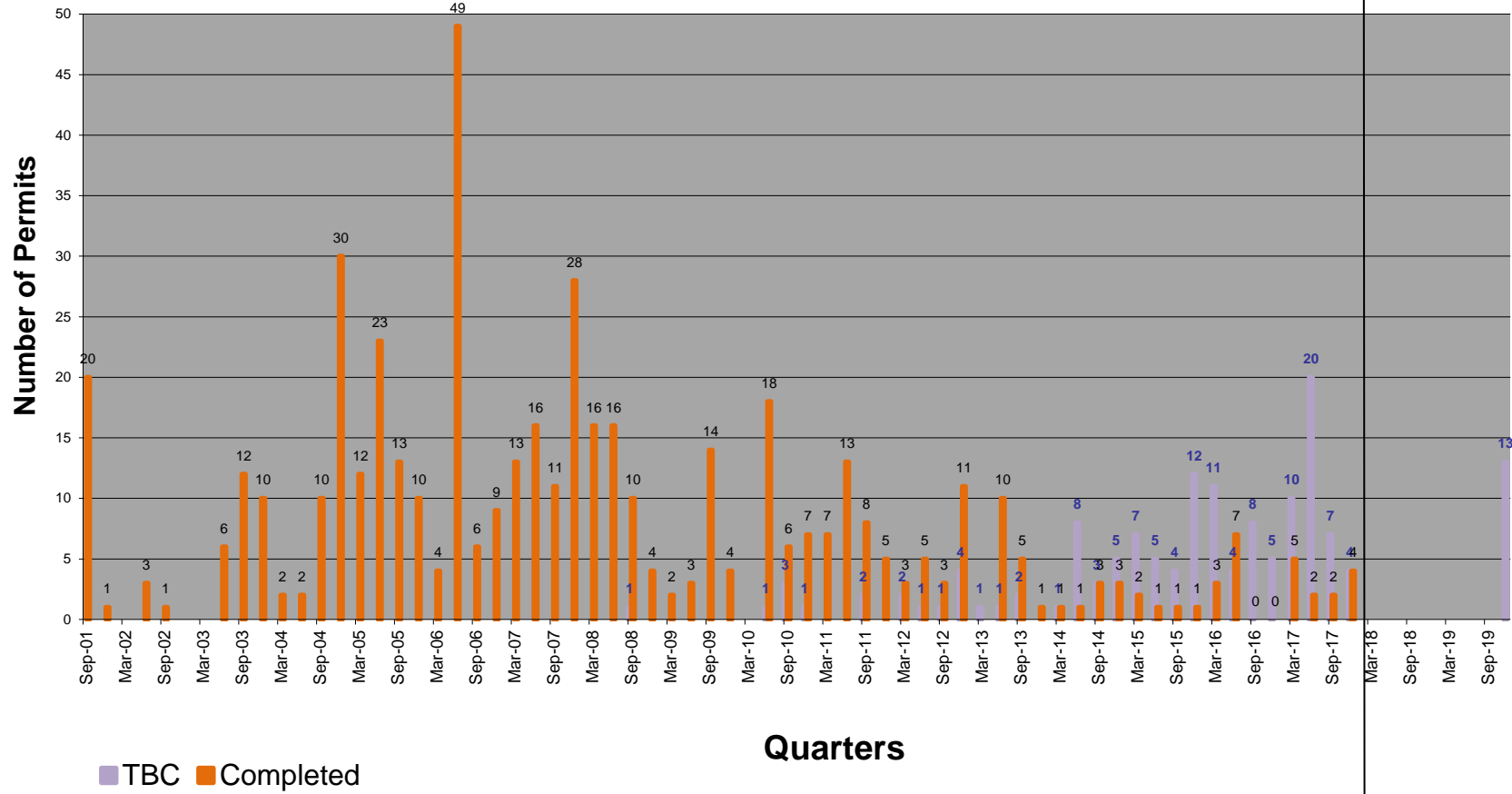
- a. 2017 Actuarial Analysis
- b. 2017 Consensus Coal Production Forecast for West Virginia

C. Bond Forfeiture Inventories

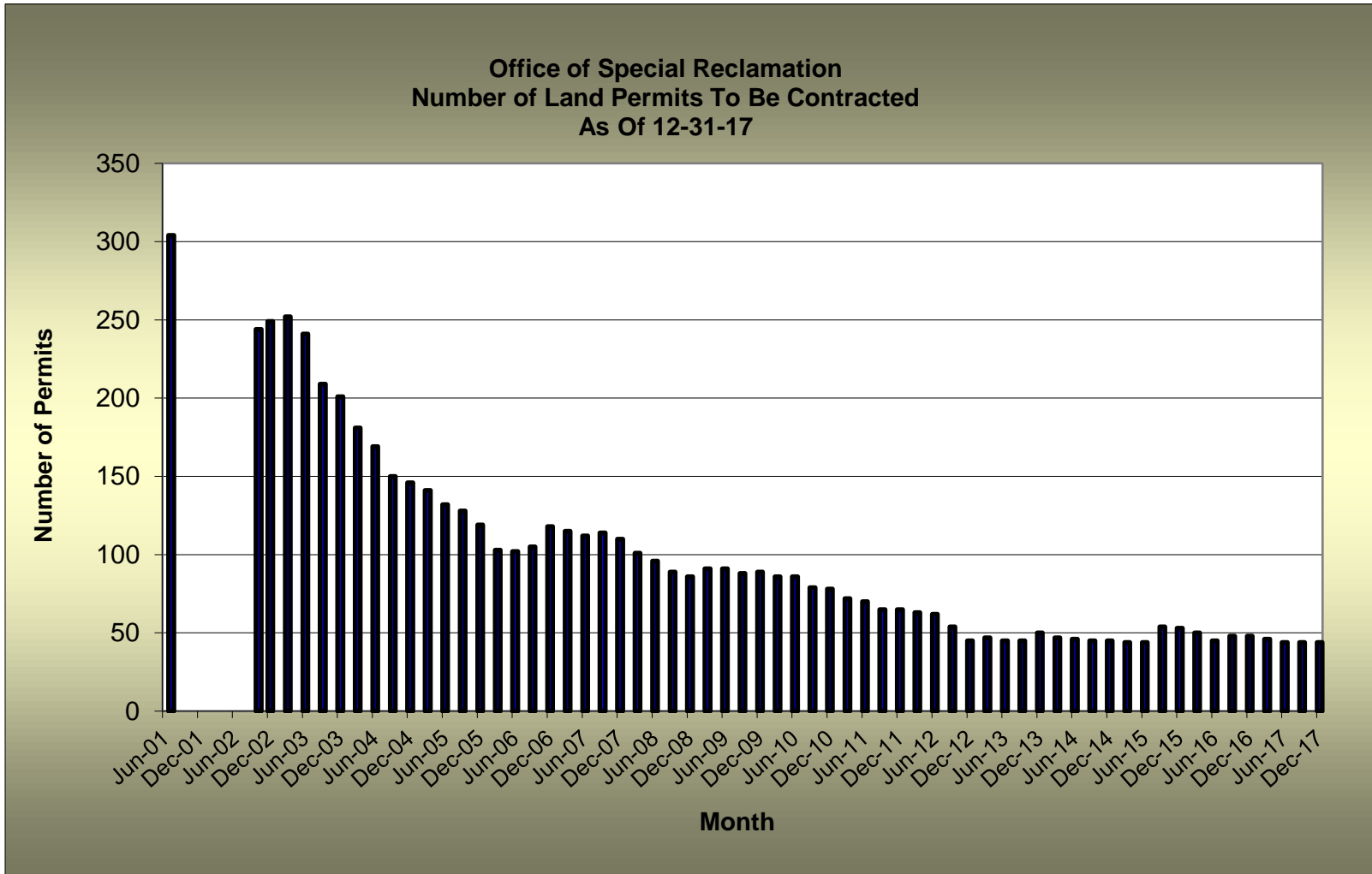
- a. **Total Forfeiture Inventory**
- b. **Acid Mine Drainage Inventory**
- c. **Mine Drainage Treatment Prioritization**

Appendix A

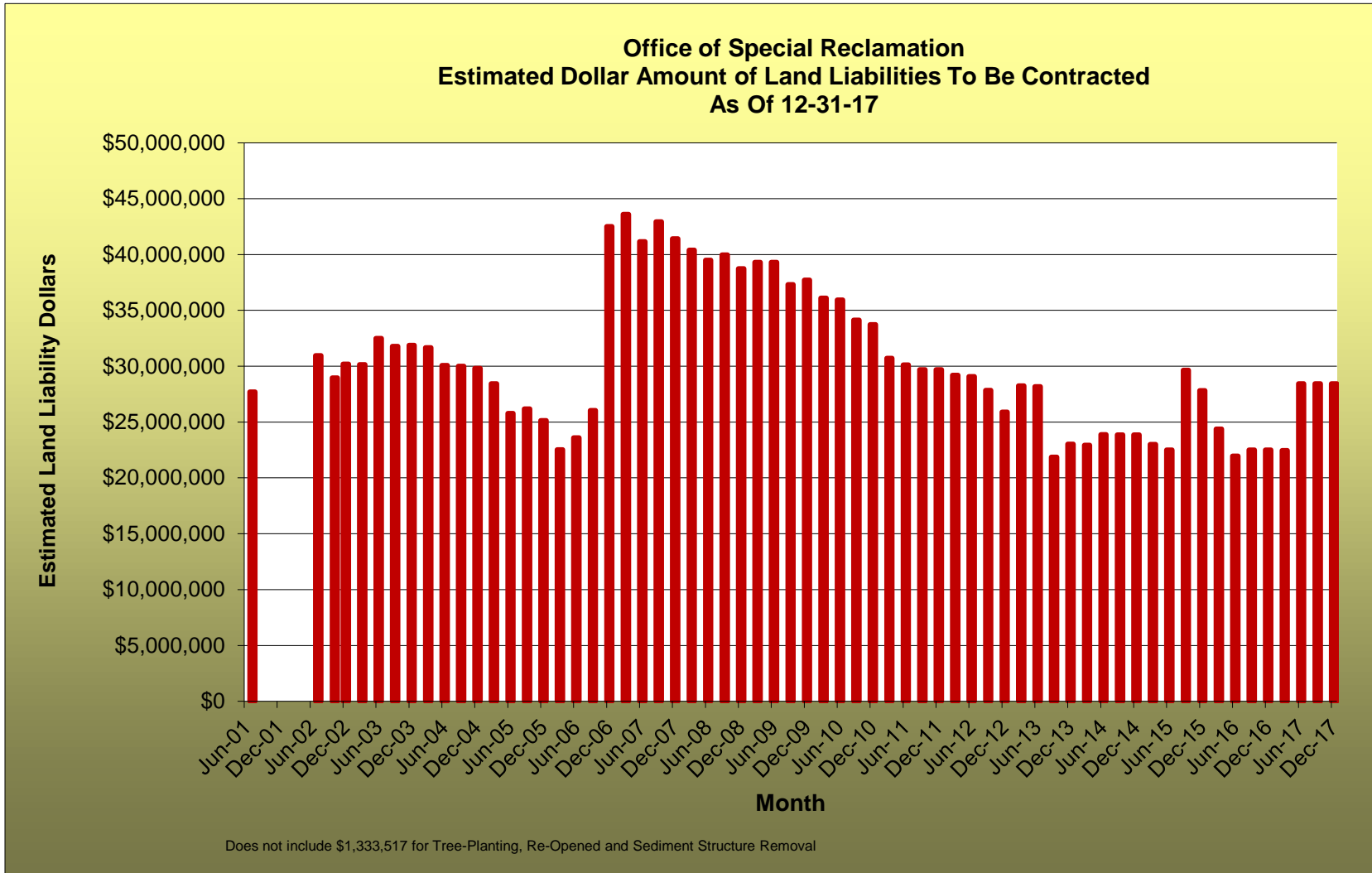
**Land and Water Permits
TBC -Scheduled by Quarter
and Projects Completed**
As Of December 31, 2017

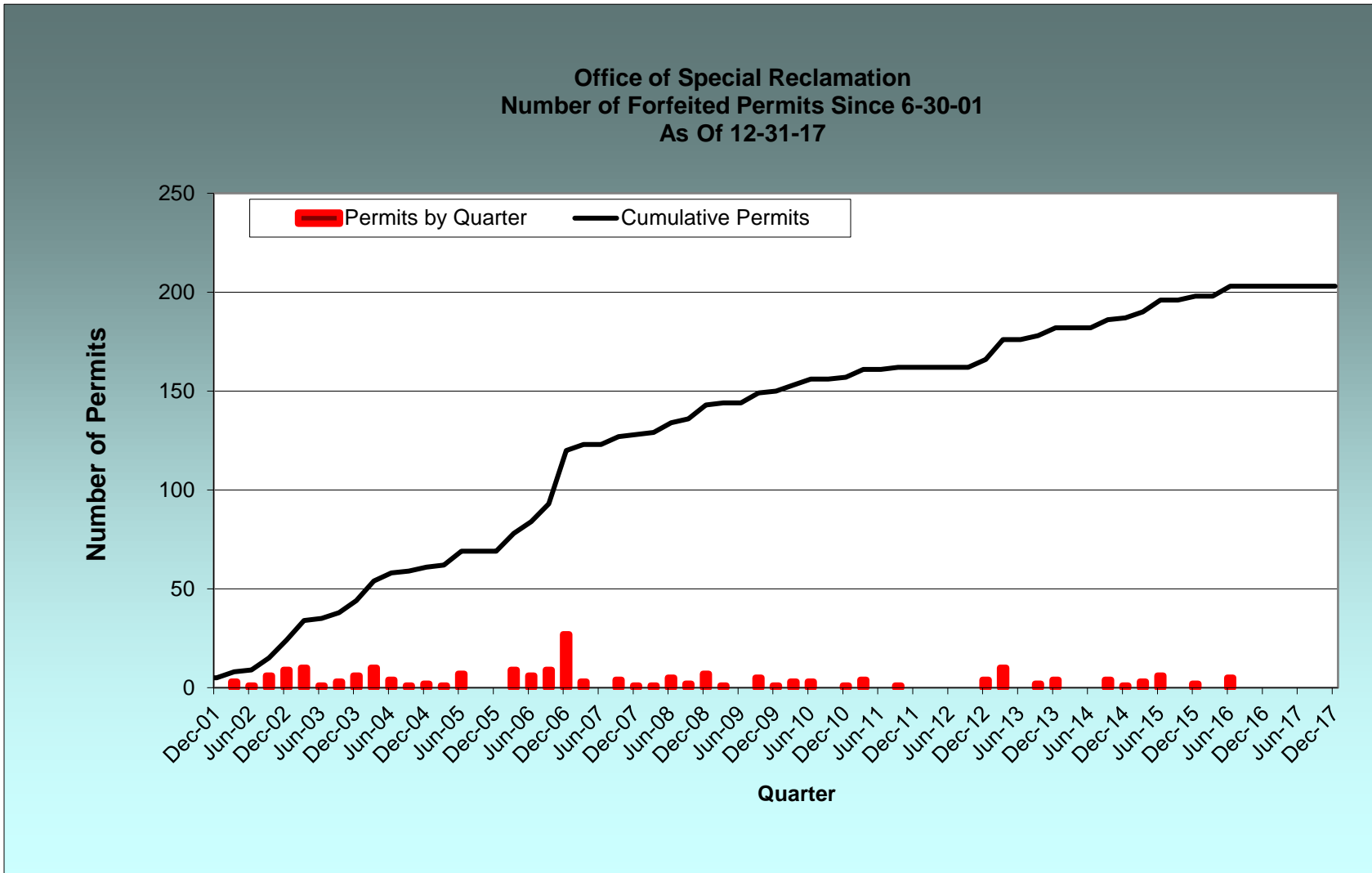


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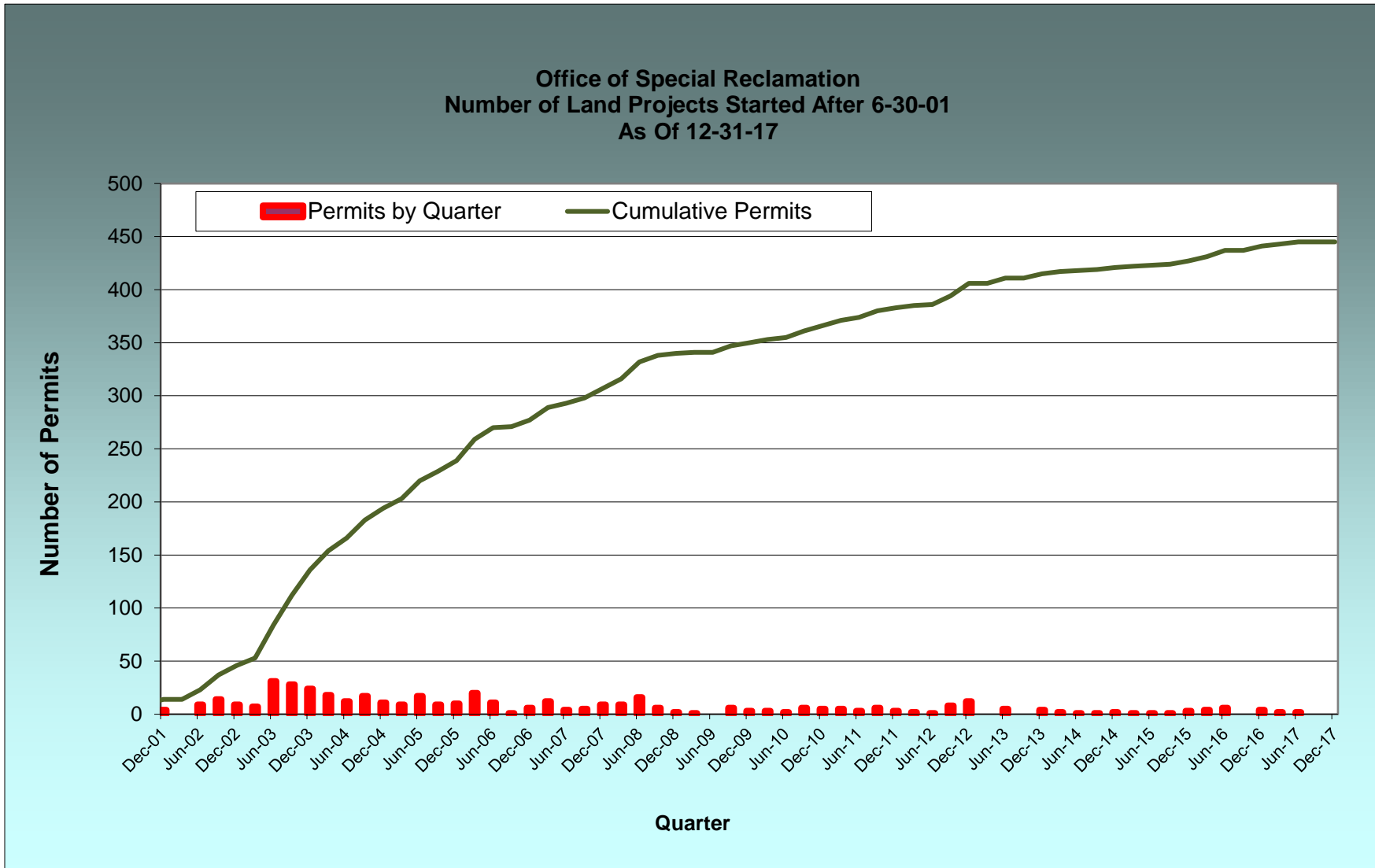


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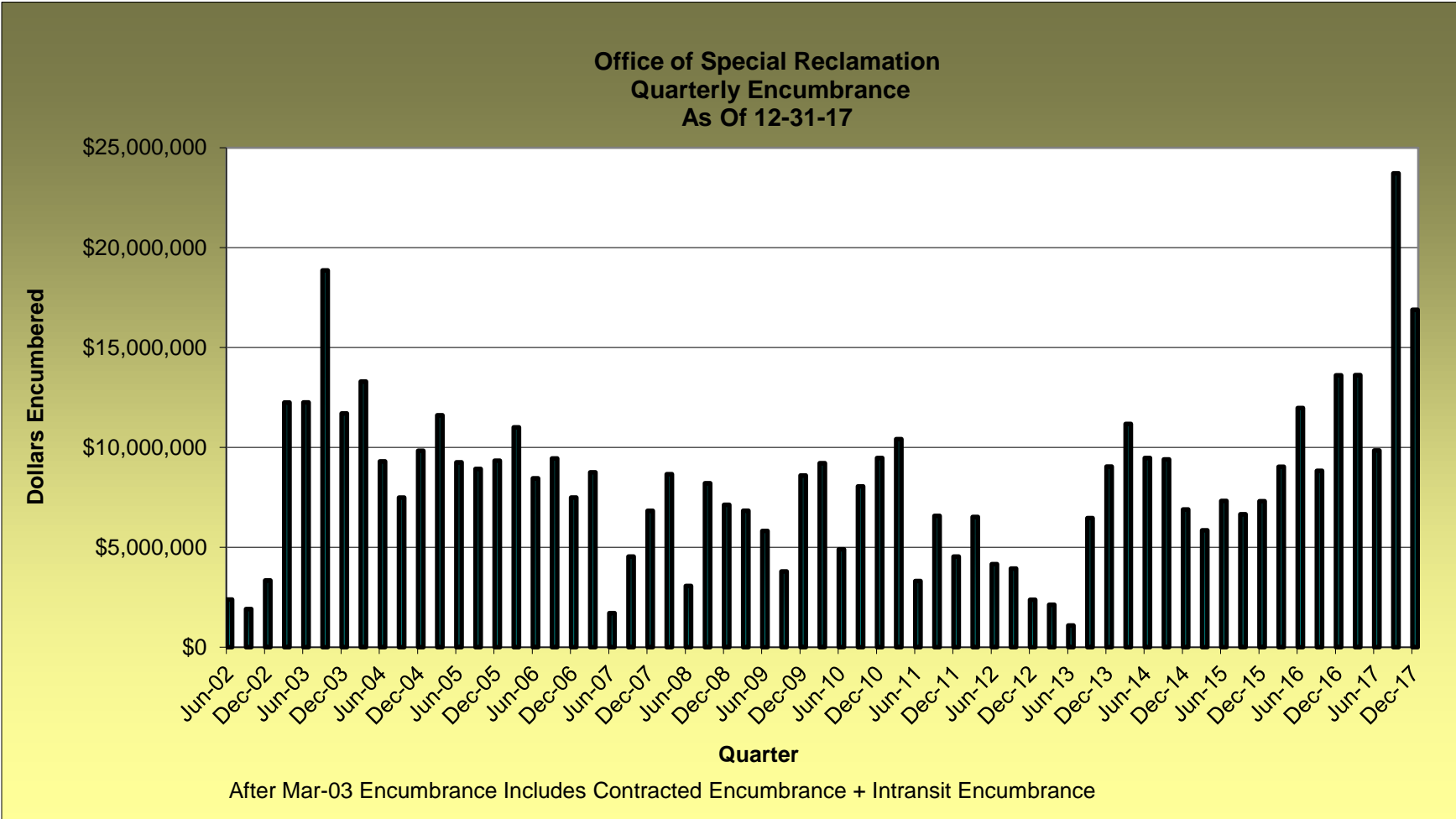




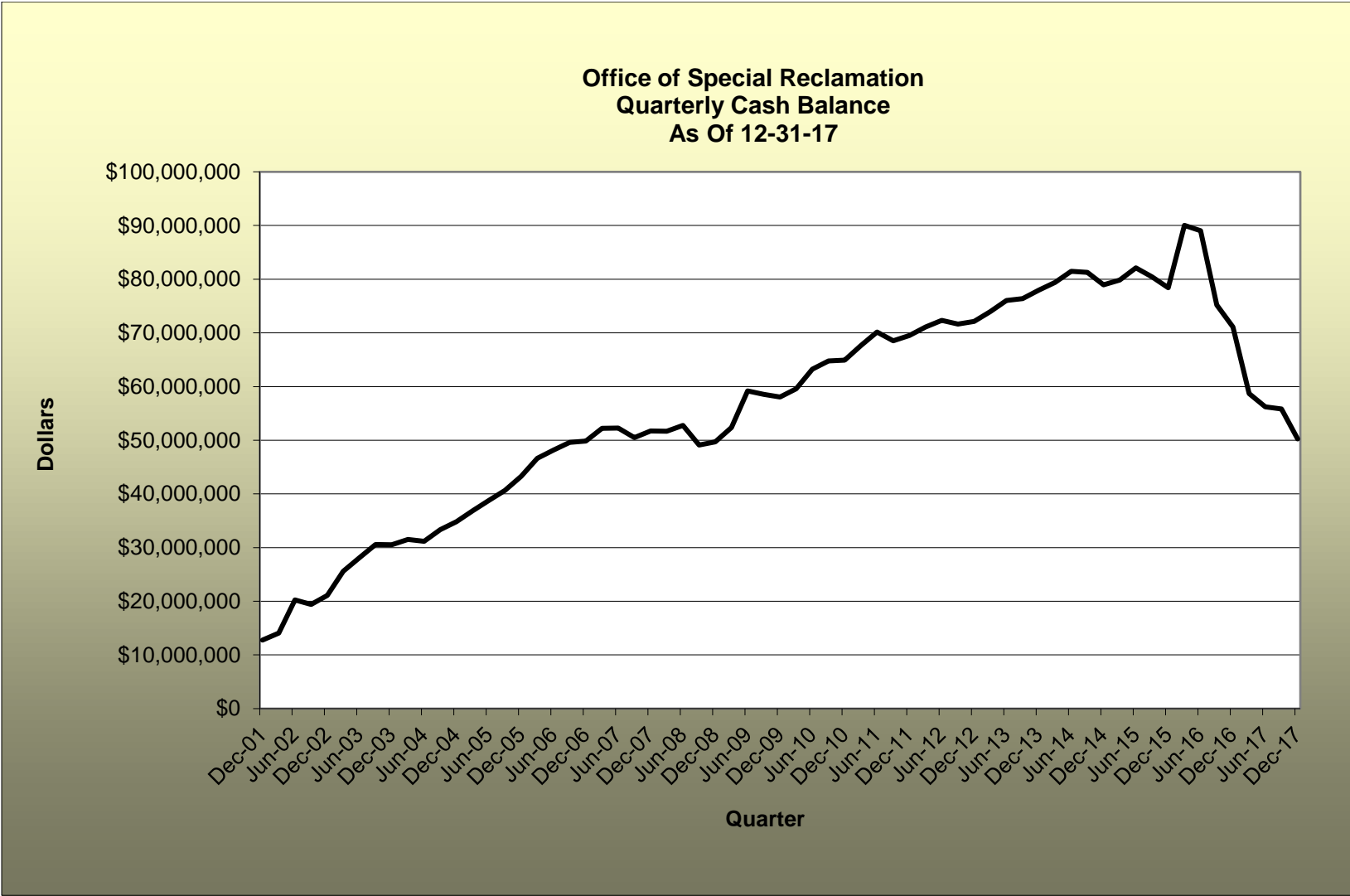
Office of Special Reclamation
Number of Land Projects Started After 6-30-01
As Of 12-31-17

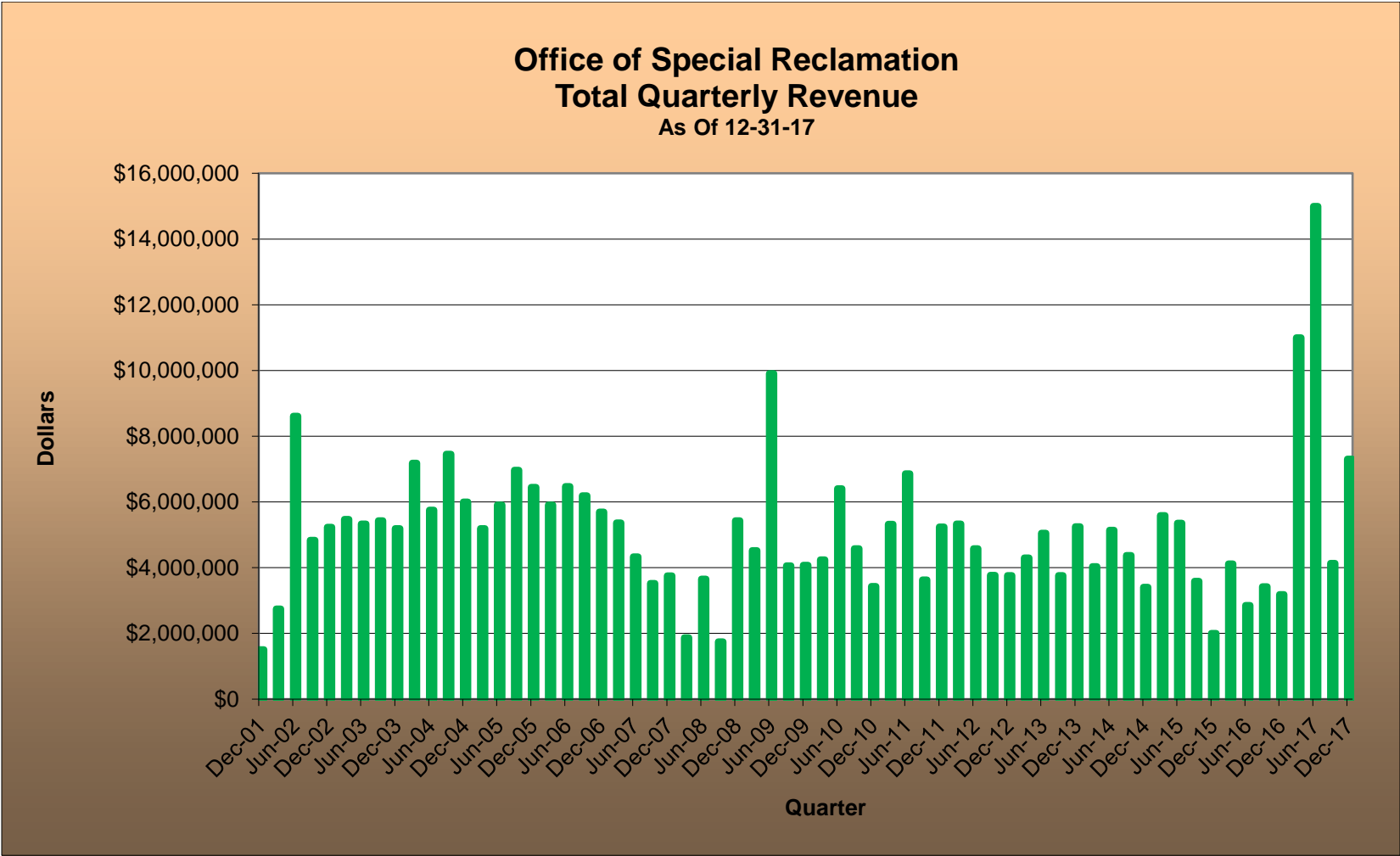


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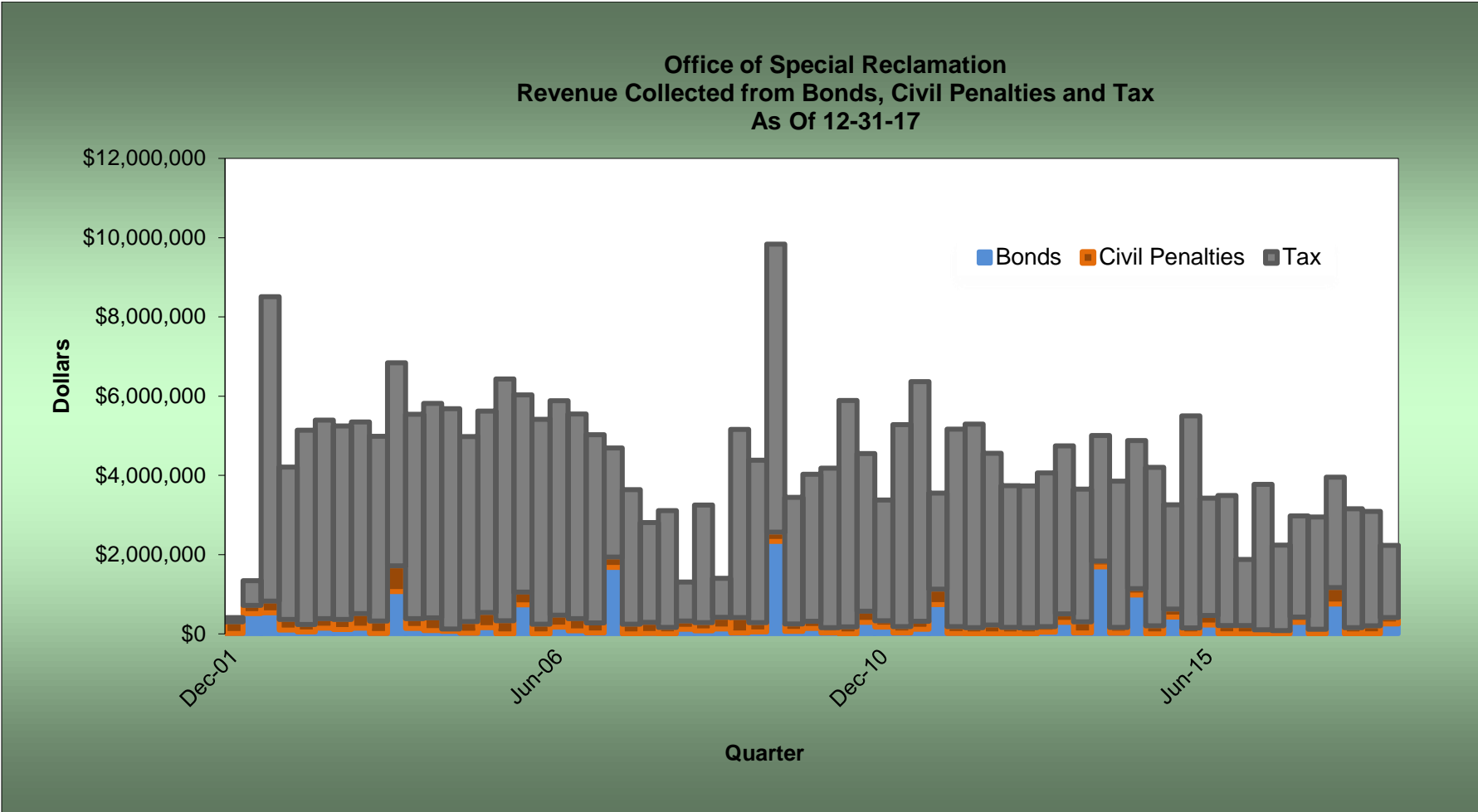


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2017 SRF Advisory Council Annual Report



Appendix B



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Greenwood, IN 46143
317.889.5760
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John E. Wade, ACAS, MAAA
Consulting Actuary
jwade@pinnacleactuaries.com

December 7, 2017

Special Reclamation Advisory Council
c/o Department of Environmental Protection
Division of Land Restoration – Office of Special Reclamation
601 57th Street S.E.
Charleston, West Virginia 25304

Dear Council Members:

Pinnacle Actuarial Resources, Inc is pleased to provide the enclosed report to the Special Reclamation Advisory Council of the West Virginia Department of Environmental Protection. The report provides summary and various details regarding the actuarial valuation of the Special Reclamation Fund and the Special Reclamation Water Trust Fund as of June 30, 2017.

If you have any questions, or require anything further please call us at the numbers listed below. Thank you for allowing us to be of service to the Council again this year. We look forward to the opportunity to work with you again in the near future.

Best Regards,

A handwritten signature in blue ink that reads "John E. Wade".

John E. Wade, ACAS, MAAA
Consulting Actuary
jwade@pinnacleactuaries.com
317-889-5760



**Report for the
West Virginia Department of Environmental Protection
Office of Special Reclamation

Actuarial Valuation of the
Special Reclamation Fund &
Special Reclamation Water Trust Fund**

Actuarial Analysis as of June 30, 2017



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Commitment Beyond Numbers

REPORT ORGANIZATION

EXECUTIVE SUMMARY provides a thumbnail sketch of the results of our analysis.

ACTUARIAL CERTIFICATION attests that this valuation has been conducted in accordance with generally accepted actuarial principles and practices.

SECTION 1 describes the actuarial model in detail and the development of the assumptions used to estimate the revenues and liabilities of the Special Reclamation Fund and the Special Reclamation Water Trust Fund.

SECTION 2 provides a projection of required income for solvency through the next 35 years.

SECTION 3 describes the data reviewed and used in the report.

SECTION 4 describes the actuarial assumptions used in the valuation.

The timely completion of our report depended on complete responses to our data and information requests. The Department of Environmental Protection staff provided us with timely and complete responses to all of our requests for information. We wish to thank them, especially Michael Sheehan, Lewis Halstead, Dianna Wright, Michael Fairchild, and Patricia Hickman for their time and for providing us with their counsel as well as the information that we used in this report.

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SECTION 1 – ACTUARIAL VALUATION	13
SECTION 2 – PROJECTION OF REQUIRED INCOME	24
SECTION 3 – DATA UNDERLYING ANALYSIS	25
SECTION 4 – ACTUARIAL ASSUMPTIONS.....	30

Exhibits

EXECUTIVE SUMMARY

This report from Pinnacle Actuarial Resources provides the Department of Environmental Protection (DEP) with information regarding the funded status of the Special Reclamation Fund (SRF or contextually Fund) and the Special Reclamation Water Trust Fund (SRWTF or contextually Fund) and an analysis of the SRF's and SRWTF's projected financial statuses under a range of operational parameters. This report updates and expands our previous actuarial study completed in 2013. This analysis incorporates the current estimates of future water treatment costs under the expanded National Pollutant Discharge Elimination System (NPDES) standards.

This valuation is a "closed" valuation in that it only considers liabilities associated with permits that have already been issued. The estimated Fund liabilities account for both known forfeitures and anticipated forfeitures from permits issued before July 1, 2017. Accordingly, we have included in this report reclamation liabilities based on the date of forfeiture as well as based on the issue date of permit, to provide the SRF Advisory Council with a complete picture of the Fund's current obligations.

The estimates in this report are actuarial central estimates. As actuarial central estimates, they represent an expected value within the range of reasonably possible outcomes. The bond recoveries are considered as an income item rather than an adjustment to the liabilities as the Fund is responsible for the reclamation of bond forfeiture sites regardless of bond collection. The estimates do not consider any excess insurance or other recoveries because there is no excess insurance and no other recoveries are expected. The estimated liability at June, 30, 2017 is based on permit and forfeiture data through June 30, 2017 and data received through October 6, 2017.

BACKGROUND ON COAL TAX RATES FOR FUNDS

In Senate Bill No. 751 (SB 751), a separate Special Reclamation Water Trust Fund (SRWTF or Water Trust Fund) was established effective July 1, 2008. Beginning in 2012, coal tax revenues based on a tax rate of 15.0 cents per ton are being paid into the Special Reclamation Water Trust Fund. In addition, coal tax revenues based on 12.9 cents per ton (7 cents plus 5.9 cents per SB 751) are being paid into the Special Reclamation Fund (SRF). These rates have continued into 2017 and our estimates assume they will for the foreseeable future.

Unless modified in response to future legislation, for budgeting and analysis purposes the Department of Environmental Protection plans to continue paying all costs for both land and water reclamation work out of the Special Reclamation Fund (SRF) through June 2018. This delay better enables the

SRWTF to build up assets and reach a position where it is large enough to begin covering water treatment costs – both water capital costs and ongoing water treatment costs.

ASSUMPTION CHANGES

Except as noted below, there were no major changes to methodologies or assumptions compared to our 2013 analysis.

- Release rates were reviewed and reduced from the prior analysis.
- Forfeiture rates were reviewed and reduced from the prior analysis.
- Investment rates were reviewed and adjustments made in keeping with current listings of recent West Virginia State investment pools, U.S. Treasury rates and a segmentation between the SRF and SRWTF. In addition, investable amounts were restricted within each fund to allow for liquidity in paying ongoing expenses.
- Inflationary cost trends have been lowered based on changes in the Consumer Price Index.
- Discount rates were adjusted to reflect selected investment rates.
- Water treatment costs are based on new standards of the NPDES.
- Water capital costs have increased due to a reassignment of “ACT” (active chemical treatment) and “P” (passive treatment) permits from closed in our prior analysis to open in our current analysis.
- Administrative cost estimates were decreased based on historical data.

These changes and the impact are described in more detail in the text of the report.

FUNDED STATUS

Separate projections of the SRF and the SRWTF have been developed to show the overall financial solvency of each fund. For the funded status, we have compared the present value of future expenditures with the current value of the Fund’s assets plus the present value of future income, using a 20-year cash-flow projection and a 35-year cash-flow projection.

Funded Status (on a present value basis)			
Fund	20 Year Projection	35 Year Projection	Year Fund Becomes Negative
SRF	97.3%	93.6%	2021
SRWTF	162.6%	151.4%	Fully Funded
Combined	123.4%	115.8%	Fully Funded

The funded status of the SRF has deteriorated significantly since our 2013 review, primarily as a result of increasing water treatment costs which more than offset more favorable selected forfeiture rates. The SRF is projected to develop a negative Fund balance in 2021. The benefit of the improved forfeiture rates, however, has moved the SRWTF into a fully funded status on a present value basis.

It is noted that on a combined basis the two Funds maintain a positive balance throughout the projection periods. In Exhibit 6.1 it can be seen that combined transfers of \$38 million in assets from the SRWTF to the SRF would keep the SRF in a positive balance position throughout the projection period without causing the SRWTF to move to a negative balance position. If those Fund transfers were to occur, the above table could be restated as below.

Funded Status (on a present value basis)			
Fund	20 Year Projection	35 Year Projection	Year Fund Becomes Negative
SRF	110.9%	105.6%	Fully Funded
SRWTF	130.3%	115.7%	Fully Funded
Combined	118.6%	109.5%	Fully Funded

A second alternative to keep the SRF in a positive Fund balance position would be to raise the SRF coal extraction fee from 12.9 cents a ton to 20.6 cents a ton in 2018 and for the next four years, and then dropping it back down to 12.9 cents a ton in 2023.

Fund transfers of \$38 million from the SRWTF to the SRF as noted in Exhibit 6.1 are assumed throughout the remainder of this report, without any changes to the extraction fees.

VALUATION RESULTS

Expenditures

Tables A-1 through A-4 below show the present value of future expenditures from July 2017 to June 2037 and from July 2017 to June 2052 for the Special Reclamation Fund and the Special Reclamation Water Trust Fund. The future expenditures associated with these Funds include:

- land capital expenditures (restoring the land to the approved reclamation plan),
- water capital expenditures (creation of water treatment facilities),
- ongoing water treatment expenditures, and
- administration costs.

These amounts include the Department of Environmental Protection estimated costs for reclamation activities on permits that have already been forfeited, including the estimated on-going water treatment costs. The projected amounts are the discounted present value of projected cash flows using a discount rate equal to the expected investment returns based upon recent returns on West Virginia investments and US Treasury Notes. Since the estimated annual reclamation cost inflation rate of 2.5 percent is fairly close to the implicit discount rate, the discounted figures are nearly the same as the estimated costs in 2017 dollar terms for the SRF. Discounting has a larger impact on the SRWTF, which is projected to have much larger investment returns.

A complete description of all of the assumptions used in the valuation can be found in Section 4. The Water Capital and Water Treatment costs are only included in the Special Reclamation Fund figures until July of 2018, at which point following a ten year capital build up, the Water Trust Fund will begin covering water capital and water treatment costs on forfeitures occurring after June 30, 2018.

- Table A-1 - Special Reclamation Fund 20 Year Liabilities for Known and Expected Forfeitures
- Table A-2 - Special Reclamation Fund 35 Year Liabilities for Known and Expected Forfeitures
- Table A-3 - Special Reclamation Water Trust Fund 20 Year Liabilities for Known and Expected Forfeitures
- Table A-4 - Special Reclamation Water Trust Fund 35 Year Liabilities for Known and Expected Forfeitures

Table A-1 Special Reclamation Fund Liability as of June 30, 2017 for Known and Expected Forfeitures Limited to a 20-Year Cash Flow (Present Value in \$ Millions)			
	Currently Forfeited Permits	Projected Future Forfeitures	Total Liabilities
Land Capital	\$27.7	\$49.2	\$76.9
Water Capital	95.2	0.0	95.2
Ongoing Water Treatment	4.8	0.0	4.8
Administration			76.3
Total			\$253.3

For comparison purposes, the 20-Year SRF cost projection prepared by Pinnacle in 2013 was \$284.0 million. Projected Land and Water Capital costs on currently forfeited permits are up substantially in

spite of the improved forecast of forfeiture rates because of the backlog in payments. Future forfeited permits costs are down because of the more favorable selected forfeiture rates.

Table A-2 Special Reclamation Fund Liability as of June 30, 2017 for Known and Expected Forfeitures Limited to a 35-Year Cash Flow (Present Value in \$ Millions)			
	Currently Forfeited Permits	Projected Future Forfeitures	Total Liabilities
Land Capital	\$27.7	\$55.7	\$83.4
Water Capital	95.2	0.0	95.2
Ongoing Water Treatment	4.8	0.0	4.8
Administration			148.6
Total			\$332.0

For comparison purposes, Pinnacle's 35-Year SRF cost projection in 2013 was \$389.9 million.

Table A-3 Special Reclamation Water Trust Fund Liability as of June 30, 2017 for Known and Expected Forfeitures Limited to a 20-Year Cash Flow (Present Value in \$ Millions)			
	Currently Forfeited Permits	Projected Future Forfeitures	Total Liabilities
Land Capital	\$0.0	\$0.0	\$0.0
Water Capital	46.7	38.0	84.7
Ongoing Water Treatment	70.6	13.1	83.7
Administration			0.0
Total			\$168.4

For comparison purposes, Pinnacle's 20-Year SRWTF cost projection in 2013 was \$151.5 million. Water treatment costs are up due to the increased costs related to the new NPDES standards.

Table A-4 Special Reclamation Water Trust Fund Liability as of June 30, 2017 for Known and Expected Forfeitures Limited to a 35-Year Cash Flow (Present Value in \$ Millions)			
	Currently Forfeited Permits	Projected Future Forfeitures	Total Liabilities
Land Capital	\$0.0	\$0.0	\$0.0
Water Capital	46.7	40.9	87.6
Ongoing Water Treatment	96.0	23.9	119.9
Administration			0.0
Total			\$207.4

For comparison purposes, the 35-Year SRWTF cost projection in 2013 was \$290.4 million.

Revenues

The SRF and SRWTF receive revenues from several sources. The primary funding source for both Funds is tax on current coal extraction. The second funding source, available only to the SRF, is from the underlying security on forfeited permits, as the Fund collects the bond amounts associated with the forfeited permits and/or civil penalties and court settlements. The third funding source, available to both Funds, is interest income earned on the SRF and SRWTF assets invested in State investment pools (SRF) and other higher yielding instruments (SRWTF).

As with the projection of expenses, we have developed income projections across both a 20 year and 35 year time horizon for each Fund. Future revenue streams have been discounted at the implicit annual investment returns for both the SRF and the SRWTF.

- Table B-1 - Special Reclamation Fund 20 Year Revenue
- Table B-2 - Special Reclamation Fund 35 Year Revenue
- Table B-3 - Special Reclamation Water Trust Fund 20 Year Revenue
- Table B-4 - Special Reclamation Water Trust Fund 35 Year Revenue

Overall estimated SRF revenues have not changed substantially since our 2013 estimates, although the individual components have shifted. Coal tax is down somewhat because of lower estimated coal production. Projected revenues from bond forfeitures are down because of the improved projected forfeiture rates. Miscellaneous income is up quite a bit based on recent past experience. Interest income is negligible because of the very low asset base of the SRF.

<p style="text-align: center;">Table B-1 Special Reclamation Fund Revenue Projection as of June 30, 2017 for Known and Expected Forfeitures <i>Limited to a 20-Year Cash Flow</i> (Present Value in \$ Millions)</p>					
Coal Tax Current Permits	Bond Forfeiture	Civil Penalties & Court Settlements	Fund Transfers	Interest Income	Total Income
\$134.5	\$26.3	\$28.4	\$29.5	\$5.9	\$224.7

Table B-2 Special Reclamation Fund Revenue Projection as of June 30, 2013 for Known and Expected Forfeitures Limited to a 35-Year Cash Flow (Present Value in \$ Millions)					
Coal Tax Current Permits	Bond Forfeiture	Civil Penalties & Court Settlements	Fund Transfers	Interest Income	Total Income
\$182.2	\$28.3	\$42.8	\$29.5	\$11.5	\$294.4

Estimated SRWTF revenues are down in our 20 and 35 year forecasts compared to our 2013 estimates due to decreased projected coal production and projected lower forfeiture of bonds.

Table B-3 Special Reclamation Water Trust Fund Revenue Projection as of June 30, 2017 for Known and Expected Forfeitures Limited to a 20-Year Cash Flow (Present Value in \$ Millions)					
Coal Tax Current Permits	Bond Forfeiture	Civil Penalties & Court Settlements	Fund Transfers	Interest Income	Total Income
\$113.5	\$0.0	\$0.0	-\$29.5	\$42.3	\$126.3

Table B-4 Special Reclamation Water Trust Fund Revenue Projection as of June 30, 2017 for Known and Expected Forfeitures Limited to a 35-Year Cash Flow (Present Value in \$ Millions)					
Coal Tax Current Permits	Bond Forfeiture	Civil Penalties & Court Settlements	Fund Transfers	Interest Income	Total Income
\$133.5	\$0.0	\$0.0	-\$29.5	\$42.9	\$146.9

Note that SRWTF interest income is nearly stagnant between the 20 year and 35 year forecasts because our model does not allow interest to be earned when the undiscounted fund balance is negative. See Exhibits 6.2 and 10.2.

Fund Status as of June 30, 2017

The Special Reclamation Fund had accumulated assets of \$56.2 million while the Special Reclamation Water Trust Fund had accumulated \$93.1 million in assets as of June 30, 2017. The SRF assets have decreased by nearly \$20 million since 2013 while the SRWTF assets are up by more than \$70 million. These levels reflect both the continued benefit of significant reclamation efforts in the past and the revenue from various sources including the coal tax collections.

In Tables C-1 and C-2 below, we combine the projected reclamation liabilities, current assets and expected future revenue and fund transfers to produce the Funded Status for each of the Funds. A Funded Status of above 100 percent indicates that the current revenue structure (i.e. legislated coal tax revenues and amounts of permit bonds) should provide sufficient funding to meet the long-term obligations of the Fund for the reclamation of forfeitures of permitted mining operations. A Funded Status of less than 100 percent would indicate that the Fund's assets, combined with expected future revenues and fund transfers, are not sufficient to cover the expected future expenditures for the reclamation of forfeitures of the permitted mining operations.

Table C-1 Special Reclamation Fund Funded Status as of June 30, 2017 (in \$ Millions)		
	20 Years	35 Years
Present Value of Future Revenues	\$195.2	\$264.9
Assets as of June 30, 2017	56.2	56.2
Present Value of Fund Transfers	29.5	29.5
Assets + Present Value of Future Revenues and Transfers	280.9	350.6
Present Value of Future Expenditures	253.3	332.0
Funded Status	110.9%	105.6%
Year Fund Balance Becomes Negative	Fully Funded Through 35 Years	

Table C-2 Special Reclamation Water Trust Fund Funded Status as of June 30, 2017 (in \$ Millions)		
	20 Years	35 Years
Present Value of Future Revenues	\$155.8	176.4
Assets as of June 30, 2013	93.1	93.1
Present Value of Fund Transfers	-29.5	-29.5
Assets + Present Value of Future Revenues and Transfers	219.4	240.0
Present Value of Future Expenditures	168.4	207.4
Funded Status	130.3%	115.7%
Year Fund Balance Becomes Negative	Fully Funded Through 35 Years	

On a combined basis, the SRF and SRWTF are projected to carry a positive balance through year 2047 on an undiscounted basis, but throughout 2052 on a discounted basis. See additional details in Exhibits 6.3 and 6.6.

In Exhibits 6 we provide projections of the estimated cash flows over the next 35 years.

The expenditures are comprised of:

- Land capital expenditures
- Water capital expenditures
- Ongoing water treatment expenditures
- Administration costs

The revenues are comprised of:

- Coal tax receipts
- Bond forfeitures, civil penalties, and court settlements
- Investment income

We also bring the Fund transfers into Exhibit 6.

The investment income is determined by applying recent West Virginia rates of return (extended into the future based on varied US Treasury interest rates) against the prior year-end closing fund balance plus one-half the year's income less one-half of the year's expenditure. For projected years where the total undiscounted fund balance is negative, total investment income is set to zero.

Exhibits 6 shows the projected cash flows for the next 35 years assuming continuation of current law, whereby the coal tax continues to be collected at a rate of 27.9 cents per ton with 15.0 cents per ton allocated to the Special Reclamation Water Trust Fund.

Exhibit 6.1 shows that under the current law, the SRF balance is projected to become negative in 2021 on an undiscounted basis, even though water treatment costs shift to the SRWTF in 2019. However, as shown in the exhibit, an infusion of funds from the SRWTF to the SRF would prevent that from happening. Exhibit 6.4 restates Exhibit 6.1 on a present value (discounted) basis, including the transferred fund amounts.

Exhibit 6.2 shows the accumulation of assets in the Water Trust Fund. The SRWTF will begin making payments for water capital and ongoing water treatment in Fiscal Year 2019. On an undiscounted basis (non-present value basis) the Fund is projected to have sufficient capital to operate until some point in 2041 before experiencing a deficit. This is after consideration the fund transfers to the SRF 2021 and 2022. We expect that the Water Trust Fund will have accumulated \$110.7 million at the end of fiscal year 2018. When payment and revenue streams are viewed on a present value basis the SRWTF is fully funded over the next 35 years. This is displayed in Exhibit 6.5.

Exhibit 6.3 projects that on a combined basis the Funds will remain solvent through 2047 on an undiscounted basis. When present valued in Exhibit 6.6, the combined Funds projected balance remains positive throughout the 35 year projection period.

Table D below shows the expected capital costs for reclamation based upon previously forfeited permits in 2017 dollars. With the current bond limit of \$5,000 per acre, the expected receipts from permits issued in the future will not be sufficient to cover the expected reclamation costs for Underground Permits or Other Permits.

Table D			
Cost Per Acre by Permit Type			
(in 2017 Dollars)			
<i>Based on Forfeited Permits</i>	Surface	Underground	Other Types
Land Capital	\$3,200	\$13,800	\$9,100
Water Capital	4,500	14,400	5,200
Water Treatment	140	260	200
Total Capital	7,840	28,460	14,500

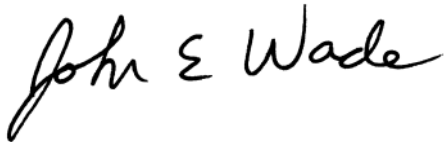
ACTUARIAL CERTIFICATION

The State of West Virginia's Department of Environmental Protection retained Pinnacle Actuarial Resources, Inc. to perform an actuarial valuation of the Special Reclamation Fund for the purposes of reporting the progress of the Fund.

John E. Wade, ACAS, MAAA, Consulting Actuary is a member of the American Academy of Actuaries and meets its Qualification Standards of Actuaries Issuing Statement of Actuarial Opinion in the United States to render the actuarial opinion contained here.

This valuation has been conducted in accordance with generally accepted actuarial principles and practices. The actuarial assumptions and methods employed in the measurement of the liability have been selected by Pinnacle Actuarial Resources, Inc. after consultation with the staff of the Department of Environmental Protection and the Special Reclamation Fund Board.

The results shown in this report are reasonable actuarial results. However, a different set of results could also be considered reasonable actuarial results. The reason for this is that actuarial standards of practice describe a "central estimate" for each assumption, rather than a single best-estimate value. Thus, reasonable results differing from those presented in this report could have been developed by selecting different points within the best-estimate ranges for various assumptions.



John E. Wade, ACAS, MAAA

Consulting Actuary

Pinnacle Actuarial Resources, Inc

SECTION 1 – ACTUARIAL VALUATION

BACKGROUND

This is the fourth actuarial valuation performed by Pinnacle Actuarial Resources, Inc. of the Special Reclamation Fund and the Special Reclamation Water Trust Fund. As in the prior valuations, forfeiture and release rates and reclamation costs have been selected on per permit or per acre bases separately for Underground, Surface, and Other permits. We have revised selections of expected future release rates based upon the available data. We have also reviewed the forfeiture data and developed expected forfeiture rates, based upon the calendar year rather than the year of permit issuance. This selection process is described more fully later in this document.

This valuation builds on the prior analyses valuations and develops separate updated reclamation costs for the different types of permits using the most up-to-date costs as reported in the Department of Environmental Protection database.

We have prepared a measurement of current liabilities and assets in accordance with the guidance set out in Governmental Accounting Standard Number 10, an excerpt of which is:

State and local governmental entities other than public entity risk pools are required to report an estimated loss from a claim as an expenditure/expense and as a liability if both of these conditions are met:

- a. Information available before the financial statements are issued indicates that it is probable that an asset had been impaired or a liability had been incurred at the date of the financial statements. It is implicit in this condition that it must be probable that one or more future events will also occur, confirming the fact of the loss.
- b. The amount of the loss can be reasonably estimated.

This valuation is a “closed” valuation in that it only considers liabilities associated with permits that have already been issued. With regard to the basis for the Funds’ liabilities, we believe the accounting rules are framed to require each Fund to account for both known forfeitures and anticipated forfeitures from existing permits. Accordingly, we have included in this report reclamation liabilities based on the date of forfeiture as well as based on the date of permit, to provide the SRF Advisory Council with a complete picture of the Funds’ obligations.

DISTRIBUTION AND USE

The purpose of this report is to provide information to the Department of Environmental Protection to address the long-term funding requirements for both the Special Reclamation Fund and the Special Reclamation Water Trust Fund. It may be given to the SRF Advisory Council as well as the State of West Virginia's Governor, Legislature, and external auditor. However, we ask that this report be reproduced only in its entirety so that the reader has the full benefit of the information provided. Other distribution or use of this report or the estimates contained in it before it is made available to the public requires our prior, written permission. Third parties reading this report should recognize that the furnishing of this report is not a substitute for their own due diligence and should place no reliance on this report or the data contained herein that would result in the creation of any duty or liability by Pinnacle to the third party.

LIMITATIONS AND RELIANCES

We relied without audit or verification on issued permits, forfeited permits, investment return, coal production and other information supplied for this analysis by Michael Sheehan, Lewis Halstead, Dianna Wright, Michael Fairchild, and Patricia Hickman, all employees of the West Virginia Department of Environmental Protection. We reviewed the data for overall reasonableness and consistency. We worked with the above named individuals to gain a better understanding of the data to make adjustments if needed. If issues are discovered with the data as provided, we would ask to be informed as our estimates heavily rely upon the data. It should also be noted that there is a high degree of uncertainty in projecting future conditions that impact our conclusions. Additional reliances and limitations are contained throughout this report and the accompanying exhibits which are an integral part of this report.

Interest rates were set at levels comparable to recent investment performance of the Funds. Estimates discounted for time value of money can be more uncertain than those on an undiscounted basis. In addition to the usual uncertainty in projecting ultimate loss, discounted estimates are also influenced by variations in the timing of actual loss payments versus the rate of payment assumed in discounting estimates to present value and variation in the actual investment yield on the assets underlying the liabilities versus the assumed interest rate used in discounting.

RISKS POSING MATERIAL EFFECTS

There are two major components to both the SRF and the SRWTF: generated revenues and actual outlays. In the past several years both sides of the equation have been significantly impacted by external changes. Recent change in water treatment standards has added tremendous costs to the Funds. Recent legislated changes to the tax rates will bring considerable revenues into the Funds. Both of these changes are the result of external factors and it can be assumed that future changes of similar magnitude, in the same or opposite directions, can occur again.

Other specific and significant risks faced by the SRF and SRWTF include the concentration of large amounts of liabilities within single operators. The overall economic condition of the industry also could play a large role since economic downturns could cause major disruptions by leading to the bankruptcies of multiple operators at the same time.

ACTUARIAL MODEL

The actuarial model combines the Department of Environmental Protection Special Reclamation Unit's estimated reclamation expenditures of the permits that have already been forfeited with the projection of estimated expenditures associated with the estimated numbers and types of future forfeited permits. The actuarial model uses separate release and forfeiture rates to project the expected number of existing permits/acres to be released and the number of permits/acres that are expected to be forfeited in the future. The model assumes that the SRF does not incur any additional costs when a permit is released. The model projects three types of expenditures associated with a forfeited permit. A forfeited permit is expected to produce associated revenues to the SRF in the form of the amount of the bond associated with the permit and/or any associated civil penalties or court settlements.

The three types of reclamation expenditures associated with a forfeited permit are:

- Land capital expenditures
- Water capital expenditures
- Ongoing water treatment costs

Some forfeited sites will require only land capital expenditures, while others may require both land and water capital expenditures. The current model assumes that where water capital expenditures are incurred there also will be ongoing water treatment costs. The future reclamation capital costs are developed based on a projection of the forfeited acreage, the current status of each permit and the average reclamation cost amounts per permitted acre. With this treatment of costs as an overall

average across permits, the water capital expenditures are projected for all forfeited permits, even though some sites may not require water treatment activities.

Future annual water treatment expenditures have been developed differently from our prior analyses, beginning with our 2013 analysis. After the settlement agreement regarding compliance with the NPDES water quality standards, for the 2011 analysis we were provided with estimated annual water treatment costs for the forfeited permits currently in the process of treating water and those permits where the water treatment facilities were yet to be completed. These costs were from a study completed by Dr. Paul Ziemkiewicz and his colleagues at West Virginia University along with the members of the team in the Office of Special Reclamation. For the 2013 and 2017 analyses we utilized projected costs listed in the DEP's Job Scheduling Report. The Job Scheduling Report's annual operating dollars is based on the Special Reclamation database.

As the treatment continues through time, it is expected that the nominal cost of treatment will decline by 2.0 percent per year before the application of normal cost inflation which is assumed to be 2.5 percent per year. This is based on previous discussions with the DEP. Dr. Ziemkiewicz is possibly going to refine that estimate and we have built in a year-by-year attenuation rate into our calculations to be activated if and when that happens. As of this report date, we are continuing to assume the 2 percent annual reduction, with a ten year delay before the attenuation occurs. Thus, the net annual change in water treatment costs is expected to be 2.5 percent before attenuation occurs and 0.5 percent after attenuation begins to occur.

As in our prior analysis, we have assumed the Water Treatment costs would continue to be required beyond the 35 year time horizon of our estimates (based upon the recommendation of Michael Sheehan and his staff in the Office of Special Reclamation). This assumption leaves the Water Abandonment costs outside of the study horizon and becomes an un-reflected cost within our estimates. Thus, all water abandonment costs related to forfeited permits requiring water treatment would be in addition to any numbers quoted in this report.

Our analysis includes a projection of the administration costs expected to be incurred in the oversight of the reclamation activities. Our projections start with historical data provided by the Fund. We have assumed that the administration costs are independent of the reclamation expenditures and will increase into the future in line with price inflation. We have not made an explicit adjustment to administrative costs for the fact that as time passes, forfeited sites being handled will include permits not yet issued as of July 2017.

The actuarial model was applied to a database of all existing issued permits that have not yet been released or forfeited. The data on each permit included:

- Date of permit issue
- Status of permit (Active, Inactive or Phased Release)
- Type of permit (Underground, Surface, or Other)
- Number of permitted acres
- Total current bond amount

The model projects the number of permits/acres expected to be released or forfeited each year over the next 35 years.

The projection of permit forfeiture is also used to determine the expected revenues from bond forfeiture and/or civil penalties and court settlements.

The actuarial model produced as output expected cash disbursements over the next 35 years. These disbursements were incorporated into a cash flow model that included projected tax receipts from coal production. The resulting fund balance, after consideration of administration costs, was assumed to earn investment rates commensurate with current rates in the State's investment pools (SRF) and higher yields in other instruments (SRWTF). The current short term to long term Treasury rates are used as a guide to project the expected investment rates into the future for the SRF.

Investable amounts are divided into two categories within each fund, short term (liquid) and longer term vehicles. For the SRF, the short term rate is the West Virginia Money Market pool, earning less than 1% in 2017, and averaging around 0.25% over the last seven years. The SRF long term rate is the West Virginia Short Term Bond pool, earning about 1.3% at the end of the 2017 fiscal year. For the SRWTF, the short term rate is the West Virginia Money Market pool. The SRWTF long term rate is based on current SRWTF investments, as managed by the West Virginia Investment Management Board, currently earning close to 11% at the end of the 2017 fiscal year. The amount of money invested into each vehicle is limited to each fund's balance, with the short term investments being allocated two years of future expenditures in order to maintain a reasonable level of liquidity within the funds. Our model uses blended investment rates projected into the future from the above sources.

THE KEY MODEL COMPONENTS

The actuarial model used the following components, each of which was developed from an analysis of experience data.

- Rates of release of permits by type of permit
- Rates of forfeiture of permits by type of permit
- Disturbed acres as a percent of permitted acres
- Expected land capital costs per disturbed acre

- Expected water capital costs per disturbed acre
- Expected ongoing water treatment costs per disturbed acre
- Administration costs

Expected Release and Forfeiture Rates

With this analysis, we have reviewed the historical release and forfeiture data of the West Virginia Program. With minor exception, we have reduced the expected release rates for the surface mine, underground mine and other facilities permits as compared to our prior analysis. Our selections relied primarily on our prior selections, modified for recent release activity over the past 10 calendar years. As such, much of the activity related to the older permits in the early years of operation is not considered. We did not observe an obvious difference in the release rate activity based upon year in which the permit was issued. The selected release rates are provided in Exhibits 23.1, 24.1, 24.2 and 24.3.

The projected forfeiture rates have been selected on a calendar year as well. With the sporadic nature of forfeitures and the high likelihood that there is correlation between permit forfeiture of multiple permits of one operator, we feel that this calendar year method of estimation is more appropriate for the West Virginia dynamics associated with this analysis. We reviewed the historical and recent forfeiture rates as a percent of open permits and selected a rate for each of surface mines, underground mines and other facility permits. With minor exception, we have reduced the expected forfeiture rates for the surface mine, underground mine and other facilities permits as compared to our prior analysis. Our selections relied primarily on our prior selections, modified for recent release activity over the past 10 calendar years. The selected rates are shown in Exhibits 23.1, 24.1, 24.2 and 24.3. Note that we continue to expect that there will be no forfeitures during the first three years following this issuance of any permit in West Virginia.

Since inception of the Surface Mining Control and Reclamation Act of 1977 (SMCRA), nearly 6,700 coal-related permits have been issued in West Virginia, 1,792 of which were still in-force as of June 30, 2017. A summary of the in-force and forfeited permit information is found in Section 3.

Each permit in the open permit database had an associated status. We grouped the statuses into three main categories:

- active,
- inactive, and
- phased release.

We performed the analysis of costs based on disturbed acres of the previously forfeited permits. As not all of the permitted acres are disturbed in the current coal production process, adjustment factors have been developed based on the percent of permitted acres that are disturbed. The ratios of disturbed acres to permitted acres are displayed in Exhibits 17.1 through 17.4.

Permits that have already entered a phased release status were deemed to be much less likely to be forfeited than those in active or inactive status. However, as a single mine operator may hold permits in all three statuses, even some permits in phased release status may be forfeited due to enterprise risk rather than reclamation cost risk. We therefore applied a factor to each permit based on these categories that reflected variations in the magnitude of potential forfeiture and liability to the Fund. The factors used are shown in Exhibit 22.1.

Development of Cost per Acre

We performed an analysis of the land capital expenditures for the 1,160 permits that have been forfeited in West Virginia as of June 30, 2017.

Exhibit 14.1 provides the development of Land Capital Expenditures per Acre and by Permit Type. Exhibit 14.2 provides the development of Water Capital Expenditures per Acre and by Permit Type. Exhibit 14.3 provides the development of Water Treatment Expenditures per Acre and by Permit Type.

Based upon the percentage of previously forfeited permits with significant water treatment issues, we have adjusted the projected future costs per permitted acre to reflect the fact that not all future forfeitures are anticipated to have significant water treatment issues. We have assumed that permits classified as “Closed Not Water But With Water Costs” do not have significant water treatment issues but rather the costs incurred were to test for compliance prior to closure.

The valuation does not include the anticipated costs for water capital equipment removal after testing indicates that water treatment is no longer needed. We are assuming that all water treatment will continue over the next 35 years and thus, have not included any water abandonment costs within our projections.

Exhibit 13.1 provides a summary of the expected reclamation costs per Forfeited Acre by Permit Type.

Reclamation Costs Summary			
<i>(In 2017 Dollars)</i>			
<i>Based upon Forfeited Permits</i>	<i>Surface</i>	<i>Underground</i>	<i>Other</i>
Land Capital Cost Per Permitted Acre	\$3,200	\$13,800	\$9,100
Water Capital Cost Per Permitted Acre	4,500	14,400	5,200
Water Treatment Cost Per Permitted Acre	140	260	200
Total Capital Cost Per Permitted Acre	7,840	28,460	14,500

We have made a similar adjustment to the water treatment cost estimate as with the water capital estimate to reflect the assumption that not all future forfeited acres/permits will have water treatment issues. The ratio used in our analysis is based upon the historical ratio of forfeited permits with water treatment issues to the total number of forfeited permits. The development of these ratios is displayed in Exhibits 17.2 and 17.3.

Administration Costs

The Administration Costs are displayed and discussed further in the following section, Actuarial Valuation.

One Method for Estimating Liabilities

Generally it is preferable to use multiple methods to estimate outstanding and future liabilities. There are no standard actuarial techniques in making these estimates for mine reclamation exposures. The developed methodology used in this analysis is similar to those used in mine reclamation programs in neighboring states.

ACTUARIAL VALUATION

The actuarial model builds on the current cash projections developed by the Department of Environmental Protection for the expected reclamation costs on sites where permits have already been forfeited. The figures for permits forfeited prior to July 1, 2017 were provided by the Department of Environmental Protection in their Job Scheduling Report as of June 30, 2017. The following exhibits show the expected expenditures for the next 35 years in the following categories:

- Exhibit 12.1 – SRF, Land Capital Expenditures
- Exhibit 12.2 – SRF, Water Capital Expenditures
- Exhibit 12.3 – SRF, Water Treatment Expenditures
- Exhibit 12.4 – SRWTF, Water Capital Expenditures
- Exhibit 12.5 – SRWTF, Water Treatment Expenditures

Each exhibit provides the estimated expenditures in the following categories:

- Permits forfeited prior to July 1, 2017 (from the Job Scheduling Report)
- Permits forfeited after July 1, 2017
- Total of the above

At this point is appropriate to point out that there are current Land Capital and Water Capital liabilities obligated to the SRF, the costs of which have not yet been paid. These amounts show up in the Prior Row, Column (1) of Exhibits 12.1 and 12.2 respectively. Because of the size of these liabilities (more than \$22 million Land and \$47 million Water) and the practicality of being able to complete the work in a short time period, we have spread these costs out evenly over the first five years of our projection period.

In a similar manner there are scheduled capital cost in 2018 and later for Land and in 2018 for Water. These scheduled costs are spread out over a five year time horizon as well in recognition of the practicality of completing the required work in a short time frame. There is also scheduled Water Treatment costs in 2018 for the SRF, the last year the SRF will cover such costs. In this case we posted 100 percent of the nearly \$5 million cost into that one year, 2018.

There are also scheduled Water Capital costs in the SRWTF in 2019 and 2020. Each of these costs are spread over five years in Exhibit 12.4. There are no scheduled Water Treatment costs in the SRWTF until 2019, as shown in Exhibit 12.5.

Administration Costs

Generally, the administration costs are independent of the cost of the reclamation activities. The current DEP staffing levels may be adjusted over time as the inventory of older permit forfeitures is processed. We have assumed the current staffing levels will remain unchanged. Future administration costs were estimated by increasing the current administration costs by 3 percent per year. This rate of increase was provided by the DEP and is consistent with Department of Labor statistics. These expected costs by year are displayed in Exhibit 16.1.

Coal Tax Revenues

Exhibits 8.1 and 8.2 show the projected coal production and the projected Coal Tax revenue by year and fund. Coal production figures were derived from the “Consensus Coal Production Forecast for West Virginia 2017” as prepared by Christine Risch, Center for Business and Economic Research, Marshall University, and Alicia K. Copley and Dr. Jacqueline Agesa, Consultants, and supplemental information from the SRF.

For the revenue projections included in our analysis, we have limited the expected coal tax revenues to the portion of the total expected coal tax revenues that are attributable to the permits issued prior to June 30, 2017. The expected coal tax to be paid from the permits issued prior to June 30, 2017 have been developed using the ratio of expected remaining surface and underground mining acres under permit to the total acres as of June 30, 2017. This ratio is provided in columns (7) and (8) of these Exhibits.

Bond Forfeiture, Civil Penalties, and Court Settlements

Based on the permit and acreage forfeiture projections along with the current bond values on the open permits issued in each year, we had developed an estimation of the expected bond forfeiture collections in each of the next 35 fiscal years. As might be expected, the amounts decline over time as the permits in-force today decline through attrition, and the expected number of permit forfeitures declines as well.

We have also included an explicit estimate of Civil Penalties and Other Revenues in this year’s analysis. Our starting point of \$750,000 for civil penalties is based on current amounts collected (\$2.2 million over the past three years). Our starting point of \$1,000,000 for Other, Miscellaneous amounts is based on current amounts collected (\$3.2 million over the past three years), tempered to reflect the fortuitous and sporadic nature of the collection of these funds.

Exhibits 9.1 and 9.2 provides the estimated bond collections from future forfeitures, civil penalties, and other revenue, along with the projected fund transfers required to keep the SRF at a positive fund balance throughout the projection period.

Investment Income

The investment income has been estimated by applying the investment rates to the fund balance at the beginning of the year plus one-half the current year income less one-half the current year expenditures. As the SRF is prohibited from borrowing, when the projected fund balance is zero, there will be no investment income in the following year.

With this analysis we have bifurcated the rates of return by the Funds, that is, we have used different rates for the SRF vs. the SRWTF. Investable amounts are divided into two categories within each fund, short term (liquid) and longer term vehicles.

The amount of money invested into each vehicle is limited to each fund's balance, with the short term investments being allocated to two years of future expenditures to maintain a reasonable level of liquidity within the funds.

The rates of return on US Treasuries were used to facilitate a gradual increase in expected short term rates of return to more historical levels.

Exhibits 10.1 and 10.2 provide the projected future investment rates, discount rates, and projected amounts of return for each fund. The discount rates are based on the average expected investment rates of return to be available to each fund over the next 35 years.

Permit and Acreage Projections

As part of the analysis, we have developed projections of the permits and acreage into the future. While the most important pieces of information are the number of forfeited permits and number of forfeited acres, the number of (open) permits that remain to be closed via release or forfeiture is also interesting and useful. We have made separate projections of the active and inactive permits as well as permits in phased release status.

- Exhibits 27.1 through 28.4 - Land
- Exhibits 29.1 through 30.4 – Water Capital
- Exhibits 31.1 through 32.4 – Water Treatment

We have also provided these exhibits separated by the type of permit. Please note that these projections are only for the permits that had been issued on or before June 30, 2017.

SECTION 2 – PROJECTION OF REQUIRED INCOME

In our prior analysis we developed indicated coal tax rates to generate income sufficient for the Funds to cover the projected forfeiture reclamation of in-force permits through the next 35 years. With this analysis such a projection is not critical given the status of the Fund on a combined (SRF plus SRWTF) basis. We have, however, looked at what type of shifting of assets between the two Funds would be required to maintain a positive balance within the SRF throughout the projection period. This shifting of funds (\$38 million) has been shown in the accompanying exhibits of this report.

It is noted that the projection for SRF leads to numbers that would call for an increase in the SRF tax rate if monies from the SRWTF would not be available to cover shortages in the SRF for the next 35 years. (The SRF balance is projected to go negative in 2021.) This facet of West Virginia's reclamation program should be monitored closely in years to come in the event that additional coal tax rate increases will be taken to achieve 100% funding for each individual fund in the next 35 years. While not shown in the accompanying exhibits, it is noted that the SRF tax rate is projected to have to increase from 12.9 cents a ton to 20.6 cents a ton for the next five years to keep the SRF at a positive balance throughout the projection period if the \$38 million dollar shift noted above were not to occur.

SECTION 3 – DATA UNDERLYING ANALYSIS

Data provided for this study are enumerated and discussed below. We did not audit or verify the data, although we did put them through some reasonability tests and found no obvious problems. In addition, we also used information provided for the prior evaluations of the Special Reclamation Fund and the Special Reclamation Water Trust Fund.

Data Provided By West Virginia for This Study

We were provided with a complete copy of the OSR (Office of Special Reclamation) database containing the forfeited permits as of June 30, 2017 in an Excel spreadsheet. The OSR also provided a detailed list of field definitions applicable to their database. We also obtained a separate database from the Division of Mining and Reclamation that provided detailed information regarding permits issued for coal mining operations. Following is a summary of the changes in the number of permits contained in the various databases and categories using information contained in the prior report and the current files.

Summary of Forfeited Permits in West Virginia			
	Total	Active Reclamation	Completed Reclamation
As of 6/30/2013	1,934	99	1,835
As of 6/30/2017*	1,160	230	930
Change	(774)	131	(905)

* The analysis as of 6/30/2017 only includes forfeited permits with a program status of PP (permanent program). The 6/30/2013 analysis included permits not coded PP.

Summary of Issued Permits in West Virginia (1977 and subsequent)			
	Total	In Force	Released or Forfeited
As of 6/30/2013	6,065	1,817	4,248
As of 6/30/2017	6,198	1,763	4,435
Change	133	(54)	187

The issued permits data for the analysis as of 6/30/2013 only included the permits that have issue years of 1977 and subsequent. Thus, for the current analysis as of 6/30/2017, in order to populate the above table, Pinnacle removed the permits issued prior to 1977. This removal of permits issued prior to 1977 only occurs in the above table.

We have utilized the “Consensus Coal Production Forecast for West Virginia 2017” prepared by Christine Risch from the Center for Business and Economic Research at Marshall University, and , Alicia K. Copley and Dr. Jacqueline Agesa, consultants. The most recent report was issued in September 2017.

The forfeiture and release rates were reviewed using the available historical data updated through June of 2017. Based upon that data, we have revised the expected release rates for the surface mine, underground mine and other facilities permits. Our selections relied primarily on the release activity over the past 10 calendar years. As such, much of the activity related to the older permits in the early years of operation is not considered. We did not observe an obvious difference in the release rate activity based upon year in which the permit was issued. The selected release rates are provided in Exhibit 23.1.

Using the historical data, the projected forfeiture rates have been selected on a calendar year basis rather than based upon the year of permit issuance. With the sporadic nature of forfeitures and the high likelihood that there is correlation between permit forfeiture of multiple permits of one operator, we feel that this method of estimation is more appropriate for the West Virginia dynamics associated with this analysis. We reviewed the historical and recent forfeiture rates as a percent of open permits and selected a rate for each of surface mines, underground mines and other facility permits. The selected rates are shown in Exhibit 23.1. Note that we continue to expect that there will be no forfeitures during the first three years following this issuance of any permit in West Virginia.

We were provided with a copy of the Job Scheduling Report (JSR) as of June 30, 2017. This report contains the Department of Environmental Protection estimates of work scheduled to be performed on sites for permits forfeited prior to June 30, 2017. The JSR contains the expected amount of payment for work in the next several quarters. This information was used for projecting costs for land capital and water capital costs for permits forfeited prior to June 30, 2017. In addition, data in the JSR providing estimates of future Bond Forfeitures, Civil Penalties & Court Settlements was used in the valuation.

Using the OSR Data – Forfeited Permits

Taking the database of forfeited permits as provided by the Department of Environmental Protection, we split the forfeited permit data into three components: Other, Surface, and Underground. Within these categories, we had four types of forfeited permits: open water, closed water, closed not water but with water costs, and land only. We further split each of these twelve categories into open land and closed land.

This resulted in the following eight categories for each of Other, Surface, and Underground:

- Open water – open land;
- Open water – closed land;
- Closed water – open land;
- Closed water – closed land;
- Closed not water but with water costs – open land;
- Closed not water but with water costs – closed land;
- Land only – open water; and
- Land only – closed water.

The water claims were determined by the use of the acid mine drainage code. Next, we split out the open and closed water claims. Open water forfeited permits are those that have not yet had the capital water projects completed. They are labeled TBC (to be contracted), UC (under contract), ACT (active chemical treatment), P (passive treatment), RO (reopened for new liability), or RT (retrofit for NPDES standards) in the water status column. As we worked our way through the remaining sorts, we discovered that there are some open water claims with no code in water status column because they are only being monitored at this time.

The closed water forfeited permits are those that have had the capital water projects completed but are undergoing monitoring and/or treatment. They are labeled C (completed) or NA (not applicable).

The closed not water but with water cost forfeited permits are those that have some capital or ongoing water costs associated with them but are not considered water forfeited permits. This can arise from several situations.

- A closed water forfeited permit that has four consecutive quarters of untreated water monitoring that shows no problems will be reclassified as closed (C);
- An open water forfeited permit that has four consecutive quarters of untreated water monitoring that shows no problems will be reclassified as not applicable (NA); and
- Land capital costs are at times labeled as water capital costs if they involve a water source even if the water is not being treated.

In all three situations, we treated the water capital and ongoing costs as land capital costs. This is consistent with the treatment in the prior actuarial study.

The land only forfeited permits are those that have no capital water costs or ongoing water costs.

We then went through these four categories and split them into open land and closed land based on the land status column. The open land claims were assigned to one of the following status:

- TBC (to be contracted),
- TPL (tree planting),
- SSR (sediment structure removal),
- RO (reopened), or
- UC (under contract).

The closed land claims were assigned to the following status codes:

- UCW (under contract warranty),
- RPM (re-permitted),
- OTR (others to reclaim)
- NR (OSR not responsible), or
- C (closed).

The first four closed land categories were deemed closed for the purpose of this study because any additional funds spent on the sites' reclamation would not come from the Special Reclamation Fund. The final model parameters based on the OSR and other data are shown in Section 4.

Forfeited Permits by Type of Mining Operation – Total Forfeited and Forfeited Pending Reclamation Completion

Of the 1,160 forfeited permits at June 30, 2017, 230 permits were either in active reclamation or awaiting reclamation activity.

In Exhibits 17.1 through 17.4, we display the total number of forfeited permits and the number of open forfeited permits, the total number of forfeited permitted acres and the number of open forfeited permitted acres that formed the basis for the measurement

- Exhibit 17.1 - Forfeitures - All Permit Types
- Exhibit 17.2 - Forfeitures – Surface Permits
- Exhibit 17.3 - Forfeitures – Underground Permits
- Exhibit 17.4 - Forfeitures - All Other Permit Types

In-Force Permits

In a separate database, we have been provided information regarding permits issued before June 30, 2017 that are still in-force. The in-force designation means that the site is either

- a. currently being mined,
- b. inactive and not yet reclaimed, or
- c. in the process of being reclaimed (phased release)

Exhibits 20.1 through 21.4 summarize the in-force permits and acreage as of June 30, 2017 by year of issuance and type of permit:

- Exhibits 20.1 and 21.1 - the total number of permits and acres in force
 - Surface Mine,
 - Underground Mine,
 - Other Permit.
- Exhibits 20.2 and 21.2 - Surface permits and acres in-force and issued by year.
- Exhibits 20.3 and 21.3 - Underground permits and acres in-force and issued by year.
- Exhibits 20.4 and 21.4 - Other permits and acres in-force and issued by year.

SECTION 4 – ACTUARIAL ASSUMPTIONS

This section summarizes the actuarial assumptions used in the measurement.

Since the model is one based upon a projection of the number of permits that will be forfeited and become the obligation of the Funds, the rates of permit forfeiture and release are the first key model assumptions. The selected rates of forfeiture and release are applied to the current in-force permit counts by year of issuance and years since issuance, and by type of permit. The selected release and forfeiture rates by type of permit are displayed on Exhibit 23.1. Also, the number of forfeited acres is determined in this part of the process.

Once the number of projected forfeitures is determined, the cost of reclamation is estimated by applying the estimated average land reclamation costs, water reclamation costs, and annual on-going water treatment costs per acre by type of mining operation (permit). The average costs in 2017 dollars as developed from the previously forfeited permit data are displayed in Exhibit 13.1, shown below.

Exhibit 13.1			
Average Reclamation Expenditures			
	<i>Land</i>	<i>Water Capital</i>	<i>Water Treatment</i>
Surface	\$3,200.00	\$4,500.00	\$140.00
Underground	13,800.00	14,400.00	260.00
Other	9,100.00	5,200.00	200.00

In adjusting the previous costs to 2017 dollars, we have used a 2.5 percent inflation rate for reclamation costs. We used Exhibit 15.1 as a guide in selecting the historic inflation rate for both Funds.

In development of the cash flow projections, the first item to determine is the timing of future payments. We have used the following assumptions as to the delay between permit forfeiture and the expenditure of land capital and water capital funds for reclamation. This expenditure delay is the same as used in previous reviews. We have not attempted to test these assumptions based upon the timing of actual expenditures.

Land Capital and Water Capital Expenditure Delay	
<i>Forfeiture Fiscal Year</i>	<i>Expenditure Fiscal Year</i>
2018	Half in FY 2021, half in FY 2022
2019	Half in FY 2022, half in FY 2023
2020	Half in FY 2023, half in FY 2024
2021	Half in FY 2024, half in FY 2025
2022	All in FY 2025
2023 and beyond	Completed in fiscal year 2 years after forfeiture

For the projection of annual on-going water treatment expenditures, we have assumed that there is no delay between the water capital expenditure and the commencement of the on-going water treatment. Thus, the exhibit above applies to the origination of the water treatment.

The projection of administration costs assumes an annual increase of 3 percent.

In the cash flow projections, we have applied an inflation rate to historical actual reclamation costs to develop these costs in terms of 2017 dollars. The inflation rate applied to these reclamation costs is 2.5 percent annually. We used Exhibit 15.1 as a guide in making this selection.

The reflection of investment income on the Fund Balances and general net cash flow has been developed based upon recent historical earnings of the SRF and SRWTF, and investment rates from US Treasuries. Longer term investment returns are typically about 3 to 5 percent. The current returns of the Funds are about 1.0 percent for the SRF and 5.0 percent for the SRWTF (11.5% in 2017).

The investment rates provided in Exhibits 10.1 and 10.2 start at just over 1.0% for the SRF, and at 5.5% for the SRWTF, and assume the current environment will gradually return to more long term rates in the coming years. Interim annual periods have been interpolated to further smooth the transition of rates to the historical levels. In addition, the SRWTF is assumed to be maintaining roughly two years of future expenditures worth of their investable assets in the Money Market funds for liquidity purposes. Implicit Discount Factors based upon the average Investment Rates of Return are also displayed in Exhibits 10.1 and 10.2.

We have continued to utilize the adjustment factors for Permit Status and Bond Value Size as shown in Exhibits 22.1 and 22.2 below.

Exhibit 22.1			
Adjustment Factors for Permit Status			
Permit Status	Land	Water Capital	Water Treatment
Active	1.00	1.00	1.00
Inactive	1.00	1.00	1.00
Phased Release	0.50	0.50	1.00

Exhibit 22.2	
Adjustment Factors for Size of Permits	
Bond Value	Factor
Less than \$100,000	1.25
Between \$100,000 and \$500,000	1.00
Over \$500,000	0.25

As previously mentioned, since not all permitted acres are disturbed during the mining operations, in the case of forfeiture, only a portion of the permitted acres will require reclamation. Exhibits 17.1 through 17.4 show the development of the percentages used in our analysis based upon historical forfeiture information.

A variable first considered in the 2011 analysis is the structure of the permit ownership. This potential variable has come into focus based upon work of Christine Risch at Marshall University in the Center for Business and Economic Research. During the operation of the Fund, we have a record of only one revoked permit from a publicly traded company. This permit did not appear to have been handled by the Office of Special Reclamation.

Based on information at hand, there is insufficient data to support varying adjustment factors at this time. However, we have built the following exhibit into our model for possible future reflection of the impact of ownership structure on our projection of future permit forfeitures.

Adjustment Factors for Ownership Structure	
Ownership Structure	Factor
Sole Proprietor	100%
Partnership	100%
Multi-Corporation	100%
Public Corporation	100%
Private Corporation	100%

As can be seen, our current model sets all the adjustment factors to 100% (i.e., no impact in this year's analysis).

Finally, a new variable has been considered for the 2017 analysis. There is the potential for Water Treatment costs to decrease in the future in a manner different from the current assumption of 2% annually after a ten year waiting period. These water treatment attenuation factors will replace the current projected 2 percent annual decrease in water treatment costs if suitable factors can be developed.

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Exhibit 1.3	Expenditures	Special Reclamation Fund and Special Reclamation Water Trust Fund Combined	Limited to a 20-Year Cash Flow
Exhibit 1.4	Expenditures	Special Reclamation Fund	Limited to a 20-Year Cash Flow --- Comparison to Prior Analysis
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Exhibit 2.4	Expenditures	Special Reclamation Fund	Limited to a 35-Year Cash Flow --- Comparison to Prior Analysis
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Exhibit 30.2	Reclamation Expenditures Calculation	Water Capital, for Forfeitures Occurring after June 30, 2017	Underground
Exhibit 30.3	Reclamation Expenditures Calculation	Water Capital, for Forfeitures Occurring after June 30, 2017	Other
Exhibit 30.4	Reclamation Expenditures Calculation	Water Capital, for Forfeitures Occurring after June 30, 2017	Footnotes for Exhibits 30.1 through 30.3:
Exhibit 31.1	Estimated Reclamation Expenditures	Water Treatment - Total for Forfeitures Occurring after June 30, 2017	
Exhibit 31.2	Estimated Reclamation Expenditures	Water Treatment - Surface, for Forfeitures Occurring after June 30, 2017	
Exhibit 31.3	Estimated Reclamation Expenditures	Water Treatment - Underground, for Forfeitures Occurring after June 30, 2017	
Exhibit 31.4	Estimated Reclamation Expenditures	Water Treatment - Other, for Forfeitures Occurring after June 30, 2017	
Exhibit 32.1	Reclamation Expenditures Calculation	Water Treatment Costs, for Forfeitures Occurring after June 30, 2017	Surface
Exhibit 32.2	Reclamation Expenditures Calculation	Water Treatment Costs, for Forfeitures Occurring after June 30, 2017	Underground
Exhibit 32.3	Reclamation Expenditures Calculation	Water Treatment Costs, for Forfeitures Occurring after June 30, 2017	Other
Exhibit 32.4	Reclamation Expenditures Calculation	Water Treatment Costs, for Forfeitures Occurring after June 30, 2017	Footnotes for Exhibits 32.1 through 32.3:

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Fund
Limited to a 20-Year Cash Flow
June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$27,734,224	\$95,209,358	\$4,837,888		
Projected Forfeited	49,212,600	0	0		
Total	76,946,824	95,209,358	4,837,888	\$76,340,446	\$253,334,517

Footnotes:

- (1) Exhibit 12.1 Col (9) and Exhibit 12.1 Col (10)
- (2) Exhibit 12.2 Col (9) and Exhibit 12.2 Col (10)
- (3) Exhibit 12.3 Col (9) and Exhibit 12.3 Col (10)
- (4) Exhibit 16.1 Col (3)
- (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Water Trust Fund
Limited to a 20-Year Cash Flow
June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$0	\$46,687,331	\$70,588,473		
Projected Forfeited	0	38,025,474	13,118,230		
Total	0	84,712,805	83,706,703	\$0	\$168,419,509

Footnotes:

- (1) Only in Special Reclamation Fund
- (2) Exhibit 12.4 Col (9) and Exhibit 12.4 Col (10)
- (3) Exhibit 12.5 Col (9) and Exhibit 12.5 Col (10)
- (4) Only in Special Reclamation Fund
- (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Fund and Special Reclamation Water Trust Fund Combined
Limited to a 20-Year Cash Flow
June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$27,734,224	\$141,896,689	\$75,426,362		
Projected Forfeited	49,212,600	38,025,474	13,118,230		
Total	76,946,824	179,922,163	88,544,592	\$76,340,446	\$421,754,025

Footnotes:

- (1) Exhibit 1.1 Col (1) + Exhibit 1.2 Col (1)
(2) Exhibit 1.1 Col (2) + Exhibit 1.2 Col (2)
(3) Exhibit 1.1 Col (3) + Exhibit 1.2 Col (3)
(4) Exhibit 1.1 Col (4) + Exhibit 1.2 Col (4)
(5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Fund
Limited to a 20-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$27,734,224	\$95,209,358	\$4,837,888		
Projected Forfeited	49,212,600	0	0		
Total	76,946,824	95,209,358	4,837,888	\$76,340,446	\$253,334,517

June 30, 2013

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(6)	(7)	(8)	(9)	(10)
Currently Forfeited	\$9,387,415	\$61,250,893	\$43,978,136		
Projected Forfeited	75,587,588	1,547,317	221,534		
Total	84,975,003	62,798,210	44,199,670	\$92,063,343	\$284,036,226

Difference in Dollars

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(11)	(12)	(13)	(14)	(15)
Currently Forfeited	\$18,346,809	\$33,958,465	(\$39,140,248)		
Projected Forfeited	(26,374,988)	(1,547,317)	(221,534)		
Total	(8,028,179)	32,411,148	(39,361,782)	(\$15,722,897)	(\$30,701,709)

Difference in Percentage

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(16)	(17)	(18)	(19)	(20)
Currently Forfeited	195%	55%	-89%		
Projected Forfeited	-35%	-100%	-100%		
Total	-9%	52%	-89%	-17%	-11%

Footnotes:

- (1) - (5) Exhibit 1.1 Col (1) through Col (5)
(6) - (10) From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
(11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
(16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Water Trust Fund
Limited to a 20-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$0	\$46,687,331	\$70,588,473		
Projected Forfeited	0	38,025,474	13,118,230		
Total	0	84,712,805	83,706,703	\$0	\$168,419,509

June 30, 2013

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(6)	(7)	(8)	(9)	(10)
Currently Forfeited	\$0	\$0	\$125,768,247		
Projected Forfeited	0	11,609,807	14,146,038		
Total	0	11,609,807	139,914,284	\$0	\$151,524,091

Difference in Dollars

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(11)	(12)	(13)	(14)	(15)
Currently Forfeited	\$0	\$46,687,331	(\$55,179,774)		
Projected Forfeited	0	26,415,667	(1,027,807)		
Total	0	73,102,999	(56,207,581)	\$0	\$16,895,418

Difference in Percentage

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(16)	(17)	(18)	(19)	(20)
Currently Forfeited	0%	0%	-44%		
Projected Forfeited	0%	228%	-7%		
Total	0%	630%	-40%	0%	11%

Footnotes:

- (1) - (5) Exhibit 1.2 Col (1) through Col (5)
(6) - (10) From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
(11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
(16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Fund and Special Reclamation Water Trust Fund Combined
Limited to a 20-Year Cash Flow --- Comparison to Prior Analysis

June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$27,734,224	\$141,896,689	\$75,426,362		
Projected Forfeited	49,212,600	38,025,474	13,118,230		
Total	76,946,824	179,922,163	88,544,592	\$76,340,446	\$421,754,025

June 30, 2013

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(6)	(7)	(8)	(9)	(10)
Currently Forfeited	\$9,387,415	\$61,250,893	\$169,746,383		
Projected Forfeited	75,587,588	13,157,124	14,367,571		
Total	84,975,003	74,408,017	184,113,954	\$92,063,343	\$435,560,317

Difference in Dollars

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(11)	(12)	(13)	(14)	(15)
Currently Forfeited	\$18,346,809	\$80,645,797	(\$94,320,022)		
Projected Forfeited	(26,374,988)	24,868,350	(1,249,341)		
Total	(8,028,179)	105,514,147	(95,569,363)	(\$15,722,897)	(\$13,806,291)

Difference in Percentage

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(16)	(17)	(18)	(19)	(20)
Currently Forfeited	195%	132%	-56%		
Projected Forfeited	-35%	189%	-9%		
Total	-9%	142%	-52%	-17%	-3%

Footnotes:

- (1) - (5) Exhibit 1.3 Col (1) through Col (5)
(6) - (10) Exhibit 1.4 Col (6) through Col (10) + Exhibit 1.5 Col (6) through Col (10)
(11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
(16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Fund
Limited to a 35-Year Cash Flow
June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$27,734,224	\$95,209,358	\$4,837,888		
Projected Forfeited	55,671,562	0	0		
Total	83,405,786	95,209,358	4,837,888	\$148,570,046	\$332,023,079

Footnotes:

- (1) Exhibit 12.1 Col (9) and Exhibit 12.1 Col (10)
(2) Exhibit 12.2 Col (9) and Exhibit 12.2 Col (10)
(3) Exhibit 12.3 Col (9) and Exhibit 12.3 Col (10)
(4) Exhibit 16.1 Col (3)
(5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Water Trust Fund
Limited to a 35-Year Cash Flow
June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$0	\$46,687,331	\$95,997,429		
Projected Forfeited	0	40,882,640	23,871,393		
Total	0	87,569,971	119,868,822	\$0	\$207,438,793

Footnotes:

- (1) Only in Special Reclamation Fund
- (2) Exhibit 12.4 Col (9) and Exhibit 12.4 Col (10)
- (3) Exhibit 12.5 Col (9) and Exhibit 12.5 Col (10)
- (4) Only in Special Reclamation Fund
- (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
 Special Reclamation Fund and Special Reclamation Water Trust Fund Combined
 Limited to a 35-Year Cash Flow
 June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$27,734,224	\$141,896,689	\$100,835,318		
Projected Forfeited	55,671,562	40,882,640	23,871,393		
Total	83,405,786	182,779,329	124,706,710	\$148,570,046	\$539,461,872

Footnotes:

- (1) Exhibit 2.1 Col (1) + Exhibit 2.2 Col (1)
 (2) Exhibit 2.1 Col (2) + Exhibit 2.2 Col (2)
 (3) Exhibit 2.1 Col (3) + Exhibit 2.2 Col (3)
 (4) Exhibit 2.1 Col (4) + Exhibit 2.2 Col (4)
 (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Fund
Limited to a 35-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$27,734,224	\$95,209,358	\$4,837,888		
Projected Forfeited	55,671,562	0	0		
Total	83,405,786	95,209,358	4,837,888	\$148,570,046	\$332,023,079

June 30, 2013

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(6)	(7)	(8)	(9)	(10)
Currently Forfeited	\$9,387,415	\$61,250,893	\$43,978,136		
Projected Forfeited	109,463,429	1,547,317	221,534		
Total	118,850,844	62,798,210	44,199,670	\$164,050,149	\$389,898,874

Difference in Dollars

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(11)	(12)	(13)	(14)	(15)
Currently Forfeited	\$18,346,809	\$33,958,465	(\$39,140,248)		
Projected Forfeited	(53,791,867)	(1,547,317)	(221,534)		
Total	(35,445,058)	32,411,148	(39,361,782)	(\$15,480,103)	(\$57,875,795)

Difference in Percentage

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(16)	(17)	(18)	(19)	(20)
Currently Forfeited	195%	55%	-89%		
Projected Forfeited	-49%	-100%	-100%		
Total	-30%	52%	-89%	-9%	-15%

Footnotes:

- (1) - (5) Exhibit 1.1 Col (1) through Col (5)
(6) - (10) From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
(11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
(16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Water Trust Fund
Limited to a 35-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$0	\$46,687,331	\$95,997,429		
Projected Forfeited	0	40,882,640	23,871,393		
Total	0	87,569,971	119,868,822	\$0	\$207,438,793

June 30, 2013

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(6)	(7)	(8)	(9)	(10)
Currently Forfeited	\$0	\$0	\$232,222,137		
Projected Forfeited	0	15,847,285	42,357,419		
Total	0	15,847,285	274,579,556	\$0	\$290,426,841

Difference in Dollars

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(11)	(12)	(13)	(14)	(15)
Currently Forfeited	\$0	\$46,687,331	(\$136,224,708)		
Projected Forfeited	0	25,035,354	(18,486,027)		
Total	0	71,722,685	(154,710,734)	\$0	(\$82,988,049)

Difference in Percentage

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(16)	(17)	(18)	(19)	(20)
Currently Forfeited	0%	0%	-59%		
Projected Forfeited	0%	158%	-44%		
Total	0%	453%	-56%	0%	-29%

Footnotes:

- (1) - (5) Exhibit 1.2 Col (1) through Col (5)
(6) - (10) From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
(11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
(16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
 Special Reclamation Fund and Special Reclamation Water Trust Fund Combined
 Limited to a 35-Year Cash Flow --- Comparison to Prior Analysis

June 30, 2017

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(1)	(2)	(3)	(4)	(5)
Currently Forfeited	\$27,734,224	\$141,896,689	\$100,835,318		
Projected Forfeited	55,671,562	40,882,640	23,871,393		
Total	83,405,786	182,779,329	124,706,710	\$148,570,046	\$539,461,872

June 30, 2013

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(6)	(7)	(8)	(9)	(10)
Currently Forfeited	\$9,387,415	\$61,250,893	\$276,200,273		
Projected Forfeited	109,463,429	17,394,603	42,578,953		
Total	118,850,844	78,645,495	318,779,226	\$164,050,149	\$680,325,715

Difference in Dollars

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(11)	(12)	(13)	(14)	(15)
Currently Forfeited	\$18,346,809	\$80,645,797	(\$175,364,955)		
Projected Forfeited	(53,791,867)	23,488,037	(18,707,560)		
Total	(35,445,058)	104,133,834	(194,072,516)	(\$15,480,103)	(\$140,863,843)

Difference in Percentage

Permit Category	Discounted Reclamation			Discounted Administrative	Total
	Land	Water Capital	Water Treatment		
	(16)	(17)	(18)	(19)	(20)
Currently Forfeited	195%	132%	-63%		
Projected Forfeited	-49%	135%	-44%		
Total	-30%	132%	-61%	-9%	-21%

Footnotes:

- (1) - (5) Exhibit 1.3 Col (1) through Col (5)
- (6) - (10) Exhibit 2.4 Col (6) through Col (10) + Exhibit 2.5 Col (6) through Col (10)
- (11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
- (16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Fund
Limited to a 20-Year Cash Flow
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$134,495,064	\$26,347,831	\$57,945,384	\$5,941,299	\$224,729,579

Footnotes:

- (1) Exhibit 8.1 Col (14)
- (2) Exhibit 9.1 Col (6)
- (3) Exhibit 9.2 Col (6)
- (4) Exhibit 10.1 Col (7)
- (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Water Trust Fund
Limited to a 20-Year Cash Flow
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$113,505,208	\$0	(\$29,495,929)	\$42,263,654	\$126,272,932

Footnotes:

- (1) Exhibit 8.2 Col (14)
- (2) Only in Special Reclamation Fund
- (3) Only in Special Reclamation Fund
- (4) Exhibit 10.2 Col (7)
- (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
 Special Reclamation Fund and Special Reclamation Water Trust Fund Combined
 Limited to a 20-Year Cash Flow
 June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$248,000,272	\$26,347,831	\$28,449,455	\$48,204,953	\$351,002,511

Footnotes:

- (1) Exhibit 3.1 Col (1) + Exhibit 3.2 Col (1)
- (2) Exhibit 3.1 Col (2) + Exhibit 3.2 Col (2)
- (3) Exhibit 3.1 Col (3) + Exhibit 3.2 Col (3)
- (4) Exhibit 3.1 Col (4) + Exhibit 3.2 Col (4)
- (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Fund
Limited to a 20-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$134,495,064	\$26,347,831	\$57,945,384	\$5,941,299	\$224,729,579

June 30, 2013

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(6)	(7)	(8)	(9)	(10)
\$183,919,366	\$37,461,847	\$7,807,461	\$1,581,077	\$230,769,751

Difference in Dollars

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(11)	(12)	(13)	(14)	(15)
(\$49,424,302)	(\$11,114,016)	\$50,137,924	\$4,360,223	(\$6,040,172)

Difference in Percentage

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(16)	(17)	(18)	(19)	(20)
-27%	-30%	642%	276%	-3%

Footnotes:

- (1) - (5) Exhibit 3.1 Col (1) through Col (5)
(6) - (10) From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
(11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
(16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Water Trust Fund
Limited to a 20-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$113,505,208	\$0	(\$29,495,929)	\$42,263,654	\$126,272,932

June 30, 2013

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(6)	(7)	(8)	(9)	(10)
\$155,307,248	\$0	\$0	\$50,067,089	\$205,374,337

Difference in Dollars

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(11)	(12)	(13)	(14)	(15)
(\$41,802,040)	\$0	(\$29,495,929)	(\$7,803,435)	(\$79,101,405)

Difference in Percentage

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(16)	(17)	(18)	(19)	(20)
-27%	0%	0%	-16%	-39%

Footnotes:

- (1) - (5) Exhibit 3.2 Col (1) through Col (5)
(6) - (10) From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
(11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
(16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
 Special Reclamation Fund and Special Reclamation Water Trust Fund Combined
 Limited to a 20-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$248,000,272	\$26,347,831	\$28,449,455	\$48,204,953	\$351,002,511

June 30, 2013

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(6)	(7)	(8)	(9)	(10)
\$339,226,614	\$37,461,847	\$7,807,461	\$51,648,166	\$436,144,088

Difference in Dollars

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(11)	(12)	(13)	(14)	(15)
(\$91,226,342)	(\$11,114,016)	\$20,641,994	(\$3,443,213)	(\$85,141,577)

Difference in Percentage

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(16)	(17)	(18)	(19)	(20)
-27%	-30%	264%	-7%	-20%

Footnotes:

- (1) - (5) Exhibit 3.3 Col (1) through Col (5)
 (6) - (10) Exhibit 3.4 Col (6) through Col (10) + Exhibit 3.5 Col (6) through Col (10)
 (11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
 (16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Fund
Limited to a 35-Year Cash Flow
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$182,203,815	\$28,320,876	\$72,338,592	\$11,530,303	\$294,393,585

Footnotes:

- (1) Exhibit 8.1 Col (14)
- (2) Exhibit 9.1 Col (6)
- (3) Exhibit 9.2 Col (6)
- (4) Exhibit 10.1 Col (7)
- (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Water Trust Fund
Limited to a 35-Year Cash Flow
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$133,475,064	\$0	(\$29,495,929)	\$42,897,797	\$146,876,931

Footnotes:

- (1) Exhibit 8.2 Col (14)
- (2) Only in Special Reclamation Fund
- (3) Only in Special Reclamation Fund
- (4) Exhibit 10.2 Col (7)
- (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
 Special Reclamation Fund and Special Reclamation Water Trust Fund Combined
 Limited to a 35-Year Cash Flow
 June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$315,678,879	\$28,320,876	\$42,842,662	\$54,428,100	\$441,270,516

Footnotes:

- (1) Exhibit 4.1 Col (1) + Exhibit 4.2 Col (1)
- (2) Exhibit 4.1 Col (2) + Exhibit 4.2 Col (2)
- (3) Exhibit 4.1 Col (3) + Exhibit 4.2 Col (3)
- (4) Exhibit 4.1 Col (4) + Exhibit 4.2 Col (4)
- (5) Sum of Col (1) through Col (4)

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Fund
Limited to a 35-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$182,203,815	\$28,320,876	\$72,338,592	\$11,530,303	\$294,393,585

June 30, 2013

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(6)	(7)	(8)	(9)	(10)
\$241,288,897	\$44,056,543	\$11,209,551	\$1,745,740	\$298,300,730

Difference in Dollars

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(11)	(12)	(13)	(14)	(15)
(\$59,085,082)	(\$15,735,667)	\$61,129,041	\$9,784,563	(\$3,907,146)

Difference in Percentage

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(16)	(17)	(18)	(19)	(20)
-24%	-36%	545%	560%	-1%

Footnotes:

- (1) - (5) Exhibit 4.1 Col (1) through Col (5)
(6) - (10) From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
(11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
(16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Water Trust Fund
Limited to a 35-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$133,475,064	\$0	(\$29,495,929)	\$42,897,797	\$146,876,931

June 30, 2013

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(6)	(7)	(8)	(9)	(10)
\$187,931,958	\$0	\$0	\$50,800,673	\$238,732,631

Difference in Dollars

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(11)	(12)	(13)	(14)	(15)
(\$54,456,894)	\$0	(\$29,495,929)	(\$7,902,876)	(\$91,855,699)

Difference in Percentage

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(16)	(17)	(18)	(19)	(20)
-29%	0%	0%	-16%	-38%

Footnotes:

- (1) - (5) Exhibit 4.2 Col (1) through Col (5)
- (6) - (10) From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
- (11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
- (16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
 Special Reclamation Fund and Special Reclamation Water Trust Fund Combined
 Limited to a 35-Year Cash Flow --- Comparison to Prior Analysis
June 30, 2017

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(1)	(2)	(3)	(4)	(5)
\$315,678,879	\$28,320,876	\$42,842,662	\$54,428,100	\$441,270,516

June 30, 2013

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(6)	(7)	(8)	(9)	(10)
\$429,220,854	\$44,056,543	\$11,209,551	\$52,546,413	\$537,033,361

Difference in Dollars

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(11)	(12)	(13)	(14)	(15)
(\$113,541,976)	(\$15,735,667)	\$31,633,111	\$1,881,687	(\$95,762,845)

Difference in Percentage

Discounted				
Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
(16)	(17)	(18)	(19)	(20)
-26%	-36%	282%	4%	-18%

Footnotes:

- (1) - (5) Exhibit 4.3 Col (1) through Col (5)
 (6) - (10) Exhibit 4.4 Col (6) through Col (10) + Exhibit 4.5 Col (6) through Col (10)
 (11) - (15) Col (1) - Col (6); Col (2) - Col (7); etc.
 (16) - (20) Col (11) / Col (6); Col (12) / Col (7); etc.

West Virginia Department of Environmental Protection Office of Special Reclamation

Funded Status
Special Reclamation Fund

June 30, 2017

	Cash Flow	
	20 Years	35 Years
(1) Present Value of Future Revenues w/o Transfers	\$195,233,650	\$264,897,656
(2) Assets as of June 30, 2017	56,208,569	56,208,569
(3) Present Value of Fund Transfers	29,495,929	29,495,929
(4) PV of Future Revenues + Assets + Transfers	280,938,148	350,602,154
(5) Present Value of Future Expenditures	253,334,517	332,023,079
(6) Funded Status	110.9%	105.6%
(7) Year Fund Balance Becomes Negative	Fully Funded Through 35 Years	

Footnotes:

- | | |
|-----|---|
| (1) | [Exhibit 3.1 Col (5) and Exhibit 4.1 Col (5)] - R |
| (2) | Exhibit 6.4 Col (4) |
| (3) | Exhibit 6.4 Col (3) |
| (4) | Row (1) + Row (2) + Row (3) |
| (5) | Exhibit 1.1 Col (5) and Exhibit 2.1 Col (5) |
| (6) | Row (4) / Row (5) |
| (7) | Exhibit 6.4 Col (4) |

West Virginia Department of Environmental Protection Office of Special Reclamation

Funded Status
Special Reclamation Water Trust Fund

June 30, 2017

	Cash Flow	
	20 Years	35 Years
(1) Present Value of Future Revenues w/o Transfers	\$155,768,862	\$176,372,861
(2) Assets as of June 30, 2017	93,119,949	93,119,949
(3) Present Value of Fund Transfers	(29,495,929)	(29,495,929)
(4) PV of Future Revenues + Assets + Transfers	219,392,881	239,996,880
(5) Present Value of Future Expenditures	168,419,509	207,438,793
(6) Funded Status	130.3%	115.7%
(7) Year Fund Balance Becomes Negative	Fully Funded Through 35 Years	

Footnotes:

- | | |
|-----|---|
| (1) | [Exhibit 3.2 Col (5) and Exhibit 4.2 Col (5)] - R |
| (2) | Exhibit 6.5 Col (4) |
| (3) | Exhibit 6.5 Col (3) |
| (4) | Row (1) + Row (2) + Row (3) |
| (5) | Exhibit 1.2 Col (5) and Exhibit 2.2 Col (5) |
| (6) | Row (4) / Row (5) |
| (7) | Exhibit 6.5 Col (4) |

West Virginia Department of Environmental Protection Office of Special Reclamation

Funded Status

Special Reclamation Fund and Special Reclamation Water Trust Fund Combined

June 30, 2017

	Cash Flow	
	20 Years	35 Years
(1) Present Value of Future Revenues w/o Transfers	\$351,002,511	\$441,270,516
(2) Assets as of June 30, 2017	149,328,518	149,328,518
(3) Present Value of Fund Transfers	0	0
(4) PV of Future Revenues + Assets + Transfers	500,331,029	590,599,034
(5) Present Value of Future Expenditures	421,754,025	539,461,872
(6) Funded Status	118.6%	109.5%
(7) Year Fund Balance Becomes Negative	Fully Funded Through 35 Years	

Footnotes:

- | | |
|-----|---|
| (1) | [Exhibit 3.3 Col (5) and Exhibit 4.3 Col (5)] - R |
| (2) | Exhibit 6.6 Col (4) |
| (3) | Exhibit 6.6 Col (3) |
| (4) | Row (1) + Row (2) + Row (3) |
| (5) | Exhibit 1.3 Col (5) and Exhibit 2.3 Col (5) |
| (6) | Row (4) / Row (5) |
| (7) | Exhibit 6.6 Col (4) |

West Virginia Department of Environmental Protection Office of Special Reclamation

Funded Status
Special Reclamation Fund
Comparison to Prior Analysis
June 30, 2017

	Cash Flow	
	20 Years	35 Years
(1) Present Value of Future Revenues w/o Transfers	\$195,233,650	\$264,897,656
(2) Assets as of June 30, 2017	56,208,569	56,208,569
(3) Present Value of Fund Transfers	29,495,929	29,495,929
(4) PV of Future Revenues + Assets + Transfers	280,938,148	350,602,154
(5) Present Value of Future Expenditures	253,334,517	332,023,079
(6) Funded Status	110.9%	105.6%
(7) Year Fund Balance Becomes Negative	Fully Funded Through 35 Years	

June 30, 2013

	Cash Flow	
	20 Years	35 Years
(8) Present Value of Future Revenues	\$230,769,751	\$298,300,730
(9) Assets as of June 30, 2013	74,959,837	74,959,837
(10) Assets + Present Value of Future Revenues	305,729,588	373,260,567
(11) Present Value of Future Expenditures	284,036,226	389,898,874
(12) Funded Status	107.6%	95.7%
(13) Year Fund Balance Becomes Negative	2018	

Footnotes:

(1)	Exhibit 5.1 Row (1)
(2)	Exhibit 5.1 Row (2)
(3)	Exhibit 6.4 Col (3)
(4)	Row (1) + Row (2)
(5)	Exhibit 5.1 Row (5)
(6)	Row (3) / Row (4)
(7)	Exhibit 5.1 Row (7)
(8)	Exhibit 3.4 Col (10) and Exhibit 4.4 Col (10)
(9) and (13)	From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
(10)	Row (8) + Row (9)
(11)	Exhibit 1.4 Col (10) and Exhibit 2.4 Col (10)
(12)	Row (10) / Row (11)

West Virginia Department of Environmental Protection Office of Special Reclamation

Funded Status
Special Reclamation Water Trust Fund
Comparison to Prior Analysis
June 30, 2017

	Cash Flow	
	20 Years	35 Years
(1) Present Value of Future Revenues w/o Transfers	\$155,768,862	\$176,372,861
(2) Assets as of June 30, 2017	93,119,949	93,119,949
(3) Present Value of Fund Transfers	(29,495,929)	(29,495,929)
(4) PV of Future Revenues + Assets + Transfers	219,392,881	239,996,880
(5) Present Value of Future Expenditures	168,419,509	207,438,793
(6) Funded Status	130.3%	115.7%
(7) Year Fund Balance Becomes Negative	Fully Funded Through 35 Years	

June 30, 2013

	Cash Flow	
	20 Years	35 Years
(8) Present Value of Future Revenues	\$205,374,337	\$238,732,631
(9) Assets as of June 30, 2013	22,487,555	22,487,555
(10) Assets + Present Value of Future Revenues	227,861,892	261,220,186
(11) Present Value of Future Expenditures	151,524,091	290,426,841
(12) Funded Status	150.4%	89.9%
(13) Year Fund Balance Becomes Negative	2038	

Footnotes:

- | | |
|--------------|---|
| (1) | Exhibit 5.2 Row (1) |
| (2) | Exhibit 5.2 Row (2) |
| (3) | Exhibit 6.5 Col (3) |
| (4) | Row (1) + Row (2) |
| (5) | Exhibit 5.2 Row (5) |
| (6) | Row (3) / Row (4) |
| (7) | Exhibit 5.2 Row (7) |
| (8) | Exhibit 3.5 Col (10) and Exhibit 4.5 Col (10) |
| (9) and (13) | From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013. |
| (10) | Row (8) + Row (9) |
| (11) | Exhibit 1.5 Col (10) and Exhibit 2.5 Col (10) |
| (12) | Row (10) / Row (11) |

West Virginia Department of Environmental Protection Office of Special Reclamation

Funded Status
Special Reclamation Fund and Special Reclamation Water Trust Fund Combined
Comparison to Prior Analysis
June 30, 2017

	Cash Flow	
	20 Years	35 Years
(1) Present Value of Future Revenues w/o Transfers	\$351,002,511	\$441,270,516
(2) Assets as of June 30, 2017	149,328,518	149,328,518
(3) Present Value of Fund Transfers	0	0
(4) PV of Future Revenues + Assets + Transfers	500,331,029	590,599,034
(5) Present Value of Future Expenditures	421,754,025	539,461,872
(6) Funded Status	118.6%	109.5%
(7) Year Fund Balance Becomes Negative	Fully Funded Through 35 Years	

June 30, 2013

	Cash Flow	
	20 Years	35 Years
(8) Present Value of Future Revenues	\$436,144,088	\$537,033,361
(9) Assets as of June 30, 2013	97,447,392	97,447,392
(10) Assets + Present Value of Future Revenues	533,591,480	634,480,753
(11) Present Value of Future Expenditures	435,560,317	680,325,715
(12) Funded Status	122.5%	93.3%
(13) Year Fund Balance Becomes Negative	2038	

Footnotes:

- | | |
|--------------|---|
| (1) | Exhibit 5.3 Row (1) |
| (2) | Exhibit 5.3 Row (2) |
| (3) | Exhibit 6.6 Col (3) |
| (4) | Row (1) + Row (2) |
| (5) | Exhibit 5.3 Row (5) |
| (6) | Row (3) / Row (4) |
| (7) | Exhibit 5.3 Row (7) |
| (8) | Exhibit 3.6 Col (10) and Exhibit 4.6 Col (10) |
| (9) and (13) | From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013. |
| (10) | Row (8) + Row (9) |
| (11) | Exhibit 1.6 Col (10) and Exhibit 2.6 Col (10) |
| (12) | Row (10) / Row (11) |

West Virginia Department of Environmental Protection Office of Special Reclamation

Cash Flow
Special Reclamation Fund

June 30, 2017

Fiscal Year Ending 6/30	Undiscounted			
	Expenditures	Revenue	Fund Transfer	Fund Balance
	(1)	(2)	(3)	(4)
Prior				\$56,208,569
2018	\$32,228,782	\$12,656,359	\$0	36,636,146
2019	28,040,517	14,904,598	0	23,500,227
2020	29,020,570	14,621,711	0	9,101,368
2021	32,559,320	13,910,235	10,000,000	452,283
2022	36,010,765	13,424,494	28,000,000	5,866,013
2023	9,454,898	12,918,298	0	9,329,412
2024	9,376,432	12,353,367	0	12,306,348
2025	10,867,291	11,900,152	0	13,339,209
2026	8,171,970	11,460,515	0	16,627,754
2027	8,077,360	11,088,910	0	19,639,305
2028	7,982,168	10,684,453	0	22,341,591
2029	7,876,107	10,325,585	0	24,791,069
2030	7,798,575	10,027,476	0	27,019,970
2031	7,690,414	9,752,972	0	29,082,528
2032	7,626,594	9,475,273	0	30,931,206
2033	7,567,545	9,309,284	0	32,672,945
2034	7,473,345	9,110,024	0	34,309,624
2035	7,511,155	8,915,452	0	35,713,922
2036	7,513,188	8,683,163	0	36,883,896
2037	7,545,068	8,492,724	0	37,831,552
2038	7,530,922	8,256,764	0	38,557,394
2039	7,596,796	8,084,766	0	39,045,364
2040	7,586,126	7,911,169	0	39,370,407
2041	7,626,131	7,736,184	0	39,480,459
2042	7,713,338	7,571,728	0	39,338,850
2043	7,806,989	7,406,426	0	38,938,287
2044	7,915,471	7,263,778	0	38,286,594
2045	8,028,195	7,113,674	0	37,372,073
2046	8,179,872	6,976,504	0	36,168,705
2047	8,323,049	6,826,174	0	34,671,829
2048	8,495,013	6,686,425	0	32,863,241
2049	8,635,566	6,561,935	0	30,789,611
2050	8,814,959	6,436,432	0	28,411,084
2051	9,042,066	6,317,097	0	25,686,115
2052	9,277,171	6,200,746	0	22,609,690

Footnotes:

- (1) Exhibit 11.1 Col (5)
(2) Exhibit 7.1 Col (5) - Col (3)
(3) Selected transfer amount between SRF and SRWTF
(4) Year 2018 = Client data
Years 2019 and Subsequent = Prior Col (4) + [(Col (2) + Col (3)) - Col (1)]

West Virginia Department of Environmental Protection Office of Special Reclamation

Cash Flow
Special Reclamation Water Trust Fund

June 30, 2017

Fiscal Year Ending 6/30	Undiscounted			
	Expenditures	Revenue	Fund Transfer	Fund Balance
	(1)	(2)	(3)	(4)
Prior				\$93,119,949
2018	\$0	\$17,573,927	\$0	110,693,876
2019	10,318,740	17,905,229	0	118,280,365
2020	17,076,812	18,128,565	0	119,332,118
2021	20,664,316	17,279,244	(10,000,000)	105,947,046
2022	24,319,705	15,538,726	(28,000,000)	69,166,068
2023	24,766,154	13,769,845	0	58,169,758
2024	19,729,902	12,755,892	0	51,195,748
2025	15,313,250	12,064,485	0	47,946,983
2026	12,147,757	11,572,185	0	47,371,412
2027	12,239,162	11,199,557	0	46,331,807
2028	12,317,026	10,759,015	0	44,773,796
2029	12,247,999	10,377,144	0	42,902,941
2030	12,214,672	10,027,841	0	40,716,111
2031	12,120,878	9,700,231	0	38,295,464
2032	12,057,130	9,376,731	0	35,615,064
2033	11,976,153	9,099,787	0	32,738,699
2034	11,835,960	8,785,722	0	29,688,461
2035	11,833,314	8,454,949	0	26,310,096
2036	11,781,918	8,116,330	0	22,644,508
2037	11,755,026	7,750,428	0	18,639,910
2038	11,647,719	7,371,311	0	14,363,503
2039	11,627,165	7,021,484	0	9,757,821
2040	11,496,345	6,626,103	0	4,887,580
2041	11,407,489	6,223,476	0	(296,433)
2042	11,372,630	5,974,492	0	(5,694,571)
2043	11,324,871	5,855,402	0	(11,164,040)
2044	11,287,349	5,747,914	0	(16,703,475)
2045	11,240,049	5,646,770	0	(22,296,755)
2046	11,228,085	5,552,000	0	(27,972,840)
2047	11,208,096	5,462,214	0	(33,718,721)
2048	11,194,643	5,377,088	0	(39,536,276)
2049	11,139,719	5,296,588	0	(45,379,407)
2050	11,118,966	5,220,245	0	(51,278,128)
2051	11,131,937	5,147,682	0	(57,262,384)
2052	11,146,969	5,078,825	0	(63,330,528)

Footnotes:

- (1) Exhibit 11.2 Col (5)
(2) Exhibit 7.2 Col (5) - Col (3)
(3) Selected transfer amount between SRF and SRWTF
(4) Year 2018 = Client data
Years 2019 and Subsequent = Prior Col (4) + [(Col (2) + Col (3)) - Col (1)]

West Virginia Department of Environmental Protection Office of Special Reclamation

Cash Flow
Special Reclamation Fund and Special Reclamation Water Trust Fund Combined

June 30, 2017

Fiscal Year Ending 6/30	Undiscounted			
	Expenditures	Revenue	Fund Transfer	Fund Balance
	(1)	(2)	(3)	(4)
Prior				\$149,328,518
2018	\$32,228,782	\$30,230,286	\$0	147,330,022
2019	38,359,258	32,809,827	0	141,780,592
2020	46,097,382	32,750,277	0	128,433,487
2021	53,223,636	31,189,479	0	106,399,330
2022	60,330,470	28,963,220	0	75,032,080
2023	34,221,053	26,688,143	0	67,499,171
2024	29,106,334	25,109,259	0	63,502,096
2025	26,180,541	23,964,637	0	61,286,192
2026	20,319,727	23,032,700	0	63,999,166
2027	20,316,522	22,288,467	0	65,971,111
2028	20,299,194	21,443,469	0	67,115,387
2029	20,124,105	20,702,728	0	67,694,010
2030	20,013,247	20,055,318	0	67,736,080
2031	19,811,292	19,453,203	0	67,377,992
2032	19,683,725	18,852,004	0	66,546,271
2033	19,543,698	18,409,072	0	65,411,644
2034	19,309,306	17,895,746	0	63,998,084
2035	19,344,469	17,370,402	0	62,024,017
2036	19,295,106	16,799,493	0	59,528,405
2037	19,300,095	16,243,152	0	56,471,462
2038	19,178,641	15,628,075	0	52,920,896
2039	19,223,961	15,106,249	0	48,803,185
2040	19,082,471	14,537,272	0	44,257,986
2041	19,033,620	13,959,660	0	39,184,027
2042	19,085,968	13,546,221	0	33,644,280
2043	19,131,860	13,261,828	0	27,774,247
2044	19,202,820	13,011,691	0	21,583,119
2045	19,268,244	12,760,443	0	15,075,318
2046	19,407,957	12,528,504	0	8,195,865
2047	19,531,145	12,288,388	0	953,108
2048	19,689,656	12,063,513	0	(6,673,035)
2049	19,775,284	11,858,523	0	(14,589,796)
2050	19,933,925	11,656,677	0	(22,867,044)
2051	20,174,003	11,464,779	0	(31,576,268)
2052	20,424,140	11,279,570	0	(40,720,838)

Footnotes:

- (1) Exhibit 6.1 Col (1) + Exhibit 6.2 Col (1)
(2) Exhibit 6.1 Col (2) + Exhibit 6.2 Col (2)
(3) Exhibit 6.1 Col (3) + Exhibit 6.2 Col (3)
(4) Year 2018 = Client data
Years 2019 and Subsequent = Prior Col (4) + [(Col (2) + Col (3)) - Col (1)]

West Virginia Department of Environmental Protection Office of Special Reclamation

Cash Flow
Special Reclamation Fund

June 30, 2017

Fiscal Year Ending 6/30	Discounted			
	Expenditures	Revenue	Fund Transfer	Fund Balance
	(1)	(2)	(3)	(4)
Prior				\$56,208,569
2018	\$31,894,527	\$12,525,096	\$0	36,839,138
2019	27,408,600	14,568,710	0	23,999,247
2020	27,984,261	14,099,578	0	10,114,564
2021	30,932,100	13,215,042	8,072,167	469,674
2022	33,659,871	12,548,102	21,423,762	781,666
2023	8,695,269	11,880,410	0	3,966,808
2024	8,484,178	11,177,830	0	6,660,460
2025	9,674,744	10,594,262	0	7,579,978
2026	7,157,988	10,038,489	0	10,460,479
2027	6,961,129	9,556,505	0	13,055,855
2028	6,768,261	9,059,591	0	15,347,185
2029	6,570,734	8,614,239	0	17,390,691
2030	6,401,232	8,230,760	0	19,220,219
2031	6,210,750	7,876,464	0	20,885,933
2032	6,059,977	7,528,910	0	22,354,866
2033	5,916,181	7,277,843	0	23,716,528
2034	5,748,407	7,007,320	0	24,975,441
2035	5,684,407	6,747,173	0	26,038,207
2036	5,594,338	6,465,505	0	26,909,373
2037	5,527,563	6,221,821	0	27,603,631
2038	5,428,310	5,951,499	0	28,126,820
2039	5,387,571	5,733,634	0	28,472,884
2040	5,293,326	5,520,129	0	28,699,687
2041	5,235,509	5,311,062	0	28,775,241
2042	5,210,063	5,114,411	0	28,679,589
2043	5,188,361	4,922,155	0	28,413,383
2044	5,175,704	4,749,580	0	27,987,259
2045	5,164,837	4,576,491	0	27,398,914
2046	5,177,633	4,415,934	0	26,637,215
2047	5,183,382	4,251,166	0	25,704,999
2048	5,205,241	4,097,045	0	24,596,804
2049	5,206,113	3,955,986	0	23,346,677
2050	5,228,645	3,817,808	0	21,935,840
2051	5,276,945	3,686,654	0	20,345,549
2052	5,326,923	3,560,449	0	18,579,075

Footnotes:

- (1) Exhibit 11.1 Col (10)
(2) Exhibit 7.1 Col (10) - Col (3)
(3) Exhibit 6.1 Col (3) x Exhibit 10.2 Col (4)
(4) Year 2018 = Client data
Years 2019 and Subsequent = Prior Col (4) + [(Col (2) + Col (3)) - Col (1)]

West Virginia Department of Environmental Protection Office of Special Reclamation

Cash Flow
Special Reclamation Water Trust Fund

June 30, 2017

Fiscal Year Ending 6/30	Discounted			
	Expenditures	Revenue	Fund Transfer	Fund Balance
	(1)	(2)	(3)	(4)
Prior				\$93,119,949
2018	\$0	\$16,657,751	\$0	109,777,700
2019	9,270,897	16,086,997	0	116,593,799
2020	14,542,847	15,438,534	0	117,489,486
2021	16,680,582	13,948,095	(8,072,167)	106,684,832
2022	18,607,842	11,889,213	(21,423,762)	78,542,442
2023	17,961,550	9,986,523	0	70,567,415
2024	13,563,061	8,768,869	0	65,773,223
2025	9,978,097	7,861,205	0	63,656,332
2026	7,502,810	7,147,320	0	63,300,842
2027	7,165,180	6,556,563	0	62,692,225
2028	6,834,847	5,970,291	0	61,827,669
2029	6,442,221	5,458,186	0	60,843,634
2030	6,089,755	4,999,487	0	59,753,366
2031	5,727,955	4,584,032	0	58,609,443
2032	5,400,787	4,200,148	0	57,408,803
2033	5,084,848	3,863,598	0	56,187,553
2034	4,763,341	3,535,783	0	54,959,995
2035	4,514,006	3,225,275	0	53,671,264
2036	4,260,095	2,934,695	0	52,345,864
2037	4,028,788	2,656,296	0	50,973,372
2038	3,783,896	2,394,656	0	49,584,132
2039	3,580,302	2,162,095	0	48,165,924
2040	3,355,469	1,933,978	0	46,744,434
2041	3,155,957	1,721,765	0	45,310,243
2042	2,982,287	1,566,713	0	43,894,669
2043	2,814,941	1,455,435	0	42,535,163
2044	2,659,350	1,354,234	0	41,230,047
2045	2,510,148	1,261,047	0	39,980,946
2046	2,376,755	1,175,244	0	38,779,435
2047	2,248,837	1,095,961	0	37,626,558
2048	2,129,041	1,022,636	0	36,520,153
2049	2,008,147	954,811	0	35,466,817
2050	1,899,911	891,989	0	34,458,896
2051	1,802,964	833,735	0	33,489,667
2052	1,711,279	779,699	0	32,558,087

Footnotes:

- (1) Exhibit 11.2 Col (10)
(2) Exhibit 7.2 Col (10) - Col (3)
(3) Exhibit 6.2 Col (3) x Exhibit 10.2 Col (4)
(4) Year 2018 = Client data
Years 2019 and Subsequent = Prior Col (4) + [(Col (2) + Col (3)) - Col (1)]

West Virginia Department of Environmental Protection Office of Special Reclamation

Cash Flow
Special Reclamation Fund and Special Reclamation Water Trust Fund Combined

June 30, 2017

Fiscal Year Ending 6/30	Discounted			
	Expenditures	Revenue	Fund Transfer	Fund Balance
	(1)	(2)	(3)	(4)
Prior				\$149,328,518
2018	\$31,894,527	\$29,182,846	\$0	146,616,837
2019	36,679,498	30,655,707	0	140,593,046
2020	42,527,108	29,538,112	0	127,604,051
2021	47,612,682	27,163,137	0	107,154,506
2022	52,267,713	24,437,315	0	79,324,108
2023	26,656,819	21,866,933	0	74,534,222
2024	22,047,239	19,946,700	0	72,433,683
2025	19,652,840	18,455,467	0	71,236,310
2026	14,660,798	17,185,809	0	73,761,321
2027	14,126,308	16,113,069	0	75,748,081
2028	13,603,108	15,029,881	0	77,174,854
2029	13,012,955	14,072,425	0	78,234,324
2030	12,490,987	13,230,248	0	78,973,585
2031	11,938,706	12,460,496	0	79,495,376
2032	11,460,765	11,729,058	0	79,763,669
2033	11,001,029	11,141,441	0	79,904,081
2034	10,511,748	10,543,103	0	79,935,436
2035	10,198,413	9,972,448	0	79,709,471
2036	9,854,433	9,400,200	0	79,255,237
2037	9,556,351	8,878,117	0	78,577,004
2038	9,212,207	8,346,155	0	77,710,952
2039	8,967,873	7,895,729	0	76,638,808
2040	8,648,795	7,454,108	0	75,444,121
2041	8,391,465	7,032,828	0	74,085,484
2042	8,192,350	6,681,125	0	72,574,258
2043	8,003,302	6,377,590	0	70,948,546
2044	7,835,054	6,103,815	0	69,217,306
2045	7,674,985	5,837,538	0	67,379,860
2046	7,554,387	5,591,178	0	65,416,650
2047	7,432,219	5,347,127	0	63,331,558
2048	7,334,282	5,119,681	0	61,116,957
2049	7,214,260	4,910,797	0	58,813,494
2050	7,128,555	4,709,797	0	56,394,736
2051	7,079,909	4,520,389	0	53,835,216
2052	7,038,202	4,340,149	0	51,137,162

Footnotes:

- (1) Exhibit 6.4 Col (1) + Exhibit 6.5 Col (1)
(2) Exhibit 6.4 Col (2) + Exhibit 6.5 Col (2)
(3) Exhibit 6.4 Col (3) + Exhibit 6.5 Col (3)
(4) Year 2018 = Client data
Years 2019 and Subsequent = Prior Col (3) + (Col (2) - Col (1))

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Fund

June 30, 2017

Fiscal Year Ending 6/30	Undiscounted					Discounted				
	Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total	Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2018	\$10,422,388	\$0	\$1,750,000	\$483,970	\$12,656,359	\$10,314,294	\$0	\$1,731,850	\$478,951	\$12,525,096
2019	10,128,190	2,665,123	1,739,400	371,885	14,904,598	9,899,943	2,605,063	1,700,201	363,504	14,568,710
2020	10,121,432	2,550,298	1,728,800	221,181	14,621,711	9,760,001	2,459,228	1,667,066	213,283	14,099,578
2021	9,674,892	2,445,838	11,718,300	71,205	23,910,235	9,191,369	2,323,602	9,704,592	67,646	21,287,209
2022	9,332,721	2,332,563	29,707,900	51,311	41,424,494	8,723,452	2,180,286	23,020,165	47,961	33,971,864
2023	8,911,174	2,186,222	1,697,500	123,402	12,918,298	8,195,228	2,010,575	1,561,119	113,488	11,880,410
2024	8,452,797	2,037,666	1,687,200	175,704	12,353,367	7,648,436	1,843,763	1,526,647	158,984	11,177,830
2025	8,093,486	1,921,398	1,677,000	208,268	11,900,152	7,205,329	1,710,549	1,492,971	185,413	10,594,262
2026	7,758,133	1,792,220	1,666,800	243,362	11,460,515	6,795,500	1,569,840	1,459,983	213,166	10,038,489
2027	7,474,849	1,662,836	1,656,700	294,525	11,088,910	6,441,881	1,433,044	1,427,756	253,824	9,556,505
2028	7,155,773	1,541,154	1,646,600	340,927	10,684,453	6,067,542	1,306,779	1,396,190	289,080	9,059,591
2029	6,906,285	1,399,935	1,636,600	382,765	10,325,585	5,761,649	1,167,912	1,365,353	319,326	8,614,239
2030	6,699,281	1,280,737	1,626,700	420,758	10,027,476	5,498,909	1,051,256	1,335,229	345,367	8,230,760
2031	6,523,587	1,156,976	1,616,800	455,609	9,752,972	5,268,425	934,370	1,305,722	367,948	7,876,464
2032	6,362,787	1,018,114	1,607,000	487,372	9,475,273	5,055,776	808,978	1,276,898	387,259	7,528,910
2033	6,252,516	943,038	1,597,200	516,530	9,309,284	4,888,113	737,251	1,248,664	403,814	7,277,843
2034	6,118,833	859,725	1,587,500	543,966	9,110,024	4,706,532	661,290	1,221,086	418,412	7,007,320
2035	5,982,336	786,555	1,577,900	568,662	8,915,452	4,527,404	595,261	1,194,147	430,361	6,747,173
2036	5,853,254	672,041	1,568,300	589,568	8,683,163	4,358,348	500,403	1,167,760	438,993	6,465,505
2037	5,715,123	612,035	1,558,800	606,765	8,492,724	4,186,934	448,381	1,141,986	444,520	6,221,821
2038	5,579,687	507,421	1,549,300	620,355	8,256,764	4,021,855	365,751	1,116,740	447,154	5,951,499
2039	5,483,275	431,378	1,539,900	630,213	8,084,766	3,888,683	305,929	1,092,082	446,940	5,733,634
2040	5,361,355	382,499	1,530,500	636,815	7,911,169	3,740,961	266,894	1,067,928	444,347	5,520,129
2041	5,246,515	328,121	1,521,200	640,349	7,736,184	3,601,849	225,262	1,044,338	439,614	5,311,062
2042	5,138,063	281,573	1,512,000	640,092	7,571,728	3,470,564	190,191	1,021,298	432,358	5,114,411
2043	5,035,646	232,291	1,502,800	635,689	7,406,426	3,346,585	154,375	998,729	422,466	4,922,155
2044	4,943,206	199,728	1,493,700	627,144	7,263,778	3,232,223	130,597	976,688	410,072	4,749,580
2045	4,856,222	158,427	1,484,600	614,425	7,113,674	3,124,188	101,922	955,098	395,282	4,576,491
2046	4,774,720	128,959	1,475,600	597,225	6,976,504	3,022,266	81,627	934,014	378,027	4,415,934
2047	4,697,504	86,773	1,466,600	575,297	6,826,174	2,925,485	54,040	913,361	358,280	4,251,166
2048	4,624,296	55,977	1,457,700	548,453	6,686,425	2,833,494	34,299	893,192	336,059	4,097,045
2049	4,555,065	41,145	1,448,800	516,925	6,561,935	2,746,107	24,805	873,436	311,638	3,955,986
2050	4,489,411	26,252	1,440,000	480,769	6,436,432	2,662,920	15,572	854,144	285,171	3,817,808
2051	4,427,007	19,466	1,431,300	439,324	6,317,097	2,583,598	11,361	835,306	256,389	3,686,654
2052	4,367,789	18,146	1,422,600	392,211	6,200,746	2,507,971	10,419	816,853	225,206	3,560,449
Total	227,519,599	32,762,627	93,329,600	15,753,021	369,364,847	182,203,815	28,320,876	72,338,592	11,530,303	294,393,585

Footnotes:

- (1) Exhibit 8.1 Col (12)
- (2) Exhibit 9.1 Col (4)
- (3) Exhibit 9.2 Col (3)
- (4) Exhibit 10.1 Col (6)
- (5) Sum of Col (1) through Col (4)

- (6) Exhibit 8.1 Col (14)
- (7) Exhibit 9.1 Col (6)
- (8) Exhibit 9.2 Col (6)
- (9) Exhibit 10.1 Col (7)
- (10) Sum of Col (6) through Col (9)

West Virginia Department of Environmental Protection Office of Special Reclamation

Revenues
Special Reclamation Water Trust Fund

June 30, 2017

Fiscal Year Ending 6/30	Undiscounted					Discounted				
	Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total	Coal Tax	Bond Forfeiture	Miscellaneous	Investment Income	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)
2018	\$12,119,056	\$0	\$0	\$5,454,871	\$17,573,927	\$11,487,257	\$0	\$0	\$5,170,494	\$16,657,751
2019	11,776,965	0	0	6,128,264	17,905,229	10,581,043	0	0	5,505,954	16,086,997
2020	11,769,107	0	0	6,359,458	18,128,565	10,022,732	0	0	5,415,801	15,438,534
2021	11,249,875	0	(10,000,000)	6,029,369	7,279,244	9,081,087	0	(8,072,167)	4,867,008	5,875,928
2022	10,852,001	0	(28,000,000)	4,686,726	(12,461,274)	8,303,239	0	(21,423,762)	3,585,975	(9,534,549)
2023	10,361,830	0	0	3,408,015	13,769,845	7,514,874	0	0	2,471,649	9,986,523
2024	9,828,834	0	0	2,927,057	12,755,892	6,756,702	0	0	2,012,167	8,768,869
2025	9,411,030	0	0	2,653,455	12,064,485	6,132,217	0	0	1,728,988	7,861,205
2026	9,021,085	0	0	2,551,101	11,572,185	5,571,686	0	0	1,575,634	7,147,320
2027	8,691,685	0	0	2,507,872	11,199,557	5,088,378	0	0	1,468,185	6,556,563
2028	8,320,666	0	0	2,438,349	10,759,015	4,617,225	0	0	1,353,066	5,970,291
2029	8,030,564	0	0	2,346,579	10,377,144	4,223,928	0	0	1,234,257	5,458,186
2030	7,789,862	0	0	2,237,979	10,027,841	3,883,719	0	0	1,115,769	4,999,487
2031	7,585,566	0	0	2,114,665	9,700,231	3,584,706	0	0	999,326	4,584,032
2032	7,398,590	0	0	1,978,141	9,376,731	3,314,073	0	0	886,075	4,200,148
2033	7,270,368	0	0	1,829,419	9,099,787	3,086,861	0	0	776,737	3,863,598
2034	7,114,922	0	0	1,670,800	8,785,722	2,863,376	0	0	672,408	3,535,783
2035	6,956,205	0	0	1,498,745	8,454,949	2,653,555	0	0	571,720	3,225,275
2036	6,806,110	0	0	1,310,221	8,116,330	2,460,947	0	0	473,748	2,934,695
2037	6,645,492	0	0	1,104,936	7,750,428	2,277,603	0	0	378,693	2,656,296
2038	6,488,008	0	0	883,303	7,371,311	2,107,705	0	0	286,951	2,394,656
2039	6,375,901	0	0	645,583	7,021,484	1,963,303	0	0	198,792	2,162,095
2040	6,234,134	0	0	391,969	6,626,103	1,819,573	0	0	114,405	1,933,978
2041	6,100,598	0	0	122,877	6,223,476	1,687,771	0	0	33,995	1,721,765
2042	5,974,492	0	0	0	5,974,492	1,566,713	0	0	0	1,566,713
2043	5,855,402	0	0	0	5,855,402	1,455,435	0	0	0	1,455,435
2044	5,747,914	0	0	0	5,747,914	1,354,234	0	0	0	1,354,234
2045	5,646,770	0	0	0	5,646,770	1,261,047	0	0	0	1,261,047
2046	5,552,000	0	0	0	5,552,000	1,175,244	0	0	0	1,175,244
2047	5,462,214	0	0	0	5,462,214	1,095,961	0	0	0	1,095,961
2048	5,377,088	0	0	0	5,377,088	1,022,636	0	0	0	1,022,636
2049	5,296,588	0	0	0	5,296,588	954,811	0	0	0	954,811
2050	5,220,245	0	0	0	5,220,245	891,989	0	0	0	891,989
2051	5,147,682	0	0	0	5,147,682	833,735	0	0	0	833,735
2052	5,078,825	0	0	0	5,078,825	779,699	0	0	0	779,699
Total	264,557,674	0	(38,000,000)	63,279,756	289,837,429	133,475,064	0	(29,495,929)	42,897,797	146,876,931

Footnotes:

- | | |
|--------------------------------------|--------------------------------------|
| (1) Exhibit 8.2 Col (12) | (6) Exhibit 8.2 Col (14) |
| (2) Only in Special Reclamation Fund | (7) Only in Special Reclamation Fund |
| (3) Exhibit 6.2 Col (3) | (8) Exhibit 6.5 Col (3) |
| (4) Exhibit 10.2 Col (6) | (9) Exhibit 10.2 Col (7) |
| (5) Sum of Col (1) through Col (4) | (10) Sum of Col (6) through Col (9) |

West Virginia Department of Environmental Protection Office of Special Reclamation

Coal Tax Revenues
Special Reclamation Fund

June 30, 2017

Fiscal Year Ending 6/30	Coal Production In Tons			Yearly Change	Percent of Production		Current Percent of Acres		Per Ton Coal Extraction Fee	Coal Tax Revenue			Discount Factor	Discounted Tax Revenue
	Ex N Appalachian	N Appalachian	Total		Surface	Underground	Surface	Underground		Ex N Appalachian	N Appalachian	Total		
	(1)	(2)	(3)		(5)	(6)	(7)	(8)		(10)	(11)	(12)		
2018	58,600,000	25,000,000	83,600,000	0.963	22.25%	77.75%	96.349%	94.886%	\$0.129	\$7,197,388	\$3,225,000	\$10,422,388	98.963%	\$10,314,294
2019	59,100,000	25,000,000	84,100,000	1.006	20.88%	79.12%	92.649%	89.992%	0.129	6,903,190	3,225,000	10,128,190	97.746%	9,899,943
2020	62,100,000	25,000,000	87,100,000	1.036	19.58%	80.42%	89.071%	85.362%	0.129	6,896,432	3,225,000	10,121,432	96.429%	9,760,001
2021	61,100,000	25,000,000	86,100,000	0.989	18.34%	81.66%	85.537%	81.000%	0.129	6,449,892	3,225,000	9,674,892	95.002%	9,191,369
2022	60,900,000	25,000,000	85,900,000	0.998	17.16%	82.84%	81.883%	76.888%	0.129	6,107,721	3,225,000	9,332,721	93.472%	8,723,452
2023	59,700,000	25,000,000	84,700,000	0.986	16.04%	83.96%	78.159%	73.008%	0.129	5,686,174	3,225,000	8,911,174	91.966%	8,195,228
2024	57,800,000	25,000,000	82,800,000	0.978	14.97%	85.03%	74.438%	69.352%	0.129	5,227,797	3,225,000	8,452,797	90.484%	7,648,436
2025	56,500,000	25,000,000	81,500,000	0.984	13.97%	86.03%	70.784%	66.149%	0.129	4,868,486	3,225,000	8,093,486	89.026%	7,205,329
2026	55,200,000	25,000,000	80,200,000	0.984	13.02%	86.98%	67.238%	63.125%	0.129	4,533,133	3,225,000	7,758,133	87.592%	6,795,500
2027	54,300,000	25,000,000	79,300,000	0.989	12.12%	87.88%	63.849%	60.233%	0.129	4,249,849	3,225,000	7,474,849	86.181%	6,441,881
2028	52,700,000	25,000,000	77,700,000	0.980	11.27%	88.73%	60.610%	57.465%	0.129	3,930,773	3,225,000	7,155,773	84.792%	6,067,542
2029	51,800,000	25,000,000	76,800,000	0.988	10.48%	89.52%	57.523%	54.806%	0.129	3,681,285	3,225,000	6,906,285	83.426%	5,761,649
2030	51,300,000	25,000,000	76,300,000	0.993	9.73%	90.27%	54.597%	52.274%	0.129	3,474,281	3,225,000	6,699,281	82.082%	5,498,909
2031	51,100,000	25,000,000	76,100,000	0.997	9.02%	90.98%	51.819%	49.864%	0.129	3,298,587	3,225,000	6,523,587	80.760%	5,268,425
2032	51,000,000	25,000,000	76,000,000	0.999	8.37%	91.63%	49.152%	47.561%	0.129	3,137,787	3,225,000	6,362,787	79.459%	5,055,776
2033	51,600,000	25,000,000	76,600,000	1.008	7.75%	92.25%	46.599%	45.389%	0.129	3,027,516	3,225,000	6,252,516	78.178%	4,888,113
2034	51,700,000	25,000,000	76,700,000	1.001	7.17%	92.83%	44.155%	43.331%	0.129	2,893,833	3,225,000	6,118,833	76.919%	4,706,532
2035	51,600,000	25,000,000	76,600,000	0.999	6.63%	93.37%	41.833%	41.395%	0.129	2,757,336	3,225,000	5,982,336	75.680%	4,527,404
2036	51,500,000	25,000,000	76,500,000	0.999			39.634%	39.553%	0.129	2,628,254	3,225,000	5,853,254	74.460%	4,358,348
2037	51,100,000	25,000,000	76,100,000	0.995			37.571%	37.798%	0.129	2,490,123	3,225,000	5,715,123	73.261%	4,186,934
2038	50,600,000	25,000,000	75,600,000	0.993			35.627%	36.124%	0.129	2,354,687	3,225,000	5,579,687	72.080%	4,021,855
2039	50,800,000	25,000,000	75,800,000	1.003			33.798%	34.534%	0.129	2,258,275	3,225,000	5,483,275	70.919%	3,888,683
2040	50,300,000	25,000,000	75,300,000	0.993			32.093%	33.017%	0.129	2,136,355	3,225,000	5,361,355	69.776%	3,740,961
2041	49,800,000	25,000,000	74,800,000				30.489%	31.576%	0.129	2,021,515	3,225,000	5,246,515	68.652%	3,601,849
2042	49,300,000	25,000,000	74,300,000				28.986%	30.203%	0.129	1,913,063	3,225,000	5,138,063	67.546%	3,470,564
2043	48,800,000	25,000,000	73,800,000				27.568%	28.895%	0.129	1,810,646	3,225,000	5,035,646	66.458%	3,346,585
2044	48,400,000	25,000,000	73,400,000				26.231%	27.663%	0.129	1,718,206	3,225,000	4,943,206	65.387%	3,232,223
2045	48,000,000	25,000,000	73,000,000				24.970%	26.497%	0.129	1,631,222	3,225,000	4,856,222	64.334%	3,124,188
2046	47,600,000	25,000,000	72,600,000				23.808%	25.397%	0.129	1,549,720	3,225,000	4,774,720	63.297%	3,022,266
2047	47,200,000	25,000,000	72,200,000				22.717%	24.347%	0.129	1,472,504	3,225,000	4,697,504	62.277%	2,925,485
2048	46,800,000	25,000,000	71,800,000				21.693%	23.343%	0.129	1,399,296	3,225,000	4,624,296	61.274%	2,833,494
2049	46,400,000	25,000,000	71,400,000				20.731%	22.387%	0.129	1,330,065	3,225,000	4,555,065	60.287%	2,746,107
2050	46,000,000	25,000,000	71,000,000				19.824%	21.473%	0.129	1,264,411	3,225,000	4,489,411	59.316%	2,662,920
2051	45,600,000	25,000,000	70,600,000				18.967%	20.597%	0.129	1,202,007	3,225,000	4,427,007	58.360%	2,583,598
2052	45,200,000	25,000,000	70,200,000				18.155%	19.760%	0.129	1,142,789	3,225,000	4,367,789	57.420%	2,507,971
Total	1,821,500,000	875,000,000	2,696,500,000								114,644,599	112,875,000	227,519,599	182,203,815
First 20 Years	1,100,700,000	500,000,000	1,600,700,000								89,439,840	64,500,000	153,939,840	134,495,064
Average / Selection				0.994	10.00%	90.00%								

Footnotes:

- (1) Col (3) - Col (2)
- (2) Client data
- (3) "Consensus Coal Production Forecast for West Virginia: 2017" dated September 5, 2017
Years 2041 and subsequent, detrended by average of Col (4)
- (4) Col (3) / Prior Year Col (3)
- (5), (6) Client data through Year 2035. Selection for Years 2036 - 2052.
- (7) Exhibit 26.2 Col (14)
- (8) Exhibit 26.3 Col (14)
- (9) Client data
- (10) [Col (1) x Col (5) x Col (7) x Col (9)] + [Col (1) x Col (6) x Col (8) x Col (9)]
- (11) Col (2) x Col (9)
- (12) Col (10) + Col (11)
- (13) Exhibit 10.1 Col (4)
- (14) Col (12) x Col (13)

West Virginia Department of Environmental Protection Office of Special Reclamation

Coal Tax Revenues
Special Reclamation Water Trust Fund

June 30, 2017

Fiscal Year Ending 6/30	Coal Production In Tons			Yearly Change	Percent of Production		Current Percent of Acres		Per Ton Coal Extraction Fee	Coal Tax Revenue			Discount Factor	Discounted Tax Revenue
	Ex N Appalachian	N Appalachian	Total		Surface	Underground	Surface	Underground		Ex N Appalachian	N Appalachian	Total		
	(1)	(2)	(3)		(5)	(6)	(7)	(8)		(10)	(11)	(12)		
2018	58,600,000	25,000,000	83,600,000	0.963	22.25%	77.75%	96.349%	94.886%	\$0.150	\$8,369,056	\$3,750,000	\$12,119,056	94.787%	\$11,487,257
2019	59,100,000	25,000,000	84,100,000	1.006	20.88%	79.12%	92.649%	89.992%	0.150	8,026,965	3,750,000	11,776,965	89.845%	10,581,043
2020	62,100,000	25,000,000	87,100,000	1.036	19.58%	80.42%	89.071%	85.362%	0.150	8,019,107	3,750,000	11,769,107	85.161%	10,022,732
2021	61,100,000	25,000,000	86,100,000	0.989	18.34%	81.66%	85.537%	81.000%	0.150	7,499,875	3,750,000	11,249,875	80.722%	9,081,087
2022	60,900,000	25,000,000	85,900,000	0.998	17.16%	82.84%	81.883%	76.888%	0.150	7,102,001	3,750,000	10,852,001	76.513%	8,303,239
2023	59,700,000	25,000,000	84,700,000	0.986	16.04%	83.96%	78.159%	73.008%	0.150	6,611,830	3,750,000	10,361,830	72.525%	7,514,874
2024	57,800,000	25,000,000	82,800,000	0.978	14.97%	85.03%	74.438%	69.352%	0.150	6,078,834	3,750,000	9,828,834	68.744%	6,756,702
2025	56,500,000	25,000,000	81,500,000	0.984	13.97%	86.03%	70.784%	66.149%	0.150	5,661,030	3,750,000	9,411,030	65.160%	6,132,217
2026	55,200,000	25,000,000	80,200,000	0.984	13.02%	86.98%	67.238%	63.125%	0.150	5,271,085	3,750,000	9,021,085	61.763%	5,571,686
2027	54,300,000	25,000,000	79,300,000	0.989	12.12%	87.88%	63.849%	60.233%	0.150	4,941,685	3,750,000	8,691,685	58.543%	5,088,378
2028	52,700,000	25,000,000	77,700,000	0.980	11.27%	88.73%	60.610%	57.465%	0.150	4,570,666	3,750,000	8,320,666	55.491%	4,617,225
2029	51,800,000	25,000,000	76,800,000	0.988	10.48%	89.52%	57.523%	54.806%	0.150	4,280,564	3,750,000	8,030,564	52.598%	4,223,928
2030	51,300,000	25,000,000	76,300,000	0.993	9.73%	90.27%	54.597%	52.274%	0.150	4,039,862	3,750,000	7,789,862	49.856%	3,883,719
2031	51,100,000	25,000,000	76,100,000	0.997	9.02%	90.98%	51.819%	49.864%	0.150	3,835,566	3,750,000	7,585,566	47.257%	3,584,706
2032	51,000,000	25,000,000	76,000,000	0.999	8.37%	91.63%	49.152%	47.561%	0.150	3,648,590	3,750,000	7,398,590	44.793%	3,314,073
2033	51,600,000	25,000,000	76,600,000	1.008	7.75%	92.25%	46.599%	45.389%	0.150	3,520,368	3,750,000	7,270,368	42.458%	3,086,861
2034	51,700,000	25,000,000	76,700,000	1.001	7.17%	92.83%	44.155%	43.331%	0.150	3,364,922	3,750,000	7,114,922	40.245%	2,863,376
2035	51,600,000	25,000,000	76,600,000	0.999	6.63%	93.37%	41.833%	41.395%	0.150	3,206,205	3,750,000	6,956,205	38.147%	2,653,555
2036	51,500,000	25,000,000	76,500,000	0.999			39.634%	39.553%	0.150	3,056,110	3,750,000	6,806,110	36.158%	2,460,947
2037	51,100,000	25,000,000	76,100,000	0.995			37.571%	37.798%	0.150	2,895,492	3,750,000	6,645,492	34.273%	2,277,603
2038	50,600,000	25,000,000	75,600,000	0.993			35.627%	36.124%	0.150	2,738,008	3,750,000	6,488,008	32.486%	2,107,705
2039	50,800,000	25,000,000	75,800,000	1.003			33.798%	34.534%	0.150	2,625,901	3,750,000	6,375,901	30.793%	1,963,303
2040	50,300,000	25,000,000	75,300,000	0.993			32.093%	33.017%	0.150	2,484,134	3,750,000	6,234,134	29.187%	1,819,573
2041	49,800,000	25,000,000	74,800,000				30.489%	31.576%	0.150	2,350,598	3,750,000	6,100,598	27.666%	1,687,771
2042	49,300,000	25,000,000	74,300,000				28.986%	30.203%	0.150	2,224,492	3,750,000	5,974,492	26.223%	1,566,713
2043	48,800,000	25,000,000	73,800,000				27.568%	28.895%	0.150	2,105,402	3,750,000	5,855,402	24.856%	1,455,435
2044	48,400,000	25,000,000	73,400,000				26.231%	27.663%	0.150	1,997,914	3,750,000	5,747,914	23.560%	1,354,234
2045	48,000,000	25,000,000	73,000,000				24.970%	26.497%	0.150	1,896,770	3,750,000	5,646,770	22.332%	1,261,047
2046	47,600,000	25,000,000	72,600,000				23.808%	25.397%	0.150	1,802,000	3,750,000	5,552,000	21.168%	1,175,244
2047	47,200,000	25,000,000	72,200,000				22.717%	24.347%	0.150	1,712,214	3,750,000	5,462,214	20.064%	1,095,961
2048	46,800,000	25,000,000	71,800,000				21.693%	23.343%	0.150	1,627,088	3,750,000	5,377,088	19.018%	1,022,636
2049	46,400,000	25,000,000	71,400,000				20.731%	22.387%	0.150	1,546,588	3,750,000	5,296,588	18.027%	954,811
2050	46,000,000	25,000,000	71,000,000				19.824%	21.473%	0.150	1,470,245	3,750,000	5,220,245	17.087%	891,989
2051	45,600,000	25,000,000	70,600,000				18.967%	20.597%	0.150	1,397,682	3,750,000	5,147,682	16.196%	833,735
2052	45,200,000	25,000,000	70,200,000				18.155%	19.760%	0.150	1,328,825	3,750,000	5,078,825	15.352%	779,699
Total	1,821,500,000	875,000,000	2,696,500,000								133,307,674	131,250,000	264,557,674	133,475,064
First 20 Years	1,100,700,000	500,000,000	1,600,700,000								103,999,813	75,000,000	178,999,813	113,505,208
Average / Selection				0.994	10.00%	90.00%								

Footnotes:

- (1) Col (3) - Col (2)
- (2) Client data
- (3) "Consensus Coal Production Forecast for West Virginia: 2017" dated September 5, 2017
Years 2041 and subsequent, detrended by average of Col (4)
- (4) Col (3) / Prior Year Col (3)
- (5), (6) Client data through Year 2035. Selection for Years 2036 - 2052.
- (7) Exhibit 26.2 Col (14)
- (8) Exhibit 26.3 Col (14)
- (9) Client data
- (10) [Col (1) x Col (5) x Col (7) x Col (9)] + [Col (1) x Col (6) x Col (8) x Col (9)]
- (11) Col (2) x Col (9)
- (12) Col (10) + Col (11)
- (13) Exhibit 10.2 Col (4)
- (14) Col (12) x Col (13)

West Virginia Department of Environmental Protection Office of Special Reclamation

Bond Forfeiture Revenues
Special Reclamation Fund

June 30, 2017

Fiscal Year Ending 6/30	Bond Forfeiture Revenues by Mine Type				Discount Factors	Discounted Bond Revenues
	Surface	Underground	Other	Total		
	(1)	(2)	(3)	(4)	(5)	(6)
2018	\$0	\$0	\$0	\$0	98.963%	\$0
2019	1,855,439	558,202	251,483	2,665,123	97.746%	2,605,063
2020	1,778,781	536,286	235,231	2,550,298	96.429%	2,459,228
2021	1,703,423	520,791	221,624	2,445,838	95.002%	2,323,602
2022	1,608,648	504,898	219,016	2,332,563	93.472%	2,180,286
2023	1,498,547	474,099	213,576	2,186,222	91.966%	2,010,575
2024	1,378,286	454,090	205,291	2,037,666	90.484%	1,843,763
2025	1,295,639	424,536	201,223	1,921,398	89.026%	1,710,549
2026	1,198,106	397,499	196,616	1,792,220	87.592%	1,569,840
2027	1,109,503	367,271	186,061	1,662,836	86.181%	1,433,044
2028	1,029,536	349,418	162,200	1,541,154	84.792%	1,306,779
2029	944,739	305,972	149,224	1,399,935	83.426%	1,167,912
2030	865,632	281,618	133,487	1,280,737	82.082%	1,051,256
2031	777,997	259,347	119,632	1,156,976	80.760%	934,370
2032	676,123	232,889	109,102	1,018,114	79.459%	808,978
2033	619,633	221,895	101,510	943,038	78.178%	737,251
2034	571,564	191,713	96,448	859,725	76.919%	661,290
2035	524,789	171,073	90,693	786,555	75.680%	595,261
2036	462,439	122,147	87,454	672,041	74.460%	500,403
2037	419,526	111,402	81,108	612,035	73.261%	448,381
2038	345,040	94,795	67,586	507,421	72.080%	365,751
2039	288,566	79,688	63,124	431,378	70.919%	305,929
2040	255,973	66,871	59,656	382,499	69.776%	266,894
2041	213,484	59,248	55,389	328,121	68.652%	225,262
2042	181,644	48,837	51,092	281,573	67.546%	190,191
2043	146,076	41,162	45,052	232,291	66.458%	154,375
2044	122,921	34,715	42,092	199,728	65.387%	130,597
2045	108,231	17,620	32,576	158,427	64.334%	101,922
2046	86,375	11,788	30,796	128,959	63.297%	81,627
2047	56,221	7,264	23,287	86,773	62.277%	54,040
2048	35,113	6,328	14,535	55,977	61.274%	34,299
2049	21,381	5,712	14,052	41,145	60.287%	24,805
2050	9,741	5,604	10,907	26,252	59.316%	15,572
2051	4,432	5,490	9,544	19,466	58.360%	11,361
2052	4,228	5,351	8,567	18,146	57.420%	10,419
Total	22,197,775	6,975,619	3,589,233	32,762,627		28,320,876
First 20 Years	20,318,350	6,485,144	3,060,978	29,864,472		26,347,831

Footnotes:

- (1) [Exhibit 27.2 Col (4) - Exhibit 27.2 Col (12)] One Year Delay
(2) [Exhibit 27.3 Col (4) - Exhibit 27.3 Col (12)] One Year Delay
(3) [Exhibit 27.4 Col (4) - Exhibit 27.4 Col (12)] One Year Delay
(4) Sum of Col (1) through Col (3)
(5) Exhibit 10.1 Col (4)
(6) Col (4) x Col (5)

West Virginia Department of Environmental Protection Office of Special Reclamation

Miscellaneous Revenues
Special Reclamation Fund

June 30, 2017

Fiscal Year Ending 6/30	Civil Penalties & Other Revenue	Fund Transfer	Total Misc Revenue	SRF Discount Factors	SRWTF Discount Factors	Discounted Misc. Revenue
	(1)	(2)	(3)	(4)	(5)	(6)
2018	\$1,750,000	\$0	\$1,750,000	98.963%	94.787%	\$1,731,850
2019	1,739,400	0	1,739,400	97.746%	89.845%	1,700,201
2020	1,728,800	0	1,728,800	96.429%	85.161%	1,667,066
2021	1,718,300	10,000,000	11,718,300	95.002%	80.722%	9,704,592
2022	1,707,900	28,000,000	29,707,900	93.472%	76.513%	23,020,165
2023	1,697,500	0	1,697,500	91.966%	72.525%	1,561,119
2024	1,687,200	0	1,687,200	90.484%	68.744%	1,526,647
2025	1,677,000	0	1,677,000	89.026%	65.160%	1,492,971
2026	1,666,800	0	1,666,800	87.592%	61.763%	1,459,983
2027	1,656,700	0	1,656,700	86.181%	58.543%	1,427,756
2028	1,646,600	0	1,646,600	84.792%	55.491%	1,396,190
2029	1,636,600	0	1,636,600	83.426%	52.598%	1,365,353
2030	1,626,700	0	1,626,700	82.082%	49.856%	1,335,229
2031	1,616,800	0	1,616,800	80.760%	47.257%	1,305,722
2032	1,607,000	0	1,607,000	79.459%	44.793%	1,276,898
2033	1,597,200	0	1,597,200	78.178%	42.458%	1,248,664
2034	1,587,500	0	1,587,500	76.919%	40.245%	1,221,086
2035	1,577,900	0	1,577,900	75.680%	38.147%	1,194,147
2036	1,568,300	0	1,568,300	74.460%	36.158%	1,167,760
2037	1,558,800	0	1,558,800	73.261%	34.273%	1,141,986
2038	1,549,300	0	1,549,300	72.080%	32.486%	1,116,740
2039	1,539,900	0	1,539,900	70.919%	30.793%	1,092,082
2040	1,530,500	0	1,530,500	69.776%	29.187%	1,067,928
2041	1,521,200	0	1,521,200	68.652%	27.666%	1,044,338
2042	1,512,000	0	1,512,000	67.546%	26.223%	1,021,298
2043	1,502,800	0	1,502,800	66.458%	24.856%	998,729
2044	1,493,700	0	1,493,700	65.387%	23.560%	976,688
2045	1,484,600	0	1,484,600	64.334%	22.332%	955,098
2046	1,475,600	0	1,475,600	63.297%	21.168%	934,014
2047	1,466,600	0	1,466,600	62.277%	20.064%	913,361
2048	1,457,700	0	1,457,700	61.274%	19.018%	893,192
2049	1,448,800	0	1,448,800	60.287%	18.027%	873,436
2050	1,440,000	0	1,440,000	59.316%	17.087%	854,144
2051	1,431,300	0	1,431,300	58.360%	16.196%	835,306
2052	1,422,600	0	1,422,600	57.420%	15.352%	816,853
Total	55,329,600	38,000,000	93,329,600			72,338,592
First 20 Years	33,053,000	38,000,000	71,053,000			57,945,384

Footnotes:

- (1) Year 2018 = Client data
Years 2019 and Subsequent = Prior Col (1) x Exhibit 8.1 Average of Col (4)
- (2) Exhibit 6.1 Col (3)
- (3) Col (1) + Col (2)
- (4) Exhibit 10.1 Col (4)
- (5) Exhibit 10.2 Col (4)
- (6) [Col (1) x Col (4)] + [Col (2) x Col (5)]

West Virginia Department of Environmental Protection Office of Special Reclamation

Projected Investment Rates
Special Reclamation Fund

June 30, 2017

Fiscal Year Ending 6/30	Investment Rates				Investable Amounts and Returns		
	Money Market	Short Term Bond	SRF Blend	Discount Factors	Investable Amounts	Investment Income	Discounted Income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2018	0.400%	1.120%	1.048%	98.963%	\$46,180,372	\$483,970	\$478,951
2019	0.475%	1.330%	1.245%	97.746%	29,882,244	371,885	363,504
2020	0.521%	1.460%	1.366%	96.429%	16,190,207	221,181	213,283
2021	0.573%	1.605%	1.502%	95.002%	4,741,224	71,205	67,646
2022	0.625%	1.750%	1.638%	93.472%	3,133,493	51,311	47,961
2023	0.625%	1.750%	1.638%	91.966%	7,536,011	123,402	113,488
2024	0.625%	1.750%	1.638%	90.484%	10,730,028	175,704	158,984
2025	0.625%	1.750%	1.638%	89.026%	12,718,644	208,268	185,413
2026	0.625%	1.750%	1.638%	87.592%	14,861,801	243,362	213,166
2027	0.625%	1.750%	1.638%	86.181%	17,986,267	294,525	253,824
2028	0.625%	1.750%	1.638%	84.792%	20,819,984	340,927	289,080
2029	0.625%	1.750%	1.638%	83.426%	23,374,947	382,765	319,326
2030	0.625%	1.750%	1.638%	82.082%	25,695,140	420,758	345,367
2031	0.625%	1.750%	1.638%	80.760%	27,823,444	455,609	367,948
2032	0.625%	1.750%	1.638%	79.459%	29,763,181	487,372	387,259
2033	0.625%	1.750%	1.638%	78.178%	31,543,811	516,530	403,814
2034	0.625%	1.750%	1.638%	76.919%	33,219,301	543,966	418,412
2035	0.625%	1.750%	1.638%	75.680%	34,727,442	568,662	430,361
2036	0.625%	1.750%	1.638%	74.460%	36,004,125	589,568	438,993
2037	0.625%	1.750%	1.638%	73.261%	37,054,342	606,765	444,520
2038	0.625%	1.750%	1.638%	72.080%	37,884,295	620,355	447,154
2039	0.625%	1.750%	1.638%	70.919%	38,486,272	630,213	446,940
2040	0.625%	1.750%	1.638%	69.776%	38,889,478	636,815	444,347
2041	0.625%	1.750%	1.638%	68.652%	39,105,259	640,349	439,614
2042	0.625%	1.750%	1.638%	67.546%	39,089,609	640,092	432,358
2043	0.625%	1.750%	1.638%	66.458%	38,820,724	635,689	422,466
2044	0.625%	1.750%	1.638%	65.387%	38,298,868	627,144	410,072
2045	0.625%	1.750%	1.638%	64.334%	37,522,121	614,425	395,282
2046	0.625%	1.750%	1.638%	63.297%	36,471,776	597,225	378,027
2047	0.625%	1.750%	1.638%	62.277%	35,132,619	575,297	358,280
2048	0.625%	1.750%	1.638%	61.274%	33,493,309	548,453	336,059
2049	0.625%	1.750%	1.638%	60.287%	31,567,963	516,925	311,638
2050	0.625%	1.750%	1.638%	59.316%	29,359,963	480,769	285,171
2051	0.625%	1.750%	1.638%	58.360%	26,828,938	439,324	256,389
2052	0.625%	1.750%	1.638%	57.420%	23,951,797	392,211	225,206
Total					988,888,998	15,753,021	11,530,303
First 20 Years					463,986,008	7,157,734	5,941,299

Footnotes:

- (1) Year 2018 = Client data. Years 2019 and Subsequent = [Year 2017 Col (1) / Year 2017 Col (2)] x Col (2)
- (2) Based on West Virginia Short Term Bond Pool Return and US Treasury Returns in Summer of 2017
- (3) [Col (1) x 10%] + [[Col (2) x 90%]
- (4) Year 2018 = 1 / (1 + Col (3)). Years 2019 and Subsequent = Prior Col (3) x [1 / (1 + Col (3))].
- (5) Maximum of Zero and {Exhibit 6.1 Col (4) + 0.5 x [Sum of Exhibit 7.1 Col (1) through Exhibit 7.1 Col (3) - Exhibit 6.1 Col (1)]}
- (6) Col (3) x Col (5)
- (7) Col (4) x Col (6)

West Virginia Department of Environmental Protection Office of Special Reclamation

Projected Investment Rates
Special Reclamation Water Trust Fund

June 30, 2017

Fiscal Year Ending 6/30	Investment Rates				Investable Amounts and Returns		
	Short Term Yield	IMB Yield	SRWTF Selection	Discount Factors	Investable Amounts	Investment Income	Discounted Income
	(1)	(2)	(3)	(4)	(5)	(6)	(7)
2018	1.120%	5.500%	5.500%	94.787%	\$99,179,477	\$5,454,871	\$5,170,494
2019	1.330%	5.500%	5.500%	89.845%	111,422,988	6,128,264	5,505,954
2020	1.460%	5.500%	5.500%	85.161%	115,626,513	6,359,458	5,415,801
2021	1.605%	5.500%	5.500%	80.722%	109,624,898	6,029,369	4,867,008
2022	1.750%	5.500%	5.500%	76.513%	85,213,194	4,686,726	3,585,975
2023	1.750%	5.500%	5.500%	72.525%	61,963,906	3,408,015	2,471,649
2024	1.750%	5.500%	5.500%	68.744%	53,219,225	2,927,057	2,012,167
2025	1.750%	5.500%	5.500%	65.160%	48,244,638	2,653,455	1,728,988
2026	1.750%	5.500%	5.500%	61.763%	46,383,647	2,551,101	1,575,634
2027	1.750%	5.500%	5.500%	58.543%	45,597,673	2,507,872	1,468,185
2028	1.750%	5.500%	5.500%	55.491%	44,333,627	2,438,349	1,353,066
2029	1.750%	5.500%	5.500%	52.598%	42,665,079	2,346,579	1,234,257
2030	1.750%	5.500%	5.500%	49.856%	40,690,536	2,237,979	1,115,769
2031	1.750%	5.500%	5.500%	47.257%	38,448,455	2,114,665	999,326
2032	1.750%	5.500%	5.500%	44.793%	35,966,194	1,978,141	886,075
2033	1.750%	5.500%	5.500%	42.458%	33,262,172	1,829,419	776,737
2034	1.750%	5.500%	5.500%	40.245%	30,378,180	1,670,800	672,408
2035	1.750%	5.500%	5.500%	38.147%	27,249,906	1,498,745	571,720
2036	1.750%	5.500%	5.500%	36.158%	23,822,192	1,310,221	473,748
2037	1.750%	5.500%	5.500%	34.273%	20,089,741	1,104,936	378,693
2038	1.750%	5.500%	5.500%	32.486%	16,060,055	883,303	286,951
2039	1.750%	5.500%	5.500%	30.793%	11,737,871	645,583	198,792
2040	1.750%	5.500%	5.500%	29.187%	7,126,716	391,969	114,405
2041	1.750%	5.500%	5.500%	27.666%	2,234,135	122,877	33,995
2042	1.750%	5.500%	5.500%	26.223%	0	0	0
2043	1.750%	5.500%	5.500%	24.856%	0	0	0
2044	1.750%	5.500%	5.500%	23.560%	0	0	0
2045	1.750%	5.500%	5.500%	22.332%	0	0	0
2046	1.750%	5.500%	5.500%	21.168%	0	0	0
2047	1.750%	5.500%	5.500%	20.064%	0	0	0
2048	1.750%	5.500%	5.500%	19.018%	0	0	0
2049	1.750%	5.500%	5.500%	18.027%	0	0	0
2050	1.750%	5.500%	5.500%	17.087%	0	0	0
2051	1.750%	5.500%	5.500%	16.196%	0	0	0
2052	1.750%	5.500%	5.500%	15.352%	0	0	0
Total					1,150,541,015	63,279,756	42,897,797
First 20 Years					1,113,382,239	61,236,023	42,263,654

Footnotes:

- (1) Exhibit 10.1 Col (2)
- (2) Year 2018 = Client data. Years 2019 and Subsequent = [Year 2017 Col (2) / Year 2017 Col (1)] x Col (1). Capped at 5.5%.
- (3) Selection based on Col (2) and client recommendation
- (4) Year 2018 = $1 / (1 + \text{Col (3)})$. Years 2019 and Subsequent = $\text{Prior Col (3)} \times [1 / (1 + \text{Col (3)})]$
- (5) Maximum of Zero and {Exhibit 6.2 Col (4) + 0.5 x [Sum of Exhibit 7.2 Col (1) through Exhibit 7.2 Col (3) - Exhibit 6.2 Col (1)]}
- (6) Col (3) x Col (5)
- (7) Col (4) x Col (6)

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Fund

June 30, 2017

Fiscal Year Ending 6/30	Undiscounted					Discounted				
	Land (1)	Water Capital (2)	Water Treatment (3)	Administrative (4)	Total (5)	Land (6)	Water Capital (7)	Water Treatment (8)	Administrative (9)	Total (10)
Prior	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2018	5,158,064	18,818,085	4,888,589	3,364,044	32,228,782	5,104,568	18,622,917	4,837,888	3,329,154	31,894,527
2019	5,287,015	19,288,537		3,464,965	28,040,517	5,167,868	18,853,853		3,386,879	27,408,600
2020	5,680,905	19,770,750		3,568,914	29,020,570	5,478,043	19,064,748		3,441,470	27,984,261
2021	8,618,319	20,265,019		3,675,981	32,559,320	8,187,601	19,252,233		3,492,267	30,932,100
2022	11,452,859	20,771,645		3,786,261	36,010,765	10,705,181	19,415,608		3,539,082	33,659,871
2023	5,555,050			3,899,849	9,454,898	5,108,743			3,586,525	8,695,269
2024	5,359,588			4,016,844	9,376,432	4,849,574			3,634,604	8,484,178
2025	6,729,941			4,137,350	10,867,291	5,991,416			3,683,328	9,674,744
2026	3,910,500			4,261,470	8,171,970	3,425,283			3,732,705	7,157,988
2027	3,688,046			4,389,314	8,077,360	3,178,385			3,782,744	6,961,129
2028	3,461,174			4,520,994	7,982,168	2,934,808			3,833,453	6,768,261
2029	3,219,483			4,656,623	7,876,107	2,685,891			3,884,842	6,570,734
2030	3,002,253			4,796,322	7,798,575	2,464,312			3,936,921	6,401,232
2031	2,750,202			4,940,212	7,690,414	2,221,053			3,989,697	6,210,750
2032	2,538,176			5,088,418	7,626,594	2,016,797			4,043,181	6,059,977
2033	2,326,475			5,241,071	7,567,545	1,818,799			4,097,381	5,916,181
2034	2,075,043			5,398,303	7,473,345	1,596,098			4,152,309	5,748,407
2035	1,950,903			5,560,252	7,511,155	1,476,434			4,207,973	5,684,407
2036	1,786,129			5,727,059	7,513,188	1,329,956			4,264,383	5,594,338
2037	1,646,197			5,898,871	7,545,068	1,206,014			4,321,549	5,527,563
2038	1,455,085			6,075,837	7,530,922	1,048,829			4,379,481	5,428,310
2039	1,338,683			6,258,112	7,596,796	949,381			4,438,190	5,387,571
2040	1,140,270			6,445,856	7,586,126	795,640			4,497,686	5,293,326
2041	986,900			6,639,231	7,626,131	677,529			4,557,980	5,235,509
2042	874,929			6,838,408	7,713,338	590,981			4,619,082	5,210,063
2043	763,428			7,043,561	7,806,989	507,358			4,681,003	5,188,361
2044	660,604			7,254,867	7,915,471	431,950			4,743,754	5,175,704
2045	555,681			7,472,513	8,028,195	357,491			4,807,346	5,164,837
2046	483,183			7,696,689	8,179,872	305,841			4,871,791	5,177,633
2047	395,460			7,927,590	8,323,049	246,282			4,937,100	5,183,382
2048	329,596			8,165,417	8,495,013	201,957			5,003,284	5,205,241
2049	225,186			8,410,380	8,635,566	135,758			5,070,356	5,206,113
2050	152,268			8,662,691	8,814,959	90,318			5,138,326	5,228,645
2051	119,494			8,922,572	9,042,066	69,737			5,207,208	5,276,945
2052	86,922			9,190,249	9,277,171	49,910			5,277,013	5,326,923
Total	95,764,012	98,914,036	4,888,589	203,397,090	402,963,727	83,405,786	95,209,358	4,837,888	148,570,046	332,023,079

Footnotes:

- (1) Exhibit 12.1 Col (8)
- (2) Exhibit 12.2 Col (8)
- (3) Exhibit 12.3 Col (8)
- (4) Exhibit 16.1 Col (1)
- (5) Sum of Col (1) through Col (4)

- (6) Exhibit 12.1 Col (11)
- (7) Exhibit 12.2 Col (11)
- (8) Exhibit 12.3 Col (11)
- (9) Exhibit 16.1 Col (3)
- (10) Sum of Col (6) through Col (9)

West Virginia Department of Environmental Protection Office of Special Reclamation

Expenditures
Special Reclamation Water Trust Fund

June 30, 2017

Fiscal Year Ending 6/30	Undiscounted					Discounted				
	Land (1)	Water Capital (2)	Water Treatment (3)	Administrative (4)	Total (5)	Land (6)	Water Capital (7)	Water Treatment (8)	Administrative (9)	Total (10)
Prior		\$0	\$0		\$0		\$0	\$0		\$0
2018		0	0		0		0	0		0
2019		4,847,014	5,471,726		10,318,740		4,354,811	4,916,086		9,270,897
2020		11,460,581	5,616,231		17,076,812		9,759,987	4,782,859		14,542,847
2021		14,775,606	5,888,710		20,664,316		11,927,117	4,753,465		16,680,582
2022		18,069,328	6,250,377		24,319,705		13,825,464	4,782,378		18,607,842
2023		18,154,423	6,611,732		24,766,154		13,166,419	4,795,131		17,961,550
2024		12,756,312	6,973,590		19,729,902		8,769,158	4,793,903		13,563,061
2025		7,471,852	7,841,399		15,313,250		4,868,650	5,109,446		9,978,097
2026		4,401,874	7,745,883		12,147,757		2,718,726	4,784,084		7,502,810
2027		4,156,099	8,083,063		12,239,162		2,433,108	4,732,072		7,165,180
2028		3,898,321	8,418,705		12,317,026		2,163,219	4,671,628		6,834,847
2029		3,634,686	8,613,313		12,247,999		1,911,778	4,530,443		6,442,221
2030		3,410,748	8,803,924		12,214,672		1,700,465	4,389,290		6,089,755
2031		3,137,440	8,983,438		12,120,878		1,482,658	4,245,297		5,727,955
2032		2,903,681	9,153,449		12,057,130		1,300,655	4,100,132		5,400,787
2033		2,663,515	9,312,638		11,976,153		1,130,878	3,953,970		5,084,848
2034		2,376,791	9,459,169		11,835,960		956,531	3,806,810		4,763,341
2035		2,234,288	9,599,027		11,833,314		852,305	3,661,701		4,514,006
2036		2,049,615	9,732,303		11,781,918		741,098	3,518,997		4,260,095
2037		1,895,894	9,859,132		11,755,026		649,778	3,379,010		4,028,788
2038		1,670,169	9,977,550		11,647,719		542,574	3,241,322		3,783,896
2039		1,536,637	10,090,528		11,627,165		473,170	3,107,132		3,580,302
2040		1,301,689	10,194,655		11,496,345		379,928	2,975,541		3,355,469
2041		1,116,439	10,291,049		11,407,489		308,870	2,847,086		3,155,957
2042		989,870	10,382,760		11,372,630		259,577	2,722,709		2,982,287
2043		856,057	10,468,814		11,324,871		212,784	2,602,157		2,814,941
2044		737,002	10,550,347		11,287,349		173,641	2,485,709		2,659,350
2045		613,121	10,626,928		11,240,049		136,923	2,373,225		2,510,148
2046		528,136	10,699,949		11,228,085		111,796	2,264,959		2,376,755
2047		438,424	10,769,672		11,208,096		87,967	2,160,870		2,248,837
2048		358,369	10,836,274		11,194,643		68,156	2,060,885		2,129,041
2049		241,217	10,898,502		11,139,719		43,484	1,964,663		2,008,147
2050		161,381	10,957,585		11,118,966		27,575	1,872,336		1,899,911
2051		117,089	11,014,848		11,131,937		18,964	1,784,000		1,802,964
2052		76,579	11,070,390		11,146,969		11,756	1,699,522		1,711,279
Total		135,040,248	311,247,658		446,287,906		87,569,971	119,868,822		207,438,793

Footnotes:

- (1)
- (2) Exhibit 12.4 Col (8)
- (3) Exhibit 12.5 Col (8)
- (4)
- (5) Sum of Col (1) through Col (4)

- (6)
- (7) Exhibit 12.4 Col (11)
- (8) Exhibit 12.5 Col (11)
- (9)
- (10) Sum of Col (6) through Col (9)

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures
Special Reclamation Fund
Land
June 30, 2017

Fiscal Year Ending 6/30	Nominal Cost					Inflated Cost			Discounted Cost		
	Current	Payout Pattern	Current	Future	Total	Current	Future	Total	Current	Future	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Prior	\$22,133,065	20%									
2018	3,340,797	20%	\$5,094,772	\$0	\$5,094,772	\$5,158,064	\$0	\$5,158,064	\$5,104,568	\$0	\$5,104,568
2019	0	20%	5,094,772	0	5,094,772	5,287,015	0	5,287,015	5,167,868	0	5,167,868
2020	1,230,236	20%	5,340,819	0	5,340,819	5,680,905	0	5,680,905	5,478,043	0	5,478,043
2021	334,485	20%	5,407,716	2,497,050	7,904,766	5,895,864	2,722,456	8,618,319	5,601,206	2,586,395	8,187,601
2022			5,407,716	4,840,695	10,248,411	6,043,260	5,409,599	11,452,859	5,648,738	5,056,444	10,705,181
2023			312,944	4,536,664	4,849,609	358,466	5,196,584	5,555,050	329,666	4,779,077	5,108,743
2024			312,944	4,251,903	4,564,848	367,428	4,992,160	5,359,588	332,464	4,517,110	4,849,574
2025			66,897	5,525,298	5,592,194	80,507	6,649,434	6,729,941	71,673	5,919,743	5,991,416
2026				3,170,147	3,170,147		3,910,500	3,910,500		3,425,283	3,425,283
2027				2,916,887	2,916,887		3,688,046	3,688,046		3,178,385	3,178,385
2028				2,670,686	2,670,686		3,461,174	3,461,174		2,934,808	2,934,808
2029				2,423,604	2,423,604		3,219,483	3,219,483		2,685,891	2,685,891
2030				2,204,951	2,204,951		3,002,253	3,002,253		2,464,312	2,464,312
2031				1,970,573	1,970,573		2,750,202	2,750,202		2,221,053	2,221,053
2032				1,774,295	1,774,295		2,538,176	2,538,176		2,016,797	2,016,797
2033				1,586,640	1,586,640		2,326,475	2,326,475		1,818,799	1,818,799
2034				1,380,649	1,380,649		2,075,043	2,075,043		1,596,098	1,596,098
2035				1,266,391	1,266,391		1,950,903	1,950,903		1,476,434	1,476,434
2036				1,131,153	1,131,153		1,786,129	1,786,129		1,329,956	1,329,956
2037				1,017,107	1,017,107		1,646,197	1,646,197		1,206,014	1,206,014
2038				877,100	877,100		1,455,085	1,455,085		1,048,829	1,048,829
2039				787,254	787,254		1,338,683	1,338,683		949,381	949,381
2040				654,216	654,216		1,140,270	1,140,270		795,640	795,640
2041				552,411	552,411		986,900	986,900		677,529	677,529
2042				477,791	477,791		874,929	874,929		590,981	590,981
2043				406,733	406,733		763,428	763,428		507,358	507,358
2044				343,367	343,367		660,604	660,604		431,950	431,950
2045				281,786	281,786		555,681	555,681		357,491	357,491
2046				239,046	239,046		483,183	483,183		305,841	305,841
2047				190,875	190,875		395,460	395,460		246,282	246,282
2048				155,204	155,204		329,596	329,596		201,957	201,957
2049				103,452	103,452		225,186	225,186		135,758	135,758
2050				68,247	68,247		152,268	152,268		90,318	90,318
2051				52,251	52,251		119,494	119,494		69,737	69,737
2052				37,082	37,082		86,922	86,922		49,910	49,910
Total	27,038,581		27,038,581	50,391,508	77,430,089	28,871,509	66,892,502	95,764,012	27,734,224	55,671,562	83,405,786
First 20 Yrs	27,038,581		27,038,581	45,164,693	72,203,274	28,871,509	57,324,813	86,196,322	27,734,224	49,212,600	76,946,824

Footnotes:

- (1) Client Data. Forfeitures occurring on June 30, 2017 and prior.
- (2) Selection
- (3) Col (1) x Col (2) payout pattern
- (4) Exhibit 27.1 Col (8)
- (5) Col (3) + Col (4)
- (6) Col (3) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (7) Col (4) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (8) Col (6) + Col (7)
- (9) Col (6) x Exhibit 10.1 Col (4)
- (10) Col (7) x Exhibit 10.1 Col (4)
- (11) Col (9) + Col (10)

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures
 Special Reclamation Fund
 Water Capital
 June 30, 2017

Fiscal Year Ending 6/30	Nominal Cost				Inflated Cost			Discounted Cost			
	Current (1)	Payout Pattern (2)	Current (3)	Future (4)	Total (5)	Current (6)	Future (7)	Total (8)	Current (9)	Future (10)	Total (11)
Prior	\$47,654,558	20%									
2018	45,281,338	20%	\$18,587,179	\$0	\$18,587,179	\$18,818,085	\$0	\$18,818,085	\$18,622,917	\$0	\$18,622,917
2019	0	20%	18,587,179	0	18,587,179	19,288,537	0	19,288,537	18,853,853	0	18,853,853
2020	0	20%	18,587,179	0	18,587,179	19,770,750	0	19,770,750	19,064,748	0	19,064,748
2021	0	20%	18,587,179	0	18,587,179	20,265,019	0	20,265,019	19,252,233	0	19,252,233
2022			18,587,179	0	18,587,179	20,771,645	0	20,771,645	19,415,608	0	19,415,608
2023											
2024											
2025											
2026											
2027											
2028											
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2048											
2049											
2050											
2051											
2052											
Total	92,935,896		92,935,896	0	92,935,896	98,914,036	0	98,914,036	95,209,358	0	95,209,358
Yrs 2018 & Prior	92,935,896		18,587,179	0	18,587,179	18,818,085	0	18,818,085	18,622,917	0	18,622,917
Yrs 2019 - 2037	0		74,348,717	0	74,348,717	80,095,951	0	80,095,951	76,586,442	0	76,586,442
Yrs 2019 - 2052	0		74,348,717	0	74,348,717	80,095,951	0	80,095,951	76,586,442	0	76,586,442

Footnotes:

- (1) Client Data. Forfeitures occurring on June 30, 2017 and prior.
- (2) Selection of amount of Current Expenditures to be paid in a given year
- (3) Col (1) x Col (2) payout pattern
- (4) No future water costs in SRF
- (5) Col (3) + Col (4)
- (6) Col (3) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (7) Col (4) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (8) Col (6) + Col (7)
- (9) Col (6) x Exhibit 10.1 Col (4)
- (10) Col (7) x Exhibit 10.1 Col (4)
- (11) Col (9) + Col (10)

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures
Special Reclamation Fund
Water Treatment
June 30, 2017

Fiscal Year Ending 6/30	Nominal Cost				Inflated Cost			Discounted Cost			
	Current (1)	Payout Pattern (2)	Current (3)	Future (4)	Total (5)	Current (6)	Future (7)	Total (8)	Current (9)	Future (10)	Total (11)
Prior	\$0	20%	\$4,828,604								
2018	4,828,604	100%	\$4,828,604	\$0	\$4,828,604	\$4,888,589	\$0	\$4,888,589	\$4,837,888	\$0	\$4,837,888
2019		Covered by SRWTF post 2018									
2020											
2021											
2022											
2023											
2024											
2025											
2026											
2027											
2028											
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2048											
2049											
2050											
2051											
2052											
Total	4,828,604		4,828,604	0	4,828,604	4,888,589	0	4,888,589	4,837,888	0	4,837,888
Yrs 2018 & Prior	4,828,604		4,828,604	0	4,828,604	4,888,589	0	4,888,589	4,837,888	0	4,837,888
Yrs 2019 - 2037	0		0	0	0	0	0	0	0	0	0
Yrs 2019 - 2052	0		0	0	0	0	0	0	0	0	0

Footnotes:

- (1) Client Data. Forfeitures occurring on June 30, 2017 and prior.
- (2) Selection of amount of Current Expenditures to be paid in a given year
- (3) Col (1) x Col (2)
- (4) No future water costs in SRF
- (5) Col (3) + Col (4)
- (6) Col (3) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (7) Col (4) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (8) Col (6) + Col (7)
- (9) Col (6) x Exhibit 10.1 Col (4)
- (10) Col (7) x Exhibit 10.1 Col (4)
- (11) Col (9) + Col (10)

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures
Special Reclamation Water Trust Fund
Water Capital
June 30, 2017

Fiscal Year Ending 6/30	Nominal Cost					Inflated Cost			Discounted Cost		
	Current	Payout Pattern	Current	Future	Total	Current	Future	Total	Current	Future	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Prior	\$0	20%									
2018	0	20%	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	23,353,850	20%	4,670,770	0	4,670,770	4,847,014	0	4,847,014	4,354,811	0	4,354,811
2020	30,518,632	20%	10,774,496	0	10,774,496	11,460,581	0	11,460,581	9,759,987	0	9,759,987
2021	0	20%	10,774,496	2,777,766	13,552,262	11,747,096	3,028,511	14,775,606	9,482,452	2,444,665	11,927,117
2022	0		10,774,496	5,394,558	16,169,054	12,040,773	6,028,555	18,069,328	9,212,809	4,612,655	13,825,464
2023	0		10,774,496	5,074,479	15,848,975	12,341,792	5,812,630	18,154,423	8,950,833	4,215,586	13,166,419
2024	0		6,103,726	4,761,030	10,864,756	7,166,386	5,589,926	12,756,312	4,926,437	3,842,721	8,769,158
2025	0			6,208,680	6,208,680	0	7,471,852	7,471,852	0	4,868,650	4,868,650
2026	0			3,568,492	3,568,492	0	4,401,874	4,401,874	0	2,718,726	2,718,726
2027	0			3,287,072	3,287,072	0	4,156,099	4,156,099	0	2,433,108	2,433,108
2028	0			3,007,994	3,007,994	0	3,898,321	3,898,321	0	2,163,219	2,163,219
2029	0			2,736,166	2,736,166	0	3,634,686	3,634,686	0	1,911,778	1,911,778
2030	0			2,504,963	2,504,963	0	3,410,748	3,410,748	0	1,700,465	1,700,465
2031	0			2,248,036	2,248,036	0	3,137,440	3,137,440	0	1,482,658	1,482,658
2032	0			2,029,798	2,029,798	0	2,903,681	2,903,681	0	1,300,655	1,300,655
2033	0			1,816,499	1,816,499	0	2,663,515	2,663,515	0	1,130,878	1,130,878
2034	0			1,581,420	1,581,420	0	2,376,791	2,376,791	0	956,531	956,531
2035	0			1,450,345	1,450,345	0	2,234,288	2,234,288	0	852,305	852,305
2036	0			1,298,018	1,298,018	0	2,049,615	2,049,615	0	741,098	741,098
2037	0			1,171,382	1,171,382	0	1,895,894	1,895,894	0	649,778	649,778
2038	0			1,006,749	1,006,749	0	1,670,169	1,670,169	0	542,574	542,574
2039	0			903,666	903,666	0	1,536,637	1,536,637	0	473,170	473,170
2040	0			746,828	746,828	0	1,301,689	1,301,689	0	379,928	379,928
2041	0			624,920	624,920	0	1,116,439	1,116,439	0	308,870	308,870
2042	0			540,560	540,560	0	989,870	989,870	0	259,577	259,577
2043	0			456,083	456,083	0	856,057	856,057	0	212,784	212,784
2044	0			383,077	383,077	0	737,002	737,002	0	173,641	173,641
2045	0			310,914	310,914	0	613,121	613,121	0	136,923	136,923
2046	0			261,286	261,286	0	528,136	528,136	0	111,796	111,796
2047	0			211,612	211,612	0	438,424	438,424	0	87,967	87,967
2048	0			168,753	168,753	0	358,369	358,369	0	68,156	68,156
2049	0			110,817	110,817	0	241,217	241,217	0	43,484	43,484
2050	0			72,331	72,331	0	161,381	161,381	0	27,575	27,575
2051	0			51,200	51,200	0	117,089	117,089	0	18,964	18,964
2052	0			32,669	32,669	0	76,579	76,579	0	11,756	11,756
Total	53,872,482		53,872,482	56,798,163	110,670,645	59,603,642	75,436,606	135,040,248	46,687,331	40,882,640	87,569,971
Yrs 2019 - 2037	53,872,482		53,872,482	50,916,699	104,789,180	59,603,642	64,694,426	124,298,068	46,687,331	38,025,474	84,712,805
Yrs 2019 - 2052	53,872,482		53,872,482	56,798,163	110,670,645	59,603,642	75,436,606	135,040,248	46,687,331	40,882,640	87,569,971

Footnotes:

- (1) Client Data. Forfeitures occurring on June 30, 2017 and prior.
- (2) Selection of amount of Current Expenditures to be paid in a given year
- (3) Col (1) x Col (2) payout pattern
- (4) Exhibit 29.1 Col (8)
- (5) Col (3) + Col (4)
- (6) Col (3) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (7) Col (4) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (8) Col (6) + Col (7)
- (9) Col (6) x Exhibit 10.2 Col (4)
- (10) Col (7) x Exhibit 10.2 Col (4)
- (11) Col (9) + Col (10)

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures
Special Reclamation Water Trust Fund
Water Treatment
June 30, 2017

Fiscal Year Ending 6/30	Nominal Cost					Inflated Cost			Discounted Cost		
	Current	Deferred Cost	Current	Future	Total	Current	Future	Total	Current	Future	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)
Prior	\$0	\$0									
2018	0	0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0	\$0
2019	5,272,767	0	5,272,767	0	5,272,767	5,471,726	0	5,471,726	4,916,086	0	4,916,086
2020	5,280,017	0	5,280,017	0	5,280,017	5,616,231	0	5,616,231	4,782,859	0	4,782,859
2021	5,301,767	0	5,301,767	99,388	5,401,155	5,780,350	108,359	5,888,710	4,665,996	87,469	4,753,465
2022	5,301,767	0	5,301,767	291,284	5,593,051	5,924,859	325,518	6,250,377	4,533,313	249,065	4,782,378
2023	5,301,767	0	5,301,767	470,335	5,772,102	6,072,980	538,751	6,611,732	4,404,404	390,727	4,795,131
2024	5,301,767	0	5,301,767	637,753	5,939,519	6,224,805	748,785	6,973,590	4,279,160	514,743	4,793,903
2025	5,301,767	0	5,301,767	1,213,985	6,515,752	6,380,425	1,460,974	7,841,399	4,157,478	951,969	5,109,446
2026	5,301,767	0	5,301,767	977,632	6,279,399	6,539,936	1,205,947	7,745,883	4,039,256	744,828	4,784,084
2027	5,301,767	0	5,301,767	1,091,153	6,392,920	6,703,434	1,379,629	8,083,063	3,924,395	807,677	4,732,072
2028	5,301,767	0	5,301,767	1,194,214	6,495,980	6,871,020	1,547,685	8,418,705	3,812,801	858,827	4,671,628
2029	5,196,312	0	5,196,312	1,287,730	6,484,041	6,902,710	1,710,603	8,613,313	3,630,698	899,745	4,530,443
2030	5,092,820	0	5,092,820	1,373,065	6,465,885	6,934,365	1,869,560	8,803,924	3,457,202	932,089	4,389,290
2031	4,990,964	0	4,990,964	1,445,841	6,436,805	6,965,569	2,017,868	8,983,438	3,291,715	953,583	4,245,297
2032	4,891,145	0	4,891,145	1,507,511	6,398,656	6,996,914	2,156,535	9,153,449	3,134,149	965,983	4,100,132
2033	4,793,322	0	4,793,322	1,557,835	6,351,156	7,028,400	2,284,238	9,312,638	2,984,126	969,844	3,953,970
2034	4,697,455	0	4,697,455	1,596,291	6,293,746	7,060,028	2,399,141	9,459,169	2,841,284	965,526	3,806,810
2035	4,603,506	0	4,603,506	1,627,520	6,231,026	7,091,798	2,507,228	9,599,027	2,705,279	956,422	3,661,701
2036	4,511,436	0	4,511,436	1,652,017	6,163,453	7,123,711	2,608,591	9,732,303	2,575,785	943,212	3,518,997
2037	4,421,207	0	4,421,207	1,670,279	6,091,487	7,155,768	2,703,364	9,859,132	2,452,489	926,521	3,379,010
2038	4,332,783	0	4,332,783	1,681,511	6,014,294	7,187,969	2,789,581	9,977,550	2,335,095	906,228	3,241,322
2039	4,246,128	0	4,246,128	1,687,917	5,934,044	7,220,315	2,870,213	10,090,528	2,223,320	883,812	3,107,132
2040	4,161,205	0	4,161,205	1,687,848	5,849,053	7,252,806	2,941,849	10,194,655	2,116,896	858,645	2,975,541
2041	4,077,981	0	4,077,981	1,682,369	5,760,349	7,285,444	3,005,606	10,291,049	2,015,566	831,520	2,847,086
2042	3,996,421	0	3,996,421	1,673,514	5,669,935	7,318,228	3,064,531	10,382,760	1,919,086	803,623	2,722,709
2043	3,916,493	0	3,916,493	1,660,999	5,577,491	7,351,160	3,117,653	10,468,814	1,827,225	774,933	2,602,157
2044	3,838,163	0	3,838,163	1,645,671	5,483,834	7,384,241	3,166,107	10,550,347	1,739,760	745,949	2,485,709
2045	3,761,400	0	3,761,400	1,627,517	5,388,916	7,417,470	3,209,459	10,626,928	1,656,483	716,742	2,373,225
2046	3,686,172	0	3,686,172	1,607,433	5,293,605	7,450,848	3,249,100	10,699,949	1,577,191	687,768	2,264,959
2047	3,612,448	0	3,612,448	1,585,697	5,198,146	7,484,377	3,285,295	10,769,672	1,501,695	659,175	2,160,870
2048	3,540,199	0	3,540,199	1,562,525	5,102,724	7,518,057	3,318,217	10,836,274	1,429,813	631,071	2,060,885
2049	3,469,395	0	3,469,395	1,537,460	5,006,856	7,551,888	3,346,614	10,898,502	1,361,372	603,291	1,964,663
2050	3,400,007	0	3,400,007	1,511,211	4,911,218	7,585,872	3,371,714	10,957,585	1,296,207	576,129	1,872,336
2051	3,332,007	0	3,332,007	1,484,464	4,816,472	7,620,008	3,394,840	11,014,848	1,234,161	549,839	1,784,000
2052	3,265,367	0	3,265,367	1,457,324	4,722,691	7,654,298	3,416,092	11,070,390	1,175,085	524,437	1,699,522
Total	152,801,255	0	152,801,255	43,787,291	196,588,546	236,128,013	75,119,645	311,247,658	95,997,429	23,871,393	119,868,822
Yrs 2019 - 2037	96,165,085	0	96,165,085	19,693,831	115,858,916	124,845,031	27,572,776	152,417,808	70,588,473	13,118,230	83,706,703
Yrs 2019 - 2052	152,801,255	0	152,801,255	43,787,291	196,588,546	236,128,013	75,119,645	311,247,658	95,997,429	23,871,393	119,868,822

Footnotes:

- (1) Client Data for forfeitures occurring on June 30, 2017 and prior. Reflects the compounding effect of the selected annual attenuation rate of 98% after 10 years.
- (2) Exhibit 12.3 Col (1) deferred payments as of 6/30/2017. Note that 2018 and Prior paid in SRF.
- (3) Col (1) + Col (2)
- (4) Exhibit 31.1 Col (16)
- (5) Col (3) + Col (4)
- (6) Col (3) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (7) Col (4) x 2.5% annual inflation from Exhibit 15.1 Row (1)
- (8) Col (6) + Col (7)
- (9) Col (6) x Exhibit 10.2 Col (4)
- (10) Col (7) x Exhibit 10.2 Col (4)
- (11) Col (9) + Col (10)

West Virginia Department of Environmental Protection Office of Special Reclamation

Average Reclamation Expenditures
Summary

June 30, 2017

Mine Type	Land (1)	Water Capital (2)	Water Treatment (3)
Surface	\$3,200.00	\$4,500.00	\$140.00
Underground	13,800.00	14,400.00	260.00
Other	9,100.00	5,200.00	200.00

Footnotes:

- (1) Exhibit 14.1 Row (6)
- (2) Exhibit 14.2 Row (12)
- (3) Exhibit 14.3 Row (9)

West Virginia Department of Environmental Protection Office of Special Reclamation

Average Reclamation Expenditures
Summary
Comparison to Prior Analysis
June 30, 2017

Mine Type	Land (1)	Water Capital (2)	Water Treatment (3)
Surface	\$3,200.00	\$4,500.00	\$140.00
Underground	13,800.00	14,400.00	260.00
Other	9,100.00	5,200.00	200.00

June 30, 2013

Mine Type	Land (4)	Water Capital (5)	Water Treatment (6)
Surface	\$2,700.00	\$900.00	\$105.00
Underground	12,400.00	1,900.00	170.00
Other	7,300.00	1,500.00	130.00

Difference in Dollars

Mine Type	Land (7)	Water Capital (8)	Water Treatment (9)
Surface	\$500.00	\$3,600.00	\$35.00
Underground	1,400.00	12,500.00	90.00
Other	1,800.00	3,700.00	70.00

Difference in Percentage

Mine Type	Land (10)	Water Capital (11)	Water Treatment (12)
Surface	19%	400%	33%
Underground	11%	658%	53%
Other	25%	247%	54%

Footnotes:

- (1) - (3) Exhibit 13.1 Col (1) through Col (3)
(4) - (6) From prior Pinnacle Actuarial Resources, Inc. analysis as of 6/30/2013.
(7) - (9) Col (1) - Col (4); Col (2) - Col (5); Col (3) - Col (6)
(10) - (12) Col (7) / Col (4); Col (8) / Col (5); Col (9) / Col (6)

West Virginia Department of Environmental Protection Office of Special Reclamation

Average Reclamation Expenditures - Land
Special Reclamation Fund
Based on Forfeited Permits
June 30, 2017

	Mine Type		
	Surface	Underground	Other
	(1)	(2)	(3)
(1) Total reclamation expenditure in 2017 dollars (i.e. inflated)	\$109,494,219	\$54,421,848	\$43,283,741
(2) Total disturbed acreage	27,941.36	3,437.12	4,291.32
(3) Average cost per disturbed acre in 2017 dollars	3,918.71	15,833.56	10,086.35
(4) Percent of permitted acreage that is disturbed	65.53%	74.15%	80.27%
(5) Cost per permitted acre in 2017 dollars	2,567.95	11,739.93	8,096.05
(6) Selected cost per acre	3,200.00	13,800.00	9,100.00

Footnotes:

- | | |
|-----|---|
| (1) | Exhibit 18.2 Col (3), Exhibit 18.3 Col (3) and Exhibit 18.4 Col (3) |
| (2) | Exhibit 17.2 Col (9), Exhibit 17.3 Col (9) and Exhibit 17.4 Col (9) |
| (3) | Row (1) / Row (2) |
| (4) | Exhibit 17.2 Row (2), Exhibit 17.3 Row (2) and Exhibit 17.4 Row (2) |
| (5) | Row (3) x Row (4) |
| (6) | Selection based on Row (3) and Row (5) |

West Virginia Department of Environmental Protection Office of Special Reclamation

Average Reclamation Expenditures - Water Capital
Special Reclamation Water Trust Fund
Based on Forfeited Permits
June 30, 2017

	Mine Type		
	Surface	Underground	Other
	(1)	(2)	(3)
(1) Total reclamation expenditure for Open Water Forfeited Permits in 2017 dollars (i.e. inflated)	\$75,027,620	\$28,247,673	\$12,006,391
(2) Additional NPDES standards expenditure for Currently Operating Permits	44,218,071	22,408,169	4,176,473
(3) Additional NPDES standards expenditure for To Be Contracted Permits	37,005,941	13,001,745	9,504,684
(4) Total Expenditure	156,251,631	63,657,588	25,687,548
(5) Total disturbed acreage under permits with water issues	10,274.99	533.43	1,413.06
(6) Average cost per disturbed acre in 2017 dollars	15,206.99	119,336.35	18,178.67
(7) Percent of permitted acreage that is disturbed under permits with water issues	68.89%	91.68%	85.03%
(8) Cost Per Permitted Acre in 2017 dollars	10,476.76	109,413.02	15,456.92
(9) Percent of forfeited acres with water issues	34.98%	12.55%	31.08%
(10) Cost Per Disturbed Acre in 2017 dollars with water issues	5,319.07	14,977.73	5,650.80
(11) Cost Per Permitted Acre in 2017 dollars with water issues	3,664.54	13,732.27	4,804.75
(12) Selected Cost Per Acre with water issues	4,500.00	14,400.00	5,200.00

Footnotes:

(1)	Exhibit 19.2 Col (2), Exhibit 19.3 Col (2) and Exhibit 19.4 Col (2)
(2)	Exhibit 19.2 Col (4), Exhibit 19.3 Col (4) and Exhibit 19.4 Col (4)
(3)	Exhibit 19.2 Col (5), Exhibit 19.3 Col (5) and Exhibit 19.4 Col (5)
(4)	Row (1) + Row (2) + Row (3)
(5)	Exhibit 17.2 Col (9), Exhibit 17.3 Col (9) and Exhibit 17.4 Col (9)
(6)	Row (4) / Row (5)
(7)	Exhibit 17.2 Row (3), Exhibit 17.3 Row (3) and Exhibit 17.4 Row (3)
(8)	Row (6) x Row (7)
(9)	Exhibit 17.2 Row (1), Exhibit 17.3 Row (1) and Exhibit 17.4 Row (1)
(10)	Row (6) x Row (9)
(11)	Row (8) x Row (9)
(12)	Selection based on Row (10) and Row (11)

West Virginia Department of Environmental Protection Office of Special Reclamation

Average Reclamation Expenditures - Water Treatment
Special Reclamation Water Trust FundBased on Forfeited Permits that are Currently Treating or Scheduled to Treat Water
June 30, 2017

	Mine Type		
	Surface	Underground	Other
	(1)	(2)	(3)
(1) Total Annual Expenditure in Actual Dollars for Water Forfeited Permits	\$4,867,501	\$1,147,756	\$983,195
(2) Total disturbed acreage under permits with water issues	10,274.99	533.43	1,413.06
(3) Total cost per disturbed acre for water issue sites	473.72	2,151.65	695.79
(4) Percent of permitted acreage that is disturbed under permits with water issues	68.89%	91.68%	85.03%
(5) Valuation Cost Per Permitted Acre	326.37	1,972.73	591.62
(6) Percent of forfeited acres with water issues	34.98%	12.55%	31.08%
(7) Valuation Cost Per Disturbed Acre with water issues	165.70	270.05	216.29
(8) Valuation Cost Per Permitted Acre with water issues	114.16	247.59	183.90
(9) Selected Valuation Cost Per Acre with water issues	140.00	260.00	200.00

Footnotes:

- | | |
|-----|--|
| (1) | Exhibit 19.2 Col (12), Exhibit 19.3 Col (12) and Exhibit 19.4 Col (12) |
| (2) | Exhibit 17.2 Col (9), Exhibit 17.3 Col (9) and Exhibit 17.4 Col (9) |
| (3) | Row (1) / Row (2) |
| (4) | Exhibit 17.2 Row (3), Exhibit 17.3 Row (3) and Exhibit 17.4 Row (3) |
| (5) | Row (3) x Row (4) |
| (6) | Exhibit 17.2 Row (1), Exhibit 17.3 Row (1) and Exhibit 17.4 Row (1) |
| (7) | Row (3) x Row (6) |
| (8) | Row (5) x Row (6) |
| (9) | Selection based on Row (7) and Row (8) |

Average Reclamation Expenditure Trends

Land and Water Combined
June 30, 2017

Revoke Year	CPI Inflation Index (1)
1977	1.065
1978	1.076
1979	1.113
1980	1.135
1981	1.103
1982	1.062
1983	1.032
1984	1.043
1985	1.036
1986	1.019
1987	1.036
1988	1.041
1989	1.048
1990	1.054
1991	1.042
1992	1.030
1993	1.030
1994	1.026
1995	1.028
1996	1.030
1997	1.023
1998	1.016
1999	1.022
2000	1.034
2001	1.028
2002	1.016
2003	1.023
2004	1.027
2005	1.034
2006	1.032
2007	1.028
2008	1.038
2009	0.996
2010	1.016
2011	1.032
2012	1.021
2013	1.015
2014	1.016
2015	1.001
2016	1.013
2017	
Total	

YEARS	AVERAGE
1982 - 2015	1.029
1992 - 2015	1.023
2002 - 2015	1.021
2010 - 2015	1.017

Selected Average Trend Factors	
(1) Prospective	1.025

Footnotes:

(1) Consumer Price Index data
Row (1) Selections based on Col (1)

West Virginia Department of Environmental Protection Office of Special Reclamation

Administrative Expenditures
Special Reclamation Fund

June 30, 2017

Fiscal Year Ending 6/30	Expenditures	Discount Factors	Discounted Expenditures
	(1)	(2)	(3)
2018	\$3,364,044	98.963%	\$3,329,154
2019	3,464,965	97.746%	3,386,879
2020	3,568,914	96.429%	3,441,470
2021	3,675,981	95.002%	3,492,267
2022	3,786,261	93.472%	3,539,082
2023	3,899,849	91.966%	3,586,525
2024	4,016,844	90.484%	3,634,604
2025	4,137,350	89.026%	3,683,328
2026	4,261,470	87.592%	3,732,705
2027	4,389,314	86.181%	3,782,744
2028	4,520,994	84.792%	3,833,453
2029	4,656,623	83.426%	3,884,842
2030	4,796,322	82.082%	3,936,921
2031	4,940,212	80.760%	3,989,697
2032	5,088,418	79.459%	4,043,181
2033	5,241,071	78.178%	4,097,381
2034	5,398,303	76.919%	4,152,309
2035	5,560,252	75.680%	4,207,973
2036	5,727,059	74.460%	4,264,383
2037	5,898,871	73.261%	4,321,549
2038	6,075,837	72.080%	4,379,481
2039	6,258,112	70.919%	4,438,190
2040	6,445,856	69.776%	4,497,686
2041	6,639,231	68.652%	4,557,980
2042	6,838,408	67.546%	4,619,082
2043	7,043,561	66.458%	4,681,003
2044	7,254,867	65.387%	4,743,754
2045	7,472,513	64.334%	4,807,346
2046	7,696,689	63.297%	4,871,791
2047	7,927,590	62.277%	4,937,100
2048	8,165,417	61.274%	5,003,284
2049	8,410,380	60.287%	5,070,356
2050	8,662,691	59.316%	5,138,326
2051	8,922,572	58.360%	5,207,208
2052	9,190,249	57.420%	5,277,013
Total	203,397,090		148,570,046
First 20 Years	90,393,116		76,340,446

Footnotes:

- (1) Client Selection for FY 2018. FY 2019 and Subsequent = Prior FY x 1.03
(2) Exhibit 10.1 Col (4)
(3) Col (1) x Col (2)

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Forfeited Permits and Acres
Total

June 30, 2017

Site Type	Number of Forfeited Permits			Forfeited Permitted Acres			Forfeited Disturbed Acres		
	Closed	Open	Total	Closed	Open	Total	Closed	Open	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Open Water - Open Land	0	20	20	0	3,521	3,521	0	2,613	2,613
Open Water - Closed Land	0	171	171	0	13,023	13,023	0	8,982	8,982
Open Water - Total	0	191	191	0	16,544	16,544	0	11,595	11,595
Closed Water - Open Land	0	0	0	0	0	0	0	0	0
Closed Water - Closed Land	11	0	11	614	0	614	627	0	627
Closed Water - Total	11	0	11	614	0	614	627	0	627
Land Only - Open Land - Water Cost	0	22	22	0	2,303	2,303	0	1,634	1,634
Land Only - Closed Land - Water Cost	629	0	629	24,934	0	24,934	16,767	0	16,767
Land Only - Water Cost - Total	629	22	651	24,934	2,303	27,237	16,767	1,634	18,401
Land Only - Open Land - No Water Cost	0	17	17	0	1,547	1,547	0	1,159	1,159
Land Only - Closed Land - No Water Cost	290	0	290	6,678	0	6,678	3,888	0	3,888
Land Only - No Water Cost - Total	290	17	307	6,678	1,547	8,225	3,888	1,159	5,047
Total	930	230	1,160	32,226	20,395	52,621	21,282	14,388	35,670

(1) Percent of Forfeited Permitted Acres with Water Issues	32.61%
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(2) Percent of Permitted Acres That Are Disturbed - Total	67.79%
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(3) Percent of Permitted Acres That Are Disturbed - Water Issues	71.23%
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(4) Percent of Permitted Acres That Are Disturbed - Closed Water	102.12%
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Footnotes:

Columns

(1) - (9) Sum of Exhibit 17.2, Exhibit 17.3, and Exhibit 17.4

Rows

(1) [Col (6) Open Water Total + Col (6) Closed Water Total] / Col (6) Total

(2) Col (9) Total / Col (6) Total

(3) [Col (9) Open Water Total + Col (9) Closed Water Total] / [Col (6) Open Water Total + Col (6) Closed Water Total]

(4) Col (9) Closed Water Total / Col (6) Closed Water Total

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Forfeited Permits and Acres
Surface

June 30, 2017

Site Type	Number of Forfeited Permits			Forfeited Permitted Acres			Forfeited Disturbed Acres		
	Closed	Open	Total	Closed	Open	Total	Closed	Open	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Open Water - Open Land	0	12	12	0	3,055	3,055	0	2,178	2,178
Open Water - Closed Land	0	121	121	0	11,459	11,459	0	7,671	7,671
Open Water - Total	0	133	133	0	14,514	14,514	0	9,849	9,849
Closed Water - Open Land	0	0	0	0	0	0	0	0	0
Closed Water - Closed Land	6	0	6	400	0	400	426	0	426
Closed Water - Total	6	0	6	400	0	400	426	0	426
Land Only - Open Land - Water Cost	0	14	14	0	1,946	1,946	0	1,297	1,297
Land Only - Closed Land - Water Cost	301	0	301	19,780	0	19,780	12,891	0	12,891
Land Only - Water Cost - Total	301	14	315	19,780	1,946	21,726	12,891	1,297	14,189
Land Only - Open Land - No Water Cost	0	8	8	0	1,365	1,365	0	1,002	1,002
Land Only - Closed Land - No Water Cost	101	0	101	4,634	0	4,634	2,476	0	2,476
Land Only - No Water Cost - Total	101	8	109	4,634	1,365	5,999	2,476	1,002	3,478
Total	408	155	563	24,814	17,825	42,639	15,794	12,148	27,941

(1) Percent of Forfeited Permitted Acres with Water Issues	34.98%
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(2) Percent of Permitted Acres That Are Disturbed - Total	65.53%
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(3) Percent of Permitted Acres That Are Disturbed - Water Issues	68.89%
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(4) Percent of Permitted Acres That Are Disturbed - Closed Water	106.50%
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Footnotes:

Columns

(1) - (9) Client data

Rows

(1) $[\text{Col (6) Open Water Total} + \text{Col (6) Closed Water Total}] / \text{Col (6) Total}$ (2) $\text{Col (9) Total} / \text{Col (6) Total}$ (3) $[\text{Col (9) Open Water Total} + \text{Col (9) Closed Water Total}] / [\text{Col (6) Open Water Total} + \text{Col (6) Closed Water Total}]$ (4) $\text{Col (9) Closed Water Total} / \text{Col (6) Closed Water Total}$

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Forfeited Permits and Acres
Underground

June 30, 2017

Site Type	Number of Forfeited Permits			Forfeited Permitted Acres			Forfeited Disturbed Acres		
	Closed	Open	Total	Closed	Open	Total	Closed	Open	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Open Water - Open Land	0	5	5	0	123	123	0	118	118
Open Water - Closed Land	0	31	31	0	422	422	0	385	385
Open Water - Total	0	36	36	0	545	545	0	503	503
Closed Water - Open Land	0	0	0	0	0	0	0	0	0
Closed Water - Closed Land	2	0	2	37	0	37	31	0	31
Closed Water - Total	2	0	2	37	0	37	31	0	31
Land Only - Open Land - Water Cost	0	3	3	0	44	44	0	44	44
Land Only - Closed Land - Water Cost	243	0	243	2,952	0	2,952	2,140	0	2,140
Land Only - Water Cost - Total	243	3	246	2,952	44	2,996	2,140	44	2,183
Land Only - Open Land - No Water Cost	0	5	5	0	122	122	0	116	116
Land Only - Closed Land - No Water Cost	95	0	95	936	0	936	605	0	605
Land Only - No Water Cost - Total	95	5	100	936	122	1,058	605	116	720
Total	340	44	384	3,925	711	4,636	2,775	662	3,437

(1) Percent of Forfeited Permitted Acres with Water Issues	12.55%
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(2) Percent of Permitted Acres That Are Disturbed - Total	74.15%
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(3) Percent of Permitted Acres That Are Disturbed - Water Issues	91.68%
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(4) Percent of Permitted Acres That Are Disturbed - Closed Water	83.57%
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Footnotes:

Columns

(1) - (9) Client data

Rows

(1) [Col (6) Open Water Total + Col (6) Closed Water Total] / Col (6) Total

(2) Col (9) Total / Col (6) Total

(3) [Col (9) Open Water Total + Col (9) Closed Water Total] / [Col (6) Open Water Total + Col (6) Closed Water Total]

(4) Col (9) Closed Water Total / Col (6) Closed Water Total

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Forfeited Permits and Acres
Other

June 30, 2017

Site Type	Number of Forfeited Permits			Forfeited Permitted Acres			Forfeited Disturbed Acres		
	Closed	Open	Total	Closed	Open	Total	Closed	Open	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
Open Water - Open Land	0	3	3	0	343	343	0	317	317
Open Water - Closed Land	0	19	19	0	1,142	1,142	0	926	926
Open Water - Total	0	22	22	0	1,485	1,485	0	1,243	1,243
Closed Water - Open Land	0	0	0	0	0	0	0	0	0
Closed Water - Closed Land	3	0	3	177	0	177	170	0	170
Closed Water - Total	3	0	3	177	0	177	170	0	170
Land Only - Open Land - Water Cost	0	5	5	0	313	313	0	293	293
Land Only - Closed Land - Water Cost	85	0	85	2,203	0	2,203	1,736	0	1,736
Land Only - Water Cost - Total	85	5	90	2,203	313	2,516	1,736	293	2,029
Land Only - Open Land - No Water Cost	0	4	4	0	61	61	0	42	42
Land Only - Closed Land - No Water Cost	94	0	94	1,108	0	1,108	807	0	807
Land Only - No Water Cost - Total	94	4	98	1,108	61	1,169	807	42	849
Total	182	31	213	3,488	1,859	5,346	2,713	1,578	4,291

(1) Percent of Forfeited Permitted Acres with Water Issues	31.08%
(2) Percent of Permitted Acres That Are Disturbed - Total	80.27%
(3) Percent of Permitted Acres That Are Disturbed - Water Issues	85.03%
(4) Percent of Permitted Acres That Are Disturbed - Closed Water	96.05%

Footnotes:

Columns

(1) - (9) Client data

Rows

- (1) $[\text{Col (6) Open Water Total} + \text{Col (6) Closed Water Total}] / \text{Col (6) Total}$
- (2) $\text{Col (9) Total} / \text{Col (6) Total}$
- (3) $[\text{Col (9) Open Water Total} + \text{Col (9) Closed Water Total}] / [\text{Col (6) Open Water Total} + \text{Col (6) Closed Water Total}]$
- (4) $\text{Col (9) Closed Water Total} / \text{Col (6) Closed Water Total}$

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures

Land

Total

June 30, 2017

Site Type	Land Reclamation Expenditures		
	Closed	Open	Total
	(1)	(2)	(3)
Open Water - Open Land	\$0	\$1,237,917	\$1,237,917
Open Water - Closed Land	0	61,053,498	61,053,498
Open Water - Total	0	62,291,415	62,291,415
Closed Water - Open Land	0	0	0
Closed Water - Closed Land	3,233,992	0	3,233,992
Closed Water - Total	3,233,992	0	3,233,992
Land Only - Open Land - Water Cost	0	7,618,291	7,618,291
Land Only - Closed Land - Water Cost	122,097,925	0	122,097,925
Land Only - Water Cost - Total	122,097,925	7,618,291	129,716,216
Land Only - Open Land - No Water Cost	0	55,871	55,871
Land Only - Closed Land - No Water Cost	11,902,315	0	11,902,315
Land Only - No Water Cost - Total	11,902,315	55,871	11,958,186
Total	137,234,232	69,965,577	207,199,808

Footnotes:

(1) - (3)

Sum of Exhibit 18.2, Exhibit 18.3, and Exhibit 18.4



West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures

Land

Surface

June 30, 2017

Site Type	Land Reclamation Expenditures		
	Closed	Open	Total
	(1)	(2)	(3)
Open Water - Open Land	\$0	\$980,452	\$980,452
Open Water - Closed Land	0	35,385,418	35,385,418
Open Water - Total	0	36,365,870	36,365,870
Closed Water - Open Land	0	0	0
Closed Water - Closed Land	2,959,738	0	2,959,738
Closed Water - Total	2,959,738	0	2,959,738
Land Only - Open Land - Water Cost	0	2,368,677	2,368,677
Land Only - Closed Land - Water Cost	63,421,619	0	63,421,619
Land Only - Water Cost - Total	63,421,619	2,368,677	65,790,296
Land Only - Open Land - No Water Cost	0	55,871	55,871
Land Only - Closed Land - No Water Cost	4,322,444	0	4,322,444
Land Only - No Water Cost - Total	4,322,444	55,871	4,378,315
Total	70,703,801	38,790,418	109,494,219

Footnotes:

(1) - (3)

Client data



West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures

Land

Underground

June 30, 2017

Site Type	Land Reclamation Expenditures		
	Closed	Open	Total
	(1)	(2)	(3)
Open Water - Open Land	\$0	\$42,365	\$42,365
Open Water - Closed Land	0	8,931,610	8,931,610
Open Water - Total	0	8,973,975	8,973,975
Closed Water - Open Land	0	0	0
Closed Water - Closed Land	83,883	0	83,883
Closed Water - Total	83,883	0	83,883
Land Only - Open Land - Water Cost	0	2,590,276	2,590,276
Land Only - Closed Land - Water Cost	38,170,481	0	38,170,481
Land Only - Water Cost - Total	38,170,481	2,590,276	40,760,757
Land Only - Open Land - No Water Cost	0	0	0
Land Only - Closed Land - No Water Cost	4,603,233	0	4,603,233
Land Only - No Water Cost - Total	4,603,233	0	4,603,233
Total	42,857,597	11,564,251	54,421,848

Footnotes:

(1) - (3)

Client data



West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures

Land

Other

June 30, 2017

Site Type	Land Reclamation Expenditures		
	Closed	Open	Total
	(1)	(2)	(3)
Open Water - Open Land	\$0	\$215,099	\$215,099
Open Water - Closed Land	0	16,736,471	16,736,471
Open Water - Total	0	16,951,570	16,951,570
Closed Water - Open Land	0	0	0
Closed Water - Closed Land	190,370	0	190,370
Closed Water - Total	190,370	0	190,370
Land Only - Open Land - Water Cost	0	2,659,338	2,659,338
Land Only - Closed Land - Water Cost	20,505,825	0	20,505,825
Land Only - Water Cost - Total	20,505,825	2,659,338	23,165,163
Land Only - Open Land - No Water Cost	0	0	0
Land Only - Closed Land - No Water Cost	2,976,638	0	2,976,638
Land Only - No Water Cost - Total	2,976,638	0	2,976,638
Total	23,672,833	19,610,908	43,283,741

Footnotes:

(1) - (3)

Client data



West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures
Water
Total
June 30, 2017

Site Type	Water Capital Reclamation			Water Capital NPDES Standards			Water Treatment Reclamation			Water Treatment Reclamation - Current			Water Abandonment Reclamation		
	Closed	Open	Total	TBC	Ex. TBC	Total	Closed	Open	Total	Closed	Open	Total	Closed	Open	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Open Water - Open Land	\$0	\$3,312,533	\$3,312,533	\$29,305,606	\$2,442,515	\$31,748,121	\$0	\$16,937,857	\$16,937,857	\$0	\$1,339,522	\$1,339,522	\$0	\$549,721	\$549,721
Open Water - Closed Land	0	111,844,807	111,844,807	41,497,107	49,355,223	90,852,330	0	88,676,000	88,676,000	0	5,658,930	5,658,930	0	19,603,449	19,603,449
Open Water - Total	0	115,157,339	115,157,339	70,802,713	51,797,738	122,600,451	0	105,613,858	105,613,858	0	6,998,452	6,998,452	0	20,153,169	20,153,169
Closed Water - Open Land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Closed Water - Closed Land	923,255	0	923,255	0	2,365,071	2,365,071	234,100	0	234,100	0	0	0	42,511	0	42,511
Closed Water - Total	923,255	0	923,255	0	2,365,071	2,365,071	234,100	0	234,100	0	0	0	42,511	0	42,511
Land Only - Open Land - Water Cost	0	124,344	124,344	0	0	0	0	179,294	179,294	0	0	0	0	0	0
Land Only - Closed Land - Water Cost	10,028,095	0	10,028,095	0	5,349,561	5,349,561	2,472,986	0	2,472,986	0	0	0	204,304	0	204,304
Land Only - Water Cost - Total	10,028,095	124,344	10,152,439	0	5,349,561	5,349,561	2,472,986	179,294	2,652,280	0	0	0	204,304	0	204,304
Land Only - Open Land - No Water Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Only - Closed Land - No Water Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Only - No Water Cost - Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	10,951,350	115,281,684	126,233,034	70,802,713	59,512,370	130,315,083	2,707,085	105,793,152	108,500,237	0	6,998,452	6,998,452	246,815	20,153,169	20,399,985

Footnotes:

(1) - (15)

Sum of Exhibit 19.2, Exhibit 19.3, and Exhibit 19.4

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures
Water
Surface
June 30, 2017

Site Type	Water Capital Reclamation			Water Capital NPDES Standards			Water Treatment Reclamation			Water Treatment Reclamation - Current			Water Abandonment Reclamation		
	Closed	Open	Total	TBC	Ex. TBC	Total	Closed	Open	Total	Closed	Open	Total	Closed	Open	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Open Water - Open Land	\$0	\$2,940,867	\$2,940,867	\$13,023,214	\$1,945,325	\$14,968,538	\$0	\$16,410,429	\$16,410,429	\$0	\$1,339,522	\$1,339,522	\$0	\$234,182	\$234,182
Open Water - Closed Land	0	71,993,598	71,993,598	31,194,857	32,064,365	63,259,222	0	52,024,093	52,024,093	0	3,527,979	3,527,979	0	13,022,692	13,022,692
Open Water - Total	0	74,934,465	74,934,465	44,218,071	34,009,690	78,227,761	0	68,434,522	68,434,522	0	4,867,501	4,867,501	0	13,256,874	13,256,874
Closed Water - Open Land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Closed Water - Closed Land	318,724	0	318,724	0	433,530	433,530	197,810	0	197,810	0	0	0	0	0	0
Closed Water - Total	318,724	0	318,724	0	433,530	433,530	197,810	0	197,810	0	0	0	0	0	0
Land Only - Open Land - Water Cost	0	93,154	93,154	0	0	0	0	103,495	103,495	0	0	0	0	0	0
Land Only - Closed Land - Water Cost	2,000,951	0	2,000,951	0	2,562,721	2,562,721	1,019,560	0	1,019,560	0	0	0	204,304	0	204,304
Land Only - Water Cost - Total	2,000,951	93,154	2,094,105	0	2,562,721	2,562,721	1,019,560	103,495	1,123,055	0	0	0	204,304	0	204,304
Land Only - Open Land - No Water Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Only - Closed Land - No Water Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Only - No Water Cost - Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	2,319,675	75,027,620	77,347,294	44,218,071	37,005,941	81,224,012	1,217,370	68,538,017	69,755,387	0	4,867,501	4,867,501	204,304	13,256,874	13,461,178

Footnotes:

(1) - (15) Client data

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures
Water
Underground
June 30, 2017

Site Type	Water Capital Reclamation			<i>Water Capital NPDES Standards</i>			Water Treatment Reclamation			<i>Water Treatment Reclamation - Current</i>			Water Abandonment Reclamation		
	Closed	Open	Total	TBC	Ex. TBC	Total	Closed	Open	Total	Closed	Open	Total	Closed	Open	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Open Water - Open Land	\$0	\$356,671	\$356,671	\$15,032,169	\$497,190	\$15,529,359	\$0	\$316,956	\$316,956	\$0	\$0	\$0	\$0	\$84,969	\$84,969
Open Water - Closed Land	0	27,891,002	27,891,002	7,376,000	10,149,999	17,525,999	0	17,965,145	17,965,145	0	1,147,756	1,147,756	0	3,317,004	3,317,004
Open Water - Total	0	28,247,673	28,247,673	22,408,169	10,647,189	33,055,358	0	18,282,100	18,282,100	0	1,147,756	1,147,756	0	3,401,973	3,401,973
Closed Water - Open Land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Closed Water - Closed Land	0	0	0	0	0	0	7,108	0	7,108	0	0	0	0	0	0
Closed Water - Total	0	0	0	0	0	0	7,108	0	7,108	0	0	0	0	0	0
Land Only - Open Land - Water Cost	0	0	0	0	0	0	0	47,676	47,676	0	0	0	0	0	0
Land Only - Closed Land - Water Cost	1,635,468	0	1,635,468	0	2,354,556	2,354,556	867,636	0	867,636	0	0	0	0	0	0
Land Only - Water Cost - Total	1,635,468	0	1,635,468	0	2,354,556	2,354,556	867,636	47,676	915,312	0	0	0	0	0	0
Land Only - Open Land - No Water Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Only - Closed Land - No Water Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Only - No Water Cost - Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	1,635,468	28,247,673	29,883,141	22,408,169	13,001,745	35,409,915	874,745	18,329,776	19,204,521	0	1,147,756	1,147,756	0	3,401,973	3,401,973

Footnotes:

(1) - (15) Client data

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures
Water
Other
June 30, 2017

Site Type	Water Capital Reclamation			Water Capital NPDES Standards			Water Treatment Reclamation			Water Treatment Reclamation - Current			Water Abandonment Reclamation		
	Closed	Open	Total	TBC	Ex. TBC	Total	Closed	Open	Total	Closed	Open	Total	Closed	Open	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)
Open Water - Open Land	\$0	\$14,994	\$14,994	\$1,250,224	\$0	\$1,250,224	\$0	\$210,472	\$210,472	\$0	\$0	\$0	\$0	\$230,570	\$230,570
Open Water - Closed Land	0	11,960,207	11,960,207	2,926,249	7,140,859	10,067,109	0	18,686,763	18,686,763	0	983,195	983,195	0	3,263,753	3,263,753
Open Water - Total	0	11,975,201	11,975,201	4,176,473	7,140,859	11,317,332	0	18,897,235	18,897,235	0	983,195	983,195	0	3,494,323	3,494,323
Closed Water - Open Land	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Closed Water - Closed Land	604,531	0	604,531	0	1,931,541	1,931,541	29,181	0	29,181	0	0	0	42,511	0	42,511
Closed Water - Total	604,531	0	604,531	0	1,931,541	1,931,541	29,181	0	29,181	0	0	0	42,511	0	42,511
Land Only - Open Land - Water Cost	0	31,190	31,190	0	0	0	0	28,124	28,124	0	0	0	0	0	0
Land Only - Closed Land - Water Cost	6,391,677	0	6,391,677	0	432,284	432,284	585,789	0	585,789	0	0	0	0	0	0
Land Only - Water Cost - Total	6,391,677	31,190	6,422,867	0	432,284	432,284	585,789	28,124	613,913	0	0	0	0	0	0
Land Only - Open Land - No Water Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Only - Closed Land - No Water Cost	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Land Only - No Water Cost - Total	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Total	6,996,208	12,006,391	19,002,599	4,176,473	9,504,684	13,681,157	614,970	18,925,359	19,540,330	0	983,195	983,195	42,511	3,494,323	3,536,834

Footnotes:

(1) - (15) Client data

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Permits

Total

June 30, 2017

Issue Year	Originally Issued	In Force				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
1961	1	0	0	0	0	0.0%
1962	0	0	0	0	0	0.0%
1963	1	0	0	0	0	0.0%
1964	0	0	0	0	0	0.0%
1965	1	0	0	0	0	0.0%
1966	0	0	0	0	0	0.0%
1967	9	0	0	0	0	0.0%
1968	9	0	0	0	0	0.0%
1969	12	0	0	0	0	0.0%
1970	21	0	0	0	0	0.0%
1971	21	0	0	0	0	0.0%
1972	29	1	0	2	3	10.3%
1973	34	1	0	2	3	8.8%
1974	82	0	0	1	1	1.2%
1975	124	2	1	3	6	4.8%
1976	155	2	6	8	16	10.3%
1977	230	2	1	5	8	3.5%
1978	224	4	1	10	15	6.7%
1979	196	9	2	12	23	11.7%
1980	299	16	4	20	40	13.4%
1981	402	31	8	51	90	22.4%
1982	474	24	8	26	58	12.2%
1983	651	40	19	55	114	17.5%
1984	283	13	5	15	33	11.7%
1985	276	13	5	26	44	15.9%
1986	282	13	2	18	33	11.7%
1987	354	10	7	22	39	11.0%
1988	339	8	8	30	46	13.6%
1989	255	18	8	30	56	22.0%
1990	117	6	4	13	23	19.7%
1991	132	9	5	24	38	28.8%
1992	141	16	5	16	37	26.2%
1993	128	14	12	19	45	35.2%
1994	123	19	10	24	53	43.1%
1995	92	8	13	32	53	57.6%
1996	98	15	8	29	52	53.1%
1997	103	25	13	30	68	66.0%
1998	67	10	9	15	34	50.7%
1999	48	14	5	11	30	62.5%
2000	60	14	7	19	40	66.7%

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Permits

Total

June 30, 2017

Issue Year	Originally Issued	In Force				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
2001	61	16	5	27	48	78.7%
2002	59	15	9	17	41	69.5%
2003	68	30	9	17	56	82.4%
2004	52	17	6	22	45	86.5%
2005	41	21	5	8	34	82.9%
2006	62	18	12	21	51	82.3%
2007	53	20	8	14	42	79.2%
2008	63	25	12	16	53	84.1%
2009	41	17	8	11	36	87.8%
2010	51	24	8	11	43	84.3%
2011	46	20	13	7	40	87.0%
2012	70	47	5	7	59	84.3%
2013	59	45	3	4	52	88.1%
2014	40	32	1	1	34	85.0%
2015	29	27	0	1	28	96.6%
2016	24	24	0	0	24	100.0%
2017	5	5	0	0	5	100.0%
Total	6,697	760	280	752	1,792	
After 1995	1,200	481	146	288	915	
Before 1996	5,497	279	134	464	877	

Footnotes:

- (1) Exhibit 20.2 Col (1) + Exhibit 20.3 Col (1) + Exhibit 20.4 Col (1)
- (2) Exhibit 20.2 Col (2) + Exhibit 20.3 Col (2) + Exhibit 20.4 Col (2)
- (3) Exhibit 20.2 Col (3) + Exhibit 20.3 Col (3) + Exhibit 20.4 Col (3)
- (4) Exhibit 20.2 Col (4) + Exhibit 20.3 Col (4) + Exhibit 20.4 Col (4)
- (5) Col (2) + Col (3) + Col (4)
- (6) Col (5) / Col (1)

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Permits
Surface

June 30, 2017

Issue Year	Originally Issued (1)	In Force				Percent Still In Force (6)
		Active (2)	Inactive (3)	Phase Released (4)	Total (5)	
1961	1	0	0	0	0	0.0%
1962	0	0	0	0	0	0.0%
1963	1	0	0	0	0	0.0%
1964	0	0	0	0	0	0.0%
1965	1	0	0	0	0	0.0%
1966	0	0	0	0	0	0.0%
1967	8	0	0	0	0	0.0%
1968	8	0	0	0	0	0.0%
1969	12	0	0	0	0	0.0%
1970	19	0	0	0	0	0.0%
1971	18	0	0	0	0	0.0%
1972	22	0	0	1	1	4.5%
1973	24	0	0	1	1	4.2%
1974	67	0	0	1	1	1.5%
1975	97	0	0	2	2	2.1%
1976	120	0	3	7	10	8.3%
1977	128	1	0	2	3	2.3%
1978	126	1	0	4	5	4.0%
1979	100	1	0	3	4	4.0%
1980	121	0	0	11	11	9.1%
1981	138	1	1	12	14	10.1%
1982	160	2	0	7	9	5.6%
1983	162	0	0	6	6	3.7%
1984	109	2	0	3	5	4.6%
1985	130	2	1	11	14	10.8%
1986	132	1	0	10	11	8.3%
1987	133	2	2	6	10	7.5%
1988	125	1	1	16	18	14.4%
1989	136	6	0	16	22	16.2%
1990	57	0	0	7	7	12.3%
1991	63	1	0	11	12	19.0%
1992	65	1	1	12	14	21.5%
1993	39	1	0	10	11	28.2%
1994	44	2	2	9	13	29.5%
1995	33	0	3	17	20	60.6%
1996	42	2	1	19	22	52.4%
1997	44	7	2	22	31	70.5%
1998	21	2	0	8	10	47.6%
1999	17	3	0	6	9	52.9%
2000	18	2	0	9	11	61.1%

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Permits
Surface

June 30, 2017

Issue Year	Originally Issued	In Force				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
2001	34	7	3	20	30	88.2%
2002	19	2	1	9	12	63.2%
2003	33	11	3	15	29	87.9%
2004	26	5	1	19	25	96.2%
2005	16	7	1	5	13	81.3%
2006	30	4	3	19	26	86.7%
2007	24	8	3	10	21	87.5%
2008	24	10	0	13	23	95.8%
2009	19	7	1	10	18	94.7%
2010	17	6	2	8	16	94.1%
2011	22	10	5	5	20	90.9%
2012	35	26	2	5	33	94.3%
2013	19	15	1	3	19	100.0%
2014	18	16	0	1	17	94.4%
2015	11	10	0	1	11	100.0%
2016	11	11	0	0	11	100.0%
2017	1	1	0	0	1	100.0%
Total	2,900	197	43	392	632	
After 1995	501	172	29	207	408	
Before 1996	2,399	25	14	185	224	

Footnotes:

- (1) Client data
- (2) Exhibit 28.1 Col (4)
- (3) Exhibit 28.1 Col (4)
- (4) Exhibit 28.1 Col (4)
- (5) Col (2) + Col (3) + Col (4)
- (6) Col (5) / Col (1)

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Permits
Underground

June 30, 2017

Issue Year	Originally Issued	In Force				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
1961	0	0	0	0	0	0.0%
1962	0	0	0	0	0	0.0%
1963	0	0	0	0	0	0.0%
1964	0	0	0	0	0	0.0%
1965	0	0	0	0	0	0.0%
1966	0	0	0	0	0	0.0%
1967	0	0	0	0	0	0.0%
1968	0	0	0	0	0	0.0%
1969	0	0	0	0	0	0.0%
1970	2	0	0	0	0	0.0%
1971	0	0	0	0	0	0.0%
1972	1	0	0	0	0	0.0%
1973	0	0	0	0	0	0.0%
1974	0	0	0	0	0	0.0%
1975	2	0	1	0	1	50.0%
1976	13	0	0	1	1	7.7%
1977	83	0	0	3	3	3.6%
1978	80	2	1	4	7	8.8%
1979	76	3	1	8	12	15.8%
1980	134	5	1	7	13	9.7%
1981	147	3	1	19	23	15.6%
1982	213	7	5	10	22	10.3%
1983	273	12	8	22	42	15.4%
1984	117	2	4	6	12	10.3%
1985	87	2	1	8	11	12.6%
1986	103	2	0	4	6	5.8%
1987	159	4	4	14	22	13.8%
1988	155	1	2	13	16	10.3%
1989	90	2	3	12	17	18.9%
1990	43	3	1	5	9	20.9%
1991	52	4	2	10	16	30.8%
1992	45	8	0	4	12	26.7%
1993	45	4	6	8	18	40.0%
1994	61	9	3	14	26	42.6%
1995	46	2	8	15	25	54.3%
1996	44	10	4	8	22	50.0%
1997	42	10	8	8	26	61.9%
1998	37	4	9	6	19	51.4%
1999	24	10	3	4	17	70.8%
2000	34	8	5	9	22	64.7%

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Permits
Underground

June 30, 2017

Issue Year	Originally Issued	In Force				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
2001	20	5	0	6	11	55.0%
2002	33	9	5	8	22	66.7%
2003	22	10	4	2	16	72.7%
2004	21	8	5	3	16	76.2%
2005	21	10	4	3	17	81.0%
2006	19	7	7	2	16	84.2%
2007	21	7	4	4	15	71.4%
2008	26	7	11	2	20	76.9%
2009	16	7	7	0	14	87.5%
2010	24	12	5	1	18	75.0%
2011	17	7	7	2	16	94.1%
2012	19	10	2	0	12	63.2%
2013	25	19	1	0	20	80.0%
2014	15	13	1	0	14	93.3%
2015	13	12	0	0	12	92.3%
2016	6	6	0	0	6	100.0%
2017	2	2	0	0	2	100.0%
Total	2,528	268	144	255	667	
After 1995	501	193	92	68	353	
Before 1996	2,027	75	52	187	314	

Footnotes:

- (1) Client data
- (2) Exhibit 28.2 Col (4)
- (3) Exhibit 28.2 Col (4)
- (4) Exhibit 28.2 Col (4)
- (5) Col (2) + Col (3) + Col (4)
- (6) Col (5) / Col (1)

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Permits
Other

June 30, 2017

Issue Year	Originally Issued (1)	In Force				Percent Still In Force (6)
		Active (2)	Inactive (3)	Phase Released (4)	Total (5)	
1961	0	0	0	0	0	0.0%
1962	0	0	0	0	0	0.0%
1963	0	0	0	0	0	0.0%
1964	0	0	0	0	0	0.0%
1965	0	0	0	0	0	0.0%
1966	0	0	0	0	0	0.0%
1967	1	0	0	0	0	0.0%
1968	1	0	0	0	0	0.0%
1969	0	0	0	0	0	0.0%
1970	0	0	0	0	0	0.0%
1971	3	0	0	0	0	0.0%
1972	6	1	0	1	2	33.3%
1973	10	1	0	1	2	20.0%
1974	15	0	0	0	0	0.0%
1975	25	2	0	1	3	12.0%
1976	22	2	3	0	5	22.7%
1977	19	1	1	0	2	10.5%
1978	18	1	0	2	3	16.7%
1979	20	5	1	1	7	35.0%
1980	44	11	3	2	16	36.4%
1981	117	27	6	20	53	45.3%
1982	101	15	3	9	27	26.7%
1983	216	28	11	27	66	30.6%
1984	57	9	1	6	16	28.1%
1985	59	9	3	7	19	32.2%
1986	47	10	2	4	16	34.0%
1987	62	4	1	2	7	11.3%
1988	59	6	5	1	12	20.3%
1989	29	10	5	2	17	58.6%
1990	17	3	3	1	7	41.2%
1991	17	4	3	3	10	58.8%
1992	31	7	4	0	11	35.5%
1993	44	9	6	1	16	36.4%
1994	18	8	5	1	14	77.8%
1995	13	6	2	0	8	61.5%
1996	12	3	3	2	8	66.7%
1997	17	8	3	0	11	64.7%
1998	9	4	0	1	5	55.6%
1999	7	1	2	1	4	57.1%
2000	8	4	2	1	7	87.5%

West Virginia Department of Environmental Protection Office of Special Reclamation

Number of Permits
Other

June 30, 2017

Issue Year	Originally Issued	In Force				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
2001	7	4	2	1	7	100.0%
2002	7	4	3	0	7	100.0%
2003	13	9	2	0	11	84.6%
2004	5	4	0	0	4	80.0%
2005	4	4	0	0	4	100.0%
2006	13	7	2	0	9	69.2%
2007	8	5	1	0	6	75.0%
2008	13	8	1	1	10	76.9%
2009	6	3	0	1	4	66.7%
2010	10	6	1	2	9	90.0%
2011	7	3	1	0	4	57.1%
2012	16	11	1	2	14	87.5%
2013	15	11	1	1	13	86.7%
2014	7	3	0	0	3	42.9%
2015	5	5	0	0	5	100.0%
2016	7	7	0	0	7	100.0%
2017	2	2	0	0	2	100.0%
Total	1,269	295	93	105	493	
After 1995	198	116	25	13	154	
Before 1996	1,071	179	68	92	339	

Footnotes:

- (1) Client data
- (2) Exhibit 28.3 Col (4)
- (3) Exhibit 28.3 Col (4)
- (4) Exhibit 28.3 Col (4)
- (5) Col (2) + Col (3) + Col (4)
- (6) Col (5) / Col (1)

West Virginia Department of Environmental Protection Office of Special Reclamation

Acres

Total

June 30, 2017

Issue Year	Originally Issued	In Force Bonded Acres				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
1961	5	0	0	0	0	0.0%
1962	0	0	0	0	0	0.0%
1963	6	0	0	0	0	0.0%
1964	0	0	0	0	0	0.0%
1965	6	0	0	0	0	0.0%
1966	0	0	0	0	0	0.0%
1967	1,240	0	0	0	0	0.0%
1968	366	0	0	0	0	0.0%
1969	331	0	0	0	0	0.0%
1970	2,796	0	0	0	0	0.0%
1971	2,005	0	0	0	0	0.0%
1972	2,866	20	0	409	429	15.0%
1973	3,364	29	0	37	65	1.9%
1974	7,194	0	0	180	180	2.5%
1975	7,375	34	103	189	327	4.4%
1976	13,205	125	1,842	1,262	3,229	24.5%
1977	12,615	540	52	774	1,366	10.8%
1978	14,268	206	23	2,357	2,586	18.1%
1979	12,574	972	90	1,064	2,126	16.9%
1980	17,031	844	516	3,034	4,394	25.8%
1981	24,343	3,237	1,234	5,776	10,246	42.1%
1982	22,964	3,723	463	2,203	6,390	27.8%
1983	32,796	8,461	2,745	6,919	18,125	55.3%
1984	16,326	2,543	387	3,022	5,952	36.5%
1985	20,860	2,376	663	5,208	8,246	39.5%
1986	22,121	2,342	612	2,843	5,797	26.2%
1987	16,743	644	455	2,222	3,320	19.8%
1988	23,161	654	868	5,741	7,262	31.4%
1989	24,697	1,806	805	4,892	7,503	30.4%
1990	11,317	276	502	2,047	2,825	25.0%
1991	14,027	908	64	16,289	17,262	123.1%
1992	14,509	1,845	342	5,762	7,949	54.8%
1993	12,672	2,216	1,188	3,899	7,304	57.6%
1994	14,785	1,369	2,909	4,913	9,191	62.2%
1995	14,729	1,736	2,488	5,404	9,628	65.4%
1996	17,210	2,318	1,381	12,418	16,117	93.6%
1997	21,532	5,136	1,927	9,793	16,855	78.3%
1998	9,940	2,466	427	5,839	8,733	87.9%
1999	6,114	2,163	530	2,036	4,728	77.3%
2000	8,517	1,186	610	7,071	8,868	104.1%

West Virginia Department of Environmental Protection Office of Special Reclamation

Acres

Total

June 30, 2017

Issue Year	Originally Issued	In Force Bonded Acres				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
2001	13,128	1,973	1,350	8,293	11,616	88.5%
2002	6,294	2,413	1,102	2,377	5,892	93.6%
2003	21,460	7,545	1,193	7,418	16,156	75.3%
2004	13,011	3,295	1,062	7,753	12,111	93.1%
2005	4,822	3,403	320	1,033	4,756	98.6%
2006	10,864	3,187	672	5,331	9,190	84.6%
2007	8,809	3,472	897	2,104	6,473	73.5%
2008	11,501	4,153	180	2,537	6,869	59.7%
2009	7,140	2,708	504	1,960	5,172	72.4%
2010	6,406	1,660	772	629	3,060	47.8%
2011	6,942	1,822	1,020	1,070	3,912	56.3%
2012	13,508	5,569	315	578	6,462	47.8%
2013	8,603	4,325	422	393	5,140	59.8%
2014	5,587	2,887	12	220	3,119	55.8%
2015	5,397	2,173	0	107	2,281	42.3%
2016	4,634	993	0	0	993	21.4%
2017	488	90	0	0	90	18.5%
Total	595,205	101,842	33,048	165,405	300,295	
After 1995	211,906	64,938	14,695	78,959	158,593	
Before 1996	383,298	36,904	18,352	86,445	141,701	

Footnotes:

- (1) Exhibit 21.2 Col (1) + Exhibit 21.3 Col (1) + Exhibit 21.4 Col (1)
(2) Exhibit 21.2 Col (2) + Exhibit 21.3 Col (2) + Exhibit 21.4 Col (2)
(3) Exhibit 21.2 Col (3) + Exhibit 21.3 Col (3) + Exhibit 21.4 Col (3)
(4) Exhibit 21.2 Col (4) + Exhibit 21.3 Col (4) + Exhibit 21.4 Col (4)
(5) Col (2) + Col (3) + Col (4)
(6) Col (5) / Col (1)

West Virginia Department of Environmental Protection Office of Special Reclamation

Acres
Surface

June 30, 2017

Issue Year	Originally Issued	In Force Bonded Acres				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
1961	5	0	0	0	0	0.0%
1962	0	0	0	0	0	0.0%
1963	6	0	0	0	0	0.0%
1964	0	0	0	0	0	0.0%
1965	6	0	0	0	0	0.0%
1966	0	0	0	0	0	0.0%
1967	293	0	0	0	0	0.0%
1968	360	0	0	0	0	0.0%
1969	331	0	0	0	0	0.0%
1970	2,794	0	0	0	0	0.0%
1971	1,970	0	0	0	0	0.0%
1972	2,816	0	0	400	400	14.2%
1973	3,126	0	0	10	10	0.3%
1974	6,940	0	0	180	180	2.6%
1975	6,956	0	0	155	155	2.2%
1976	12,576	0	1,561	1,239	2,800	22.3%
1977	11,722	475	0	749	1,224	10.4%
1978	13,184	70	0	2,262	2,332	17.7%
1979	11,370	180	0	925	1,105	9.7%
1980	13,876	0	0	1,910	1,910	13.8%
1981	15,790	3	4	3,119	3,126	19.8%
1982	17,508	1,667	0	1,608	3,275	18.7%
1983	14,593	0	0	2,075	2,075	14.2%
1984	10,105	666	0	1,413	2,080	20.6%
1985	16,682	905	224	4,476	5,605	33.6%
1986	19,082	1,195	0	2,508	3,703	19.4%
1987	12,667	300	323	1,594	2,216	17.5%
1988	18,928	336	176	5,472	5,984	31.6%
1989	21,676	1,373	0	4,660	6,033	27.8%
1990	8,889	0	0	1,958	1,958	22.0%
1991	11,984	96	0	5,668	5,765	48.1%
1992	12,034	726	127	5,678	6,531	54.3%
1993	8,729	342	0	3,583	3,925	45.0%
1994	11,659	176	1,793	4,245	6,213	53.3%
1995	12,832	0	2,009	5,075	7,084	55.2%
1996	16,042	981	1,055	12,050	14,087	87.8%
1997	19,511	3,595	1,493	9,486	14,574	74.7%
1998	7,821	1,204	0	5,637	6,842	87.5%
1999	4,658	1,868	0	1,559	3,428	73.6%
2000	7,044	621	0	6,526	7,147	101.5%

West Virginia Department of Environmental Protection Office of Special Reclamation

Acres
Surface

June 30, 2017

Issue Year	Originally Issued	In Force Bonded Acres				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
2001	12,580	1,885	1,161	8,126	11,172	88.8%
2002	4,966	1,138	716	2,179	4,033	81.2%
2003	19,904	5,839	1,020	7,398	14,257	71.6%
2004	12,193	1,967	898	7,695	10,560	86.6%
2005	4,230	2,556	244	990	3,790	89.6%
2006	10,166	2,705	314	5,320	8,339	82.0%
2007	7,956	2,737	727	2,027	5,491	69.0%
2008	10,449	3,284	0	2,479	5,763	55.2%
2009	6,535	2,377	312	1,930	4,619	70.7%
2010	5,052	523	546	561	1,631	32.3%
2011	6,428	1,617	794	1,007	3,418	53.2%
2012	11,926	4,551	100	571	5,222	43.8%
2013	6,668	2,918	351	392	3,662	54.9%
2014	4,838	2,617	0	220	2,837	58.6%
2015	4,358	1,826	0	107	1,933	44.4%
2016	2,779	789	0	0	789	28.4%
2017	155	2	0	0	2	1.3%
Total	487,749	56,112	15,950	137,223	209,286	
After 1995	186,259	47,601	9,733	76,262	133,596	
Before 1996	301,490	8,511	6,218	60,961	75,690	

Footnotes:

- (1) Client data
- (2) Exhibit 28.1 Col (5)
- (3) Exhibit 28.1 Col (5)
- (4) Exhibit 28.1 Col (5)
- (5) Col (2) + Col (3) + Col (4)
- (6) Col (5) / Col (1)

West Virginia Department of Environmental Protection Office of Special Reclamation

Acres
Underground

June 30, 2017

Issue Year	Originally Issued	In Force Bonded Acres				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
1961	0	0	0	0	0	0.0%
1962	0	0	0	0	0	0.0%
1963	0	0	0	0	0	0.0%
1964	0	0	0	0	0	0.0%
1965	0	0	0	0	0	0.0%
1966	0	0	0	0	0	0.0%
1967	0	0	0	0	0	0.0%
1968	0	0	0	0	0	0.0%
1969	0	0	0	0	0	0.0%
1970	2	0	0	0	0	0.0%
1971	0	0	0	0	0	0.0%
1972	3	0	0	0	0	0.0%
1973	0	0	0	0	0	0.0%
1974	0	0	0	0	0	0.0%
1975	86	0	103	0	103	120.1%
1976	98	0	0	23	23	23.1%
1977	592	0	0	25	25	4.2%
1978	747	123	23	36	183	24.4%
1979	824	652	80	128	861	104.5%
1980	1,722	294	46	115	455	26.4%
1981	1,978	198	69	764	1,031	52.1%
1982	2,567	322	415	137	875	34.1%
1983	8,589	5,590	1,032	1,766	8,388	97.7%
1984	2,685	377	361	1,132	1,870	69.7%
1985	1,303	21	44	333	398	30.5%
1986	1,343	32	0	89	122	9.1%
1987	1,949	238	112	356	706	36.2%
1988	3,053	5	201	255	461	15.1%
1989	1,131	81	105	183	369	32.6%
1990	1,593	220	139	36	394	24.8%
1991	1,219	648	14	10,294	10,955	898.4%
1992	659	235	0	84	319	48.4%
1993	997	581	296	213	1,090	109.3%
1994	1,120	103	345	607	1,056	94.3%
1995	716	101	307	329	738	103.0%
1996	573	152	92	184	428	74.7%
1997	743	379	343	307	1,029	138.5%
1998	798	110	427	96	633	79.4%
1999	780	236	297	297	829	106.3%
2000	775	127	138	456	721	93.0%

West Virginia Department of Environmental Protection Office of Special Reclamation

Acres
Underground

June 30, 2017

Issue Year	Originally Issued	In Force Bonded Acres				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
2001	237	64	0	150	213	90.3%
2002	713	581	279	197	1,057	148.3%
2003	271	604	142	20	766	283.1%
2004	431	953	164	58	1,175	272.7%
2005	276	227	76	43	346	125.5%
2006	427	181	303	11	495	115.9%
2007	547	496	51	77	625	114.1%
2008	441	272	170	55	496	112.4%
2009	276	58	192	0	250	90.6%
2010	556	282	91	26	399	71.7%
2011	305	87	160	63	310	101.5%
2012	471	227	24	0	251	53.4%
2013	628	560	14	0	574	91.3%
2014	300	226	12	0	238	79.3%
2015	178	178	0	0	178	99.8%
2016	135	33	0	0	33	24.7%
2017	37	22	0	0	22	60.2%
Total	44,875	15,877	6,666	18,948	41,491	
After 1995	9,898	6,055	2,974	2,040	11,069	
Before 1996	34,977	9,822	3,692	16,907	30,422	

Footnotes:

- (1) Client data
- (2) Exhibit 28.2 Col (5)
- (3) Exhibit 28.2 Col (5)
- (4) Exhibit 28.2 Col (5)
- (5) Col (2) + Col (3) + Col (4)
- (6) Col (5) / Col (1)

West Virginia Department of Environmental Protection Office of Special Reclamation

Acres
Other

June 30, 2017

Issue Year	Originally Issued	In Force Bonded Acres				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
1961	0	0	0	0	0	0.0%
1962	0	0	0	0	0	0.0%
1963	0	0	0	0	0	0.0%
1964	0	0	0	0	0	0.0%
1965	0	0	0	0	0	0.0%
1966	0	0	0	0	0	0.0%
1967	947	0	0	0	0	0.0%
1968	6	0	0	0	0	0.0%
1969	0	0	0	0	0	0.0%
1970	0	0	0	0	0	0.0%
1971	34	0	0	0	0	0.0%
1972	47	20	0	9	29	61.7%
1973	238	29	0	27	56	23.3%
1974	254	0	0	0	0	0.0%
1975	333	34	0	34	68	20.5%
1976	532	125	281	0	406	76.4%
1977	301	65	52	0	117	38.9%
1978	337	13	0	59	71	21.2%
1979	380	140	10	10	160	42.0%
1980	1,434	551	470	1,008	2,029	141.5%
1981	6,576	3,036	1,160	1,893	6,089	92.6%
1982	2,888	1,734	48	458	2,241	77.6%
1983	9,613	2,871	1,714	3,078	7,662	79.7%
1984	3,535	1,499	26	477	2,002	56.6%
1985	2,875	1,450	395	398	2,243	78.0%
1986	1,697	1,115	612	245	1,972	116.2%
1987	2,127	105	20	272	398	18.7%
1988	1,180	312	492	14	818	69.3%
1989	1,890	351	700	49	1,101	58.3%
1990	835	56	363	54	473	56.6%
1991	824	164	50	327	542	65.7%
1992	1,816	884	215	0	1,099	60.5%
1993	2,945	1,293	892	103	2,288	77.7%
1994	2,006	1,090	771	61	1,922	95.8%
1995	1,181	1,634	171	0	1,806	152.9%
1996	595	1,185	233	183	1,602	269.3%
1997	1,278	1,162	91	0	1,253	98.0%
1998	1,322	1,152	0	106	1,258	95.2%
1999	676	59	233	179	471	69.7%
2000	699	438	473	89	1,000	143.1%

West Virginia Department of Environmental Protection Office of Special Reclamation

Acres
Other

June 30, 2017

Issue Year	Originally Issued	In Force Bonded Acres				Percent Still In Force
		Active	Inactive	Phase Released	Total	
	(1)	(2)	(3)	(4)	(5)	(6)
2001	311	24	189	17	230	73.8%
2002	614	694	108	0	802	130.6%
2003	1,285	1,102	31	0	1,133	88.2%
2004	386	375	0	0	375	97.1%
2005	317	619	0	0	619	195.6%
2006	271	301	54	0	355	131.1%
2007	306	239	119	0	358	116.9%
2008	611	596	10	4	610	99.9%
2009	329	274	0	30	303	92.2%
2010	797	854	134	42	1,030	129.2%
2011	208	118	66	0	184	88.4%
2012	1,111	790	192	7	988	88.9%
2013	1,307	847	57	1	905	69.2%
2014	449	45	0	0	45	10.0%
2015	861	169	0	0	169	19.7%
2016	1,720	171	0	0	171	9.9%
2017	296	66	0	0	66	22.3%
Total	62,580	29,853	10,432	9,233	49,518	
After 1995	15,749	11,282	1,989	657	13,928	
Before 1996	46,831	18,571	8,443	8,576	35,590	

Footnotes:

- (1) Client data
- (2) Exhibit 28.3 Col (5)
- (3) Exhibit 28.3 Col (5)
- (4) Exhibit 28.3 Col (5)
- (5) Col (2) + Col (3) + Col (4)
- (6) Col (5) / Col (1)

West Virginia Department of Environmental Protection Office of Special Reclamation

Adjustment Factors for Permit Status

June 30, 2017

Permit Status	Land (1)	Water Capital (2)	Water Treatment (3)
Active	1.00	1.00	1.00
Inactive	1.00	1.00	1.00
Phased Released	0.50	0.50	1.00

Footnotes:

(1) - (3) Selected by the Special Reclamation Advisory Council

These factors are intended to reflect that the cost of Phase Release acreage is much less than the cost associated with land that has not had any reclamation activity.

West Virginia Department of Environmental Protection Office of Special Reclamation

Adjustment Factors for Size of Permits

June 30, 2017

Bond Category	Bond Value	Factor
		(1)
Small	Less than \$100,000	1.25
Medium	Between \$100,000 and \$500,000	1.00
Large	Above \$500,000	0.25

Footnotes:

(1) Selected by the Special Reclamation Advisory Council

These factors are intended to reflect the financial strength of the permit holder.

West Virginia Department of Environmental Protection Office of Special Reclamation

Forfeiture and Release Rates

June 30, 2017

Years Since Issuance	Surface		Underground		Other	
	Forfeiture	Release	Forfeiture	Release	Forfeiture	Release
	(1)	(2)	(3)	(4)	(5)	(6)
1	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
3	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
4	1.10%	0.50%	1.10%	5.00%	0.50%	0.50%
5	1.10%	0.50%	1.10%	5.00%	0.50%	0.50%
6	1.10%	0.50%	1.10%	5.00%	0.50%	1.00%
7	1.10%	0.50%	1.10%	5.00%	0.50%	1.00%
8	1.10%	0.50%	1.10%	5.00%	0.50%	2.00%
9	1.10%	0.50%	1.10%	5.00%	0.50%	3.00%
10	1.10%	4.00%	1.10%	5.00%	0.50%	3.00%
11	1.10%	4.00%	1.10%	5.00%	0.50%	3.00%
12	1.10%	4.00%	1.10%	4.00%	0.50%	4.00%
13	1.10%	4.00%	1.10%	4.00%	0.50%	4.00%
14	1.10%	4.00%	1.10%	4.00%	0.50%	3.00%
15	1.10%	4.00%	1.10%	4.00%	0.50%	3.00%
16	1.10%	4.00%	1.10%	4.00%	0.50%	3.00%
17	1.10%	4.00%	1.10%	4.00%	0.50%	3.00%
18	1.10%	4.00%	1.10%	4.00%	0.50%	3.00%
19	1.10%	4.00%	1.10%	4.00%	0.50%	3.00%
20	1.10%	5.00%	1.10%	4.00%	0.50%	5.00%
21	1.10%	5.00%	1.10%	4.00%	0.50%	5.00%
22	1.10%	5.00%	1.10%	4.00%	0.50%	3.00%
23	1.10%	5.00%	1.10%	4.00%	0.50%	3.00%
24	1.00%	5.00%	1.00%	4.00%	0.50%	3.00%
25	1.00%	5.00%	1.00%	5.00%	0.50%	3.00%
26	1.00%	5.00%	1.00%	5.00%	0.50%	3.00%
27	1.00%	5.00%	1.00%	5.00%	0.50%	3.00%
28	1.00%	5.00%	1.00%	5.00%	0.50%	3.00%
29	1.00%	5.00%	1.00%	5.00%	0.50%	3.00%
30	1.00%	5.00%	1.00%	5.00%	0.50%	3.00%
31	1.00%	5.00%	0.01%	5.00%	0.50%	3.00%
32	1.00%	5.00%	0.01%	5.00%	0.50%	3.00%
33	1.00%	5.00%	0.01%	5.00%	0.50%	3.00%
34	0.01%	5.00%	0.01%	5.00%	0.01%	3.00%
35	0.01%	5.00%	0.01%	5.00%	0.01%	3.00%
36	0.01%	5.00%	0.01%	5.00%	0.01%	3.00%
37	0.01%	5.00%	0.01%	5.00%	0.01%	3.00%
38	0.01%	5.00%	0.01%	5.00%	0.01%	3.00%
39	0.01%	5.00%	0.01%	5.00%	0.01%	0.10%
40	0.01%	5.00%	0.01%	5.00%	0.01%	0.10%
41	0.01%	5.00%	0.01%	5.00%	0.01%	0.10%
42	0.01%	5.00%	0.01%	4.00%	0.01%	0.10%
43	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
44	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
45	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
46	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
47	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
48	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
49	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
50	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
51	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
52	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
53	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
54	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
55	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
56	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%
57	0.01%	4.00%	0.01%	4.00%	0.01%	0.10%

Footnotes:

- (1) - (2) Exhibit 24.1
- (3) - (4) Exhibit 24.2
- (5) - (6) Exhibit 24.3

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Number of Permits
 June 30, 2017

Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	8	8	7	7	7	7	7	7	7	7	6	6	6	6	6	6	5	4	4
1968	8	8	8	8	8	8	8	8	8	8	8	8	8	7	7	7	5	5	4
1969	12	12	10	10	10	10	10	10	10	10	10	10	10	9	9	8	7	7	7
1970	19	19	18	18	18	18	18	18	17	17	17	17	17	17	12	11	8	6	4
1971	18	18	18	18	18	18	18	18	18	18	18	18	18	14	11	8	7	4	4
1972	22	22	21	21	21	21	21	21	21	21	21	20	16	10	8	6	6	5	4
1973	24	24	24	24	24	24	24	24	23	22	21	18	13	12	10	9	8	7	7
1974	67	67	67	67	67	67	67	66	65	64	49	39	29	24	20	17	16	15	13
1975	97	97	96	95	94	89	87	85	84	64	47	35	28	21	19	16	15	13	11
1976	120	118	117	112	112	112	108	108	86	64	52	44	39	37	35	32	31	28	25
1977	128	128	123	121	119	118	116	91	70	56	43	35	27	25	22	22	21	21	19
1978	126	123	122	119	115	115	97	74	62	54	43	41	39	32	30	27	20	17	15
1979	100	99	98	96	94	85	78	74	64	59	54	47	41	36	30	27	25	19	19
1980	121	121	120	120	107	102	95	90	85	80	76	70	64	57	51	47	44	40	38
1981	138	136	135	125	118	114	108	104	96	91	82	76	67	56	52	45	39	36	32
1982	160	160	153	144	128	123	113	104	98	89	72	63	52	41	40	38	32	26	23
1983	162	159	152	142	125	118	109	100	90	63	54	48	42	34	29	26	22	17	16
1984	109	106	100	93	92	87	85	77	72	62	53	43	39	29	27	24	20	20	18
1985	130	123	115	113	109	107	105	97	85	72	64	54	49	34	29	26	26	26	21
1986	131	129	125	119	115	110	96	87	75	65	58	53	47	43	37	30	26	23	22
1987	133	133	123	120	117	105	94	89	79	60	54	42	36	30	24	21	20	19	19
1988	124	122	115	110	104	99	89	82	72	64	54	49	43	35	34	33	32	30	30
1989	134	134	131	125	121	118	113	102	93	84	67	61	53	49	47	45	43	41	36
1990	57	56	50	47	42	42	41	36	30	22	19	17	16	15	15	14	11	11	11
1991	63	61	60	59	58	56	55	50	47	33	29	27	23	22	21	19	18	15	15
1992	65	63	63	57	56	55	54	49	42	36	32	30	27	26	20	20	17	17	17
1993	39	36	32	31	31	31	28	25	23	19	19	18	18	16	15	13	12	12	12
1994	44	44	44	43	39	37	32	32	30	25	22	21	20	18	18	16	16	15	15
1995	33	33	33	33	33	32	32	30	29	27	26	26	25	25	23	22	22	21	21
1996	42	41	40	39	38	38	38	38	36	36	34	34	31	28	27	27	26	23	23
1997	44	44	44	42	42	42	41	40	39	37	37	36	34	34	33	33	32	31	31
1998	21	21	20	19	18	17	16	16	15	15	15	14	12	11	11	11	11	11	10
1999	17	16	16	16	15	14	14	13	11	11	11	11	10	10	9	9	9	9	9
2000	18	18	18	17	17	16	15	15	14	14	14	14	14	13	12	11	11	11	11
2001	34	34	34	33	33	33	33	31	31	31	31	30	30	30	30	30	30	30	30
2002	19	19	19	19	18	18	16	15	15	15	15	14	13	12	12	12	12	12	12
2003	33	33	33	32	32	30	30	30	30	29	29	29	29	29	29	29	29	29	29
2004	26	26	26	26	26	26	26	26	26	26	26	25	25	25	25	25	25	25	25
2005	16	16	16	15	14	14	14	14	14	14	13	13	13	13	13	13	13	13	13
2006	30	30	30	30	30	30	30	30	29	28	26	26	26	26	26	26	26	26	26
2007	24	24	24	24	23	23	23	23	22	21	21	21	21	21	21	21	21	21	21
2008	24	24	24	24	24	24	24	24	23	23	23	23	23	23	23	23	23	23	23
2009	19	19	19	19	19	19	19	19	18	18	18	18	18	18	18	18	18	18	18
2010	17	17	17	17	17	16	16	16	16	16	16	16	16	16	16	16	16	16	16
2011	22	22	22	22	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
2012	35	35	35	34	33	33	33	33	33	33	33	33	33	33	33	33	33	33	33
2013	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19	19
2014	18	18	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17	17
2015	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
2016	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11	11
2017	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Number of Permits
 June 30, 2017

Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	2	2	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
1968	4	3	3	2	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0
1969	5	5	3	3	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	4	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1971	3	3	3	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0
1972	4	3	3	3	2	2	2	2	1	1	1	1	1	1	1	1	1	1	1
1973	7	6	4	4	3	3	2	2	2	1	1	1	1	1	1	1	1	1	1
1974	13	10	10	8	5	4	2	2	2	2	2	2	2	2	2	2	2	1	1
1975	11	7	5	5	5	5	4	3	3	3	3	3	3	3	3	2	2	2	2
1976	23	20	20	19	18	14	14	14	14	14	14	14	14	13	13	12	12	12	11
1977	17	14	13	11	10	9	7	7	7	6	6	6	5	5	4	4	4	4	4
1978	14	12	11	10	10	8	7	6	6	6	6	5	5	5	5	5	5	5	5
1979	17	16	15	15	14	13	10	9	9	7	7	6	6	6	6	6	6	5	4
1980	35	30	25	23	22	22	22	21	20	15	14	14	14	14	14	12	12	11	11
1981	28	26	23	20	20	17	17	17	17	17	16	15	14	14	14	14	14	14	
1982	19	17	16	14	13	13	13	12	11	11	10	10	9	9	9	9	9		
1983	15	15	13	13	13	12	12	12	9	8	8	8	7	7	6	6			
1984	15	13	13	13	13	8	8	8	8	7	6	6	5	5	5				
1985	19	19	19	19	16	15	15	14	14	14	14	14	14	14					
1986	22	20	19	17	15	14	13	13	13	12	12	11	11						
1987	18	17	16	14	11	10	10	10	10	10	10	10							
1988	29	27	25	25	25	23	20	20	20	19	19								
1989	34	32	30	27	27	26	24	24	24	22									
1990	11	9	8	8	8	7	7	7	7										
1991	14	13	13	13	13	13	12	12											
1992	17	16	15	15	14	14	14												
1993	11	11	11	11	11	11													
1994	15	15	14	13	13														
1995	21	21	21	20															
1996	23	22	22																
1997	31	31																	
1998	10																		
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2016																			
2017																			

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Number of Permits
 June 30, 2017

Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
1973	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
1974	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0
1975	2	2	2	2	2	2	2	2	0	0	0	0	0	0	0	0	0	0	0
1976	11	11	11	10	10	10	10	10	0	0	0	0	0	0	0	0	0	0	0
1977	4	3	3	3	3	3	3	3	0	0	0	0	0	0	0	0	0	0	0
1978	5	5	5	5	5	5	5	5	0	0	0	0	0	0	0	0	0	0	0
1979	4	4	4	4	4	4	4	4	0	0	0	0	0	0	0	0	0	0	0
1980																			
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2016																			
2017																			

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Number of Releases
 June 30, 2017

Completely Released Issue Year	Months of Maturity																			
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	1	1	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	2	0	1	0
1969	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	5	1	3	2	1	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	4	2	3	1	2	0	0
1972	0	0	1	0	0	0	0	0	0	0	1	3	6	2	2	0	1	1	1	0
1973	0	0	0	0	0	0	0	0	0	0	1	3	5	1	2	1	1	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	13	9	10	4	3	2	1	1	1	2
1975	0	0	0	0	0	0	0	1	0	19	16	11	7	5	1	3	1	1	1	2
1976	0	0	0	1	0	0	1	0	22	19	11	8	5	2	2	3	1	3	2	0
1977	0	0	0	0	0	0	1	21	16	14	11	7	5	2	2	0	1	0	1	0
1978	0	0	0	0	0	0	17	17	10	7	11	2	1	4	2	2	5	3	2	0
1979	0	0	0	0	0	8	7	4	9	5	4	6	2	4	5	1	1	6	0	0
1980	0	0	0	0	10	4	7	5	5	4	4	3	5	6	4	3	3	3	2	0
1981	0	0	0	6	6	3	6	4	7	4	7	4	7	7	3	5	6	3	4	0
1982	0	0	5	8	14	4	7	8	6	6	11	8	6	8	0	1	6	6	2	0
1983	0	2	4	7	12	5	4	8	8	15	5	5	4	7	5	2	4	2	0	0
1984	0	0	5	2	0	4	2	5	4	9	9	9	4	7	2	2	4	0	2	0
1985	0	7	4	1	1	0	2	6	5	7	7	10	4	13	5	0	0	0	3	0
1986	1	2	3	3	2	1	4	4	6	9	6	4	5	4	4	7	4	3	1	0
1987	0	0	3	1	1	7	4	3	8	15	6	10	4	5	5	2	0	0	0	0
1988	1	1	2	1	1	1	4	5	9	5	9	5	3	8	1	0	1	2	0	0
1989	1	0	0	1	3	1	4	9	8	8	17	4	5	4	2	1	2	2	4	0
1990	0	0	1	0	1	0	1	5	6	7	2	2	1	0	1	0	1	2	0	0
1991	0	0	0	0	0	1	0	5	3	14	4	2	4	1	0	1	1	3	0	0
1992	0	1	0	5	1	1	0	3	5	5	4	2	3	1	6	0	0	0	0	0
1993	0	1	1	0	0	0	3	1	2	4	0	0	0	0	2	0	2	1	0	0
1994	0	0	0	0	4	0	4	0	2	5	3	1	1	2	0	2	0	1	0	0
1995	0	0	0	0	0	1	0	2	1	2	1	0	0	0	2	1	0	1	0	0
1996	0	1	1	1	1	0	0	0	2	0	2	0	1	2	1	0	1	2	0	0
1997	0	0	0	1	0	0	1	1	1	2	0	1	2	0	1	0	0	0	0	0
1998	0	0	1	1	0	1	0	0	0	0	0	1	2	1	0	0	0	0	1	0
1999	0	1	0	0	0	1	0	0	2	0	0	0	1	0	1	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0	0	0	0
2001	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0
2003	0	0	0	1	0	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	1
2008	0	0	0	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Number of Releases
 June 30, 2017

Completely Released Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	2	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	1	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
1969	2	0	2	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	1	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1972	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1973	0	1	2	0	1	0	1	0	0	1	0	0	0	0	0	0	0	0	0
1974	0	3	0	2	3	1	2	0	0	0	0	0	0	0	0	0	0	1	0
1975	0	4	2	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1976	2	3	0	1	1	3	0	0	0	0	0	0	0	0	1	0	0	0	1
1977	2	3	1	2	1	1	2	0	0	1	0	0	0	0	1	0	0	0	0
1978	1	2	1	1	0	2	1	0	0	0	0	1	0	0	0	0	0	0	0
1979	2	1	1	0	1	1	3	1	0	2	0	1	0	0	0	0	0	1	1
1980	3	5	3	2	1	0	0	1	1	0	1	0	0	0	0	2	0	1	0
1981	2	0	3	3	0	3	0	0	0	0	1	0	1	0	0	0	0	0	0
1982	1	2	1	1	1	0	0	1	1	0	1	0	1	0	0	0	0	0	0
1983	1	0	1	0	0	1	0	0	3	1	0	0	1	0	1	0	0	0	0
1984	3	2	0	0	0	2	0	0	0	1	1	0	1	0	0	0	0	0	0
1985	1	0	0	0	2	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1986	0	1	1	0	1	1	1	0	0	1	0	1	0	0	0	0	0	0	0
1987	1	1	0	2	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	2	0	0	2	2	0	0	1	0	0	0	0	0	0	0	0	0
1989	2	2	2	2	0	1	2	0	0	2	0	0	0	0	0	0	0	0	0
1990	0	2	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	1	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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 June 30, 2017

Completely Released Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Revoked Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1970	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	1
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0
1974	0	0	0	0	0	0	0	1	1	1	2	1	0	1	1	1	0	0	0
1975	0	0	1	1	1	5	2	1	1	1	1	1	0	2	1	0	0	1	0
1976	0	2	1	4	0	0	3	0	0	3	1	0	0	0	0	0	0	0	1
1977	0	0	5	2	2	1	1	4	5	0	2	1	3	0	1	0	0	0	1
1978	0	3	1	3	4	0	1	6	2	1	0	0	1	3	0	1	2	0	0
1979	0	1	1	2	2	1	0	0	1	0	1	1	4	1	1	2	1	0	0
1980	0	0	1	0	3	1	0	0	0	1	0	3	1	1	2	1	0	1	0
1981	0	2	1	4	1	1	0	0	1	1	2	2	2	4	1	2	0	0	0
1982	0	0	2	1	2	1	3	1	0	3	6	1	5	3	1	1	0	0	1
1983	0	1	3	3	5	2	5	1	2	12	4	1	2	1	0	1	0	3	1
1984	0	3	1	5	1	1	0	3	1	1	0	1	0	3	0	1	0	0	0
1985	0	0	4	1	3	2	0	2	7	6	1	0	1	2	0	3	0	0	2
1986	0	0	1	3	2	4	10	5	6	1	1	1	1	0	2	0	0	0	0
1987	0	0	7	2	2	5	7	2	2	4	0	2	2	1	1	1	1	1	0
1988	0	1	5	4	5	4	6	2	1	3	1	0	3	0	0	1	0	0	0
1989	1	0	3	5	1	2	1	2	1	1	0	2	3	0	0	1	0	0	1
1990	0	1	5	3	4	0	0	0	0	1	1	0	0	0	0	0	1	0	0
1991	0	2	1	1	1	1	1	0	0	0	0	0	0	0	1	1	0	0	0
1992	0	1	0	1	0	0	1	2	2	1	0	0	0	0	0	3	0	0	0
1993	0	2	3	1	0	0	0	2	0	0	0	1	0	0	0	1	0	0	0
1994	0	0	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	1	0
1997	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	1	1	0
1998	0	0	0	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	1	0	1	1	0	1	0	0	0	0	1	0	0	0	0	0
2001	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	1	0	2	0	0	0	0	0	1	1	0	0			
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0			
2004	0	0	0	0	0	0	0	0	0	0	0	1	0	0					
2005	0	0	0	1	0	0	0	0	0	0	0	0	0						
2006	0	0	0	0	0	0	0	0	0	0	2	0							
2007	0	0	0	0	1	0	0	0	1	0	0								
2008	0	0	0	0	0	0	0	0	1	0									
2009	0	0	0	0	0	0	0	1	0										
2010	0	0	0	0	0	1	0	0											
2011	0	0	0	0	1	0	0												
2012	0	0	0	1	0	0													
2013	0	0	0	0	0														
2014	0	0	0	0															
2015	0	0	0																
2016	0	0																	
2017	0																		

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Revoked Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	1	0	0	0	0	0	0	1	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	2	0	0	0	0	0	0	5	0	0	0	0	0	0	0	0	0
1981	2	2	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1982	2	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	1	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	1	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Revoked Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Terminated Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Number of Misc Terminations
 June 30, 2017

Terminated Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Number of Misc Terminations
 June 30, 2017

Terminated Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
Surface
Forfeiture Percentages
June 30, 2017

Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	5.26%	0.00%	0.00%	0.00%	0.00%	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.67%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	0.00%	0.00%	14.29%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.17%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.49%	1.52%	1.54%	3.13%	2.04%	0.00%	3.45%	4.17%	5.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	1.03%	1.04%	1.05%	5.32%	2.25%	1.15%	1.18%	1.19%	1.56%	2.13%	0.00%	7.14%	4.76%	0.00%	0.00%	6.67%	0.00%
1976	0.00%	1.67%	0.85%	3.42%	0.00%	0.00%	2.68%	0.00%	0.00%	3.49%	1.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.57%
1977	0.00%	0.00%	3.91%	1.63%	1.65%	0.84%	0.85%	3.45%	5.49%	0.00%	3.57%	2.33%	8.57%	0.00%	4.00%	0.00%	0.00%	0.00%	4.76%
1978	0.00%	2.38%	0.81%	2.46%	3.36%	0.00%	0.87%	6.19%	2.70%	1.61%	0.00%	0.00%	2.44%	7.69%	0.00%	3.33%	7.41%	0.00%	0.00%
1979	0.00%	1.00%	1.01%	2.04%	2.08%	1.06%	0.00%	0.00%	1.35%	0.00%	1.69%	1.85%	8.51%	2.44%	2.78%	6.67%	3.70%	0.00%	0.00%
1980	0.00%	0.00%	0.83%	0.00%	2.50%	0.93%	0.00%	0.00%	0.00%	1.18%	0.00%	3.95%	1.43%	1.56%	3.51%	1.96%	0.00%	2.27%	0.00%
1981	0.00%	1.45%	0.74%	2.96%	0.80%	0.85%	0.00%	0.00%	0.96%	1.04%	2.20%	2.44%	2.63%	5.97%	1.79%	3.85%	0.00%	0.00%	0.00%
1982	0.00%	0.00%	1.25%	0.65%	1.39%	0.78%	2.44%	0.88%	0.00%	3.06%	6.74%	1.39%	7.94%	5.77%	2.44%	2.50%	0.00%	0.00%	3.85%
1983	0.00%	0.62%	1.89%	1.97%	3.52%	1.60%	4.24%	0.92%	2.00%	13.33%	6.35%	1.85%	4.17%	2.38%	0.00%	3.45%	0.00%	13.64%	5.88%
1984	0.00%	2.75%	0.94%	5.00%	1.08%	1.09%	0.00%	3.53%	1.30%	1.39%	0.00%	1.89%	0.00%	7.69%	0.00%	3.70%	0.00%	0.00%	0.00%
1985	0.00%	0.00%	3.25%	0.87%	2.65%	1.83%	0.00%	1.90%	7.22%	7.06%	1.39%	0.00%	1.85%	4.08%	0.00%	10.34%	0.00%	0.00%	7.69%
1986	0.00%	0.00%	0.78%	2.40%	1.68%	3.48%	9.09%	5.21%	6.90%	1.33%	1.54%	1.72%	1.89%	0.00%	4.65%	0.00%	0.00%	0.00%	0.00%
1987	0.00%	0.00%	5.26%	1.63%	1.67%	4.27%	6.67%	2.13%	2.25%	5.06%	0.00%	3.70%	4.76%	2.78%	3.33%	4.17%	4.76%	5.00%	0.00%
1988	0.00%	0.81%	4.10%	3.48%	4.55%	3.85%	6.06%	2.25%	1.22%	4.17%	1.56%	0.00%	6.12%	0.00%	0.00%	2.94%	0.00%	0.00%	0.00%
1989	0.74%	0.00%	2.24%	3.82%	0.80%	1.65%	0.85%	1.77%	0.98%	1.08%	0.00%	2.99%	4.92%	0.00%	0.00%	2.13%	0.00%	0.00%	2.44%
1990	0.00%	1.75%	8.93%	6.00%	8.51%	0.00%	0.00%	0.00%	0.00%	3.33%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	0.00%	0.00%
1991	0.00%	3.17%	1.64%	1.67%	1.69%	1.72%	1.79%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.55%	4.76%	0.00%	0.00%	0.00%
1992	0.00%	1.54%	0.00%	1.59%	0.00%	0.00%	1.82%	3.70%	4.08%	2.38%	0.00%	0.00%	0.00%	0.00%	0.00%	15.00%	0.00%	0.00%	0.00%
1993	0.00%	5.13%	8.33%	3.13%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	5.26%	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%
1994	0.00%	0.00%	0.00%	2.27%	0.00%	5.13%	2.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1995	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1996	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.88%	3.23%	0.00%	0.00%	0.00%	3.85%	0.00%
1997	0.00%	0.00%	0.00%	2.27%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.03%	3.13%	0.00%
1998	0.00%	0.00%	0.00%	0.00%	5.26%	0.00%	5.88%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1999	0.00%	0.00%	0.00%	0.00%	6.25%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000	0.00%	0.00%	0.00%	5.56%	0.00%	5.88%	6.25%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%
2001	0.00%	0.00%	0.00%	2.94%	0.00%	0.00%	0.00%	3.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2002	0.00%	0.00%	0.00%	0.00%	5.26%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.00%	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.00%	0.00%	0.00%	0.00%	4.17%	0.00%	0.00%	0.00%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.17%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.00%	0.00%	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	0.00%	0.00%	0.00%	0.00%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2012	0.00%	0.00%	0.00%	2.86%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2017	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Weighted Avg																			
5 Year	0.00%	0.00%	0.00%	0.91%	0.90%	0.88%	0.00%	0.89%	1.83%	0.00%	1.69%	0.92%	0.90%	1.80%	0.00%	0.00%	1.06%	2.25%	0.00%
10 Year	0.00%	0.00%	0.00%	0.90%	0.87%	0.42%	0.91%	0.87%	1.33%	0.00%	0.98%	0.46%	1.36%	1.35%	0.00%	0.52%	2.06%	1.14%	0.00%
15 Year	0.00%	0.00%	0.00%	1.13%	1.15%	0.59%	1.17%	0.85%	1.10%	0.00%	0.57%	0.57%	1.17%	0.92%	0.29%	1.22%	1.53%	1.29%	0.99%
All Year	0.03%	0.66%	1.65%	1.89%	1.66%	1.39%	1.91%	1.63%	1.86%	2.22%	1.53%	1.33%	2.62%	2.43%	1.47%	2.15%	1.18%	1.65%	1.35%
Prior Selected	0.00%	0.00%	0.00%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Selected	0.00%	0.00%	0.00%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Forfeiture Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1980	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1981	6.25%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1982	8.70%	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1983	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1984	0.00%	0.00%	0.00%	0.00%	0.00%	23.08%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1985	4.76%	0.00%	0.00%	0.00%	5.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1986	0.00%	4.55%	0.00%	10.53%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1987	0.00%	0.00%	5.88%	0.00%	0.00%	9.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1988	3.33%	6.90%	0.00%	0.00%	0.00%	0.00%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1989	0.00%	0.00%	0.00%	3.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1990	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1991	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1992	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1993	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1994	0.00%	0.00%	0.00%	7.14%	0.00%														
1995	0.00%	0.00%	0.00%	0.00%															
1996	0.00%	0.00%	0.00%																
1997	0.00%	0.00%																	
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2012																			
2013																			
2014																			
2015																			
2016																			
2017																			
Weighted Avg																			
5 Year	0.00%	0.00%	0.00%	1.35%	0.00%	0.00%	1.20%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Year	0.00%	0.97%	0.55%	2.33%	1.23%	2.61%	0.70%	0.00%	0.00%	3.42%	0.00%	0.97%	1.05%	1.08%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year	0.66%	1.02%	0.75%	1.95%	0.82%	1.70%	0.47%	0.51%	0.00%	2.70%	0.00%	0.78%	0.86%	1.00%	0.00%	0.00%	0.00%	0.00%	0.00%
All Year	1.10%	1.20%	1.18%	1.34%	0.61%	1.69%	0.78%	0.88%	0.00%	3.09%	0.00%	0.76%	0.85%	0.99%	0.00%	0.00%	0.00%	0.00%	0.00%
Prior Selected	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Selected	1.10%	1.10%	1.10%	1.10%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	0.01%	0.01%	0.01%	0.01%	0.01%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Forfeiture Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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5 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
All Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Prior Selected	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Selected	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%

West Virginia Department of Environmental Protection Office of Special Reclamation
Surface
Release Percentages
June 30, 2017

Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	16.67%	20.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	28.57%	0.00%	20.00%
1969	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.11%	12.50%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	29.41%	8.33%	27.27%	25.00%	16.67%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.22%	14.29%	27.27%	12.50%	28.57%	0.00%
1972	0.00%	0.00%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.76%	15.00%	37.50%	20.00%	25.00%	0.00%	16.67%	20.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.55%	14.29%	27.78%	7.69%	16.67%	10.00%	11.11%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.31%	18.37%	25.64%	13.79%	12.50%	10.00%	5.88%	6.25%	13.33%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	22.62%	25.00%	23.40%	20.00%	17.86%	4.76%	15.79%	6.25%	6.67%	15.38%	0.00%
1976	0.00%	0.00%	0.00%	0.85%	0.00%	0.00%	0.89%	0.00%	20.37%	22.09%	17.19%	15.38%	11.36%	5.13%	5.41%	8.57%	3.13%	9.68%	7.14%
1977	0.00%	0.00%	0.00%	0.00%	0.00%	0.85%	18.10%	17.58%	20.00%	19.64%	16.28%	14.29%	7.41%	8.00%	0.00%	4.55%	0.00%	4.76%	0.00%
1978	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.78%	17.53%	13.51%	11.29%	20.37%	4.65%	2.44%	10.26%	6.25%	6.67%	18.52%	15.00%	11.76%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	8.51%	5.13%	12.16%	7.81%	6.78%	11.11%	4.26%	9.76%	13.89%	3.33%	3.70%	24.00%	0.00%	0.00%
1980	0.00%	0.00%	0.00%	0.00%	8.33%	3.74%	6.86%	5.26%	5.56%	4.71%	5.00%	3.95%	7.14%	9.38%	7.02%	5.88%	6.38%	6.82%	5.00%
1981	0.00%	0.00%	0.00%	4.44%	4.80%	2.54%	5.26%	3.70%	6.73%	4.17%	7.69%	4.88%	9.21%	10.45%	5.36%	9.62%	13.33%	7.69%	11.11%
1982	0.00%	0.00%	3.13%	5.23%	9.72%	3.13%	5.69%	7.08%	5.77%	6.12%	12.36%	11.11%	9.52%	15.38%	0.00%	2.50%	15.79%	18.75%	7.69%
1983	0.00%	1.23%	2.52%	4.61%	8.45%	4.00%	3.39%	7.34%	8.00%	16.67%	7.94%	9.26%	8.33%	16.67%	14.71%	6.90%	15.38%	9.09%	0.00%
1984	0.00%	0.00%	4.72%	2.00%	0.00%	4.35%	2.30%	5.88%	5.19%	12.50%	14.52%	16.98%	9.30%	17.95%	6.90%	7.41%	16.67%	0.00%	10.00%
1985	0.00%	5.38%	3.25%	0.87%	0.88%	0.00%	1.87%	5.71%	5.15%	8.24%	9.72%	15.63%	7.41%	26.53%	14.71%	0.00%	0.00%	0.00%	11.54%
1986	0.76%	1.53%	2.33%	2.40%	1.68%	0.87%	3.64%	4.17%	6.90%	12.00%	9.23%	6.90%	9.43%	8.51%	9.30%	18.92%	13.33%	11.54%	4.35%
1987	0.00%	0.00%	2.26%	0.81%	0.83%	5.98%	3.81%	3.19%	8.99%	18.99%	10.00%	18.52%	9.52%	13.89%	16.67%	8.33%	0.00%	0.00%	0.00%
1988	0.80%	0.81%	1.64%	0.87%	0.91%	0.96%	4.04%	5.62%	10.98%	6.94%	14.06%	9.26%	6.12%	18.60%	2.86%	0.00%	3.03%	6.25%	0.00%
1989	0.74%	0.00%	0.00%	0.76%	2.40%	0.83%	3.39%	7.96%	7.84%	8.60%	20.24%	5.97%	8.20%	7.55%	4.08%	2.13%	4.44%	4.65%	9.76%
1990	0.00%	0.00%	1.79%	0.00%	2.13%	0.00%	2.38%	12.20%	16.67%	23.33%	9.09%	10.53%	5.88%	0.00%	6.25%	0.00%	6.67%	14.29%	0.00%
1991	0.00%	0.00%	0.00%	0.00%	0.00%	1.72%	0.00%	9.09%	6.00%	29.79%	12.12%	6.90%	14.81%	4.35%	0.00%	4.76%	5.26%	16.67%	0.00%
1992	0.00%	1.54%	0.00%	7.94%	1.75%	1.79%	0.00%	5.56%	10.20%	11.90%	11.11%	6.25%	10.00%	3.70%	23.08%	0.00%	0.00%	0.00%	0.00%
1993	0.00%	2.56%	2.78%	0.00%	0.00%	0.00%	9.68%	3.57%	8.00%	17.39%	0.00%	0.00%	0.00%	11.11%	0.00%	0.00%	13.33%	7.69%	0.00%
1994	0.00%	0.00%	0.00%	0.00%	9.30%	0.00%	10.81%	0.00%	6.25%	16.67%	12.00%	4.55%	4.76%	10.00%	0.00%	11.11%	0.00%	6.25%	0.00%
1995	0.00%	0.00%	0.00%	0.00%	0.00%	3.03%	0.00%	6.25%	3.33%	6.90%	3.70%	0.00%	0.00%	0.00%	8.00%	4.35%	0.00%	4.55%	0.00%
1996	0.00%	2.38%	2.44%	2.50%	2.56%	0.00%	0.00%	0.00%	5.26%	0.00%	5.56%	0.00%	2.94%	6.45%	3.57%	0.00%	3.70%	7.69%	0.00%
1997	0.00%	0.00%	0.00%	2.27%	0.00%	0.00%	2.38%	2.44%	2.50%	5.13%	0.00%	2.70%	5.56%	0.00%	2.94%	0.00%	0.00%	0.00%	0.00%
1998	0.00%	0.00%	4.76%	5.00%	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	6.67%	14.29%	8.33%	0.00%	0.00%	0.00%	0.00%	9.09%
1999	0.00%	5.88%	0.00%	0.00%	0.00%	6.67%	0.00%	0.00%	15.38%	0.00%	0.00%	0.00%	9.09%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%
2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.69%	8.33%	0.00%	0.00%
2001	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.03%	0.00%	0.00%	0.00%	3.23%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2002	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.00%	0.00%	0.00%	3.03%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	3.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.00%	0.00%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.33%	3.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	0.00%	0.00%	0.00%	0.00%	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2012	0.00%	0.00%	0.00%	0.00%	2.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	0.00%	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2017	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Weighted Avg																			
5 Year	0.00%	0.00%	0.95%	0.00%	1.80%	0.00%	0.00%	0.00%	0.92%	1.75%	0.85%	0.92%	0.00%	0.00%	2.13%	1.35%	0.00%	2.25%	1.05%
10 Year	0.00%	0.00%	0.46%	0.00%	1.30%	0.84%	0.00%	0.87%	0.44%	1.40%	0.49%	1.84%	2.73%	1.35%	2.86%	2.09%	1.55%	4.57%	0.61%
15 Year	0.00%	0.00%	0.29%	0.28%	0.86%	1.18%	0.29%	0.85%	1.93%	3.30%	2.01%	2.00%	4.09%	2.14%	4.99%	1.83%	2.45%	5.48%	2.96%
All Year	0.10%	0.55%	1.23%	1.45%	2.27%	1.78%	3.28%	5.25%	7.07%	9.95%	10.15%	8.43%	7.94%	9.70%	7.56%	5.61%	7.10%	7.78%	5.22%
Prior Selected	0.00%	0.00%	0.00%	0.50%	0.50%	1.00%	1.00%	2.00%	3.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Selected	0.00%	0.00%	0.00%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Release Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	33.33%	0.00%	0.00%	50.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	28.57%	0.00%	40.00%	0.00%	66.67%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	75.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	25.00%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	25.00%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	14.29%	33.33%	0.00%	25.00%	0.00%	33.33%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	23.08%	0.00%	20.00%	37.50%	20.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%
1975	0.00%	36.36%	28.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%
1976	8.00%	13.04%	0.00%	5.00%	5.26%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	8.33%	0.00%
1977	10.53%	17.65%	7.14%	15.38%	9.09%	10.00%	22.22%	0.00%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%
1978	6.67%	14.29%	8.33%	9.09%	0.00%	20.00%	12.50%	0.00%	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	10.53%	5.88%	6.25%	0.00%	6.67%	7.14%	23.08%	10.00%	0.00%	22.22%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%	16.67%	20.00%	0.00%
1980	7.89%	14.29%	10.00%	8.00%	4.35%	0.00%	0.00%	4.55%	4.76%	0.00%	6.67%	0.00%	0.00%	0.00%	14.29%	0.00%	8.33%	0.00%	0.00%
1981	6.25%	0.00%	11.54%	13.04%	0.00%	15.00%	0.00%	0.00%	0.00%	0.00%	5.88%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1982	4.35%	10.53%	5.88%	6.25%	7.14%	0.00%	0.00%	7.69%	8.33%	0.00%	9.09%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1983	6.25%	0.00%	6.67%	0.00%	0.00%	7.69%	0.00%	0.00%	25.00%	11.11%	0.00%	0.00%	12.50%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%
1984	16.67%	13.33%	0.00%	0.00%	0.00%	15.38%	0.00%	0.00%	0.00%	12.50%	14.29%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1985	4.76%	0.00%	0.00%	0.00%	10.53%	6.25%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1986	0.00%	4.55%	5.00%	0.00%	5.88%	6.67%	7.14%	0.00%	0.00%	7.69%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1987	5.26%	5.56%	0.00%	12.50%	21.43%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1988	0.00%	0.00%	7.41%	0.00%	0.00%	8.00%	8.70%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1989	5.56%	5.88%	6.25%	6.67%	0.00%	3.70%	7.69%	0.00%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1990	0.00%	18.18%	11.11%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1991	6.67%	7.14%	0.00%	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1992	0.00%	5.88%	6.25%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1993	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1994	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1995	0.00%	0.00%	0.00%	4.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1996	0.00%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1997	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1998	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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Weighted Avg																			
5 Year	0.00%	0.99%	2.35%	1.35%	1.67%	2.74%	6.02%	0.00%	0.00%	4.94%	1.61%	2.00%	6.12%	0.00%	2.04%	4.08%	0.00%	4.88%	5.41%
10 Year	2.09%	3.40%	3.83%	2.91%	4.32%	5.23%	4.23%	1.49%	2.92%	4.11%	3.33%	2.91%	4.21%	0.00%	2.47%	5.26%	0.00%	5.08%	4.76%
15 Year	2.99%	3.73%	3.75%	3.52%	3.67%	5.53%	4.65%	2.03%	2.58%	4.86%	2.65%	2.33%	3.45%	0.00%	2.33%	5.06%	0.00%	5.00%	4.65%
All Year	5.13%	7.78%	5.88%	5.09%	5.78%	7.12%	6.20%	2.21%	2.90%	6.19%	2.60%	2.29%	3.42%	0.00%	2.33%	5.06%	0.00%	5.00%	4.65%
Prior Selected	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Selected	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Surface
 Release Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	9.09%															
1977	0.00%	25.00%	0.00%																
1978	0.00%	0.00%																	
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2016																			
2017																			
Weighted Avg																			
5 Year	0.00%	4.35%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Year	3.33%	4.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year	3.33%	4.00%	0.00%	6.25%	0.00%														
All Year	3.33%	4.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Prior Selected	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Selected	5.00%	5.00%	5.00%	5.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Underground
 Number of Permits
 June 30, 2017

Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	1	1	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	2	2	2	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1
1976	13	13	13	13	13	12	12	11	10	7	7	7	5	5	4	4	4	3	3
1977	83	82	80	77	74	71	67	55	43	38	33	31	31	28	27	26	24	23	22
1978	80	78	74	67	65	64	50	38	31	29	27	26	26	26	25	24	22	20	20
1979	76	75	75	75	74	57	51	43	42	38	38	38	37	36	36	34	30	29	29
1980	134	134	132	132	115	103	98	96	89	85	85	84	83	83	80	73	67	63	52
1981	147	147	147	138	132	131	129	127	126	122	120	116	114	110	101	90	78	73	66
1982	213	213	208	190	176	160	147	140	139	134	123	114	107	85	77	68	61	54	49
1983	273	270	264	255	242	218	202	195	183	173	162	153	141	132	124	110	101	85	81
1984	116	113	105	97	82	76	70	67	64	61	51	49	44	39	36	33	30	27	25
1985	87	87	84	79	77	67	65	65	62	60	51	44	42	37	35	28	25	22	22
1986	103	99	97	96	92	88	85	78	68	62	57	47	42	33	27	26	22	21	21
1987	159	153	146	140	134	114	108	102	92	84	78	72	63	51	47	42	41	39	38
1988	154	151	143	134	126	114	99	87	77	69	60	51	41	36	29	27	24	24	22
1989	90	90	86	80	76	67	66	63	57	53	47	43	41	38	30	29	28	24	24
1990	43	40	37	36	34	34	30	26	26	24	22	21	19	19	16	16	16	16	16
1991	52	51	51	46	43	40	39	38	37	35	29	28	26	25	24	24	24	23	22
1992	45	45	41	40	40	36	34	33	33	30	28	27	24	22	20	19	18	17	16
1993	45	39	39	38	37	35	34	34	33	32	31	30	30	29	25	24	23	22	22
1994	61	59	58	58	55	51	49	48	46	46	43	40	40	38	34	34	31	31	30
1995	46	44	43	43	42	41	39	38	38	38	35	33	31	30	30	28	28	28	26
1996	44	44	43	41	39	38	36	36	36	36	35	32	30	30	29	27	27	27	25
1997	42	42	42	42	41	37	37	36	35	32	29	28	28	28	28	28	27	27	27
1998	37	37	37	35	35	32	30	30	30	30	29	27	26	26	26	25	22	22	19
1999	24	24	24	24	24	23	23	23	22	22	22	22	21	21	20	20	17	17	17
2000	34	34	34	34	33	33	31	29	29	29	26	26	26	26	26	22	22	22	22
2001	20	20	20	20	20	19	19	19	19	18	17	17	17	16	15	11	11	11	11
2002	33	33	33	32	32	30	30	29	29	28	25	25	24	23	22	22	22	22	22
2003	22	22	21	21	20	18	18	17	17	17	16	16	16	16	16	16	16	16	16
2004	21	20	20	20	20	20	20	19	18	16	16	16	16	16	16	16	16	16	16
2005	21	21	21	20	20	19	19	18	18	18	18	17	17	17	17	17	17	17	17
2006	19	19	19	19	19	17	17	17	17	17	16	16	16	16	16	16	16	16	16
2007	21	21	21	21	21	20	20	19	19	19	17	15	15	15	15	15	15	15	15
2008	26	25	23	23	22	22	22	22	21	20	20	20	20	20	20	20	20	20	20
2009	16	16	16	16	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
2010	24	24	24	23	23	22	18	18	18	18	18	18	18	18	18	18	18	18	18
2011	17	17	17	17	17	16	16	16	16	16	16	16	16	16	16	16	16	16	16
2012	19	19	16	15	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
2013	25	25	25	22	20	20	20	20	20	20	20	20	20	20	20	20	20	20	20
2014	15	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
2015	13	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
2016	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
2017	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

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Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	1	1	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1976	3	3	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	1
1977	17	15	14	11	9	9	8	7	7	7	6	5	5	5	4	4	4	4	4
1978	20	19	17	13	13	12	12	12	12	11	11	10	10	9	8	7	7	7	7
1979	29	28	27	26	25	23	20	19	19	17	15	14	14	13	13	13	13	13	12
1980	51	44	39	31	29	28	20	17	17	17	17	16	16	16	15	14	13	13	13
1981	57	53	46	42	39	38	36	33	31	29	28	28	27	27	23	23	23	23	
1982	42	41	40	36	36	30	28	26	26	25	25	23	23	22	22	22	22		
1983	77	72	69	66	63	55	53	53	51	49	48	43	43	42	42	42			
1984	23	23	23	21	18	17	16	14	14	14	13	13	13	12	12				
1985	21	20	17	17	13	13	13	13	13	12	12	12	11	11					
1986	19	16	13	10	9	8	8	7	7	7	6	6	6						
1987	35	33	30	29	29	27	27	25	24	24	22	22							
1988	21	20	19	17	17	17	17	16	16	16	16								
1989	22	22	21	20	18	17	17	17	17	17									
1990	13	13	13	11	11	10	10	10	9										
1991	19	19	19	19	18	17	17	16											
1992	16	14	13	13	12	12	12												
1993	21	19	19	18	18	18													
1994	28	27	26	26	26														
1995	25	25	25	25															
1996	25	22	22																
1997	27	26																	
1998	19																		
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2017																			

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Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	1	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	1	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	4	4	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	7	7	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	12	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Completely Released Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1976	0	0	0	0	0	1	0	0	1	2	0	0	2	0	1	0	0	1	0
1977	0	0	0	0	0	0	1	8	7	5	5	2	0	1	0	0	1	0	1
1978	0	1	0	0	0	0	12	8	4	2	0	2	1	0	0	1	0	2	2
1979	0	0	0	0	0	11	3	4	1	3	0	0	0	1	0	2	3	0	0
1980	0	0	0	0	10	6	4	1	7	4	0	1	1	0	2	7	4	4	9
1981	0	0	0	6	2	1	2	2	1	3	2	2	1	1	7	8	11	5	6
1982	0	0	3	16	14	13	13	5	1	3	9	6	4	14	6	9	6	7	4
1983	0	1	5	5	7	20	14	4	10	7	9	4	8	8	4	13	7	14	4
1984	0	0	7	5	10	1	1	2	1	1	4	1	5	4	3	3	3	1	1
1985	0	0	1	3	0	7	1	0	1	2	6	5	0	5	2	5	3	2	0
1986	0	3	2	1	2	0	2	0	5	7	4	5	9	5	7	3	1	3	1
1987	0	5	2	4	5	16	3	4	5	5	6	1	9	9	4	4	1	2	1
1988	1	3	4	7	5	9	6	7	9	6	6	5	8	3	4	2	1	0	1
1989	0	0	2	4	2	7	0	2	4	4	6	3	1	2	6	1	1	4	0
1990	0	1	0	0	2	0	0	3	0	2	2	1	2	0	3	0	0	0	0
1991	0	1	0	2	1	2	0	0	1	2	5	1	2	1	1	0	0	1	1
1992	0	0	3	1	0	2	2	1	0	3	1	0	3	2	2	1	1	1	1
1993	0	1	0	0	0	2	1	0	0	1	1	1	0	1	4	1	1	1	0
1994	0	1	0	0	2	4	2	1	2	0	3	3	0	2	4	0	3	0	1
1995	0	2	1	0	0	1	1	1	0	0	3	2	2	0	0	2	0	0	1
1996	0	0	1	2	0	1	2	0	0	0	1	2	2	0	1	2	0	0	2
1997	0	0	0	0	1	3	0	1	1	3	3	1	0	0	0	0	1	0	0
1998	0	0	0	2	0	1	2	0	0	0	0	2	1	0	0	1	3	0	3
1999	0	0	0	0	0	1	0	0	1	0	0	0	0	1	0	1	0	3	0
2000	0	0	0	0	1	0	2	2	0	0	2	0	0	0	0	0	4	0	0
2001	0	0	0	0	0	1	0	0	0	1	1	0	0	1	1	4	0		
2002	0	0	0	0	0	2	0	1	0	1	3	0	1	1	1	0			
2003	0	0	1	0	1	2	0	1	0	0	1	0	0	0	0				
2004	0	1	0	0	0	0	0	1	1	2	0	0	0	0					
2005	0	0	0	0	0	1	0	1	0	0	0	1	0						
2006	0	0	0	0	0	2	0	0	0	0	1	0							
2007	0	0	0	0	0	1	0	1	0	2	2								
2008	0	1	2	0	1	0	0	0	1	1									
2009	0	0	0	0	2	0	0	0	0	0									
2010	0	0	0	1	0	1	4	0											
2011	0	0	0	0	0	1	0												
2012	0	0	3	1	3	0													
2013	0	0	0	3	2														
2014	0	0	1	0															
2015	0	1	0																
2016	0	0																	
2017	0																		

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Completely Released Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1977	4	2	1	3	2	0	1	0	0	1	1	0	0	1	0	0	0	0	0
1978	0	1	0	4	0	1	0	0	0	0	1	0	1	1	1	0	0	0	0
1979	0	1	1	1	1	2	3	1	0	2	1	1	0	1	0	0	0	1	1
1980	1	7	5	8	2	1	8	3	0	0	0	1	0	0	0	1	1	0	0
1981	8	3	6	4	3	1	2	3	2	2	1	0	1	0	4	0	0	0	0
1982	3	1	1	3	0	6	2	1	0	0	0	2	0	1	0	0	0	0	0
1983	2	5	3	2	3	7	2	0	2	2	1	2	0	1	0	0	0	0	0
1984	2	0	0	1	3	1	1	1	0	0	1	0	0	1	0	0	0	0	0
1985	1	1	0	0	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1986	2	2	3	3	1	1	0	1	0	0	1	0	0	0	0	0	0	0	0
1987	2	2	2	1	0	2	0	2	0	0	2	0	0	0	0	0	0	0	0
1988	1	1	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1989	2	0	1	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	3	0	0	2	0	1	0	0	1	0	0	0	0	0	0	0	0	0	0
1991	2	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1992	0	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	1	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	2	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	3	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Completely Released Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Revoked Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0
1977	0	1	2	3	3	3	3	4	5	0	0	0	0	2	1	1	1	1	0
1978	0	1	4	7	2	1	2	4	3	0	0	0	0	0	0	0	1	0	0
1979	0	1	0	0	1	6	3	4	0	1	0	0	0	1	0	0	0	1	1
1980	0	0	2	0	7	6	1	1	0	0	0	0	0	0	1	0	2	0	2
1981	0	0	0	3	4	0	0	0	0	1	0	2	1	3	2	3	1	0	1
1982	0	0	2	2	0	3	0	2	0	2	2	3	3	8	2	0	1	0	1
1983	0	2	1	4	6	4	2	3	2	3	2	5	4	1	4	1	2	2	0
1984	1	3	1	3	5	5	5	1	2	2	6	1	0	1	0	0	0	2	1
1985	0	0	2	2	2	3	1	0	2	0	3	2	2	0	0	2	0	1	0
1986	0	1	0	0	2	0	2	3	2	3	2	0	1	0	2	3	0	1	0
1987	0	1	5	2	1	4	3	2	5	3	0	5	0	3	0	1	0	0	0
1988	0	0	4	2	3	3	9	5	1	2	3	4	2	2	3	0	2	0	1
1989	0	0	2	2	2	2	1	1	2	0	0	1	1	1	2	0	0	0	0
1990	0	2	3	1	0	0	4	1	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	3	2	1	1	1	0	0	1	0	0	0	0	0	0	0	0
1992	0	0	1	0	0	2	0	0	0	0	1	1	0	0	0	0	0	0	0
1993	0	5	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1994	0	1	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	1	0	1	0	0	0	0	0	0	1	0	0	0	0	1
1996	0	0	0	0	2	0	0	0	0	0	0	1	0	0	0	0	0	0	0
1997	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Revoked Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	1	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	2	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0
1981	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	3	0	0	1	0	0	0	1	0	1	0	0	0	0	0	0	0	0	0
1983	2	0	0	1	0	1	0	0	0	0	0	3	0	0	0	0	0	0	0
1984	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	3	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1986	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	1	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Revoked Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
 Underground
 Number of Misc Terminations
 June 30, 2017

Terminated Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
 Underground
 Forfeiture Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.33%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	1.20%	2.44%	3.75%	3.90%	4.05%	4.23%	5.97%	9.09%	0.00%	0.00%	0.00%	0.00%	6.45%	3.57%	3.70%	3.85%	4.17%	0.00%
1978	0.00%	1.25%	5.13%	9.46%	2.99%	1.54%	3.13%	8.00%	7.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	0.00%	0.00%
1979	0.00%	1.32%	0.00%	0.00%	1.33%	8.11%	5.26%	7.84%	0.00%	2.38%	0.00%	0.00%	0.00%	2.63%	0.00%	0.00%	2.94%	3.33%	0.00%
1980	0.00%	0.00%	1.49%	0.00%	5.30%	5.22%	0.97%	1.02%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.20%	0.00%	2.74%	0.00%	3.17%
1981	0.00%	0.00%	0.00%	2.04%	2.90%	0.00%	0.00%	0.00%	0.00%	0.79%	0.00%	1.67%	0.86%	2.63%	1.82%	2.97%	1.11%	0.00%	1.37%
1982	0.00%	0.00%	0.94%	0.96%	0.00%	1.70%	0.00%	1.36%	0.00%	1.44%	1.49%	2.44%	2.63%	7.48%	2.35%	0.00%	1.47%	0.00%	1.85%
1983	0.00%	0.73%	0.37%	1.52%	2.35%	1.65%	0.92%	1.49%	1.03%	1.64%	1.16%	3.09%	2.61%	0.71%	3.03%	0.81%	1.82%	1.98%	0.00%
1984	0.85%	2.59%	0.88%	2.86%	5.15%	6.10%	6.58%	1.43%	2.99%	3.13%	9.84%	1.96%	0.00%	2.27%	0.00%	0.00%	6.67%	3.70%	0.00%
1985	0.00%	0.00%	2.30%	2.38%	2.53%	3.90%	1.49%	0.00%	3.08%	0.00%	5.00%	3.92%	4.55%	0.00%	0.00%	5.71%	0.00%	4.00%	0.00%
1986	0.00%	0.97%	0.00%	0.00%	2.08%	0.00%	2.17%	3.41%	2.35%	3.85%	2.94%	0.00%	1.75%	0.00%	4.76%	9.09%	0.00%	3.85%	0.00%
1987	0.00%	0.63%	3.27%	1.37%	0.71%	2.99%	2.63%	1.85%	4.90%	3.26%	0.00%	6.41%	0.00%	4.76%	0.00%	2.13%	0.00%	0.00%	0.00%
1988	0.00%	0.00%	2.65%	1.40%	2.24%	2.38%	7.89%	5.05%	1.15%	2.60%	4.35%	6.67%	3.92%	4.88%	8.33%	0.00%	7.41%	0.00%	4.17%
1989	0.00%	0.00%	2.22%	2.33%	2.50%	2.63%	1.49%	1.52%	3.17%	0.00%	0.00%	2.13%	2.33%	2.44%	5.26%	0.00%	0.00%	0.00%	0.00%
1990	0.00%	4.65%	7.50%	2.70%	0.00%	0.00%	11.76%	3.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1991	0.00%	0.00%	0.00%	5.88%	4.35%	2.33%	2.50%	2.56%	0.00%	0.00%	2.86%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1992	0.00%	0.00%	2.22%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.00%	3.33%	3.57%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1993	0.00%	11.11%	0.00%	2.56%	0.00%	0.00%	0.00%	0.00%	2.94%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1994	0.00%	1.64%	1.69%	0.00%	1.72%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1995	0.00%	0.00%	0.00%	0.00%	2.33%	0.00%	2.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.23%	0.00%	0.00%	0.00%	0.00%	3.57%
1996	0.00%	0.00%	0.00%	0.00%	4.88%	0.00%	0.00%	0.00%	0.00%	0.00%	2.86%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1997	0.00%	0.00%	0.00%	0.00%	0.00%	2.44%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1998	0.00%	0.00%	0.00%	0.00%	0.00%	5.71%	0.00%	0.00%	0.00%	0.00%	3.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1999	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	3.45%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2001	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2002	0.00%	0.00%	0.00%	3.03%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.00%	0.00%	0.00%	4.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2012	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2017	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Weighted Avg																			
5 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.83%
10 Year	0.00%	0.00%	0.00%	0.51%	0.00%	0.00%	0.00%	0.00%	0.00%	0.94%	0.00%	0.00%	0.42%	0.00%	0.00%	0.00%	0.00%	0.00%	0.43%
15 Year	0.00%	0.00%	0.00%	0.62%	0.00%	0.60%	0.00%	0.00%	0.00%	0.51%	0.52%	0.00%	0.27%	0.52%	0.00%	0.53%	0.27%	0.55%	
All Year	0.04%	0.71%	1.21%	1.54%	1.93%	2.14%	1.93%	1.80%	1.45%	1.17%	1.46%	1.80%	1.08%	1.92%	1.54%	1.10%	1.11%	0.97%	1.08%
Prior Selected	0.00%	0.00%	0.00%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Selected	0.00%	0.00%	0.00%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%	1.10%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Underground
 Forfeiture Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	0.00%	10.53%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1980	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%
1981	1.52%	1.75%	1.89%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1982	6.12%	0.00%	0.00%	2.50%	0.00%	0.00%	0.00%	3.57%	0.00%	3.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1983	2.47%	0.00%	0.00%	1.45%	0.00%	1.59%	0.00%	0.00%	0.00%	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1984	0.00%	0.00%	0.00%	4.35%	0.00%	0.00%	0.00%	6.25%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1985	0.00%	0.00%	15.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1986	0.00%	5.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1987	2.63%	0.00%	3.03%	0.00%	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1988	0.00%	0.00%	0.00%	5.26%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1989	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1990	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1991	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1992	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1993	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1994	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1995	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1996	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1997	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1998	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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2016																			
2017																			
Weighted Avg																			
5 Year	0.00%	0.00%	0.00%	0.98%	0.00%	0.00%	0.00%	0.00%	1.33%	1.30%	0.00%	2.97%	0.00%	0.00%	0.84%	0.00%	0.00%	0.00%	0.00%
10 Year	0.44%	0.00%	0.47%	1.01%	0.00%	0.00%	0.00%	0.97%	0.47%	0.93%	0.48%	1.52%	0.00%	0.00%	0.68%	0.00%	0.00%	0.00%	0.00%
15 Year	0.56%	0.26%	1.04%	1.27%	0.00%	0.28%	0.00%	0.99%	0.37%	1.17%	0.43%	1.46%	0.00%	0.00%	0.68%	0.00%	0.00%	0.00%	0.00%
All Year	1.33%	0.33%	1.27%	1.01%	0.00%	0.26%	0.00%	0.98%	0.37%	1.17%	0.43%	1.46%	0.00%	0.00%	0.68%	0.00%	0.00%	0.00%	0.00%
Prior Selected	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Selected	1.10%	1.10%	1.10%	1.10%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	1.00%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Underground
 Forfeiture Percentages
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Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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2016																			
2017																			
Weighted Avg																			
5 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
All Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Prior Selected	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Selected	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Underground
 Release Percentages
 June 30, 2017

Issue Year	Months of Maturity																			
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	9.09%	20.00%	0.00%	0.00%	28.57%	0.00%	20.00%	0.00%	0.00%	25.00%	0.00%	0.00%
1977	0.00%	0.00%	0.00%	0.00%	0.00%	1.41%	11.94%	12.73%	11.63%	13.16%	6.06%	0.00%	3.23%	0.00%	0.00%	3.85%	0.00%	4.35%	0.00%	0.00%
1978	0.00%	1.25%	0.00%	0.00%	0.00%	0.00%	18.75%	16.00%	10.53%	6.45%	0.00%	6.90%	3.70%	0.00%	0.00%	3.85%	0.00%	8.33%	9.09%	0.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	14.86%	5.26%	7.84%	2.33%	7.14%	0.00%	0.00%	0.00%	0.00%	2.70%	0.00%	5.56%	8.82%	0.00%	0.00%
1980	0.00%	0.00%	0.00%	0.00%	7.58%	5.22%	3.88%	1.02%	7.29%	4.49%	0.00%	1.18%	1.19%	0.00%	2.41%	8.75%	5.48%	5.97%	14.29%	0.00%
1981	0.00%	0.00%	0.00%	4.08%	1.45%	0.76%	1.53%	1.55%	0.79%	2.38%	1.64%	1.67%	0.86%	0.88%	6.36%	7.92%	12.22%	6.41%	8.22%	0.00%
1982	0.00%	0.00%	1.41%	7.69%	7.37%	7.39%	8.13%	3.40%	0.71%	2.16%	6.72%	4.88%	3.51%	13.08%	7.06%	11.69%	8.82%	11.48%	7.41%	0.00%
1983	0.00%	0.37%	1.85%	1.89%	2.75%	8.26%	6.42%	1.98%	5.13%	3.83%	5.20%	2.47%	5.23%	5.67%	3.03%	10.48%	6.36%	13.86%	4.71%	0.00%
1984	0.00%	0.00%	6.19%	4.76%	10.31%	1.22%	2.86%	1.49%	1.56%	6.56%	1.96%	10.20%	9.09%	7.69%	8.33%	9.09%	3.33%	3.70%	0.00%	0.00%
1985	0.00%	0.00%	1.15%	3.57%	0.00%	9.09%	1.49%	0.00%	1.54%	3.23%	10.00%	9.80%	0.00%	11.90%	5.41%	14.29%	10.71%	8.00%	0.00%	0.00%
1986	0.00%	2.91%	2.02%	1.03%	2.08%	0.00%	2.17%	0.00%	5.88%	8.97%	5.88%	8.06%	15.79%	10.64%	16.67%	9.09%	3.70%	11.54%	4.55%	0.00%
1987	0.00%	3.14%	1.31%	2.74%	3.57%	11.94%	2.63%	3.70%	4.90%	5.43%	7.14%	1.28%	12.50%	14.29%	7.84%	8.51%	2.38%	4.88%	2.56%	0.00%
1988	0.65%	1.95%	2.65%	4.90%	3.73%	7.14%	5.26%	7.07%	10.34%	7.79%	8.70%	8.33%	15.69%	7.32%	11.11%	6.90%	3.70%	0.00%	4.17%	0.00%
1989	0.00%	0.00%	2.22%	4.65%	2.50%	9.21%	0.00%	3.03%	6.35%	7.02%	11.32%	6.38%	2.33%	4.88%	15.79%	3.33%	3.45%	14.29%	0.00%	0.00%
1990	0.00%	2.33%	0.00%	0.00%	5.56%	0.00%	0.00%	10.00%	0.00%	7.69%	8.33%	4.55%	9.52%	0.00%	15.79%	0.00%	0.00%	0.00%	0.00%	0.00%
1991	0.00%	1.92%	0.00%	3.92%	2.17%	4.65%	0.00%	0.00%	2.63%	5.41%	14.29%	3.45%	7.14%	3.85%	4.00%	0.00%	0.00%	4.17%	4.35%	0.00%
1992	0.00%	0.00%	6.67%	2.44%	0.00%	5.00%	5.56%	2.94%	0.00%	9.09%	3.33%	0.00%	11.11%	8.33%	9.09%	5.00%	5.26%	5.56%	5.88%	0.00%
1993	0.00%	2.22%	0.00%	0.00%	0.00%	5.41%	2.86%	0.00%	0.00%	3.03%	3.13%	3.23%	0.00%	3.33%	13.79%	4.00%	4.17%	4.35%	0.00%	0.00%
1994	0.00%	1.64%	0.00%	0.00%	3.45%	7.27%	3.92%	2.04%	4.17%	0.00%	6.52%	6.98%	0.00%	5.00%	10.53%	0.00%	8.82%	0.00%	3.23%	0.00%
1995	0.00%	4.35%	2.27%	0.00%	0.00%	2.38%	2.44%	2.56%	0.00%	0.00%	7.89%	5.71%	6.06%	0.00%	6.67%	0.00%	0.00%	0.00%	3.57%	0.00%
1996	0.00%	0.00%	2.27%	4.65%	0.00%	2.56%	5.26%	0.00%	0.00%	0.00%	2.78%	5.71%	6.25%	0.00%	3.33%	6.90%	0.00%	0.00%	7.41%	0.00%
1997	0.00%	0.00%	0.00%	0.00%	2.38%	7.32%	0.00%	2.70%	2.78%	8.57%	9.38%	3.45%	0.00%	0.00%	0.00%	0.00%	3.57%	0.00%	0.00%	0.00%
1998	0.00%	0.00%	0.00%	5.41%	0.00%	2.86%	6.25%	0.00%	0.00%	0.00%	0.00%	6.90%	3.70%	0.00%	0.00%	3.85%	12.00%	0.00%	13.64%	0.00%
1999	0.00%	0.00%	0.00%	0.00%	0.00%	4.17%	0.00%	0.00%	4.35%	0.00%	0.00%	0.00%	0.00%	4.55%	0.00%	4.76%	0.00%	15.00%	0.00%	0.00%
2000	0.00%	0.00%	0.00%	0.00%	2.94%	0.00%	6.06%	6.45%	0.00%	0.00%	6.90%	0.00%	0.00%	0.00%	0.00%	0.00%	15.38%	0.00%	0.00%	0.00%
2001	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	5.26%	5.56%	0.00%	0.00%	5.88%	6.25%	26.67%	0.00%	0.00%	0.00%	0.00%
2002	0.00%	0.00%	0.00%	0.00%	0.00%	6.25%	0.00%	3.33%	0.00%	3.45%	0.00%	4.00%	4.17%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.00%	0.00%	4.55%	0.00%	4.76%	10.00%	0.00%	5.56%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.00%	4.76%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	5.26%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	5.26%	0.00%	0.00%	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.00%	0.00%	0.00%	0.00%	0.00%	10.53%	0.00%	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.00%	0.00%	0.00%	0.00%	0.00%	4.76%	0.00%	5.00%	0.00%	10.53%	11.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.00%	3.85%	8.00%	0.00%	4.35%	0.00%	0.00%	0.00%	4.55%	4.76%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.00%	0.00%	0.00%	4.17%	0.00%	4.35%	18.18%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	0.00%	0.00%	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2012	0.00%	0.00%	15.79%	6.25%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2013	0.00%	0.00%	0.00%	12.00%	9.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2015	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2017	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Weighted Avg																				
5 Year	0.00%	1.28%	4.55%	5.21%	7.53%	2.27%	4.26%	1.10%	1.11%	5.38%	4.71%	1.10%	1.10%	2.02%	1.96%	5.45%	7.27%	2.54%	4.96%	0.00%
10 Year	0.00%	1.10%	3.11%	2.55%	4.08%	4.26%	2.02%	2.54%	0.99%	3.35%	4.72%	1.87%	1.77%	1.27%	2.76%	4.30%	5.37%	2.48%	3.91%	0.00%
15 Year	0.00%	1.01%	2.27%	1.54%	3.06%	3.92%	2.34%	2.26%	1.09%	2.54%	5.30%	3.11%	2.86%	2.40%	5.94%	4.00%	4.21%	3.98%	3.32%	0.00%
All Year	0.04%	0.87%	1.53%	2.63%	3.20%	5.59%	3.96%	3.32%	3.71%	4.44%	5.70%	3.75%	4.79%	5.08%	5.81%	6.87%	5.99%	6.53%	5.25%	0.00%
Prior Selected	0.00%	0.00%	0.00%</																	

West Virginia Department of Environmental Protection Office of Special Reclamation
 Underground
 Release Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	18.18%	11.76%	6.67%	21.43%	18.18%	0.00%	11.11%	0.00%	0.00%	0.00%	14.29%	16.67%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	5.00%	0.00%	23.53%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	9.09%	0.00%	10.00%	11.11%	12.50%	0.00%	0.00%	0.00%
1979	0.00%	3.45%	3.57%	3.70%	3.85%	8.00%	13.04%	5.00%	0.00%	10.53%	5.88%	6.67%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	7.69%
1980	1.92%	13.73%	11.36%	20.51%	6.45%	3.45%	28.57%	15.00%	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	6.67%	7.14%	0.00%	0.00%
1981	12.12%	5.26%	11.32%	8.70%	7.14%	2.56%	5.26%	8.33%	6.06%	6.45%	3.45%	0.00%	3.57%	0.00%	14.81%	0.00%	0.00%	0.00%	0.00%
1982	6.12%	2.38%	2.44%	7.50%	0.00%	16.67%	6.67%	3.57%	0.00%	0.00%	0.00%	8.00%	0.00%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%
1983	2.47%	6.49%	4.17%	2.90%	4.55%	11.11%	3.64%	0.00%	3.77%	3.92%	2.04%	4.17%	0.00%	2.33%	0.00%	0.00%	0.00%	0.00%	0.00%
1984	8.00%	0.00%	0.00%	4.35%	14.29%	5.56%	5.88%	6.25%	0.00%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%
1985	4.55%	4.76%	0.00%	0.00%	23.53%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1986	9.52%	10.53%	18.75%	23.08%	10.00%	11.11%	0.00%	12.50%	0.00%	0.00%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1987	5.26%	5.71%	6.06%	3.33%	0.00%	6.90%	0.00%	7.41%	0.00%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1988	4.55%	4.76%	5.00%	5.26%	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1989	8.33%	0.00%	4.55%	4.76%	10.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1990	18.75%	0.00%	0.00%	15.38%	0.00%	9.09%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1991	9.09%	0.00%	0.00%	0.00%	5.26%	5.56%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1992	0.00%	12.50%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1993	4.55%	9.52%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1994	6.67%	3.57%	3.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1995	3.85%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1996	0.00%	12.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1997	0.00%	3.70%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1998	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1999	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2001	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2002	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2012	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2017	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Weighted Avg																			
5 Year	2.36%	5.56%	1.87%	0.00%	1.15%	3.90%	0.00%	4.55%	1.33%	0.00%	5.48%	1.98%	1.03%	2.56%	3.36%	0.87%	1.27%	0.00%	2.63%
10 Year	4.85%	4.61%	2.80%	0.04%	4.44%	4.29%	1.55%	3.40%	2.34%	1.85%	3.33%	3.55%	1.18%	3.07%	4.05%	1.55%	1.18%	0.00%	2.56%
15 Year	5.35%	5.10%	3.37%	4.58%	5.05%	6.76%	5.56%	4.64%	1.85%	2.33%	3.46%	4.37%	1.16%	3.05%	4.05%	1.55%	1.18%	0.00%	2.56%
All Year	5.45%	5.71%	4.91%	6.88%	5.12%	6.56%	5.93%	4.59%	1.84%	2.33%	3.46%	4.37%	1.16%	3.05%	4.05%	1.55%	1.18%	0.00%	2.56%
Prior Selected	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Selected	4.00%	4.00%	4.00%	4.00%	4.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Underground
 Release Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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2016																			
2017																			
Weighted Avg																			
5 Year	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Year	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
All Year	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Prior Selected	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Selected	5.00%	5.00%	5.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%	4.00%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Number of Permits
 June 30, 2017

Issue Year	Months of Maturity																			
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228	
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1968	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
1972	6	6	6	6	6	6	6	6	6	6	6	6	3	3	3	3	3	2	2	2
1973	10	10	10	10	10	10	10	10	10	10	10	8	7	7	7	7	6	6	6	6
1974	15	15	15	15	15	14	14	14	14	14	8	7	5	3	3	3	3	3	3	3
1975	25	25	25	25	25	24	24	23	23	19	13	8	7	5	4	4	4	4	4	4
1976	22	22	22	22	22	22	22	22	18	15	10	10	10	10	10	10	10	10	10	10
1977	19	19	19	18	17	17	17	13	9	8	8	8	8	8	8	8	8	7	7	7
1978	18	18	18	17	17	17	15	14	13	13	13	12	12	12	12	12	11	10	7	7
1979	20	20	20	20	20	19	15	14	12	12	12	12	12	12	12	12	12	11	11	11
1980	44	44	44	44	41	37	36	33	33	33	32	32	31	31	31	30	30	29	29	29
1981	117	117	117	116	114	114	113	112	111	108	108	104	102	99	97	89	86	86	84	84
1982	101	101	98	97	94	89	84	80	79	75	73	67	63	60	58	55	54	54	49	49
1983	216	210	205	191	178	171	164	162	156	146	133	127	123	118	109	106	102	95	89	89
1984	57	57	56	51	47	43	40	38	35	35	32	32	32	29	29	26	24	22	22	22
1985	59	58	55	52	49	48	48	44	43	38	36	33	31	27	26	25	24	23	23	23
1986	47	45	44	43	42	40	36	31	30	29	25	23	21	21	19	19	19	19	18	18
1987	60	59	50	48	42	38	36	33	28	23	23	21	18	17	15	13	13	13	13	13
1988	56	53	51	46	45	43	39	34	34	29	26	25	19	17	15	15	15	14	14	14
1989	29	29	28	28	26	23	23	22	21	21	20	19	19	19	17	17	17	17	17	17
1990	16	16	16	16	16	15	15	14	14	13	12	12	12	11	10	10	9	9	9	9
1991	17	17	17	17	16	16	15	14	14	14	14	14	14	14	13	12	12	11	11	11
1992	31	30	28	24	21	20	19	18	17	16	16	15	15	15	14	14	12	11	11	11
1993	44	40	33	31	30	25	25	25	25	23	22	22	20	19	19	18	18	18	18	18
1994	18	18	18	18	18	18	17	17	17	17	17	17	17	15	15	14	14	14	14	14
1995	13	12	12	12	12	11	10	10	10	10	10	10	10	10	9	9	8	8	8	8
1996	12	12	12	12	10	10	10	10	10	10	10	10	9	9	9	9	8	8	8	8
1997	17	17	17	16	15	15	14	13	13	13	13	13	13	13	12	12	12	12	12	12
1998	9	9	9	9	9	9	9	8	8	7	7	7	7	7	7	7	7	7	7	6
1999	7	7	7	7	6	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4
2000	8	8	8	8	8	8	8	8	7	7	7	7	7	7	7	7	7	7	7	7
2001	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2002	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2003	13	13	13	12	12	12	12	12	12	12	11	11	11	11	11	11	11	11	11	11
2004	5	5	5	5	5	5	5	5	5	5	5	5	4	4	4	4	4	4	4	4
2005	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2006	13	13	12	12	12	11	11	11	10	10	10	9	9	9	9	9	9	9	9	9
2007	8	8	7	7	7	7	7	6	6	6	6	6	6	6	6	6	6	6	6	6
2008	13	13	12	11	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10	10
2009	6	6	6	6	5	5	5	5	5	4	4	4	4	4	4	4	4	4	4	4
2010	10	10	10	10	10	9	9	9	9	9	9	9	9	9	9	9	9	9	9	9
2011	7	7	7	5	5	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4
2012	16	15	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14	14
2013	15	15	14	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13	13
2014	7	6	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
2015	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5	5
2016	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7
2017	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Number of Permits
 June 30, 2017

Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	0	0	0	0
1968	1	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	3	3	3	3	3	3	3	2	1	1	0	0	0	0	0	0	0	0	0
1972	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2
1973	5	5	5	5	4	3	3	3	3	3	3	3	3	3	3	3	3	3	3
1974	3	3	3	3	3	2	2	2	2	2	1	1	1	1	1	1	1	1	0
1975	4	4	4	4	4	4	4	4	4	4	3	3	3	3	3	3	3	3	3
1976	10	9	8	7	6	6	6	6	6	6	6	6	6	5	5	5	5	5	5
1977	7	7	5	5	5	5	2	2	2	2	2	2	2	2	2	2	2	2	2
1978	7	6	6	5	4	4	4	4	4	4	4	4	4	4	4	4	4	3	3
1979	10	10	9	9	8	8	8	8	8	8	8	8	8	8	7	7	7	7	7
1980	28	28	28	25	25	23	22	22	22	22	21	20	20	20	18	17	16	16	16
1981	76	72	72	70	69	65	64	63	63	62	61	61	60	57	57	54	53	53	
1982	46	44	41	40	39	38	35	33	32	31	30	29	29	28	28	27	27		
1983	86	84	81	79	77	75	75	73	72	72	71	71	69	68	67	66			
1984	21	20	20	20	20	20	20	19	19	19	17	17	16	16	16				
1985	23	23	20	20	20	20	20	19	19	19	19	19	19						
1986	18	18	18	18	18	18	18	18	18	17	17	16	16						
1987	13	12	12	10	10	9	9	8	7	7	7	7							
1988	14	13	13	13	13	12	12	12	12	12	12								
1989	17	17	17	17	17	17	17	17	17	17	17								
1990	8	8	8	8	8	7	7	7	7										
1991	10	10	10	10	10	10	10	10											
1992	11	11	11	11	11	11	11												
1993	17	17	17	17	16	16													
1994	14	14	14	14	14														
1995	8	8	8	8															
1996	8	8	8																
1997	12	11																	
1998	5																		
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West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Number of Permits
 June 30, 2017

Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	2	2	2	2	2	2	2	2											
1973	3	3	3	2	2	2	2												
1974	0	0	0	0	0	0													
1975	3	3	3	3	3														
1976	5	5	5	5															
1977	2	2	2																
1978	3	3																	
1979	7																		
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2014																			
2015																			
2016																			
2017																			

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Number of Releases
 June 30, 2017

Completely Released Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	3	0	0	0	0	1	0
1973	0	0	0	0	0	0	0	0	0	0	2	1	0	0	0	0	1	0	0
1974	0	0	0	0	0	0	0	0	0	6	1	2	2	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	4	6	4	1	2	1	0	0	0	0	0
1976	0	0	0	0	0	0	0	2	2	5	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	4	4	1	0	0	0	0	0	0	0	0	1	0
1978	0	0	0	0	0	1	1	1	0	0	0	0	0	0	0	1	1	1	3
1979	0	0	0	0	1	2	1	2	0	0	0	0	0	0	0	0	1	0	0
1980	0	0	0	0	3	2	1	3	0	1	0	1	0	0	1	0	1	0	0
1981	0	0	0	0	2	0	0	1	1	2	0	4	0	1	1	6	3	0	2
1982	0	0	3	1	2	5	5	3	0	2	1	4	2	1	2	2	0	0	3
1983	0	5	4	11	10	7	6	2	6	9	9	4	2	3	7	3	4	4	4
1984	0	0	1	4	4	3	2	1	1	0	2	0	0	3	0	2	1	2	0
1985	0	0	3	3	2	1	0	3	1	4	2	3	2	1	1	1	0	1	0
1986	0	2	1	1	1	2	4	4	1	0	2	2	2	0	1	0	0	0	1
1987	2	1	7	1	6	3	2	1	5	4	0	2	3	1	1	2	0	0	0
1988	3	3	2	4	1	2	3	4	0	4	3	1	3	2	0	0	0	1	0
1989	0	0	1	0	2	3	0	0	1	0	1	0	0	0	1	0	0	0	0
1990	1	0	0	0	0	1	0	1	0	0	1	0	0	0	1	1	0	1	0
1991	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	1	0	1	0
1992	0	1	0	3	1	1	1	1	0	1	0	1	0	0	1	0	2	1	1
1993	0	2	3	2	1	5	0	0	0	2	0	0	2	0	1	0	1	0	0
1994	0	0	0	0	0	0	1	0	0	0	0	0	2	0	0	0	0	0	0
1995	0	0	0	0	0	1	1	0	0	0	0	0	0	0	1	0	1	0	0
1996	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	1	0	0
1997	0	0	0	0	1	0	1	1	0	0	0	0	0	0	1	0	0	0	0
1998	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0	0	1
1999	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	1	0	0	1	0	0	1	0	0	1	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	2	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	1	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Number of Releases
 June 30, 2017

Completely Released Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1968	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	1	1	0	1	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	1	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	1
1975	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1976	0	1	1	1	1	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1977	0	0	2	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	1	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	1	0
1979	1	0	0	0	1	0	0	0	0	0	0	0	0	1	0	0	0	0	0
1980	1	0	0	3	0	2	1	0	0	1	1	0	0	2	1	1	0	0	0
1981	6	3	0	2	0	2	1	1	0	1	1	0	0	2	0	3	1	0	0
1982	3	2	3	1	1	1	3	2	1	1	1	1	0	1	0	1	0	0	0
1983	3	2	2	2	2	2	0	1	0	0	1	0	2	0	1	1	0	0	0
1984	1	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1985	0	0	2	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	1	0	1	0	0	0	0	0	0	0
1987	0	1	0	1	0	1	0	1	0	0	0	0	0	0	0	0	0	0	0
1988	0	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	1	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Number of Releases
 June 30, 2017

Completely Released Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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 Other
 Number of Forfeitures
 June 30, 2017

Revoked Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	1	0	1	0	0	0	1	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	2	1	0	0	0	0	0	0	0	0	0
1977	0	0	0	1	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	1	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	2	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	1	0	0	1	0	0	1	0	0	2	2	1	2	0	0	0
1982	0	0	0	0	1	0	0	1	1	2	1	2	2	2	0	1	1	0	2
1983	0	1	1	3	3	0	1	0	0	1	4	2	2	2	2	0	0	3	2
1984	0	0	0	1	0	1	1	1	2	0	1	0	0	0	0	1	1	0	0
1985	0	1	0	0	1	0	0	1	0	1	0	0	0	3	0	0	1	0	0
1986	0	0	0	0	0	0	0	1	0	1	2	0	0	0	1	0	0	0	0
1987	0	0	2	1	0	1	0	2	0	1	0	0	0	0	1	0	0	0	0
1988	0	0	0	1	0	0	1	1	0	1	0	0	3	0	2	0	0	0	0
1989	0	0	0	0	0	0	0	1	0	0	0	1	0	0	1	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	2	1	2	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1993	0	2	4	0	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0
1995	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	1	0	0	0	0	0	0
1997	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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 Other
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Revoked Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	2	1	0	0	1	2	0	0	0	0	0	1	1	1	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	1	0	0	0	0	1	1	0	0	0	1	0	0	0	0	0	0
1984	0	1	0	0	0	0	0	1	0	2	0	0	0	0	0	0	0	0	0
1985	0	0	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	1	0	0	0	0	1	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Revoked Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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Terminated Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

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	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Number of Misc Terminations
 June 30, 2017

Terminated Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1962	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1963	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1964	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1965	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1966	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1967	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1968	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1969	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1970	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1971	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1972	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1973	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1974	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1975	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1976	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1977	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1978	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1979	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1980	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1981	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1982	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1983	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1984	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1985	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1986	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1987	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1988	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1989	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1990	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1991	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1992	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1993	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1994	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1995	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1996	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1997	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1998	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
1999	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2000	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2001	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2002	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2003	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2004	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2005	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2006	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2007	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2008	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2009	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2010	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2011	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2012	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2013	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2014	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2015	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2016	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
2017	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Forfeiture Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	4.00%	0.00%	4.17%	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.09%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	0.00%	5.26%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	0.00%	0.00%	5.56%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	10.53%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1980	0.00%	0.00%	0.00%	0.00%	4.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1981	0.00%	0.00%	0.00%	0.85%	0.00%	0.00%	0.88%	0.00%	0.00%	0.90%	0.00%	0.00%	1.92%	1.96%	1.01%	2.06%	0.00%	0.00%	0.00%
1982	0.00%	0.00%	0.00%	1.03%	0.00%	0.00%	1.19%	1.25%	2.53%	1.33%	2.74%	2.99%	3.17%	0.00%	1.72%	1.82%	0.00%	3.70%	0.00%
1983	0.00%	0.46%	0.48%	1.46%	1.57%	0.00%	0.58%	0.00%	0.00%	0.64%	2.74%	1.50%	1.57%	1.63%	1.69%	0.00%	0.00%	2.94%	2.11%
1984	0.00%	0.00%	0.00%	1.79%	0.00%	2.13%	2.33%	2.50%	5.26%	0.00%	2.86%	0.00%	0.00%	0.00%	0.00%	3.45%	3.85%	0.00%	0.00%
1985	0.00%	1.69%	0.00%	0.00%	1.92%	0.00%	0.00%	2.08%	0.00%	2.33%	0.00%	0.00%	9.68%	0.00%	0.00%	4.00%	0.00%	0.00%	0.00%
1986	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	2.78%	0.00%	3.33%	6.90%	0.00%	0.00%	0.00%	4.76%	0.00%	0.00%	0.00%	0.00%	0.00%
1987	0.00%	0.00%	3.39%	2.00%	0.00%	2.38%	0.00%	5.56%	0.00%	3.57%	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%
1988	0.00%	0.00%	0.00%	1.96%	0.00%	0.00%	2.33%	2.56%	0.00%	2.94%	0.00%	0.00%	12.00%	0.00%	11.76%	0.00%	0.00%	0.00%	0.00%
1989	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.35%	0.00%	0.00%	0.00%	5.00%	0.00%	0.00%	5.26%	0.00%	0.00%	0.00%	0.00%	0.00%
1990	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1991	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1992	0.00%	0.00%	6.67%	3.57%	8.33%	0.00%	0.00%	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1993	0.00%	4.55%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1994	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	6.67%	0.00%	0.00%	0.00%	0.00%
1995	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1996	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1997	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1998	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1999	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2001	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2002	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.00%	0.00%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2012	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2017	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Weighted Avg																			
5 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Year	0.00%	0.00%	1.02%	1.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.33%	0.00%	0.00%	1.02%	0.00%	0.00%	0.00%
15 Year	0.00%	0.00%	0.75%	0.77%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.70%	0.00%	0.65%	0.00%	0.59%	0.59%	0.00%	0.00%	0.00%
All Year	0.00%	0.40%	0.81%	1.01%	0.70%	0.56%	0.69%	0.93%	0.65%	1.14%	1.09%	0.91%	1.38%	1.31%	1.22%	0.81%	0.51%	0.53%	0.75%
Prior Selected	0.00%	0.00%	0.00%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Selected	0.00%	0.00%	0.00%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Forfeiture Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1980	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1981	2.38%	1.32%	0.00%	0.00%	1.43%	2.90%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.64%	1.67%	0.00%	0.00%	0.00%	0.00%	0.00%
1982	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1983	0.00%	0.00%	1.19%	0.00%	0.00%	0.00%	0.00%	1.33%	1.37%	0.00%	0.00%	0.00%	0.00%	1.45%	0.00%	0.00%	0.00%	0.00%	0.00%
1984	0.00%	4.76%	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.00%	10.53%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1985	0.00%	0.00%	4.35%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1986	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1987	0.00%	0.00%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1988	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1989	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1990	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1991	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1992	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1993	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1994	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1995	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1996	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1997	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1998	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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5 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	1.61%	0.00%	2.70%	0.00%	0.00%	1.04%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Year	0.00%	0.00%	0.00%	0.78%	0.00%	0.00%	0.00%	0.90%	0.74%	0.00%	0.74%	0.00%	0.40%	0.86%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year	0.00%	0.36%	0.65%	0.28%	0.27%	0.55%	0.00%	0.62%	0.64%	0.00%	0.70%	0.00%	0.38%	0.83%	0.00%	0.00%	0.00%	0.00%	0.00%
All Year	0.39%	0.41%	0.66%	0.23%	0.24%	0.51%	0.28%	0.58%	0.62%	0.00%	0.68%	0.00%	0.38%	0.82%	0.00%	0.00%	0.00%	0.00%	0.00%
Prior Selected	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Selected	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.50%	0.01%	0.01%	0.01%	0.01%	0.01%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Forfeiture Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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5 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
All Year	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Prior Selected	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%	1.25%
Selected	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%	0.01%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Release Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	12	24	36	48	60	72	84	96	108	120	132	144	156	168	180	192	204	216	228
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	17.39%	31.58%	30.77%	12.50%	28.57%	20.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.09%	11.11%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	23.53%	30.77%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%
1978	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.88%	6.67%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.33%	9.09%	30.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	5.00%	10.53%	6.67%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.33%	0.00%
1980	0.00%	0.00%	0.00%	0.00%	6.82%	4.88%	2.70%	8.33%	0.00%	0.00%	3.03%	0.00%	3.13%	0.00%	0.00%	3.23%	0.00%	3.33%	0.00%
1981	0.00%	0.00%	0.00%	0.00%	1.72%	0.00%	0.00%	0.88%	0.89%	1.80%	0.00%	3.70%	0.00%	0.98%	1.01%	6.19%	3.37%	0.00%	2.33%
1982	0.00%	0.00%	2.97%	1.02%	2.06%	5.32%	3.57%	0.00%	2.53%	1.33%	1.33%	5.48%	2.99%	1.59%	3.33%	3.45%	0.00%	0.00%	5.56%
1983	0.00%	2.31%	1.90%	5.37%	5.24%	3.93%	3.51%	1.22%	3.70%	5.77%	6.16%	3.01%	1.57%	2.44%	5.93%	2.75%	3.77%	3.92%	4.21%
1984	0.00%	0.00%	1.75%	7.14%	7.84%	6.38%	4.65%	2.50%	2.63%	0.00%	5.71%	0.00%	0.00%	9.38%	0.00%	6.90%	3.85%	8.33%	0.00%
1985	0.00%	0.00%	5.17%	5.45%	3.85%	2.04%	0.00%	6.25%	2.27%	9.30%	5.26%	8.33%	6.06%	3.23%	3.70%	3.85%	0.00%	4.17%	0.00%
1986	0.00%	4.26%	2.22%	2.27%	2.33%	4.76%	10.00%	11.11%	3.23%	0.00%	6.90%	8.00%	8.70%	0.00%	4.76%	0.00%	0.00%	0.00%	5.26%
1987	3.23%	1.67%	11.86%	2.00%	12.50%	7.14%	5.26%	2.78%	15.15%	14.29%	0.00%	8.70%	14.29%	5.56%	5.88%	13.33%	0.00%	0.00%	0.00%
1988	5.08%	5.36%	3.77%	7.84%	2.17%	4.44%	6.98%	10.26%	0.00%	11.76%	10.34%	3.85%	12.00%	10.53%	0.00%	0.00%	0.00%	6.67%	0.00%
1989	0.00%	0.00%	3.45%	0.00%	7.14%	11.54%	0.00%	0.00%	4.55%	0.00%	4.76%	0.00%	0.00%	0.00%	5.26%	0.00%	0.00%	0.00%	0.00%
1990	5.88%	0.00%	0.00%	0.00%	0.00%	6.25%	0.00%	6.67%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	8.33%	9.09%	0.00%	10.00%	0.00%
1991	0.00%	0.00%	0.00%	0.00%	5.88%	0.00%	6.25%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.14%	7.69%	0.00%	8.33%	0.00%
1992	0.00%	3.23%	0.00%	10.71%	4.17%	4.76%	5.00%	5.26%	0.00%	5.88%	0.00%	6.25%	0.00%	0.00%	6.67%	0.00%	14.29%	8.33%	0.00%
1993	0.00%	4.55%	7.50%	6.06%	3.23%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	9.09%	0.00%	5.00%	0.00%	5.26%	0.00%	0.00%
1994	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.56%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.76%	0.00%	0.00%	0.00%	0.00%	0.00%
1995	0.00%	0.00%	0.00%	0.00%	0.00%	8.33%	9.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	11.11%	0.00%
1996	0.00%	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.11%	0.00%
1997	0.00%	0.00%	0.00%	0.00%	6.25%	0.00%	6.67%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%
1998	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	11.11%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%
1999	0.00%	0.00%	0.00%	0.00%	14.29%	16.67%	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2001	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2002	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.00%	0.00%	7.69%	0.00%	0.00%	8.33%	0.00%	0.00%	9.09%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.00%	0.00%	7.69%	0.00%	9.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.00%	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.00%	0.00%	0.00%	0.00%	0.00%	10.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	0.00%	0.00%	0.00%	28.57%	0.00%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2012	0.00%	6.25%	6.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2013	0.00%	0.00%	6.67%	7.14%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	14.29%	33.33%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2017	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Weighted Avg																			
5 Year	0.00%	4.00%	8.33%	8.16%	2.08%	4.55%	0.00%	2.38%	5.56%	0.00%	2.70%	2.70%	2.94%	0.00%	0.00%	0.00%	0.00%	2.56%	2.56%
10 Year	0.00%	2.13%	6.12%	4.44%	2.30%	3.57%	0.00%	1.30%	4.00%	1.37%	1.45%	1.33%	1.33%	0.00%	0.00%	2.04%	0.98%	4.72%	1.94%
15 Year	0.00%	1.47%	4.48%	3.85%	2.34%	3.31%	0.85%	2.44%	2.48%	1.53%	0.70%	1.33%	1.96%	1.27%	2.35%	2.96%	0.59%	3.89%	1.59%
All Year	0.47%	1.27%	2.51%	2.95%	3.69%	3.82%	3.06%	3.50%	3.05%	4.20%	4.85%	3.77%	3.45%	2.63%	2.75%	3.57%	1.89%	3.38%	2.81%
Prior Selected	0.00%	0.00%	0.00%	0.50%	0.50%	1.00%	1.00%	2.00%	3.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%	5.00%
Selected	0.00%	0.00%	0.00%	0.50%	0.50%	1.00%	1.00%	2.00%	3.00%	3.00%	3.00%	4.00%	4.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Release Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	240	252	264	276	288	300	312	324	336	348	360	372	384	396	408	420	432	444	456
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	50.00%	0.00%	100.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	16.67%	0.00%	0.00%	0.00%	20.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	50.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	100.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	10.00%	11.11%	12.50%	14.29%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	28.57%	0.00%	0.00%	0.00%	40.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	14.29%	0.00%	16.67%	20.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	25.00%	0.00%
1979	9.09%	0.00%	0.00%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%
1980	3.45%	0.00%	0.00%	10.71%	0.00%	8.00%	4.35%	0.00%	0.00%	0.00%	4.55%	4.76%	0.00%	0.00%	10.00%	5.56%	5.88%	0.00%	0.00%
1981	7.14%	3.95%	0.00%	2.78%	0.00%	2.90%	1.54%	1.56%	0.00%	1.59%	1.61%	0.00%	0.00%	3.33%	0.00%	5.26%	1.85%	0.00%	0.00%
1982	6.12%	4.35%	6.82%	2.44%	2.50%	2.56%	7.89%	5.71%	3.03%	3.13%	3.23%	3.33%	0.00%	3.45%	0.00%	3.57%	0.00%	0.00%	0.00%
1983	3.37%	2.33%	2.38%	2.47%	2.53%	2.60%	0.00%	1.33%	0.00%	0.00%	1.39%	0.00%	2.82%	0.00%	1.47%	1.49%	0.00%	0.00%	0.00%
1984	4.55%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%
1985	0.00%	0.00%	8.70%	0.00%	0.00%	0.00%	0.00%	5.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1986	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	5.56%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1987	0.00%	7.69%	0.00%	8.33%	0.00%	10.00%	0.00%	11.11%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1988	0.00%	7.14%	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1989	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1990	11.11%	0.00%	0.00%	0.00%	0.00%	12.50%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1991	9.09%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1992	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1993	5.56%	0.00%	0.00%	0.00%	0.00%	5.88%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1994	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1995	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1996	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1997	0.00%	8.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1998	16.67%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1999	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2000	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2001	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2002	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2003	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2004	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2005	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2006	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2007	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2008	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2009	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2010	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2011	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2012	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2013	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2014	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2015	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2016	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
2017	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Weighted Avg																			
5 Year	2.08%	1.69%	0.00%	0.00%	1.67%	1.61%	0.00%	1.82%	0.00%	1.37%	0.00%	0.76%	1.97%	1.55%	1.59%	3.39%	1.83%	1.22%	0.00%
10 Year	3.51%	1.68%	0.00%	0.78%	0.72%	2.10%	0.00%	2.24%	0.37%	1.07%	1.49%	1.18%	1.21%	1.72%	1.90%	3.13%	1.63%	1.04%	2.38%
15 Year	2.45%	1.79%	2.28%	1.66%	1.08%	2.77%	1.48%	1.86%	0.32%	0.98%	1.74%	1.48%	1.15%	1.65%	1.84%	3.05%	1.60%	1.04%	2.38%
All Year	3.92%	2.48%	2.18%	2.75%	1.92%	3.05%	1.93%	2.03%	0.62%	0.96%	2.04%	1.46%	1.14%	1.65%	1.83%	3.54%	1.60%	1.04%	2.38%
Prior Selected	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Selected	5.00%	5.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%	3.00%

West Virginia Department of Environmental Protection Office of Special Reclamation
 Other
 Release Percentages
 June 30, 2017

Issue Year	Months of Maturity																		
	468	480	492	504	516	528	540	552	564	576	588	600	612	624	636	648	660	672	684
1961	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1962	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1963	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1964	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1965	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1966	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1967	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1968	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1969	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1970	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1971	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1972	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1973	0.00%	0.00%	0.00%	33.33%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1974	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1975	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1976	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1977	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1978	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
1979	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
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Weighted Avg																			
5 Year	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
10 Year	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
15 Year	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
All Year	0.00%	0.00%	0.00%	7.69%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%	0.00%
Prior Selected	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%	7.00%
Selected	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%	0.10%

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Number of Permit Projections
 Total, for Forfeitures Occurring after June 30, 2017
 June 30, 2017

Fiscal Year Ending 6/30	In Force			Forfeited			Released			End of Year			Total
	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2017										760.00	280.00	752.00	1,792.00
2018	760.00	280.00	752.00	4.96	2.02	5.30	23.65	10.70	31.58	731.39	267.29	715.11	1,713.79
2019	731.39	267.29	715.11	4.94	1.87	4.75	23.20	10.09	30.33	703.25	255.33	680.04	1,638.61
2020	703.25	255.33	680.04	4.86	1.73	4.27	22.06	9.52	28.65	676.33	244.08	647.12	1,567.53
2021	676.33	244.08	647.12	4.61	1.61	3.91	21.38	9.14	27.26	650.34	233.33	615.94	1,499.61
2022	650.34	233.33	615.94	4.34	1.48	3.48	20.59	8.53	25.36	625.41	223.33	587.10	1,435.84
2023	625.41	223.33	587.10	3.99	1.38	3.13	20.06	8.16	23.87	601.37	213.79	560.10	1,375.26
2024	601.37	213.79	560.10	3.75	1.25	2.84	19.51	7.60	22.49	578.11	204.94	534.77	1,317.82
2025	578.11	204.94	534.77	3.48	1.15	2.49	18.60	7.13	21.16	556.03	196.65	511.12	1,263.80
2026	556.03	196.65	511.12	3.25	1.02	2.17	17.93	6.77	20.09	534.85	188.86	488.86	1,212.57
2027	534.85	188.86	488.86	2.98	0.92	1.93	16.93	6.39	19.08	514.94	181.55	467.85	1,164.34
2028	514.94	181.55	467.85	2.73	0.79	1.71	16.02	5.98	18.07	496.20	174.78	448.06	1,119.04
2029	496.20	174.78	448.06	2.54	0.68	1.49	15.18	5.63	17.09	478.49	168.48	429.48	1,076.44
2030	478.49	168.48	429.48	2.33	0.61	1.28	14.36	5.31	16.14	461.80	162.55	412.06	1,036.41
2031	461.80	162.55	412.06	2.11	0.53	1.06	13.60	5.04	15.22	446.09	156.98	395.78	998.85
2032	446.09	156.98	395.78	1.95	0.50	0.93	12.98	4.71	14.41	431.16	151.77	380.44	963.36
2033	431.16	151.77	380.44	1.79	0.44	0.81	12.40	4.44	13.65	416.97	146.88	365.98	929.83
2034	416.97	146.88	365.98	1.63	0.39	0.72	11.67	4.21	12.91	403.66	142.27	352.36	898.29
2035	403.66	142.27	352.36	1.47	0.33	0.59	11.06	3.94	12.18	391.13	138.00	339.59	868.72
2036	391.13	138.00	339.59	1.32	0.29	0.51	10.49	3.71	11.52	379.31	134.00	327.56	840.87
2037	379.31	134.00	327.56	1.16	0.23	0.42	9.91	3.50	10.89	368.24	130.27	316.24	814.75
2038	368.24	130.27	316.24	1.04	0.20	0.33	9.36	3.29	10.29	357.84	126.78	305.62	790.24
2039	357.84	126.78	305.62	0.93	0.16	0.29	8.83	3.08	9.73	348.09	123.54	295.60	767.23
2040	348.09	123.54	295.60	0.82	0.11	0.22	8.35	2.88	9.20	338.91	120.55	286.18	745.64
2041	338.91	120.55	286.18	0.71	0.09	0.18	7.88	2.70	8.77	330.31	117.76	277.23	725.30
2042	330.31	117.76	277.23	0.62	0.06	0.13	7.38	2.54	8.34	322.32	115.16	268.76	706.23
2043	322.32	115.16	268.76	0.54	0.05	0.10	6.96	2.43	7.95	314.81	112.68	260.71	688.20
2044	314.81	112.68	260.71	0.44	0.04	0.07	6.55	2.30	7.54	307.82	110.33	253.09	671.24
2045	307.82	110.33	253.09	0.36	0.02	0.06	6.15	2.17	7.20	301.31	108.14	245.83	655.28
2046	301.31	108.14	245.83	0.24	0.02	0.04	5.78	2.05	6.87	295.29	106.07	238.93	640.29
2047	295.29	106.07	238.93	0.16	0.01	0.03	5.41	1.94	6.53	289.72	104.12	232.37	626.21
2048	289.72	104.12	232.37	0.11	0.01	0.03	5.12	1.85	6.24	284.49	102.26	226.11	612.86
2049	284.49	102.26	226.11	0.07	0.01	0.02	4.82	1.75	5.93	279.59	100.50	220.16	600.25
2050	279.59	100.50	220.16	0.03	0.01	0.02	4.57	1.64	5.67	274.99	98.85	214.47	588.31
2051	274.99	98.85	214.47	0.03	0.01	0.02	4.25	1.56	5.40	270.72	97.28	209.05	577.05
2052	270.72	97.28	209.05	0.03	0.01	0.02	3.94	1.48	5.16	266.75	95.80	203.87	566.42

Footnotes:

- (1) Prior Col (1) - Prior Col (4) - Prior Col (7)
- (2) Prior Col (2) - Prior Col (5) - Prior Col (8)
- (3) Prior Col (3) - Prior Col (6) - Prior Col (9)
- (4) Exhibit 25.2 Col (4) + Exhibit 25.3 Col (4) + Exhibit 25.4 Col (4)
- (5) Exhibit 25.2 Col (5) + Exhibit 25.3 Col (5) + Exhibit 25.4 Col (5)
- (6) Exhibit 25.2 Col (6) + Exhibit 25.3 Col (6) + Exhibit 25.4 Col (6)
- (7) Exhibit 25.2 Col (7) + Exhibit 25.3 Col (7) + Exhibit 25.4 Col (7)
- (8) Exhibit 25.2 Col (8) + Exhibit 25.3 Col (8) + Exhibit 25.4 Col (8)

Footnotes:

- (9) Exhibit 25.2 Col (9) + Exhibit 25.3 Col (9) + Exhibit 25.4 Col (9)
- (10) Col (1) - Col (4) - Col (7)
- (11) Col (2) - Col (5) - Col (8)
- (12) Col (3) - Col (6) - Col (9)
- (13) Col (10) + Col (11) + Col (12)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Number of Permit Projections
Surface, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	In Force			Forfeited			Released			End of Year			Total
	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2017										197.00	43.00	392.00	632.00
2018	197.00	43.00	392.00	1.82	0.42	3.54	4.56	1.51	16.81	190.62	41.07	371.65	603.34
2019	190.62	41.07	371.65	1.85	0.39	3.25	4.65	1.43	16.22	184.12	39.25	352.18	575.56
2020	184.12	39.25	352.18	1.89	0.37	2.97	4.68	1.42	15.67	177.55	37.45	333.55	548.55
2021	177.55	37.45	333.55	1.82	0.34	2.74	4.83	1.54	15.11	170.90	35.58	315.69	522.17
2022	170.90	35.58	315.69	1.74	0.31	2.46	5.45	1.53	14.49	163.71	33.73	298.74	496.18
2023	163.71	33.73	298.74	1.62	0.30	2.20	5.74	1.51	13.83	156.35	31.93	282.70	470.98
2024	156.35	31.93	282.70	1.55	0.28	2.03	5.98	1.42	13.16	148.83	30.22	267.51	446.56
2025	148.83	30.22	267.51	1.46	0.26	1.83	6.01	1.36	12.46	141.35	28.60	253.22	423.18
2026	141.35	28.60	253.22	1.38	0.24	1.64	6.07	1.30	11.88	133.90	27.06	239.70	400.66
2027	133.90	27.06	239.70	1.30	0.23	1.48	5.82	1.25	11.28	126.79	25.58	226.93	379.31
2028	126.79	25.58	226.93	1.21	0.20	1.34	5.55	1.17	10.69	120.02	24.21	214.91	359.14
2029	120.02	24.21	214.91	1.14	0.18	1.17	5.29	1.12	10.12	113.59	22.91	203.62	340.13
2030	113.59	22.91	203.62	1.07	0.16	1.00	5.03	1.06	9.59	107.50	21.70	193.02	322.22
2031	107.50	21.70	193.02	0.98	0.14	0.84	4.81	1.02	9.04	101.72	20.53	183.14	305.39
2032	101.72	20.53	183.14	0.91	0.13	0.75	4.66	0.98	8.52	96.15	19.42	173.86	289.43
2033	96.15	19.42	173.86	0.84	0.12	0.68	4.49	0.93	8.07	90.82	18.37	165.11	274.30
2034	90.82	18.37	165.11	0.78	0.11	0.60	4.32	0.88	7.62	85.72	17.37	156.89	259.98
2035	85.72	17.37	156.89	0.71	0.10	0.49	4.12	0.83	7.19	80.89	16.45	149.21	246.54
2036	80.89	16.45	149.21	0.65	0.09	0.43	3.94	0.78	6.80	76.29	15.58	141.98	233.85
2037	76.29	15.58	141.98	0.57	0.07	0.36	3.72	0.73	6.43	72.01	14.78	135.19	221.97
2038	72.01	14.78	135.19	0.51	0.06	0.28	3.51	0.69	6.07	67.99	14.03	128.84	210.86
2039	67.99	14.03	128.84	0.46	0.06	0.25	3.30	0.65	5.72	64.23	13.32	122.88	200.43
2040	64.23	13.32	122.88	0.41	0.04	0.18	3.10	0.61	5.39	60.72	12.67	117.31	190.69
2041	60.72	12.67	117.31	0.37	0.03	0.14	2.92	0.58	5.12	57.43	12.05	112.04	181.53
2042	57.43	12.05	112.04	0.32	0.03	0.10	2.76	0.55	4.87	54.35	11.47	107.07	172.89
2043	54.35	11.47	107.07	0.29	0.03	0.07	2.60	0.52	4.63	51.47	10.92	102.37	164.75
2044	51.47	10.92	102.37	0.25	0.02	0.05	2.45	0.49	4.38	48.77	10.41	97.94	157.11
2045	48.77	10.41	97.94	0.22	0.01	0.04	2.31	0.47	4.17	46.24	9.93	93.73	149.91
2046	46.24	9.93	93.73	0.14	0.00	0.02	2.17	0.44	3.96	43.93	9.49	89.76	143.18
2047	43.93	9.49	89.76	0.10	0.00	0.01	2.05	0.42	3.75	41.78	9.07	85.99	136.84
2048	41.78	9.07	85.99	0.06	0.00	0.01	1.93	0.40	3.58	39.79	8.68	82.40	130.86
2049	39.79	8.68	82.40	0.03	0.00	0.01	1.83	0.37	3.40	37.92	8.30	78.99	125.21
2050	37.92	8.30	78.99	0.01	0.00	0.01	1.73	0.35	3.24	36.18	7.95	75.74	119.87
2051	36.18	7.95	75.74	0.00	0.00	0.01	1.64	0.34	3.09	34.54	7.61	72.65	114.80
2052	34.54	7.61	72.65	0.00	0.00	0.01	1.55	0.32	2.94	32.98	7.29	69.70	109.97

Footnotes:

- (1) Prior Col (1) - Prior Col (4) - Prior Col (7)
- (2) Prior Col (2) - Prior Col (5) - Prior Col (8)
- (3) Prior Col (3) - Prior Col (6) - Prior Col (9)
- (4) - (6) Exhibit 28.1 Col (9), Exhibit 28.1 Col (24), Exhibit 28.1 Col (39), etc.
- (7) - (9) Exhibit 28.1 Col (10), Exhibit 28.1 Col (25), Exhibit 28.1 Col (40), etc.

Footnotes:

- (10) Col (1) - Col (4) - Col (7)
- (11) Col (2) - Col (5) - Col (8)
- (12) Col (3) - Col (6) - Col (9)
- (13) Col (10) + Col (11) + Col (12)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Number of Permit Projections
Underground, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	In Force			Forfeited			Released			End of Year			Total
	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2017										268.00	144.00	255.00	667.00
2018	268.00	144.00	255.00	2.24	1.27	1.58	11.38	6.54	11.86	254.38	136.19	241.56	632.12
2019	254.38	136.19	241.56	2.23	1.18	1.36	11.37	6.17	11.30	240.78	128.84	228.89	598.51
2020	240.78	128.84	228.89	2.15	1.08	1.18	10.98	5.80	10.79	227.65	121.95	216.93	566.53
2021	227.65	121.95	216.93	2.02	1.01	1.06	10.47	5.46	10.22	215.16	115.48	205.65	536.29
2022	215.16	115.48	205.65	1.87	0.93	0.92	9.84	5.19	9.69	203.45	109.37	195.04	507.85
2023	203.45	109.37	195.04	1.70	0.88	0.84	9.26	4.92	9.07	192.49	103.57	185.13	481.19
2024	192.49	103.57	185.13	1.57	0.79	0.73	8.71	4.63	8.56	182.21	98.15	175.83	456.20
2025	182.21	98.15	175.83	1.42	0.72	0.60	8.09	4.36	8.04	172.70	93.07	167.20	432.97
2026	172.70	93.07	167.20	1.33	0.63	0.46	7.60	4.10	7.64	163.77	88.34	159.10	411.21
2027	163.77	88.34	159.10	1.19	0.57	0.39	7.18	3.91	7.26	155.40	83.85	151.45	390.70
2028	155.40	83.85	151.45	1.07	0.49	0.32	6.82	3.74	6.90	147.52	79.62	144.23	371.36
2029	147.52	79.62	144.23	0.98	0.42	0.27	6.48	3.55	6.50	140.05	75.65	137.45	353.16
2030	140.05	75.65	137.45	0.88	0.38	0.23	6.20	3.39	6.14	132.98	71.89	131.08	335.94
2031	132.98	71.89	131.08	0.79	0.33	0.18	5.91	3.24	5.80	126.28	68.32	125.10	319.70
2032	126.28	68.32	125.10	0.72	0.31	0.14	5.63	3.09	5.53	119.93	64.93	119.44	304.29
2033	119.93	64.93	119.44	0.64	0.27	0.10	5.36	2.97	5.24	113.93	61.69	114.10	289.72
2034	113.93	61.69	114.10	0.56	0.23	0.08	5.08	2.85	4.98	108.29	58.60	109.03	275.92
2035	108.29	58.60	109.03	0.50	0.20	0.07	4.86	2.70	4.73	102.93	55.70	104.24	262.87
2036	102.93	55.70	104.24	0.43	0.17	0.05	4.61	2.58	4.48	97.89	52.94	99.71	250.54
2037	97.89	52.94	99.71	0.38	0.14	0.04	4.41	2.43	4.23	93.11	50.37	95.44	238.92
2038	93.11	50.37	95.44	0.33	0.12	0.03	4.22	2.30	4.02	88.56	47.95	91.40	227.91
2039	88.56	47.95	91.40	0.28	0.07	0.02	4.02	2.17	3.82	84.26	45.71	87.56	217.53
2040	84.26	45.71	87.56	0.25	0.05	0.02	3.85	2.04	3.64	80.17	43.62	83.90	207.69
2041	80.17	43.62	83.90	0.20	0.03	0.01	3.65	1.94	3.48	76.32	41.65	80.41	198.39
2042	76.32	41.65	80.41	0.17	0.01	0.01	3.45	1.83	3.31	72.70	39.81	77.10	189.61
2043	72.70	39.81	77.10	0.14	0.01	0.01	3.27	1.75	3.15	69.29	38.05	73.94	181.28
2044	69.29	38.05	73.94	0.08	0.01	0.01	3.10	1.66	3.00	66.11	36.38	70.93	173.42
2045	66.11	36.38	70.93	0.05	0.00	0.01	2.93	1.58	2.88	63.13	34.80	68.04	165.98
2046	63.13	34.80	68.04	0.02	0.00	0.01	2.78	1.50	2.75	60.33	33.30	65.29	158.92
2047	60.33	33.30	65.29	0.01	0.00	0.01	2.63	1.42	2.63	57.69	31.87	62.65	152.21
2048	57.69	31.87	62.65	0.01	0.00	0.01	2.50	1.35	2.52	55.18	30.52	60.12	145.82
2049	55.18	30.52	60.12	0.01	0.00	0.01	2.38	1.28	2.41	52.80	29.24	57.70	139.73
2050	52.80	29.24	57.70	0.01	0.00	0.01	2.26	1.21	2.31	50.53	28.03	55.38	133.94
2051	50.53	28.03	55.38	0.01	0.00	0.01	2.15	1.15	2.22	48.38	26.88	53.15	128.40
2052	48.38	26.88	53.15	0.00	0.00	0.01	2.04	1.09	2.13	46.33	25.78	51.02	123.13

Footnotes:

- (1) Prior Col (1) - Prior Col (4) - Prior Col (7)
- (2) Prior Col (2) - Prior Col (5) - Prior Col (8)
- (3) Prior Col (3) - Prior Col (6) - Prior Col (9)
- (4) - (6) Exhibit 28.2 Col (9), Exhibit 28.2 Col (24), Exhibit 28.2 Col (39), etc.
- (7) - (9) Exhibit 28.2 Col (10), Exhibit 28.2 Col (25), Exhibit 28.2 Col (40), etc.

Footnotes:

- (10) Col (1) - Col (4) - Col (7)
- (11) Col (2) - Col (5) - Col (8)
- (12) Col (3) - Col (6) - Col (9)
- (13) Col (10) + Col (11) + Col (12)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Number of Permit Projections
Other, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	In Force			Forfeited			Released			End of Year			Total
	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)
2017										295.00	93.00	105.00	493.00
2018	295.00	93.00	105.00	0.90	0.32	0.18	7.71	2.65	2.91	286.39	90.03	101.91	478.32
2019	286.39	90.03	101.91	0.85	0.30	0.14	7.18	2.49	2.81	278.35	87.24	98.96	464.55
2020	278.35	87.24	98.96	0.81	0.28	0.12	6.40	2.29	2.20	271.13	84.67	96.64	452.45
2021	271.13	84.67	96.64	0.78	0.26	0.11	6.07	2.14	1.93	264.28	82.27	94.60	441.15
2022	264.28	82.27	94.60	0.73	0.23	0.10	5.30	1.81	1.18	258.25	80.23	93.32	431.81
2023	258.25	80.23	93.32	0.66	0.20	0.09	5.06	1.73	0.96	252.52	78.30	92.27	423.09
2024	252.52	78.30	92.27	0.63	0.18	0.08	4.83	1.55	0.77	247.07	76.56	91.43	415.06
2025	247.07	76.56	91.43	0.59	0.17	0.07	4.50	1.42	0.66	241.98	74.98	90.70	407.65
2026	241.98	74.98	90.70	0.54	0.15	0.06	4.25	1.37	0.58	237.18	73.46	90.06	400.70
2027	237.18	73.46	90.06	0.49	0.12	0.06	3.94	1.22	0.53	232.75	72.12	89.47	394.33
2028	232.75	72.12	89.47	0.45	0.10	0.05	3.64	1.07	0.49	228.66	70.96	88.93	388.54
2029	228.66	70.96	88.93	0.41	0.09	0.05	3.41	0.96	0.47	224.84	69.91	88.41	383.16
2030	224.84	69.91	88.41	0.39	0.08	0.04	3.13	0.87	0.41	221.32	68.97	87.96	378.25
2031	221.32	68.97	87.96	0.35	0.06	0.04	2.88	0.78	0.38	218.09	68.12	87.53	373.75
2032	218.09	68.12	87.53	0.32	0.06	0.04	2.69	0.65	0.36	215.08	67.42	87.14	369.64
2033	215.08	67.42	87.14	0.31	0.05	0.03	2.56	0.54	0.34	212.22	66.82	86.77	365.81
2034	212.22	66.82	86.77	0.29	0.05	0.03	2.27	0.48	0.31	209.66	66.30	86.43	362.39
2035	209.66	66.30	86.43	0.27	0.04	0.03	2.08	0.40	0.25	207.31	65.86	86.15	359.31
2036	207.31	65.86	86.15	0.25	0.03	0.03	1.94	0.35	0.25	205.12	65.48	85.87	356.47
2037	205.12	65.48	85.87	0.22	0.03	0.03	1.78	0.34	0.23	203.12	65.12	85.62	353.86
2038	203.12	65.12	85.62	0.20	0.02	0.02	1.63	0.30	0.21	201.29	64.80	85.38	351.47
2039	201.29	64.80	85.38	0.18	0.02	0.02	1.51	0.26	0.19	199.60	64.51	85.17	349.27
2040	199.60	64.51	85.17	0.16	0.02	0.02	1.41	0.23	0.17	198.02	64.26	84.97	347.25
2041	198.02	64.26	84.97	0.15	0.02	0.02	1.32	0.19	0.17	196.56	64.05	84.78	345.39
2042	196.56	64.05	84.78	0.13	0.01	0.02	1.17	0.16	0.17	195.26	63.88	84.59	343.73
2043	195.26	63.88	84.59	0.12	0.01	0.02	1.09	0.16	0.17	194.06	63.71	84.40	342.17
2044	194.06	63.71	84.40	0.10	0.01	0.01	1.01	0.15	0.16	192.94	63.54	84.23	340.71
2045	192.94	63.54	84.23	0.10	0.01	0.01	0.91	0.13	0.16	191.94	63.41	84.05	339.40
2046	191.94	63.41	84.05	0.07	0.01	0.01	0.83	0.12	0.16	191.03	63.28	83.89	338.20
2047	191.03	63.28	83.89	0.05	0.01	0.01	0.73	0.10	0.14	190.25	63.17	83.73	337.15
2048	190.25	63.17	83.73	0.05	0.01	0.01	0.68	0.10	0.13	189.52	63.06	83.59	336.17
2049	189.52	63.06	83.59	0.04	0.01	0.01	0.61	0.09	0.11	188.87	62.96	83.47	335.31
2050	188.87	62.96	83.47	0.02	0.01	0.01	0.57	0.08	0.11	188.28	62.88	83.35	334.51
2051	188.28	62.88	83.35	0.02	0.01	0.01	0.46	0.07	0.09	187.80	62.80	83.25	333.85
2052	187.80	62.80	83.25	0.02	0.01	0.01	0.35	0.06	0.08	187.43	62.73	83.16	333.32

Footnotes:

- (1) Prior Col (1) - Prior Col (4) - Prior Col (7)
- (2) Prior Col (2) - Prior Col (5) - Prior Col (8)
- (3) Prior Col (3) - Prior Col (6) - Prior Col (9)
- (4) - (6) Exhibit 28.3 Col (9), Exhibit 28.3 Col (24), Exhibit 28.3 Col (39), etc.
- (7) - (9) Exhibit 28.3 Col (10), Exhibit 28.3 Col (25), Exhibit 28.3 Col (40), etc.

Footnotes:

- (10) Col (1) - Col (4) - Col (7)
- (11) Col (2) - Col (5) - Col (8)
- (12) Col (3) - Col (6) - Col (9)
- (13) Col (10) + Col (11) + Col (12)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Acreage Projections
Total, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	In Force			Forfeited			Released			End of Year			Total	Active % of Acres
	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2017										101,842	33,048	165,405	300,295	100.00%
2018	101,842	33,048	165,405	403	113	677	3,393	1,253	7,389	98,046	31,682	157,338	287,067	96.27%
2019	98,046	31,682	157,338	398	104	609	3,330	1,187	7,066	94,318	30,391	149,663	274,373	92.61%
2020	94,318	30,391	149,663	384	97	561	3,120	1,132	6,731	90,814	29,161	142,371	262,347	89.17%
2021	90,814	29,161	142,371	365	91	517	3,017	1,115	6,461	87,431	27,955	135,393	250,780	85.85%
2022	87,431	27,955	135,393	346	83	416	2,983	1,026	6,081	84,103	26,846	128,895	239,844	82.58%
2023	84,103	26,846	128,895	322	78	363	2,969	997	5,812	80,812	25,771	122,721	229,304	79.35%
2024	80,812	25,771	122,721	305	71	330	2,891	945	5,551	77,616	24,754	116,839	219,210	76.21%
2025	77,616	24,754	116,839	289	66	289	2,753	881	5,253	74,574	23,807	111,298	209,680	73.23%
2026	74,574	23,807	111,298	271	59	256	2,656	838	4,997	71,648	22,911	106,045	200,603	70.35%
2027	71,648	22,911	106,045	252	53	231	2,530	796	4,747	68,866	22,062	101,067	191,995	67.62%
2028	68,866	22,062	101,067	234	45	206	2,427	742	4,494	66,206	21,275	96,366	183,847	65.01%
2029	66,206	21,275	96,366	219	37	182	2,322	700	4,264	63,664	20,538	91,920	176,123	62.51%
2030	63,664	20,538	91,920	204	32	152	2,213	669	4,038	61,247	19,838	87,731	168,816	60.14%
2031	61,247	19,838	87,731	183	27	121	2,097	639	3,814	58,968	19,171	83,796	161,935	57.90%
2032	58,968	19,171	83,796	170	26	106	1,995	594	3,605	56,803	18,552	80,085	155,440	55.78%
2033	56,803	18,552	80,085	156	22	95	1,903	554	3,375	54,744	17,975	76,614	149,333	53.75%
2034	54,744	17,975	76,614	145	20	82	1,787	523	3,190	52,812	17,432	73,343	143,586	51.86%
2035	52,812	17,432	73,343	131	17	66	1,678	493	3,011	51,002	16,922	70,266	138,191	50.08%
2036	51,002	16,922	70,266	120	14	57	1,582	467	2,853	49,300	16,441	67,356	133,096	48.41%
2037	49,300	16,441	67,356	101	11	46	1,485	437	2,702	47,714	15,992	64,608	128,314	46.85%
2038	47,714	15,992	64,608	88	10	32	1,411	406	2,556	46,215	15,576	62,021	123,811	45.38%
2039	46,215	15,576	62,021	77	9	28	1,332	377	2,397	44,805	15,190	59,595	119,591	43.99%
2040	44,805	15,190	59,595	67	7	21	1,256	351	2,260	43,482	14,832	57,315	115,629	42.70%
2041	43,482	14,832	57,315	58	5	17	1,183	333	2,142	42,240	14,494	55,156	111,890	41.48%
2042	42,240	14,494	55,156	48	5	12	1,108	318	2,043	41,085	14,171	53,101	108,357	40.34%
2043	41,085	14,171	53,101	41	4	9	1,049	304	1,936	39,994	13,863	51,156	105,013	39.27%
2044	39,994	13,863	51,156	35	3	7	987	287	1,832	38,971	13,572	49,317	101,861	38.27%
2045	38,971	13,572	49,317	30	2	5	934	272	1,749	38,008	13,298	47,563	98,869	37.32%
2046	38,008	13,298	47,563	19	1	4	873	257	1,658	37,115	13,040	45,901	96,056	36.44%
2047	37,115	13,040	45,901	12	1	3	824	244	1,572	36,279	12,795	44,326	93,400	35.62%
2048	36,279	12,795	44,326	8	1	3	780	233	1,505	35,491	12,561	42,818	90,871	34.85%
2049	35,491	12,561	42,818	4	1	2	731	222	1,432	34,756	12,339	41,383	88,478	34.13%
2050	34,756	12,339	41,383	2	1	2	694	210	1,370	34,060	12,128	40,010	86,198	33.44%
2051	34,060	12,128	40,010	2	1	2	651	200	1,311	33,407	11,927	38,697	84,031	32.80%
2052	33,407	11,927	38,697	2	1	2	612	191	1,255	32,793	11,736	37,440	81,969	32.20%

Footnotes:

- (1) Prior Col (1) - Prior Col (4) - Prior Col (7)
- (2) Prior Col (2) - Prior Col (5) - Prior Col (8)
- (3) Prior Col (3) - Prior Col (6) - Prior Col (9)
- (4) Exhibit 26.2 Col (4) + Exhibit 26.3 Col (4) + Exhibit 26.4 Col (4)
- (5) Exhibit 26.2 Col (5) + Exhibit 26.3 Col (5) + Exhibit 26.4 Col (5)
- (6) Exhibit 26.2 Col (6) + Exhibit 26.3 Col (6) + Exhibit 26.4 Col (6)
- (7) Exhibit 26.2 Col (7) + Exhibit 26.3 Col (7) + Exhibit 26.4 Col (7)

Footnotes:

- (8) Exhibit 26.2 Col (8) + Exhibit 26.3 Col (8) + Exhibit 26.4 Col (8)
- (9) Exhibit 26.2 Col (9) + Exhibit 26.3 Col (9) + Exhibit 26.4 Col (9)
- (10) Col (1) - Col (4) - Col (7)
- (11) Col (2) - Col (5) - Col (8)
- (12) Col (3) - Col (6) - Col (9)
- (13) Col (10) + Col (11) + Col (12)
- (14) Col (10) / Year 2017 Col (10)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Acreage Projections
Surface, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	In Force			Forfeited			Released			End of Year			Total	Active % of Acres
	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2017										56,112	15,950	137,223	209,286	100.00%
2018	56,112	15,950	137,223	277	47	560	1,772	652	6,195	54,064	15,251	130,468	199,783	96.35%
2019	54,064	15,251	130,468	278	44	504	1,797	616	5,950	51,988	14,591	124,014	190,593	92.65%
2020	51,988	14,591	124,014	273	42	465	1,735	606	5,720	49,980	13,943	117,829	181,752	89.07%
2021	49,980	13,943	117,829	259	39	428	1,724	614	5,515	47,997	13,290	111,887	173,173	85.54%
2022	47,997	13,290	111,887	249	36	381	1,801	593	5,262	45,946	12,661	106,243	164,851	81.88%
2023	45,946	12,661	106,243	233	34	331	1,857	584	5,051	43,857	12,043	100,862	156,761	78.16%
2024	43,857	12,043	100,862	223	32	302	1,865	562	4,836	41,769	11,448	95,724	148,940	74.44%
2025	41,769	11,448	95,724	211	31	267	1,839	536	4,587	39,719	10,881	90,870	141,470	70.78%
2026	39,719	10,881	90,870	200	28	238	1,790	512	4,376	37,729	10,341	86,256	134,326	67.24%
2027	37,729	10,341	86,256	187	27	216	1,714	491	4,157	35,827	9,824	81,883	127,534	63.85%
2028	35,827	9,824	81,883	176	22	194	1,642	465	3,934	34,010	9,337	77,756	121,102	60.61%
2029	34,010	9,337	77,756	166	19	171	1,566	444	3,732	32,278	8,874	73,853	115,005	57.52%
2030	32,278	8,874	73,853	156	16	143	1,487	423	3,538	30,635	8,435	70,172	109,243	54.60%
2031	30,635	8,435	70,172	141	13	115	1,418	406	3,339	29,077	8,016	66,718	103,811	51.82%
2032	29,077	8,016	66,718	131	13	101	1,366	386	3,155	27,580	7,617	63,463	98,660	49.15%
2033	27,580	7,617	63,463	121	12	91	1,312	369	2,993	26,148	7,236	60,379	93,763	46.60%
2034	26,148	7,236	60,379	114	11	78	1,258	350	2,823	24,776	6,874	57,477	89,128	44.15%
2035	24,776	6,874	57,477	104	9	63	1,199	332	2,664	23,473	6,533	54,751	84,757	41.83%
2036	23,473	6,533	54,751	96	8	55	1,138	316	2,522	22,239	6,209	52,174	80,623	39.63%
2037	22,239	6,209	52,174	80	6	43	1,077	293	2,386	21,082	5,909	49,745	76,736	37.57%
2038	21,082	5,909	49,745	70	5	30	1,021	272	2,257	19,991	5,632	47,458	73,082	35.63%
2039	19,991	5,632	47,458	62	5	27	964	256	2,112	18,965	5,372	45,320	69,656	33.80%
2040	18,965	5,372	45,320	53	4	19	904	239	1,987	18,008	5,128	43,314	66,451	32.09%
2041	18,008	5,128	43,314	46	3	15	854	228	1,881	17,108	4,897	41,418	63,424	30.49%
2042	17,108	4,897	41,418	38	3	10	805	218	1,793	16,265	4,677	39,615	60,556	28.99%
2043	16,265	4,677	39,615	32	2	7	764	208	1,697	15,469	4,467	37,911	57,846	27.57%
2044	15,469	4,467	37,911	29	2	5	721	195	1,602	14,719	4,269	36,303	55,291	26.23%
2045	14,719	4,269	36,303	24	1	4	683	185	1,528	14,011	4,084	34,771	52,867	24.97%
2046	14,011	4,084	34,771	16	0	3	636	174	1,446	13,359	3,909	33,323	50,591	23.81%
2047	13,359	3,909	33,323	10	0	2	602	165	1,368	12,747	3,745	31,952	48,444	22.72%
2048	12,747	3,745	31,952	6	0	2	569	157	1,310	12,173	3,588	30,641	46,401	21.69%
2049	12,173	3,588	30,641	2	0	1	538	150	1,245	11,633	3,438	29,395	44,465	20.73%
2050	11,633	3,438	29,395	1	0	1	508	142	1,190	11,124	3,295	28,203	42,622	19.82%
2051	11,124	3,295	28,203	1	0	1	480	136	1,137	10,643	3,159	27,064	40,866	18.97%
2052	10,643	3,159	27,064	1	0	1	455	130	1,088	10,187	3,029	25,975	39,191	18.15%

Footnotes:

- (1) Prior Col (1) - Prior Col (4) - Prior Col (7)
- (2) Prior Col (2) - Prior Col (5) - Prior Col (8)
- (3) Prior Col (3) - Prior Col (6) - Prior Col (9)
- (4) - (6) Exhibit 28.1 Col (11), Exhibit 28.1 Col (26), Exhibit 28.1 Col (41), etc.
- (7) - (9) Exhibit 28.1 Col (12), Exhibit 28.1 Col (27), Exhibit 28.1 Col (42), etc.

Footnotes:

- (10) Col (1) - Col (4) - Col (7)
- (11) Col (2) - Col (5) - Col (8)
- (12) Col (3) - Col (6) - Col (9)
- (13) Col (10) + Col (11) + Col (12)
- (14) Col (10) / Year 2017 Col (10)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Acreage Projections
 Underground, for Forfeitures Occurring after June 30, 2017
 June 30, 2017

Fiscal Year Ending 6/30	In Force			Forfeited			Released			End of Year			Total	Active % of Acres
	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2017										15,877	6,666	18,948	41,491	100.00%
2018	15,877	6,666	18,948	68	45	107	744	303	920	15,065	6,317	17,921	39,304	94.89%
2019	15,065	6,317	17,921	67	41	98	710	290	875	14,288	5,986	16,949	37,224	89.99%
2020	14,288	5,986	16,949	62	38	90	673	276	829	13,553	5,672	16,030	35,256	85.36%
2021	13,553	5,672	16,030	58	35	84	634	260	785	12,861	5,377	15,161	33,399	81.00%
2022	12,861	5,377	15,161	53	33	30	600	248	743	12,208	5,096	14,388	31,692	76.89%
2023	12,208	5,096	14,388	48	31	27	568	237	700	11,592	4,829	13,661	30,082	73.01%
2024	11,592	4,829	13,661	43	27	24	537	223	666	11,011	4,579	12,972	28,562	69.35%
2025	11,011	4,579	12,972	40	24	18	468	205	623	10,503	4,349	12,331	27,183	66.15%
2026	10,503	4,349	12,331	37	21	15	443	192	585	10,023	4,136	11,732	25,890	63.13%
2027	10,023	4,136	11,732	34	19	12	425	184	556	9,563	3,933	11,163	24,659	60.23%
2028	9,563	3,933	11,163	30	16	10	409	176	528	9,124	3,741	10,626	23,490	57.47%
2029	9,124	3,741	10,626	28	13	9	394	168	501	8,702	3,561	10,116	22,379	54.81%
2030	8,702	3,561	10,116	25	11	7	377	159	475	8,300	3,391	9,633	21,324	52.27%
2031	8,300	3,391	9,633	23	10	5	360	152	452	7,917	3,229	9,177	20,323	49.86%
2032	7,917	3,229	9,177	21	9	4	344	144	430	7,551	3,076	8,743	19,370	47.56%
2033	7,551	3,076	8,743	18	7	3	326	138	363	7,207	2,931	8,377	18,514	45.39%
2034	7,207	2,931	8,377	16	6	2	311	132	348	6,880	2,792	8,027	17,699	43.33%
2035	6,880	2,792	8,027	12	5	2	295	125	332	6,572	2,662	7,693	16,928	41.39%
2036	6,572	2,662	7,693	11	4	2	282	118	316	6,280	2,540	7,375	16,194	39.55%
2037	6,280	2,540	7,375	9	3	1	269	112	302	6,001	2,425	7,071	15,497	37.80%
2038	6,001	2,425	7,071	7	3	1	259	106	289	5,735	2,316	6,781	14,832	36.12%
2039	5,735	2,316	6,781	6	2	1	246	101	276	5,483	2,213	6,504	14,201	34.53%
2040	5,483	2,213	6,504	5	1	1	236	95	265	5,242	2,117	6,239	13,598	33.02%
2041	5,242	2,117	6,239	4	1	1	224	90	253	5,013	2,027	5,985	13,026	31.58%
2042	5,013	2,027	5,985	4	0	0	214	85	241	4,795	1,941	5,744	12,480	30.20%
2043	4,795	1,941	5,744	3	0	0	205	82	231	4,588	1,859	5,512	11,959	28.90%
2044	4,588	1,859	5,512	1	0	0	194	78	221	4,392	1,781	5,291	11,464	27.66%
2045	4,392	1,781	5,291	1	0	0	184	74	212	4,207	1,707	5,078	10,992	26.50%
2046	4,207	1,707	5,078	0	0	0	174	71	204	4,032	1,636	4,874	10,543	25.40%
2047	4,032	1,636	4,874	0	0	0	166	67	195	3,866	1,569	4,678	10,112	24.35%
2048	3,866	1,569	4,678	0	0	0	159	64	188	3,706	1,505	4,490	9,701	23.34%
2049	3,706	1,505	4,490	0	0	0	152	61	180	3,554	1,443	4,310	9,308	22.39%
2050	3,554	1,443	4,310	0	0	0	145	59	173	3,409	1,384	4,137	8,931	21.47%
2051	3,409	1,384	4,137	0	0	0	139	56	166	3,270	1,329	3,971	8,570	20.60%
2052	3,270	1,329	3,971	0	0	0	133	53	159	3,137	1,275	3,812	8,224	19.76%

Footnotes:

- (1) Prior Col (1) - Prior Col (4) - Prior Col (7)
- (2) Prior Col (2) - Prior Col (5) - Prior Col (8)
- (3) Prior Col (3) - Prior Col (6) - Prior Col (9)
- (4) - (6) Exhibit 28.1 Col (11), Exhibit 28.1 Col (26), Exhibit 28.1 Col (41), etc.
- (7) - (9) Exhibit 28.1 Col (12), Exhibit 28.1 Col (27), Exhibit 28.1 Col (42), etc.

Footnotes:

- (10) Col (1) - Col (4) - Col (7)
- (11) Col (2) - Col (5) - Col (8)
- (12) Col (3) - Col (6) - Col (9)
- (13) Col (10) + Col (11) + Col (12)
- (14) Col (10) / Year 2017 Col (10)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Acreage Projections
Other, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	In Force			Forfeited			Released			End of Year			Total	Active % of Acres
	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released	Active	Inactive	Phase Released		
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)
2017										29,853	10,432	9,233	49,518	100.00%
2018	29,853	10,432	9,233	58	20	10	878	297	275	28,917	10,114	8,949	47,980	96.87%
2019	28,917	10,114	8,949	53	19	8	822	281	241	28,042	9,814	8,700	46,557	93.94%
2020	28,042	9,814	8,700	49	17	6	712	251	182	27,281	9,546	8,512	45,339	91.39%
2021	27,281	9,546	8,512	47	16	5	660	242	162	26,574	9,288	8,345	44,207	89.02%
2022	26,574	9,288	8,345	44	15	5	581	185	76	25,949	9,089	8,264	43,301	86.92%
2023	25,949	9,089	8,264	41	13	5	544	176	62	25,364	8,900	8,197	42,461	84.96%
2024	25,364	8,900	8,197	39	12	4	488	160	50	24,837	8,728	8,143	41,708	83.20%
2025	24,837	8,728	8,143	37	11	3	446	140	43	24,353	8,577	8,096	41,027	81.58%
2026	24,353	8,577	8,096	34	10	3	422	134	36	23,897	8,434	8,057	40,388	80.05%
2027	23,897	8,434	8,057	30	8	3	391	120	34	23,476	8,305	8,020	39,801	78.64%
2028	23,476	8,305	8,020	28	6	3	376	101	32	23,072	8,198	7,985	39,255	77.29%
2029	23,072	8,198	7,985	25	5	3	362	89	31	22,685	8,103	7,952	38,740	75.99%
2030	22,685	8,103	7,952	23	5	2	350	87	24	22,312	8,011	7,925	38,249	74.74%
2031	22,312	8,011	7,925	19	4	2	319	81	23	21,974	7,926	7,900	37,801	73.61%
2032	21,974	7,926	7,900	18	4	1	285	63	20	21,672	7,859	7,878	37,409	72.60%
2033	21,672	7,859	7,878	17	3	1	265	47	19	21,390	7,808	7,858	37,056	71.65%
2034	21,390	7,808	7,858	15	3	1	219	41	19	21,155	7,765	7,839	36,759	70.87%
2035	21,155	7,765	7,839	15	3	1	184	35	15	20,956	7,727	7,822	36,506	70.20%
2036	20,956	7,727	7,822	14	2	1	162	33	15	20,781	7,692	7,807	36,279	69.61%
2037	20,781	7,692	7,807	12	2	1	139	32	13	20,630	7,658	7,792	36,081	69.11%
2038	20,630	7,658	7,792	11	2	1	132	28	10	20,488	7,628	7,781	35,897	68.63%
2039	20,488	7,628	7,781	9	2	1	121	20	9	20,358	7,606	7,771	35,734	68.19%
2040	20,358	7,606	7,771	9	2	1	117	17	9	20,232	7,587	7,762	35,580	67.77%
2041	20,232	7,587	7,762	8	1	1	105	16	9	20,119	7,569	7,752	35,440	67.39%
2042	20,119	7,569	7,752	7	1	1	88	15	9	20,025	7,553	7,742	35,320	67.08%
2043	20,025	7,553	7,742	6	1	1	81	15	9	19,937	7,537	7,733	35,207	66.79%
2044	19,937	7,537	7,733	5	1	1	72	15	9	19,861	7,521	7,723	35,106	66.53%
2045	19,861	7,521	7,723	4	1	1	67	14	9	19,789	7,507	7,714	35,010	66.29%
2046	19,789	7,507	7,714	3	1	1	63	12	9	19,723	7,494	7,705	34,922	66.07%
2047	19,723	7,494	7,705	2	0	1	55	12	8	19,666	7,481	7,696	34,843	65.88%
2048	19,666	7,481	7,696	2	0	1	52	12	8	19,612	7,469	7,687	34,768	65.70%
2049	19,612	7,469	7,687	1	0	1	42	10	8	19,569	7,458	7,678	34,706	65.55%
2050	19,569	7,458	7,678	1	0	1	40	10	8	19,527	7,448	7,670	34,645	65.41%
2051	19,527	7,448	7,670	1	0	1	32	8	8	19,494	7,440	7,662	34,595	65.30%
2052	19,494	7,440	7,662	1	0	1	24	7	8	19,469	7,432	7,653	34,554	65.22%

Footnotes:

- (1) Prior Col (1) - Prior Col (4) - Prior Col (7)
- (2) Prior Col (2) - Prior Col (5) - Prior Col (8)
- (3) Prior Col (3) - Prior Col (6) - Prior Col (9)
- (4) - (6) Exhibit 28.1 Col (11), Exhibit 28.1 Col (26), Exhibit 28.1 Col (41), etc.
- (7) - (9) Exhibit 28.1 Col (12), Exhibit 28.1 Col (27), Exhibit 28.1 Col (42), etc.

Footnotes:

- (10) Col (1) - Col (4) - Col (7)
- (11) Col (2) - Col (5) - Col (8)
- (12) Col (3) - Col (6) - Col (9)
- (13) Col (10) + Col (11) + Col (12)
- (14) Col (10) / Year 2017 Col (10)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
Land - Total, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay				Net Liability				Net Liability - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2017																
2018	\$2,352,206	\$962,418	\$1,679,476	\$4,994,100	\$0	\$0	\$0	\$0	\$1,028,750	\$614,433	\$685,793	\$2,328,977	\$0	\$0	\$0	\$0
2019	2,291,848	881,204	1,514,237	4,687,289	0	0	0	0	968,583	560,718	607,690	2,136,991	0	0	0	0
2020	2,180,509	813,362	1,392,170	4,386,040	0	0	0	0	877,744	508,714	553,745	1,940,202	0	0	0	0
2021	2,067,546	760,110	1,290,111	4,117,767	1,176,103	481,209	839,738	2,497,050	808,544	471,583	505,078	1,785,204	514,375	307,217	342,896	1,164,488
2022	1,927,395	700,966	838,053	3,466,414	2,322,027	921,811	1,596,856	4,840,695	721,320	426,358	132,515	1,280,193	998,666	587,576	646,742	2,232,984
2023	1,778,924	652,921	738,302	3,170,147	2,236,178	847,283	1,453,203	4,536,664	641,522	389,620	101,340	1,132,481	923,163	534,716	580,717	2,038,597
2024	1,667,891	582,478	666,518	2,916,887	2,124,028	786,736	1,341,140	4,251,903	574,390	337,846	83,253	995,488	843,144	490,148	529,411	1,862,703
2025	1,568,120	534,832	567,734	2,670,686	2,961,168	1,081,021	1,483,108	5,525,298	517,666	301,350	59,450	878,466	1,125,592	662,149	385,054	2,172,795
2026	1,461,092	465,528	496,985	2,423,604	1,778,924	652,921	738,302	3,170,147	461,912	249,805	49,052	760,768	641,522	389,620	101,340	1,132,481
2027	1,343,829	416,945	444,177	2,204,951	1,667,891	582,478	666,518	2,916,887	404,595	223,125	36,077	663,798	574,390	337,846	83,253	995,488
2028	1,233,958	347,500	389,115	1,970,573	1,568,120	534,832	567,734	2,670,686	360,582	183,870	26,186	570,638	517,666	301,350	59,450	878,466
2029	1,146,276	282,754	345,265	1,774,295	1,461,092	465,528	496,985	2,423,604	325,340	145,377	22,840	493,557	461,912	249,805	49,052	760,768
2030	1,053,691	244,880	288,069	1,586,640	1,343,829	416,945	444,177	2,204,951	288,675	121,618	19,371	429,664	404,595	223,125	36,077	663,798
2031	943,528	212,843	224,277	1,380,649	1,233,958	347,500	389,115	1,970,573	243,961	105,171	13,403	362,535	360,582	183,870	26,186	570,638
2032	873,311	200,434	192,647	1,266,391	1,146,276	282,754	345,265	1,774,295	217,500	96,115	9,739	323,354	325,340	145,377	22,840	493,557
2033	794,610	167,125	169,417	1,131,153	1,053,691	244,880	288,069	1,586,640	186,827	75,747	8,853	271,428	288,675	121,618	19,371	429,664
2034	725,149	146,140	145,818	1,017,107	943,528	212,843	224,277	1,380,649	160,276	63,523	6,753	230,552	243,961	105,171	13,403	362,535
2035	638,092	121,431	117,577	877,100	873,311	200,434	192,647	1,266,391	146,616	52,514	5,929	205,059	217,500	96,115	9,739	323,354
2036	579,325	105,060	102,869	787,254	794,610	167,125	169,417	1,131,153	127,013	43,208	4,998	175,218	186,827	75,747	8,853	271,428
2037	489,917	80,605	83,694	654,216	725,149	146,140	145,818	1,017,107	110,099	32,216	4,480	146,794	160,276	63,523	6,753	230,552
2038	422,262	71,120	59,029	552,411	638,092	121,431	117,577	877,100	88,788	28,077	4,168	121,033	146,616	52,514	5,929	205,059
2039	366,843	58,676	52,272	477,791	579,325	105,060	102,869	787,254	70,252	21,777	3,263	95,292	127,013	43,208	4,998	175,218
2040	321,930	44,993	39,810	406,733	489,917	80,605	83,694	654,216	59,365	16,073	3,174	78,612	110,099	32,216	4,480	146,794
2041	276,859	33,872	32,636	343,367	422,262	71,120	59,029	552,411	46,153	12,549	3,093	61,794	88,788	28,077	4,168	121,033
2042	232,140	25,946	23,700	281,786	366,843	58,676	52,272	477,791	37,765	8,713	3,017	49,496	70,252	21,777	3,263	95,292
2043	197,569	23,247	18,230	239,046	321,930	44,993	39,810	406,733	28,371	8,002	2,945	39,318	59,365	16,073	3,174	78,612
2044	157,695	18,330	14,850	190,875	276,859	33,872	32,636	343,367	23,848	5,723	2,877	32,447	46,153	12,549	3,093	61,794
2045	130,517	12,501	12,186	155,204	232,140	25,946	23,700	281,786	18,230	5,205	2,811	26,246	37,765	8,713	3,017	49,496
2046	85,319	8,270	9,863	103,452	197,569	23,247	18,230	239,046	10,735	3,193	2,751	16,679	28,371	8,002	2,945	39,318
2047	53,215	6,154	8,877	68,247	157,695	18,330	14,850	190,875	7,324	2,251	2,695	12,270	23,848	5,723	2,877	32,447
2048	37,827	6,046	8,378	52,251	130,517	12,501	12,186	155,204	6,298	2,168	2,641	11,107	18,230	5,205	2,811	26,246
2049	23,366	5,943	7,772	37,082	85,319	8,270	9,863	103,452	6,144	2,096	2,589	10,829	10,735	3,193	2,751	16,679
2050	16,615	5,846	7,583	30,043	53,215	6,154	8,877	68,247	6,002	2,035	2,540	10,577	7,324	2,251	2,695	12,270
2051	15,104	5,753	7,401	28,258	37,827	6,046	8,378	52,251	5,638	1,982	2,492	10,113	6,298	2,168	2,641	11,107
2052	14,893	5,667	7,226	27,787	23,366	5,943	7,772	37,082	5,594	1,940	2,447	9,981	6,144	2,096	2,589	10,829

Footnotes:

- (1) Exhibit 27.2 Col (1) + Exhibit 27.3 Col (1) + Exhibit 27.4 Col (1)
- (2) Exhibit 27.2 Col (2) + Exhibit 27.3 Col (2) + Exhibit 27.4 Col (2)
- (3) Exhibit 27.2 Col (3) + Exhibit 27.3 Col (3) + Exhibit 27.4 Col (3)
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1), Col (2), and Col (3) delayed three years
- (8) Col (5) + Col (6) + Col (7)

Footnotes:

- (9) Exhibit 27.2 Col (9) + Exhibit 27.3 Col (9) + Exhibit 27.4 Col (9)
- (10) Exhibit 27.2 Col (10) + Exhibit 27.3 Col (10) + Exhibit 27.4 Col (10)
- (11) Exhibit 27.2 Col (11) + Exhibit 27.3 Col (11) + Exhibit 27.4 Col (11)
- (12) Col (9) + Col (10) + Col (11)
- (13) - (15) Col (9), Col (10), and Col (11) delayed three years
- (16) Col (13) + Col (14) + Col (15)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
Land - Surface, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay				Net Liability				Net Liability - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2017																
2018	\$886,665	\$150,922	\$896,775	\$1,934,363	\$0	\$0	\$0	\$0	\$16,980	\$8,995	\$52,949	\$78,924	\$0	\$0	\$0	\$0
2019	890,931	141,410	806,863	1,839,204	0	0	0	0	16,135	7,991	36,296	60,423	0	0	0	0
2020	872,624	134,729	744,033	1,751,387	0	0	0	0	9,069	7,046	31,849	47,964	0	0	0	0
2021	830,296	124,851	684,541	1,639,688	443,333	75,461	448,388	967,181	4,535	6,153	20,350	31,039	8,490	4,497	26,474	39,462
2022	797,240	114,623	610,250	1,522,113	888,798	146,166	851,819	1,886,784	2,249	3,970	17,347	23,566	16,558	8,493	44,622	69,673
2023	745,262	109,128	529,306	1,383,696	881,778	138,069	775,448	1,795,295	1,767	3,289	354	5,410	12,602	7,519	34,073	54,193
2024	712,396	103,728	483,761	1,299,886	851,460	129,790	714,287	1,695,537	1,307	2,645	295	4,247	6,802	6,600	26,100	39,501
2025	676,055	97,799	427,444	1,201,298	1,212,388	177,048	1,770,488	2,341,957	905	2,036	251	3,192	4,517	7,047	27,522	39,086
2026	638,888	90,054	381,086	1,110,028	745,262	109,128	529,306	1,383,696	73	238	214	525	1,767	3,289	354	5,410
2027	599,571	85,006	345,320	1,029,897	712,396	103,728	483,761	1,299,886	63	118	179	361	1,307	2,645	295	4,247
2028	563,435	71,949	309,640	945,024	676,055	97,799	427,444	1,201,298	54	85	147	285	905	2,036	251	3,192
2029	532,479	59,393	273,997	865,868	638,888	90,054	381,086	1,110,028	45	76	116	237	73	238	214	525
2030	497,958	51,772	228,464	778,195	599,571	85,006	345,320	1,029,897	38	68	92	198	63	118	179	361
2031	449,917	42,763	183,620	676,300	563,435	71,949	309,640	945,024	33	61	82	177	54	85	147	285
2032	418,401	40,499	160,889	619,789	532,479	59,393	273,997	865,868	29	55	73	156	45	76	116	237
2033	387,555	38,207	145,938	571,701	497,958	51,772	228,464	778,195	24	48	64	136	38	68	92	198
2034	363,486	35,924	125,501	524,910	449,917	42,763	183,620	676,300	21	42	58	122	33	61	82	177
2035	333,107	29,089	100,353	462,549	418,401	40,499	160,889	619,789	18	37	55	110	29	55	73	156
2036	306,787	25,148	87,689	419,624	387,555	38,207	145,938	571,701	15	31	52	99	24	48	64	136
2037	255,053	20,603	69,471	345,128	363,486	35,924	125,501	524,910	13	26	49	88	21	42	58	122
2038	224,276	16,920	47,447	288,643	333,107	29,089	100,353	462,549	10	21	46	78	18	37	55	110
2039	198,237	15,334	42,470	256,041	306,787	25,148	87,689	419,624	8	16	44	68	15	31	52	99
2040	170,040	13,177	30,325	213,542	255,053	20,603	69,471	345,128	5	12	41	58	13	26	49	88
2041	148,068	9,617	24,008	181,693	224,276	16,920	47,447	288,643	4	7	39	50	10	21	46	78
2042	120,384	9,095	16,640	146,119	198,237	15,334	42,470	256,041	3	3	37	43	8	16	44	68
2043	103,462	7,858	11,637	122,957	170,040	13,177	30,325	213,542	2	0	34	36	5	12	41	58
2044	93,374	6,138	8,752	108,264	148,068	9,617	24,008	181,693	1	0	32	33	4	7	39	50
2045	78,057	2,138	6,210	86,406	120,384	9,095	16,640	146,119	0	0	30	31	3	3	37	43
2046	50,899	1,281	4,069	56,249	103,462	7,858	11,637	122,957	0	0	28	28	2	0	34	36
2047	31,531	407	3,202	35,140	93,374	6,138	8,752	108,264	0	0	26	26	1	0	32	33
2048	18,209	390	2,807	21,406	78,057	2,138	6,210	86,406	0	0	25	25	0	0	30	31
2049	7,090	373	2,301	9,764	50,899	1,281	4,069	56,249	0	0	23	23	0	0	28	28
2050	1,888	357	2,207	4,453	31,531	407	3,202	35,140	0	0	21	21	0	0	26	26
2051	1,787	342	2,118	4,247	18,209	390	2,807	21,406	0	0	20	20	0	0	25	25
2052	1,708	328	2,032	4,069	7,090	373	2,301	9,764	0	0	18	18	0	0	23	23

Footnotes:

- (1) - (3) Exhibit 28.1 Col (15), Exhibit 28.1 Col (30), Exhibit 28.1 Col (45), etc.
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1), Col (2), and Col (3) delayed three years
- (8) Col (5) + Col (6) + Col (7)

Footnotes:

- (9) - (11) Exhibit 28.1 Col (18), Exhibit 28.1 Col (33), Exhibit 28.1 Col (48), etc.
- (12) Col (9) + Col (10) + Col (11)
- (13) - (15) Col (9), Col (10), and Col (11) delayed three years
- (16) Col (13) + Col (14) + Col (15)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
Land - Underground, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay				Net Liability				Net Liability - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2017																
2018	\$938,732	\$626,944	\$736,861	\$2,302,537	\$0	\$0	\$0	\$0	\$654,252	\$480,531	\$609,553	\$1,744,336	\$0	\$0	\$0	\$0
2019	918,078	568,890	673,242	2,160,211	0	0	0	0	629,721	438,611	555,593	1,623,925	0	0	0	0
2020	861,762	523,812	620,505	2,006,080	0	0	0	0	577,059	398,965	509,265	1,485,289	0	0	0	0
2021	806,368	486,790	581,287	1,874,445	469,366	313,472	368,431	1,151,269	527,121	368,780	473,646	1,369,547	327,126	240,266	304,776	872,168
2022	726,841	453,558	204,699	1,385,098	928,405	597,917	705,052	2,231,374	467,594	338,303	105,103	910,999	641,986	459,571	582,573	1,684,130
2023	660,122	427,249	187,581	1,274,952	889,920	546,351	646,874	2,083,145	415,405	313,654	91,803	820,862	603,390	418,788	532,429	1,554,607
2024	597,406	372,968	163,207	1,133,582	834,065	505,301	600,896	1,940,262	363,345	270,313	75,388	709,045	552,090	383,873	491,455	1,427,418
2025	553,210	337,104	124,450	1,014,764	1,130,025	696,953	495,343	2,322,321	324,521	239,821	52,923	617,265	731,154	522,693	341,926	1,595,773
2026	511,538	287,374	100,515	899,427	660,122	427,249	187,581	1,274,952	289,062	200,139	42,955	532,156	415,405	313,654	91,803	820,862
2027	468,149	262,311	85,579	816,039	597,406	372,968	163,207	1,133,582	255,670	179,401	31,550	466,621	363,345	270,313	75,388	709,045
2028	419,641	218,424	67,513	705,578	553,210	337,104	124,450	1,014,764	229,383	148,097	22,126	399,606	324,521	239,821	52,923	617,265
2029	387,549	173,672	59,625	620,846	511,538	287,374	100,515	899,427	205,699	114,501	19,027	339,228	289,062	200,139	42,955	532,156
2030	348,168	151,981	51,052	551,200	468,149	262,311	85,579	816,039	177,644	98,140	16,069	291,853	255,670	179,401	31,550	466,621
2031	317,037	133,403	32,323	482,763	419,641	218,424	67,513	705,578	155,097	84,579	10,199	249,874	229,383	148,097	22,126	399,606
2032	293,802	124,543	24,999	443,344	387,549	173,672	59,625	620,846	138,071	76,759	6,618	221,449	205,699	114,501	19,027	339,228
2033	253,396	98,559	17,449	369,405	348,168	151,981	51,052	551,200	113,994	57,885	5,813	177,692	177,644	98,140	16,069	291,853
2034	222,239	83,987	15,716	321,941	317,037	133,403	32,323	482,763	98,164	47,810	4,894	150,868	155,097	84,579	10,199	249,874
2035	171,076	68,954	12,917	252,947	293,802	124,543	24,999	443,344	88,829	37,738	4,232	130,799	138,071	76,759	6,618	221,449
2036	148,127	60,203	10,918	219,248	253,396	98,559	17,449	369,405	73,136	31,400	3,310	107,847	113,994	57,885	5,813	177,692
2037	128,098	41,688	10,004	179,790	222,239	83,987	15,716	321,941	60,593	21,601	2,800	84,994	98,164	47,810	4,894	150,868
2038	100,848	36,416	7,404	144,668	171,076	68,954	12,917	252,947	44,521	17,963	2,497	64,980	88,829	37,738	4,232	130,799
2039	82,213	26,069	5,663	113,945	148,127	60,203	10,918	219,248	33,330	12,144	1,600	47,075	73,136	31,400	3,310	107,847
2040	74,498	16,283	5,384	96,165	128,098	41,688	10,004	179,790	27,850	7,550	1,517	36,917	60,593	21,601	2,800	84,994
2041	58,635	11,342	4,562	74,538	100,848	36,416	7,404	144,668	19,383	4,877	1,442	25,702	44,521	17,963	2,497	64,980
2042	51,573	4,484	3,068	59,125	82,213	26,069	5,663	113,945	15,070	1,521	1,371	17,963	33,330	12,144	1,600	47,075
2043	40,413	3,335	2,944	46,692	74,498	16,283	5,384	96,165	9,563	1,109	1,305	11,977	27,850	7,550	1,517	36,917
2044	20,251	2,683	2,825	25,758	58,635	11,342	4,562	74,538	6,129	768	1,242	8,139	19,383	4,877	1,442	25,702
2045	11,932	2,159	2,711	16,803	51,573	4,484	3,068	59,125	3,277	555	1,182	5,015	15,070	1,521	1,371	17,963
2046	5,378	2,068	2,601	10,048	40,413	3,335	2,944	46,692	1,186	470	1,127	2,784	9,563	1,109	1,305	11,977
2047	3,990	1,982	2,497	8,468	20,251	2,683	2,825	25,758	675	389	1,076	6,129	6,129	768	1,242	8,139
2048	3,059	1,899	2,396	7,355	11,932	2,159	2,711	16,803	302	314	1,027	1,643	3,277	555	1,182	5,015
2049	2,930	1,821	2,300	7,051	5,378	2,068	2,601	10,048	216	250	980	1,447	1,186	470	1,127	2,784
2050	2,807	1,746	2,208	6,761	3,990	1,982	2,497	8,468	140	195	936	1,271	675	389	1,076	2,140
2051	2,691	1,675	2,119	6,484	3,059	1,899	2,396	7,355	92	148	893	1,133	302	314	1,027	1,643
2052	2,579	1,607	2,034	6,220	2,930	1,821	2,300	7,051	64	111	853	1,028	216	250	980	1,447

Footnotes:

- (1) - (3) Exhibit 28.2 Col (15), Exhibit 28.2 Col (30), Exhibit 28.2 Col (45), etc.
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1), Col (2), and Col (3) delayed three years
- (8) Col (5) + Col (6) + Col (7)

Footnotes:

- (9) - (11) Exhibit 28.2 Col (18), Exhibit 28.2 Col (33), Exhibit 28.2 Col (48), etc.
- (12) Col (9) + Col (10) + Col (11)
- (13) - (15) Col (9), Col (10), and Col (11) delayed three years
- (16) Col (13) + Col (14) + Col (15)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
Land - Other, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay				Net Liability				Net Liability - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2017																
2018	\$526,809	\$184,551	\$45,840	\$757,200	\$0	\$0	\$0	\$0	\$357,519	\$124,907	\$23,291	\$505,717	\$0	\$0	\$0	\$0
2019	482,839	170,904	34,131	687,874	0	0	0	0	322,726	114,116	15,801	452,644	0	0	0	0
2020	446,122	154,820	27,631	628,573	0	0	0	0	291,616	102,703	12,631	406,949	0	0	0	0
2021	430,882	148,469	24,283	603,634	263,405	92,276	22,920	378,600	276,888	96,649	11,082	384,619	178,759	62,454	11,646	252,859
2022	403,314	132,786	23,103	559,203	504,824	177,728	39,985	722,537	251,477	84,085	10,065	345,627	340,122	119,512	19,546	479,180
2023	373,540	116,544	21,416	511,499	464,480	162,862	30,881	658,224	224,349	72,677	9,182	306,209	307,171	108,410	14,216	429,796
2024	358,088	105,782	19,549	483,419	438,502	151,645	25,957	616,104	209,739	64,888	7,570	282,196	284,252	99,676	11,856	395,784
2025	338,855	99,929	15,841	454,625	618,756	207,020	35,244	861,020	192,240	59,493	6,276	258,009	389,921	132,409	15,606	537,936
2026	310,666	88,100	15,383	414,149	373,540	116,544	21,416	511,499	172,778	49,428	5,882	228,088	224,349	72,677	9,182	306,209
2027	276,108	69,628	13,279	359,016	358,088	105,782	19,549	483,419	148,862	43,606	4,348	196,816	209,739	64,888	7,570	282,196
2028	250,881	57,127	11,962	319,971	338,855	99,929	15,841	454,625	131,145	35,688	3,914	170,747	192,240	59,493	6,276	258,009
2029	226,248	49,689	11,643	287,580	310,666	88,100	15,383	414,149	119,596	30,800	3,697	154,093	172,778	49,428	5,882	228,088
2030	207,564	41,128	8,553	257,245	276,108	69,628	13,279	359,016	110,993	23,410	3,209	137,613	148,862	43,606	4,348	196,816
2031	176,574	36,678	8,335	221,586	250,881	57,127	11,962	319,971	88,831	20,531	3,122	112,484	131,145	35,688	3,914	170,747
2032	161,109	35,392	6,758	203,259	226,248	49,689	11,643	287,580	79,400	19,301	3,048	101,749	119,596	30,800	3,697	154,093
2033	153,659	30,359	6,030	190,047	207,564	41,128	8,553	257,245	72,809	17,814	2,977	93,600	110,993	23,410	3,209	137,613
2034	139,424	26,229	4,601	170,255	176,574	36,678	8,335	221,586	62,091	15,671	1,800	79,562	88,831	20,531	3,122	112,484
2035	133,909	23,389	4,307	161,604	161,109	35,392	6,758	203,259	57,768	14,740	1,642	74,150	79,400	19,301	3,048	101,749
2036	124,411	19,709	4,262	148,382	153,659	30,359	6,030	190,047	53,861	11,776	1,636	67,273	72,809	17,814	2,977	93,600
2037	106,766	18,313	4,219	129,298	139,424	26,229	4,601	170,255	49,493	10,589	1,630	61,712	62,091	15,671	1,800	79,562
2038	97,138	17,783	4,178	119,100	133,909	23,389	4,307	161,604	44,257	10,093	1,625	55,975	57,768	14,740	1,642	74,150
2039	86,392	17,274	4,139	107,805	124,411	19,709	4,262	148,382	36,914	9,616	1,619	48,150	53,861	11,776	1,636	67,273
2040	77,392	15,532	4,101	97,026	106,766	18,313	4,219	129,298	31,510	8,511	1,615	41,636	49,493	10,589	1,630	61,712
2041	70,157	12,913	4,065	87,135	97,138	17,783	4,178	119,100	26,766	7,665	1,612	36,043	44,257	10,093	1,625	55,975
2042	60,184	12,367	3,991	76,542	86,392	17,274	4,139	107,805	22,693	7,189	1,609	31,490	36,914	9,616	1,619	48,150
2043	53,694	12,054	3,649	69,397	77,392	15,532	4,101	97,026	18,806	6,893	1,605	27,305	31,510	8,511	1,615	41,636
2044	44,069	9,510	3,273	56,852	70,157	12,913	4,065	87,135	17,718	4,955	1,602	24,275	26,766	7,665	1,612	36,043
2045	40,527	8,203	3,266	51,996	60,184	12,367	3,991	76,542	14,952	4,649	1,599	21,200	22,693	7,189	1,609	31,490
2046	29,042	4,920	3,193	37,155	53,694	12,054	3,649	69,397	9,549	2,723	1,596	13,868	18,806	6,893	1,605	27,305
2047	17,694	3,766	3,179	24,638	44,069	9,510	3,273	56,852	6,650	1,862	1,592	10,104	17,718	4,955	1,602	24,275
2048	16,559	3,757	3,175	23,491	40,527	8,203	3,266	51,996	5,996	1,854	1,589	9,439	14,952	4,649	1,599	21,200
2049	13,346	3,749	3,171	20,267	29,042	4,920	3,193	37,155	5,928	1,846	1,586	9,360	9,549	2,723	1,596	13,868
2050	11,919	3,742	3,168	18,829	17,694	3,766	3,179	24,638	5,862	1,840	1,583	9,285	6,650	1,862	1,592	10,104
2051	10,627	3,736	3,164	17,527	16,559	3,757	3,175	23,491	5,547	1,834	1,579	8,960	5,996	1,854	1,589	9,439
2052	10,606	3,731	3,161	17,498	13,346	3,749	3,171	20,267	5,530	1,830	1,576	8,935	5,928	1,846	1,586	9,360

Footnotes:

- (1) - (3) Exhibit 28.3 Col (15), Exhibit 28.3 Col (30), Exhibit 28.3 Col (45), etc.
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1), Col (2), and Col (3) delayed three years
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Footnotes:

- (9) - (11) Exhibit 28.3 Col (18), Exhibit 28.3 Col (33), Exhibit 28.3 Col (48), etc.
- (12) Col (9) + Col (10) + Col (11)
- (13) - (15) Col (9), Col (10), and Col (11) delayed three years
- (16) Col (13) + Col (14) + Col (15)

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Surface
June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Permit Count	Current Bonded Acres	As of Fiscal Year End 2018										Gross Cost	Current Security Amount	Forfeited Security Amount	Net Cost
					Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
1961 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	\$3,200.00	1.00	\$0.00	\$0	\$0	\$0.00	
1962 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1963 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1964 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1965 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1966 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1967 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1968 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1969 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1970 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1971 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1972 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1973 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1974 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1975 Surface	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1976 Surface	Active	0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1977 Surface	Active	1	475.23	0.010%	0.25	5.000%	0.00	0.05	0.01	23.76	3,200.00	1.00	38.02	799,744	20	18.02		
1978 Surface	Active	1	70.00	0.010%	1.00	5.000%	0.00	0.05	0.01	3.50	3,200.00	1.00	22.40	120,400	12	10.36		
1979 Surface	Active	1	180.00	0.010%	1.00	5.000%	0.00	0.05	0.02	9.00	3,200.00	1.00	57.60	180,000	18	39.60		
1980 Surface	Active	0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1981 Surface	Active	1	2.50	0.010%	1.25	5.000%	0.00	0.05	0.00	0.13	3,200.00	1.00	1.00	10,000	1	0.00		
1982 Surface	Active	2	1,666.76	0.010%	0.25	5.000%	0.00	0.10	0.04	83.34	3,200.00	1.00	133.34	4,947,160	124	9.66		
1983 Surface	Active	0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1984 Surface	Active	2	666.47	0.010%	0.47	5.000%	0.00	0.10	0.03	33.32	3,200.00	1.00	99.40	2,535,800	118	0.00		
1985 Surface	Active	2	904.60	1.000%	0.36	5.000%	0.02	0.10	3.24	45.23	3,200.00	1.00	10,356.80	2,889,000	10,336	20.47		
1986 Surface	Active	1	1,194.95	1.000%	0.25	5.000%	0.01	0.05	2.99	59.75	3,200.00	1.00	9,559.60	1,354,080	3,385	6,174.40		
1987 Surface	Active	2	299.96	1.000%	1.07	5.000%	0.02	0.10	3.20	15.00	3,200.00	1.00	10,254.40	530,560	5,668	4,586.38		
1988 Surface	Active	1	336.46	1.000%	0.25	5.000%	0.01	0.05	0.84	16.82	3,200.00	1.00	2,691.68	1,685,000	4,213	0.00		
1989 Surface	Active	6	1,373.36	1.000%	0.58	5.000%	0.06	0.30	7.95	68.67	3,200.00	1.00	25,443.86	4,203,880	24,339	1,105.07		
1990 Surface	Active	0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1991 Surface	Active	1	96.43	1.000%	1.00	5.000%	0.01	0.05	0.96	4.82	3,200.00	1.00	3,085.76	271,000	2,710	375.76		
1992 Surface	Active	1	726.00	1.000%	0.25	5.000%	0.01	0.05	1.82	36.30	3,200.00	1.00	5,808.00	2,613,600	6,534	0.00		
1993 Surface	Active	1	342.25	1.000%	0.25	5.000%	0.01	0.05	0.86	17.11	3,200.00	1.00	2,738.00	891,800	2,230	508.50		
1994 Surface	Active	2	176.19	1.000%	1.07	5.000%	0.02	0.10	1.89	8.81	3,200.00	1.00	6,046.08	395,959	4,246	1,799.96		
1995 Surface	Active	0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1996 Surface	Active	2	981.28	1.000%	0.25	5.000%	0.02	0.10	2.70	49.06	3,200.00	1.00	8,635.26	4,298,080	11,820	0.00		
1997 Surface	Active	7	3,594.61	1.000%	0.36	5.000%	0.08	0.35	14.24	179.73	3,200.00	1.00	45,565.15	14,434,240	57,177	0.00		
1998 Surface	Active	2	1,204.44	1.000%	0.25	5.000%	0.02	0.10	3.31	60.22	3,200.00	1.00	10,599.07	5,532,160	15,213	0.00		
1999 Surface	Active	3	1,868.36	1.000%	0.25	4.000%	0.03	0.12	5.14	74.73	3,200.00	1.00	16,441.57	6,737,540	18,528	0.00		
2000 Surface	Active	2	620.83	1.000%	0.25	4.000%	0.02	0.08	1.71	24.83	3,200.00	1.00	5,463.30	2,431,240	6,686	0.00		
2001 Surface	Active	7	1,884.74	1.000%	0.35	4.000%	0.08	0.28	7.24	75.39	3,200.00	1.00	23,167.50	8,726,000	33,519	0.00		
2002 Surface	Active	2	1,137.84	1.000%	0.25	4.000%	0.02	0.08	3.13	45.51	3,200.00	1.00	10,012.99	5,117,000	14,072	0.00		
2003 Surface	Active	11	5,838.52	1.000%	0.47	4.000%	0.12	0.44	30.29	233.54	3,200.00	1.00	96,921.95	28,842,122	149,622	0.00		
2004 Surface	Active	5	1,967.21	1.000%	0.70	4.000%	0.06	0.20	15.19	78.69	3,200.00	1.00	48,610.54	8,507,150	65,692	0.00		
2005 Surface	Active	7	2,555.92	1.000%	0.43	4.000%	0.08	0.28	12.09	102.24	3,200.00	1.00	38,686.26	13,200,728	62,439	0.00		
2006 Surface	Active	4	2,705.22	1.000%	0.62	4.000%	0.04	0.16	18.52	108.21	3,200.00	1.00	59,248.10	12,197,994	83,485	0.00		
2007 Surface	Active	8	2,737.05	1.000%	0.48	4.000%	0.09	0.32	14.37	109.48	3,200.00	1.00	45,978.98	9,196,320	48,277	0.00		
2008 Surface	Active	10	3,284.20	1.000%	0.69	4.000%	0.11	0.40	24.85	131.37	3,200.00	1.00	79,523.37	16,366,638	123,844	0.00		
2009 Surface	Active	7	2,376.88	1.000%	0.48	5.000%	0.08	0.04	12.43	11.88	3,200.00	1.00	39,781.34	8,297,960	43,400	0.00		
2010 Surface	Active	6	523.42	1.000%	1.09	5.000%	0.07	0.03	6.27	2.62	3,200.00	1.00	20,057.10	2,158,880	25,852	0.00		
2011 Surface	Active	10	1,617.17	1.000%	0.77	5.000%	0.11	0.05	13.79	8.09	3,200.00	1.00	44,115.51	4,901,380	41,783	2,332.09		
2012 Surface	Active	26	4,551.37	1.000%	0.60	5.000%	0.29	0.13	29.97	22.76	3,200.00	1.00	95,914.30	17,603,680	115,930	0.00		
2013 Surface	Active	15	2,918.41	1.000%	0.71	5.000%	0.17	0.08	22.78	14.59	3,200.00	1.00	72,908.20	10,927,440	85,310	0.00		
2014 Surface	Active	16	2,617.01	1.000%	0.53	5.000%	0.18	0.08	15.22	13.09	3,200.00	1.00	48,698.87	8,464,480	49,223	0.00		
2015 Surface	Active	10	1,826.09	0.000%	0.70	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	5,557,360	0	0.00		
2016 Surface	Active	11	788.61	0.000%	0.80	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	2,506,439	0	0.00		
2017 Surface	Active	1	2.00	0.000%	1.25	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	10,000	0	0.00		
TOTAL			197	56,112.34		1.82	4.56	277.08	1,771.59			886,665.33	219,442,814	1,115,827	16,980.27			

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Land, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Permit Count	Current Bonded Acres	As of Fiscal Year End 2018										Gross Cost	Current Security Amount	Forfeited Security Amount	Net Cost
					Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
1961 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	\$0.00	\$0	\$0	\$0.00
1962 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1963 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1964 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1965 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1966 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1967 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1968 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1969 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1970 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1971 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1972 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1973 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1974 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1975 Surface	Inactive		0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1976 Surface	Inactive		3	1,561.15	0.010%	0.48	5.000%	0.00	0.15	0.08	78.06	3,200.00	1.00	241.19	1,790,560	86	154.74	
1977 Surface	Inactive		0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1978 Surface	Inactive		0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1979 Surface	Inactive		0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1980 Surface	Inactive		0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1981 Surface	Inactive		1	4.47	0.010%	1.00	5.000%	0.00	0.05	0.00	0.22	3,200.00	1.00	1.43	155,000	16	0.00	
1982 Surface	Inactive		0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1983 Surface	Inactive		0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1984 Surface	Inactive		0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1985 Surface	Inactive		1	224.46	1.000%	0.25	5.000%	0.01	0.05	0.56	11.22	3,200.00	1.00	1,795.68	795,520	1,989	0.00	
1986 Surface	Inactive		0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1987 Surface	Inactive		2	322.57	1.000%	0.36	5.000%	0.02	0.10	1.15	16.13	3,200.00	1.00	3,693.18	1,338,320	4,788	0.00	
1988 Surface	Inactive		1	176.00	1.000%	1.00	5.000%	0.01	0.05	1.76	8.80	3,200.00	1.00	5,632.00	316,800	3,168	2,464.00	
1989 Surface	Inactive		0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1990 Surface	Inactive		0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1991 Surface	Inactive		0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1992 Surface	Inactive		1	127.07	1.000%	1.00	5.000%	0.01	0.05	1.27	6.35	3,200.00	1.00	4,066.24	128,000	1,280	2,786.24	
1993 Surface	Inactive		0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1994 Surface	Inactive		2	1,792.68	1.000%	0.25	5.000%	0.02	0.10	4.48	89.63	3,200.00	1.00	14,341.44	8,564,000	21,410	0.00	
1995 Surface	Inactive		3	2,009.28	1.100%	0.25	5.000%	0.03	0.15	5.53	100.46	3,200.00	1.00	17,681.66	7,666,574	21,083	0.00	
1996 Surface	Inactive		1	1,055.30	1.100%	0.25	5.000%	0.01	0.05	2.90	52.77	3,200.00	1.00	9,286.64	4,470,800	12,295	0.00	
1997 Surface	Inactive		2	1,493.18	1.100%	0.25	5.000%	0.02	0.10	4.11	74.66	3,200.00	1.00	13,139.98	7,060,280	19,416	0.00	
1998 Surface	Inactive		0	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1999 Surface	Inactive		0	0.00	1.100%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
2000 Surface	Inactive		0	0.00	1.100%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
2001 Surface	Inactive		3	1,161.29	1.100%	0.28	4.000%	0.03	0.12	3.60	46.45	3,200.00	1.00	11,520.88	6,088,240	18,875	0.00	
2002 Surface	Inactive		1	715.52	1.100%	0.25	4.000%	0.01	0.04	1.97	28.62	3,200.00	1.00	6,296.58	3,935,800	10,823	0.00	
2003 Surface	Inactive		3	1,020.28	1.100%	0.25	4.000%	0.03	0.12	2.81	40.81	3,200.00	1.00	8,978.46	4,557,180	12,532	0.00	
2004 Surface	Inactive		1	898.15	1.100%	0.25	4.000%	0.01	0.04	2.47	35.93	3,200.00	1.00	7,903.72	4,993,320	13,732	0.00	
2005 Surface	Inactive		1	244.34	1.100%	0.25	4.000%	0.01	0.04	0.67	9.77	3,200.00	1.00	2,150.19	863,040	2,373	0.00	
2006 Surface	Inactive		3	314.48	1.100%	0.42	4.000%	0.03	0.12	1.45	12.58	3,200.00	1.00	4,631.90	1,313,320	6,045	0.00	
2007 Surface	Inactive		3	727.30	1.100%	0.41	4.000%	0.03	0.12	3.24	29.09	3,200.00	1.00	10,383.28	1,690,869	7,544	2,839.64	
2008 Surface	Inactive		0	0.00	1.100%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
2009 Surface	Inactive		1	311.89	1.100%	0.25	5.000%	0.01	0.01	0.86	1.56	3,200.00	1.00	2,744.63	1,042,480	2,867	0.00	
2010 Surface	Inactive		2	546.43	1.100%	0.25	5.000%	0.02	0.01	1.50	2.73	3,200.00	1.00	4,808.58	2,750,000	7,563	0.00	
2011 Surface	Inactive		5	793.78	1.100%	0.54	5.000%	0.06	0.03	4.68	3.97	3,200.00	1.00	14,969.71	3,249,565	19,151	0.00	
2012 Surface	Inactive		2	99.70	1.100%	1.02	0.500%	0.02	0.01	1.11	0.50	3,200.00	1.00	3,566.29	251,920	2,816	750.28	
2013 Surface	Inactive		1	351.00	1.100%	0.25	0.500%	0.01	0.01	0.97	1.76	3,200.00	1.00	3,088.80	1,755,000	4,826	0.00	
2014 Surface	Inactive		0	0.00	1.100%	0.00	0.500%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
2015 Surface	Inactive		0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
2016 Surface	Inactive		0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
2017 Surface	Inactive		0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
TOTAL			43	15,950.32				0.42	1.51	47.16	652.08			150,922.49	64,776,587	194,677	8,994.91	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Surface
June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Permit Count	Current Bonded Acres	As of Fiscal Year End 2018										Gross Cost	Current Security Amount	Forfeited Security Amount	Net Cost
					Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
1961 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	\$3,200.00	0.50	\$0.00	\$0	\$0	\$0.00
1962 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1963 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1964 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1965 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1966 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1967 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1968 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1969 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1970 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1971 Surface	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00
1972 Surface	Phased Released	1	400.00	0.010%	1.25	4.000%	0.00	0.04	0.05	16.00	3,200.00	0.50	80.00	32,250	4	75.97		
1973 Surface	Phased Released	1	9.60	0.010%	1.25	4.000%	0.00	0.04	0.00	0.38	3,200.00	0.50	1.92	26,250	3	0.00		
1974 Surface	Phased Released	1	180.00	0.010%	1.25	4.000%	0.00	0.04	0.02	7.20	3,200.00	0.50	36.00	72,000	9	27.00		
1975 Surface	Phased Released	2	155.30	0.010%	1.25	4.000%	0.00	0.08	0.02	6.21	3,200.00	0.50	31.06	43,350	5	25.64		
1976 Surface	Phased Released	7	1,239.23	0.010%	0.93	5.000%	0.00	0.35	0.12	61.96	3,200.00	0.50	185.32	1,467,250	137	48.18		
1977 Surface	Phased Released	2	748.81	0.010%	0.46	5.000%	0.00	0.10	0.03	37.44	3,200.00	0.50	55.36	1,631,200	75	0.00		
1978 Surface	Phased Released	4	2,262.16	0.010%	0.55	5.000%	0.00	0.20	0.12	113.11	3,200.00	0.50	197.92	3,021,080	165	32.72		
1979 Surface	Phased Released	3	925.40	0.010%	0.67	5.000%	0.00	0.15	0.06	46.27	3,200.00	0.50	99.42	1,584,880	106	0.00		
1980 Surface	Phased Released	11	1,910.37	0.010%	0.69	5.000%	0.00	0.55	0.13	95.52	3,200.00	0.50	210.16	4,796,740	330	0.00		
1981 Surface	Phased Released	12	3,119.22	0.010%	0.52	5.000%	0.00	0.60	0.16	155.96	3,200.00	0.50	261.65	5,515,370	289	0.00		
1982 Surface	Phased Released	7	1,607.89	0.010%	0.87	5.000%	0.00	0.35	0.14	80.39	3,200.00	0.50	223.41	2,167,202	188	35.21		
1983 Surface	Phased Released	6	2,074.52	0.010%	0.54	5.000%	0.00	0.30	0.11	103.73	3,200.00	0.50	179.86	2,866,272	155	24.54		
1984 Surface	Phased Released	3	1,413.45	0.010%	0.38	5.000%	0.00	0.15	0.05	70.67	3,200.00	0.50	86.77	1,059,928	41	46.10		
1985 Surface	Phased Released	11	4,476.37	1.000%	0.66	5.000%	0.11	0.55	29.55	223.82	3,200.00	0.50	47,279.28	5,340,432	35,253	12,025.86		
1986 Surface	Phased Released	10	2,508.01	1.000%	0.50	5.000%	0.10	0.50	12.50	125.40	3,200.00	0.50	20,005.16	6,428,324	32,047	0.00		
1987 Surface	Phased Released	6	1,593.69	1.000%	0.78	5.000%	0.06	0.30	12.44	79.68	3,200.00	0.50	19,904.82	1,212,000	9,461	10,443.82		
1988 Surface	Phased Released	16	5,471.56	1.000%	0.54	5.000%	0.16	0.80	29.62	273.58	3,200.00	0.50	47,390.01	10,952,112	59,286	0.00		
1989 Surface	Phased Released	16	4,659.87	1.000%	0.89	5.000%	0.16	0.80	41.59	232.99	3,200.00	0.50	66,541.24	4,076,022	36,378	30,163.67		
1990 Surface	Phased Released	7	1,957.79	1.000%	0.75	5.000%	0.07	0.35	14.64	97.89	3,200.00	0.50	23,425.73	3,874,968	28,978	0.00		
1991 Surface	Phased Released	11	5,668.21	1.000%	0.46	5.000%	0.11	0.55	26.17	283.41	3,200.00	0.50	41,874.44	21,265,071	98,186	0.00		
1992 Surface	Phased Released	12	5,677.52	1.000%	0.40	5.000%	0.12	0.60	22.49	283.88	3,200.00	0.50	35,977.16	16,643,168	65,915	0.00		
1993 Surface	Phased Released	10	3,583.11	1.000%	0.39	5.000%	0.10	0.50	13.93	179.16	3,200.00	0.50	22,290.19	7,692,078	29,907	0.00		
1994 Surface	Phased Released	9	4,244.57	1.000%	0.37	5.000%	0.09	0.45	15.59	212.23	3,200.00	0.50	24,948.60	16,290,828	59,846	0.00		
1995 Surface	Phased Released	17	5,074.70	1.000%	0.43	5.000%	0.19	0.85	24.10	253.74	3,200.00	0.50	38,554.10	13,916,908	66,082	0.00		
1996 Surface	Phased Released	19	12,050.18	1.000%	0.29	5.000%	0.21	0.95	38.92	602.51	3,200.00	0.50	62,275.27	47,379,396	153,035	0.00		
1997 Surface	Phased Released	22	9,485.73	1.000%	0.44	5.000%	0.24	1.10	45.65	474.29	3,200.00	0.50	73,047.09	30,094,606	144,844	0.00		
1998 Surface	Phased Released	8	5,637.42	1.000%	0.28	5.000%	0.09	0.40	17.48	279.87	3,200.00	0.50	27,964.21	16,312,288	50,573	0.00		
1999 Surface	Phased Released	6	1,559.47	1.000%	0.52	4.000%	0.07	0.24	8.90	62.38	3,200.00	0.50	14,242.10	6,408,120	36,577	0.00		
2000 Surface	Phased Released	9	6,526.00	1.000%	0.27	4.000%	0.10	0.36	19.62	261.04	3,200.00	0.50	31,389.55	28,671,164	86,191	0.00		
2001 Surface	Phased Released	20	8,126.32	1.000%	0.34	4.000%	0.22	0.80	30.84	325.05	3,200.00	0.50	49,342.15	32,512,014	123,381	0.00		
2002 Surface	Phased Released	9	2,179.48	1.000%	0.53	4.000%	0.10	0.36	12.79	87.18	3,200.00	0.50	20,459.66	8,589,372	50,395	0.00		
2003 Surface	Phased Released	15	7,397.89	1.000%	0.31	4.000%	0.17	0.60	24.82	295.92	3,200.00	0.50	39,718.92	31,424,292	105,447	0.00		
2004 Surface	Phased Released	19	7,695.07	1.000%	0.43	4.000%	0.21	0.76	36.39	307.80	3,200.00	0.50	58,229.98	28,967,547	137,002	0.00		
2005 Surface	Phased Released	5	989.62	1.000%	0.45	4.000%	0.06	0.20	4.87	39.58	3,200.00	0.50	7,793.72	2,186,860	10,764	0.00		
2006 Surface	Phased Released	19	5,319.77	1.000%	0.36	4.000%	0.21	0.76	21.20	212.79	3,200.00	0.50	33,917.59	21,492,570	85,645	0.00		
2007 Surface	Phased Released	10	2,026.81	1.000%	0.49	4.000%	0.11	0.40	10.85	81.07	3,200.00	0.50	17,358.11	6,184,694	33,105	0.00		
2008 Surface	Phased Released	13	2,478.99	1.000%	0.55	4.000%	0.14	0.52	15.04	99.16	3,200.00	0.50	24,057.27	8,800,788	53,379	0.00		
2009 Surface	Phased Released	10	1,930.25	1.000%	0.47	5.000%	0.11	0.05	10.08	9.65	3,200.00	0.50	16,124.52	6,868,660	35,861	0.00		
2010 Surface	Phased Released	8	561.34	1.000%	1.08	5.000%	0.09	0.04	6.70	2.81	3,200.00	0.50	10,712.43	1,023,608	12,209	0.00		
2011 Surface	Phased Released	5	1,006.96	1.000%	0.47	5.000%	0.06	0.03	5.24	5.03	3,200.00	0.50	8,380.90	2,427,200	12,626	0.00		
2012 Surface	Phased Released	5	571.14	1.000%	0.82	5.000%	0.06	0.03	5.16	2.86	3,200.00	0.50	8,253.28	1,472,120	13,296	0.00		
2013 Surface	Phased Released	3	392.33	1.000%	0.39	5.000%	0.03	0.03	1.69	1.96	3,200.00	0.50	2,700.76	909,200	3,912	0.00		
2014 Surface	Phased Released	1	220.00	1.000%	0.25	5.000%	0.01	0.01	0.61	1.10	3,200.00	0.50	968.00	765,600	2,105	0.00		
2015 Surface	Phased Released	1	107.23	0.000%	1.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	216,000	0	0.00		
2016 Surface	Phased Released	0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00		
2017 Surface	Phased Released	0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00		
TOTAL			392	137,223.35				3.54	16.81	560.48	6,194.67		896,775.07	414,681,782	1,673,196	52,948.72		

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Surface

June 30, 2017
As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment										Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Permit Status						
(1)	(2)	(3)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	
1961	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$3,200.00	1.00	\$0.00	\$0	\$0	\$0.00	
1962	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1963	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1964	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1965	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1966	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1967	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1968	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1969	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1970	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1971	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1972	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1973	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1974	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1975	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1976	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1977	Surface	Active	0.95	451.46	0.010%	0.25	5.000%	0.00	0.05	0.01	22.57	3,200.00	1.00	36.12	799,724	20	16.12	
1978	Surface	Active	0.95	66.49	0.010%	1.00	5.000%	0.00	0.05	0.01	3.32	3,200.00	1.00	21.28	120,388	12	9.24	
1979	Surface	Active	0.95	170.98	0.010%	1.00	5.000%	0.00	0.05	0.02	8.55	3,200.00	1.00	54.71	179,982	18	36.72	
1980	Surface	Active	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1981	Surface	Active	0.95	2.37	0.010%	1.25	5.000%	0.00	0.05	0.00	0.12	3,200.00	1.00	0.95	9,999	1	0.00	
1982	Surface	Active	1.90	1,583.38	0.010%	0.25	5.000%	0.00	0.09	0.04	79.17	3,200.00	1.00	126.67	4,947,036	124	2.99	
1983	Surface	Active	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1984	Surface	Active	1.90	633.12	0.010%	0.47	5.000%	0.00	0.09	0.03	31.66	3,200.00	1.00	94.42	2,535,682	118	0.00	
1985	Surface	Active	1.88	856.13	0.010%	0.36	5.000%	0.00	0.09	0.03	42.81	3,200.00	1.00	98.02	2,878,664	103	0.00	
1986	Surface	Active	0.94	1,132.22	1.000%	0.25	5.000%	0.01	0.05	2.83	56.61	3,200.00	1.00	9,057.72	1,350,695	3,377	5,680.98	
1987	Surface	Active	1.88	281.76	1.000%	1.07	5.000%	0.02	0.09	3.01	14.09	3,200.00	1.00	9,632.13	524,892	5,607	4,024.66	
1988	Surface	Active	0.94	318.80	1.000%	0.25	5.000%	0.01	0.05	0.80	15.94	3,200.00	1.00	2,550.37	1,680,788	4,202	0.00	
1989	Surface	Active	5.64	1,296.74	1.000%	0.58	5.000%	0.06	0.28	7.51	64.84	3,200.00	1.00	24,024.36	4,179,541	24,198	0.00	
1990	Surface	Active	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1991	Surface	Active	0.94	90.64	1.000%	1.00	5.000%	0.01	0.05	0.91	4.53	3,200.00	1.00	2,900.61	268,290	2,683	217.71	
1992	Surface	Active	0.94	687.89	1.000%	0.25	5.000%	0.01	0.05	1.72	34.39	3,200.00	1.00	5,503.08	2,607,066	6,518	0.00	
1993	Surface	Active	0.94	324.28	1.000%	0.25	5.000%	0.01	0.05	0.81	16.21	3,200.00	1.00	2,594.26	889,571	2,224	370.33	
1994	Surface	Active	1.88	165.49	1.000%	1.07	5.000%	0.02	0.09	1.77	8.27	3,200.00	1.00	5,678.94	391,713	4,201	1,478.35	
1995	Surface	Active	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00	
1996	Surface	Active	1.88	929.52	1.100%	0.25	5.000%	0.02	0.09	2.56	46.48	3,200.00	1.00	8,179.75	4,286,260	11,787	0.00	
1997	Surface	Active	6.57	3,400.64	1.100%	0.36	5.000%	0.07	0.33	13.47	170.03	3,200.00	1.00	43,106.40	14,377,063	56,951	0.00	
1998	Surface	Active	1.88	1,140.91	1.100%	0.25	5.000%	0.02	0.09	3.14	57.05	3,200.00	1.00	10,039.97	5,516,947	15,172	0.00	
1999	Surface	Active	2.85	1,788.49	1.100%	0.25	5.000%	0.03	0.14	4.92	89.42	3,200.00	1.00	15,738.69	6,719,012	18,477	0.00	
2000	Surface	Active	1.90	594.29	1.100%	0.25	4.000%	0.02	0.08	1.63	23.77	3,200.00	1.00	5,229.75	2,424,554	6,668	0.00	
2001	Surface	Active	6.64	1,802.11	1.100%	0.35	4.000%	0.07	0.27	6.92	72.08	3,200.00	1.00	22,151.81	8,692,481	33,390	0.00	
2002	Surface	Active	1.90	1,089.20	1.100%	0.25	4.000%	0.02	0.08	3.00	43.57	3,200.00	1.00	9,584.94	5,102,928	14,033	0.00	
2003	Surface	Active	10.44	5,574.69	1.100%	0.47	4.000%	0.11	0.42	28.92	222.99	3,200.00	1.00	92,542.28	28,692,500	148,846	0.00	
2004	Surface	Active	4.75	1,873.33	1.100%	0.70	4.000%	0.05	0.19	14.47	74.93	3,200.00	1.00	46,290.75	8,441,458	65,185	0.00	
2005	Surface	Active	6.64	2,441.59	1.100%	0.43	4.000%	0.07	0.27	11.55	97.66	3,200.00	1.00	36,955.82	13,138,289	62,144	0.00	
2006	Surface	Active	3.80	2,578.50	1.100%	0.62	4.000%	0.04	0.15	17.65	103.14	3,200.00	1.00	56,472.68	12,114,509	82,914	0.00	
2007	Surface	Active	7.59	2,613.20	1.100%	0.48	4.000%	0.08	0.30	13.72	104.53	3,200.00	1.00	43,898.45	9,148,043	48,024	0.00	
2008	Surface	Active	9.49	3,127.98	1.100%	0.69	4.000%	0.10	0.38	23.67	125.12	3,200.00	1.00	75,740.69	16,242,794	122,907	0.00	
2009	Surface	Active	6.89	2,352.56	1.100%	0.48	4.000%	0.08	0.28	12.30	94.10	3,200.00	1.00	39,374.37	8,254,560	43,173	0.00	
2010	Surface	Active	5.90	514.54	1.100%	1.09	0.500%	0.06	0.03	6.16	2.57	3,200.00	1.00	19,716.64	2,133,028	25,543	0.00	
2011	Surface	Active	9.84	1,595.30	1.100%	0.77	0.500%	0.11	0.05	13.60	7.98	3,200.00	1.00	43,518.85	4,859,597	41,427	2,091.63	
2012	Surface	Active	25.58	4,498.64	1.100%	0.60	0.500%	0.28	0.13	29.63	22.49	3,200.00	1.00	94,803.08	17,487,750	115,166	0.00	
2013	Surface	Active	14.76	2,881.03	1.100%	0.71	0.500%	0.16	0.07	22.49	14.41	3,200.00	1.00	71,974.47	10,842,130	84,644	0.00	
2014	Surface	Active	15.74	2,588.71	1.100%	0.53	0.500%	0.17	0.08	15.05	12.94	3,200.00	1.00	48,172.18	8,415,257	48,936	0.00	
2015	Surface	Active	10.00	1,826.09	1.100%	0.70	0.500%	0.11	0.05	14.08	9.13	3,200.00	1.00	45,065.83	5,557,360	42,859	2,206.66	
2016	Surface	Active	11.00	788.61	0.000%	0.80	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	2,506,439	0	0.00	
2017	Surface	Active	1.00	2.00	0.000%	1.25	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	10,000	0	0.00	
TOTAL			190.62	54,063.67				1.85	4.65	278.42	1,797.48			890,931.05	218,326,986	1,141,651	16,135.40	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Surface

June 30, 2017
As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
1961	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$3,200.00	1.00	\$0.00	\$0	\$0	\$0.00
1962	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1963	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1964	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1965	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1966	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1967	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1968	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1969	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1970	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1971	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1972	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1973	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1974	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1975	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1976	Surface	Inactive	2.85	1,483.02	0.010%	0.48	4.000%	0.00	0.11	0.07	59.32	3,200.00	1.00	229.12	1,790,474	86	142.68
1977	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1978	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1979	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1980	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1981	Surface	Inactive	0.95	4.25	0.010%	1.00	5.000%	0.00	0.05	0.00	0.21	3,200.00	1.00	1.36	154,985	15	0.00
1982	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1983	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1984	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1985	Surface	Inactive	0.94	212.68	0.010%	0.25	5.000%	0.00	0.05	0.01	10.63	3,200.00	1.00	17.01	793,531	20	0.00
1986	Surface	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1987	Surface	Inactive	1.88	305.29	1.000%	0.36	5.000%	0.02	0.09	1.09	15.26	3,200.00	1.00	3,495.31	1,333,532	4,771	0.00
1988	Surface	Inactive	0.94	165.44	1.000%	1.00	5.000%	0.01	0.05	1.65	8.27	3,200.00	1.00	5,294.08	313,632	3,136	2,157.76
1989	Surface	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1990	Surface	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1991	Surface	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1992	Surface	Inactive	0.94	119.45	1.000%	1.00	5.000%	0.01	0.05	1.19	5.97	3,200.00	1.00	3,822.27	126,720	1,267	2,555.07
1993	Surface	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1994	Surface	Inactive	1.88	1,698.56	1.000%	0.25	5.000%	0.02	0.09	4.25	84.93	3,200.00	1.00	13,588.51	8,542,590	21,356	0.00
1995	Surface	Inactive	2.82	1,903.29	1.000%	0.25	5.000%	0.03	0.14	4.76	95.16	3,200.00	1.00	15,226.32	7,645,491	19,114	0.00
1996	Surface	Inactive	0.94	999.63	1.100%	0.25	5.000%	0.01	0.05	2.75	49.98	3,200.00	1.00	8,796.77	4,458,505	12,261	0.00
1997	Surface	Inactive	1.88	1,414.41	1.100%	0.25	5.000%	0.02	0.09	3.89	70.72	3,200.00	1.00	12,446.85	7,040,864	19,362	0.00
1998	Surface	Inactive	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1999	Surface	Inactive	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2000	Surface	Inactive	0.00	0.00	1.100%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2001	Surface	Inactive	2.85	1,111.24	1.100%	0.28	4.000%	0.03	0.11	3.45	44.45	3,200.00	1.00	11,024.32	6,069,365	18,816	0.00
2002	Surface	Inactive	0.95	684.93	1.100%	0.25	4.000%	0.01	0.04	1.88	27.40	3,200.00	1.00	6,027.40	3,924,977	10,794	0.00
2003	Surface	Inactive	2.85	976.66	1.100%	0.25	4.000%	0.03	0.11	2.69	39.07	3,200.00	1.00	8,594.63	4,544,648	12,498	0.00
2004	Surface	Inactive	0.95	859.75	1.100%	0.25	4.000%	0.01	0.04	2.36	34.39	3,200.00	1.00	7,565.84	4,979,588	13,694	0.00
2005	Surface	Inactive	0.95	233.89	1.100%	0.25	4.000%	0.01	0.04	0.64	9.36	3,200.00	1.00	2,058.27	860,667	2,367	0.00
2006	Surface	Inactive	2.85	300.45	1.100%	0.42	4.000%	0.03	0.11	1.38	12.02	3,200.00	1.00	4,425.31	1,307,275	6,017	0.00
2007	Surface	Inactive	2.85	694.96	1.100%	0.41	4.000%	0.03	0.11	3.10	27.80	3,200.00	1.00	9,921.63	1,683,325	7,510	2,411.64
2008	Surface	Inactive	0.00	0.00	1.100%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2009	Surface	Inactive	0.98	309.47	1.100%	0.25	4.000%	0.01	0.04	0.85	12.38	3,200.00	1.00	2,723.36	1,039,613	2,859	0.00
2010	Surface	Inactive	1.97	542.20	1.100%	0.25	0.500%	0.02	0.01	1.49	2.71	3,200.00	1.00	4,771.32	2,742,438	7,542	0.00
2011	Surface	Inactive	4.92	785.13	1.100%	0.54	0.500%	0.05	0.02	4.63	3.93	3,200.00	1.00	14,806.64	3,230,414	19,038	0.00
2012	Surface	Inactive	1.97	98.09	1.100%	1.02	0.500%	0.02	0.01	1.10	0.49	3,200.00	1.00	3,508.60	249,104	2,785	724.06
2013	Surface	Inactive	0.98	348.28	1.100%	0.25	0.500%	0.01	0.00	0.96	1.74	3,200.00	1.00	3,064.86	1,750,174	4,813	0.00
2014	Surface	Inactive	0.00	0.00	1.100%	0.00	0.500%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2015	Surface	Inactive	0.00	0.00	1.100%	0.00	0.500%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2016	Surface	Inactive	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2017	Surface	Inactive	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
TOTAL			41.07	15,251.08				0.39	1.43	44.19	616.19			141,409.79	64,581,910	190,122	7,991.21

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Surface

June 30, 2017
As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment										Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Permit Status						
(1)	(2)	(3)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	
1961	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$3,200.00	0.50	\$0.00	\$0	\$0	\$0.00	
1962	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1963	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1964	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1965	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1966	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1967	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1968	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1969	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1970	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1971	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1972	Surface	Phased Released	0.96	383.95	0.010%	1.25	4.000%	0.00	0.04	0.05	15.36	3,200.00	0.50	76.79	32,246	4	72.76	
1973	Surface	Phased Released	0.96	9.21	0.010%	1.25	4.000%	0.00	0.04	0.00	0.37	3,200.00	0.50	1.84	26,247	3	0.00	
1974	Surface	Phased Released	0.96	172.78	0.010%	1.25	4.000%	0.00	0.04	0.02	6.91	3,200.00	0.50	34.56	71,991	9	25.56	
1975	Surface	Phased Released	1.92	149.07	0.010%	1.25	4.000%	0.00	0.08	0.02	5.96	3,200.00	0.50	29.81	43,345	5	24.40	
1976	Surface	Phased Released	6.65	1,177.15	0.010%	0.93	4.000%	0.00	0.27	0.11	47.09	3,200.00	0.50	176.04	1,467,113	137	38.91	
1977	Surface	Phased Released	1.90	711.33	0.010%	0.46	5.000%	0.00	0.09	0.03	35.57	3,200.00	0.50	52.59	1,631,125	75	0.00	
1978	Surface	Phased Released	3.80	2,148.93	0.010%	0.55	5.000%	0.00	0.19	0.12	107.45	3,200.00	0.50	188.01	3,020,915	165	22.82	
1979	Surface	Phased Released	2.85	879.07	0.010%	0.67	5.000%	0.00	0.14	0.06	43.95	3,200.00	0.50	94.44	1,584,774	106	0.00	
1980	Surface	Phased Released	10.45	1,814.72	0.010%	0.69	5.000%	0.00	0.52	0.12	90.74	3,200.00	0.50	199.64	4,796,410	330	0.00	
1981	Surface	Phased Released	11.40	2,963.10	0.010%	0.52	5.000%	0.00	0.57	0.16	148.15	3,200.00	0.50	248.55	5,515,081	289	0.00	
1982	Surface	Phased Released	6.65	1,527.36	0.010%	0.87	5.000%	0.00	0.33	0.13	76.37	3,200.00	0.50	212.22	2,167,014	188	24.03	
1983	Surface	Phased Released	5.70	1,970.68	0.010%	0.54	5.000%	0.00	0.28	0.11	98.53	3,200.00	0.50	170.86	2,866,117	155	15.55	
1984	Surface	Phased Released	2.85	1,342.72	0.010%	0.38	5.000%	0.00	0.14	0.05	67.14	3,200.00	0.50	82.42	1,059,887	41	41.76	
1985	Surface	Phased Released	10.34	4,223.00	0.010%	0.66	5.000%	0.00	0.52	0.28	211.15	3,200.00	0.50	446.03	5,305,179	350	95.83	
1986	Surface	Phased Released	9.40	2,370.11	1.000%	0.50	5.000%	0.09	0.47	11.82	118.51	3,200.00	0.50	18,905.17	6,396,277	31,887	0.00	
1987	Surface	Phased Released	5.64	1,501.56	1.000%	0.78	5.000%	0.06	0.28	11.72	75.08	3,200.00	0.50	18,754.20	1,202,539	9,387	9,367.06	
1988	Surface	Phased Released	15.04	5,168.36	1.000%	0.54	5.000%	0.15	0.75	27.98	258.42	3,200.00	0.50	44,763.98	10,892,826	58,965	0.00	
1989	Surface	Phased Released	15.04	4,385.29	1.000%	0.89	5.000%	0.15	0.75	39.14	219.26	3,200.00	0.50	62,620.31	4,039,644	36,053	26,567.41	
1990	Surface	Phased Released	6.58	1,845.26	1.000%	0.75	5.000%	0.07	0.33	13.80	92.26	3,200.00	0.50	22,079.26	3,845,990	28,762	0.00	
1991	Surface	Phased Released	10.34	5,358.63	1.000%	0.46	5.000%	0.10	0.52	24.74	267.93	3,200.00	0.50	39,587.37	21,166,885	97,733	0.00	
1992	Surface	Phased Released	11.28	5,371.16	1.000%	0.40	5.000%	0.11	0.56	21.27	268.56	3,200.00	0.50	34,035.82	16,577,253	65,654	0.00	
1993	Surface	Phased Released	9.40	3,390.02	1.000%	0.39	5.000%	0.09	0.47	13.18	169.50	3,200.00	0.50	21,089.02	7,662,171	29,791	0.00	
1994	Surface	Phased Released	8.46	4,016.75	1.000%	0.37	5.000%	0.08	0.42	14.76	200.84	3,200.00	0.50	23,609.52	16,230,982	59,626	0.00	
1995	Surface	Phased Released	15.96	4,796.87	1.000%	0.43	5.000%	0.16	0.80	20.71	239.84	3,200.00	0.50	33,130.30	13,850,826	59,789	0.00	
1996	Surface	Phased Released	17.84	11,408.75	1.100%	0.29	5.000%	0.20	0.89	36.85	570.44	3,200.00	0.50	58,960.36	47,226,361	152,541	0.00	
1997	Surface	Phased Released	20.66	8,965.79	1.100%	0.44	5.000%	0.23	1.03	43.15	448.29	3,200.00	0.50	69,043.16	29,949,762	144,147	0.00	
1998	Surface	Phased Released	7.51	5,338.07	1.100%	0.28	5.000%	0.08	0.38	16.55	266.90	3,200.00	0.50	26,479.30	16,261,715	50,416	0.00	
1999	Surface	Phased Released	5.69	1,488.19	1.100%	0.52	5.000%	0.06	0.28	8.49	74.41	3,200.00	0.50	13,591.12	6,371,543	36,368	0.00	
2000	Surface	Phased Released	8.54	6,245.34	1.100%	0.27	4.000%	0.09	0.34	18.77	249.81	3,200.00	0.50	30,039.60	28,584,973	85,932	0.00	
2001	Surface	Phased Released	18.98	7,770.43	1.100%	0.34	4.000%	0.21	0.76	29.49	310.82	3,200.00	0.50	47,181.21	32,388,633	122,913	0.00	
2002	Surface	Phased Released	8.54	2,079.51	1.100%	0.53	4.000%	0.09	0.34	12.20	83.18	3,200.00	0.50	19,521.24	8,538,977	50,099	0.00	
2003	Surface	Phased Released	14.24	7,077.15	1.100%	0.31	4.000%	0.16	0.57	23.75	283.09	3,200.00	0.50	37,996.88	31,318,845	105,093	0.00	
2004	Surface	Phased Released	18.03	7,350.87	1.100%	0.43	4.000%	0.20	0.72	34.77	294.03	3,200.00	0.50	55,625.38	28,830,545	136,354	0.00	
2005	Surface	Phased Released	4.75	945.16	1.100%	0.45	4.000%	0.05	0.19	4.65	37.81	3,200.00	0.50	7,443.61	2,176,096	10,711	0.00	
2006	Surface	Phased Released	18.03	5,085.78	1.100%	0.36	4.000%	0.20	0.72	20.27	203.43	3,200.00	0.50	32,425.73	21,406,925	85,303	0.00	
2007	Surface	Phased Released	9.49	1,934.89	1.100%	0.49	4.000%	0.10	0.38	10.36	77.40	3,200.00	0.50	16,570.87	6,151,589	32,927	0.00	
2008	Surface	Phased Released	12.34	2,364.79	1.100%	0.55	4.000%	0.14	0.49	14.34	94.59	3,200.00	0.50	22,949.07	8,747,409	53,056	0.00	
2009	Surface	Phased Released	9.84	1,910.52	1.100%	0.47	4.000%	0.11	0.39	9.97	76.42	3,200.00	0.50	15,959.71	6,832,799	35,674	0.00	
2010	Surface	Phased Released	7.87	551.84	1.100%	1.08	0.500%	0.09	0.04	6.58	2.76	3,200.00	0.50	10,531.09	1,011,399	12,063	0.00	
2011	Surface	Phased Released	4.92	996.69	1.100%	0.47	0.500%	0.05	0.02	5.18	4.98	3,200.00	0.50	8,295.40	2,414,574	12,560	0.00	
2012	Surface	Phased Released	4.92	563.13	1.100%	0.82	0.500%	0.05	0.02	5.09	2.82	3,200.00	0.50	8,137.47	1,458,824	13,175	0.00	
2013	Surface	Phased Released	2.95	388.68	1.100%	0.39	0.500%	0.03	0.01	1.67	1.94	3,200.00	0.50	2,675.63	905,288	3,895	0.00	
2014	Surface	Phased Released	0.98	218.30	1.100%	0.25	0.500%	0.01	0.00	0.60	1.09	3,200.00	0.50	960.50	763,495	2,100	0.00	
2015	Surface	Phased Released	1.00	107.23	1.100%	1.00	0.500%	0.01	0.01	1.18	0.54	3,200.00	0.50	1,887.25	216,000	2,376	0.00	
2016	Surface	Phased Released	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
2017	Surface	Phased Released	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
TOTAL			371.65	130,468.19					3.25	16.22	504.29	5,949.68		806,863.34	413,008,586	1,627,211	36,296.08	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Surface

June 30, 2017
As of Fiscal Year End
2020

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
1961	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$3,200.00	1.00	\$0.00	\$0	\$0	\$0.00
1962	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1963	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1964	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1965	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1966	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1967	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1968	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1969	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1970	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1971	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1972	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1973	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1974	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1975	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1976	Surface	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1977	Surface	Active	0.90	428.87	0.010%	0.25	4.000%	0.00	0.04	0.01	17.15	3,200.00	1.00	34.31	799,704	20	14.32
1978	Surface	Active	0.90	63.16	0.010%	1.00	5.000%	0.00	0.05	0.01	3.16	3,200.00	1.00	20.21	120,376	12	8.17
1979	Surface	Active	0.90	162.42	0.010%	1.00	5.000%	0.00	0.05	0.02	8.12	3,200.00	1.00	51.97	179,964	18	33.98
1980	Surface	Active	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1981	Surface	Active	0.90	2.26	0.010%	1.25	5.000%	0.00	0.05	0.00	0.11	3,200.00	1.00	0.90	9,998	1	0.00
1982	Surface	Active	1.80	1,504.17	0.010%	0.25	5.000%	0.00	0.09	0.04	75.21	3,200.00	1.00	120.33	4,946,913	124	0.00
1983	Surface	Active	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1984	Surface	Active	1.80	601.43	0.010%	0.47	5.000%	0.00	0.09	0.03	30.07	3,200.00	1.00	89.70	2,535,564	118	0.00
1985	Surface	Active	1.79	813.30	0.010%	0.36	5.000%	0.00	0.09	0.03	40.66	3,200.00	1.00	93.11	2,878,561	103	0.00
1986	Surface	Active	0.88	1,072.77	0.010%	0.25	5.000%	0.00	0.04	0.03	53.64	3,200.00	1.00	85.82	1,347,318	34	52.14
1987	Surface	Active	1.77	264.66	1.000%	1.07	5.000%	0.02	0.09	2.83	13.23	3,200.00	1.00	9,047.62	519,285	5,548	3,500.06
1988	Surface	Active	0.88	302.06	1.000%	0.25	5.000%	0.01	0.04	0.76	15.10	3,200.00	1.00	2,416.47	1,676,586	4,191	0.00
1989	Surface	Active	5.30	1,224.40	1.000%	0.58	5.000%	0.05	0.27	7.09	61.22	3,200.00	1.00	22,684.05	4,155,343	24,058	0.00
1990	Surface	Active	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1991	Surface	Active	0.88	85.21	1.000%	1.00	5.000%	0.01	0.04	0.85	4.26	3,200.00	1.00	2,726.58	265,607	2,656	70.51
1992	Surface	Active	0.88	651.77	1.000%	0.25	5.000%	0.01	0.04	1.63	32.59	3,200.00	1.00	5,214.17	2,600,548	6,501	0.00
1993	Surface	Active	0.88	307.26	1.000%	0.25	5.000%	0.01	0.04	0.77	15.36	3,200.00	1.00	2,458.06	887,347	2,218	239.69
1994	Surface	Active	1.77	155.44	1.000%	1.07	5.000%	0.02	0.09	1.67	7.77	3,200.00	1.00	5,334.09	387,512	4,156	1,178.55
1995	Surface	Active	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1996	Surface	Active	1.76	880.49	1.000%	0.25	5.000%	0.02	0.09	2.20	44.02	3,200.00	1.00	7,043.88	4,274,473	10,686	0.00
1997	Surface	Active	6.17	3,217.14	1.100%	0.36	5.000%	0.07	0.31	12.74	160.86	3,200.00	1.00	40,780.32	14,320,112	56,725	0.00
1998	Surface	Active	1.76	1,080.72	1.100%	0.25	5.000%	0.02	0.09	2.97	54.04	3,200.00	1.00	9,510.36	5,501,775	15,130	0.00
1999	Surface	Active	2.67	1,694.14	1.100%	0.25	5.000%	0.03	0.13	4.66	84.71	3,200.00	1.00	14,908.48	6,700,534	18,426	0.00
2000	Surface	Active	1.80	568.88	1.100%	0.25	5.000%	0.02	0.09	1.56	28.44	3,200.00	1.00	5,006.18	2,417,887	6,649	0.00
2001	Surface	Active	6.30	1,723.10	1.100%	0.35	4.000%	0.07	0.25	6.62	68.92	3,200.00	1.00	21,180.65	8,659,090	33,262	0.00
2002	Surface	Active	1.80	1,042.63	1.100%	0.25	4.000%	0.02	0.07	2.87	41.71	3,200.00	1.00	9,175.18	5,088,895	13,994	0.00
2003	Surface	Active	9.91	5,322.78	1.100%	0.47	4.000%	0.11	0.40	27.61	212.91	3,200.00	1.00	88,360.51	28,543,653	148,074	0.00
2004	Surface	Active	4.50	1,783.93	1.100%	0.70	4.000%	0.05	0.18	13.78	71.36	3,200.00	1.00	44,081.66	8,376,273	64,682	0.00
2005	Surface	Active	6.30	2,332.38	1.100%	0.43	4.000%	0.07	0.25	11.03	93.30	3,200.00	1.00	35,302.79	13,076,145	61,850	0.00
2006	Surface	Active	3.60	2,457.71	1.100%	0.62	4.000%	0.04	0.14	16.82	98.31	3,200.00	1.00	53,827.26	12,031,595	82,346	0.00
2007	Surface	Active	7.20	2,494.95	1.100%	0.48	4.000%	0.08	0.29	13.10	99.80	3,200.00	1.00	41,912.07	9,100,019	47,772	0.00
2008	Surface	Active	9.01	2,979.19	1.100%	0.69	4.000%	0.10	0.36	22.54	119.17	3,200.00	1.00	72,137.94	16,119,887	121,977	0.00
2009	Surface	Active	6.54	2,246.16	1.100%	0.48	4.000%	0.07	0.26	11.75	89.85	3,200.00	1.00	37,593.46	8,211,386	42,948	0.00
2010	Surface	Active	5.81	505.80	1.100%	0.79	4.000%	0.06	0.23	6.06	20.23	3,200.00	1.00	19,381.95	2,107,485	25,237	0.00
2011	Surface	Active	9.68	1,573.72	1.100%	1.07	0.500%	0.11	0.05	13.42	7.87	3,200.00	1.00	42,930.27	4,818,169	41,074	1,856.20
2012	Surface	Active	25.17	4,446.52	1.100%	0.60	0.500%	0.28	0.13	29.28	22.23	3,200.00	1.00	93,704.73	17,372,584	114,408	0.00
2013	Surface	Active	14.52	2,844.14	1.100%	0.71	0.500%	0.16	0.07	22.20	14.22	3,200.00	1.00	71,052.70	10,757,487	83,983	0.00
2014	Surface	Active	15.49	2,560.71	1.100%	0.53	0.500%	0.17	0.08	14.89	12.80	3,200.00	1.00	47,651.19	8,366,321	48,652	0.00
2015	Surface	Active	9.84	1,802.88	1.100%	0.70	0.500%	0.11	0.05	13.90	9.01	3,200.00	1.00	44,492.95	5,514,501	42,529	1,964.31
2016	Surface	Active	11.00	788.61	1.100%	0.80	0.500%	0.12	0.06	6.94	3.94	3,200.00	1.00	22,212.48	2,506,439	22,062	150.63
2017	Surface	Active	1.00	2.00	0.000%	1.25	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	10,000	0	0.00
TOTAL			184.12	51,987.77				1.89	4.68	272.70	1,735.37			872,624.42	217,185,335	1,152,223	9,068.56

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Surface

June 30, 2017
As of Fiscal Year End
2020

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
1961	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$3,200.00	1.00	\$0.00	\$0	\$0	\$0.00
1962	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1963	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1964	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1965	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1966	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1967	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1968	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1969	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1970	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1971	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1972	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1973	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1974	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1975	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1976	Surface	Inactive	2.74	1,423.62	0.010%	0.48	4.000%	0.00	0.11	0.07	56.94	3,200.00	1.00	219.95	1,790,387	86	133.51
1977	Surface	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1978	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1979	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1980	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1981	Surface	Inactive	0.90	4.03	0.010%	1.00	5.000%	0.00	0.05	0.00	0.20	3,200.00	1.00	1.29	154,969	15	0.00
1982	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1983	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1984	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1985	Surface	Inactive	0.89	202.04	0.010%	0.25	5.000%	0.00	0.04	0.01	10.10	3,200.00	1.00	16.16	793,511	20	0.00
1986	Surface	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1987	Surface	Inactive	1.77	288.93	1.000%	0.36	5.000%	0.02	0.09	1.03	14.45	3,200.00	1.00	3,308.04	1,328,760	4,754	0.00
1988	Surface	Inactive	0.88	155.51	1.000%	1.00	5.000%	0.01	0.04	1.56	7.78	3,200.00	1.00	4,976.44	310,496	3,105	1,871.48
1989	Surface	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1990	Surface	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1991	Surface	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1992	Surface	Inactive	0.88	112.28	1.000%	1.00	5.000%	0.01	0.04	1.12	5.61	3,200.00	1.00	3,592.93	125,453	1,255	2,338.40
1993	Surface	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1994	Surface	Inactive	1.77	1,609.39	1.000%	0.25	5.000%	0.02	0.09	4.02	80.47	3,200.00	1.00	12,875.12	8,521,234	21,303	0.00
1995	Surface	Inactive	2.65	1,803.37	1.000%	0.25	5.000%	0.03	0.13	4.51	90.17	3,200.00	1.00	14,426.94	7,626,377	19,066	0.00
1996	Surface	Inactive	0.88	946.90	1.000%	0.25	5.000%	0.01	0.04	2.37	47.35	3,200.00	1.00	7,575.22	4,446,244	11,116	0.00
1997	Surface	Inactive	1.76	1,339.80	1.100%	0.25	5.000%	0.02	0.09	3.68	66.99	3,200.00	1.00	11,790.28	7,021,502	19,309	0.00
1998	Surface	Inactive	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
1999	Surface	Inactive	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2000	Surface	Inactive	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2001	Surface	Inactive	2.70	1,063.34	1.100%	0.28	4.000%	0.03	0.11	3.30	42.53	3,200.00	1.00	10,549.17	6,050,549	18,758	0.00
2002	Surface	Inactive	0.90	655.65	1.100%	0.25	4.000%	0.01	0.04	1.80	26.23	3,200.00	1.00	5,769.73	3,914,183	10,764	0.00
2003	Surface	Inactive	2.70	934.91	1.100%	0.25	4.000%	0.03	0.11	2.57	37.40	3,200.00	1.00	8,227.21	4,532,150	12,463	0.00
2004	Surface	Inactive	0.90	823.00	1.100%	0.25	4.000%	0.01	0.04	2.26	32.92	3,200.00	1.00	7,242.40	4,965,895	13,656	0.00
2005	Surface	Inactive	0.90	223.90	1.100%	0.25	4.000%	0.01	0.04	0.62	8.96	3,200.00	1.00	1,970.28	858,300	2,360	0.00
2006	Surface	Inactive	2.70	287.05	1.100%	0.42	4.000%	0.03	0.11	1.32	11.48	3,200.00	1.00	4,227.93	1,301,258	5,989	0.00
2007	Surface	Inactive	2.70	664.06	1.100%	0.41	4.000%	0.03	0.11	2.96	26.56	3,200.00	1.00	9,480.50	1,675,815	7,476	2,004.02
2008	Surface	Inactive	0.00	0.00	1.100%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2009	Surface	Inactive	0.93	296.24	1.100%	0.25	4.000%	0.01	0.04	0.81	11.85	3,200.00	1.00	2,606.94	1,036,754	2,851	0.00
2010	Surface	Inactive	1.94	537.99	1.100%	0.25	4.000%	0.02	0.08	1.48	21.52	3,200.00	1.00	4,734.34	2,734,896	7,521	0.00
2011	Surface	Inactive	4.84	776.58	1.100%	0.54	0.500%	0.05	0.02	4.58	3.88	3,200.00	1.00	14,645.35	3,211,376	18,926	0.00
2012	Surface	Inactive	1.94	96.50	1.100%	1.02	0.500%	0.02	0.01	1.08	0.48	3,200.00	1.00	3,451.83	246,319	2,753	698.43
2013	Surface	Inactive	0.97	345.58	1.100%	0.25	0.500%	0.01	0.00	0.95	1.73	3,200.00	1.00	3,041.11	1,745,361	4,800	0.00
2014	Surface	Inactive	0.00	0.00	1.100%	0.00	0.500%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2015	Surface	Inactive	0.00	0.00	1.100%	0.00	0.500%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2016	Surface	Inactive	0.00	0.00	1.100%	0.00	0.500%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
2017	Surface	Inactive	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	1.00	0.00	0	0	0.00
TOTAL			39.25	14,590.70				0.37	1.42	42.10	605.60			134,729.14	64,391,788	188,348	7,045.83

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Surface

June 30, 2017
As of Fiscal Year End
2020

Permit Issue Year	Mine Type	Mine Status	Adjustment										Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres							
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	
1961	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$3,200.00	0.50	\$0.00	\$0	\$0	\$0.00	
1962	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1963	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1964	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1965	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1966	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1967	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1968	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1969	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1970	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1971	Surface	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
1972	Surface	Phased Released	0.92	368.54	0.010%	1.25	4.000%	0.00	0.04	0.05	14.74	3,200.00	0.50	73.71	32,242	4	69.68	
1973	Surface	Phased Released	0.92	8.85	0.010%	1.25	4.000%	0.00	0.04	0.00	0.35	3,200.00	0.50	1.77	26,243	3	0.00	
1974	Surface	Phased Released	0.92	165.84	0.010%	1.25	4.000%	0.00	0.04	0.02	6.63	3,200.00	0.50	33.17	71,982	9	24.17	
1975	Surface	Phased Released	1.84	143.09	0.010%	1.25	4.000%	0.00	0.07	0.02	5.72	3,200.00	0.50	28.62	43,339	5	23.20	
1976	Surface	Phased Released	6.38	1,129.96	0.010%	0.93	4.000%	0.00	0.26	0.11	45.20	3,200.00	0.50	168.98	1,466,976	137	31.87	
1977	Surface	Phased Released	1.80	675.74	0.010%	0.46	4.000%	0.00	0.07	0.03	27.03	3,200.00	0.50	49.96	1,631,049	75	0.00	
1978	Surface	Phased Released	3.61	2,041.36	0.010%	0.55	5.000%	0.00	0.18	0.11	102.07	3,200.00	0.50	178.60	3,020,750	165	13.42	
1979	Surface	Phased Released	2.71	835.06	0.010%	0.67	5.000%	0.00	0.14	0.06	41.75	3,200.00	0.50	89.71	1,584,667	106	0.00	
1980	Surface	Phased Released	9.93	1,723.86	0.010%	0.69	5.000%	0.00	0.50	0.12	86.19	3,200.00	0.50	189.64	4,796,080	330	0.00	
1981	Surface	Phased Released	10.83	2,814.79	0.010%	0.52	5.000%	0.00	0.54	0.15	140.74	3,200.00	0.50	236.11	5,514,792	289	0.00	
1982	Surface	Phased Released	6.32	1,450.86	0.010%	0.87	5.000%	0.00	0.32	0.13	72.54	3,200.00	0.50	201.59	2,166,826	188	13.42	
1983	Surface	Phased Released	5.41	1,872.04	0.010%	0.54	5.000%	0.00	0.27	0.10	93.60	3,200.00	0.50	162.31	2,865,961	155	7.01	
1984	Surface	Phased Released	2.71	1,275.54	0.010%	0.38	5.000%	0.00	0.14	0.05	63.78	3,200.00	0.50	78.30	1,059,847	41	37.64	
1985	Surface	Phased Released	9.82	4,011.57	0.010%	0.66	5.000%	0.00	0.49	0.26	200.58	3,200.00	0.50	423.70	5,304,828	350	73.52	
1986	Surface	Phased Released	8.84	2,239.79	0.010%	0.50	5.000%	0.00	0.44	0.11	111.99	3,200.00	0.50	178.66	6,364,389	317	0.00	
1987	Surface	Phased Released	5.30	1,414.77	1.000%	0.78	5.000%	0.05	0.27	11.04	70.74	3,200.00	0.50	17,670.10	1,193,152	9,314	8,356.22	
1988	Surface	Phased Released	14.14	4,881.97	1.000%	0.54	5.000%	0.14	0.71	26.43	244.10	3,200.00	0.50	42,283.46	10,833,861	58,646	0.00	
1989	Surface	Phased Released	14.14	4,126.89	1.000%	0.89	5.000%	0.14	0.71	36.83	206.34	3,200.00	0.50	58,930.43	4,003,592	35,731	23,199.29	
1990	Surface	Phased Released	6.19	1,739.20	1.000%	0.75	5.000%	0.06	0.31	13.01	86.96	3,200.00	0.50	20,810.18	3,817,228	28,547	0.00	
1991	Surface	Phased Released	9.72	5,065.95	1.000%	0.46	5.000%	0.10	0.49	23.39	253.30	3,200.00	0.50	37,425.22	21,069,152	97,281	0.00	
1992	Surface	Phased Released	10.60	5,081.33	1.000%	0.40	5.000%	0.11	0.53	20.12	254.07	3,200.00	0.50	32,199.23	16,511,599	65,394	0.00	
1993	Surface	Phased Released	8.84	3,207.34	1.000%	0.39	5.000%	0.09	0.44	12.47	160.37	3,200.00	0.50	19,952.57	7,632,380	29,675	0.00	
1994	Surface	Phased Released	7.95	3,801.16	1.000%	0.37	5.000%	0.08	0.40	13.96	190.06	3,200.00	0.50	22,342.31	16,171,356	59,407	0.00	
1995	Surface	Phased Released	15.01	4,536.32	1.000%	0.43	5.000%	0.15	0.75	19.58	226.82	3,200.00	0.50	31,330.77	13,791,037	59,531	0.00	
1996	Surface	Phased Released	16.75	10,801.46	1.000%	0.29	5.000%	0.17	0.84	31.72	540.07	3,200.00	0.50	50,747.18	47,073,820	138,226	0.00	
1997	Surface	Phased Released	19.40	8,474.35	1.100%	0.44	5.000%	0.21	0.97	40.79	423.72	3,200.00	0.50	65,258.70	29,805,615	143,453	0.00	
1998	Surface	Phased Released	7.05	5,054.62	1.100%	0.28	5.000%	0.08	0.35	15.67	252.73	3,200.00	0.50	25,073.24	16,211,299	50,260	0.00	
1999	Surface	Phased Released	5.35	1,405.29	1.100%	0.52	5.000%	0.06	0.27	8.02	70.26	3,200.00	0.50	12,833.99	6,335,175	36,161	0.00	
2000	Surface	Phased Released	8.11	5,976.75	1.100%	0.27	5.000%	0.09	0.41	17.97	298.84	3,200.00	0.50	28,747.71	28,499,041	85,674	0.00	
2001	Surface	Phased Released	18.01	7,430.12	1.100%	0.34	4.000%	0.20	0.72	28.20	297.20	3,200.00	0.50	45,114.91	32,265,720	122,446	0.00	
2002	Surface	Phased Released	8.11	1,984.13	1.100%	0.53	4.000%	0.09	0.32	11.64	79.37	3,200.00	0.50	18,625.86	8,488,878	49,805	0.00	
2003	Surface	Phased Released	13.51	6,770.32	1.100%	0.31	4.000%	0.15	0.54	22.72	270.81	3,200.00	0.50	36,349.50	31,213,751	104,741	0.00	
2004	Surface	Phased Released	17.11	7,022.07	1.100%	0.43	4.000%	0.19	0.68	33.21	280.88	3,200.00	0.50	53,137.29	28,694,191	135,709	0.00	
2005	Surface	Phased Released	4.50	902.71	1.100%	0.45	4.000%	0.05	0.18	4.44	36.11	3,200.00	0.50	7,109.23	2,165,385	10,658	0.00	
2006	Surface	Phased Released	17.11	4,862.08	1.100%	0.36	4.000%	0.19	0.68	19.37	194.48	3,200.00	0.50	30,999.49	21,321,622	84,963	0.00	
2007	Surface	Phased Released	9.01	1,847.14	1.100%	0.49	4.000%	0.10	0.36	9.89	73.89	3,200.00	0.50	15,819.34	6,118,662	32,751	0.00	
2008	Surface	Phased Released	11.71	2,255.86	1.100%	0.55	4.000%	0.13	0.47	13.68	90.23	3,200.00	0.50	21,891.91	8,694,353	52,734	0.00	
2009	Surface	Phased Released	9.34	1,824.13	1.100%	0.47	4.000%	0.10	0.37	9.52	72.97	3,200.00	0.50	15,237.99	6,797,125	35,488	0.00	
2010	Surface	Phased Released	7.75	542.50	1.100%	1.08	4.000%	0.09	0.31	6.47	21.70	3,200.00	0.50	10,352.83	999,336	11,919	0.00	
2011	Surface	Phased Released	4.84	986.52	1.100%	0.47	0.500%	0.05	0.02	5.13	4.93	3,200.00	0.50	8,210.77	2,402,014	12,495	0.00	
2012	Surface	Phased Released	4.84	555.22	1.100%	0.82	0.500%	0.05	0.02	5.01	2.78	3,200.00	0.50	8,023.29	1,445,649	13,056	0.00	
2013	Surface	Phased Released	2.90	385.06	1.100%	0.39	0.500%	0.03	0.01	1.66	1.93	3,200.00	0.50	2,650.74	901,393	3,878	0.00	
2014	Surface	Phased Released	0.97	216.60	1.100%	0.25	0.500%	0.01	0.00	0.60	1.08	3,200.00	0.50	953.05	761,395	2,094	0.00	
2015	Surface	Phased Released	0.98	105.51	1.100%	1.00	0.500%	0.01	0.00	1.16	0.53	3,200.00	0.50	1,857.05	213,624	2,350	0.00	
2016	Surface	Phased Released	0.00	0.00	1.100%	0.00	0.500%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
2017	Surface	Phased Released	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	3,200.00	0.50	0.00	0	0	0.00	
TOTAL			352.18	124,014.22				2.97	15.67	465.02	5,720.18			744,033.17	411,381,375	1,574,564	31,849.43	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Land, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Permit Count	Current Bonded Acres	As of Fiscal Year End 2018										Gross Cost	Current Security Amount	Forfeited Security Amount	Net Cost
					Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Land Avg Recl Cost per Acre	Adjustment Factor Permit Status					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
1961	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$13,800.00	1.00	\$0.00	\$0	\$0	\$0.00	
1962	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1963	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1964	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1965	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1966	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1967	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1968	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1969	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1970	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1971	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1972	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1973	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1974	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1975	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1976	Underground	Active	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1977	Underground	Active	0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1978	Underground	Active	2	123.25	0.010%	1.00	5.000%	0.00	0.10	0.01	6.16	13,800.00	1.00	170.09	503,440	50	119.74	
1979	Underground	Active	3	651.83	0.010%	0.48	5.000%	0.00	0.15	0.03	32.59	13,800.00	1.00	430.17	5,391,575	258	172.33	
1980	Underground	Active	5	293.69	0.010%	1.03	5.000%	0.00	0.25	0.03	14.68	13,800.00	1.00	416.02	1,068,160	110	306.38	
1981	Underground	Active	3	198.01	0.010%	0.37	5.000%	0.00	0.15	0.01	9.90	13,800.00	1.00	101.20	602,600	22	78.88	
1982	Underground	Active	7	322.08	0.010%	1.12	5.000%	0.00	0.35	0.04	16.10	13,800.00	1.00	499.37	736,440	83	416.63	
1983	Underground	Active	12	5,590.35	0.010%	0.27	5.000%	0.00	0.60	0.15	279.52	13,800.00	1.00	2,101.38	19,250,888	524	1,577.01	
1984	Underground	Active	2	377.10	0.010%	0.32	5.000%	0.00	0.10	0.01	18.86	13,800.00	1.00	168.96	3,907,000	127	42.11	
1985	Underground	Active	2	21.04	0.010%	1.25	5.000%	0.00	0.10	0.00	1.05	13,800.00	1.00	36.29	48,400	6	30.24	
1986	Underground	Active	2	32.30	0.010%	1.25	5.000%	0.00	0.10	0.00	1.62	13,800.00	1.00	55.72	59,280	7	48.31	
1987	Underground	Active	4	238.44	0.010%	1.01	5.000%	0.00	0.20	0.02	11.92	13,800.00	1.00	332.22	700,800	71	261.47	
1988	Underground	Active	1	5.18	1.000%	1.25	5.000%	0.01	0.05	0.06	0.26	13,800.00	1.00	893.55	13,237	165	728.09	
1989	Underground	Active	2	81.30	1.000%	1.04	5.000%	0.02	0.10	0.84	4.07	13,800.00	1.00	11,616.50	182,320	1,888	9,728.77	
1990	Underground	Active	3	219.75	1.000%	0.39	5.000%	0.03	0.15	0.87	10.99	13,800.00	1.00	11,962.88	627,560	2,476	9,487.26	
1991	Underground	Active	4	647.75	1.000%	0.49	5.000%	0.04	0.20	3.14	32.39	13,800.00	1.00	43,388.24	3,615,560	17,549	25,838.88	
1992	Underground	Active	8	234.86	1.000%	1.05	5.000%	0.08	0.40	2.46	11.74	13,800.00	1.00	33,897.98	1,160,033	12,133	21,875.32	
1993	Underground	Active	4	580.92	1.000%	0.45	5.000%	0.04	0.20	2.62	29.05	13,800.00	1.00	36,149.10	1,841,760	8,305	27,844.19	
1994	Underground	Active	9	103.05	1.000%	1.25	4.000%	0.09	0.36	1.29	4.12	13,800.00	1.00	17,776.13	262,920	3,287	14,489.63	
1995	Underground	Active	2	101.24	1.000%	1.03	4.000%	0.02	0.08	1.15	4.05	13,800.00	1.00	15,803.52	293,040	3,315	12,488.78	
1996	Underground	Active	10	151.82	1.000%	1.19	4.000%	0.11	0.40	1.99	6.07	13,800.00	1.00	27,467.07	419,188	5,496	21,971.50	
1997	Underground	Active	10	378.99	1.000%	0.60	4.000%	0.11	0.40	2.51	15.16	13,800.00	1.00	34,575.11	2,107,573	13,933	20,642.28	
1998	Underground	Active	4	109.68	1.000%	1.03	4.000%	0.04	0.16	1.24	4.39	13,800.00	1.00	17,067.25	408,400	4,605	12,462.11	
1999	Underground	Active	10	235.51	1.000%	1.07	4.000%	0.11	0.40	2.76	9.42	13,800.00	1.00	38,143.55	686,760	8,060	30,083.50	
2000	Underground	Active	8	126.91	1.000%	1.17	4.000%	0.09	0.32	1.64	5.08	13,800.00	1.00	22,626.40	337,800	4,364	18,262.25	
2001	Underground	Active	5	63.96	1.000%	1.10	4.000%	0.06	0.20	0.77	2.56	13,800.00	1.00	10,666.99	170,720	2,063	8,603.80	
2002	Underground	Active	9	580.74	1.000%	0.66	4.000%	0.10	0.36	4.22	23.23	13,800.00	1.00	58,210.75	2,108,680	15,316	42,894.48	
2003	Underground	Active	10	604.37	1.000%	0.41	4.000%	0.11	0.40	2.73	24.17	13,800.00	1.00	37,705.32	2,923,840	13,218	24,487.06	
2004	Underground	Active	8	953.24	1.000%	0.72	4.000%	0.09	0.32	7.53	38.13	13,800.00	1.00	103,890.79	9,999,459	74,233	29,657.53	
2005	Underground	Active	10	227.16	1.000%	1.08	4.000%	0.11	0.40	2.70	9.09	13,800.00	1.00	37,194.80	663,260	7,870	29,325.15	
2006	Underground	Active	7	180.61	1.000%	1.06	4.000%	0.08	0.28	2.11	7.22	13,800.00	1.00	29,085.26	574,000	6,698	22,386.97	
2007	Underground	Active	7	496.25	1.000%	0.82	5.000%	0.08	0.35	4.46	24.81	13,800.00	1.00	61,546.71	1,450,240	13,034	48,513.09	
2008	Underground	Active	7	272.08	1.000%	1.04	5.000%	0.08	0.35	3.13	13.60	13,800.00	1.00	43,154.11	773,160	8,886	34,267.92	
2009	Underground	Active	7	57.94	1.000%	1.25	5.000%	0.08	0.35	0.80	2.90	13,800.00	1.00	10,994.12	172,200	2,368	8,626.37	
2010	Underground	Active	12	281.96	1.000%	1.11	5.000%	0.13	0.60	3.44	14.10	13,800.00	1.00	47,415.32	816,480	9,949	37,465.90	
2011	Underground	Active	7	87.09	1.000%	1.25	5.000%	0.08	0.35	1.20	4.35	13,800.00	1.00	16,525.33	256,720	3,530	12,995.43	
2012	Underground	Active	10	227.37	1.000%	1.12	5.000%	0.11	0.50	2.81	11.37	13,800.00	1.00	38,709.96	638,240	7,874	30,835.97	
2013	Underground	Active	19	560.02	1.000%	1.04	5.000%	0.21	0.95	6.43	28.00	13,800.00	1.00	88,790.49	2,123,316	24,395	64,395.63	
2014	Underground	Active	13	225.76	1.000%	1.14	5.000%	0.14	0.65	2.84	11.29	13,800.00	1.00	39,163.20	653,320	8,213	30,950.65	
2015	Underground	Active	12	177.90	0.000%	1.23	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	512,880	0	0.00	
2016	Underground	Active	6	33.45	0.000%	1.25	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	94,880	0	0.00	
2017	Underground	Active	2	22.30	0.000%	1.25	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	58,920	0	0.00	
TOTAL			268	15,877.25				2.24	11.38	68.02	744.01			938,731.80	67,615,049	284,480	654,251.57	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Land, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Permit Count	Current Bonded Acres	As of Fiscal Year End 2018										Gross Cost	Current Security Amount	Forfeited Security Amount	Net Cost
					Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Land Avg Recl Cost per Acre	Adjustment Factor Permit Status					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
1961	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$13,800.00	1.00	\$0.00	\$0	\$0	\$0.00	
1962	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1963	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1964	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1965	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1966	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1967	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1968	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1969	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1970	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1971	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1972	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1973	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1974	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1975	Underground	Inactive	1	103.30	0.010%	1.00	4.000%	0.00	0.04	0.01	4.13	13,800.00	1.00	142.55	345,280	35	108.03	
1976	Underground	Inactive	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1977	Underground	Inactive	0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1978	Underground	Inactive	1	23.02	0.010%	1.25	5.000%	0.00	0.05	0.00	1.15	13,800.00	1.00	39.71	80,520	10	29.64	
1979	Underground	Inactive	1	80.45	0.010%	1.00	5.000%	0.00	0.05	0.01	4.02	13,800.00	1.00	111.02	155,800	16	95.44	
1980	Underground	Inactive	1	45.71	0.010%	1.00	5.000%	0.00	0.05	0.00	2.29	13,800.00	1.00	63.08	311,509	31	31.93	
1981	Underground	Inactive	1	69.04	0.010%	1.00	5.000%	0.00	0.05	0.01	3.45	13,800.00	1.00	95.28	154,000	15	79.88	
1982	Underground	Inactive	5	415.09	0.010%	1.05	5.000%	0.00	0.25	0.04	20.75	13,800.00	1.00	600.66	914,680	96	504.75	
1983	Underground	Inactive	8	1,031.66	0.010%	0.65	5.000%	0.00	0.40	0.07	51.58	13,800.00	1.00	921.16	3,367,680	218	703.27	
1984	Underground	Inactive	4	360.89	0.010%	0.58	5.000%	0.00	0.20	0.02	18.04	13,800.00	1.00	290.84	1,002,680	59	232.28	
1985	Underground	Inactive	1	43.54	0.010%	1.00	5.000%	0.00	0.05	0.00	2.18	13,800.00	1.00	60.09	110,880	11	49.00	
1986	Underground	Inactive	0	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1987	Underground	Inactive	4	112.03	0.010%	0.99	5.000%	0.00	0.20	0.01	5.60	13,800.00	1.00	153.34	1,195,546	119	34.76	
1988	Underground	Inactive	2	200.53	1.000%	0.75	5.000%	0.02	0.10	1.51	10.03	13,800.00	1.00	20,827.65	1,815,407	13,663	7,164.34	
1989	Underground	Inactive	3	104.66	1.000%	1.01	5.000%	0.03	0.15	1.06	5.23	13,800.00	1.00	14,587.64	353,320	3,569	11,019.07	
1990	Underground	Inactive	1	139.00	1.000%	0.25	5.000%	0.01	0.05	0.35	6.95	13,800.00	1.00	4,795.50	10,764,386	26,911	0.00	
1991	Underground	Inactive	2	14.02	1.000%	1.25	5.000%	0.02	0.10	0.18	0.70	13,800.00	1.00	2,418.45	28,920	362	2,056.95	
1992	Underground	Inactive	0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1993	Underground	Inactive	6	296.33	1.000%	1.04	5.000%	0.06	0.30	3.10	14.82	13,800.00	1.00	42,728.94	949,417	9,920	32,808.65	
1994	Underground	Inactive	3	345.33	1.000%	0.47	4.000%	0.03	0.12	1.64	13.81	13,800.00	1.00	22,622.00	932,360	4,426	18,196.10	
1995	Underground	Inactive	8	307.49	1.000%	1.09	4.000%	0.09	0.32	3.69	12.30	13,800.00	1.00	50,872.73	839,800	10,068	40,804.56	
1996	Underground	Inactive	4	92.09	1.000%	1.09	4.000%	0.04	0.16	1.10	3.68	13,800.00	1.00	15,181.52	300,880	3,594	11,587.20	
1997	Underground	Inactive	8	342.93	1.000%	1.07	4.000%	0.09	0.32	4.04	13.72	13,800.00	1.00	55,703.24	1,180,567	13,896	41,807.34	
1998	Underground	Inactive	9	427.44	1.000%	1.03	4.000%	0.10	0.36	4.85	17.10	13,800.00	1.00	66,966.95	1,117,500	12,687	54,280.10	
1999	Underground	Inactive	3	296.54	1.000%	0.45	4.000%	0.03	0.12	1.45	11.86	13,800.00	1.00	20,058.09	899,400	4,408	15,649.70	
2000	Underground	Inactive	5	137.62	1.000%	1.09	4.000%	0.06	0.20	1.65	5.50	13,800.00	1.00	22,789.73	455,800	5,470	17,320.17	
2001	Underground	Inactive	0	0.00	1.000%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
2002	Underground	Inactive	5	278.87	1.000%	1.09	4.000%	0.06	0.20	3.33	11.15	13,800.00	1.00	46,012.86	664,000	7,939	38,073.85	
2003	Underground	Inactive	4	141.54	1.000%	1.06	4.000%	0.04	0.16	1.65	5.66	13,800.00	1.00	22,717.63	434,000	5,048	17,669.92	
2004	Underground	Inactive	5	164.25	1.000%	1.06	4.000%	0.06	0.20	1.92	6.57	13,800.00	1.00	26,493.27	481,000	5,622	20,871.20	
2005	Underground	Inactive	4	75.89	1.000%	1.25	4.000%	0.04	0.16	1.04	3.04	13,800.00	1.00	14,400.13	203,800	2,802	11,597.88	
2006	Underground	Inactive	7	303.26	1.000%	1.03	4.000%	0.08	0.28	3.43	12.13	13,800.00	1.00	47,366.31	1,011,800	11,452	35,914.61	
2007	Underground	Inactive	4	50.83	1.000%	1.25	5.000%	0.04	0.20	0.70	2.54	13,800.00	1.00	9,644.99	145,000	1,994	7,651.24	
2008	Underground	Inactive	11	169.62	1.000%	1.19	5.000%	0.12	0.55	2.23	8.48	13,800.00	1.00	30,760.95	478,400	6,287	24,474.08	
2009	Underground	Inactive	7	191.95	1.000%	1.11	5.000%	0.08	0.35	2.35	9.60	13,800.00	1.00	32,471.72	594,400	7,286	25,185.25	
2010	Underground	Inactive	5	91.49	1.000%	1.25	5.000%	0.06	0.25	1.26	4.57	13,800.00	1.00	17,360.23	239,520	3,293	14,066.83	
2011	Underground	Inactive	7	159.70	1.000%	1.16	5.000%	0.08	0.35	2.05	7.99	13,800.00	1.00	28,238.60	402,800	5,161	23,077.42	
2012	Underground	Inactive	2	24.05	1.000%	1.25	5.000%	0.02	0.10	0.33	1.20	13,800.00	1.00	4,563.49	80,760	1,110	3,453.04	
2013	Underground	Inactive	1	13.74	1.000%	1.25	5.000%	0.01	0.05	0.19	0.69	13,800.00	1.00	2,607.17	34,160	470	2,137.47	
2014	Underground	Inactive	1	12.00	1.000%	1.25	5.000%	0.01	0.05	0.17	0.60	13,800.00	1.00	2,277.00	35,040	482	1,795.20	
2015	Underground	Inactive	0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
2016	Underground	Inactive	0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
2017	Underground	Inactive	0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
TOTAL			144	6,665.90				1.27	6.54	45.43	303.13			626,944.50	32,081,012	168,529	480,531.13	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Land, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Permit Count	Current Bonded Acres	As of Fiscal Year End 2018										Gross Cost	Current Security Amount	Forfeited Security Amount	Net Cost
					Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Land Avg Recl Cost per Acre	Adjustment Factor Permit Status					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
1961	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$13,800.00	0.50	\$0.00	\$0	\$0	\$0.00	
1962	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1963	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1964	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1965	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1966	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1967	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1968	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1969	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1970	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1971	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1972	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1973	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1974	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1975	Underground	Phased Released	0	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1976	Underground	Phased Released	1	22.53	0.010%	1.25	4.000%	0.00	0.04	0.00	0.90	13,800.00	0.50	19.43	72,960	9	10.31	
1977	Underground	Phased Released	3	25.13	0.010%	1.25	5.000%	0.00	0.15	0.00	1.26	13,800.00	0.50	21.67	38,588	5	16.85	
1978	Underground	Phased Released	4	36.33	0.010%	1.20	5.000%	0.00	0.20	0.00	1.82	13,800.00	0.50	30.20	421,509	51	0.00	
1979	Underground	Phased Released	8	128.30	0.010%	1.15	5.000%	0.00	0.40	0.01	6.42	13,800.00	0.50	102.04	209,240	24	77.92	
1980	Underground	Phased Released	7	115.31	0.010%	0.95	5.000%	0.00	0.35	0.01	5.77	13,800.00	0.50	75.30	1,155,420	109	0.00	
1981	Underground	Phased Released	19	763.80	0.010%	0.87	5.000%	0.00	0.95	0.07	38.19	13,800.00	0.50	457.82	2,080,787	181	277.07	
1982	Underground	Phased Released	10	137.48	0.010%	1.22	5.000%	0.00	0.50	0.02	6.87	13,800.00	0.50	115.64	988,854	121	0.00	
1983	Underground	Phased Released	22	1,766.39	0.010%	0.67	5.000%	0.00	1.10	0.12	88.32	13,800.00	0.50	811.30	5,231,892	348	463.04	
1984	Underground	Phased Released	6	1,132.36	0.010%	0.58	5.000%	0.00	0.30	0.07	56.62	13,800.00	0.50	449.82	3,759,740	216	233.37	
1985	Underground	Phased Released	8	333.26	0.010%	0.70	5.000%	0.00	0.40	0.02	16.66	13,800.00	0.50	160.27	1,322,147	92	68.12	
1986	Underground	Phased Released	4	89.42	0.010%	1.25	5.000%	0.00	0.20	0.01	4.47	13,800.00	0.50	77.12	151,800	19	58.15	
1987	Underground	Phased Released	14	355.98	0.010%	1.18	5.000%	0.00	0.70	0.04	17.80	13,800.00	0.50	290.16	1,114,033	132	158.56	
1988	Underground	Phased Released	13	255.05	1.000%	1.24	5.000%	0.13	0.65	3.16	12.75	13,800.00	0.50	21,773.81	518,592	6,416	15,357.49	
1989	Underground	Phased Released	12	182.92	1.000%	1.25	5.000%	0.12	0.60	2.29	9.15	13,800.00	0.50	15,776.85	348,800	4,360	11,416.85	
1990	Underground	Phased Released	5	35.63	1.000%	1.25	5.000%	0.05	0.25	0.45	1.78	13,800.00	0.50	3,073.09	82,239	1,028	2,045.11	
1991	Underground	Phased Released	10	10,293.67	1.000%	0.62	5.000%	0.10	0.50	63.34	514.68	13,800.00	0.50	437,046.83	992,928	6,110	430,937.04	
1992	Underground	Phased Released	4	84.48	1.000%	1.13	5.000%	0.04	0.20	0.95	4.22	13,800.00	0.50	6,583.64	159,690	1,804	4,748.03	
1993	Underground	Phased Released	8	212.90	1.000%	1.14	5.000%	0.08	0.40	2.43	10.65	13,800.00	0.50	16,780.85	483,720	5,526	11,255.20	
1994	Underground	Phased Released	14	607.38	1.000%	1.06	4.000%	0.14	0.56	6.44	24.30	13,800.00	0.50	44,413.06	1,491,664	15,808	28,605.23	
1995	Underground	Phased Released	15	329.13	1.000%	1.15	4.000%	0.17	0.60	4.15	13.17	13,800.00	0.50	28,659.16	1,139,777	14,384	14,275.59	
1996	Underground	Phased Released	8	184.16	1.000%	1.25	4.000%	0.09	0.32	2.53	7.37	13,800.00	0.50	17,472.18	225,208	3,097	14,375.57	
1997	Underground	Phased Released	8	306.96	1.000%	1.11	4.000%	0.09	0.32	3.73	12.28	13,800.00	0.50	25,770.71	757,968	9,222	16,548.26	
1998	Underground	Phased Released	6	95.91	1.000%	1.11	4.000%	0.07	0.24	1.17	3.84	13,800.00	0.50	8,075.19	391,800	4,781	3,294.35	
1999	Underground	Phased Released	4	297.32	1.000%	0.46	4.000%	0.04	0.16	1.52	11.89	13,800.00	0.50	10,462.06	1,100,760	5,614	4,848.52	
2000	Underground	Phased Released	9	456.32	1.000%	1.04	4.000%	0.10	0.36	5.23	18.25	13,800.00	0.50	36,055.37	1,326,764	15,193	20,862.32	
2001	Underground	Phased Released	6	149.53	1.000%	1.17	4.000%	0.07	0.24	1.92	5.98	13,800.00	0.50	13,231.46	315,480	4,046	9,185.68	
2002	Underground	Phased Released	8	197.14	1.000%	1.07	4.000%	0.09	0.32	2.31	7.89	13,800.00	0.50	15,967.44	1,390,834	16,326	0.00	
2003	Underground	Phased Released	2	20.27	1.000%	1.25	4.000%	0.02	0.08	0.28	0.81	13,800.00	0.50	1,923.12	49,400	679	1,243.87	
2004	Underground	Phased Released	3	57.88	1.000%	1.16	4.000%	0.03	0.12	0.74	2.32	13,800.00	0.50	5,113.76	213,720	2,737	2,377.18	
2005	Underground	Phased Released	3	43.30	1.000%	1.25	4.000%	0.03	0.12	0.60	1.73	13,800.00	0.50	4,108.09	98,720	1,357	2,750.69	
2006	Underground	Phased Released	2	11.06	1.000%	1.25	4.000%	0.02	0.08	0.15	0.44	13,800.00	0.50	1,049.32	28,320	389	659.92	
2007	Underground	Phased Released	4	77.48	1.000%	1.25	5.000%	0.04	0.20	1.07	3.87	13,800.00	0.50	7,350.92	226,440	3,114	4,237.37	
2008	Underground	Phased Released	2	54.60	1.000%	1.25	5.000%	0.02	0.10	0.75	2.73	13,800.00	0.50	5,180.18	72,624	999	4,181.60	
2009	Underground	Phased Released	0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2010	Underground	Phased Released	1	25.60	1.000%	1.25	5.000%	0.01	0.05	0.35	1.28	13,800.00	0.50	2,428.80	78,000	1,073	1,356.30	
2011	Underground	Phased Released	2	62.76	1.000%	1.25	5.000%	0.02	0.10	0.86	3.14	13,800.00	0.50	5,954.36	171,560	2,359	3,595.41	
2012	Underground	Phased Released	0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2013	Underground	Phased Released	0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2014	Underground	Phased Released	0	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2015	Underground	Phased Released	0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2016	Underground	Phased Released	0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2017	Underground	Phased Released	0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
TOTAL			255	18,947.74				1.58	11.86	106.79	919.60			736,861.01	28,211,977	127,726	609,552.95	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Underground
June 30, 2017
As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
1961	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$13,800.00	1.00	\$0.00	\$0	\$0	\$0.00
1962	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1963	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1964	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1965	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1966	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1967	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1968	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1969	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1970	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1971	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1972	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1973	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1974	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1975	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1976	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1977	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1978	Underground	Active	1.90	117.08	0.010%	1.00	5.000%	0.00	0.09	0.01	5.85	13,800.00	1.00	161.56	503,390	50	111.22
1979	Underground	Active	2.85	619.21	0.010%	0.48	5.000%	0.00	0.14	0.03	30.96	13,800.00	1.00	408.64	5,391,317	258	150.82
1980	Underground	Active	4.75	278.98	0.010%	1.03	5.000%	0.00	0.24	0.03	13.95	13,800.00	1.00	395.18	1,068,050	110	285.55
1981	Underground	Active	2.85	188.10	0.010%	0.37	5.000%	0.00	0.14	0.01	9.41	13,800.00	1.00	96.14	602,578	22	73.82
1982	Underground	Active	6.65	305.94	0.010%	1.12	5.000%	0.00	0.33	0.03	15.30	13,800.00	1.00	474.34	736,357	83	391.61
1983	Underground	Active	11.40	5,310.68	0.010%	0.27	5.000%	0.00	0.57	0.14	265.53	13,800.00	1.00	1,996.25	19,250,364	524	1,471.90
1984	Underground	Active	1.90	358.23	0.010%	0.32	5.000%	0.00	0.09	0.01	17.91	13,800.00	1.00	160.51	3,906,873	127	33.66
1985	Underground	Active	1.90	19.99	0.010%	1.25	5.000%	0.00	0.09	0.00	1.00	13,800.00	1.00	34.47	48,394	6	28.43
1986	Underground	Active	1.90	30.68	0.010%	1.25	5.000%	0.00	0.09	0.00	1.53	13,800.00	1.00	52.92	59,273	7	45.52
1987	Underground	Active	3.80	226.49	0.010%	1.01	5.000%	0.00	0.19	0.02	11.32	13,800.00	1.00	315.58	700,729	71	244.83
1988	Underground	Active	0.94	4.86	0.010%	1.25	5.000%	0.00	0.05	0.00	0.24	13,800.00	1.00	8.38	13,072	2	6.74
1989	Underground	Active	1.88	76.39	1.000%	1.04	5.000%	0.02	0.09	0.79	3.82	13,800.00	1.00	10,915.39	180,432	1,868	9,047.21
1990	Underground	Active	2.82	207.90	1.000%	0.39	5.000%	0.03	0.14	0.82	10.39	13,800.00	1.00	11,317.54	625,084	2,466	8,851.69
1991	Underground	Active	3.76	612.22	1.000%	0.49	5.000%	0.04	0.19	2.97	30.61	13,800.00	1.00	41,008.22	3,598,011	17,464	23,544.05
1992	Underground	Active	7.52	220.66	1.000%	1.05	5.000%	0.08	0.38	2.31	11.03	13,800.00	1.00	31,848.54	1,147,900	12,006	19,842.78
1993	Underground	Active	3.76	549.25	1.000%	0.45	5.000%	0.04	0.19	2.48	27.46	13,800.00	1.00	34,178.64	1,833,455	8,267	25,911.18
1994	Underground	Active	8.55	97.64	1.000%	1.25	5.000%	0.09	0.43	1.22	4.88	13,800.00	1.00	16,842.88	259,634	3,245	13,597.46
1995	Underground	Active	1.90	96.05	1.000%	1.03	4.000%	0.02	0.08	0.99	3.84	13,800.00	1.00	13,629.65	289,725	2,979	10,650.34
1996	Underground	Active	9.49	143.76	1.100%	1.19	4.000%	0.10	0.38	1.88	5.75	13,800.00	1.00	26,008.29	413,692	5,424	20,584.77
1997	Underground	Active	9.49	361.32	1.100%	0.60	4.000%	0.10	0.38	2.39	14.45	13,800.00	1.00	32,963.53	2,093,640	13,841	19,122.81
1998	Underground	Active	3.80	104.06	1.100%	1.03	4.000%	0.04	0.15	1.17	4.16	13,800.00	1.00	16,192.11	403,795	4,553	11,638.90
1999	Underground	Active	9.49	223.33	1.100%	1.07	4.000%	0.10	0.38	2.62	8.93	13,800.00	1.00	36,170.14	678,700	7,965	28,204.69
2000	Underground	Active	7.59	120.19	1.100%	1.17	4.000%	0.08	0.30	1.55	4.81	13,800.00	1.00	21,429.03	333,436	4,308	17,121.25
2001	Underground	Active	4.75	60.63	1.100%	1.10	4.000%	0.05	0.19	0.73	2.43	13,800.00	1.00	10,111.39	168,657	2,038	8,073.14
2002	Underground	Active	8.54	553.29	1.100%	0.66	4.000%	0.09	0.34	4.02	22.13	13,800.00	1.00	55,459.51	2,093,364	15,205	40,254.48
2003	Underground	Active	9.49	577.46	1.100%	0.41	4.000%	0.10	0.38	2.61	23.10	13,800.00	1.00	36,026.65	2,910,622	13,159	22,868.15
2004	Underground	Active	7.59	907.58	1.100%	0.72	4.000%	0.08	0.30	7.17	36.30	13,800.00	1.00	98,914.67	9,325,226	73,647	25,267.67
2005	Underground	Active	9.49	215.38	1.100%	1.08	4.000%	0.10	0.38	2.56	8.62	13,800.00	1.00	35,265.68	655,390	7,776	27,489.41
2006	Underground	Active	6.64	171.28	1.100%	1.06	4.000%	0.07	0.27	2.00	6.85	13,800.00	1.00	27,582.44	567,302	6,620	20,962.31
2007	Underground	Active	6.57	466.98	1.100%	0.82	4.000%	0.07	0.26	4.20	18.68	13,800.00	1.00	57,916.24	1,437,206	12,916	44,999.75
2008	Underground	Active	6.57	255.35	1.100%	1.04	5.000%	0.07	0.33	2.93	12.77	13,800.00	1.00	40,500.42	764,274	8,784	31,716.36
2009	Underground	Active	6.57	54.25	1.100%	1.25	5.000%	0.07	0.33	0.75	2.71	13,800.00	1.00	10,293.24	169,832	2,335	7,958.05
2010	Underground	Active	11.27	264.43	1.100%	1.11	5.000%	0.12	0.56	3.22	13.22	13,800.00	1.00	44,466.76	806,531	9,828	34,638.59
2011	Underground	Active	6.57	81.54	1.100%	1.25	5.000%	0.07	0.33	1.12	4.08	13,800.00	1.00	15,471.84	253,190	3,481	11,990.47
2012	Underground	Active	9.39	213.20	1.100%	1.12	5.000%	0.10	0.47	2.63	10.66	13,800.00	1.00	36,296.89	630,366	7,777	28,520.05
2013	Underground	Active	17.84	525.58	1.100%	1.04	5.000%	0.20	0.89	6.04	26.28	13,800.00	1.00	83,330.85	2,098,921	24,115	59,216.26
2014	Underground	Active	12.21	211.63	1.100%	1.14	5.000%	0.13	0.61	2.66	10.58	13,800.00	1.00	36,712.74	645,107	8,109	28,603.42
2015	Underground	Active	12.00	177.90	1.100%	1.23	5.000%	0.13	0.60	2.40	8.90	13,800.00	1.00	33,120.86	512,880	6,919	26,201.56
2016	Underground	Active	6.00	33.45	0.000%	1.25	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	94,880	0	0.00
2017	Underground	Active	2.00	22.30	0.000%	1.25	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	58,920	0	0.00
TOTAL			254.38	15,065.22				2.23	11.37	66.53	710.46			918,078.13	67,330,568	288,357	629,720.90

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Underground
June 30, 2017
As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
1961	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$13,800.00	1.00	\$0.00	\$0	\$0	\$0.00
1962	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1963	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1964	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1965	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1966	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1967	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1968	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1969	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1970	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1971	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1972	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1973	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1974	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1975	Underground	Inactive	0.96	99.16	0.010%	1.00	4.000%	0.00	0.04	0.01	3.97	13,800.00	1.00	136.84	345,245	35	102.31
1976	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1977	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1978	Underground	Inactive	0.95	21.87	0.010%	1.25	5.000%	0.00	0.05	0.00	1.09	13,800.00	1.00	37.72	80,510	10	27.66
1979	Underground	Inactive	0.95	76.42	0.010%	1.00	5.000%	0.00	0.05	0.01	3.82	13,800.00	1.00	105.46	155,784	16	89.88
1980	Underground	Inactive	0.95	43.42	0.010%	1.00	5.000%	0.00	0.05	0.00	2.17	13,800.00	1.00	59.92	311,478	31	28.77
1981	Underground	Inactive	0.95	65.58	0.010%	1.00	5.000%	0.00	0.05	0.01	3.28	13,800.00	1.00	90.50	153,985	15	75.10
1982	Underground	Inactive	4.75	394.29	0.010%	1.05	5.000%	0.00	0.24	0.04	19.71	13,800.00	1.00	570.57	914,584	96	474.66
1983	Underground	Inactive	7.60	980.01	0.010%	0.65	5.000%	0.00	0.38	0.06	49.00	13,800.00	1.00	875.05	3,367,462	218	657.16
1984	Underground	Inactive	3.80	342.82	0.010%	0.58	5.000%	0.00	0.19	0.02	17.14	13,800.00	1.00	276.28	1,002,621	59	217.73
1985	Underground	Inactive	0.95	41.36	0.010%	1.00	5.000%	0.00	0.05	0.00	2.07	13,800.00	1.00	57.07	110,869	11	45.99
1986	Underground	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1987	Underground	Inactive	3.80	106.42	0.010%	0.99	5.000%	0.00	0.19	0.01	5.32	13,800.00	1.00	145.66	1,195,427	119	27.09
1988	Underground	Inactive	1.88	188.99	0.010%	0.75	5.000%	0.00	0.09	0.01	9.45	13,800.00	1.00	196.30	1,801,744	136	60.69
1989	Underground	Inactive	2.82	98.37	1.000%	1.01	5.000%	0.03	0.14	0.99	4.92	13,800.00	1.00	13,710.92	349,751	3,533	10,178.40
1990	Underground	Inactive	0.94	131.70	1.000%	0.25	5.000%	0.01	0.05	0.33	6.59	13,800.00	1.00	4,543.74	10,737,475	26,844	0.00
1991	Underground	Inactive	1.88	13.14	1.000%	1.25	5.000%	0.02	0.09	0.16	0.66	13,800.00	1.00	2,267.30	28,559	357	1,910.32
1992	Underground	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1993	Underground	Inactive	5.64	278.42	1.000%	1.04	5.000%	0.06	0.28	2.91	13.92	13,800.00	1.00	40,146.03	939,497	9,817	30,329.39
1994	Underground	Inactive	2.85	329.88	1.000%	0.47	5.000%	0.03	0.14	1.57	16.49	13,800.00	1.00	21,609.73	927,934	4,405	17,204.84
1995	Underground	Inactive	7.59	291.50	1.000%	1.09	4.000%	0.08	0.30	3.18	11.66	13,800.00	1.00	43,843.57	829,732	9,043	34,800.41
1996	Underground	Inactive	3.80	87.31	1.100%	1.09	4.000%	0.04	0.15	1.04	3.49	13,800.00	1.00	14,392.90	297,286	3,551	10,841.51
1997	Underground	Inactive	7.59	325.18	1.100%	1.07	4.000%	0.08	0.30	3.83	13.01	13,800.00	1.00	52,819.45	1,166,671	13,732	39,087.12
1998	Underground	Inactive	8.54	405.49	1.100%	1.03	4.000%	0.09	0.34	4.60	16.22	13,800.00	1.00	63,528.00	1,104,813	12,543	50,985.19
1999	Underground	Inactive	2.85	283.22	1.100%	0.45	4.000%	0.03	0.11	1.39	11.33	13,800.00	1.00	19,157.45	894,992	4,387	14,770.67
2000	Underground	Inactive	4.75	130.46	1.100%	1.09	4.000%	0.05	0.19	1.57	5.22	13,800.00	1.00	21,604.67	450,330	5,404	16,200.74
2001	Underground	Inactive	0.00	0.00	1.100%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
2002	Underground	Inactive	4.75	264.38	1.100%	1.09	4.000%	0.05	0.19	3.16	10.58	13,800.00	1.00	43,622.20	656,061	7,844	35,778.11
2003	Underground	Inactive	3.80	134.23	1.100%	1.06	4.000%	0.04	0.15	1.56	5.37	13,800.00	1.00	21,544.70	428,952	4,989	16,555.70
2004	Underground	Inactive	4.75	155.76	1.100%	1.06	4.000%	0.05	0.19	1.82	6.23	13,800.00	1.00	25,123.88	475,378	5,556	19,567.52
2005	Underground	Inactive	3.80	71.81	1.100%	1.25	4.000%	0.04	0.15	0.99	2.87	13,800.00	1.00	13,626.12	200,998	2,764	10,862.40
2006	Underground	Inactive	6.64	287.70	1.100%	1.03	4.000%	0.07	0.27	3.26	11.51	13,800.00	1.00	44,935.56	1,000,348	11,322	33,613.47
2007	Underground	Inactive	3.76	47.59	1.100%	1.25	4.000%	0.04	0.15	0.65	1.90	13,800.00	1.00	9,030.12	143,006	1,966	7,063.79
2008	Underground	Inactive	10.33	158.91	1.100%	1.19	5.000%	0.11	0.52	2.09	7.95	13,800.00	1.00	28,818.66	472,113	6,204	22,614.41
2009	Underground	Inactive	6.57	180.00	1.100%	1.11	5.000%	0.07	0.33	2.21	9.00	13,800.00	1.00	30,450.07	587,114	7,197	23,252.93
2010	Underground	Inactive	4.70	85.66	1.100%	1.25	5.000%	0.05	0.23	1.18	4.28	13,800.00	1.00	16,253.51	236,227	3,248	13,005.40
2011	Underground	Inactive	6.57	149.67	1.100%	1.16	5.000%	0.07	0.33	1.92	7.48	13,800.00	1.00	26,464.84	397,639	5,095	21,369.79
2012	Underground	Inactive	1.88	22.52	1.100%	1.25	5.000%	0.02	0.09	0.31	1.13	13,800.00	1.00	4,272.57	79,650	1,095	3,177.38
2013	Underground	Inactive	0.94	12.86	1.100%	1.25	5.000%	0.01	0.05	0.18	0.64	13,800.00	1.00	2,440.96	33,690	463	1,977.72
2014	Underground	Inactive	0.94	11.24	1.100%	1.25	5.000%	0.01	0.05	0.15	0.56	13,800.00	1.00	2,131.84	34,558	475	1,656.67
2015	Underground	Inactive	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
2016	Underground	Inactive	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
2017	Underground	Inactive	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
TOTAL			136.19	6,317.34		1.18		6.17	41.22	290.03		568,890.14	31,912,483	152,579	438,610.91		

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Underground
June 30, 2017
As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment										Avg Recl Cost per Acre	Adjustment		Adjustment		Net Cost
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Factor Permit Status		Gross Cost	Current Security Amount	Forfeited Security Amount		
(1)	(2)	(3)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	
1961	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$13,800.00	0.50	\$0.00	\$0	\$0	\$0.00	
1962	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1963	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1964	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1965	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1966	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1967	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1968	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1969	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1970	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1971	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1972	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1973	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1974	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1975	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1976	Underground	Phased Released	0.96	21.63	0.010%	1.25	4.000%	0.00	0.04	0.00	0.87	13,800.00	0.50	18.65	72,951	9	9.53	
1977	Underground	Phased Released	2.85	23.87	0.010%	1.25	4.000%	0.00	0.11	0.00	0.95	13,800.00	0.50	20.59	38,583	5	15.77	
1978	Underground	Phased Released	3.80	34.51	0.010%	1.20	5.000%	0.00	0.19	0.00	1.73	13,800.00	0.50	28.68	421,458	51	0.00	
1979	Underground	Phased Released	7.60	121.87	0.010%	1.15	5.000%	0.00	0.38	0.01	6.09	13,800.00	0.50	96.93	209,216	24	72.81	
1980	Underground	Phased Released	6.65	109.53	0.010%	0.95	5.000%	0.00	0.33	0.01	5.48	13,800.00	0.50	71.53	1,155,311	109	0.00	
1981	Underground	Phased Released	18.05	725.54	0.010%	0.87	5.000%	0.00	0.90	0.06	36.28	13,800.00	0.50	434.89	2,080,606	181	254.15	
1982	Underground	Phased Released	9.50	130.59	0.010%	1.22	5.000%	0.00	0.47	0.02	6.53	13,800.00	0.50	109.84	988,733	121	0.00	
1983	Underground	Phased Released	20.90	1,677.95	0.010%	0.67	5.000%	0.00	1.04	0.11	83.90	13,800.00	0.50	770.68	5,231,543	348	422.45	
1984	Underground	Phased Released	5.70	1,075.68	0.010%	0.58	5.000%	0.00	0.28	0.06	53.78	13,800.00	0.50	427.31	3,759,524	216	210.87	
1985	Underground	Phased Released	7.60	316.57	0.010%	0.70	5.000%	0.00	0.38	0.02	15.83	13,800.00	0.50	152.25	1,322,055	92	60.10	
1986	Underground	Phased Released	3.80	84.94	0.010%	1.25	5.000%	0.00	0.19	0.01	4.25	13,800.00	0.50	73.26	151,781	19	54.29	
1987	Underground	Phased Released	13.30	338.14	0.010%	1.18	5.000%	0.00	0.66	0.04	16.91	13,800.00	0.50	275.61	1,113,901	132	144.03	
1988	Underground	Phased Released	12.22	239.14	0.010%	1.24	5.000%	0.00	0.61	0.03	11.96	13,800.00	0.50	204.16	512,176	63	140.79	
1989	Underground	Phased Released	11.28	171.49	1.000%	1.25	5.000%	0.11	0.56	2.14	8.57	13,800.00	0.50	14,790.80	344,440	4,306	10,485.30	
1990	Underground	Phased Released	4.70	33.40	1.000%	1.25	5.000%	0.05	0.24	0.42	1.67	13,800.00	0.50	2,881.02	81,211	1,015	1,865.89	
1991	Underground	Phased Released	9.40	9,715.65	1.000%	0.62	5.000%	0.09	0.47	59.78	485.78	13,800.00	0.50	412,505.21	986,818	6,072	406,433.01	
1992	Underground	Phased Released	3.76	79.30	1.000%	1.13	5.000%	0.04	0.19	0.90	3.97	13,800.00	0.50	6,180.10	157,886	1,783	4,396.86	
1993	Underground	Phased Released	7.52	199.82	1.000%	1.14	5.000%	0.08	0.38	2.28	9.99	13,800.00	0.50	15,750.12	478,194	5,463	10,287.59	
1994	Underground	Phased Released	13.30	576.65	1.000%	1.06	5.000%	0.13	0.67	6.11	28.83	13,800.00	0.50	42,165.87	1,475,856	15,640	26,525.57	
1995	Underground	Phased Released	14.24	311.81	1.000%	1.15	4.000%	0.14	0.57	3.58	12.47	13,800.00	0.50	24,682.84	1,125,393	12,911	11,771.88	
1996	Underground	Phased Released	7.59	174.26	1.100%	1.25	4.000%	0.08	0.30	2.40	6.97	13,800.00	0.50	16,533.05	222,111	3,054	13,479.02	
1997	Underground	Phased Released	7.59	290.95	1.100%	1.11	4.000%	0.08	0.30	3.54	11.64	13,800.00	0.50	24,426.32	748,746	9,110	15,316.08	
1998	Underground	Phased Released	5.69	90.90	1.100%	1.11	4.000%	0.06	0.23	1.11	3.64	13,800.00	0.50	7,653.65	387,019	4,723	2,931.14	
1999	Underground	Phased Released	8.50	283.91	1.100%	0.46	4.000%	0.04	0.15	1.45	11.36	13,800.00	0.50	9,990.22	1,095,146	5,585	4,405.31	
2000	Underground	Phased Released	3.84	432.84	1.100%	1.04	4.000%	0.09	0.34	4.96	17.31	13,800.00	0.50	34,200.27	1,311,570	15,019	19,181.21	
2001	Underground	Phased Released	5.69	141.63	1.100%	1.17	4.000%	0.06	0.23	1.82	5.67	13,800.00	0.50	12,532.52	311,434	3,994	8,538.62	
2002	Underground	Phased Released	7.59	186.94	1.100%	1.07	4.000%	0.08	0.30	2.19	7.48	13,800.00	0.50	15,141.31	1,374,508	16,135	0.00	
2003	Underground	Phased Released	1.90	19.18	1.100%	1.25	4.000%	0.02	0.08	0.26	0.77	13,800.00	0.50	1,819.75	48,721	670	1,149.84	
2004	Underground	Phased Released	2.85	54.82	1.100%	1.16	4.000%	0.03	0.11	0.70	2.19	13,800.00	0.50	4,843.73	210,983	2,702	2,142.19	
2005	Underground	Phased Released	2.85	40.97	1.100%	1.25	4.000%	0.03	0.11	0.56	1.64	13,800.00	0.50	3,887.28	97,363	1,339	2,548.54	
2006	Underground	Phased Released	1.90	10.47	1.100%	1.25	4.000%	0.02	0.08	0.14	0.42	13,800.00	0.50	992.92	27,931	384	608.87	
2007	Underground	Phased Released	3.76	72.54	1.100%	1.25	4.000%	0.04	0.15	1.00	2.90	13,800.00	0.50	6,882.29	223,326	3,071	3,811.56	
2008	Underground	Phased Released	1.88	51.12	1.100%	1.25	5.000%	0.02	0.09	0.70	2.56	13,800.00	0.50	4,849.94	71,625	985	3,865.09	
2009	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2010	Underground	Phased Released	0.94	23.97	1.100%	1.25	5.000%	0.01	0.05	0.33	1.20	13,800.00	0.50	2,273.96	76,928	1,058	1,216.21	
2011	Underground	Phased Released	1.88	58.76	1.100%	1.25	5.000%	0.02	0.09	0.81	2.94	13,800.00	0.50	5,574.76	169,201	2,327	3,248.25	
2012	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2013	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2014	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2015	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2016	Underground	Phased Released	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2017	Underground	Phased Released	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
TOTAL			241.56	17,921.35				1.36	11.30	97.57	874.50			673,242.31	28,084,250	118,713	555,592.81	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Underground
June 30, 2017
As of Fiscal Year End
2020

Permit Issue Year	Mine Type	Mine Status	Adjustment										Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres							
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	
1961	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$13,800.00	1.00	\$0.00	\$0	\$0	\$0.00	
1962	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1963	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1964	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1965	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1966	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1967	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1968	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1969	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1970	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1971	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1972	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1973	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1974	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1975	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1976	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1977	Underground	Active	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00	
1978	Underground	Active	1.80	111.21	0.010%	1.00	4.000%	0.00	0.07	0.01	4.45	13,800.00	1.00	153.47	503,339	50	103.14	
1979	Underground	Active	2.71	588.22	0.010%	0.48	5.000%	0.00	0.14	0.03	29.41	13,800.00	1.00	388.19	5,391,059	258	130.38	
1980	Underground	Active	4.51	265.00	0.010%	1.03	5.000%	0.00	0.23	0.03	13.25	13,800.00	1.00	375.38	1,067,941	110	265.76	
1981	Underground	Active	2.71	178.69	0.010%	0.37	5.000%	0.00	0.14	0.01	8.93	13,800.00	1.00	91.32	602,555	22	69.01	
1982	Underground	Active	6.32	290.61	0.010%	1.12	5.000%	0.00	0.32	0.03	14.53	13,800.00	1.00	450.57	736,275	83	367.85	
1983	Underground	Active	10.83	5,045.00	0.010%	0.27	5.000%	0.00	0.54	0.14	252.25	13,800.00	1.00	1,896.38	19,249,840	524	1,372.04	
1984	Underground	Active	1.80	340.31	0.010%	0.32	5.000%	0.00	0.09	0.01	17.02	13,800.00	1.00	152.48	3,906,746	127	25.63	
1985	Underground	Active	1.80	18.98	0.010%	1.25	5.000%	0.00	0.09	0.00	0.95	13,800.00	1.00	32.75	48,388	6	26.70	
1986	Underground	Active	1.80	29.14	0.010%	1.25	5.000%	0.00	0.09	0.00	1.46	13,800.00	1.00	50.27	59,265	7	42.86	
1987	Underground	Active	3.61	215.15	0.010%	1.01	5.000%	0.00	0.18	0.02	10.76	13,800.00	1.00	299.77	700,658	71	229.02	
1988	Underground	Active	0.89	4.61	0.010%	1.25	5.000%	0.00	0.04	0.00	0.23	13,800.00	1.00	7.96	13,070	2	6.32	
1989	Underground	Active	1.77	71.78	0.010%	1.04	5.000%	0.00	0.09	0.01	3.59	13,800.00	1.00	102.57	178,564	18	84.08	
1990	Underground	Active	2.65	196.68	1.000%	0.39	5.000%	0.03	0.13	0.78	9.83	13,800.00	1.00	10,707.02	622,619	2,456	8,250.90	
1991	Underground	Active	3.53	578.64	1.000%	0.49	5.000%	0.04	0.18	2.81	28.93	13,800.00	1.00	38,758.77	3,580,546	17,379	21,379.36	
1992	Underground	Active	7.07	207.32	1.000%	1.05	5.000%	0.07	0.35	2.17	10.37	13,800.00	1.00	29,923.01	1,135,895	11,880	18,042.82	
1993	Underground	Active	3.53	519.32	1.000%	0.45	5.000%	0.04	0.18	2.34	25.97	13,800.00	1.00	32,315.59	1,825,188	8,230	24,085.40	
1994	Underground	Active	8.04	91.54	1.000%	1.25	5.000%	0.08	0.40	1.14	4.58	13,800.00	1.00	15,790.20	256,388	3,205	12,585.35	
1995	Underground	Active	1.80	91.22	1.000%	1.03	5.000%	0.02	0.09	0.94	4.56	13,800.00	1.00	12,944.31	286,746	2,949	9,995.63	
1996	Underground	Active	9.01	136.12	1.000%	1.19	4.000%	0.09	0.36	1.62	5.44	13,800.00	1.00	22,388.17	408,269	4,866	17,522.33	
1997	Underground	Active	9.01	344.48	1.100%	0.60	4.000%	0.10	0.36	2.28	13.78	13,800.00	1.00	31,427.07	2,079,799	13,749	17,677.85	
1998	Underground	Active	3.60	98.72	1.100%	1.03	4.000%	0.04	0.14	1.11	3.95	13,800.00	1.00	15,361.84	399,242	4,502	10,859.97	
1999	Underground	Active	9.01	211.77	1.100%	1.07	4.000%	0.10	0.36	2.49	8.47	13,800.00	1.00	34,298.83	670,735	7,872	26,426.86	
2000	Underground	Active	7.20	113.83	1.100%	1.17	4.000%	0.08	0.29	1.47	4.55	13,800.00	1.00	20,295.02	329,128	4,252	16,042.90	
2001	Underground	Active	4.50	57.47	1.100%	1.10	4.000%	0.05	0.18	0.69	2.30	13,800.00	1.00	9,584.74	166,619	2,014	7,571.12	
2002	Underground	Active	8.11	527.14	1.100%	0.66	4.000%	0.09	0.32	3.83	21.09	13,800.00	1.00	52,838.30	2,078,159	15,095	37,743.72	
2003	Underground	Active	9.01	551.75	1.100%	0.41	4.000%	0.10	0.36	2.49	22.07	13,800.00	1.00	34,422.71	2,897,463	13,099	21,323.70	
2004	Underground	Active	7.20	864.11	1.100%	0.72	4.000%	0.08	0.29	6.82	34.56	13,800.00	1.00	94,176.90	9,251,579	73,065	21,111.53	
2005	Underground	Active	9.01	204.21	1.100%	1.08	4.000%	0.10	0.36	2.42	8.17	13,800.00	1.00	33,436.63	647,614	7,684	25,752.62	
2006	Underground	Active	6.30	162.43	1.100%	1.06	4.000%	0.07	0.25	1.90	6.50	13,800.00	1.00	26,157.27	560,682	6,543	19,614.40	
2007	Underground	Active	6.24	444.10	1.100%	0.82	4.000%	0.07	0.25	3.99	17.76	13,800.00	1.00	55,079.08	1,424,290	12,800	42,278.68	
2008	Underground	Active	6.17	239.65	1.100%	1.04	4.000%	0.07	0.25	2.75	9.59	13,800.00	1.00	38,009.92	755,490	8,683	29,326.81	
2009	Underground	Active	6.17	50.79	1.100%	1.25	5.000%	0.07	0.31	0.70	2.54	13,800.00	1.00	9,637.05	167,497	2,303	7,333.96	
2010	Underground	Active	10.58	247.98	1.100%	1.11	5.000%	0.12	0.53	3.02	12.40	13,800.00	1.00	41,701.57	796,702	9,708	31,993.15	
2011	Underground	Active	6.17	76.34	1.100%	1.25	5.000%	0.07	0.31	1.05	3.82	13,800.00	1.00	14,485.51	249,709	3,433	11,052.01	
2012	Underground	Active	8.82	199.91	1.100%	1.12	5.000%	0.10	0.44	2.47	10.00	13,800.00	1.00	34,034.25	622,589	7,681	26,353.35	
2013	Underground	Active	16.75	493.27	1.100%	1.04	5.000%	0.18	0.84	5.67	24.66	13,800.00	1.00	78,206.92	2,074,806	23,838	54,369.38	
2014	Underground	Active	11.46	198.39	1.100%	1.14	5.000%	0.13	0.57	2.49	9.92	13,800.00	1.00	34,415.60	636,998	8,007	26,408.23	
2015	Underground	Active	11.27	166.60	1.100%	1.23	5.000%	0.12	0.56	2.25	8.33	13,800.00	1.00	31,017.98	505,961	6,826	24,192.03	
2016	Underground	Active	6.00	33.45	1.100%	1.25	5.000%	0.07	0.30	0.46	1.67	13,800.00	1.00	6,347.14	94,880	1,305	5,042.54	
2017	Underground	Active	2.00	22.30	0.000%	1.25	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	58,920	0	0.00	
TOTAL			240.78	14,288.23				2.15	10.98	62.45	672.63			861,762.48	67,042,211	284,703	577,059.41	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Underground
June 30, 2017
As of Fiscal Year End
2020

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
1961	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$13,800.00	1.00	\$0.00	\$0	\$0	\$0.00
1962	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1963	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1964	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1965	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1966	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1967	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1968	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1969	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1970	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1971	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1972	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1973	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1974	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1975	Underground	Inactive	0.92	95.18	0.010%	1.00	4.000%	0.00	0.04	0.01	3.81	13,800.00	1.00	131.35	345,211	35	96.83
1976	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1977	Underground	Inactive	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1978	Underground	Inactive	0.90	20.77	0.010%	1.25	4.000%	0.00	0.04	0.00	0.83	13,800.00	1.00	35.83	80,500	10	25.77
1979	Underground	Inactive	0.90	72.59	0.010%	1.00	5.000%	0.00	0.05	0.01	3.63	13,800.00	1.00	100.18	155,769	16	84.60
1980	Underground	Inactive	0.90	41.24	0.010%	1.00	5.000%	0.00	0.05	0.00	2.06	13,800.00	1.00	56.92	311,447	31	25.77
1981	Underground	Inactive	0.90	62.30	0.010%	1.00	5.000%	0.00	0.05	0.01	3.11	13,800.00	1.00	85.97	153,969	15	70.57
1982	Underground	Inactive	4.51	374.54	0.010%	1.05	5.000%	0.00	0.23	0.04	18.73	13,800.00	1.00	541.98	914,488	96	446.09
1983	Underground	Inactive	7.22	930.95	0.010%	0.65	5.000%	0.00	0.36	0.06	46.55	13,800.00	1.00	831.24	3,367,244	218	613.37
1984	Underground	Inactive	3.61	325.66	0.010%	0.58	5.000%	0.00	0.18	0.02	16.28	13,800.00	1.00	262.45	1,002,563	59	203.90
1985	Underground	Inactive	0.90	39.29	0.010%	1.00	5.000%	0.00	0.05	0.00	1.96	13,800.00	1.00	54.22	110,858	11	43.13
1986	Underground	Inactive	0.00	0.00	0.010%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1987	Underground	Inactive	3.61	101.09	0.010%	0.99	5.000%	0.00	0.18	0.01	5.05	13,800.00	1.00	138.36	1,195,309	119	19.81
1988	Underground	Inactive	1.79	179.53	0.010%	0.75	5.000%	0.00	0.09	0.01	8.98	13,800.00	1.00	186.47	1,801,608	136	50.87
1989	Underground	Inactive	2.65	92.46	0.010%	1.01	5.000%	0.00	0.13	0.01	4.62	13,800.00	1.00	128.87	346,219	35	93.90
1990	Underground	Inactive	0.88	124.79	1.000%	0.25	5.000%	0.01	0.04	0.31	6.24	13,800.00	1.00	4,305.19	10,710,631	26,777	0.00
1991	Underground	Inactive	1.77	12.32	1.000%	1.25	5.000%	0.02	0.09	0.15	0.62	13,800.00	1.00	2,125.59	28,202	353	1,773.07
1992	Underground	Inactive	0.00	0.00	1.000%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
1993	Underground	Inactive	5.30	261.59	1.000%	1.04	5.000%	0.05	0.27	2.73	13.08	13,800.00	1.00	37,719.25	929,680	9,714	28,005.18
1994	Underground	Inactive	2.68	311.82	1.000%	0.47	5.000%	0.03	0.13	1.48	15.59	13,800.00	1.00	20,426.66	923,529	4,384	16,042.69
1995	Underground	Inactive	7.21	276.67	1.000%	1.09	5.000%	0.07	0.36	3.02	13.83	13,800.00	1.00	41,611.98	820,689	8,945	32,667.38
1996	Underground	Inactive	3.60	82.77	1.000%	1.09	4.000%	0.04	0.14	0.90	3.31	13,800.00	1.00	12,404.77	293,734	3,190	9,214.80
1997	Underground	Inactive	7.20	308.34	1.100%	1.07	4.000%	0.08	0.29	3.63	12.33	13,800.00	1.00	50,084.96	1,152,939	13,571	36,514.26
1998	Underground	Inactive	8.11	384.67	1.100%	1.03	4.000%	0.09	0.32	4.37	15.39	13,800.00	1.00	60,265.66	1,092,270	12,400	47,865.24
1999	Underground	Inactive	2.70	270.51	1.100%	0.45	4.000%	0.03	0.11	1.33	10.82	13,800.00	1.00	18,297.26	890,605	4,365	13,931.97
2000	Underground	Inactive	4.50	123.68	1.100%	1.09	4.000%	0.05	0.18	1.48	4.95	13,800.00	1.00	20,481.23	444,927	5,339	15,142.14
2001	Underground	Inactive	0.00	0.00	1.100%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
2002	Underground	Inactive	4.50	250.64	1.100%	1.09	4.000%	0.05	0.18	3.00	10.03	13,800.00	1.00	41,355.75	648,217	7,750	33,605.44
2003	Underground	Inactive	3.60	127.30	1.100%	1.06	4.000%	0.04	0.14	1.48	5.09	13,800.00	1.00	20,432.34	423,963	4,931	15,501.36
2004	Underground	Inactive	4.50	147.71	1.100%	1.06	4.000%	0.05	0.18	1.73	5.91	13,800.00	1.00	23,825.27	469,822	5,491	18,333.86
2005	Underground	Inactive	3.60	67.95	1.100%	1.25	4.000%	0.04	0.14	0.93	2.72	13,800.00	1.00	12,893.72	198,234	2,726	10,168.00
2006	Underground	Inactive	6.30	272.93	1.100%	1.03	4.000%	0.07	0.25	3.09	10.92	13,800.00	1.00	42,629.55	989,026	11,194	31,435.60
2007	Underground	Inactive	3.56	45.03	1.100%	1.25	4.000%	0.04	0.14	0.62	1.80	13,800.00	1.00	8,544.76	141,040	1,939	6,605.46
2008	Underground	Inactive	9.70	148.88	1.100%	1.19	4.000%	0.11	0.39	1.96	5.96	13,800.00	1.00	26,999.01	465,909	6,123	20,876.29
2009	Underground	Inactive	6.17	168.79	1.100%	1.11	5.000%	0.07	0.31	2.07	8.44	13,800.00	1.00	28,554.30	579,916	7,109	21,445.38
2010	Underground	Inactive	4.41	80.20	1.100%	1.25	5.000%	0.05	0.22	1.10	4.01	13,800.00	1.00	15,217.35	232,978	3,203	12,013.90
2011	Underground	Inactive	6.17	140.27	1.100%	1.16	5.000%	0.07	0.31	1.80	7.01	13,800.00	1.00	24,802.49	392,544	5,030	19,772.74
2012	Underground	Inactive	1.76	21.08	1.100%	1.25	5.000%	0.02	0.09	0.29	1.05	13,800.00	1.00	4,000.19	78,554	1,080	2,920.07
2013	Underground	Inactive	0.88	12.04	1.100%	1.25	5.000%	0.01	0.04	0.17	0.60	13,800.00	1.00	2,285.35	33,227	457	1,828.48
2014	Underground	Inactive	0.88	10.52	1.100%	1.25	5.000%	0.01	0.04	0.14	0.53	13,800.00	1.00	1,995.94	34,083	469	1,527.29
2015	Underground	Inactive	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
2016	Underground	Inactive	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
2017	Underground	Inactive	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	1.00	0.00	0	0	0.00
TOTAL			128.84	5,986.09				1.08	5.80	37.96	275.84			523,812.35	31,759,904	147,319	398,965.20

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Underground
June 30, 2017
As of Fiscal Year End
2020

Permit Issue Year	Mine Type	Mine Status	Adjustment										Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres							
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)	
1961	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	\$13,800.00	0.50	\$0.00	\$0	\$0	\$0.00	
1962	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1963	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1964	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1965	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1966	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1967	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1968	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1969	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1970	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1971	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1972	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1973	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1974	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1975	Underground	Phased Released	0.00	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
1976	Underground	Phased Released	0.92	20.76	0.010%	1.25	4.000%	0.00	0.04	0.00	0.83	13,800.00	0.50	17.90	72,942	9	8.79	
1977	Underground	Phased Released	2.74	22.91	0.010%	1.25	4.000%	0.00	0.11	0.00	0.92	13,800.00	0.50	19.76	38,578	5	14.94	
1978	Underground	Phased Released	3.61	32.78	0.010%	1.20	4.000%	0.00	0.14	0.00	1.31	13,800.00	0.50	27.25	421,407	51	0.00	
1979	Underground	Phased Released	7.22	115.76	0.010%	1.15	5.000%	0.00	0.36	0.01	5.79	13,800.00	0.50	92.07	209,192	24	67.96	
1980	Underground	Phased Released	6.32	104.05	0.010%	0.95	5.000%	0.00	0.32	0.01	5.20	13,800.00	0.50	67.95	1,155,201	109	0.00	
1981	Underground	Phased Released	17.14	689.20	0.010%	0.87	5.000%	0.00	0.86	0.06	34.46	13,800.00	0.50	413.11	2,080,426	181	232.38	
1982	Underground	Phased Released	9.02	124.04	0.010%	1.22	5.000%	0.00	0.45	0.02	6.20	13,800.00	0.50	104.34	988,613	121	0.00	
1983	Underground	Phased Released	19.85	1,593.94	0.010%	0.67	5.000%	0.00	0.99	0.11	79.70	13,800.00	0.50	732.10	5,231,195	348	383.88	
1984	Underground	Phased Released	5.41	1,021.83	0.010%	0.58	5.000%	0.00	0.27	0.06	51.09	13,800.00	0.50	405.92	3,759,307	216	189.49	
1985	Underground	Phased Released	7.22	300.72	0.010%	0.70	5.000%	0.00	0.36	0.02	15.04	13,800.00	0.50	144.63	1,321,963	92	52.49	
1986	Underground	Phased Released	3.61	80.68	0.010%	1.25	5.000%	0.00	0.18	0.01	4.03	13,800.00	0.50	69.59	151,762	19	50.62	
1987	Underground	Phased Released	12.63	321.19	0.010%	1.18	5.000%	0.00	0.63	0.04	16.06	13,800.00	0.50	261.80	1,113,770	132	130.23	
1988	Underground	Phased Released	11.61	227.16	0.010%	1.24	5.000%	0.00	0.58	0.03	11.36	13,800.00	0.50	193.92	512,112	63	130.56	
1989	Underground	Phased Released	10.60	160.77	0.010%	1.25	5.000%	0.00	0.53	0.02	8.04	13,800.00	0.50	138.66	340,135	43	96.15	
1990	Underground	Phased Released	4.42	31.32	1.000%	1.25	5.000%	0.04	0.22	0.39	1.57	13,800.00	0.50	2,700.96	80,195	1,002	1,698.51	
1991	Underground	Phased Released	8.84	9,170.08	1.000%	0.62	5.000%	0.09	0.44	56.43	458.50	13,800.00	0.50	389,341.67	980,746	6,035	383,306.84	
1992	Underground	Phased Released	3.53	74.44	1.000%	1.13	5.000%	0.04	0.18	0.84	3.72	13,800.00	0.50	5,801.29	156,103	1,763	4,038.20	
1993	Underground	Phased Released	7.07	187.55	1.000%	1.14	5.000%	0.07	0.35	2.14	9.38	13,800.00	0.50	14,782.69	472,732	5,400	9,382.57	
1994	Underground	Phased Released	12.50	541.70	1.000%	1.06	5.000%	0.13	0.63	5.74	27.09	13,800.00	0.50	39,610.73	1,460,216	15,475	24,136.17	
1995	Underground	Phased Released	13.52	295.76	1.000%	1.15	5.000%	0.14	0.68	3.39	14.79	13,800.00	0.50	23,412.36	1,112,482	12,763	10,649.51	
1996	Underground	Phased Released	7.20	164.89	1.000%	1.25	4.000%	0.07	0.29	2.06	6.60	13,800.00	0.50	14,222.18	219,057	2,738	11,483.96	
1997	Underground	Phased Released	7.20	275.77	1.100%	1.11	4.000%	0.08	0.29	3.36	11.03	13,800.00	0.50	23,152.06	739,635	8,999	14,152.67	
1998	Underground	Phased Released	5.40	86.16	1.100%	1.11	4.000%	0.06	0.22	1.05	3.45	13,800.00	0.50	7,254.11	382,297	4,665	2,589.23	
1999	Underground	Phased Released	3.60	271.11	1.100%	0.46	4.000%	0.04	0.14	1.38	10.84	13,800.00	0.50	9,539.66	1,089,562	5,556	3,983.24	
2000	Underground	Phased Released	8.11	410.57	1.100%	1.04	4.000%	0.09	0.32	4.70	16.42	13,800.00	0.50	32,440.63	1,296,551	14,847	17,593.55	
2001	Underground	Phased Released	5.40	134.15	1.100%	1.17	4.000%	0.06	0.22	1.72	5.37	13,800.00	0.50	11,870.50	307,440	3,943	7,927.82	
2002	Underground	Phased Released	7.20	177.27	1.100%	1.07	4.000%	0.08	0.29	2.08	7.09	13,800.00	0.50	14,357.92	1,358,373	15,945	0.00	
2003	Underground	Phased Released	1.80	18.15	1.100%	1.25	4.000%	0.02	0.07	0.25	0.73	13,800.00	0.50	1,721.94	48,051	661	1,061.24	
2004	Underground	Phased Released	2.70	51.93	1.100%	1.16	4.000%	0.03	0.11	0.66	2.08	13,800.00	0.50	4,587.96	208,282	2,667	1,921.01	
2005	Underground	Phased Released	2.70	38.77	1.100%	1.25	4.000%	0.03	0.11	0.53	1.55	13,800.00	0.50	3,678.34	96,024	1,320	2,358.01	
2006	Underground	Phased Released	1.80	9.90	1.100%	1.25	4.000%	0.02	0.07	0.14	0.40	13,800.00	0.50	939.55	27,547	379	560.78	
2007	Underground	Phased Released	3.56	68.64	1.100%	1.25	4.000%	0.04	0.14	0.94	2.75	13,800.00	0.50	6,512.37	220,256	3,029	3,483.85	
2008	Underground	Phased Released	1.76	47.86	1.100%	1.25	4.000%	0.02	0.07	0.66	1.91	13,800.00	0.50	4,540.76	70,641	971	3,569.45	
2009	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2010	Underground	Phased Released	0.88	22.44	1.100%	1.25	5.000%	0.01	0.04	0.31	1.12	13,800.00	0.50	2,129.00	75,870	1,043	1,085.79	
2011	Underground	Phased Released	1.76	55.01	1.100%	1.25	5.000%	0.02	0.09	0.76	2.75	13,800.00	0.50	5,219.37	166,875	2,295	2,924.85	
2012	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2013	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2014	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2015	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2016	Underground	Phased Released	0.00	0.00	1.100%	0.00	5.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
2017	Underground	Phased Released	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	13,800.00	0.50	0.00	0	0	0.00	
TOTAL			228.89	16,949.28				1.18	10.79	89.93	829.15			620,505.04	27,965,537	112,909	509,264.75	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Other
June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Permit Count	Current Bonded Acres	As of Fiscal Year End 2018												
					Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Land Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost	Current Security Amount	Forfeited Security Amount	Net Cost
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)
1961 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	\$9,100.00	1.00	\$0.00	\$0	\$0	\$0.00
1962 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1963 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1964 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1965 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1966 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1967 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1968 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1969 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1970 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1971 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1972 Other	Active	1	20.00	0.010%	1.25	0.100%	0.00	0.00	0.00	0.00	0.02	9,100.00	1.00	22.75	20,000	3	20.25
1973 Other	Active	1	28.52	0.010%	1.25	0.100%	0.00	0.00	0.00	0.00	0.03	9,100.00	1.00	32.44	29,000	4	28.82
1974 Other	Active	0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1975 Other	Active	2	34.08	0.010%	1.25	0.100%	0.00	0.00	0.00	0.00	0.03	9,100.00	1.00	38.77	20,500	3	36.20
1976 Other	Active	2	125.00	0.010%	1.25	0.100%	0.00	0.00	0.00	0.02	0.13	9,100.00	1.00	142.19	125,000	16	126.56
1977 Other	Active	1	65.00	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	0.07	9,100.00	1.00	73.94	65,000	8	65.81
1978 Other	Active	1	12.76	0.010%	1.25	0.100%	0.00	0.00	0.00	0.00	0.01	9,100.00	1.00	14.51	13,000	2	12.89
1979 Other	Active	5	139.84	0.010%	1.25	0.100%	0.00	0.01	0.02	0.02	0.14	9,100.00	1.00	159.07	149,000	19	140.44
1980 Other	Active	11	550.72	0.010%	1.09	3.000%	0.00	0.33	0.06	0.06	16.52	9,100.00	1.00	545.62	904,640	98	447.13
1981 Other	Active	27	3,036.00	0.010%	0.52	3.000%	0.00	0.81	0.16	0.16	91.08	9,100.00	1.00	1,432.00	14,210,347	737	695.45
1982 Other	Active	15	1,734.38	0.010%	0.57	3.000%	0.00	0.45	0.10	0.10	52.03	9,100.00	1.00	906.24	5,152,605	296	610.38
1983 Other	Active	28	2,870.67	0.010%	0.64	3.000%	0.00	0.84	0.18	0.18	86.12	9,100.00	1.00	1,680.45	7,345,120	472	1,207.95
1984 Other	Active	9	1,498.93	0.010%	0.44	3.000%	0.00	0.27	0.07	0.07	44.97	9,100.00	1.00	598.76	6,052,960	266	333.05
1985 Other	Active	9	1,449.90	0.500%	0.56	3.000%	0.05	0.27	4.09	43.50	9,100.00	1.00	37,264.01	4,568,500	12,903	24,361.21	
1986 Other	Active	10	1,114.64	0.500%	0.53	3.000%	0.05	0.30	2.98	33.44	9,100.00	1.00	27,089.45	3,281,840	8,765	18,324.66	
1987 Other	Active	4	105.36	0.500%	1.06	3.000%	0.02	0.12	0.56	3.16	9,100.00	1.00	5,085.31	235,800	1,251	3,834.63	
1988 Other	Active	6	312.00	0.500%	1.10	3.000%	0.03	0.18	1.72	9.36	9,100.00	1.00	15,666.22	316,000	1,744	13,922.58	
1989 Other	Active	10	351.06	0.500%	1.25	3.000%	0.05	0.30	2.19	10.53	9,100.00	1.00	19,966.54	363,000	2,269	17,697.79	
1990 Other	Active	3	56.15	0.500%	1.25	3.000%	0.02	0.09	0.35	1.68	9,100.00	1.00	3,193.53	62,000	388	2,806.03	
1991 Other	Active	4	164.28	0.500%	1.17	3.000%	0.02	0.12	0.96	4.93	9,100.00	1.00	8,722.92	224,200	1,308	7,414.73	
1992 Other	Active	7	883.76	0.500%	0.54	3.000%	0.04	0.21	2.37	26.51	9,100.00	1.00	21,543.50	3,191,280	8,549	12,994.69	
1993 Other	Active	9	1,293.06	0.500%	0.55	3.000%	0.05	0.27	3.58	38.79	9,100.00	1.00	32,593.08	3,831,260	10,612	21,980.84	
1994 Other	Active	8	1,090.23	0.500%	0.45	3.000%	0.04	0.24	2.45	32.71	9,100.00	1.00	22,284.19	3,272,980	7,352	14,932.61	
1995 Other	Active	6	1,634.41	0.500%	0.31	3.000%	0.03	0.18	2.54	49.03	9,100.00	1.00	23,115.02	8,367,592	13,004	10,110.56	
1996 Other	Active	3	1,185.33	0.500%	0.30	3.000%	0.02	0.09	1.78	35.56	9,100.00	1.00	16,210.40	6,524,530	9,805	6,405.07	
1997 Other	Active	8	1,162.12	0.500%	0.73	5.000%	0.04	0.40	4.24	58.11	9,100.00	1.00	38,626.32	2,413,760	8,816	29,810.04	
1998 Other	Active	4	1,151.98	0.500%	0.30	5.000%	0.02	0.20	1.72	57.60	9,100.00	1.00	15,651.97	3,828,560	5,716	9,935.63	
1999 Other	Active	1	58.70	0.500%	1.25	3.000%	0.01	0.03	0.37	1.76	9,100.00	1.00	3,338.56	59,000	369	2,969.81	
2000 Other	Active	4	438.48	0.500%	0.80	3.000%	0.02	0.12	1.74	13.15	9,100.00	1.00	15,878.91	819,360	3,261	12,618.26	
2001 Other	Active	4	24.48	0.500%	1.22	3.000%	0.02	0.12	0.15	0.73	9,100.00	1.00	1,363.33	128,113	784	579.28	
2002 Other	Active	4	694.36	0.500%	0.31	3.000%	0.02	0.12	1.06	20.83	9,100.00	1.00	9,671.13	4,387,067	6,715	2,956.45	
2003 Other	Active	9	1,102.24	0.500%	0.54	3.000%	0.05	0.27	2.98	33.07	9,100.00	1.00	27,150.26	5,127,360	13,879	13,271.51	
2004 Other	Active	4	375.01	0.500%	0.77	3.000%	0.02	0.12	1.44	11.25	9,100.00	1.00	13,122.20	1,168,232	4,492	8,630.08	
2005 Other	Active	4	619.46	0.500%	0.59	4.000%	0.02	0.16	1.84	24.78	9,100.00	1.00	16,701.79	1,083,840	3,211	13,490.55	
2006 Other	Active	7	301.44	0.500%	1.11	4.000%	0.04	0.28	1.68	12.06	9,100.00	1.00	15,289.45	632,240	3,524	11,765.49	
2007 Other	Active	5	238.77	0.500%	1.13	3.000%	0.03	0.15	1.35	7.16	9,100.00	1.00	12,255.08	408,120	2,302	9,953.20	
2008 Other	Active	8	596.48	0.500%	0.72	3.000%	0.04	0.24	2.14	17.89	9,100.00	1.00	19,458.87	1,680,000	6,023	13,436.19	
2009 Other	Active	3	273.55	0.500%	1.01	3.000%	0.02	0.09	1.38	8.21	9,100.00	1.00	12,594.40	494,080	2,500	10,094.65	
2010 Other	Active	6	854.22	0.500%	0.53	2.000%	0.03	0.12	2.27	17.08	9,100.00	1.00	20,685.67	3,959,800	10,537	10,148.31	
2011 Other	Active	3	118.05	0.500%	1.25	1.000%	0.02	0.03	0.74	1.18	9,100.00	1.00	6,714.09	122,000	763	5,951.59	
2012 Other	Active	11	789.96	0.500%	0.79	1.000%	0.06	0.11	3.11	7.90	9,100.00	1.00	28,285.45	1,720,900	6,771	21,514.15	
2013 Other	Active	11	846.95	0.500%	0.76	0.500%	0.06	0.06	3.20	4.23	9,100.00	1.00	29,101.21	2,484,780	9,382	19,719.11	
2014 Other	Active	3	44.65	0.500%	1.25	0.500%	0.02	0.02	0.28	0.22	9,100.00	1.00	2,539.47	60,092	376	2,163.89	
2015 Other	Active	5	169.35	0.000%	1.12	0.000%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	700,200	0	0.00
2016 Other	Active	7	170.63	0.000%	0.44	0.000%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	6,583,600	0	0.00
2017 Other	Active	2	65.90	0.000%	1.20	0.000%	0.00	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	197,260	0	0.00
TOTAL			295	29,852.86				0.90	7.71	57.89	877.58			526,809.07	106,384,518	169,291	357,518.57

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Land, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Permit Count	Current Bonded Acres	As of Fiscal Year End 2018										Gross Cost	Current Security Amount	Forfeited Security Amount	Net Cost
					Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Land Avg Recl Cost per Acre	Adjustment Factor Permit Status					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
1961 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	\$9,100.00	1.00	\$0.00	\$0	\$0	\$0.00	
1962 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1963 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1964 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1965 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1966 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1967 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1968 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1969 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1970 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1971 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1972 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1973 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1974 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1975 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1976 Other	Inactive		3	281.18	0.010%	1.02	0.100%	0.00	0.00	0.03	0.28	9,100.00	1.00	261.22	284,000	29	232.22	
1977 Other	Inactive		1	52.00	0.010%	1.25	0.100%	0.00	0.00	0.01	0.05	9,100.00	1.00	59.15	52,000	7	52.65	
1978 Other	Inactive		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1979 Other	Inactive		1	9.75	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	1.00	11.09	10,000	1	9.84	
1980 Other	Inactive		3	470.23	0.010%	0.54	3.000%	0.00	0.09	0.03	14.11	9,100.00	1.00	232.99	934,060	51	182.14	
1981 Other	Inactive		6	1,160.41	0.010%	0.35	3.000%	0.00	0.18	0.04	34.81	9,100.00	1.00	373.08	3,101,480	110	263.51	
1982 Other	Inactive		3	48.25	0.010%	1.25	3.000%	0.00	0.09	0.01	1.45	9,100.00	1.00	54.88	84,520	11	44.32	
1983 Other	Inactive		11	1,713.51	0.010%	0.50	3.000%	0.00	0.33	0.09	51.41	9,100.00	1.00	779.60	11,349,515	567	212.16	
1984 Other	Inactive		1	26.00	0.010%	1.25	3.000%	0.00	0.03	0.00	0.78	9,100.00	1.00	29.58	58,240	7	22.30	
1985 Other	Inactive		3	394.50	0.500%	0.45	3.000%	0.02	0.09	0.89	11.84	9,100.00	1.00	8,104.69	1,208,400	2,728	5,376.60	
1986 Other	Inactive		2	612.21	0.500%	0.41	3.000%	0.01	0.06	1.24	18.37	9,100.00	1.00	11,317.22	2,264,780	4,601	6,716.52	
1987 Other	Inactive		1	20.21	0.500%	1.25	3.000%	0.01	0.03	0.13	0.61	9,100.00	1.00	1,149.44	21,000	131	1,018.19	
1988 Other	Inactive		5	491.54	0.500%	0.55	3.000%	0.03	0.15	1.35	14.75	9,100.00	1.00	12,302.63	1,106,440	3,043	9,259.47	
1989 Other	Inactive		5	700.45	0.500%	0.44	3.000%	0.03	0.15	1.53	21.01	9,100.00	1.00	13,898.09	2,211,360	4,822	9,076.44	
1990 Other	Inactive		3	362.69	0.500%	0.50	3.000%	0.02	0.09	0.91	10.88	9,100.00	1.00	8,254.27	1,169,120	2,924	5,330.38	
1991 Other	Inactive		3	50.33	0.500%	1.25	3.000%	0.02	0.09	0.31	1.51	9,100.00	1.00	2,862.52	54,000	338	2,525.02	
1992 Other	Inactive		4	215.12	0.500%	1.17	3.000%	0.02	0.12	1.26	6.45	9,100.00	1.00	11,454.06	297,040	1,738	9,716.05	
1993 Other	Inactive		6	892.07	0.500%	0.52	3.000%	0.03	0.18	2.34	26.76	9,100.00	1.00	21,278.64	4,990,640	13,082	8,197.07	
1994 Other	Inactive		5	770.77	0.500%	0.41	3.000%	0.03	0.15	1.56	23.12	9,100.00	1.00	14,222.96	2,305,000	4,674	9,548.89	
1995 Other	Inactive		2	171.34	0.500%	1.06	3.000%	0.01	0.06	0.91	5.14	9,100.00	1.00	8,264.62	503,120	2,667	5,597.80	
1996 Other	Inactive		3	233.39	0.500%	1.02	3.000%	0.02	0.09	1.19	7.00	9,100.00	1.00	10,835.37	234,000	1,194	9,641.56	
1997 Other	Inactive		3	90.95	0.500%	1.23	5.000%	0.02	0.15	0.56	4.55	9,100.00	1.00	5,105.10	270,000	1,665	3,439.68	
1998 Other	Inactive		0	0.00	0.500%	0.00	5.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1999 Other	Inactive		2	233.33	0.500%	0.63	3.000%	0.01	0.06	0.73	7.00	9,100.00	1.00	6,642.15	1,193,440	3,733	2,908.81	
2000 Other	Inactive		2	472.50	0.500%	0.25	3.000%	0.01	0.06	0.59	14.18	9,100.00	1.00	5,374.69	1,617,820	2,022	3,352.41	
2001 Other	Inactive		2	188.75	0.500%	0.43	3.000%	0.01	0.06	0.41	5.66	9,100.00	1.00	3,694.03	919,820	1,978	1,715.81	
2002 Other	Inactive		3	107.86	0.500%	1.25	3.000%	0.02	0.09	0.67	3.24	9,100.00	1.00	6,134.54	124,000	775	5,359.54	
2003 Other	Inactive		2	30.80	0.500%	1.25	3.000%	0.01	0.06	0.19	0.92	9,100.00	1.00	1,751.75	32,000	200	1,551.75	
2004 Other	Inactive		0	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
2005 Other	Inactive		0	0.00	0.500%	0.00	4.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
2006 Other	Inactive		2	53.90	0.500%	1.25	4.000%	0.01	0.08	0.34	2.16	9,100.00	1.00	3,065.56	113,360	709	2,357.06	
2007 Other	Inactive		1	118.83	0.500%	1.00	3.000%	0.01	0.03	0.59	3.56	9,100.00	1.00	5,406.77	399,840	1,999	3,407.57	
2008 Other	Inactive		1	9.90	0.500%	1.25	3.000%	0.01	0.03	0.06	0.30	9,100.00	1.00	563.06	10,000	63	500.56	
2009 Other	Inactive		0	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
2010 Other	Inactive		1	133.81	0.500%	1.00	2.000%	0.01	0.02	0.67	2.68	9,100.00	1.00	6,088.36	137,000	685	5,403.36	
2011 Other	Inactive		1	66.26	0.500%	1.00	1.000%	0.01	0.01	0.33	0.66	9,100.00	1.00	3,014.83	230,480	1,152	1,862.43	
2012 Other	Inactive		1	191.70	0.500%	1.00	1.000%	0.01	0.01	0.96	1.92	9,100.00	1.00	8,722.35	316,520	1,583	7,139.75	
2013 Other	Inactive		1	57.00	0.500%	1.25	0.500%	0.01	0.01	0.36	0.29	9,100.00	1.00	3,241.88	57,000	356	2,885.63	
2014 Other	Inactive		0	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
2015 Other	Inactive		0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
2016 Other	Inactive		0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
2017 Other	Inactive		0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
TOTAL			93.00	10,431.54				0.32	2.65	20.28	297.44			184,551.16	37,659,995	59,644	124,907.46	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Land, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Permit Count	Current Bonded Acres	As of Fiscal Year End 2018										Gross Cost	Current Security Amount	Forfeited Security Amount	Net Cost
					Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Land Avg Recl Cost per Acre	Adjustment Factor Permit Status					
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)	(18)	
1961 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	\$9,100.00	0.50	\$0.00	\$0	\$0	\$0.00	
1962 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1963 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1964 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1965 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1966 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1967 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1968 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1969 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1970 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1971 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1972 Other	Phased Released		1	9.00	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	0.50	5.12	10,000	1	3.87	
1973 Other	Phased Released		1	27.00	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	0.50	15.36	27,000	3	11.98	
1974 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1975 Other	Phased Released		1	34.00	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	0.50	19.34	34,000	4	15.09	
1976 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1977 Other	Phased Released		0	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1978 Other	Phased Released		2	58.69	0.010%	1.25	0.100%	0.00	0.00	0.01	0.06	9,100.00	0.50	33.38	48,000	6	27.38	
1979 Other	Phased Released		1	10.00	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	0.50	5.69	10,000	1	4.44	
1980 Other	Phased Released		2	1,007.91	0.010%	1.25	3.000%	0.00	0.06	0.13	30.24	9,100.00	0.50	573.25	20,000	3	570.75	
1981 Other	Phased Released		20	1,892.78	0.010%	1.00	3.000%	0.00	0.60	0.19	56.78	9,100.00	0.50	857.37	3,502,409	349	508.69	
1982 Other	Phased Released		9	457.88	0.010%	1.25	3.000%	0.00	0.27	0.06	13.74	9,100.00	0.50	260.42	289,480	36	224.23	
1983 Other	Phased Released		27	3,078.26	0.010%	0.70	3.000%	0.00	0.81	0.21	92.35	9,100.00	0.50	976.18	9,968,180	695	281.43	
1984 Other	Phased Released		6	476.66	0.010%	0.77	3.000%	0.00	0.18	0.04	14.30	9,100.00	0.50	167.57	1,424,520	110	57.51	
1985 Other	Phased Released		7	398.19	0.500%	1.18	3.000%	0.04	0.21	2.35	11.95	9,100.00	0.50	10,677.30	717,424	4,228	6,449.29	
1986 Other	Phased Released		4	245.30	0.500%	1.04	3.000%	0.02	0.12	1.27	7.36	9,100.00	0.50	5,796.66	646,100	3,356	2,441.07	
1987 Other	Phased Released		2	272.00	0.500%	0.43	3.000%	0.01	0.06	0.59	8.16	9,100.00	0.50	2,684.50	806,440	1,749	935.24	
1988 Other	Phased Released		1	14.00	0.500%	1.25	3.000%	0.01	0.03	0.09	0.42	9,100.00	0.50	398.13	14,000	88	310.63	
1989 Other	Phased Released		2	49.49	0.500%	1.03	3.000%	0.01	0.06	0.25	1.48	9,100.00	0.50	1,156.33	148,000	760	396.33	
1990 Other	Phased Released		1	54.00	0.500%	1.25	3.000%	0.01	0.03	0.34	1.62	9,100.00	0.50	1,535.63	30,600	191	1,344.38	
1991 Other	Phased Released		3	327.16	0.500%	0.54	3.000%	0.02	0.09	0.88	9.81	9,100.00	0.50	4,025.61	900,944	2,436	1,589.16	
1992 Other	Phased Released		0	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1993 Other	Phased Released		1	102.94	0.500%	1.00	3.000%	0.01	0.03	0.51	3.09	9,100.00	0.50	2,341.89	103,000	515	1,826.89	
1994 Other	Phased Released		1	61.00	0.500%	1.00	3.000%	0.01	0.03	0.31	1.83	9,100.00	0.50	1,387.75	165,920	830	558.15	
1995 Other	Phased Released		0	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1996 Other	Phased Released		2	183.32	0.500%	1.04	3.000%	0.01	0.06	0.96	5.50	9,100.00	0.50	4,347.75	521,600	2,719	1,628.93	
1997 Other	Phased Released		0	0.00	0.500%	0.00	5.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
1998 Other	Phased Released		1	106.00	0.500%	1.00	5.000%	0.01	0.05	0.53	5.30	9,100.00	0.50	2,411.50	356,160	1,781	630.70	
1999 Other	Phased Released		1	179.00	0.500%	0.25	3.000%	0.01	0.03	0.22	5.37	9,100.00	0.50	1,018.06	744,640	931	87.26	
2000 Other	Phased Released		1	89.00	0.500%	1.25	3.000%	0.01	0.03	0.56	2.67	9,100.00	0.50	2,530.94	36,880	231	2,300.44	
2001 Other	Phased Released		1	16.66	0.500%	1.25	3.000%	0.01	0.03	0.10	0.50	9,100.00	0.50	473.77	17,000	106	367.52	
2002 Other	Phased Released		0	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2003 Other	Phased Released		0	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2004 Other	Phased Released		0	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2005 Other	Phased Released		0	0.00	0.500%	0.00	4.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2006 Other	Phased Released		0	0.00	0.500%	0.00	4.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2007 Other	Phased Released		0	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2008 Other	Phased Released		1	3.60	0.500%	1.25	3.000%	0.01	0.03	0.02	0.11	9,100.00	0.50	102.38	8,000	50	52.38	
2009 Other	Phased Released		1	29.85	0.500%	1.25	3.000%	0.01	0.03	0.19	0.90	9,100.00	0.50	848.86	88,800	555	293.86	
2010 Other	Phased Released		2	41.99	0.500%	1.01	2.000%	0.01	0.04	0.21	0.84	9,100.00	0.50	968.75	130,560	662	306.74	
2011 Other	Phased Released		0	0.00	0.500%	0.00	1.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2012 Other	Phased Released		2	6.75	0.500%	1.25	1.000%	0.01	0.02	0.04	0.07	9,100.00	0.50	191.95	20,000	125	66.95	
2013 Other	Phased Released		1	1.00	0.500%	1.25	0.500%	0.01	0.01	0.01	0.01	9,100.00	0.50	28.44	10,000	63	0.00	
2014 Other	Phased Released		0	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2015 Other	Phased Released		0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2016 Other	Phased Released		0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
2017 Other	Phased Released		0	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00	
TOTAL			105	9,233.43				0.18	2.91	10.07	274.52			45,839.84	20,799,657	22,583	23,291.26	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017

Other

June 30, 2017

As of Fiscal Year End

2019

Permit Issue Year	Mine Type	Mine Status	Adjustment										Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Permit Status						
(1)	(2)	(3)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)	
1961	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	\$9,100.00	1.00	\$0.00	\$0	\$0	\$0.00	
1962	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1963	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1964	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1965	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1966	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1967	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1968	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1969	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1970	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1971	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1972	Other	Active	1.00	19.98	0.010%	1.25	0.100%	0.00	0.00	0.00	0.02	9,100.00	1.00	22.72	19,998	2	20.22	
1973	Other	Active	1.00	28.49	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	1.00	32.41	28,996	4	28.78	
1974	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00	
1975	Other	Active	2.00	34.04	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	1.00	38.72	20,497	3	36.16	
1976	Other	Active	2.00	124.86	0.010%	1.25	0.100%	0.00	0.00	0.02	0.12	9,100.00	1.00	142.03	124,984	16	126.40	
1977	Other	Active	1.00	64.93	0.010%	1.25	0.100%	0.00	0.00	0.01	0.06	9,100.00	1.00	73.85	64,992	8	65.73	
1978	Other	Active	1.00	12.75	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	1.00	14.50	12,998	2	12.87	
1979	Other	Active	4.99	139.68	0.010%	1.25	0.100%	0.00	0.00	0.02	0.14	9,100.00	1.00	158.89	148,981	19	140.27	
1980	Other	Active	10.67	534.14	0.010%	1.09	0.100%	0.00	0.01	0.06	0.53	9,100.00	1.00	529.20	904,542	98	430.72	
1981	Other	Active	26.19	2,944.76	0.010%	0.52	3.000%	0.00	0.79	0.15	88.34	9,100.00	1.00	1,388.97	14,209,610	737	652.45	
1982	Other	Active	14.55	1,682.25	0.010%	0.57	3.000%	0.00	0.44	0.10	50.47	9,100.00	1.00	879.00	5,152,309	296	583.16	
1983	Other	Active	27.16	2,784.37	0.010%	0.64	3.000%	0.00	0.81	0.18	83.53	9,100.00	1.00	1,629.93	7,344,648	472	1,157.46	
1984	Other	Active	8.73	1,453.90	0.010%	0.44	3.000%	0.00	0.26	0.06	43.62	9,100.00	1.00	580.77	6,052,694	266	315.08	
1985	Other	Active	8.69	1,402.31	0.010%	0.56	3.000%	0.00	0.26	0.08	42.07	9,100.00	1.00	720.82	4,555,597	257	463.49	
1986	Other	Active	9.65	1,078.22	0.500%	0.53	3.000%	0.05	0.29	2.88	32.35	9,100.00	1.00	26,204.42	3,273,075	8,741	17,463.03	
1987	Other	Active	3.86	101.64	0.500%	1.06	3.000%	0.02	0.12	0.54	3.05	9,100.00	1.00	4,905.78	234,549	1,244	3,661.74	
1988	Other	Active	5.79	300.92	0.500%	1.10	3.000%	0.03	0.17	1.66	9.03	9,100.00	1.00	15,109.79	314,256	1,734	13,375.78	
1989	Other	Active	9.65	338.33	0.500%	1.25	3.000%	0.05	0.29	2.11	10.15	9,100.00	1.00	19,242.75	360,731	2,255	16,988.18	
1990	Other	Active	2.90	54.11	0.500%	1.25	3.000%	0.01	0.09	0.34	1.62	9,100.00	1.00	3,077.77	61,613	385	2,692.69	
1991	Other	Active	3.86	158.39	0.500%	1.17	3.000%	0.02	0.12	0.92	4.75	9,100.00	1.00	8,410.33	222,892	1,301	7,109.78	
1992	Other	Active	6.76	854.88	0.500%	0.54	3.000%	0.03	0.20	2.29	25.65	9,100.00	1.00	20,839.48	3,182,731	8,526	12,313.58	
1993	Other	Active	8.69	1,250.69	0.500%	0.55	3.000%	0.04	0.26	3.46	37.52	9,100.00	1.00	31,525.00	3,820,648	10,583	20,942.16	
1994	Other	Active	7.72	1,055.07	0.500%	0.45	3.000%	0.04	0.23	2.37	31.65	9,100.00	1.00	21,565.61	3,265,628	7,335	14,230.55	
1995	Other	Active	5.79	1,582.84	0.500%	0.31	3.000%	0.03	0.17	2.46	47.49	9,100.00	1.00	22,385.65	8,354,588	12,984	9,401.40	
1996	Other	Active	2.90	1,147.99	0.500%	0.30	3.000%	0.01	0.09	1.73	34.44	9,100.00	1.00	15,699.73	6,514,725	9,791	5,909.13	
1997	Other	Active	7.56	1,099.77	0.500%	0.73	3.000%	0.04	0.23	4.02	32.99	9,100.00	1.00	36,553.92	2,404,944	8,784	27,769.85	
1998	Other	Active	3.78	1,092.66	0.500%	0.30	5.000%	0.02	0.19	1.63	54.63	9,100.00	1.00	14,846.00	3,822,844	5,708	9,138.20	
1999	Other	Active	0.97	56.57	0.500%	1.25	5.000%	0.00	0.05	0.35	2.83	9,100.00	1.00	3,217.54	58,631	366	2,851.09	
2000	Other	Active	3.86	423.58	0.500%	0.80	3.000%	0.02	0.12	1.69	12.71	9,100.00	1.00	15,339.35	816,099	3,248	12,091.68	
2001	Other	Active	3.86	23.60	0.500%	1.22	3.000%	0.02	0.12	0.14	0.71	9,100.00	1.00	1,314.08	127,329	779	534.84	
2002	Other	Active	3.86	672.47	0.500%	0.31	3.000%	0.02	0.12	1.03	20.17	9,100.00	1.00	9,366.20	4,380,352	6,704	2,661.79	
2003	Other	Active	8.69	1,066.19	0.500%	0.54	3.000%	0.04	0.26	2.89	31.99	9,100.00	1.00	26,262.26	5,113,481	13,841	12,421.08	
2004	Other	Active	3.86	362.32	0.500%	0.77	3.000%	0.02	0.12	1.39	10.87	9,100.00	1.00	12,678.08	1,163,740	4,475	8,203.23	
2005	Other	Active	3.82	592.85	0.500%	0.59	3.000%	0.02	0.11	1.76	17.79	9,100.00	1.00	15,984.24	1,080,629	3,202	12,782.51	
2006	Other	Active	6.69	287.70	0.500%	1.11	4.000%	0.03	0.27	1.60	11.51	9,100.00	1.00	14,592.66	628,716	3,504	11,088.33	
2007	Other	Active	4.83	230.26	0.500%	1.13	4.000%	0.02	0.19	1.30	9.25	9,100.00	1.00	11,818.31	405,818	2,289	9,529.41	
2008	Other	Active	7.72	576.45	0.500%	0.72	3.000%	0.04	0.23	2.07	17.29	9,100.00	1.00	18,805.35	1,673,977	6,001	12,804.26	
2009	Other	Active	2.90	263.96	0.500%	1.01	3.000%	0.01	0.09	1.34	7.92	9,100.00	1.00	12,152.85	491,580	2,487	9,665.74	
2010	Other	Active	5.85	834.86	0.500%	0.53	3.000%	0.03	0.18	2.22	25.05	9,100.00	1.00	20,216.91	3,949,263	10,509	9,707.59	
2011	Other	Active	2.96	116.13	0.500%	1.25	2.000%	0.01	0.06	0.73	2.32	9,100.00	1.00	6,604.99	121,238	758	5,847.26	
2012	Other	Active	10.84	778.95	0.500%	0.79	1.000%	0.05	0.11	3.06	7.79	9,100.00	1.00	27,891.30	1,714,129	6,745	21,146.64	
2013	Other	Active	10.89	839.52	0.500%	0.76	1.000%	0.05	0.11	3.17	8.40	9,100.00	1.00	28,845.82	2,475,398	9,347	19,499.15	
2014	Other	Active	2.97	44.15	0.500%	1.25	0.500%	0.01	0.01	0.28	0.22	9,100.00	1.00	2,510.90	59,717	373	2,137.67	
2015	Other	Active	5.00	169.33	0.500%	1.12	0.500%	0.03	0.03	0.95	0.85	9,100.00	1.00	8,659.81	700,200	3,935	4,725.18	
2016	Other	Active	7.00	170.63	0.000%	0.44	0.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	6,583,600	0	0.00	
2017	Other	Active	2.00	65.90	0.000%	1.20	0.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	197,260	0	0.00	
TOTAL			286.39	28,917.39				0.85	7.18	53.06	821.92			482,838.66	106,215,228	160,112	322,726.29	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Other

June 30, 2017
As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
1961	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	\$9,100.00	1.00	\$0.00	\$0	\$0	\$0.00
1962	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1963	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1964	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1965	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1966	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1967	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1968	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1969	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1970	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1971	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1972	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1973	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1974	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1975	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1976	Other	Inactive	3.00	280.87	0.010%	1.02	0.100%	0.00	0.00	0.03	0.28	9,100.00	1.00	260.93	283,971	29	231.94
1977	Other	Inactive	1.00	51.94	0.010%	1.25	0.100%	0.00	0.00	0.01	0.05	9,100.00	1.00	59.08	51,994	6	52.58
1978	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1979	Other	Inactive	1.00	9.74	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	1.00	11.08	9,999	1	9.83
1980	Other	Inactive	2.91	456.10	0.010%	0.54	0.100%	0.00	0.00	0.02	0.46	9,100.00	1.00	225.99	934,009	51	175.14
1981	Other	Inactive	5.82	1,125.56	0.010%	0.35	3.000%	0.00	0.17	0.04	33.77	9,100.00	1.00	361.88	3,101,370	110	252.30
1982	Other	Inactive	2.91	46.80	0.010%	1.25	3.000%	0.00	0.09	0.01	1.40	9,100.00	1.00	53.23	84,509	11	42.67
1983	Other	Inactive	10.67	1,662.02	0.010%	0.50	3.000%	0.00	0.32	0.08	49.86	9,100.00	1.00	756.17	11,348,948	567	188.76
1984	Other	Inactive	0.97	25.22	0.010%	1.25	3.000%	0.00	0.03	0.00	0.76	9,100.00	1.00	28.68	58,233	7	21.40
1985	Other	Inactive	2.90	381.77	0.010%	0.45	3.000%	0.00	0.09	0.02	11.45	9,100.00	1.00	156.86	1,205,672	54	102.43
1986	Other	Inactive	1.93	592.60	0.500%	0.41	3.000%	0.01	0.06	1.20	17.78	9,100.00	1.00	10,954.71	2,260,179	4,591	6,363.36
1987	Other	Inactive	0.97	19.48	0.500%	1.25	3.000%	0.00	0.03	0.12	0.58	9,100.00	1.00	1,107.78	20,869	130	977.35
1988	Other	Inactive	4.83	475.44	0.500%	0.55	3.000%	0.02	0.14	1.31	14.26	9,100.00	1.00	11,899.72	1,103,397	3,035	8,864.92
1989	Other	Inactive	4.83	677.91	0.500%	0.44	3.000%	0.02	0.14	1.48	20.34	9,100.00	1.00	13,450.84	2,206,538	4,811	8,639.70
1990	Other	Inactive	2.90	350.90	0.500%	0.50	3.000%	0.01	0.09	0.88	10.53	9,100.00	1.00	7,986.00	1,166,196	2,917	5,069.42
1991	Other	Inactive	2.90	48.51	0.500%	1.25	3.000%	0.01	0.09	0.30	1.46	9,100.00	1.00	2,758.75	53,663	335	2,423.36
1992	Other	Inactive	3.86	207.41	0.500%	1.17	3.000%	0.02	0.12	1.21	6.22	9,100.00	1.00	11,043.42	295,302	1,728	9,315.58
1993	Other	Inactive	5.79	862.97	0.500%	0.52	3.000%	0.03	0.17	2.26	25.89	9,100.00	1.00	20,584.51	4,977,558	13,047	7,537.23
1994	Other	Inactive	4.83	746.08	0.500%	0.41	3.000%	0.02	0.14	1.51	22.38	9,100.00	1.00	13,767.43	2,300,326	4,665	9,102.84
1995	Other	Inactive	1.93	165.29	0.500%	1.06	3.000%	0.01	0.06	0.88	4.96	9,100.00	1.00	7,972.87	500,453	2,653	5,320.19
1996	Other	Inactive	2.90	225.20	0.500%	1.02	3.000%	0.01	0.09	1.15	6.76	9,100.00	1.00	10,455.03	232,806	1,188	9,267.31
1997	Other	Inactive	2.84	85.84	0.500%	1.23	3.000%	0.01	0.09	0.53	2.58	9,100.00	1.00	4,818.36	268,335	1,655	3,163.21
1998	Other	Inactive	0.00	0.00	0.500%	0.00	5.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1999	Other	Inactive	1.93	225.60	0.500%	0.63	5.000%	0.01	0.10	0.71	11.28	9,100.00	1.00	6,422.11	1,189,707	3,722	2,700.45
2000	Other	Inactive	1.93	457.73	0.500%	0.25	3.000%	0.01	0.06	0.57	13.73	9,100.00	1.00	5,206.73	1,615,798	2,020	3,186.98
2001	Other	Inactive	1.93	182.68	0.500%	0.43	3.000%	0.01	0.06	0.39	5.48	9,100.00	1.00	3,575.27	917,842	1,974	1,601.30
2002	Other	Inactive	2.90	103.95	0.500%	1.25	3.000%	0.01	0.09	0.65	3.12	9,100.00	1.00	5,912.16	123,225	770	5,142.00
2003	Other	Inactive	1.93	29.68	0.500%	1.25	3.000%	0.01	0.06	0.19	0.89	9,100.00	1.00	1,688.25	31,800	199	1,489.50
2004	Other	Inactive	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2005	Other	Inactive	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2006	Other	Inactive	1.91	51.41	0.500%	1.25	4.000%	0.01	0.08	0.32	2.06	9,100.00	1.00	2,923.78	112,652	704	2,219.71
2007	Other	Inactive	0.97	114.67	0.500%	1.00	4.000%	0.00	0.04	0.57	4.59	9,100.00	1.00	5,217.53	397,841	1,989	3,228.32
2008	Other	Inactive	0.97	9.54	0.500%	1.25	3.000%	0.00	0.03	0.06	0.29	9,100.00	1.00	542.65	9,938	62	480.54
2009	Other	Inactive	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2010	Other	Inactive	0.98	130.46	0.500%	1.00	3.000%	0.00	0.03	0.65	3.91	9,100.00	1.00	5,936.15	136,315	682	5,254.57
2011	Other	Inactive	0.99	65.27	0.500%	1.00	2.000%	0.00	0.02	0.33	1.31	9,100.00	1.00	2,969.61	229,328	1,147	1,822.97
2012	Other	Inactive	0.99	188.82	0.500%	1.00	1.000%	0.00	0.01	0.94	1.89	9,100.00	1.00	8,591.51	314,937	1,575	7,016.83
2013	Other	Inactive	0.99	56.36	0.500%	1.25	1.000%	0.00	0.01	0.35	0.56	9,100.00	1.00	3,205.40	56,644	354	2,851.38
2014	Other	Inactive	0.00	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2015	Other	Inactive	0.00	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2016	Other	Inactive	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2017	Other	Inactive	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
TOTAL			90.03	10,113.82				0.30	2.49	18.78	280.87			170,904.46	37,600,351	56,788	114,116.06

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Other

June 30, 2017
As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(19)	(20)	(21)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	(31)	(32)	(33)
1961	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	\$9,100.00	0.50	\$0.00	\$0	\$0	\$0.00
1962	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1963	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1964	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1965	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1966	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1967	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1968	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1969	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1970	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1971	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1972	Other	Phased Released	1.00	8.99	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	0.50	5.11	9,999	1	3.86
1973	Other	Phased Released	1.00	26.97	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	0.50	15.34	26,997	3	11.96
1974	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1975	Other	Phased Released	1.00	33.96	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	0.50	19.32	33,996	4	15.07
1976	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1977	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1978	Other	Phased Released	2.00	58.62	0.010%	1.25	0.100%	0.00	0.00	0.01	0.06	9,100.00	0.50	33.34	47,994	6	27.34
1979	Other	Phased Released	1.00	9.99	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	0.50	5.68	9,999	1	4.43
1980	Other	Phased Released	1.94	977.55	0.010%	1.25	0.100%	0.00	0.00	0.12	0.98	9,100.00	0.50	555.98	19,998	2	553.48
1981	Other	Phased Released	19.40	1,835.81	0.010%	1.00	3.000%	0.00	0.58	0.18	55.07	9,100.00	0.50	831.56	3,502,060	349	482.92
1982	Other	Phased Released	8.73	444.09	0.010%	1.25	3.000%	0.00	0.26	0.06	13.32	9,100.00	0.50	252.57	289,444	36	216.39
1983	Other	Phased Released	26.19	2,985.70	0.010%	0.70	3.000%	0.00	0.79	0.21	89.57	9,100.00	0.50	946.83	9,967,485	695	252.12
1984	Other	Phased Released	5.82	462.32	0.010%	0.77	3.000%	0.00	0.17	0.04	13.87	9,100.00	0.50	162.53	1,424,410	110	52.48
1985	Other	Phased Released	6.76	383.90	0.010%	1.18	3.000%	0.00	0.20	0.05	11.52	9,100.00	0.50	205.88	713,196	84	121.82
1986	Other	Phased Released	3.86	236.67	0.500%	1.04	3.000%	0.02	0.12	1.23	7.10	9,100.00	0.50	5,592.65	642,744	3,338	2,254.49
1987	Other	Phased Released	1.93	263.25	0.500%	0.43	3.000%	0.01	0.06	0.57	7.90	9,100.00	0.50	2,598.14	804,691	1,745	852.67
1988	Other	Phased Released	0.97	13.49	0.500%	1.25	3.000%	0.00	0.03	0.08	0.40	9,100.00	0.50	383.69	13,913	87	296.74
1989	Other	Phased Released	1.93	47.75	0.500%	1.03	3.000%	0.01	0.06	0.25	1.43	9,100.00	0.50	1,115.70	147,240	756	359.60
1990	Other	Phased Released	0.97	52.04	0.500%	1.25	3.000%	0.00	0.03	0.33	1.56	9,100.00	0.50	1,479.96	30,409	190	1,289.90
1991	Other	Phased Released	2.90	316.46	0.500%	0.54	3.000%	0.01	0.09	0.86	9.49	9,100.00	0.50	3,893.96	898,508	2,430	1,464.09
1992	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1993	Other	Phased Released	0.97	99.34	0.500%	1.00	3.000%	0.00	0.03	0.50	2.98	9,100.00	0.50	2,259.92	102,485	512	1,747.49
1994	Other	Phased Released	0.97	58.87	0.500%	1.00	3.000%	0.00	0.03	0.29	1.77	9,100.00	0.50	1,339.18	165,090	825	513.73
1995	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1996	Other	Phased Released	1.93	176.86	0.500%	1.04	3.000%	0.01	0.06	0.92	5.31	9,100.00	0.50	4,194.66	518,881	2,705	1,490.00
1997	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1998	Other	Phased Released	0.95	100.17	0.500%	1.00	5.000%	0.00	0.05	0.50	5.01	9,100.00	0.50	2,278.87	354,379	1,772	506.97
1999	Other	Phased Released	0.97	173.41	0.500%	0.25	5.000%	0.00	0.05	0.22	8.67	9,100.00	0.50	986.25	743,709	930	56.61
2000	Other	Phased Released	0.97	85.77	0.500%	1.25	3.000%	0.00	0.03	0.54	2.57	9,100.00	0.50	2,439.19	36,650	229	2,210.13
2001	Other	Phased Released	0.97	16.06	0.500%	1.25	3.000%	0.00	0.03	0.10	0.48	9,100.00	0.50	456.59	16,894	106	351.01
2002	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2003	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2004	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2005	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2006	Other	Phased Released	0.00	0.00	0.500%	0.00	4.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2007	Other	Phased Released	0.00	0.00	0.500%	0.00	4.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2008	Other	Phased Released	0.97	3.47	0.500%	1.25	3.000%	0.00	0.03	0.02	0.10	9,100.00	0.50	98.66	7,950	50	48.98
2009	Other	Phased Released	0.97	28.77	0.500%	1.25	3.000%	0.00	0.03	0.18	0.86	9,100.00	0.50	818.09	88,245	552	266.56
2010	Other	Phased Released	1.95	40.94	0.500%	1.01	3.000%	0.01	0.06	0.21	1.23	9,100.00	0.50	944.46	129,898	659	285.81
2011	Other	Phased Released	0.00	0.00	0.500%	0.00	2.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2012	Other	Phased Released	1.97	6.64	0.500%	1.25	1.000%	0.01	0.02	0.04	0.07	9,100.00	0.50	188.83	19,875	124	64.62
2013	Other	Phased Released	0.99	0.99	0.500%	1.25	1.000%	0.00	0.01	0.01	0.01	9,100.00	0.50	28.12	9,938	62	0.00
2014	Other	Phased Released	0.00	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2015	Other	Phased Released	0.00	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2016	Other	Phased Released	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2017	Other	Phased Released	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
TOTAL			101.91	8,948.83				0.14	2.81	7.50	241.42			34,131.07	20,777,074	18,364	15,801.29

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Other

June 30, 2017
As of Fiscal Year End
2020

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
1961	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	\$9,100.00	1.00	\$0.00	\$0	\$0	\$0.00
1962	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1963	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1964	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1965	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1966	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1967	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1968	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1969	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1970	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1971	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1972	Other	Active	1.00	19.96	0.010%	1.25	0.100%	0.00	0.00	0.00	0.02	9,100.00	1.00	22.70	19,995	2	20.20
1973	Other	Active	1.00	28.46	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	1.00	32.37	28,993	4	28.74
1974	Other	Active	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1975	Other	Active	2.00	34.00	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	1.00	38.68	20,495	3	36.12
1976	Other	Active	2.00	124.72	0.010%	1.25	0.100%	0.00	0.00	0.02	0.12	9,100.00	1.00	141.87	124,969	16	126.25
1977	Other	Active	1.00	64.85	0.010%	1.25	0.100%	0.00	0.00	0.01	0.06	9,100.00	1.00	73.77	64,984	8	65.65
1978	Other	Active	1.00	12.73	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	1.00	14.48	12,997	2	12.86
1979	Other	Active	4.99	139.53	0.010%	1.25	0.100%	0.00	0.00	0.02	0.14	9,100.00	1.00	158.71	148,963	19	140.09
1980	Other	Active	10.66	533.55	0.010%	1.09	0.100%	0.00	0.01	0.06	0.53	9,100.00	1.00	528.61	904,443	98	430.14
1981	Other	Active	25.40	2,856.27	0.010%	0.52	0.100%	0.00	0.03	0.15	2.86	9,100.00	1.00	1,347.23	14,208,874	736	610.75
1982	Other	Active	14.11	1,631.68	0.010%	0.57	3.000%	0.00	0.42	0.09	48.95	9,100.00	1.00	852.58	5,152,013	296	556.76
1983	Other	Active	26.34	2,700.66	0.010%	0.64	3.000%	0.00	0.79	0.17	81.02	9,100.00	1.00	1,580.92	7,344,175	472	1,108.49
1984	Other	Active	8.47	1,410.22	0.010%	0.44	3.000%	0.00	0.25	0.06	42.31	9,100.00	1.00	563.32	6,052,429	266	297.64
1985	Other	Active	8.42	1,360.16	0.010%	0.56	3.000%	0.00	0.25	0.08	40.80	9,100.00	1.00	699.15	4,555,340	257	441.84
1986	Other	Active	9.31	1,043.00	0.010%	0.53	3.000%	0.00	0.28	0.06	31.29	9,100.00	1.00	506.97	3,264,334	174	332.61
1987	Other	Active	3.72	98.05	0.500%	1.06	3.000%	0.02	0.11	0.52	2.94	9,100.00	1.00	4,732.58	233,305	1,237	3,495.14
1988	Other	Active	5.59	290.23	0.500%	1.10	3.000%	0.03	0.17	1.60	8.71	9,100.00	1.00	14,573.12	312,522	1,724	12,848.68
1989	Other	Active	9.31	326.07	0.500%	1.25	3.000%	0.05	0.28	2.04	9.78	9,100.00	1.00	18,545.20	358,477	2,240	16,304.72
1990	Other	Active	2.79	52.15	0.500%	1.25	3.000%	0.01	0.08	0.33	1.56	9,100.00	1.00	2,966.20	61,227	383	2,583.53
1991	Other	Active	3.72	152.72	0.500%	1.17	3.000%	0.02	0.11	0.89	4.58	9,100.00	1.00	8,108.95	221,591	1,293	6,815.98
1992	Other	Active	6.52	826.94	0.500%	0.54	3.000%	0.03	0.20	2.22	24.81	9,100.00	1.00	20,158.47	3,174,205	8,503	11,655.41
1993	Other	Active	8.38	1,209.70	0.500%	0.55	3.000%	0.04	0.25	3.35	36.29	9,100.00	1.00	30,491.93	3,810,065	10,554	19,938.41
1994	Other	Active	7.45	1,021.05	0.500%	0.45	3.000%	0.04	0.22	2.29	30.63	9,100.00	1.00	20,870.21	3,258,293	7,319	13,551.61
1995	Other	Active	5.59	1,532.89	0.500%	0.31	3.000%	0.03	0.17	2.38	45.99	9,100.00	1.00	21,679.29	8,341,603	12,964	8,715.22
1996	Other	Active	2.79	1,111.82	0.500%	0.30	3.000%	0.01	0.08	1.67	33.35	9,100.00	1.00	15,205.14	6,504,934	9,776	5,429.26
1997	Other	Active	7.30	1,062.76	0.500%	0.73	3.000%	0.04	0.22	3.88	31.88	9,100.00	1.00	35,323.79	2,396,160	8,752	26,571.80
1998	Other	Active	3.57	1,036.40	0.500%	0.30	3.000%	0.02	0.11	1.55	31.09	9,100.00	1.00	14,081.54	3,817,136	5,699	8,382.25
1999	Other	Active	0.91	53.39	0.500%	1.25	5.000%	0.00	0.05	0.33	2.67	9,100.00	1.00	3,036.55	58,265	364	2,672.40
2000	Other	Active	3.72	409.19	0.500%	0.80	5.000%	0.02	0.19	1.63	20.46	9,100.00	1.00	14,818.13	812,852	3,235	11,583.38
2001	Other	Active	3.72	22.74	0.500%	1.22	3.000%	0.02	0.11	0.14	0.68	9,100.00	1.00	1,266.62	126,550	774	492.14
2002	Other	Active	3.72	651.26	0.500%	0.31	3.000%	0.02	0.11	1.00	19.54	9,100.00	1.00	9,070.87	4,373,648	6,694	2,376.73
2003	Other	Active	8.38	1,031.32	0.500%	0.54	3.000%	0.04	0.25	2.79	30.94	9,100.00	1.00	25,403.31	5,099,640	13,804	11,599.59
2004	Other	Active	3.72	350.05	0.500%	0.77	3.000%	0.02	0.11	1.35	10.50	9,100.00	1.00	12,248.98	1,159,265	4,458	7,791.34
2005	Other	Active	3.69	573.30	0.500%	0.59	3.000%	0.02	0.11	1.70	17.20	9,100.00	1.00	15,457.35	1,077,427	3,192	12,265.11
2006	Other	Active	6.38	274.59	0.500%	1.11	3.000%	0.03	0.19	1.53	8.24	9,100.00	1.00	13,927.61	625,212	3,485	10,442.82
2007	Other	Active	4.61	219.75	0.500%	1.13	4.000%	0.02	0.18	1.24	8.79	9,100.00	1.00	11,278.92	403,529	2,276	9,002.93
2008	Other	Active	7.45	557.09	0.500%	0.72	4.000%	0.04	0.30	2.00	22.28	9,100.00	1.00	18,173.77	1,667,976	5,980	12,194.20
2009	Other	Active	2.79	254.71	0.500%	1.01	3.000%	0.01	0.08	1.29	7.64	9,100.00	1.00	11,726.78	489,093	2,475	9,252.26
2010	Other	Active	5.65	807.59	0.500%	0.53	3.000%	0.03	0.17	2.15	24.23	9,100.00	1.00	19,556.60	3,938,753	10,481	9,075.25
2011	Other	Active	2.88	113.08	0.500%	1.25	3.000%	0.01	0.09	0.71	3.39	9,100.00	1.00	6,431.61	120,480	753	5,678.61
2012	Other	Active	10.67	768.10	0.500%	0.79	2.000%	0.05	0.21	3.02	15.36	9,100.00	1.00	27,502.64	1,707,384	6,718	20,784.52
2013	Other	Active	10.73	827.95	0.500%	0.76	1.000%	0.05	0.11	3.13	8.28	9,100.00	1.00	28,448.45	2,466,051	9,311	19,137.07
2014	Other	Active	2.94	43.65	0.500%	1.25	1.000%	0.01	0.03	0.27	0.44	9,100.00	1.00	2,482.65	59,343	371	2,111.76
2015	Other	Active	4.95	167.55	0.500%	1.12	0.500%	0.02	0.02	0.94	0.84	9,100.00	1.00	8,567.85	696,265	3,913	4,655.33
2016	Other	Active	7.00	170.63	0.500%	0.44	0.500%	0.04	0.04	0.38	0.85	9,100.00	1.00	3,425.51	6,583,600	14,524	0.00
2017	Other	Active	2.00	65.90	0.000%	1.20	0.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	197,260	0	0.00
TOTAL			278.35	28,042.42				0.81	6.40	49.02	712.14			446,121.98	106,055,115	165,605	291,615.55

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017
Other

June 30, 2017
As of Fiscal Year End
2020

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
1961	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	\$9,100.00	1.00	\$0.00	\$0	\$0	\$0.00
1962	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1963	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1964	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1965	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1966	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1967	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1968	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1969	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1970	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1971	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1972	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1973	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1974	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1975	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1976	Other	Inactive	2.99	280.56	0.010%	1.02	0.100%	0.00	0.00	0.03	0.28	9,100.00	1.00	260.64	283,942	29	231.65
1977	Other	Inactive	1.00	51.88	0.010%	1.25	0.100%	0.00	0.00	0.01	0.05	9,100.00	1.00	59.02	51,987	6	52.52
1978	Other	Inactive	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1979	Other	Inactive	1.00	9.73	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	1.00	11.07	9,998	1	9.82
1980	Other	Inactive	2.91	455.62	0.010%	0.54	0.100%	0.00	0.00	0.02	0.46	9,100.00	1.00	225.75	933,958	51	174.90
1981	Other	Inactive	5.64	1,091.75	0.010%	0.35	0.100%	0.00	0.01	0.04	1.09	9,100.00	1.00	351.01	3,101,261	110	241.44
1982	Other	Inactive	2.82	45.39	0.010%	1.25	3.000%	0.00	0.08	0.01	1.36	9,100.00	1.00	51.63	84,499	11	41.07
1983	Other	Inactive	10.35	1,612.08	0.010%	0.50	3.000%	0.00	0.31	0.08	48.36	9,100.00	1.00	733.45	11,348,380	567	166.07
1984	Other	Inactive	0.94	24.46	0.010%	1.25	3.000%	0.00	0.03	0.00	0.73	9,100.00	1.00	27.82	58,225	7	20.54
1985	Other	Inactive	2.81	370.30	0.010%	0.45	3.000%	0.00	0.08	0.02	11.11	9,100.00	1.00	152.15	1,205,617	54	97.72
1986	Other	Inactive	1.86	573.62	0.010%	0.41	3.000%	0.00	0.06	0.02	17.21	9,100.00	1.00	212.08	2,255,588	92	120.44
1987	Other	Inactive	0.93	18.77	0.500%	1.25	3.000%	0.00	0.03	0.12	0.56	9,100.00	1.00	1,067.62	20,738	130	938.01
1988	Other	Inactive	4.66	459.87	0.500%	0.55	3.000%	0.02	0.14	1.26	13.80	9,100.00	1.00	11,509.99	1,100,362	3,026	8,483.55
1989	Other	Inactive	4.66	656.09	0.500%	0.44	3.000%	0.02	0.14	1.43	19.68	9,100.00	1.00	13,017.99	2,201,727	4,801	8,217.34
1990	Other	Inactive	2.79	339.50	0.500%	0.50	3.000%	0.01	0.08	0.85	10.18	9,100.00	1.00	7,726.44	1,163,280	2,909	4,817.16
1991	Other	Inactive	2.79	46.75	0.500%	1.25	3.000%	0.01	0.08	0.29	1.40	9,100.00	1.00	2,658.75	53,327	333	2,325.45
1992	Other	Inactive	3.72	199.97	0.500%	1.17	3.000%	0.02	0.11	1.17	6.00	9,100.00	1.00	10,647.50	293,574	1,718	8,929.77
1993	Other	Inactive	5.59	834.82	0.500%	0.52	3.000%	0.03	0.17	2.19	25.04	9,100.00	1.00	19,913.02	4,964,511	13,013	6,899.94
1994	Other	Inactive	4.66	722.19	0.500%	0.41	3.000%	0.02	0.14	1.46	21.67	9,100.00	1.00	13,326.49	2,295,661	4,655	8,671.36
1995	Other	Inactive	1.86	159.46	0.500%	1.06	3.000%	0.01	0.06	0.85	4.78	9,100.00	1.00	7,691.43	497,800	2,639	5,052.80
1996	Other	Inactive	2.79	217.29	0.500%	1.02	3.000%	0.01	0.08	1.11	6.52	9,100.00	1.00	10,088.04	231,618	1,182	8,906.38
1997	Other	Inactive	2.74	82.74	0.500%	1.23	3.000%	0.01	0.08	0.51	2.48	9,100.00	1.00	4,644.08	266,679	1,645	2,999.15
1998	Other	Inactive	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
1999	Other	Inactive	1.82	213.61	0.500%	0.63	5.000%	0.01	0.09	0.67	10.68	9,100.00	1.00	6,080.92	1,185,985	3,710	2,370.90
2000	Other	Inactive	1.86	443.43	0.500%	0.25	5.000%	0.01	0.09	0.55	22.17	9,100.00	1.00	5,044.02	1,613,778	2,017	3,026.80
2001	Other	Inactive	1.86	176.81	0.500%	0.43	3.000%	0.01	0.06	0.38	5.30	9,100.00	1.00	3,460.32	915,868	1,970	1,490.60
2002	Other	Inactive	2.79	100.18	0.500%	1.25	3.000%	0.01	0.08	0.63	3.01	9,100.00	1.00	5,697.84	122,455	765	4,932.50
2003	Other	Inactive	1.86	28.61	0.500%	1.25	3.000%	0.01	0.06	0.18	0.86	9,100.00	1.00	1,627.05	31,601	198	1,429.54
2004	Other	Inactive	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2005	Other	Inactive	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2006	Other	Inactive	1.82	49.03	0.500%	1.25	3.000%	0.01	0.05	0.31	1.47	9,100.00	1.00	2,788.56	111,947	700	2,088.88
2007	Other	Inactive	0.92	109.51	0.500%	1.00	4.000%	0.00	0.04	0.55	4.38	9,100.00	1.00	4,982.74	395,852	1,979	3,003.48
2008	Other	Inactive	0.93	9.20	0.500%	1.25	4.000%	0.00	0.04	0.06	0.37	9,100.00	1.00	522.98	9,875	62	461.26
2009	Other	Inactive	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2010	Other	Inactive	0.94	125.90	0.500%	1.00	3.000%	0.00	0.03	0.63	3.78	9,100.00	1.00	5,728.38	135,633	678	5,050.21
2011	Other	Inactive	0.96	63.63	0.500%	1.00	3.000%	0.00	0.03	0.32	1.91	9,100.00	1.00	2,895.37	228,181	1,141	1,754.46
2012	Other	Inactive	0.97	185.99	0.500%	1.00	2.000%	0.00	0.02	0.93	3.72	9,100.00	1.00	8,462.64	313,363	1,567	6,895.83
2013	Other	Inactive	0.98	55.44	0.500%	1.25	1.000%	0.00	0.01	0.35	0.55	9,100.00	1.00	3,153.32	56,290	352	2,801.51
2014	Other	Inactive	0.00	0.00	0.500%	0.00	1.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2015	Other	Inactive	0.00	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2016	Other	Inactive	0.00	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
2017	Other	Inactive	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	1.00	0.00	0	0	0.00
TOTAL			87.24	9,814.17				0.28	2.29	17.01	250.99			154,820.09	37,543,563	52,117	102,703.01

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017

Other

June 30, 2017
As of Fiscal Year End
2020

Permit Issue Year	Mine Type	Mine Status	Adjustment										Gross Cost	Adjustment Current Security Amount	Forfeited Security Amount	Net Cost	
			Adjusted Permit Count	Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Permit Count	Released Permit Count	Forfeited Acres	Released Acres	Avg Recl Cost per Acre					Adjustment Factor Permit Status
(1)	(2)	(3)	(34)	(35)	(36)	(37)	(38)	(39)	(40)	(41)	(42)	(43)	(44)	(45)	(46)	(47)	(48)
1961	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	\$9,100.00	0.50	\$0.00	\$0	\$0	\$0.00
1962	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1963	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1964	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1965	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1966	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1967	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1968	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1969	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1970	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1971	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1972	Other	Phased Released	1.00	8.98	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	0.50	5.11	9,998	1	3.86
1973	Other	Phased Released	1.00	26.94	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	0.50	15.32	26,993	3	11.95
1974	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1975	Other	Phased Released	1.00	33.92	0.010%	1.25	0.100%	0.00	0.00	0.00	0.03	9,100.00	0.50	19.29	33,992	4	15.05
1976	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1977	Other	Phased Released	0.00	0.00	0.010%	0.00	0.100%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1978	Other	Phased Released	2.00	58.56	0.010%	1.25	0.100%	0.00	0.00	0.01	0.06	9,100.00	0.50	33.30	47,988	6	27.31
1979	Other	Phased Released	1.00	9.98	0.010%	1.25	0.100%	0.00	0.00	0.00	0.01	9,100.00	0.50	5.67	9,998	1	4.43
1980	Other	Phased Released	1.94	976.45	0.010%	1.25	0.100%	0.00	0.00	0.12	0.98	9,100.00	0.50	555.35	19,995	2	552.85
1981	Other	Phased Released	18.81	1,780.55	0.010%	1.00	0.100%	0.00	0.02	0.18	1.78	9,100.00	0.50	806.53	3,501,712	349	457.92
1982	Other	Phased Released	8.47	430.71	0.010%	1.25	3.000%	0.00	0.25	0.05	12.92	9,100.00	0.50	244.97	289,408	36	208.79
1983	Other	Phased Released	25.40	2,895.92	0.010%	0.70	3.000%	0.00	0.76	0.20	86.88	9,100.00	0.50	918.35	9,966,791	695	223.70
1984	Other	Phased Released	5.64	448.42	0.010%	0.77	3.000%	0.00	0.17	0.03	13.45	9,100.00	0.50	157.64	1,424,300	110	47.60
1985	Other	Phased Released	6.55	372.34	0.010%	1.18	3.000%	0.00	0.20	0.04	11.17	9,100.00	0.50	199.68	713,112	84	115.63
1986	Other	Phased Released	3.72	228.34	0.010%	1.04	3.000%	0.00	0.11	0.02	6.85	9,100.00	0.50	107.92	639,406	66	41.50
1987	Other	Phased Released	1.86	254.78	0.500%	0.43	3.000%	0.01	0.06	0.55	7.64	9,100.00	0.50	2,514.56	802,945	1,742	772.88
1988	Other	Phased Released	0.93	13.00	0.500%	1.25	3.000%	0.00	0.03	0.08	0.39	9,100.00	0.50	369.78	13,826	86	283.37
1989	Other	Phased Released	1.86	46.07	0.500%	1.03	3.000%	0.01	0.06	0.24	1.38	9,100.00	0.50	1,076.50	146,484	752	324.29
1990	Other	Phased Released	0.93	50.16	0.500%	1.25	3.000%	0.00	0.03	0.31	1.50	9,100.00	0.50	1,426.31	30,219	189	1,237.44
1991	Other	Phased Released	2.79	306.11	0.500%	0.54	3.000%	0.01	0.08	0.83	9.18	9,100.00	0.50	3,766.61	896,078	2,423	1,343.31
1992	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1993	Other	Phased Released	0.93	95.86	0.500%	1.00	3.000%	0.00	0.03	0.48	2.88	9,100.00	0.50	2,180.82	101,973	510	1,670.96
1994	Other	Phased Released	0.93	56.80	0.500%	1.00	3.000%	0.00	0.03	0.28	1.70	9,100.00	0.50	1,292.31	164,265	821	470.98
1995	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1996	Other	Phased Released	1.86	170.64	0.500%	1.04	3.000%	0.01	0.06	0.89	5.12	9,100.00	0.50	4,046.95	516,177	2,691	1,356.40
1997	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
1998	Other	Phased Released	0.89	94.66	0.500%	1.00	3.000%	0.00	0.03	0.47	2.84	9,100.00	0.50	2,153.53	352,607	1,763	390.49
1999	Other	Phased Released	0.91	164.52	0.500%	0.25	5.000%	0.00	0.05	0.21	8.23	9,100.00	0.50	935.70	742,780	928	7.23
2000	Other	Phased Released	0.93	82.66	0.500%	1.25	5.000%	0.00	0.05	0.52	4.13	9,100.00	0.50	2,350.77	36,420	228	2,123.14
2001	Other	Phased Released	0.93	15.47	0.500%	1.25	3.000%	0.00	0.03	0.10	0.46	9,100.00	0.50	440.04	16,788	105	335.12
2002	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2003	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2004	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2005	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2006	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2007	Other	Phased Released	0.00	0.00	0.500%	0.00	4.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2008	Other	Phased Released	0.93	3.34	0.500%	1.25	4.000%	0.00	0.04	0.02	0.13	9,100.00	0.50	95.09	7,900	49	45.71
2009	Other	Phased Released	0.93	27.73	0.500%	1.25	3.000%	0.00	0.03	0.17	0.83	9,100.00	0.50	788.43	87,693	548	240.35
2010	Other	Phased Released	1.88	39.50	0.500%	1.01	3.000%	0.01	0.06	0.20	1.19	9,100.00	0.50	911.34	129,239	655	256.03
2011	Other	Phased Released	0.00	0.00	0.500%	0.00	3.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2012	Other	Phased Released	1.94	6.53	0.500%	1.25	2.000%	0.01	0.04	0.04	0.13	9,100.00	0.50	185.77	19,751	123	62.32
2013	Other	Phased Released	0.98	0.97	0.500%	1.25	1.000%	0.00	0.01	0.01	0.01	9,100.00	0.50	27.66	9,875	62	0.00
2014	Other	Phased Released	0.00	0.00	0.500%	0.00	1.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2015	Other	Phased Released	0.00	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2016	Other	Phased Released	0.00	0.00	0.500%	0.00	0.500%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
2017	Other	Phased Released	0.00	0.00	0.000%	0.00	0.000%	0.00	0.00	0.00	0.00	9,100.00	0.50	0.00	0	0	0.00
TOTAL			98.96	8,699.92				0.12	2.20	6.07	181.92			27,631.33	20,758,711	15,035	12,630.60

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Land, for Forfeitures Occurring after June 30, 2017

June 30, 2017

Footnotes for Exhibits 28.1 through 28.3:

- (1) - (5) Client data
- (6) Exhibit 23.1 Cols (1), (3), and (5)
- (7) Exhibit 22.2 Col (1) adjusted for current acreage distribution by year
- (8) Exhibit 23.1 Cols (2), (4), and (6)
- (9) Col (4) x Col (6)
- (10) Col (4) x Col (8)
- (11) Col (5) x Col (6) x Col (7)
- (12) Col (5) x Col (8)
- (13) Exhibit 13.1 Col (1)
- (14) Exhibit 22.1 Col (3)
- (15) Col (11) x Col (13) x Col (14)
- (16) Client data
- (17) [Col (11) / Col (5)] x Col (16)
- (18) Maximum of Zero and Col (15) - Col (17)
- (19) Col (4) - [Col (9) + Col (10)]
- (20) Col (5) - [Col (11) + Col (12)]
- (21) Exhibit 23.1 Cols (1), (3), and (5)
- (22) Col (7)
- (23) Exhibit 23.1 Cols (2), (4), and (6)
- (24) Col (19) x Col (21)
- (25) Col (19) x Col (23)
- (26) Col (20) x Col (21) x Col (22)
- (27) Col (20) x Col (23)
- (28) Col (13)
- (29) Col (14)
- (30) Col (26) x Col (28) x Col (29)
- (31) Col (16) - Col (17)
- (32) [Col (26) / Col (20)] x Col (31)
- (33) Maximum of Zero and Col (30) - Col (32)
- (34) Col (19) - [Col (24) + Col (25)]
- (35) Col (20) - [Col (26) + Col (27)]
- (36) Exhibit 23.1 Cols (1), (3), and (5)
- (37) Col (7)
- (38) Exhibit 23.1 Cols (2), (4), and (6)
- (39) Col (34) x Col (36)
- (40) Col (34) x Col (28)
- (41) Col (35) x Col (36) x Col (37)
- (42) Col (35) x Col (28)
- (43) Col (13)
- (44) Col (14)
- (45) Col (41) x Col (43) x Col (44)
- (46) Col (31) - Col (32)
- (47) [Col (41) / Col (35)] x Col (46)
- (48) Maximum of Zero and Col (45) - Col (47)

Same calculations continue for fiscal years 2021 through 2052

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
 Water Capital - Total, for Forfeitures Occurring after June 30, 2017
 June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2017								
2018	\$2,527,453	\$971,896	\$2,056,183	\$5,555,531	\$0	\$0	\$0	\$0
2019	2,486,774	890,142	1,856,669	5,233,585	0	0	0	0
2020	2,381,285	824,518	1,709,569	4,915,373	0	0	0	0
2021	2,255,250	768,365	1,583,072	4,606,687	1,263,727	485,948	1,028,091	2,777,766
2022	2,110,027	710,344	1,084,966	3,905,336	2,507,114	931,019	1,956,426	5,394,558
2023	1,950,299	665,883	952,310	3,568,492	2,434,030	857,330	1,783,119	5,074,479
2024	1,829,809	595,499	861,764	3,287,072	2,318,267	796,442	1,646,321	4,761,030
2025	1,721,596	546,393	740,005	3,007,994	3,237,651	1,094,527	1,876,502	6,208,680
2026	1,609,738	476,850	649,579	2,736,166	1,950,299	665,883	952,310	3,568,492
2027	1,489,427	433,043	582,493	2,504,963	1,829,809	595,499	861,764	3,287,072
2028	1,373,578	361,743	512,714	2,248,036	1,721,596	546,393	740,005	3,007,994
2029	1,282,482	293,138	454,179	2,029,798	1,609,738	476,850	649,579	2,736,166
2030	1,182,168	254,895	379,437	1,816,499	1,489,427	433,043	582,493	2,504,963
2031	1,064,416	220,297	296,707	1,581,420	1,373,578	361,743	512,714	2,248,036
2032	987,014	207,133	256,199	1,450,345	1,282,482	293,138	454,179	2,029,798
2033	897,218	173,921	226,879	1,298,018	1,182,168	254,895	379,437	1,816,499
2034	822,724	153,144	195,514	1,171,382	1,064,416	220,297	296,707	1,581,420
2035	723,465	126,223	157,061	1,006,749	987,014	207,133	256,199	1,450,345
2036	657,078	109,447	137,141	903,666	897,218	173,921	226,879	1,298,018
2037	553,345	82,939	110,544	746,828	822,724	153,144	195,514	1,171,382
2038	476,129	71,956	76,835	624,920	723,465	126,223	157,061	1,006,749
2039	413,926	58,636	67,998	540,560	657,078	109,447	137,141	903,666
2040	361,080	44,397	50,606	456,083	553,345	82,939	110,544	746,828
2041	309,494	32,737	40,845	383,077	476,129	71,956	76,835	624,920
2042	257,495	24,536	28,883	310,914	413,926	58,636	67,998	540,560
2043	218,346	21,419	21,522	261,286	361,080	44,397	50,606	456,083
2044	177,621	16,865	17,126	211,612	309,494	32,737	40,845	383,077
2045	145,378	9,948	13,428	168,753	257,495	24,536	28,883	310,914
2046	93,784	6,772	10,261	110,817	218,346	21,419	21,522	261,286
2047	58,615	4,792	8,924	72,331	177,621	16,865	17,126	211,612
2048	38,261	4,677	8,262	51,200	145,378	9,948	13,428	168,753
2049	20,654	4,567	7,448	32,669	93,784	6,772	10,261	110,817
2050	12,396	4,463	7,218	24,077	58,615	4,792	8,924	72,331
2051	11,393	4,364	6,997	22,754	38,261	4,677	8,262	51,200
2052	11,154	4,271	6,786	22,211	20,654	4,567	7,448	32,669

Footnotes:

- (1) Exhibit 29.2 Col (1) + Exhibit 29.3 Col (1) + Exhibit 29.4 Col (1)
- (2) Exhibit 29.2 Col (2) + Exhibit 29.3 Col (2) + Exhibit 29.4 Col (2)
- (3) Exhibit 29.2 Col (3) + Exhibit 29.3 Col (3) + Exhibit 29.4 Col (3)
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1), Col (2), and Col (3) delayed three years
- (8) Col (5) + Col (6) + Col (7)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
 Water Capital - Surface, for Forfeitures Occurring after June 30, 2017
 June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2017								
2018	\$1,246,873	\$212,235	\$1,261,090	\$2,720,198	\$0	\$0	\$0	\$0
2019	1,252,872	198,858	1,134,652	2,586,381	0	0	0	0
2020	1,227,128	189,463	1,046,297	2,462,888	0	0	0	0
2021	1,167,603	175,571	962,636	2,305,811	623,437	106,117	630,545	1,360,099
2022	1,121,119	161,188	858,165	2,140,472	1,249,872	205,546	1,197,871	2,653,289
2023	1,048,025	153,462	744,336	1,945,822	1,240,000	194,160	1,090,474	2,524,634
2024	1,001,807	145,868	680,290	1,827,964	1,197,366	182,517	1,004,467	2,384,349
2025	950,702	137,530	601,093	1,689,325	1,704,920	248,974	1,339,483	3,293,377
2026	898,436	126,638	535,903	1,560,977	1,048,025	153,462	744,336	1,945,822
2027	843,147	119,539	485,606	1,448,292	1,001,807	145,868	680,290	1,827,964
2028	792,331	101,179	435,431	1,328,941	950,702	137,530	601,093	1,689,325
2029	748,799	83,521	385,308	1,217,628	898,436	126,638	535,903	1,560,977
2030	700,254	72,805	321,277	1,094,336	843,147	119,539	485,606	1,448,292
2031	632,695	60,135	258,216	951,047	792,331	101,179	435,431	1,328,941
2032	588,376	56,952	226,250	871,578	748,799	83,521	385,308	1,217,628
2033	545,000	53,728	205,226	803,954	700,254	72,805	321,277	1,094,336
2034	511,152	50,518	176,486	738,155	632,695	60,135	258,216	951,047
2035	468,432	40,906	141,122	650,459	588,376	56,952	226,250	871,578
2036	431,419	35,365	123,313	590,096	545,000	53,728	205,226	803,954
2037	358,669	28,974	97,694	485,337	511,152	50,518	176,486	738,155
2038	315,388	23,794	66,722	405,905	468,432	40,906	141,122	650,459
2039	278,771	21,563	59,723	360,057	431,419	35,365	123,313	590,096
2040	239,119	18,530	42,645	300,294	358,669	28,974	97,694	485,337
2041	208,221	13,524	33,762	255,506	315,388	23,794	66,722	405,905
2042	169,289	12,790	23,400	205,479	278,771	21,563	59,723	360,057
2043	145,493	11,050	16,365	172,908	239,119	18,530	42,645	300,294
2044	131,307	8,632	12,308	152,247	208,221	13,524	33,762	255,506
2045	109,768	3,007	8,733	121,508	169,289	12,790	23,400	205,479
2046	71,577	1,802	5,723	79,101	145,493	11,050	16,365	172,908
2047	44,341	572	4,503	49,416	131,307	8,632	12,308	152,247
2048	25,607	548	3,947	30,102	109,768	3,007	8,733	121,508
2049	9,970	525	3,236	13,731	71,577	1,802	5,723	79,101
2050	2,655	503	3,104	6,262	44,341	572	4,503	49,416
2051	2,513	482	2,978	5,973	25,607	548	3,947	30,102
2052	2,402	462	2,858	5,721	9,970	525	3,236	13,731

Footnotes:

- (1) - (3) Exhibit 30.1 Col (12), Exhibit 30.1 Col (21), Exhibit 30.1 Col (30), etc.
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1) delayed three years
- (8) Col (5) + Col (6) + Col (7)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
 Water Capital - Underground, for Forfeitures Occurring after June 30, 2017
 June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2017								
2018	\$979,546	\$654,203	\$768,898	\$2,402,648	\$0	\$0	\$0	\$0
2019	957,995	593,624	702,514	2,254,133	0	0	0	0
2020	899,230	546,587	647,484	2,093,301	0	0	0	0
2021	841,428	507,955	606,560	1,955,943	489,773	327,101	384,449	1,201,324
2022	758,442	473,278	213,599	1,445,320	968,770	623,914	735,706	2,328,390
2023	688,822	445,825	195,737	1,330,384	928,612	570,106	674,999	2,173,717
2024	623,380	389,184	170,303	1,182,868	870,329	527,271	627,022	2,024,622
2025	577,263	351,760	129,861	1,058,884	1,179,156	727,255	516,879	2,423,291
2026	533,778	299,868	104,886	938,532	688,822	445,825	195,737	1,330,384
2027	488,503	273,716	89,300	851,519	623,380	389,184	170,303	1,182,868
2028	437,886	227,920	70,448	736,255	577,263	351,760	129,861	1,058,884
2029	404,399	181,223	62,217	647,839	533,778	299,868	104,886	938,532
2030	363,306	158,588	53,272	575,166	488,503	273,716	89,300	851,519
2031	330,821	139,203	33,728	503,753	437,886	227,920	70,448	736,255
2032	306,575	129,958	26,086	462,619	404,399	181,223	62,217	647,839
2033	264,414	102,844	18,208	385,466	363,306	158,588	53,272	575,166
2034	231,901	87,638	16,399	335,939	330,821	139,203	33,728	503,753
2035	178,514	71,952	13,479	263,944	306,575	129,958	26,086	462,619
2036	154,568	62,821	11,392	228,781	264,414	102,844	18,208	385,466
2037	133,667	43,501	10,439	187,607	231,901	87,638	16,399	335,939
2038	105,233	37,999	7,726	150,958	178,514	71,952	13,479	263,944
2039	85,788	27,202	5,910	118,900	154,568	62,821	11,392	228,781
2040	77,737	16,991	5,618	100,346	133,667	43,501	10,439	187,607
2041	61,184	11,835	4,761	77,779	105,233	37,999	7,726	150,958
2042	53,815	4,679	3,202	61,696	85,788	27,202	5,910	118,900
2043	42,170	3,480	3,072	48,722	77,737	16,991	5,618	100,346
2044	21,132	2,799	2,947	26,878	61,184	11,835	4,761	77,779
2045	12,451	2,253	2,829	17,533	53,815	4,679	3,202	61,696
2046	5,612	2,158	2,715	10,485	42,170	3,480	3,072	48,722
2047	4,163	2,068	2,605	8,837	21,132	2,799	2,947	26,878
2048	3,192	1,982	2,500	7,674	12,451	2,253	2,829	17,533
2049	3,057	1,900	2,400	7,357	5,612	2,158	2,715	10,485
2050	2,929	1,822	2,303	7,055	4,163	2,068	2,605	8,837
2051	2,808	1,748	2,211	6,766	3,192	1,982	2,500	7,674
2052	2,691	1,677	2,122	6,490	3,057	1,900	2,400	7,357

Footnotes:

- (1) - (3) Exhibit 30.2 Col (12), Exhibit 30.2 Col (21), Exhibit 30.2 Col (30), etc.
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1) delayed three years
- (8) Col (5) + Col (6) + Col (7)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
Water Capital - Other, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
2017								
2018	\$301,034	\$105,458	\$26,194	\$432,686	\$0	\$0	\$0	\$0
2019	275,908	97,660	19,503	393,071	0	0	0	0
2020	254,927	88,469	15,789	359,185	0	0	0	0
2021	246,219	84,839	13,876	344,934	150,517	52,729	13,097	216,343
2022	230,465	75,877	13,202	319,544	288,471	101,559	22,849	412,878
2023	213,452	66,596	12,237	292,285	265,417	93,064	17,646	376,128
2024	204,622	60,447	11,171	276,240	250,573	86,654	14,833	352,059
2025	193,631	57,102	9,052	259,786	353,575	118,297	20,140	492,011
2026	177,524	50,343	8,790	236,657	213,452	66,596	12,237	292,285
2027	157,776	39,788	7,588	205,152	204,622	60,447	11,171	276,240
2028	143,361	32,644	6,836	182,840	193,631	57,102	9,052	259,786
2029	129,285	28,394	6,653	164,332	177,524	50,343	8,790	236,657
2030	118,608	23,501	4,887	146,997	157,776	39,788	7,588	205,152
2031	100,899	20,959	4,763	126,621	143,361	32,644	6,836	182,840
2032	92,062	20,224	3,862	116,148	129,285	28,394	6,653	164,332
2033	87,805	17,348	3,446	108,599	118,608	23,501	4,887	146,997
2034	79,671	14,988	2,629	97,289	100,899	20,959	4,763	126,621
2035	76,519	13,365	2,461	92,345	92,062	20,224	3,862	116,148
2036	71,092	11,262	2,436	84,789	87,805	17,348	3,446	108,599
2037	61,009	10,464	2,411	73,884	79,671	14,988	2,629	97,289
2038	55,508	10,162	2,387	68,057	76,519	13,365	2,461	92,345
2039	49,367	9,871	2,365	61,603	71,092	11,262	2,436	84,789
2040	44,224	8,876	2,344	55,443	61,009	10,464	2,411	73,884
2041	40,089	7,379	2,323	49,791	55,508	10,162	2,387	68,057
2042	34,391	7,067	2,281	43,738	49,367	9,871	2,365	61,603
2043	30,682	6,888	2,085	39,655	44,224	8,876	2,344	55,443
2044	25,182	5,434	1,870	32,487	40,089	7,379	2,323	49,791
2045	23,158	4,688	1,866	29,712	34,391	7,067	2,281	43,738
2046	16,595	2,812	1,824	21,231	30,682	6,888	2,085	39,655
2047	10,111	2,152	1,816	14,079	25,182	5,434	1,870	32,487
2048	9,462	2,147	1,814	13,423	23,158	4,688	1,866	29,712
2049	7,627	2,142	1,812	11,581	16,595	2,812	1,824	21,231
2050	6,811	2,138	1,810	10,759	10,111	2,152	1,816	14,079
2051	6,072	2,135	1,808	10,015	9,462	2,147	1,814	13,423
2052	6,061	2,132	1,806	9,999	7,627	2,142	1,812	11,581

Footnotes:

- (1) - (3) Exhibit 30.3 Col (12), Exhibit 30.3 Col (21), Exhibit 30.3 Col (30), etc.
(4) Col (1) + Col (2) + Col (3)
(5) - (7) Col (1) delayed three years
(8) Col (5) + Col (6) + Col (7)

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
				Forfeiture Rate	Factor Permit Bond Size	Release Rate				Factor Permit Status		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$4,500.00	1.00	\$0.00	
1962	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1963	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1964	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1965	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1966	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1967	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1968	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1969	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1970	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1971	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1972	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1973	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1974	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1975	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1976	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1977	Surface	Active	475.23	0.010%	0.25	5.000%	0.01	23.76	4,500.00	1.00	53.46	
1978	Surface	Active	70.00	0.010%	1.00	5.000%	0.01	3.50	4,500.00	1.00	31.50	
1979	Surface	Active	180.00	0.010%	1.00	5.000%	0.02	9.00	4,500.00	1.00	81.00	
1980	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1981	Surface	Active	2.50	0.010%	1.25	5.000%	0.00	0.13	4,500.00	1.00	1.41	
1982	Surface	Active	1,666.76	0.010%	0.25	5.000%	0.04	83.34	4,500.00	1.00	187.51	
1983	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1984	Surface	Active	666.47	0.010%	0.47	5.000%	0.03	33.32	4,500.00	1.00	139.78	
1985	Surface	Active	904.60	1.000%	0.36	5.000%	3.24	45.23	4,500.00	1.00	14,564.25	
1986	Surface	Active	1,194.95	1.000%	0.25	5.000%	2.99	59.75	4,500.00	1.00	13,443.19	
1987	Surface	Active	299.96	1.000%	1.07	5.000%	3.20	15.00	4,500.00	1.00	14,420.25	
1988	Surface	Active	336.46	1.000%	0.25	5.000%	0.84	16.82	4,500.00	1.00	3,785.18	
1989	Surface	Active	1,373.36	1.000%	0.58	5.000%	7.95	68.67	4,500.00	1.00	35,780.43	
1990	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1991	Surface	Active	96.43	1.000%	1.00	5.000%	0.96	4.82	4,500.00	1.00	4,339.35	
1992	Surface	Active	726.00	1.000%	0.25	5.000%	1.82	36.30	4,500.00	1.00	8,167.50	
1993	Surface	Active	342.25	1.000%	0.25	5.000%	0.86	17.11	4,500.00	1.00	3,850.31	
1994	Surface	Active	176.19	1.000%	1.07	5.000%	1.89	8.81	4,500.00	1.00	8,502.30	
1995	Surface	Active	0.00	1.100%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1996	Surface	Active	981.28	1.100%	0.25	5.000%	2.70	49.06	4,500.00	1.00	12,143.34	
1997	Surface	Active	3,594.61	1.100%	0.36	5.000%	14.24	179.73	4,500.00	1.00	64,075.99	
1998	Surface	Active	1,204.44	1.100%	0.25	5.000%	3.31	60.22	4,500.00	1.00	14,904.95	
1999	Surface	Active	1,868.36	1.100%	0.25	4.000%	5.14	74.73	4,500.00	1.00	23,120.96	
2000	Surface	Active	620.83	1.100%	0.25	4.000%	1.71	24.83	4,500.00	1.00	7,682.77	
2001	Surface	Active	1,884.74	1.100%	0.35	4.000%	7.24	75.39	4,500.00	1.00	32,579.30	
2002	Surface	Active	1,137.84	1.100%	0.25	4.000%	3.13	45.51	4,500.00	1.00	14,080.77	
2003	Surface	Active	5,838.52	1.100%	0.47	4.000%	30.29	233.54	4,500.00	1.00	136,296.50	
2004	Surface	Active	1,967.21	1.100%	0.70	4.000%	15.19	78.69	4,500.00	1.00	68,358.58	
2005	Surface	Active	2,555.92	1.100%	0.43	4.000%	12.09	102.24	4,500.00	1.00	54,402.55	
2006	Surface	Active	2,705.22	1.100%	0.62	4.000%	18.52	108.21	4,500.00	1.00	83,317.65	
2007	Surface	Active	2,737.05	1.100%	0.48	4.000%	14.37	109.48	4,500.00	1.00	64,657.95	
2008	Surface	Active	3,284.20	1.100%	0.69	4.000%	24.85	131.37	4,500.00	1.00	111,829.73	
2009	Surface	Active	2,376.88	1.100%	0.48	0.500%	12.43	11.88	4,500.00	1.00	55,942.51	
2010	Surface	Active	523.42	1.100%	1.09	0.500%	6.27	2.62	4,500.00	1.00	28,205.30	
2011	Surface	Active	1,617.17	1.100%	0.77	0.500%	13.79	8.09	4,500.00	1.00	62,037.44	
2012	Surface	Active	4,551.37	1.100%	0.60	0.500%	29.97	22.76	4,500.00	1.00	134,879.48	
2013	Surface	Active	2,918.41	1.100%	0.71	0.500%	22.78	14.59	4,500.00	1.00	102,527.16	
2014	Surface	Active	2,617.01	1.100%	0.53	0.500%	15.22	13.09	4,500.00	1.00	68,482.78	
2015	Surface	Active	1,826.09	0.000%	0.70	0.000%	0.00	0.00	4,500.00	1.00	0.00	
2016	Surface	Active	788.61	0.000%	0.80	0.000%	0.00	0.00	4,500.00	1.00	0.00	
2017	Surface	Active	2.00	0.000%	1.25	0.000%	0.00	0.00	4,500.00	1.00	0.00	
TOTAL			56,112.34				277.08	1,771.59			1,246,873.12	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
				Forfeiture Rate	Factor Permit Bond Size	Release Rate				Factor Permit Status		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	\$4,500.00	1.00	\$0.00	
1962	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1963	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1964	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1965	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1966	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1967	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1968	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1969	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1970	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1971	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1972	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1973	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1974	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1975	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
1976	Surface	Inactive	1,561.15	0.010%	0.48	5.000%	0.08	78.06	4,500.00	1.00	339.18	
1977	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1978	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1979	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1980	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1981	Surface	Inactive	4.47	0.010%	1.00	5.000%	0.00	0.22	4,500.00	1.00	2.01	
1982	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1983	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1984	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1985	Surface	Inactive	224.46	1.000%	0.25	5.000%	0.56	11.22	4,500.00	1.00	2,525.18	
1986	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1987	Surface	Inactive	322.57	1.000%	0.36	5.000%	1.15	16.13	4,500.00	1.00	5,193.54	
1988	Surface	Inactive	176.00	1.000%	1.00	5.000%	1.76	8.80	4,500.00	1.00	7,920.00	
1989	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1990	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1991	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1992	Surface	Inactive	127.07	1.000%	1.00	5.000%	1.27	6.35	4,500.00	1.00	5,718.15	
1993	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1994	Surface	Inactive	1,792.68	1.000%	0.25	5.000%	4.48	89.63	4,500.00	1.00	20,167.65	
1995	Surface	Inactive	2,009.28	1.100%	0.25	5.000%	5.53	100.46	4,500.00	1.00	24,864.84	
1996	Surface	Inactive	1,055.30	1.100%	0.25	5.000%	2.90	52.77	4,500.00	1.00	13,059.34	
1997	Surface	Inactive	1,493.18	1.100%	0.25	5.000%	4.11	74.66	4,500.00	1.00	18,478.10	
1998	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00	
1999	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
2000	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
2001	Surface	Inactive	1,161.29	1.100%	0.28	4.000%	3.60	46.45	4,500.00	1.00	16,201.23	
2002	Surface	Inactive	715.52	1.100%	0.25	4.000%	1.97	28.62	4,500.00	1.00	8,854.56	
2003	Surface	Inactive	1,020.28	1.100%	0.25	4.000%	2.81	40.81	4,500.00	1.00	12,625.97	
2004	Surface	Inactive	898.15	1.100%	0.25	4.000%	2.47	35.93	4,500.00	1.00	11,114.61	
2005	Surface	Inactive	244.34	1.100%	0.25	4.000%	0.67	9.77	4,500.00	1.00	3,023.71	
2006	Surface	Inactive	314.48	1.100%	0.42	4.000%	1.45	12.58	4,500.00	1.00	6,513.61	
2007	Surface	Inactive	727.30	1.100%	0.41	4.000%	3.24	29.09	4,500.00	1.00	14,601.49	
2008	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00	
2009	Surface	Inactive	311.89	1.100%	0.25	0.500%	0.86	1.56	4,500.00	1.00	3,859.64	
2010	Surface	Inactive	546.43	1.100%	0.25	0.500%	1.50	2.73	4,500.00	1.00	6,762.07	
2011	Surface	Inactive	793.78	1.100%	0.54	0.500%	4.68	3.97	4,500.00	1.00	21,051.16	
2012	Surface	Inactive	99.70	1.100%	1.02	0.500%	1.11	0.50	4,500.00	1.00	5,015.10	
2013	Surface	Inactive	351.00	1.100%	0.25	0.500%	0.97	1.76	4,500.00	1.00	4,343.63	
2014	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	4,500.00	1.00	0.00	
2015	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	1.00	0.00	
2016	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	1.00	0.00	
2017	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	1.00	0.00	
TOTAL			15,950.32				47.16	652.08			212,234.75	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$4,500.00	0.50	\$0.00	
1962	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1963	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1964	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1965	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1966	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1967	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1968	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1969	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1970	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1971	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00	
1972	Surface	Phased Release	400.00	0.010%	1.25	4.000%	0.05	16.00	4,500.00	0.50	112.50	
1973	Surface	Phased Release	9.60	0.010%	1.25	4.000%	0.00	0.38	4,500.00	0.50	2.70	
1974	Surface	Phased Release	180.00	0.010%	1.25	4.000%	0.02	7.20	4,500.00	0.50	50.63	
1975	Surface	Phased Release	155.30	0.010%	1.25	4.000%	0.02	6.21	4,500.00	0.50	43.68	
1976	Surface	Phased Release	1,239.23	0.010%	0.93	5.000%	0.12	61.96	4,500.00	0.50	260.61	
1977	Surface	Phased Release	748.81	0.010%	0.46	5.000%	0.03	37.44	4,500.00	0.50	77.85	
1978	Surface	Phased Release	2,262.16	0.010%	0.55	5.000%	0.12	113.11	4,500.00	0.50	278.33	
1979	Surface	Phased Release	925.40	0.010%	0.67	5.000%	0.06	46.27	4,500.00	0.50	139.80	
1980	Surface	Phased Release	1,910.37	0.010%	0.69	5.000%	0.13	95.52	4,500.00	0.50	295.54	
1981	Surface	Phased Release	3,119.22	0.010%	0.52	5.000%	0.16	155.96	4,500.00	0.50	367.94	
1982	Surface	Phased Release	1,607.89	0.010%	0.87	5.000%	0.14	80.39	4,500.00	0.50	314.18	
1983	Surface	Phased Release	2,074.52	0.010%	0.54	5.000%	0.11	103.73	4,500.00	0.50	252.93	
1984	Surface	Phased Release	1,413.45	0.010%	0.38	5.000%	0.05	70.67	4,500.00	0.50	122.01	
1985	Surface	Phased Release	4,476.37	1.000%	0.66	5.000%	29.55	223.82	4,500.00	0.50	66,486.49	
1986	Surface	Phased Release	2,508.01	1.000%	0.50	5.000%	12.50	125.40	4,500.00	0.50	28,132.26	
1987	Surface	Phased Release	1,593.69	1.000%	0.78	5.000%	12.44	79.68	4,500.00	0.50	27,991.16	
1988	Surface	Phased Release	5,471.56	1.000%	0.54	5.000%	29.62	273.58	4,500.00	0.50	66,642.20	
1989	Surface	Phased Release	4,659.87	1.000%	0.89	5.000%	41.59	232.99	4,500.00	0.50	93,573.62	
1990	Surface	Phased Release	1,957.79	1.000%	0.75	5.000%	14.64	97.89	4,500.00	0.50	32,942.44	
1991	Surface	Phased Release	5,668.21	1.000%	0.46	5.000%	26.17	283.41	4,500.00	0.50	58,885.93	
1992	Surface	Phased Release	5,677.52	1.000%	0.40	5.000%	22.49	283.88	4,500.00	0.50	50,592.88	
1993	Surface	Phased Release	3,583.11	1.000%	0.39	5.000%	13.93	179.16	4,500.00	0.50	31,345.59	
1994	Surface	Phased Release	4,244.57	1.000%	0.37	5.000%	15.59	212.23	4,500.00	0.50	35,083.97	
1995	Surface	Phased Release	5,074.70	1.100%	0.43	5.000%	24.10	253.74	4,500.00	0.50	54,216.71	
1996	Surface	Phased Release	12,050.18	1.100%	0.29	5.000%	38.92	602.51	4,500.00	0.50	87,574.60	
1997	Surface	Phased Release	9,485.73	1.100%	0.44	5.000%	45.65	474.29	4,500.00	0.50	102,722.47	
1998	Surface	Phased Release	5,637.42	1.100%	0.28	5.000%	17.48	281.87	4,500.00	0.50	39,324.67	
1999	Surface	Phased Release	1,559.47	1.100%	0.52	4.000%	8.90	62.38	4,500.00	0.50	20,027.95	
2000	Surface	Phased Release	6,526.00	1.100%	0.27	4.000%	19.62	261.04	4,500.00	0.50	44,141.55	
2001	Surface	Phased Release	8,126.32	1.100%	0.34	4.000%	30.84	325.05	4,500.00	0.50	69,387.40	
2002	Surface	Phased Release	2,179.48	1.100%	0.53	4.000%	12.79	87.18	4,500.00	0.50	28,771.40	
2003	Surface	Phased Release	7,397.89	1.100%	0.31	4.000%	24.82	295.92	4,500.00	0.50	55,854.73	
2004	Surface	Phased Release	7,695.07	1.100%	0.43	4.000%	36.39	307.80	4,500.00	0.50	81,885.91	
2005	Surface	Phased Release	989.62	1.100%	0.45	4.000%	4.87	39.58	4,500.00	0.50	10,959.92	
2006	Surface	Phased Release	5,319.77	1.100%	0.36	4.000%	21.20	212.79	4,500.00	0.50	47,696.61	
2007	Surface	Phased Release	2,026.81	1.100%	0.49	4.000%	10.85	81.07	4,500.00	0.50	24,409.84	
2008	Surface	Phased Release	2,478.99	1.100%	0.55	4.000%	15.04	99.16	4,500.00	0.50	33,830.54	
2009	Surface	Phased Release	1,930.25	1.100%	0.47	0.500%	10.08	9.65	4,500.00	0.50	22,675.10	
2010	Surface	Phased Release	561.34	1.100%	1.08	0.500%	6.70	2.81	4,500.00	0.50	15,064.35	
2011	Surface	Phased Release	1,006.96	1.100%	0.47	0.500%	5.24	5.03	4,500.00	0.50	11,785.63	
2012	Surface	Phased Release	571.14	1.100%	0.82	0.500%	5.16	2.86	4,500.00	0.50	11,606.17	
2013	Surface	Phased Release	392.33	1.100%	0.39	0.500%	1.69	1.96	4,500.00	0.50	3,797.94	
2014	Surface	Phased Release	220.00	1.100%	0.25	0.500%	0.61	1.10	4,500.00	0.50	1,361.25	
2015	Surface	Phased Release	107.23	0.000%	1.00	0.000%	0.00	0.00	4,500.00	0.50	0.00	
2016	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	0.50	0.00	
2017	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	0.50	0.00	
TOTAL			137,223.35				560.48	6,194.67			1,261,089.95	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2019								
			Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$4,500.00	1.00	\$0.00
1962	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1963	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1964	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1965	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1966	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1967	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1968	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1969	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1970	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1971	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1972	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1973	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1974	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1975	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1976	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1977	Surface	Active	451.46	0.010%	0.25	5.000%	0.01	22.57	4,500.00	1.00	50.79
1978	Surface	Active	66.49	0.010%	1.00	5.000%	0.01	3.32	4,500.00	1.00	29.92
1979	Surface	Active	170.98	0.010%	1.00	5.000%	0.02	8.55	4,500.00	1.00	76.94
1980	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1981	Surface	Active	2.37	0.010%	1.25	5.000%	0.00	0.12	4,500.00	1.00	1.34
1982	Surface	Active	1,583.38	0.010%	0.25	5.000%	0.04	79.17	4,500.00	1.00	178.13
1983	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1984	Surface	Active	633.12	0.010%	0.47	5.000%	0.03	31.66	4,500.00	1.00	132.78
1985	Surface	Active	856.13	0.010%	0.36	5.000%	0.03	42.81	4,500.00	1.00	137.84
1986	Surface	Active	1,132.22	1.000%	0.25	5.000%	2.83	56.61	4,500.00	1.00	12,737.42
1987	Surface	Active	281.76	1.000%	1.07	5.000%	3.01	14.09	4,500.00	1.00	13,545.18
1988	Surface	Active	318.80	1.000%	0.25	5.000%	0.80	15.94	4,500.00	1.00	3,586.45
1989	Surface	Active	1,296.74	1.000%	0.58	5.000%	7.51	64.84	4,500.00	1.00	33,784.26
1990	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1991	Surface	Active	90.64	1.000%	1.00	5.000%	0.91	4.53	4,500.00	1.00	4,078.99
1992	Surface	Active	687.89	1.000%	0.25	5.000%	1.72	34.39	4,500.00	1.00	7,738.71
1993	Surface	Active	324.28	1.000%	0.25	5.000%	0.81	16.21	4,500.00	1.00	3,648.17
1994	Surface	Active	165.49	1.000%	1.07	5.000%	1.77	8.27	4,500.00	1.00	7,986.01
1995	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1996	Surface	Active	929.52	1.100%	0.25	5.000%	2.56	46.48	4,500.00	1.00	11,502.78
1997	Surface	Active	3,400.64	1.100%	0.36	5.000%	13.47	170.03	4,500.00	1.00	60,618.37
1998	Surface	Active	1,140.91	1.100%	0.25	5.000%	3.14	57.05	4,500.00	1.00	14,118.71
1999	Surface	Active	1,788.49	1.100%	0.25	5.000%	4.92	89.42	4,500.00	1.00	22,132.53
2000	Surface	Active	594.29	1.100%	0.25	4.000%	1.63	23.77	4,500.00	1.00	7,354.33
2001	Surface	Active	1,802.11	1.100%	0.35	4.000%	6.92	72.08	4,500.00	1.00	31,150.98
2002	Surface	Active	1,089.20	1.100%	0.25	4.000%	3.00	43.57	4,500.00	1.00	13,478.82
2003	Surface	Active	5,574.69	1.100%	0.47	4.000%	28.92	222.99	4,500.00	1.00	130,137.58
2004	Surface	Active	1,873.33	1.100%	0.70	4.000%	14.47	74.93	4,500.00	1.00	65,096.37
2005	Surface	Active	2,441.59	1.100%	0.43	4.000%	11.55	97.66	4,500.00	1.00	51,969.13
2006	Surface	Active	2,578.50	1.100%	0.62	4.000%	17.65	103.14	4,500.00	1.00	79,414.70
2007	Surface	Active	2,613.20	1.100%	0.48	4.000%	13.72	104.53	4,500.00	1.00	61,732.20
2008	Surface	Active	3,127.98	1.100%	0.69	4.000%	23.67	125.12	4,500.00	1.00	106,510.35
2009	Surface	Active	2,352.56	1.100%	0.48	4.000%	12.30	94.10	4,500.00	1.00	55,370.21
2010	Surface	Active	514.54	1.100%	1.09	0.500%	6.16	2.57	4,500.00	1.00	27,726.52
2011	Surface	Active	1,595.30	1.100%	0.77	0.500%	13.60	7.98	4,500.00	1.00	61,198.39
2012	Surface	Active	4,498.64	1.100%	0.60	0.500%	29.63	22.49	4,500.00	1.00	133,316.83
2013	Surface	Active	2,881.03	1.100%	0.71	0.500%	22.49	14.41	4,500.00	1.00	101,214.10
2014	Surface	Active	2,588.71	1.100%	0.53	0.500%	15.05	12.94	4,500.00	1.00	67,742.13
2015	Surface	Active	1,826.09	1.100%	0.70	0.500%	14.08	9.13	4,500.00	1.00	63,373.83
2016	Surface	Active	788.61	0.000%	0.80	0.000%	0.00	0.00	4,500.00	1.00	0.00
2017	Surface	Active	2.00	0.000%	1.25	0.000%	0.00	0.00	4,500.00	1.00	0.00
TOTAL			54,063.67				278.42	1,797.48			1,252,871.79

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017
 As of Fiscal Year End
 2019

Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2019								Gross Cost
			Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status	
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	\$4,500.00	1.00	\$0.00
1962	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1963	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1964	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1965	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1966	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1967	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1968	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1969	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1970	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1971	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1972	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1973	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1974	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1975	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1976	Surface	Inactive	1,483.02	0.010%	0.48	4.000%	0.07	59.32	4,500.00	1.00	322.20
1977	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1978	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1979	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1980	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1981	Surface	Inactive	4.25	0.010%	1.00	5.000%	0.00	0.21	4,500.00	1.00	1.91
1982	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1983	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1984	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1985	Surface	Inactive	212.68	0.010%	0.25	5.000%	0.01	10.63	4,500.00	1.00	23.93
1986	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1987	Surface	Inactive	305.29	1.000%	0.36	5.000%	1.09	15.26	4,500.00	1.00	4,915.28
1988	Surface	Inactive	165.44	1.000%	1.00	5.000%	1.65	8.27	4,500.00	1.00	7,444.80
1989	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1990	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1991	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1992	Surface	Inactive	119.45	1.000%	1.00	5.000%	1.19	5.97	4,500.00	1.00	5,375.06
1993	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1994	Surface	Inactive	1,698.56	1.000%	0.25	5.000%	4.25	84.93	4,500.00	1.00	19,108.85
1995	Surface	Inactive	1,903.29	1.000%	0.25	5.000%	4.76	95.16	4,500.00	1.00	21,412.02
1996	Surface	Inactive	999.63	1.100%	0.25	5.000%	2.75	49.98	4,500.00	1.00	12,370.46
1997	Surface	Inactive	1,414.41	1.100%	0.25	5.000%	3.89	70.72	4,500.00	1.00	17,503.38
1998	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1999	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
2000	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
2001	Surface	Inactive	1,111.24	1.100%	0.28	4.000%	3.45	44.45	4,500.00	1.00	15,502.95
2002	Surface	Inactive	684.93	1.100%	0.25	4.000%	1.88	27.40	4,500.00	1.00	8,476.03
2003	Surface	Inactive	976.66	1.100%	0.25	4.000%	2.69	39.07	4,500.00	1.00	12,086.20
2004	Surface	Inactive	859.75	1.100%	0.25	4.000%	2.36	34.39	4,500.00	1.00	10,639.46
2005	Surface	Inactive	233.89	1.100%	0.25	4.000%	0.64	9.36	4,500.00	1.00	2,894.44
2006	Surface	Inactive	300.45	1.100%	0.42	4.000%	1.38	12.02	4,500.00	1.00	6,223.09
2007	Surface	Inactive	694.96	1.100%	0.41	4.000%	3.10	27.80	4,500.00	1.00	13,952.29
2008	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
2009	Surface	Inactive	309.47	1.100%	0.25	4.000%	0.85	12.38	4,500.00	1.00	3,829.73
2010	Surface	Inactive	542.20	1.100%	0.25	0.500%	1.49	2.71	4,500.00	1.00	6,709.67
2011	Surface	Inactive	785.13	1.100%	0.54	0.500%	4.63	3.93	4,500.00	1.00	20,821.84
2012	Surface	Inactive	98.09	1.100%	1.02	0.500%	1.10	0.49	4,500.00	1.00	4,933.96
2013	Surface	Inactive	348.28	1.100%	0.25	0.500%	0.96	1.74	4,500.00	1.00	4,309.96
2014	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	4,500.00	1.00	0.00
2015	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	4,500.00	1.00	0.00
2016	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	1.00	0.00
2017	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	1.00	0.00
TOTAL			15,251.08				44.19	616.19			198,857.51

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2019								Gross Cost
			Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status	
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$4,500.00	0.50	\$0.00
1962	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1963	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1964	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1965	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1966	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1967	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1968	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1969	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1970	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1971	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1972	Surface	Phased Release	383.95	0.010%	1.25	4.000%	0.05	15.36	4,500.00	0.50	107.99
1973	Surface	Phased Release	9.21	0.010%	1.25	4.000%	0.00	0.37	4,500.00	0.50	2.59
1974	Surface	Phased Release	172.78	0.010%	1.25	4.000%	0.02	6.91	4,500.00	0.50	48.59
1975	Surface	Phased Release	149.07	0.010%	1.25	4.000%	0.02	5.96	4,500.00	0.50	41.93
1976	Surface	Phased Release	1,177.15	0.010%	0.93	4.000%	0.11	47.09	4,500.00	0.50	247.56
1977	Surface	Phased Release	711.33	0.010%	0.46	5.000%	0.03	35.57	4,500.00	0.50	73.96
1978	Surface	Phased Release	2,148.93	0.010%	0.55	5.000%	0.12	107.45	4,500.00	0.50	264.39
1979	Surface	Phased Release	879.07	0.010%	0.67	5.000%	0.06	43.95	4,500.00	0.50	132.80
1980	Surface	Phased Release	1,814.72	0.010%	0.69	5.000%	0.12	90.74	4,500.00	0.50	280.74
1981	Surface	Phased Release	2,963.10	0.010%	0.52	5.000%	0.16	148.15	4,500.00	0.50	349.52
1982	Surface	Phased Release	1,527.36	0.010%	0.87	5.000%	0.13	76.37	4,500.00	0.50	298.44
1983	Surface	Phased Release	1,970.68	0.010%	0.54	5.000%	0.11	98.53	4,500.00	0.50	240.27
1984	Surface	Phased Release	1,342.72	0.010%	0.38	5.000%	0.05	67.14	4,500.00	0.50	115.91
1985	Surface	Phased Release	4,223.00	0.010%	0.66	5.000%	0.28	211.15	4,500.00	0.50	627.23
1986	Surface	Phased Release	2,370.11	1.000%	0.50	5.000%	11.82	118.51	4,500.00	0.50	26,585.40
1987	Surface	Phased Release	1,501.56	1.000%	0.78	5.000%	11.72	75.08	4,500.00	0.50	26,373.10
1988	Surface	Phased Release	5,168.36	1.000%	0.54	5.000%	27.98	258.42	4,500.00	0.50	62,949.34
1989	Surface	Phased Release	4,385.29	1.000%	0.89	5.000%	39.14	219.26	4,500.00	0.50	88,059.81
1990	Surface	Phased Release	1,845.26	1.000%	0.75	5.000%	13.80	92.26	4,500.00	0.50	31,048.96
1991	Surface	Phased Release	5,358.63	1.000%	0.46	5.000%	24.74	267.93	4,500.00	0.50	55,669.74
1992	Surface	Phased Release	5,371.16	1.000%	0.40	5.000%	21.27	268.56	4,500.00	0.50	47,862.86
1993	Surface	Phased Release	3,390.02	1.000%	0.39	5.000%	13.18	169.50	4,500.00	0.50	29,656.43
1994	Surface	Phased Release	4,016.75	1.000%	0.37	5.000%	14.76	200.84	4,500.00	0.50	33,200.89
1995	Surface	Phased Release	4,796.87	1.000%	0.43	5.000%	20.71	239.84	4,500.00	0.50	46,589.49
1996	Surface	Phased Release	11,408.75	1.100%	0.29	5.000%	36.85	570.44	4,500.00	0.50	82,913.01
1997	Surface	Phased Release	8,965.79	1.100%	0.44	5.000%	43.15	448.29	4,500.00	0.50	97,091.94
1998	Surface	Phased Release	5,338.07	1.100%	0.28	5.000%	16.55	266.90	4,500.00	0.50	37,236.51
1999	Surface	Phased Release	1,488.19	1.100%	0.52	5.000%	8.49	74.41	4,500.00	0.50	19,112.52
2000	Surface	Phased Release	6,245.34	1.100%	0.27	4.000%	18.77	249.81	4,500.00	0.50	42,243.19
2001	Surface	Phased Release	7,770.43	1.100%	0.34	4.000%	29.49	310.82	4,500.00	0.50	66,348.58
2002	Surface	Phased Release	2,079.51	1.100%	0.53	4.000%	12.20	83.18	4,500.00	0.50	27,451.74
2003	Surface	Phased Release	7,077.15	1.100%	0.31	4.000%	23.75	283.09	4,500.00	0.50	53,433.11
2004	Surface	Phased Release	7,350.87	1.100%	0.43	4.000%	34.77	294.03	4,500.00	0.50	78,223.20
2005	Surface	Phased Release	945.16	1.100%	0.45	4.000%	4.65	37.81	4,500.00	0.50	10,467.58
2006	Surface	Phased Release	5,085.78	1.100%	0.36	4.000%	20.27	203.43	4,500.00	0.50	45,598.68
2007	Surface	Phased Release	1,934.89	1.100%	0.49	4.000%	10.36	77.40	4,500.00	0.50	23,302.79
2008	Surface	Phased Release	2,364.79	1.100%	0.55	4.000%	14.34	94.59	4,500.00	0.50	32,272.12
2009	Surface	Phased Release	1,910.52	1.100%	0.47	4.000%	9.97	76.42	4,500.00	0.50	22,443.34
2010	Surface	Phased Release	551.84	1.100%	1.08	0.500%	6.58	2.76	4,500.00	0.50	14,809.35
2011	Surface	Phased Release	996.69	1.100%	0.47	0.500%	5.18	4.98	4,500.00	0.50	11,665.40
2012	Surface	Phased Release	563.13	1.100%	0.82	0.500%	5.09	2.82	4,500.00	0.50	11,443.32
2013	Surface	Phased Release	388.68	1.100%	0.39	0.500%	1.67	1.94	4,500.00	0.50	3,762.61
2014	Surface	Phased Release	218.30	1.100%	0.25	0.500%	0.60	1.09	4,500.00	0.50	1,350.70
2015	Surface	Phased Release	107.23	1.100%	1.00	0.500%	1.18	0.54	4,500.00	0.50	2,653.94
2016	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	0.50	0.00
2017	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	0.50	0.00
TOTAL			130,468.19				504.29	5,949.68			1,134,651.57

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

			As of Fiscal Year End 2020								
Permit Issue Year	Mine Type	Mine Status	Adjustment			Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost	
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size			Release Rate	Forfeited Acres		Factor Permit Status
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$4,500.00	1.00	\$0.00
1962	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1963	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1964	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1965	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1966	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1967	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1968	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1969	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1970	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1971	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1972	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1973	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1974	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1975	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1976	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1977	Surface	Active	428.87	0.010%	0.25	4.000%	0.01	17.15	4,500.00	1.00	48.25
1978	Surface	Active	63.16	0.010%	1.00	5.000%	0.01	3.16	4,500.00	1.00	28.42
1979	Surface	Active	162.42	0.010%	1.00	5.000%	0.02	8.12	4,500.00	1.00	73.09
1980	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1981	Surface	Active	2.26	0.010%	1.25	5.000%	0.00	0.11	4,500.00	1.00	1.27
1982	Surface	Active	1,504.17	0.010%	0.25	5.000%	0.04	75.21	4,500.00	1.00	169.22
1983	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1984	Surface	Active	601.43	0.010%	0.47	5.000%	0.03	30.07	4,500.00	1.00	126.14
1985	Surface	Active	813.30	0.010%	0.36	5.000%	0.03	40.66	4,500.00	1.00	130.94
1986	Surface	Active	1,072.77	0.010%	0.25	5.000%	0.03	53.64	4,500.00	1.00	120.69
1987	Surface	Active	264.66	1.000%	1.07	5.000%	2.83	13.23	4,500.00	1.00	12,723.22
1988	Surface	Active	302.06	1.000%	0.25	5.000%	0.76	15.10	4,500.00	1.00	3,398.16
1989	Surface	Active	1,224.40	1.000%	0.58	5.000%	7.09	61.22	4,500.00	1.00	31,899.45
1990	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1991	Surface	Active	85.21	1.000%	1.00	5.000%	0.85	4.26	4,500.00	1.00	3,834.25
1992	Surface	Active	651.77	1.000%	0.25	5.000%	1.63	32.59	4,500.00	1.00	7,332.42
1993	Surface	Active	307.26	1.000%	0.25	5.000%	0.77	15.36	4,500.00	1.00	3,456.64
1994	Surface	Active	155.44	1.000%	1.07	5.000%	1.67	7.77	4,500.00	1.00	7,501.07
1995	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1996	Surface	Active	880.49	1.000%	0.25	5.000%	2.20	44.02	4,500.00	1.00	9,905.46
1997	Surface	Active	3,217.14	1.100%	0.36	5.000%	12.74	160.86	4,500.00	1.00	57,347.33
1998	Surface	Active	1,080.72	1.100%	0.25	5.000%	2.97	54.04	4,500.00	1.00	13,373.95
1999	Surface	Active	1,694.14	1.100%	0.25	5.000%	4.66	84.71	4,500.00	1.00	20,965.04
2000	Surface	Active	568.88	1.100%	0.25	5.000%	1.56	28.44	4,500.00	1.00	7,039.94
2001	Surface	Active	1,723.10	1.100%	0.35	4.000%	6.62	68.92	4,500.00	1.00	29,785.28
2002	Surface	Active	1,042.63	1.100%	0.25	4.000%	2.87	41.71	4,500.00	1.00	12,902.60
2003	Surface	Active	5,322.78	1.100%	0.47	4.000%	27.61	212.91	4,500.00	1.00	124,256.97
2004	Surface	Active	1,783.93	1.100%	0.70	4.000%	13.78	71.36	4,500.00	1.00	61,989.84
2005	Surface	Active	2,332.38	1.100%	0.43	4.000%	11.03	93.30	4,500.00	1.00	49,644.55
2006	Surface	Active	2,457.71	1.100%	0.62	4.000%	16.82	98.31	4,500.00	1.00	75,694.58
2007	Surface	Active	2,494.95	1.100%	0.48	4.000%	13.10	99.80	4,500.00	1.00	58,938.84
2008	Surface	Active	2,979.19	1.100%	0.69	4.000%	22.54	119.17	4,500.00	1.00	101,443.98
2009	Surface	Active	2,246.16	1.100%	0.48	4.000%	11.75	89.85	4,500.00	1.00	52,865.80
2010	Surface	Active	505.80	1.100%	1.09	4.000%	6.06	20.23	4,500.00	1.00	27,255.87
2011	Surface	Active	1,573.72	1.100%	0.77	0.500%	13.42	7.87	4,500.00	1.00	60,370.69
2012	Surface	Active	4,446.52	1.100%	0.60	0.500%	29.28	22.23	4,500.00	1.00	131,772.28
2013	Surface	Active	2,844.14	1.100%	0.71	0.500%	22.20	14.22	4,500.00	1.00	99,917.86
2014	Surface	Active	2,560.71	1.100%	0.53	0.500%	14.89	12.80	4,500.00	1.00	67,009.48
2015	Surface	Active	1,802.88	1.100%	0.70	0.500%	13.90	9.01	4,500.00	1.00	62,568.21
2016	Surface	Active	788.61	1.100%	0.80	0.500%	6.94	3.94	4,500.00	1.00	31,236.30
2017	Surface	Active	2.00	0.000%	1.25	0.000%	0.00	0.00	4,500.00	1.00	0.00
TOTAL			51,987.77				272.70	1,735.37			1,227,128.10

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017
 As of Fiscal Year End
 2020

Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2020								
			Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	\$4,500.00	1.00	\$0.00
1962	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1963	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1964	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1965	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1966	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1967	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1968	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1969	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1970	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1971	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1972	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1973	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1974	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1975	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1976	Surface	Inactive	1,423.62	0.010%	0.48	4.000%	0.07	56.94	4,500.00	1.00	309.30
1977	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
1978	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1979	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1980	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1981	Surface	Inactive	4.03	0.010%	1.00	5.000%	0.00	0.20	4,500.00	1.00	1.81
1982	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1983	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1984	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1985	Surface	Inactive	202.04	0.010%	0.25	5.000%	0.01	10.10	4,500.00	1.00	22.73
1986	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1987	Surface	Inactive	288.93	1.000%	0.36	5.000%	1.03	14.45	4,500.00	1.00	4,651.93
1988	Surface	Inactive	155.51	1.000%	1.00	5.000%	1.56	7.78	4,500.00	1.00	6,998.11
1989	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1990	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1991	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1992	Surface	Inactive	112.28	1.000%	1.00	5.000%	1.12	5.61	4,500.00	1.00	5,052.56
1993	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1994	Surface	Inactive	1,609.39	1.000%	0.25	5.000%	4.02	80.47	4,500.00	1.00	18,105.63
1995	Surface	Inactive	1,803.37	1.000%	0.25	5.000%	4.51	90.17	4,500.00	1.00	20,287.89
1996	Surface	Inactive	946.90	1.000%	0.25	5.000%	2.37	47.35	4,500.00	1.00	10,652.65
1997	Surface	Inactive	1,339.80	1.100%	0.25	5.000%	3.68	66.99	4,500.00	1.00	16,580.08
1998	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
1999	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
2000	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	4,500.00	1.00	0.00
2001	Surface	Inactive	1,063.34	1.100%	0.28	4.000%	3.30	42.53	4,500.00	1.00	14,834.77
2002	Surface	Inactive	655.65	1.100%	0.25	4.000%	1.80	26.23	4,500.00	1.00	8,113.68
2003	Surface	Inactive	934.91	1.100%	0.25	4.000%	2.57	37.40	4,500.00	1.00	11,569.52
2004	Surface	Inactive	823.00	1.100%	0.25	4.000%	2.26	32.92	4,500.00	1.00	10,184.62
2005	Surface	Inactive	223.90	1.100%	0.25	4.000%	0.62	8.96	4,500.00	1.00	2,770.71
2006	Surface	Inactive	287.05	1.100%	0.42	4.000%	1.32	11.48	4,500.00	1.00	5,945.52
2007	Surface	Inactive	664.06	1.100%	0.41	4.000%	2.96	26.56	4,500.00	1.00	13,331.95
2008	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	4,500.00	1.00	0.00
2009	Surface	Inactive	296.24	1.100%	0.25	4.000%	0.81	11.85	4,500.00	1.00	3,666.01
2010	Surface	Inactive	537.99	1.100%	0.25	4.000%	1.48	21.52	4,500.00	1.00	6,657.67
2011	Surface	Inactive	776.58	1.100%	0.54	0.500%	4.58	3.88	4,500.00	1.00	20,595.02
2012	Surface	Inactive	96.50	1.100%	1.02	0.500%	1.08	0.48	4,500.00	1.00	4,854.14
2013	Surface	Inactive	345.58	1.100%	0.25	0.500%	0.95	1.73	4,500.00	1.00	4,276.56
2014	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	4,500.00	1.00	0.00
2015	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	4,500.00	1.00	0.00
2016	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	4,500.00	1.00	0.00
2017	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	1.00	0.00
TOTAL			14,590.70				42.10	605.60			189,462.86

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2020								Gross Cost
			Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status	
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$4,500.00	0.50	\$0.00
1962	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1963	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1964	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1965	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1966	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1967	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1968	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1969	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1970	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1971	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	4,500.00	0.50	0.00
1972	Surface	Phased Release	368.54	0.010%	1.25	4.000%	0.05	14.74	4,500.00	0.50	103.65
1973	Surface	Phased Release	8.85	0.010%	1.25	4.000%	0.00	0.35	4,500.00	0.50	2.49
1974	Surface	Phased Release	165.84	0.010%	1.25	4.000%	0.02	6.63	4,500.00	0.50	46.64
1975	Surface	Phased Release	143.09	0.010%	1.25	4.000%	0.02	5.72	4,500.00	0.50	40.24
1976	Surface	Phased Release	1,129.96	0.010%	0.93	4.000%	0.11	45.20	4,500.00	0.50	237.63
1977	Surface	Phased Release	675.74	0.010%	0.46	4.000%	0.03	27.03	4,500.00	0.50	70.26
1978	Surface	Phased Release	2,041.36	0.010%	0.55	5.000%	0.11	102.07	4,500.00	0.50	251.16
1979	Surface	Phased Release	835.06	0.010%	0.67	5.000%	0.06	41.75	4,500.00	0.50	126.16
1980	Surface	Phased Release	1,723.86	0.010%	0.69	5.000%	0.12	86.19	4,500.00	0.50	266.68
1981	Surface	Phased Release	2,814.79	0.010%	0.52	5.000%	0.15	140.74	4,500.00	0.50	332.03
1982	Surface	Phased Release	1,450.86	0.010%	0.87	5.000%	0.13	72.54	4,500.00	0.50	283.49
1983	Surface	Phased Release	1,872.04	0.010%	0.54	5.000%	0.10	93.60	4,500.00	0.50	228.24
1984	Surface	Phased Release	1,275.54	0.010%	0.38	5.000%	0.05	63.78	4,500.00	0.50	110.11
1985	Surface	Phased Release	4,011.57	0.010%	0.66	5.000%	0.26	200.58	4,500.00	0.50	595.83
1986	Surface	Phased Release	2,239.79	0.010%	0.50	5.000%	0.11	111.99	4,500.00	0.50	251.24
1987	Surface	Phased Release	1,414.77	1.000%	0.78	5.000%	11.04	70.74	4,500.00	0.50	24,848.57
1988	Surface	Phased Release	4,881.97	1.000%	0.54	5.000%	26.43	244.10	4,500.00	0.50	59,461.12
1989	Surface	Phased Release	4,126.89	1.000%	0.89	5.000%	36.83	206.34	4,500.00	0.50	82,870.91
1990	Surface	Phased Release	1,739.20	1.000%	0.75	5.000%	13.01	86.96	4,500.00	0.50	29,264.31
1991	Surface	Phased Release	5,065.95	1.000%	0.46	5.000%	23.39	253.30	4,500.00	0.50	52,629.21
1992	Surface	Phased Release	5,081.33	1.000%	0.40	5.000%	20.12	254.07	4,500.00	0.50	45,280.16
1993	Surface	Phased Release	3,207.34	1.000%	0.39	5.000%	12.47	160.37	4,500.00	0.50	28,058.31
1994	Surface	Phased Release	3,801.16	1.000%	0.37	5.000%	13.96	190.06	4,500.00	0.50	31,418.87
1995	Surface	Phased Release	4,536.32	1.000%	0.43	5.000%	19.58	226.82	4,500.00	0.50	44,058.90
1996	Surface	Phased Release	10,801.46	1.000%	0.29	5.000%	31.72	540.07	4,500.00	0.50	71,363.22
1997	Surface	Phased Release	8,474.35	1.100%	0.44	5.000%	40.79	423.72	4,500.00	0.50	91,770.05
1998	Surface	Phased Release	5,054.62	1.100%	0.28	5.000%	15.67	252.73	4,500.00	0.50	35,259.24
1999	Surface	Phased Release	1,405.29	1.100%	0.52	5.000%	8.02	70.26	4,500.00	0.50	18,047.80
2000	Surface	Phased Release	5,976.75	1.100%	0.27	5.000%	17.97	298.84	4,500.00	0.50	40,426.47
2001	Surface	Phased Release	7,430.12	1.100%	0.34	4.000%	28.20	297.20	4,500.00	0.50	63,442.85
2002	Surface	Phased Release	1,984.13	1.100%	0.53	4.000%	11.64	79.37	4,500.00	0.50	26,192.61
2003	Surface	Phased Release	6,770.32	1.100%	0.31	4.000%	22.72	270.81	4,500.00	0.50	51,116.49
2004	Surface	Phased Release	7,022.07	1.100%	0.43	4.000%	33.21	280.88	4,500.00	0.50	74,724.31
2005	Surface	Phased Release	902.71	1.100%	0.45	4.000%	4.44	36.11	4,500.00	0.50	9,997.35
2006	Surface	Phased Release	4,862.08	1.100%	0.36	4.000%	19.37	194.48	4,500.00	0.50	43,593.03
2007	Surface	Phased Release	1,847.14	1.100%	0.49	4.000%	9.89	73.89	4,500.00	0.50	22,245.95
2008	Surface	Phased Release	2,255.86	1.100%	0.55	4.000%	13.68	90.23	4,500.00	0.50	30,785.50
2009	Surface	Phased Release	1,824.13	1.100%	0.47	4.000%	9.52	72.97	4,500.00	0.50	21,428.43
2010	Surface	Phased Release	542.50	1.100%	1.08	4.000%	6.47	21.70	4,500.00	0.50	14,558.67
2011	Surface	Phased Release	986.52	1.100%	0.47	0.500%	5.13	4.93	4,500.00	0.50	11,546.39
2012	Surface	Phased Release	555.22	1.100%	0.82	0.500%	5.01	2.78	4,500.00	0.50	11,282.75
2013	Surface	Phased Release	385.06	1.100%	0.39	0.500%	1.66	1.93	4,500.00	0.50	3,727.61
2014	Surface	Phased Release	216.60	1.100%	0.25	0.500%	0.60	1.08	4,500.00	0.50	1,340.23
2015	Surface	Phased Release	105.51	1.100%	1.00	0.500%	1.16	0.53	4,500.00	0.50	2,611.48
2016	Surface	Phased Release	0.00	1.100%	0.00	0.500%	0.00	0.00	4,500.00	0.50	0.00
2017	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	4,500.00	0.50	0.00
TOTAL			124,014.22				465.02	5,720.18			1,046,296.64

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$14,400.00	1.00	\$0.00	
1962	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1963	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1964	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1965	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1966	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1967	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1968	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1969	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1970	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1971	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1972	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1973	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1974	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1975	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1976	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1977	Underground	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00	
1978	Underground	Active	123.25	0.010%	1.00	5.000%	0.01	6.16	14,400.00	1.00	177.48	
1979	Underground	Active	651.83	0.010%	0.48	5.000%	0.03	32.59	14,400.00	1.00	448.87	
1980	Underground	Active	293.69	0.010%	1.03	5.000%	0.03	14.68	14,400.00	1.00	434.11	
1981	Underground	Active	198.01	0.010%	0.37	5.000%	0.01	9.90	14,400.00	1.00	105.60	
1982	Underground	Active	322.08	0.010%	1.12	5.000%	0.04	16.10	14,400.00	1.00	521.08	
1983	Underground	Active	5,590.35	0.010%	0.27	5.000%	0.15	279.52	14,400.00	1.00	2,192.74	
1984	Underground	Active	377.10	0.010%	0.32	5.000%	0.01	18.86	14,400.00	1.00	176.31	
1985	Underground	Active	21.04	0.010%	1.25	5.000%	0.00	1.05	14,400.00	1.00	37.87	
1986	Underground	Active	32.30	0.010%	1.25	5.000%	0.00	1.62	14,400.00	1.00	58.14	
1987	Underground	Active	238.44	0.010%	1.01	5.000%	0.02	11.92	14,400.00	1.00	346.67	
1988	Underground	Active	5.18	1.000%	1.25	5.000%	0.06	0.26	14,400.00	1.00	932.40	
1989	Underground	Active	81.30	1.000%	1.04	5.000%	0.84	4.07	14,400.00	1.00	12,121.56	
1990	Underground	Active	219.75	1.000%	0.39	5.000%	0.87	10.99	14,400.00	1.00	12,483.00	
1991	Underground	Active	647.75	1.000%	0.49	5.000%	3.14	32.39	14,400.00	1.00	45,274.68	
1992	Underground	Active	234.86	1.000%	1.05	5.000%	2.46	11.74	14,400.00	1.00	35,371.80	
1993	Underground	Active	580.92	1.000%	0.45	5.000%	2.62	29.05	14,400.00	1.00	37,720.80	
1994	Underground	Active	103.05	1.000%	1.25	4.000%	1.29	4.12	14,400.00	1.00	18,549.00	
1995	Underground	Active	101.24	1.100%	1.03	4.000%	1.15	4.05	14,400.00	1.00	16,490.63	
1996	Underground	Active	151.82	1.100%	1.19	4.000%	1.99	6.07	14,400.00	1.00	28,661.29	
1997	Underground	Active	378.99	1.100%	0.60	4.000%	2.51	15.16	14,400.00	1.00	36,078.37	
1998	Underground	Active	109.68	1.100%	1.03	4.000%	1.24	4.39	14,400.00	1.00	17,809.31	
1999	Underground	Active	235.51	1.100%	1.07	4.000%	2.76	9.42	14,400.00	1.00	39,801.96	
2000	Underground	Active	126.91	1.100%	1.17	4.000%	1.64	5.08	14,400.00	1.00	23,610.16	
2001	Underground	Active	63.96	1.100%	1.10	4.000%	0.77	2.56	14,400.00	1.00	11,130.77	
2002	Underground	Active	580.74	1.100%	0.66	4.000%	4.22	23.23	14,400.00	1.00	60,741.65	
2003	Underground	Active	604.37	1.100%	0.41	4.000%	2.73	24.17	14,400.00	1.00	39,344.68	
2004	Underground	Active	953.24	1.100%	0.72	4.000%	7.53	38.13	14,400.00	1.00	108,407.78	
2005	Underground	Active	227.16	1.100%	1.08	4.000%	2.70	9.09	14,400.00	1.00	38,811.96	
2006	Underground	Active	180.61	1.100%	1.06	4.000%	2.11	7.22	14,400.00	1.00	30,349.84	
2007	Underground	Active	496.25	1.100%	0.82	5.000%	4.46	24.81	14,400.00	1.00	64,222.65	
2008	Underground	Active	272.08	1.100%	1.04	5.000%	3.13	13.60	14,400.00	1.00	45,030.38	
2009	Underground	Active	57.94	1.100%	1.25	5.000%	0.80	2.90	14,400.00	1.00	11,472.12	
2010	Underground	Active	281.96	1.100%	1.11	5.000%	3.44	14.10	14,400.00	1.00	49,476.86	
2011	Underground	Active	87.09	1.100%	1.25	5.000%	1.20	4.35	14,400.00	1.00	17,243.82	
2012	Underground	Active	227.37	1.100%	1.12	5.000%	2.81	11.37	14,400.00	1.00	40,393.00	
2013	Underground	Active	560.02	1.100%	1.04	5.000%	6.43	28.00	14,400.00	1.00	92,650.95	
2014	Underground	Active	225.76	1.100%	1.14	5.000%	2.84	11.29	14,400.00	1.00	40,865.95	
2015	Underground	Active	177.90	0.000%	1.23	0.000%	0.00	0.00	14,400.00	1.00	0.00	
2016	Underground	Active	33.45	0.000%	1.25	0.000%	0.00	0.00	14,400.00	1.00	0.00	
2017	Underground	Active	22.30	0.000%	1.25	0.000%	0.00	0.00	14,400.00	1.00	0.00	
TOTAL			15,877.25				68.02	744.01			979,546.22	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Avg Recl			Adjustment		
				Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Cost per Acre	Factor Permit Status	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	\$14,400.00	1.00	\$0.00	
1962	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1963	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1964	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1965	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1966	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1967	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1968	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1969	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1970	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1971	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1972	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1973	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1974	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1975	Underground	Inactive	103.30	0.010%	1.00	4.000%	0.01	4.13	14,400.00	1.00	148.75	
1976	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1977	Underground	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00	
1978	Underground	Inactive	23.02	0.010%	1.25	5.000%	0.00	1.15	14,400.00	1.00	41.44	
1979	Underground	Inactive	80.45	0.010%	1.00	5.000%	0.01	4.02	14,400.00	1.00	115.85	
1980	Underground	Inactive	45.71	0.010%	1.00	5.000%	0.00	2.29	14,400.00	1.00	65.82	
1981	Underground	Inactive	69.04	0.010%	1.00	5.000%	0.01	3.45	14,400.00	1.00	99.42	
1982	Underground	Inactive	415.09	0.010%	1.05	5.000%	0.04	20.75	14,400.00	1.00	626.78	
1983	Underground	Inactive	1,031.66	0.010%	0.65	5.000%	0.07	51.58	14,400.00	1.00	961.21	
1984	Underground	Inactive	360.89	0.010%	0.58	5.000%	0.02	18.04	14,400.00	1.00	303.48	
1985	Underground	Inactive	43.54	0.010%	1.00	5.000%	0.00	2.18	14,400.00	1.00	62.70	
1986	Underground	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00	
1987	Underground	Inactive	112.03	0.010%	0.99	5.000%	0.01	5.60	14,400.00	1.00	160.01	
1988	Underground	Inactive	200.53	1.000%	0.75	5.000%	1.51	10.03	14,400.00	1.00	21,733.20	
1989	Underground	Inactive	104.66	1.000%	1.01	5.000%	1.06	5.23	14,400.00	1.00	15,221.88	
1990	Underground	Inactive	139.00	1.000%	0.25	5.000%	0.35	6.95	14,400.00	1.00	5,004.00	
1991	Underground	Inactive	14.02	1.000%	1.25	5.000%	0.18	0.70	14,400.00	1.00	2,523.60	
1992	Underground	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00	
1993	Underground	Inactive	296.33	1.000%	1.04	5.000%	3.10	14.82	14,400.00	1.00	44,586.72	
1994	Underground	Inactive	345.33	1.000%	0.47	4.000%	1.64	13.81	14,400.00	1.00	23,605.56	
1995	Underground	Inactive	307.49	1.100%	1.09	4.000%	3.69	12.30	14,400.00	1.00	53,084.59	
1996	Underground	Inactive	92.09	1.100%	1.09	4.000%	1.10	3.68	14,400.00	1.00	15,841.58	
1997	Underground	Inactive	342.93	1.100%	1.07	4.000%	4.04	13.72	14,400.00	1.00	58,125.12	
1998	Underground	Inactive	427.44	1.100%	1.03	4.000%	4.85	17.10	14,400.00	1.00	69,878.56	
1999	Underground	Inactive	296.54	1.100%	0.45	4.000%	1.45	11.86	14,400.00	1.00	20,930.18	
2000	Underground	Inactive	137.62	1.100%	1.09	4.000%	1.65	5.50	14,400.00	1.00	23,780.59	
2001	Underground	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
2002	Underground	Inactive	278.87	1.100%	1.09	4.000%	3.33	11.15	14,400.00	1.00	48,013.42	
2003	Underground	Inactive	141.54	1.100%	1.06	4.000%	1.65	5.66	14,400.00	1.00	23,705.35	
2004	Underground	Inactive	164.25	1.100%	1.06	4.000%	1.92	6.57	14,400.00	1.00	27,645.16	
2005	Underground	Inactive	75.89	1.100%	1.25	4.000%	1.04	3.04	14,400.00	1.00	15,026.22	
2006	Underground	Inactive	303.26	1.100%	1.03	4.000%	3.43	12.13	14,400.00	1.00	49,425.71	
2007	Underground	Inactive	50.83	1.100%	1.25	5.000%	0.70	2.54	14,400.00	1.00	10,064.34	
2008	Underground	Inactive	169.62	1.100%	1.19	5.000%	2.23	8.48	14,400.00	1.00	32,098.39	
2009	Underground	Inactive	191.95	1.100%	1.11	5.000%	2.35	9.60	14,400.00	1.00	33,883.53	
2010	Underground	Inactive	91.49	1.100%	1.25	5.000%	1.26	4.57	14,400.00	1.00	18,115.02	
2011	Underground	Inactive	159.70	1.100%	1.16	5.000%	2.05	7.99	14,400.00	1.00	29,466.36	
2012	Underground	Inactive	24.05	1.100%	1.25	5.000%	0.33	1.20	14,400.00	1.00	4,761.90	
2013	Underground	Inactive	13.74	1.100%	1.25	5.000%	0.19	0.69	14,400.00	1.00	2,720.52	
2014	Underground	Inactive	12.00	1.100%	1.25	5.000%	0.17	0.60	14,400.00	1.00	2,376.00	
2015	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	1.00	0.00	
2016	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	1.00	0.00	
2017	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	1.00	0.00	
TOTAL			6,665.90				45.43	303.13			654,202.95	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Avg Recl			Adjustment		
				Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Cost per Acre	Factor Permit Status	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$14,400.00	0.50	\$0.00	
1962	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1963	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1964	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1965	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1966	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1967	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1968	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1969	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1970	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1971	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1972	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1973	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1974	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1975	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00	
1976	Underground	Phased Release	22.53	0.010%	1.25	4.000%	0.00	0.90	14,400.00	0.50	20.28	
1977	Underground	Phased Release	25.13	0.010%	1.25	5.000%	0.00	1.26	14,400.00	0.50	22.62	
1978	Underground	Phased Release	36.33	0.010%	1.20	5.000%	0.00	1.82	14,400.00	0.50	31.51	
1979	Underground	Phased Release	128.30	0.010%	1.15	5.000%	0.01	6.42	14,400.00	0.50	106.48	
1980	Underground	Phased Release	115.31	0.010%	0.95	5.000%	0.01	5.77	14,400.00	0.50	78.58	
1981	Underground	Phased Release	763.80	0.010%	0.87	5.000%	0.07	38.19	14,400.00	0.50	477.73	
1982	Underground	Phased Release	137.48	0.010%	1.22	5.000%	0.02	6.87	14,400.00	0.50	120.66	
1983	Underground	Phased Release	1,766.39	0.010%	0.67	5.000%	0.12	88.32	14,400.00	0.50	846.58	
1984	Underground	Phased Release	1,132.36	0.010%	0.58	5.000%	0.07	56.62	14,400.00	0.50	469.38	
1985	Underground	Phased Release	333.26	0.010%	0.70	5.000%	0.02	16.66	14,400.00	0.50	167.24	
1986	Underground	Phased Release	89.42	0.010%	1.25	5.000%	0.01	4.47	14,400.00	0.50	80.48	
1987	Underground	Phased Release	355.98	0.010%	1.18	5.000%	0.04	17.80	14,400.00	0.50	302.77	
1988	Underground	Phased Release	255.05	1.000%	1.24	5.000%	3.16	12.75	14,400.00	0.50	22,720.50	
1989	Underground	Phased Release	182.92	1.000%	1.25	5.000%	2.29	9.15	14,400.00	0.50	16,462.80	
1990	Underground	Phased Release	35.63	1.000%	1.25	5.000%	0.45	1.78	14,400.00	0.50	3,206.70	
1991	Underground	Phased Release	10,293.67	1.000%	0.62	5.000%	63.34	514.68	14,400.00	0.50	456,048.87	
1992	Underground	Phased Release	84.48	1.000%	1.13	5.000%	0.95	4.22	14,400.00	0.50	6,869.88	
1993	Underground	Phased Release	212.90	1.000%	1.14	5.000%	2.43	10.65	14,400.00	0.50	17,510.45	
1994	Underground	Phased Release	607.38	1.000%	1.06	4.000%	6.44	24.30	14,400.00	0.50	46,344.06	
1995	Underground	Phased Release	329.13	1.100%	1.15	4.000%	4.15	13.17	14,400.00	0.50	29,905.21	
1996	Underground	Phased Release	184.16	1.100%	1.25	4.000%	2.53	7.37	14,400.00	0.50	18,231.84	
1997	Underground	Phased Release	306.96	1.100%	1.11	4.000%	3.73	12.28	14,400.00	0.50	26,891.17	
1998	Underground	Phased Release	95.91	1.100%	1.11	4.000%	1.17	3.84	14,400.00	0.50	8,426.29	
1999	Underground	Phased Release	297.32	1.100%	0.46	4.000%	1.52	11.89	14,400.00	0.50	10,916.93	
2000	Underground	Phased Release	456.32	1.100%	1.04	4.000%	5.23	18.25	14,400.00	0.50	37,622.99	
2001	Underground	Phased Release	149.53	1.100%	1.17	4.000%	1.92	5.98	14,400.00	0.50	13,806.74	
2002	Underground	Phased Release	197.14	1.100%	1.07	4.000%	2.31	7.89	14,400.00	0.50	16,661.68	
2003	Underground	Phased Release	20.27	1.100%	1.25	4.000%	0.28	0.81	14,400.00	0.50	2,006.73	
2004	Underground	Phased Release	57.88	1.100%	1.16	4.000%	0.74	2.32	14,400.00	0.50	5,336.10	
2005	Underground	Phased Release	43.30	1.100%	1.25	4.000%	0.60	1.73	14,400.00	0.50	4,286.70	
2006	Underground	Phased Release	11.06	1.100%	1.25	4.000%	0.15	0.44	14,400.00	0.50	1,094.94	
2007	Underground	Phased Release	77.48	1.100%	1.25	5.000%	1.07	3.87	14,400.00	0.50	7,670.52	
2008	Underground	Phased Release	54.60	1.100%	1.25	5.000%	0.75	2.73	14,400.00	0.50	5,405.40	
2009	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00	
2010	Underground	Phased Release	25.60	1.100%	1.25	5.000%	0.35	1.28	14,400.00	0.50	2,534.40	
2011	Underground	Phased Release	62.76	1.100%	1.25	5.000%	0.86	3.14	14,400.00	0.50	6,213.24	
2012	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00	
2013	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00	
2014	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00	
2015	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	0.50	0.00	
2016	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	0.50	0.00	
2017	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	0.50	0.00	
TOTAL			18,947.74				106.79	919.60			768,898.44	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2019								
Permit Issue Year	Mine Type	Mine Status	Adjustment							Adjustment	
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Factor Permit Status	Gross Cost
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$14,400.00	1.00	\$0.00
1962	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1963	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1964	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1965	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1966	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1967	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1968	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1969	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1970	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1971	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1972	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1973	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1974	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1975	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1976	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1977	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1978	Underground	Active	117.08	0.010%	1.00	5.000%	0.01	5.85	14,400.00	1.00	168.59
1979	Underground	Active	619.21	0.010%	0.48	5.000%	0.03	30.96	14,400.00	1.00	426.41
1980	Underground	Active	278.98	0.010%	1.03	5.000%	0.03	13.95	14,400.00	1.00	412.36
1981	Underground	Active	188.10	0.010%	0.37	5.000%	0.01	9.41	14,400.00	1.00	100.31
1982	Underground	Active	305.94	0.010%	1.12	5.000%	0.03	15.30	14,400.00	1.00	494.97
1983	Underground	Active	5,310.68	0.010%	0.27	5.000%	0.14	265.53	14,400.00	1.00	2,083.04
1984	Underground	Active	358.23	0.010%	0.32	5.000%	0.01	17.91	14,400.00	1.00	167.49
1985	Underground	Active	19.99	0.010%	1.25	5.000%	0.00	1.00	14,400.00	1.00	35.97
1986	Underground	Active	30.68	0.010%	1.25	5.000%	0.00	1.53	14,400.00	1.00	55.23
1987	Underground	Active	226.49	0.010%	1.01	5.000%	0.02	11.32	14,400.00	1.00	329.30
1988	Underground	Active	4.86	0.010%	1.25	5.000%	0.00	0.24	14,400.00	1.00	8.74
1989	Underground	Active	76.39	1.000%	1.04	5.000%	0.79	3.82	14,400.00	1.00	11,389.98
1990	Underground	Active	207.90	1.000%	0.39	5.000%	0.82	10.39	14,400.00	1.00	11,809.61
1991	Underground	Active	612.22	1.000%	0.49	5.000%	2.97	30.61	14,400.00	1.00	42,791.19
1992	Underground	Active	220.66	1.000%	1.05	5.000%	2.31	11.03	14,400.00	1.00	33,233.26
1993	Underground	Active	549.25	1.000%	0.45	5.000%	2.48	27.46	14,400.00	1.00	35,664.67
1994	Underground	Active	97.64	1.000%	1.25	5.000%	1.22	4.88	14,400.00	1.00	17,575.18
1995	Underground	Active	96.05	1.000%	1.03	4.000%	0.99	3.84	14,400.00	1.00	14,222.24
1996	Underground	Active	143.76	1.100%	1.19	4.000%	1.88	5.75	14,400.00	1.00	27,139.09
1997	Underground	Active	361.32	1.100%	0.60	4.000%	2.39	14.45	14,400.00	1.00	34,396.73
1998	Underground	Active	104.06	1.100%	1.03	4.000%	1.17	4.16	14,400.00	1.00	16,896.12
1999	Underground	Active	223.33	1.100%	1.07	4.000%	2.62	8.93	14,400.00	1.00	37,742.75
2000	Underground	Active	120.19	1.100%	1.17	4.000%	1.55	4.81	14,400.00	1.00	22,360.72
2001	Underground	Active	60.63	1.100%	1.10	4.000%	0.73	2.43	14,400.00	1.00	10,551.02
2002	Underground	Active	553.29	1.100%	0.66	4.000%	4.02	22.13	14,400.00	1.00	57,870.79
2003	Underground	Active	577.46	1.100%	0.41	4.000%	2.61	23.10	14,400.00	1.00	37,593.02
2004	Underground	Active	907.58	1.100%	0.72	4.000%	7.17	36.30	14,400.00	1.00	103,215.31
2005	Underground	Active	215.38	1.100%	1.08	4.000%	2.56	8.62	14,400.00	1.00	36,798.97
2006	Underground	Active	171.28	1.100%	1.06	4.000%	2.00	6.85	14,400.00	1.00	28,781.68
2007	Underground	Active	466.98	1.100%	0.82	4.000%	4.20	18.68	14,400.00	1.00	60,434.34
2008	Underground	Active	255.35	1.100%	1.04	5.000%	2.93	12.77	14,400.00	1.00	42,261.31
2009	Underground	Active	54.25	1.100%	1.25	5.000%	0.75	2.71	14,400.00	1.00	10,740.77
2010	Underground	Active	264.43	1.100%	1.11	5.000%	3.22	13.22	14,400.00	1.00	46,400.10
2011	Underground	Active	81.54	1.100%	1.25	5.000%	1.12	4.08	14,400.00	1.00	16,144.53
2012	Underground	Active	213.20	1.100%	1.12	5.000%	2.63	10.66	14,400.00	1.00	37,875.02
2013	Underground	Active	525.58	1.100%	1.04	5.000%	6.04	26.28	14,400.00	1.00	86,953.93
2014	Underground	Active	211.63	1.100%	1.14	5.000%	2.66	10.58	14,400.00	1.00	38,308.94
2015	Underground	Active	177.90	1.100%	1.23	5.000%	2.40	8.90	14,400.00	1.00	34,560.90
2016	Underground	Active	33.45	0.000%	1.25	0.000%	0.00	0.00	14,400.00	1.00	0.00
2017	Underground	Active	22.30	0.000%	1.25	0.000%	0.00	0.00	14,400.00	1.00	0.00
TOTAL			15,065.22					66.53	710.46		957,994.57

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2019								
			Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status	Gross Cost
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	\$0.00
1962	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1963	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1964	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1965	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1966	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1967	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1968	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1969	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1970	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1971	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1972	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1973	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1974	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1975	Underground	Inactive	99.16	0.010%	1.00	4.000%	0.01	3.97	14,400.00	1.00	142.79
1976	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1977	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1978	Underground	Inactive	21.87	0.010%	1.25	5.000%	0.00	1.09	14,400.00	1.00	39.36
1979	Underground	Inactive	76.42	0.010%	1.00	5.000%	0.01	3.82	14,400.00	1.00	110.04
1980	Underground	Inactive	43.42	0.010%	1.00	5.000%	0.00	2.17	14,400.00	1.00	62.52
1981	Underground	Inactive	65.58	0.010%	1.00	5.000%	0.01	3.28	14,400.00	1.00	94.44
1982	Underground	Inactive	394.29	0.010%	1.05	5.000%	0.04	19.71	14,400.00	1.00	595.37
1983	Underground	Inactive	980.01	0.010%	0.65	5.000%	0.06	49.00	14,400.00	1.00	913.09
1984	Underground	Inactive	342.82	0.010%	0.58	5.000%	0.02	17.14	14,400.00	1.00	288.29
1985	Underground	Inactive	41.36	0.010%	1.00	5.000%	0.00	2.07	14,400.00	1.00	59.56
1986	Underground	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00
1987	Underground	Inactive	106.42	0.010%	0.99	5.000%	0.01	5.32	14,400.00	1.00	151.99
1988	Underground	Inactive	188.99	0.010%	0.75	5.000%	0.01	9.45	14,400.00	1.00	204.83
1989	Underground	Inactive	98.37	1.000%	1.01	5.000%	0.99	4.92	14,400.00	1.00	14,307.04
1990	Underground	Inactive	131.70	1.000%	0.25	5.000%	0.33	6.59	14,400.00	1.00	4,741.29
1991	Underground	Inactive	13.14	1.000%	1.25	5.000%	0.16	0.66	14,400.00	1.00	2,365.88
1992	Underground	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00
1993	Underground	Inactive	278.42	1.000%	1.04	5.000%	2.91	13.92	14,400.00	1.00	41,891.51
1994	Underground	Inactive	329.88	1.000%	0.47	5.000%	1.57	16.49	14,400.00	1.00	22,549.28
1995	Underground	Inactive	291.50	1.000%	1.09	4.000%	3.18	11.66	14,400.00	1.00	45,749.81
1996	Underground	Inactive	87.31	1.100%	1.09	4.000%	1.04	3.49	14,400.00	1.00	15,018.68
1997	Underground	Inactive	325.18	1.100%	1.07	4.000%	3.83	13.01	14,400.00	1.00	55,115.95
1998	Underground	Inactive	405.49	1.100%	1.03	4.000%	4.60	16.22	14,400.00	1.00	66,290.09
1999	Underground	Inactive	283.22	1.100%	0.45	4.000%	1.39	11.33	14,400.00	1.00	19,990.39
2000	Underground	Inactive	130.46	1.100%	1.09	4.000%	1.57	5.22	14,400.00	1.00	22,544.00
2001	Underground	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
2002	Underground	Inactive	264.38	1.100%	1.09	4.000%	3.16	10.58	14,400.00	1.00	45,518.81
2003	Underground	Inactive	134.23	1.100%	1.06	4.000%	1.56	5.37	14,400.00	1.00	22,481.43
2004	Underground	Inactive	155.76	1.100%	1.06	4.000%	1.82	6.23	14,400.00	1.00	26,216.23
2005	Underground	Inactive	71.81	1.100%	1.25	4.000%	0.99	2.87	14,400.00	1.00	14,218.56
2006	Underground	Inactive	287.70	1.100%	1.03	4.000%	3.26	11.51	14,400.00	1.00	46,889.28
2007	Underground	Inactive	47.59	1.100%	1.25	4.000%	0.65	1.90	14,400.00	1.00	9,422.74
2008	Underground	Inactive	158.91	1.100%	1.19	5.000%	2.09	7.95	14,400.00	1.00	30,071.65
2009	Underground	Inactive	180.00	1.100%	1.11	5.000%	2.21	9.00	14,400.00	1.00	31,773.99
2010	Underground	Inactive	85.66	1.100%	1.25	5.000%	1.18	4.28	14,400.00	1.00	16,960.19
2011	Underground	Inactive	149.67	1.100%	1.16	5.000%	1.92	7.48	14,400.00	1.00	27,615.48
2012	Underground	Inactive	22.52	1.100%	1.25	5.000%	0.31	1.13	14,400.00	1.00	4,458.33
2013	Underground	Inactive	12.86	1.100%	1.25	5.000%	0.18	0.64	14,400.00	1.00	2,547.09
2014	Underground	Inactive	11.24	1.100%	1.25	5.000%	0.15	0.56	14,400.00	1.00	2,224.53
2015	Underground	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00
2016	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	1.00	0.00
2017	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	1.00	0.00
TOTAL			6,317.34				41.22	290.03			593,624.49

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2019								
Permit Issue Year	Mine Type	Mine Status	Adjustment					Released Acres	Avg Recl Cost per Acre	Adjustment	
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres			Factor Permit Status	Gross Cost
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$14,400.00	0.50	\$0.00
1962	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1963	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1964	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1965	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1966	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1967	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1968	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1969	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1970	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1971	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1972	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1973	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1974	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1975	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1976	Underground	Phased Release	21.63	0.010%	1.25	4.000%	0.00	0.87	14,400.00	0.50	19.46
1977	Underground	Phased Release	23.87	0.010%	1.25	4.000%	0.00	0.95	14,400.00	0.50	21.48
1978	Underground	Phased Release	34.51	0.010%	1.20	5.000%	0.00	1.73	14,400.00	0.50	29.93
1979	Underground	Phased Release	121.87	0.010%	1.15	5.000%	0.01	6.09	14,400.00	0.50	101.14
1980	Underground	Phased Release	109.53	0.010%	0.95	5.000%	0.01	5.48	14,400.00	0.50	74.64
1981	Underground	Phased Release	725.54	0.010%	0.87	5.000%	0.06	36.28	14,400.00	0.50	453.80
1982	Underground	Phased Release	130.59	0.010%	1.22	5.000%	0.02	6.53	14,400.00	0.50	114.62
1983	Underground	Phased Release	1,677.95	0.010%	0.67	5.000%	0.11	83.90	14,400.00	0.50	804.19
1984	Underground	Phased Release	1,075.68	0.010%	0.58	5.000%	0.06	53.78	14,400.00	0.50	445.89
1985	Underground	Phased Release	316.57	0.010%	0.70	5.000%	0.02	15.83	14,400.00	0.50	158.87
1986	Underground	Phased Release	84.94	0.010%	1.25	5.000%	0.01	4.25	14,400.00	0.50	76.44
1987	Underground	Phased Release	338.14	0.010%	1.18	5.000%	0.04	16.91	14,400.00	0.50	287.60
1988	Underground	Phased Release	239.14	0.010%	1.24	5.000%	0.03	11.96	14,400.00	0.50	213.03
1989	Underground	Phased Release	171.49	1.000%	1.25	5.000%	2.14	8.57	14,400.00	0.50	15,433.88
1990	Underground	Phased Release	33.40	1.000%	1.25	5.000%	0.42	1.67	14,400.00	0.50	3,006.28
1991	Underground	Phased Release	9,715.65	1.000%	0.62	5.000%	59.78	485.78	14,400.00	0.50	430,440.22
1992	Underground	Phased Release	79.30	1.000%	1.13	5.000%	0.90	3.97	14,400.00	0.50	6,448.79
1993	Underground	Phased Release	199.82	1.000%	1.14	5.000%	2.28	9.99	14,400.00	0.50	16,434.90
1994	Underground	Phased Release	576.65	1.000%	1.06	5.000%	6.11	28.83	14,400.00	0.50	43,999.17
1995	Underground	Phased Release	311.81	1.000%	1.15	4.000%	3.58	12.47	14,400.00	0.50	25,756.01
1996	Underground	Phased Release	174.26	1.100%	1.25	4.000%	2.40	6.97	14,400.00	0.50	17,251.88
1997	Underground	Phased Release	290.95	1.100%	1.11	4.000%	3.54	11.64	14,400.00	0.50	25,488.33
1998	Underground	Phased Release	90.90	1.100%	1.11	4.000%	1.11	3.64	14,400.00	0.50	7,986.41
1999	Underground	Phased Release	283.91	1.100%	0.46	4.000%	1.45	11.36	14,400.00	0.50	10,424.58
2000	Underground	Phased Release	432.84	1.100%	1.04	4.000%	4.96	17.31	14,400.00	0.50	35,687.24
2001	Underground	Phased Release	141.63	1.100%	1.17	4.000%	1.82	5.67	14,400.00	0.50	13,077.41
2002	Underground	Phased Release	186.94	1.100%	1.07	4.000%	2.19	7.48	14,400.00	0.50	15,799.63
2003	Underground	Phased Release	19.18	1.100%	1.25	4.000%	0.26	0.77	14,400.00	0.50	1,898.87
2004	Underground	Phased Release	54.82	1.100%	1.16	4.000%	0.70	2.19	14,400.00	0.50	5,054.33
2005	Underground	Phased Release	40.97	1.100%	1.25	4.000%	0.56	1.64	14,400.00	0.50	4,056.29
2006	Underground	Phased Release	10.47	1.100%	1.25	4.000%	0.14	0.42	14,400.00	0.50	1,036.09
2007	Underground	Phased Release	72.54	1.100%	1.25	4.000%	1.00	2.90	14,400.00	0.50	7,181.52
2008	Underground	Phased Release	51.12	1.100%	1.25	5.000%	0.70	2.56	14,400.00	0.50	5,060.81
2009	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2010	Underground	Phased Release	23.97	1.100%	1.25	5.000%	0.33	1.20	14,400.00	0.50	2,372.83
2011	Underground	Phased Release	58.76	1.100%	1.25	5.000%	0.81	2.94	14,400.00	0.50	5,817.15
2012	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2013	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2014	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2015	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2016	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	0.50	0.00
2017	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	0.50	0.00
TOTAL			17,921.35					97.57	874.50		702,513.72

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2020								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Factor Permit Status	Gross Cost
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$14,400.00	1.00	\$0.00
1962	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1963	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1964	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1965	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1966	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1967	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1968	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1969	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1970	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1971	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1972	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1973	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1974	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1975	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1976	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1977	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00
1978	Underground	Active	111.21	0.010%	1.00	4.000%	0.01	4.45	14,400.00	1.00	160.14
1979	Underground	Active	588.22	0.010%	0.48	5.000%	0.03	29.41	14,400.00	1.00	405.07
1980	Underground	Active	265.00	0.010%	1.03	5.000%	0.03	13.25	14,400.00	1.00	391.70
1981	Underground	Active	178.69	0.010%	0.37	5.000%	0.01	8.93	14,400.00	1.00	95.30
1982	Underground	Active	290.61	0.010%	1.12	5.000%	0.03	14.53	14,400.00	1.00	470.16
1983	Underground	Active	5,045.00	0.010%	0.27	5.000%	0.14	252.25	14,400.00	1.00	1,978.83
1984	Underground	Active	340.31	0.010%	0.32	5.000%	0.01	17.02	14,400.00	1.00	159.11
1985	Underground	Active	18.98	0.010%	1.25	5.000%	0.00	0.95	14,400.00	1.00	34.17
1986	Underground	Active	29.14	0.010%	1.25	5.000%	0.00	1.46	14,400.00	1.00	52.46
1987	Underground	Active	215.15	0.010%	1.01	5.000%	0.02	10.76	14,400.00	1.00	312.80
1988	Underground	Active	4.61	0.010%	1.25	5.000%	0.00	0.23	14,400.00	1.00	8.30
1989	Underground	Active	71.78	0.010%	1.04	5.000%	0.01	3.59	14,400.00	1.00	107.03
1990	Underground	Active	196.68	1.000%	0.39	5.000%	0.78	9.83	14,400.00	1.00	11,172.54
1991	Underground	Active	578.64	1.000%	0.49	5.000%	2.81	28.93	14,400.00	1.00	40,443.93
1992	Underground	Active	207.32	1.000%	1.05	5.000%	2.17	10.37	14,400.00	1.00	31,224.01
1993	Underground	Active	519.32	1.000%	0.45	5.000%	2.34	25.97	14,400.00	1.00	33,720.61
1994	Underground	Active	91.54	1.000%	1.25	5.000%	1.14	4.58	14,400.00	1.00	16,476.73
1995	Underground	Active	91.22	1.000%	1.03	5.000%	0.94	4.56	14,400.00	1.00	13,507.10
1996	Underground	Active	136.12	1.000%	1.19	4.000%	1.62	5.44	14,400.00	1.00	23,361.57
1997	Underground	Active	344.48	1.100%	0.60	4.000%	2.28	13.78	14,400.00	1.00	32,793.47
1998	Underground	Active	98.72	1.100%	1.03	4.000%	1.11	3.95	14,400.00	1.00	16,029.75
1999	Underground	Active	211.77	1.100%	1.07	4.000%	2.49	8.47	14,400.00	1.00	35,790.08
2000	Underground	Active	113.83	1.100%	1.17	4.000%	1.47	4.55	14,400.00	1.00	21,177.41
2001	Underground	Active	57.47	1.100%	1.10	4.000%	0.69	2.30	14,400.00	1.00	10,001.47
2002	Underground	Active	527.14	1.100%	0.66	4.000%	3.83	21.09	14,400.00	1.00	55,135.62
2003	Underground	Active	551.75	1.100%	0.41	4.000%	2.49	22.07	14,400.00	1.00	35,919.35
2004	Underground	Active	864.11	1.100%	0.72	4.000%	6.82	34.56	14,400.00	1.00	98,271.54
2005	Underground	Active	204.21	1.100%	1.08	4.000%	2.42	8.17	14,400.00	1.00	34,890.39
2006	Underground	Active	162.43	1.100%	1.06	4.000%	1.90	6.50	14,400.00	1.00	27,294.54
2007	Underground	Active	444.10	1.100%	0.82	4.000%	3.99	17.76	14,400.00	1.00	57,473.83
2008	Underground	Active	239.65	1.100%	1.04	4.000%	2.75	9.59	14,400.00	1.00	39,662.52
2009	Underground	Active	50.79	1.100%	1.25	5.000%	0.70	2.54	14,400.00	1.00	10,056.05
2010	Underground	Active	247.98	1.100%	1.11	5.000%	3.02	12.40	14,400.00	1.00	43,514.68
2011	Underground	Active	76.34	1.100%	1.25	5.000%	1.05	3.82	14,400.00	1.00	15,115.31
2012	Underground	Active	199.91	1.100%	1.12	5.000%	2.47	10.00	14,400.00	1.00	35,514.00
2013	Underground	Active	493.27	1.100%	1.04	5.000%	5.67	24.66	14,400.00	1.00	81,607.22
2014	Underground	Active	198.39	1.100%	1.14	5.000%	2.49	9.92	14,400.00	1.00	35,911.93
2015	Underground	Active	166.60	1.100%	1.23	5.000%	2.25	8.33	14,400.00	1.00	32,366.59
2016	Underground	Active	33.45	1.100%	1.25	5.000%	0.46	1.67	14,400.00	1.00	6,623.10
2017	Underground	Active	22.30	0.000%	1.25	0.000%	0.00	0.00	14,400.00	1.00	0.00
TOTAL			14,288.23				62.45	672.63			899,230.41

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2020									
			Adjustment						Avg Recl Cost per Acre	Adjustment		
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres		Factor Permit Status	Gross Cost	
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)	
1961	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	\$14,400.00	1.00	\$0.00
1962	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1963	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1964	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1965	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1966	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1967	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1968	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1969	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1970	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1971	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1972	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1973	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1974	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	0.00	14,400.00	1.00	0.00
1975	Underground	Inactive	95.18	0.010%	1.00	4.000%	0.01	3.81	14,400.00	1.00	137.06	
1976	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1977	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
1978	Underground	Inactive	20.77	0.010%	1.25	4.000%	0.00	0.83	14,400.00	1.00	37.39	
1979	Underground	Inactive	72.59	0.010%	1.00	5.000%	0.01	3.63	14,400.00	1.00	104.53	
1980	Underground	Inactive	41.24	0.010%	1.00	5.000%	0.00	2.06	14,400.00	1.00	59.39	
1981	Underground	Inactive	62.30	0.010%	1.00	5.000%	0.01	3.11	14,400.00	1.00	89.71	
1982	Underground	Inactive	374.54	0.010%	1.05	5.000%	0.04	18.73	14,400.00	1.00	565.54	
1983	Underground	Inactive	930.95	0.010%	0.65	5.000%	0.06	46.55	14,400.00	1.00	867.38	
1984	Underground	Inactive	325.66	0.010%	0.58	5.000%	0.02	16.28	14,400.00	1.00	273.86	
1985	Underground	Inactive	39.29	0.010%	1.00	5.000%	0.00	1.96	14,400.00	1.00	56.57	
1986	Underground	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00	
1987	Underground	Inactive	101.09	0.010%	0.99	5.000%	0.01	5.05	14,400.00	1.00	144.38	
1988	Underground	Inactive	179.53	0.010%	0.75	5.000%	0.01	8.98	14,400.00	1.00	194.57	
1989	Underground	Inactive	92.46	0.010%	1.01	5.000%	0.01	4.62	14,400.00	1.00	134.47	
1990	Underground	Inactive	124.79	1.000%	0.25	5.000%	0.31	6.24	14,400.00	1.00	4,492.37	
1991	Underground	Inactive	12.32	1.000%	1.25	5.000%	0.15	0.62	14,400.00	1.00	2,218.01	
1992	Underground	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00	
1993	Underground	Inactive	261.59	1.000%	1.04	5.000%	2.73	13.08	14,400.00	1.00	39,359.21	
1994	Underground	Inactive	311.82	1.000%	0.47	5.000%	1.48	15.59	14,400.00	1.00	21,314.78	
1995	Underground	Inactive	276.67	1.000%	1.09	5.000%	3.02	13.83	14,400.00	1.00	43,424.19	
1996	Underground	Inactive	82.77	1.000%	1.09	4.000%	0.90	3.31	14,400.00	1.00	12,944.11	
1997	Underground	Inactive	308.34	1.100%	1.07	4.000%	3.63	12.33	14,400.00	1.00	52,262.57	
1998	Underground	Inactive	384.67	1.100%	1.03	4.000%	4.37	15.39	14,400.00	1.00	62,885.90	
1999	Underground	Inactive	270.51	1.100%	0.45	4.000%	1.33	10.82	14,400.00	1.00	19,092.79	
2000	Underground	Inactive	123.68	1.100%	1.09	4.000%	1.48	4.95	14,400.00	1.00	21,371.72	
2001	Underground	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	14,400.00	1.00	0.00	
2002	Underground	Inactive	250.64	1.100%	1.09	4.000%	3.00	10.03	14,400.00	1.00	43,153.82	
2003	Underground	Inactive	127.30	1.100%	1.06	4.000%	1.48	5.09	14,400.00	1.00	21,320.70	
2004	Underground	Inactive	147.71	1.100%	1.06	4.000%	1.73	5.91	14,400.00	1.00	24,861.15	
2005	Underground	Inactive	67.95	1.100%	1.25	4.000%	0.93	2.72	14,400.00	1.00	13,454.31	
2006	Underground	Inactive	272.93	1.100%	1.03	4.000%	3.09	10.92	14,400.00	1.00	44,483.00	
2007	Underground	Inactive	45.03	1.100%	1.25	4.000%	0.62	1.80	14,400.00	1.00	8,916.27	
2008	Underground	Inactive	148.88	1.100%	1.19	4.000%	1.96	5.96	14,400.00	1.00	28,172.88	
2009	Underground	Inactive	168.79	1.100%	1.11	5.000%	2.07	8.44	14,400.00	1.00	29,795.79	
2010	Underground	Inactive	80.20	1.100%	1.25	5.000%	1.10	4.01	14,400.00	1.00	15,878.98	
2011	Underground	Inactive	140.27	1.100%	1.16	5.000%	1.80	7.01	14,400.00	1.00	25,880.86	
2012	Underground	Inactive	21.08	1.100%	1.25	5.000%	0.29	1.05	14,400.00	1.00	4,174.11	
2013	Underground	Inactive	12.04	1.100%	1.25	5.000%	0.17	0.60	14,400.00	1.00	2,384.71	
2014	Underground	Inactive	10.52	1.100%	1.25	5.000%	0.14	0.53	14,400.00	1.00	2,082.72	
2015	Underground	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00	
2016	Underground	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	1.00	0.00	
2017	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	1.00	0.00	
TOTAL			5,986.09				37.96	275.84				546,586.80

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2020								
Permit Issue Year	Mine Type	Mine Status	Adjustment							Adjustment	
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Factor Permit Status	Gross Cost
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$14,400.00	0.50	\$0.00
1962	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1963	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1964	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1965	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1966	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1967	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1968	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1969	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1970	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1971	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1972	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1973	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1974	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1975	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	14,400.00	0.50	0.00
1976	Underground	Phased Release	20.76	0.010%	1.25	4.000%	0.00	0.83	14,400.00	0.50	18.68
1977	Underground	Phased Release	22.91	0.010%	1.25	4.000%	0.00	0.92	14,400.00	0.50	20.62
1978	Underground	Phased Release	32.78	0.010%	1.20	4.000%	0.00	1.31	14,400.00	0.50	28.43
1979	Underground	Phased Release	115.76	0.010%	1.15	5.000%	0.01	5.79	14,400.00	0.50	96.07
1980	Underground	Phased Release	104.05	0.010%	0.95	5.000%	0.01	5.20	14,400.00	0.50	70.90
1981	Underground	Phased Release	689.20	0.010%	0.87	5.000%	0.06	34.46	14,400.00	0.50	431.07
1982	Underground	Phased Release	124.04	0.010%	1.22	5.000%	0.02	6.20	14,400.00	0.50	108.87
1983	Underground	Phased Release	1,593.94	0.010%	0.67	5.000%	0.11	79.70	14,400.00	0.50	763.93
1984	Underground	Phased Release	1,021.83	0.010%	0.58	5.000%	0.06	51.09	14,400.00	0.50	423.57
1985	Underground	Phased Release	300.72	0.010%	0.70	5.000%	0.02	15.04	14,400.00	0.50	150.91
1986	Underground	Phased Release	80.68	0.010%	1.25	5.000%	0.01	4.03	14,400.00	0.50	72.61
1987	Underground	Phased Release	321.19	0.010%	1.18	5.000%	0.04	16.06	14,400.00	0.50	273.18
1988	Underground	Phased Release	227.16	0.010%	1.24	5.000%	0.03	11.36	14,400.00	0.50	202.36
1989	Underground	Phased Release	160.77	0.010%	1.25	5.000%	0.02	8.04	14,400.00	0.50	144.69
1990	Underground	Phased Release	31.32	1.000%	1.25	5.000%	0.39	1.57	14,400.00	0.50	2,818.39
1991	Underground	Phased Release	9,170.08	1.000%	0.62	5.000%	56.43	458.50	14,400.00	0.50	406,269.57
1992	Underground	Phased Release	74.44	1.000%	1.13	5.000%	0.84	3.72	14,400.00	0.50	6,053.52
1993	Underground	Phased Release	187.55	1.000%	1.14	5.000%	2.14	9.38	14,400.00	0.50	15,425.42
1994	Underground	Phased Release	541.70	1.000%	1.06	5.000%	5.74	27.09	14,400.00	0.50	41,332.93
1995	Underground	Phased Release	295.76	1.000%	1.15	5.000%	3.39	14.79	14,400.00	0.50	24,430.28
1996	Underground	Phased Release	164.89	1.000%	1.25	4.000%	2.06	6.60	14,400.00	0.50	14,840.54
1997	Underground	Phased Release	275.77	1.100%	1.11	4.000%	3.36	11.03	14,400.00	0.50	24,158.67
1998	Underground	Phased Release	86.16	1.100%	1.11	4.000%	1.05	3.45	14,400.00	0.50	7,569.51
1999	Underground	Phased Release	271.11	1.100%	0.46	4.000%	1.38	10.84	14,400.00	0.50	9,954.43
2000	Underground	Phased Release	410.57	1.100%	1.04	4.000%	4.70	16.42	14,400.00	0.50	33,851.09
2001	Underground	Phased Release	134.15	1.100%	1.17	4.000%	1.72	5.37	14,400.00	0.50	12,386.60
2002	Underground	Phased Release	177.27	1.100%	1.07	4.000%	2.08	7.09	14,400.00	0.50	14,982.18
2003	Underground	Phased Release	18.15	1.100%	1.25	4.000%	0.25	0.73	14,400.00	0.50	1,796.80
2004	Underground	Phased Release	51.93	1.100%	1.16	4.000%	0.66	2.08	14,400.00	0.50	4,787.44
2005	Underground	Phased Release	38.77	1.100%	1.25	4.000%	0.53	1.55	14,400.00	0.50	3,838.26
2006	Underground	Phased Release	9.90	1.100%	1.25	4.000%	0.14	0.40	14,400.00	0.50	980.40
2007	Underground	Phased Release	68.64	1.100%	1.25	4.000%	0.94	2.75	14,400.00	0.50	6,795.52
2008	Underground	Phased Release	47.86	1.100%	1.25	4.000%	0.66	1.91	14,400.00	0.50	4,738.18
2009	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2010	Underground	Phased Release	22.44	1.100%	1.25	5.000%	0.31	1.12	14,400.00	0.50	2,221.56
2011	Underground	Phased Release	55.01	1.100%	1.25	5.000%	0.76	2.75	14,400.00	0.50	5,446.30
2012	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2013	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2014	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2015	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2016	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	14,400.00	0.50	0.00
2017	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	14,400.00	0.50	0.00
TOTAL			16,949.28					89.93	829.15		647,483.52

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Adjustment			Avg Recl Cost per Acre	Factor Permit Status	Gross Cost
				Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Factor Permit Status			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	\$5,200.00	1.00	\$0.00	
1962	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1963	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1964	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1965	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1966	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1967	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1968	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1969	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1970	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1971	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1972	Other	Active	20.00	0.010%	1.25	0.100%	0.00	0.02	5,200.00	1.00	13.00	
1973	Other	Active	28.52	0.010%	1.25	0.100%	0.00	0.03	5,200.00	1.00	18.54	
1974	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1975	Other	Active	34.08	0.010%	1.25	0.100%	0.00	0.03	5,200.00	1.00	22.15	
1976	Other	Active	125.00	0.010%	1.25	0.100%	0.02	0.13	5,200.00	1.00	81.25	
1977	Other	Active	65.00	0.010%	1.25	0.100%	0.01	0.07	5,200.00	1.00	42.25	
1978	Other	Active	12.76	0.010%	1.25	0.100%	0.00	0.01	5,200.00	1.00	8.29	
1979	Other	Active	139.84	0.010%	1.25	0.100%	0.02	0.14	5,200.00	1.00	90.90	
1980	Other	Active	550.72	0.010%	1.09	3.000%	0.06	16.52	5,200.00	1.00	311.79	
1981	Other	Active	3,036.00	0.010%	0.52	3.000%	0.16	91.08	5,200.00	1.00	818.29	
1982	Other	Active	1,734.38	0.010%	0.57	3.000%	0.10	52.03	5,200.00	1.00	517.85	
1983	Other	Active	2,870.67	0.010%	0.64	3.000%	0.18	86.12	5,200.00	1.00	960.26	
1984	Other	Active	1,498.93	0.010%	0.44	3.000%	0.07	44.97	5,200.00	1.00	342.15	
1985	Other	Active	1,449.90	0.500%	0.56	3.000%	4.09	43.50	5,200.00	1.00	21,293.72	
1986	Other	Active	1,114.64	0.500%	0.53	3.000%	2.98	33.44	5,200.00	1.00	15,479.69	
1987	Other	Active	105.36	0.500%	1.06	3.000%	0.56	3.16	5,200.00	1.00	2,905.89	
1988	Other	Active	312.00	0.500%	1.10	3.000%	1.72	9.36	5,200.00	1.00	8,952.13	
1989	Other	Active	351.06	0.500%	1.25	3.000%	2.19	10.53	5,200.00	1.00	11,409.45	
1990	Other	Active	56.15	0.500%	1.25	3.000%	0.35	1.68	5,200.00	1.00	1,824.88	
1991	Other	Active	164.28	0.500%	1.17	3.000%	0.96	4.93	5,200.00	1.00	4,984.53	
1992	Other	Active	883.76	0.500%	0.54	3.000%	2.37	26.51	5,200.00	1.00	12,310.57	
1993	Other	Active	1,293.06	0.500%	0.55	3.000%	3.58	38.79	5,200.00	1.00	18,624.62	
1994	Other	Active	1,090.23	0.500%	0.45	3.000%	2.45	32.71	5,200.00	1.00	12,733.83	
1995	Other	Active	1,634.41	0.500%	0.31	3.000%	2.54	49.03	5,200.00	1.00	13,208.59	
1996	Other	Active	1,185.33	0.500%	0.30	3.000%	1.78	35.56	5,200.00	1.00	9,263.09	
1997	Other	Active	1,162.12	0.500%	0.73	5.000%	4.24	58.11	5,200.00	1.00	22,072.18	
1998	Other	Active	1,151.98	0.500%	0.30	5.000%	1.72	57.60	5,200.00	1.00	8,943.98	
1999	Other	Active	58.70	0.500%	1.25	3.000%	0.37	1.76	5,200.00	1.00	1,907.75	
2000	Other	Active	438.48	0.500%	0.80	3.000%	1.74	13.15	5,200.00	1.00	9,073.66	
2001	Other	Active	24.48	0.500%	1.22	3.000%	0.15	0.73	5,200.00	1.00	779.04	
2002	Other	Active	694.36	0.500%	0.31	3.000%	1.06	20.83	5,200.00	1.00	5,526.36	
2003	Other	Active	1,102.24	0.500%	0.54	3.000%	2.98	33.07	5,200.00	1.00	15,514.43	
2004	Other	Active	375.01	0.500%	0.77	3.000%	1.44	11.25	5,200.00	1.00	7,498.40	
2005	Other	Active	619.46	0.500%	0.59	4.000%	1.84	24.78	5,200.00	1.00	9,543.88	
2006	Other	Active	301.44	0.500%	1.11	4.000%	1.68	12.06	5,200.00	1.00	8,736.83	
2007	Other	Active	238.77	0.500%	1.13	3.000%	1.35	7.16	5,200.00	1.00	7,002.91	
2008	Other	Active	596.48	0.500%	0.72	3.000%	2.14	17.89	5,200.00	1.00	11,119.36	
2009	Other	Active	273.55	0.500%	1.01	3.000%	1.38	8.21	5,200.00	1.00	7,196.80	
2010	Other	Active	854.22	0.500%	0.53	2.000%	2.27	17.08	5,200.00	1.00	11,820.38	
2011	Other	Active	118.05	0.500%	1.25	1.000%	0.74	1.18	5,200.00	1.00	3,836.63	
2012	Other	Active	789.96	0.500%	0.79	1.000%	3.11	7.90	5,200.00	1.00	16,163.11	
2013	Other	Active	846.95	0.500%	0.76	0.500%	3.20	4.23	5,200.00	1.00	16,629.26	
2014	Other	Active	44.65	0.500%	1.25	0.500%	0.28	0.22	5,200.00	1.00	1,451.13	
2015	Other	Active	169.35	0.000%	1.12	0.000%	0.00	0.00	5,200.00	1.00	0.00	
2016	Other	Active	170.63	0.000%	0.44	0.000%	0.00	0.00	5,200.00	1.00	0.00	
2017	Other	Active	65.90	0.000%	1.20	0.000%	0.00	0.00	5,200.00	1.00	0.00	
TOTAL			29,852.86				57.89	877.58			301,033.75	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
				Forfeiture Rate	Factor Permit Bond Size	Release Rate				Factor Permit Status		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	\$5,200.00	1.00	\$0.00	
1962	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1963	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1964	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1965	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1966	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1967	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1968	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1969	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1970	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1971	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1972	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1973	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1974	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1975	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1976	Other	Inactive	281.18	0.010%	1.02	0.100%	0.03	0.28	5,200.00	1.00	149.27	
1977	Other	Inactive	52.00	0.010%	1.25	0.100%	0.01	0.05	5,200.00	1.00	33.80	
1978	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1979	Other	Inactive	9.75	0.010%	1.25	0.100%	0.00	0.01	5,200.00	1.00	6.34	
1980	Other	Inactive	470.23	0.010%	0.54	3.000%	0.03	14.11	5,200.00	1.00	133.14	
1981	Other	Inactive	1,160.41	0.010%	0.35	3.000%	0.04	34.81	5,200.00	1.00	213.19	
1982	Other	Inactive	48.25	0.010%	1.25	3.000%	0.01	1.45	5,200.00	1.00	31.36	
1983	Other	Inactive	1,713.51	0.010%	0.50	3.000%	0.09	51.41	5,200.00	1.00	445.49	
1984	Other	Inactive	26.00	0.010%	1.25	3.000%	0.00	0.78	5,200.00	1.00	16.90	
1985	Other	Inactive	394.50	0.500%	0.45	3.000%	0.89	11.84	5,200.00	1.00	4,631.25	
1986	Other	Inactive	612.21	0.500%	0.41	3.000%	1.24	18.37	5,200.00	1.00	6,466.98	
1987	Other	Inactive	20.21	0.500%	1.25	3.000%	0.13	0.61	5,200.00	1.00	656.83	
1988	Other	Inactive	491.54	0.500%	0.55	3.000%	1.35	14.75	5,200.00	1.00	7,030.08	
1989	Other	Inactive	700.45	0.500%	0.44	3.000%	1.53	21.01	5,200.00	1.00	7,941.77	
1990	Other	Inactive	362.69	0.500%	0.50	3.000%	0.91	10.88	5,200.00	1.00	4,716.73	
1991	Other	Inactive	50.33	0.500%	1.25	3.000%	0.31	1.51	5,200.00	1.00	1,635.73	
1992	Other	Inactive	215.12	0.500%	1.17	3.000%	1.26	6.45	5,200.00	1.00	6,545.18	
1993	Other	Inactive	892.07	0.500%	0.52	3.000%	2.34	26.76	5,200.00	1.00	12,159.23	
1994	Other	Inactive	770.77	0.500%	0.41	3.000%	1.56	23.12	5,200.00	1.00	8,127.41	
1995	Other	Inactive	171.34	0.500%	1.06	3.000%	0.91	5.14	5,200.00	1.00	4,722.64	
1996	Other	Inactive	233.39	0.500%	1.02	3.000%	1.19	7.00	5,200.00	1.00	6,191.64	
1997	Other	Inactive	90.95	0.500%	1.23	5.000%	0.56	4.55	5,200.00	1.00	2,917.20	
1998	Other	Inactive	0.00	0.500%	0.00	5.000%	0.00	0.00	5,200.00	1.00	0.00	
1999	Other	Inactive	233.33	0.500%	0.63	3.000%	0.73	7.00	5,200.00	1.00	3,795.52	
2000	Other	Inactive	472.50	0.500%	0.25	3.000%	0.59	14.18	5,200.00	1.00	3,071.25	
2001	Other	Inactive	188.75	0.500%	0.43	3.000%	0.41	5.66	5,200.00	1.00	2,110.88	
2002	Other	Inactive	107.86	0.500%	1.25	3.000%	0.67	3.24	5,200.00	1.00	3,505.45	
2003	Other	Inactive	30.80	0.500%	1.25	3.000%	0.19	0.92	5,200.00	1.00	1,001.00	
2004	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	1.00	0.00	
2005	Other	Inactive	0.00	0.500%	0.00	4.000%	0.00	0.00	5,200.00	1.00	0.00	
2006	Other	Inactive	53.90	0.500%	1.25	4.000%	0.34	2.16	5,200.00	1.00	1,751.75	
2007	Other	Inactive	118.83	0.500%	1.00	3.000%	0.59	3.56	5,200.00	1.00	3,089.58	
2008	Other	Inactive	9.90	0.500%	1.25	3.000%	0.06	0.30	5,200.00	1.00	321.75	
2009	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	1.00	0.00	
2010	Other	Inactive	133.81	0.500%	1.00	2.000%	0.67	2.68	5,200.00	1.00	3,479.06	
2011	Other	Inactive	66.26	0.500%	1.00	1.000%	0.33	0.66	5,200.00	1.00	1,722.76	
2012	Other	Inactive	191.70	0.500%	1.00	1.000%	0.96	1.92	5,200.00	1.00	4,984.20	
2013	Other	Inactive	57.00	0.500%	1.25	0.500%	0.36	0.29	5,200.00	1.00	1,852.50	
2014	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	1.00	0.00	
2015	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	1.00	0.00	
2016	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	1.00	0.00	
2017	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	1.00	0.00	
TOTAL			10,431.54				20.28	297.44			105,457.80	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
				Forfeiture Rate	Factor Permit Bond Size	Release Rate				Factor Permit Status		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	\$5,200.00	0.50	\$0.00	
1962	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1963	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1964	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1965	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1966	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1967	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1968	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1969	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1970	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1971	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1972	Other	Phased Release	9.00	0.010%	1.25	0.100%	0.00	0.01	5,200.00	0.50	2.93	
1973	Other	Phased Release	27.00	0.010%	1.25	0.100%	0.00	0.03	5,200.00	0.50	8.78	
1974	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1975	Other	Phased Release	34.00	0.010%	1.25	0.100%	0.00	0.03	5,200.00	0.50	11.05	
1976	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1977	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00	
1978	Other	Phased Release	58.69	0.010%	1.25	0.100%	0.01	0.06	5,200.00	0.50	19.07	
1979	Other	Phased Release	10.00	0.010%	1.25	0.100%	0.00	0.01	5,200.00	0.50	3.25	
1980	Other	Phased Release	1,007.91	0.010%	1.25	3.000%	0.13	30.24	5,200.00	0.50	327.57	
1981	Other	Phased Release	1,892.78	0.010%	1.00	3.000%	0.19	56.78	5,200.00	0.50	489.92	
1982	Other	Phased Release	457.88	0.010%	1.25	3.000%	0.06	13.74	5,200.00	0.50	148.81	
1983	Other	Phased Release	3,078.26	0.010%	0.70	3.000%	0.21	92.35	5,200.00	0.50	557.82	
1984	Other	Phased Release	476.66	0.010%	0.77	3.000%	0.04	14.30	5,200.00	0.50	95.76	
1985	Other	Phased Release	398.19	0.500%	1.18	3.000%	2.35	11.95	5,200.00	0.50	6,101.31	
1986	Other	Phased Release	245.30	0.500%	1.04	3.000%	1.27	7.36	5,200.00	0.50	3,312.37	
1987	Other	Phased Release	272.00	0.500%	0.43	3.000%	0.59	8.16	5,200.00	0.50	1,534.00	
1988	Other	Phased Release	14.00	0.500%	1.25	3.000%	0.09	0.42	5,200.00	0.50	227.50	
1989	Other	Phased Release	49.49	0.500%	1.03	3.000%	0.25	1.48	5,200.00	0.50	660.76	
1990	Other	Phased Release	54.00	0.500%	1.25	3.000%	0.34	1.62	5,200.00	0.50	877.50	
1991	Other	Phased Release	327.16	0.500%	0.54	3.000%	0.88	9.81	5,200.00	0.50	2,300.35	
1992	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00	
1993	Other	Phased Release	102.94	0.500%	1.00	3.000%	0.51	3.09	5,200.00	0.50	1,338.22	
1994	Other	Phased Release	61.00	0.500%	1.00	3.000%	0.31	1.83	5,200.00	0.50	793.00	
1995	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00	
1996	Other	Phased Release	183.32	0.500%	1.04	3.000%	0.96	5.50	5,200.00	0.50	2,484.43	
1997	Other	Phased Release	0.00	0.500%	0.00	5.000%	0.00	0.00	5,200.00	0.50	0.00	
1998	Other	Phased Release	106.00	0.500%	1.00	5.000%	0.53	5.30	5,200.00	0.50	1,378.00	
1999	Other	Phased Release	179.00	0.500%	0.25	3.000%	0.22	5.37	5,200.00	0.50	581.75	
2000	Other	Phased Release	89.00	0.500%	1.25	3.000%	0.56	2.67	5,200.00	0.50	1,446.25	
2001	Other	Phased Release	16.66	0.500%	1.25	3.000%	0.10	0.50	5,200.00	0.50	270.73	
2002	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00	
2003	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00	
2004	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00	
2005	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	5,200.00	0.50	0.00	
2006	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	5,200.00	0.50	0.00	
2007	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00	
2008	Other	Phased Release	3.60	0.500%	1.25	3.000%	0.02	0.11	5,200.00	0.50	58.50	
2009	Other	Phased Release	29.85	0.500%	1.25	3.000%	0.19	0.90	5,200.00	0.50	485.06	
2010	Other	Phased Release	41.99	0.500%	1.01	2.000%	0.21	0.84	5,200.00	0.50	553.57	
2011	Other	Phased Release	0.00	0.500%	0.00	1.000%	0.00	0.00	5,200.00	0.50	0.00	
2012	Other	Phased Release	6.75	0.500%	1.25	1.000%	0.04	0.07	5,200.00	0.50	109.69	
2013	Other	Phased Release	1.00	0.500%	1.25	0.500%	0.01	0.01	5,200.00	0.50	16.25	
2014	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	0.50	0.00	
2015	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	0.50	0.00	
2016	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	0.50	0.00	
2017	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	0.50	0.00	
TOTAL			9,233.43				10.07	274.52			26,194.20	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Water Capital, for Forfeitures Occurring after June 30, 2017
Other
June 30, 2017

			As of Fiscal Year End 2019									
Permit Issue Year	Mine Type	Mine Status	Adjustment						Avg Recl Cost per Acre		Adjustment	Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres		Factor Permit Status		
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)	
1961	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	\$5,200.00	1.00	\$0.00	
1962	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1963	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1964	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1965	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1966	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1967	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1968	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1969	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1970	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1971	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1972	Other	Active	19.98	0.010%	1.25	0.100%	0.00	0.02	5,200.00	1.00	12.99	
1973	Other	Active	28.49	0.010%	1.25	0.100%	0.00	0.03	5,200.00	1.00	18.52	
1974	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00	
1975	Other	Active	34.04	0.010%	1.25	0.100%	0.00	0.03	5,200.00	1.00	22.13	
1976	Other	Active	124.86	0.010%	1.25	0.100%	0.02	0.12	5,200.00	1.00	81.16	
1977	Other	Active	64.93	0.010%	1.25	0.100%	0.01	0.06	5,200.00	1.00	42.20	
1978	Other	Active	12.75	0.010%	1.25	0.100%	0.00	0.01	5,200.00	1.00	8.28	
1979	Other	Active	139.68	0.010%	1.25	0.100%	0.02	0.14	5,200.00	1.00	90.79	
1980	Other	Active	534.14	0.010%	1.09	0.100%	0.06	0.53	5,200.00	1.00	302.40	
1981	Other	Active	2,944.76	0.010%	0.52	3.000%	0.15	88.34	5,200.00	1.00	793.70	
1982	Other	Active	1,682.25	0.010%	0.57	3.000%	0.10	50.47	5,200.00	1.00	502.29	
1983	Other	Active	2,784.37	0.010%	0.64	3.000%	0.18	83.53	5,200.00	1.00	931.39	
1984	Other	Active	1,453.90	0.010%	0.44	3.000%	0.06	43.62	5,200.00	1.00	331.87	
1985	Other	Active	1,402.31	0.010%	0.56	3.000%	0.08	42.07	5,200.00	1.00	411.90	
1986	Other	Active	1,078.22	0.500%	0.53	3.000%	2.88	32.35	5,200.00	1.00	14,973.95	
1987	Other	Active	101.64	0.500%	1.06	3.000%	0.54	3.05	5,200.00	1.00	2,803.30	
1988	Other	Active	300.92	0.500%	1.10	3.000%	1.66	9.03	5,200.00	1.00	8,634.16	
1989	Other	Active	338.33	0.500%	1.25	3.000%	2.11	10.15	5,200.00	1.00	10,995.86	
1990	Other	Active	54.11	0.500%	1.25	3.000%	0.34	1.62	5,200.00	1.00	1,758.72	
1991	Other	Active	158.39	0.500%	1.17	3.000%	0.92	4.75	5,200.00	1.00	4,805.90	
1992	Other	Active	854.88	0.500%	0.54	3.000%	2.29	25.65	5,200.00	1.00	11,908.28	
1993	Other	Active	1,250.69	0.500%	0.55	3.000%	3.46	37.52	5,200.00	1.00	18,014.29	
1994	Other	Active	1,055.07	0.500%	0.45	3.000%	2.37	31.65	5,200.00	1.00	12,323.21	
1995	Other	Active	1,582.84	0.500%	0.31	3.000%	2.46	47.49	5,200.00	1.00	12,791.80	
1996	Other	Active	1,147.99	0.500%	0.30	3.000%	1.73	34.44	5,200.00	1.00	8,971.27	
1997	Other	Active	1,099.77	0.500%	0.73	3.000%	4.02	32.99	5,200.00	1.00	20,887.95	
1998	Other	Active	1,092.66	0.500%	0.30	5.000%	1.63	54.63	5,200.00	1.00	8,483.43	
1999	Other	Active	56.57	0.500%	1.25	5.000%	0.35	2.83	5,200.00	1.00	1,838.59	
2000	Other	Active	423.58	0.500%	0.80	3.000%	1.69	12.71	5,200.00	1.00	8,765.34	
2001	Other	Active	23.60	0.500%	1.22	3.000%	0.14	0.71	5,200.00	1.00	750.91	
2002	Other	Active	672.47	0.500%	0.31	3.000%	1.03	20.17	5,200.00	1.00	5,352.11	
2003	Other	Active	1,066.19	0.500%	0.54	3.000%	2.89	31.99	5,200.00	1.00	15,007.01	
2004	Other	Active	362.32	0.500%	0.77	3.000%	1.39	10.87	5,200.00	1.00	7,244.61	
2005	Other	Active	592.85	0.500%	0.59	3.000%	1.76	17.79	5,200.00	1.00	9,133.85	
2006	Other	Active	287.70	0.500%	1.11	4.000%	1.60	11.51	5,200.00	1.00	8,338.66	
2007	Other	Active	230.26	0.500%	1.13	4.000%	1.30	9.21	5,200.00	1.00	6,753.32	
2008	Other	Active	576.45	0.500%	0.72	3.000%	2.07	17.29	5,200.00	1.00	10,745.91	
2009	Other	Active	263.96	0.500%	1.01	3.000%	1.34	7.92	5,200.00	1.00	6,944.48	
2010	Other	Active	834.86	0.500%	0.53	3.000%	2.22	25.05	5,200.00	1.00	11,552.52	
2011	Other	Active	116.13	0.500%	1.25	2.000%	0.73	2.32	5,200.00	1.00	3,774.28	
2012	Other	Active	778.95	0.500%	0.79	1.000%	3.06	7.79	5,200.00	1.00	15,937.88	
2013	Other	Active	839.52	0.500%	0.76	1.000%	3.17	8.40	5,200.00	1.00	16,483.33	
2014	Other	Active	44.15	0.500%	1.25	0.500%	0.28	0.22	5,200.00	1.00	1,434.80	
2015	Other	Active	169.35	0.500%	1.12	0.500%	0.95	0.85	5,200.00	1.00	4,948.46	
2016	Other	Active	170.63	0.000%	0.44	0.000%	0.00	0.00	5,200.00	1.00	0.00	
2017	Other	Active	65.90	0.000%	1.20	0.000%	0.00	0.00	5,200.00	1.00	0.00	
TOTAL			28,917.39				53.06	821.92			275,907.81	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Water Capital, for Forfeitures Occurring after June 30, 2017

Other
June 30, 2017

As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment						Avg Recl Cost per Acre	Adjustment	
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres		Factor Permit Status	Gross Cost
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	\$5,200.00	1.00	\$0.00
1962	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1963	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1964	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1965	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1966	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1967	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1968	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1969	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1970	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1971	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1972	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1973	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1974	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1975	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1976	Other	Inactive	280.87	0.010%	1.02	0.100%	0.03	0.28	5,200.00	1.00	149.10
1977	Other	Inactive	51.94	0.010%	1.25	0.100%	0.01	0.05	5,200.00	1.00	33.76
1978	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1979	Other	Inactive	9.74	0.010%	1.25	0.100%	0.00	0.01	5,200.00	1.00	6.33
1980	Other	Inactive	456.10	0.010%	0.54	0.100%	0.02	0.46	5,200.00	1.00	129.14
1981	Other	Inactive	1,125.56	0.010%	0.35	3.000%	0.04	33.77	5,200.00	1.00	206.79
1982	Other	Inactive	46.80	0.010%	1.25	3.000%	0.01	1.40	5,200.00	1.00	30.42
1983	Other	Inactive	1,662.02	0.010%	0.50	3.000%	0.08	49.86	5,200.00	1.00	432.10
1984	Other	Inactive	25.22	0.010%	1.25	3.000%	0.00	0.76	5,200.00	1.00	16.39
1985	Other	Inactive	381.77	0.010%	0.45	3.000%	0.02	11.45	5,200.00	1.00	89.64
1986	Other	Inactive	592.60	0.500%	0.41	3.000%	1.20	17.78	5,200.00	1.00	6,259.83
1987	Other	Inactive	19.48	0.500%	1.25	3.000%	0.12	0.58	5,200.00	1.00	633.02
1988	Other	Inactive	475.44	0.500%	0.55	3.000%	1.31	14.26	5,200.00	1.00	6,799.84
1989	Other	Inactive	677.91	0.500%	0.44	3.000%	1.48	20.34	5,200.00	1.00	7,686.20
1990	Other	Inactive	350.90	0.500%	0.50	3.000%	0.88	10.53	5,200.00	1.00	4,563.43
1991	Other	Inactive	48.51	0.500%	1.25	3.000%	0.30	1.46	5,200.00	1.00	1,576.43
1992	Other	Inactive	207.41	0.500%	1.17	3.000%	1.21	6.22	5,200.00	1.00	6,310.52
1993	Other	Inactive	862.97	0.500%	0.52	3.000%	2.26	25.89	5,200.00	1.00	11,762.58
1994	Other	Inactive	746.08	0.500%	0.41	3.000%	1.51	22.38	5,200.00	1.00	7,867.10
1995	Other	Inactive	165.29	0.500%	1.06	3.000%	0.88	4.96	5,200.00	1.00	4,555.93
1996	Other	Inactive	225.20	0.500%	1.02	3.000%	1.15	6.76	5,200.00	1.00	5,974.30
1997	Other	Inactive	85.84	0.500%	1.23	3.000%	0.53	2.58	5,200.00	1.00	2,753.35
1998	Other	Inactive	0.00	0.500%	0.00	5.000%	0.00	0.00	5,200.00	1.00	0.00
1999	Other	Inactive	225.60	0.500%	0.63	5.000%	0.71	11.28	5,200.00	1.00	3,669.78
2000	Other	Inactive	457.73	0.500%	0.25	3.000%	0.57	13.73	5,200.00	1.00	2,975.27
2001	Other	Inactive	182.68	0.500%	0.43	3.000%	0.39	5.48	5,200.00	1.00	2,043.01
2002	Other	Inactive	103.95	0.500%	1.25	3.000%	0.65	3.12	5,200.00	1.00	3,378.38
2003	Other	Inactive	29.68	0.500%	1.25	3.000%	0.19	0.89	5,200.00	1.00	964.71
2004	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	1.00	0.00
2005	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	1.00	0.00
2006	Other	Inactive	51.41	0.500%	1.25	4.000%	0.32	2.06	5,200.00	1.00	1,670.73
2007	Other	Inactive	114.67	0.500%	1.00	4.000%	0.57	4.59	5,200.00	1.00	2,981.44
2008	Other	Inactive	9.54	0.500%	1.25	3.000%	0.06	0.29	5,200.00	1.00	310.09
2009	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	1.00	0.00
2010	Other	Inactive	130.46	0.500%	1.00	3.000%	0.65	3.91	5,200.00	1.00	3,392.08
2011	Other	Inactive	65.27	0.500%	1.00	2.000%	0.33	1.31	5,200.00	1.00	1,696.92
2012	Other	Inactive	188.82	0.500%	1.00	1.000%	0.94	1.89	5,200.00	1.00	4,909.44
2013	Other	Inactive	56.36	0.500%	1.25	1.000%	0.35	0.56	5,200.00	1.00	1,831.66
2014	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	1.00	0.00
2015	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	1.00	0.00
2016	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	1.00	0.00
2017	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	1.00	0.00
TOTAL			10,113.82				18.78	280.87			97,659.69

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Water Capital, for Forfeitures Occurring after June 30, 2017

Other
June 30, 2017

As of Fiscal Year End
2019

Permit Issue Year	Mine Type	Mine Status	Adjustment						Avg Recl Cost per Acre	Adjustment	
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres		Factor Permit Status	Gross Cost
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	\$5,200.00	0.50	\$0.00
1962	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1963	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1964	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1965	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1966	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1967	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1968	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1969	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1970	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1971	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1972	Other	Phased Release	8.99	0.010%	1.25	0.100%	0.00	0.01	5,200.00	0.50	2.92
1973	Other	Phased Release	26.97	0.010%	1.25	0.100%	0.00	0.03	5,200.00	0.50	8.77
1974	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1975	Other	Phased Release	33.96	0.010%	1.25	0.100%	0.00	0.03	5,200.00	0.50	11.04
1976	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1977	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1978	Other	Phased Release	58.62	0.010%	1.25	0.100%	0.01	0.06	5,200.00	0.50	19.05
1979	Other	Phased Release	9.99	0.010%	1.25	0.100%	0.00	0.01	5,200.00	0.50	3.25
1980	Other	Phased Release	977.55	0.010%	1.25	0.100%	0.12	0.98	5,200.00	0.50	317.70
1981	Other	Phased Release	1,835.81	0.010%	1.00	3.000%	0.18	55.07	5,200.00	0.50	475.18
1982	Other	Phased Release	444.09	0.010%	1.25	3.000%	0.06	13.32	5,200.00	0.50	144.33
1983	Other	Phased Release	2,985.70	0.010%	0.70	3.000%	0.21	89.57	5,200.00	0.50	541.04
1984	Other	Phased Release	462.32	0.010%	0.77	3.000%	0.04	13.87	5,200.00	0.50	92.88
1985	Other	Phased Release	383.90	0.010%	1.18	3.000%	0.05	11.52	5,200.00	0.50	117.65
1986	Other	Phased Release	236.67	0.500%	1.04	3.000%	1.23	7.10	5,200.00	0.50	3,195.80
1987	Other	Phased Release	263.25	0.500%	0.43	3.000%	0.57	7.90	5,200.00	0.50	1,484.65
1988	Other	Phased Release	13.49	0.500%	1.25	3.000%	0.08	0.40	5,200.00	0.50	219.25
1989	Other	Phased Release	47.75	0.500%	1.03	3.000%	0.25	1.43	5,200.00	0.50	637.55
1990	Other	Phased Release	52.04	0.500%	1.25	3.000%	0.33	1.56	5,200.00	0.50	845.69
1991	Other	Phased Release	316.46	0.500%	0.54	3.000%	0.86	9.49	5,200.00	0.50	2,225.12
1992	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
1993	Other	Phased Release	99.34	0.500%	1.00	3.000%	0.50	2.98	5,200.00	0.50	1,291.38
1994	Other	Phased Release	58.87	0.500%	1.00	3.000%	0.29	1.77	5,200.00	0.50	765.25
1995	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
1996	Other	Phased Release	176.86	0.500%	1.04	3.000%	0.92	5.31	5,200.00	0.50	2,396.95
1997	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
1998	Other	Phased Release	100.17	0.500%	1.00	5.000%	0.50	5.01	5,200.00	0.50	1,302.21
1999	Other	Phased Release	173.41	0.500%	0.25	5.000%	0.22	8.67	5,200.00	0.50	563.57
2000	Other	Phased Release	85.77	0.500%	1.25	3.000%	0.54	2.57	5,200.00	0.50	1,393.82
2001	Other	Phased Release	16.06	0.500%	1.25	3.000%	0.10	0.48	5,200.00	0.50	260.91
2002	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2003	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2004	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2005	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2006	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	5,200.00	0.50	0.00
2007	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	5,200.00	0.50	0.00
2008	Other	Phased Release	3.47	0.500%	1.25	3.000%	0.02	0.10	5,200.00	0.50	56.38
2009	Other	Phased Release	28.77	0.500%	1.25	3.000%	0.18	0.86	5,200.00	0.50	467.48
2010	Other	Phased Release	40.94	0.500%	1.01	3.000%	0.21	1.23	5,200.00	0.50	539.69
2011	Other	Phased Release	0.00	0.500%	0.00	2.000%	0.00	0.00	5,200.00	0.50	0.00
2012	Other	Phased Release	6.64	0.500%	1.25	1.000%	0.04	0.07	5,200.00	0.50	107.91
2013	Other	Phased Release	0.99	0.500%	1.25	1.000%	0.01	0.01	5,200.00	0.50	16.07
2014	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	0.50	0.00
2015	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	0.50	0.00
2016	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	0.50	0.00
2017	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	0.50	0.00
TOTAL			8,948.83				7.50	241.42			19,503.47

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Water Capital, for Forfeitures Occurring after June 30, 2017
Other
June 30, 2017

			As of Fiscal Year End 2020								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Factor Permit Status	Gross Cost
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	\$5,200.00	1.00	\$0.00
1962	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1963	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1964	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1965	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1966	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1967	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1968	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1969	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1970	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1971	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1972	Other	Active	19.96	0.010%	1.25	0.100%	0.00	0.02	5,200.00	1.00	12.97
1973	Other	Active	28.46	0.010%	1.25	0.100%	0.00	0.03	5,200.00	1.00	18.50
1974	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1975	Other	Active	34.00	0.010%	1.25	0.100%	0.00	0.03	5,200.00	1.00	22.10
1976	Other	Active	124.72	0.010%	1.25	0.100%	0.02	0.12	5,200.00	1.00	81.07
1977	Other	Active	64.85	0.010%	1.25	0.100%	0.01	0.06	5,200.00	1.00	42.15
1978	Other	Active	12.73	0.010%	1.25	0.100%	0.00	0.01	5,200.00	1.00	8.28
1979	Other	Active	139.53	0.010%	1.25	0.100%	0.02	0.14	5,200.00	1.00	90.69
1980	Other	Active	533.55	0.010%	1.09	0.100%	0.06	0.53	5,200.00	1.00	302.06
1981	Other	Active	2,856.27	0.010%	0.52	0.100%	0.15	2.86	5,200.00	1.00	769.85
1982	Other	Active	1,631.68	0.010%	0.57	3.000%	0.09	48.95	5,200.00	1.00	487.19
1983	Other	Active	2,700.66	0.010%	0.64	3.000%	0.17	81.02	5,200.00	1.00	903.38
1984	Other	Active	1,410.22	0.010%	0.44	3.000%	0.06	42.31	5,200.00	1.00	321.90
1985	Other	Active	1,360.16	0.010%	0.56	3.000%	0.08	40.80	5,200.00	1.00	399.52
1986	Other	Active	1,043.00	0.010%	0.53	3.000%	0.06	31.29	5,200.00	1.00	289.69
1987	Other	Active	98.05	0.500%	1.06	3.000%	0.52	2.94	5,200.00	1.00	2,704.33
1988	Other	Active	290.23	0.500%	1.10	3.000%	1.60	8.71	5,200.00	1.00	8,327.50
1989	Other	Active	326.07	0.500%	1.25	3.000%	2.04	9.78	5,200.00	1.00	10,597.26
1990	Other	Active	52.15	0.500%	1.25	3.000%	0.33	1.56	5,200.00	1.00	1,694.97
1991	Other	Active	152.72	0.500%	1.17	3.000%	0.89	4.58	5,200.00	1.00	4,633.69
1992	Other	Active	826.94	0.500%	0.54	3.000%	2.22	24.81	5,200.00	1.00	11,519.13
1993	Other	Active	1,209.70	0.500%	0.55	3.000%	3.35	36.29	5,200.00	1.00	17,423.96
1994	Other	Active	1,021.05	0.500%	0.45	3.000%	2.29	30.63	5,200.00	1.00	11,925.83
1995	Other	Active	1,532.89	0.500%	0.31	3.000%	2.38	45.99	5,200.00	1.00	12,388.17
1996	Other	Active	1,111.82	0.500%	0.30	3.000%	1.67	33.35	5,200.00	1.00	8,688.65
1997	Other	Active	1,062.76	0.500%	0.73	3.000%	3.88	31.88	5,200.00	1.00	20,185.02
1998	Other	Active	1,036.40	0.500%	0.30	3.000%	1.55	31.09	5,200.00	1.00	8,046.59
1999	Other	Active	53.39	0.500%	1.25	5.000%	0.33	2.67	5,200.00	1.00	1,735.17
2000	Other	Active	409.19	0.500%	0.80	5.000%	1.63	20.46	5,200.00	1.00	8,467.50
2001	Other	Active	22.74	0.500%	1.22	3.000%	0.14	0.68	5,200.00	1.00	723.78
2002	Other	Active	651.26	0.500%	0.31	3.000%	1.00	19.54	5,200.00	1.00	5,183.36
2003	Other	Active	1,031.32	0.500%	0.54	3.000%	2.79	30.94	5,200.00	1.00	14,516.17
2004	Other	Active	350.05	0.500%	0.77	3.000%	1.35	10.50	5,200.00	1.00	6,999.42
2005	Other	Active	573.30	0.500%	0.59	3.000%	1.70	17.20	5,200.00	1.00	8,832.77
2006	Other	Active	274.59	0.500%	1.11	3.000%	1.53	8.24	5,200.00	1.00	7,958.64
2007	Other	Active	219.75	0.500%	1.13	4.000%	1.24	8.79	5,200.00	1.00	6,445.10
2008	Other	Active	557.09	0.500%	0.72	4.000%	2.00	22.28	5,200.00	1.00	10,385.01
2009	Other	Active	254.71	0.500%	1.01	3.000%	1.29	7.64	5,200.00	1.00	6,701.01
2010	Other	Active	807.59	0.500%	0.53	3.000%	2.15	24.23	5,200.00	1.00	11,175.20
2011	Other	Active	113.08	0.500%	1.25	3.000%	0.71	3.39	5,200.00	1.00	3,675.20
2012	Other	Active	768.10	0.500%	0.79	2.000%	3.02	15.36	5,200.00	1.00	15,715.79
2013	Other	Active	827.95	0.500%	0.76	1.000%	3.13	8.28	5,200.00	1.00	16,256.26
2014	Other	Active	43.65	0.500%	1.25	1.000%	0.27	0.44	5,200.00	1.00	1,418.66
2015	Other	Active	167.55	0.500%	1.12	0.500%	0.94	0.84	5,200.00	1.00	4,895.92
2016	Other	Active	170.63	0.500%	0.44	0.500%	0.38	0.85	5,200.00	1.00	1,957.44
2017	Other	Active	65.90	0.000%	1.20	0.000%	0.00	0.00	5,200.00	1.00	0.00
TOTAL			28,042.42				49.02	712.14			254,926.85

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017
 As of Fiscal Year End
 2020

Permit Issue Year	Mine Type	Mine Status	Adjustment						Avg Recl Cost per Acre	Adjustment	
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres		Factor Permit Status	Gross Cost
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	\$5,200.00	1.00	\$0.00
1962	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1963	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1964	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1965	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1966	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1967	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1968	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1969	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1970	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1971	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1972	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1973	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1974	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1975	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1976	Other	Inactive	280.56	0.010%	1.02	0.100%	0.03	0.28	5,200.00	1.00	148.94
1977	Other	Inactive	51.88	0.010%	1.25	0.100%	0.01	0.05	5,200.00	1.00	33.72
1978	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	1.00	0.00
1979	Other	Inactive	9.73	0.010%	1.25	0.100%	0.00	0.01	5,200.00	1.00	6.32
1980	Other	Inactive	455.62	0.010%	0.54	0.100%	0.02	0.46	5,200.00	1.00	129.00
1981	Other	Inactive	1,091.75	0.010%	0.35	0.100%	0.04	1.09	5,200.00	1.00	200.58
1982	Other	Inactive	45.39	0.010%	1.25	3.000%	0.01	1.36	5,200.00	1.00	29.50
1983	Other	Inactive	1,612.08	0.010%	0.50	3.000%	0.08	48.36	5,200.00	1.00	419.11
1984	Other	Inactive	24.46	0.010%	1.25	3.000%	0.00	0.73	5,200.00	1.00	15.90
1985	Other	Inactive	370.30	0.010%	0.45	3.000%	0.02	11.11	5,200.00	1.00	86.94
1986	Other	Inactive	573.62	0.010%	0.41	3.000%	0.02	17.21	5,200.00	1.00	121.19
1987	Other	Inactive	18.77	0.500%	1.25	3.000%	0.12	0.56	5,200.00	1.00	610.07
1988	Other	Inactive	459.87	0.500%	0.55	3.000%	1.26	13.80	5,200.00	1.00	6,577.14
1989	Other	Inactive	656.09	0.500%	0.44	3.000%	1.43	19.68	5,200.00	1.00	7,438.85
1990	Other	Inactive	339.50	0.500%	0.50	3.000%	0.85	10.18	5,200.00	1.00	4,415.11
1991	Other	Inactive	46.75	0.500%	1.25	3.000%	0.29	1.40	5,200.00	1.00	1,519.28
1992	Other	Inactive	199.97	0.500%	1.17	3.000%	1.17	6.00	5,200.00	1.00	6,084.28
1993	Other	Inactive	834.82	0.500%	0.52	3.000%	2.19	25.04	5,200.00	1.00	11,378.87
1994	Other	Inactive	722.19	0.500%	0.41	3.000%	1.46	21.67	5,200.00	1.00	7,615.14
1995	Other	Inactive	159.46	0.500%	1.06	3.000%	0.85	4.78	5,200.00	1.00	4,395.10
1996	Other	Inactive	217.29	0.500%	1.02	3.000%	1.11	6.52	5,200.00	1.00	5,764.59
1997	Other	Inactive	82.74	0.500%	1.23	3.000%	0.51	2.48	5,200.00	1.00	2,653.76
1998	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	1.00	0.00
1999	Other	Inactive	213.61	0.500%	0.63	5.000%	0.67	10.68	5,200.00	1.00	3,474.81
2000	Other	Inactive	443.43	0.500%	0.25	5.000%	0.55	22.17	5,200.00	1.00	2,882.30
2001	Other	Inactive	176.81	0.500%	0.43	3.000%	0.38	5.30	5,200.00	1.00	1,977.32
2002	Other	Inactive	100.18	0.500%	1.25	3.000%	0.63	3.01	5,200.00	1.00	3,255.91
2003	Other	Inactive	28.61	0.500%	1.25	3.000%	0.18	0.86	5,200.00	1.00	929.74
2004	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	1.00	0.00
2005	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	1.00	0.00
2006	Other	Inactive	49.03	0.500%	1.25	3.000%	0.31	1.47	5,200.00	1.00	1,593.46
2007	Other	Inactive	109.51	0.500%	1.00	4.000%	0.55	4.38	5,200.00	1.00	2,847.28
2008	Other	Inactive	9.20	0.500%	1.25	4.000%	0.06	0.37	5,200.00	1.00	298.85
2009	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	1.00	0.00
2010	Other	Inactive	125.90	0.500%	1.00	3.000%	0.63	3.78	5,200.00	1.00	3,273.36
2011	Other	Inactive	63.63	0.500%	1.00	3.000%	0.32	1.91	5,200.00	1.00	1,654.50
2012	Other	Inactive	185.99	0.500%	1.00	2.000%	0.93	3.72	5,200.00	1.00	4,835.80
2013	Other	Inactive	55.44	0.500%	1.25	1.000%	0.35	0.55	5,200.00	1.00	1,801.89
2014	Other	Inactive	0.00	0.500%	0.00	1.000%	0.00	0.00	5,200.00	1.00	0.00
2015	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	1.00	0.00
2016	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	1.00	0.00
2017	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	1.00	0.00
TOTAL			9,814.17				17.01	250.99			88,468.62

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Capital, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017
 As of Fiscal Year End
 2020

Permit Issue Year	Mine Type	Mine Status	Adjustment								Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status	
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	\$5,200.00	0.50	\$0.00
1962	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1963	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1964	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1965	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1966	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1967	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1968	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1969	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1970	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1971	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1972	Other	Phased Release	8.98	0.010%	1.25	0.100%	0.00	0.01	5,200.00	0.50	2.92
1973	Other	Phased Release	26.94	0.010%	1.25	0.100%	0.00	0.03	5,200.00	0.50	8.76
1974	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1975	Other	Phased Release	33.92	0.010%	1.25	0.100%	0.00	0.03	5,200.00	0.50	11.03
1976	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1977	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	5,200.00	0.50	0.00
1978	Other	Phased Release	58.56	0.010%	1.25	0.100%	0.01	0.06	5,200.00	0.50	19.03
1979	Other	Phased Release	9.98	0.010%	1.25	0.100%	0.00	0.01	5,200.00	0.50	3.24
1980	Other	Phased Release	976.45	0.010%	1.25	0.100%	0.12	0.98	5,200.00	0.50	317.35
1981	Other	Phased Release	1,780.55	0.010%	1.00	0.100%	0.18	1.78	5,200.00	0.50	460.88
1982	Other	Phased Release	430.71	0.010%	1.25	3.000%	0.05	12.92	5,200.00	0.50	139.98
1983	Other	Phased Release	2,895.92	0.010%	0.70	3.000%	0.20	86.88	5,200.00	0.50	524.77
1984	Other	Phased Release	448.42	0.010%	0.77	3.000%	0.03	13.45	5,200.00	0.50	90.08
1985	Other	Phased Release	372.34	0.010%	1.18	3.000%	0.04	11.17	5,200.00	0.50	114.10
1986	Other	Phased Release	228.34	0.010%	1.04	3.000%	0.02	6.85	5,200.00	0.50	61.67
1987	Other	Phased Release	254.78	0.500%	0.43	3.000%	0.55	7.64	5,200.00	0.50	1,436.89
1988	Other	Phased Release	13.00	0.500%	1.25	3.000%	0.08	0.39	5,200.00	0.50	211.31
1989	Other	Phased Release	46.07	0.500%	1.03	3.000%	0.24	1.38	5,200.00	0.50	615.15
1990	Other	Phased Release	50.16	0.500%	1.25	3.000%	0.31	1.50	5,200.00	0.50	815.03
1991	Other	Phased Release	306.11	0.500%	0.54	3.000%	0.83	9.18	5,200.00	0.50	2,152.35
1992	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
1993	Other	Phased Release	95.86	0.500%	1.00	3.000%	0.48	2.88	5,200.00	0.50	1,246.18
1994	Other	Phased Release	56.80	0.500%	1.00	3.000%	0.28	1.70	5,200.00	0.50	738.46
1995	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
1996	Other	Phased Release	170.64	0.500%	1.04	3.000%	0.89	5.12	5,200.00	0.50	2,312.54
1997	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
1998	Other	Phased Release	94.66	0.500%	1.00	3.000%	0.47	2.84	5,200.00	0.50	1,230.59
1999	Other	Phased Release	164.52	0.500%	0.25	5.000%	0.21	8.23	5,200.00	0.50	534.69
2000	Other	Phased Release	82.66	0.500%	1.25	5.000%	0.52	4.13	5,200.00	0.50	1,343.30
2001	Other	Phased Release	15.47	0.500%	1.25	3.000%	0.10	0.46	5,200.00	0.50	251.45
2002	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2003	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2004	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2005	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2006	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2007	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	5,200.00	0.50	0.00
2008	Other	Phased Release	3.34	0.500%	1.25	4.000%	0.02	0.13	5,200.00	0.50	54.34
2009	Other	Phased Release	27.73	0.500%	1.25	3.000%	0.17	0.83	5,200.00	0.50	450.53
2010	Other	Phased Release	39.50	0.500%	1.01	3.000%	0.20	1.19	5,200.00	0.50	520.76
2011	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	5,200.00	0.50	0.00
2012	Other	Phased Release	6.53	0.500%	1.25	2.000%	0.04	0.13	5,200.00	0.50	106.15
2013	Other	Phased Release	0.97	0.500%	1.25	1.000%	0.01	0.01	5,200.00	0.50	15.81
2014	Other	Phased Release	0.00	0.500%	0.00	1.000%	0.00	0.00	5,200.00	0.50	0.00
2015	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	0.50	0.00
2016	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	5,200.00	0.50	0.00
2017	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	5,200.00	0.50	0.00
TOTAL			8,699.92				6.07	181.92			15,789.33

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Water Capital, for Forfeitures Occurring after June 30, 2017

June 30, 2017

Footnotes for Exhibits 30.1 through 30.3:

- (1) - (4) Client data
- (5) Exhibit 23.1 Cols (1), (3), and (5)
- (6) Exhibit 22.2 Col (1) adjusted for current acreage distribution by year
- (7) Exhibit 23.1 Cols (2), (4), and (6)
- (8) Col (4) x Col (5) x Col (6)
- (9) Col (4) x Col (7)
- (10) Exhibit 13.1 Col (2)
- (11) Exhibit 22.1 Col (3)
- (12) Col (8) x Col (10) x Col (11)
- (13) Col (4) - [Col (8) + Col (9)]
- (14) Exhibit 23.1 Cols (1), (3), and (5)
- (15) Col (6)
- (16) Exhibit 23.1 Cols (2), (4), and (6)
- (17) Col (13) x Col (14) x Col (15)
- (18) Col (13) x Col (16)
- (19) Col (10)
- (20) Col (11)
- (21) Col (17) x Col (19) x Col (20)
- (22) Col (13) - [Col (17) + Col (18)]
- (23) Exhibit 23.1 Cols (1), (3), and (5)
- (24) Col (15)
- (25) Exhibit 23.1 Cols (2), (4), and (6)
- (26) Col (22) x Col (23) x Col (24)
- (27) Col (22) x Col (25)
- (28) Col (10)
- (29) Col (11)
- (30) Col (26) x Col (28) x Col (29)

Same calculations continue for fiscal years 2021 through 2052

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
Water Treatment - Total for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay				Gross Liability - Unlimited Years Running				Gross Liability - Unlimited Years Running - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2017																
2018	\$68,056	\$22,471	\$108,249	\$198,776	\$0	\$0	\$0	\$0	\$68,056	\$22,471	\$108,249	\$198,776	\$0	\$0	\$0	\$0
2019	66,887	20,661	97,469	185,018	0	0	0	0	134,943	43,132	205,718	383,793	0	0	0	0
2020	64,218	19,166	89,699	173,083	0	0	0	0	199,162	62,298	295,417	556,876	0	0	0	0
2021	60,988	17,897	82,868	161,753	34,028	11,235	54,124	99,388	260,149	80,195	378,285	718,629	34,028	11,235	54,124	99,388
2022	57,437	16,478	62,126	136,042	67,472	21,566	102,859	191,897	317,587	96,673	440,411	854,671	101,500	32,801	156,983	291,284
2023	53,252	15,385	54,324	122,961	65,553	19,914	93,584	179,050	370,839	112,058	494,735	977,632	167,052	52,715	250,567	470,335
2024	50,293	13,890	49,338	113,521	62,603	18,531	86,284	167,418	421,132	125,948	544,073	1,091,153	229,655	71,246	336,851	637,753
2025	47,448	12,826	42,787	103,061	87,931	25,427	103,560	216,918	468,579	138,774	586,860	1,194,214	447,662	136,770	629,553	1,213,985
2026	44,417	11,290	37,809	93,516	53,252	15,385	54,324	122,961	512,996	150,065	624,669	1,287,730	370,839	112,058	494,735	977,632
2027	41,120	10,191	34,024	85,335	50,293	13,890	49,338	113,521	554,116	160,256	658,693	1,373,065	421,132	125,948	544,073	1,091,153
2028	38,070	8,519	30,163	76,752	47,448	12,826	42,787	103,061	590,825	168,325	686,691	1,445,841	468,579	138,774	586,860	1,194,214
2029	35,570	6,963	26,733	69,266	44,417	11,290	37,809	93,516	623,724	174,434	709,353	1,507,511	512,996	150,065	624,669	1,287,730
2030	32,907	6,032	22,290	61,230	41,120	10,191	34,024	85,335	652,728	179,247	725,860	1,557,835	554,116	160,256	658,693	1,373,065
2031	29,538	5,190	17,651	52,379	38,070	8,519	30,163	76,752	677,222	182,884	736,185	1,596,291	590,825	168,325	686,691	1,445,841
2032	27,381	4,896	15,317	47,594	35,570	6,963	26,733	69,266	698,511	185,928	743,081	1,627,520	623,724	174,434	709,353	1,507,511
2033	25,107	4,196	13,692	42,995	32,907	6,032	22,290	61,230	716,582	188,001	747,434	1,652,017	652,728	179,247	725,860	1,557,835
2034	23,154	3,730	11,776	38,660	29,538	5,190	17,651	52,379	731,836	189,374	749,070	1,670,279	677,222	182,884	736,185	1,596,291
2035	20,740	3,086	9,457	33,282	27,381	4,896	15,317	47,594	743,884	189,892	747,735	1,681,511	698,511	185,928	743,081	1,627,520
2036	18,947	2,668	8,272	29,886	25,107	4,196	13,692	42,995	753,425	189,818	744,674	1,687,917	716,582	188,001	747,434	1,652,017
2037	15,919	2,089	6,641	24,649	23,154	3,730	11,776	38,660	759,303	189,016	739,528	1,687,848	731,836	189,374	749,070	1,670,279
2038	13,847	1,817	4,614	20,278	20,740	3,086	9,457	33,282	762,549	187,830	731,989	1,682,369	743,884	189,892	747,735	1,681,511
2039	12,121	1,542	4,111	17,774	18,947	2,668	8,272	29,886	763,570	186,290	723,655	1,673,514	753,425	189,818	744,674	1,687,917
2040	10,544	1,225	3,037	14,805	15,919	2,089	6,641	24,649	762,577	184,373	714,049	1,660,999	759,303	189,016	739,528	1,687,848
2041	9,125	918	2,451	12,494	13,847	1,817	4,614	20,278	759,805	182,108	703,757	1,645,671	762,549	187,830	731,989	1,682,369
2042	7,561	754	1,747	10,062	12,121	1,542	4,111	17,774	755,161	179,646	692,710	1,627,517	763,570	186,290	723,655	1,673,514
2043	6,468	672	1,290	8,429	10,544	1,225	3,037	14,805	749,164	177,081	681,188	1,607,433	762,577	184,373	714,049	1,660,999
2044	5,435	528	1,016	6,979	9,125	918	2,451	12,494	741,922	174,363	669,413	1,585,697	759,805	182,108	703,757	1,645,671
2045	4,531	315	789	5,634	7,561	754	1,747	10,062	733,613	171,434	657,477	1,562,525	755,161	179,646	692,710	1,627,517
2046	2,966	203	594	3,764	6,468	672	1,290	8,429	723,618	168,406	645,436	1,537,460	749,164	177,081	681,188	1,607,433
2047	1,844	138	514	2,495	5,435	528	1,016	6,979	712,441	165,335	633,434	1,511,211	741,922	174,363	669,413	1,585,697
2048	1,218	135	475	1,829	4,531	315	789	5,634	700,623	162,290	621,552	1,484,464	733,613	171,434	657,477	1,562,525
2049	659	133	427	1,219	2,966	203	594	3,764	688,263	159,275	609,786	1,457,324	723,618	168,406	645,436	1,537,460
2050	397	131	416	944	1,844	138	514	2,495	675,691	156,296	598,192	1,430,180	712,441	165,335	633,434	1,511,211
2051	362	129	404	895	1,218	135	475	1,829	663,161	153,359	586,778	1,403,298	700,623	162,290	621,552	1,484,464
2052	356	127	393	876	659	133	427	1,219	650,732	150,466	575,554	1,376,753	688,263	159,275	609,786	1,457,324

Footnotes:

- (1) Exhibit 31.2 Col (1) + Exhibit 31.3 Col (1) + Exhibit 31.4 Col (1)
- (2) Exhibit 31.2 Col (2) + Exhibit 31.3 Col (2) + Exhibit 31.4 Col (2)
- (3) Exhibit 31.2 Col (3) + Exhibit 31.3 Col (3) + Exhibit 31.4 Col (3)
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1), Col (2), and Col (3) delayed three years
- (8) Col (5) + Col (6) + Col (7)

Footnotes:

- (9) Exhibit 31.2 Col (9) + Exhibit 31.3 Col (9) + Exhibit 31.4 Col (9)
- (10) Exhibit 31.2 Col (10) + Exhibit 31.3 Col (10) + Exhibit 31.4 Col (10)
- (11) Exhibit 31.2 Col (11) + Exhibit 31.3 Col (11) + Exhibit 31.4 Col (11)
- (12) Col (9) + Col (10) + Col (11)
- (13) - (15) Col (9), Col (10), and Col (11) delayed three years
- (16) Col (13) + Col (14) + Col (15)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
Water Treatment - Surface, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay				Gross Liability - Unlimited Years Running				Gross Liability - Unlimited Years Running - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2017																
2018	\$38,792	\$6,603	\$78,468	\$123,862	\$0	\$0	\$0	\$0	\$38,792	\$6,603	\$78,468	\$123,862	\$0	\$0	\$0	\$0
2019	38,978	6,187	70,601	115,765	0	0	0	0	77,770	12,790	149,068	239,628	0	0	0	0
2020	38,177	5,894	65,103	109,175	0	0	0	0	115,947	18,684	214,171	348,802	0	0	0	0
2021	36,325	5,462	59,897	101,685	19,396	3,301	39,234	61,931	152,273	24,146	274,069	450,487	19,396	3,301	39,234	61,931
2022	34,879	5,015	53,397	93,291	38,885	6,395	74,534	119,814	187,152	29,161	327,466	543,778	58,281	9,696	113,768	181,745
2023	32,605	4,774	46,314	83,694	38,578	6,041	67,852	112,470	219,757	33,935	373,780	627,472	96,859	15,737	181,620	294,215
2024	31,167	4,538	42,329	78,035	37,251	5,678	62,500	105,430	250,924	38,473	416,109	705,507	134,110	21,415	244,120	399,645
2025	29,577	4,279	37,401	71,257	53,042	7,746	83,346	144,133	280,502	42,752	453,510	776,764	263,288	41,234	464,500	769,022
2026	27,951	3,940	33,345	65,236	32,605	4,774	46,314	83,694	308,453	46,692	486,855	842,000	219,757	33,935	373,780	627,472
2027	26,231	3,719	30,215	60,166	31,167	4,538	42,329	78,035	334,684	50,411	517,071	902,166	250,924	38,473	416,109	705,507
2028	24,650	3,148	27,093	54,892	29,577	4,279	37,401	71,257	358,559	53,427	542,595	954,580	280,502	42,752	453,510	776,764
2029	23,296	2,598	23,975	49,869	27,951	3,940	33,345	65,236	380,315	55,772	563,620	999,706	308,453	46,692	486,855	842,000
2030	21,786	2,265	19,991	44,041	26,231	3,719	30,215	60,166	399,828	57,671	579,417	1,036,916	334,684	50,411	517,071	902,166
2031	19,684	1,871	16,067	37,622	24,650	3,148	27,093	54,892	416,558	59,074	590,177	1,065,809	358,559	53,427	542,595	954,580
2032	18,305	1,772	14,078	34,155	23,296	2,598	23,975	49,869	431,271	60,287	602,896	1,089,544	380,315	55,772	563,620	999,706
2033	16,956	1,672	12,770	31,397	21,786	2,265	19,991	44,041	444,054	61,315	603,685	1,109,055	399,828	57,671	579,417	1,036,916
2034	15,902	1,572	10,981	28,456	19,684	1,871	16,067	37,622	455,244	62,166	606,892	1,124,302	416,558	59,074	590,177	1,065,809
2035	14,573	1,273	8,781	24,627	18,305	1,772	14,078	34,155	464,608	62,646	607,305	1,134,560	431,271	60,287	597,986	1,089,544
2036	13,422	1,100	7,673	22,195	16,956	1,672	12,770	31,397	472,365	62,892	606,111	1,141,368	444,054	61,315	603,685	1,109,055
2037	11,159	901	6,079	18,139	15,902	1,572	10,981	28,456	477,448	62,880	602,896	1,143,224	455,244	62,166	606,892	1,124,302
2038	9,812	740	4,152	14,704	14,573	1,273	8,781	24,627	480,813	62,664	597,397	1,140,874	464,608	62,646	607,305	1,134,560
2039	8,673	671	3,716	13,060	13,422	1,100	7,673	22,195	482,702	62,345	591,177	1,136,223	472,365	62,892	606,111	1,141,368
2040	7,439	577	2,653	10,669	11,159	901	6,079	18,139	483,056	61,906	583,692	1,128,654	477,448	62,880	602,896	1,143,224
2041	6,478	421	2,101	8,999	9,812	740	4,152	14,704	482,198	61,294	575,537	1,119,029	480,813	62,664	597,397	1,140,874
2042	5,267	398	1,456	7,121	8,673	671	3,716	13,060	479,909	60,644	566,660	1,107,214	482,702	62,345	591,177	1,136,223
2043	4,526	344	1,018	5,888	7,439	577	2,653	10,669	476,692	59,928	557,297	1,093,918	483,056	61,906	583,692	1,128,654
2044	4,085	269	766	5,119	6,478	421	2,101	8,999	472,870	59,127	547,670	1,079,667	482,198	61,294	575,537	1,119,029
2045	3,415	94	543	4,052	5,267	398	1,456	7,121	468,245	58,146	537,852	1,064,243	479,909	60,644	566,660	1,107,214
2046	2,227	56	356	2,639	4,526	344	1,018	5,888	462,324	57,127	527,901	1,047,352	476,692	59,928	557,297	1,093,918
2047	1,379	18	280	1,677	4,085	269	766	5,119	455,496	56,074	517,958	1,029,528	472,870	59,127	547,670	1,079,667
2048	797	17	246	1,059	3,415	94	543	4,052	448,052	55,027	508,102	1,011,181	468,245	58,146	537,852	1,064,243
2049	310	16	201	528	2,227	56	356	2,639	440,114	53,986	498,330	992,430	462,324	57,127	527,901	1,047,352
2050	83	16	193	291	1,379	18	280	1,677	431,964	52,955	488,696	973,614	455,496	56,074	517,958	1,029,528
2051	78	15	185	278	797	17	246	1,059	423,844	51,935	479,209	954,988	448,052	55,027	508,102	1,011,181
2052	75	14	178	267	310	16	201	528	415,780	50,928	469,878	936,586	440,114	53,986	498,330	992,430

Footnotes:

- (1) - (3) Exhibit 32.1 Col (12), Exhibit 32.1 Col (21), Exhibit 32.1 Col (30), etc.
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1), Col (2), and Col (3) delayed three years
- (8) Col (5) + Col (6) + Col (7)

Footnotes:

- (9) - (11) Running total of Col (1), Col (2), and Col (3) respectively
- (12) Reflecting the compounding effect of the selected 98% attenuation rate after 10 years
- (13) - (15) Col (9) + Col (10) + Col (11)
- (13) - (15) Col (9), Col (10), and Col (11) delayed three years
- (16) Col (13) + Col (14) + Col (15)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
Water Treatment - Underground, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay				Gross Liability - Unlimited Years Running				Gross Liability - Unlimited Years Running - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2017																
2018	\$17,686	\$11,812	\$27,766	\$57,264	\$0	\$0	\$0	\$0	\$17,686	\$11,812	\$27,766	\$57,264	\$0	\$0	\$0	\$0
2019	17,297	10,718	25,369	53,384	0	0	0	0	34,983	22,530	53,134	110,648	0	0	0	0
2020	16,236	9,869	23,381	49,486	0	0	0	0	51,219	32,399	76,516	160,134	0	0	0	0
2021	15,192	9,171	21,904	46,267	8,843	5,906	13,883	28,632	66,412	41,571	98,419	206,402	8,843	5,906	13,883	28,632
2022	13,694	8,545	7,713	29,953	17,492	11,265	26,567	55,324	80,106	50,116	106,133	236,354	26,335	17,171	40,450	83,956
2023	12,437	8,050	7,068	27,555	16,767	10,294	24,375	51,435	92,543	58,165	113,201	263,909	43,101	27,465	64,825	135,391
2024	11,255	7,027	6,150	24,432	15,714	9,520	22,642	47,877	103,799	65,192	119,351	288,342	58,816	36,985	87,467	183,268
2025	10,423	6,351	4,689	21,463	21,290	13,131	18,665	53,086	114,221	71,544	124,040	309,805	113,312	70,901	155,342	339,555
2026	9,638	5,414	3,788	18,839	12,437	8,050	7,068	27,555	123,859	76,958	127,828	328,645	92,543	58,165	113,201	263,909
2027	8,820	4,942	3,225	16,987	11,255	7,027	6,150	24,432	132,679	81,900	131,052	345,632	103,799	65,192	119,351	288,342
2028	7,906	4,115	2,544	14,565	10,423	6,351	4,689	21,463	140,232	85,779	133,041	359,052	114,221	71,544	124,040	309,805
2029	7,302	3,272	2,247	12,820	9,638	5,414	3,788	18,839	146,841	88,605	134,236	369,682	123,859	76,958	127,828	328,645
2030	6,560	2,863	1,924	11,347	8,820	4,942	3,225	16,987	152,397	90,834	134,662	377,893	132,679	81,900	131,052	345,632
2031	5,973	2,513	1,218	9,705	7,906	4,115	2,544	14,565	157,083	92,543	133,973	383,599	140,232	85,779	133,041	359,052
2032	5,535	2,346	942	8,824	7,302	3,272	2,247	12,820	161,083	93,929	132,893	387,905	146,841	88,605	134,236	369,682
2033	4,774	1,857	658	7,289	6,560	2,863	1,924	11,347	164,104	94,684	131,427	390,215	152,397	90,834	134,662	377,893
2034	4,187	1,582	592	6,362	5,973	2,513	1,218	9,705	166,347	95,047	129,815	391,209	157,083	92,543	133,973	383,599
2035	3,223	1,299	487	5,009	5,535	2,346	942	8,824	167,457	95,023	128,049	390,529	161,083	93,929	132,893	387,905
2036	2,791	1,134	411	4,336	4,774	1,857	658	7,289	167,985	94,753	126,176	388,913	164,104	94,684	131,427	390,215
2037	2,413	785	377	3,576	4,187	1,582	592	6,362	168,004	94,063	124,250	386,316	166,347	95,047	129,815	391,209
2038	1,900	686	279	2,865	3,223	1,299	487	5,009	167,399	93,220	122,221	382,840	167,457	95,023	128,049	390,529
2039	1,549	491	213	2,253	2,791	1,134	411	4,336	166,347	92,149	120,127	378,623	167,985	94,753	126,176	388,913
2040	1,404	307	203	1,913	2,413	785	377	3,576	165,070	90,866	118,031	373,968	168,004	94,063	124,250	386,316
2041	1,105	214	172	1,490	1,900	686	279	2,865	163,429	89,472	115,926	368,827	167,399	93,220	122,221	382,840
2042	972	84	116	1,172	1,549	491	213	2,253	161,599	87,935	113,791	363,324	166,347	92,149	120,127	378,623
2043	761	63	111	935	1,404	307	203	1,913	159,519	86,370	111,683	357,573	165,070	90,866	118,031	373,968
2044	382	51	106	539	1,105	214	172	1,490	157,033	84,795	109,603	351,431	163,429	89,472	115,926	368,827
2045	225	41	102	368	972	84	116	1,172	154,383	83,216	107,553	345,151	161,599	87,935	113,791	363,324
2046	101	39	98	238	761	63	111	935	151,611	81,645	105,533	338,789	159,519	86,370	111,683	357,573
2047	75	37	94	207	382	51	106	539	148,821	80,089	103,545	332,455	157,033	84,795	109,603	351,431
2048	58	36	90	184	225	41	102	368	146,034	78,549	101,589	326,172	154,383	83,216	107,553	345,151
2049	55	34	87	176	101	39	98	238	143,270	77,030	99,665	319,966	151,611	81,645	105,533	338,789
2050	53	33	83	169	75	37	94	207	140,532	75,534	97,775	313,842	148,821	80,089	103,545	332,455
2051	51	32	80	162	58	36	90	184	137,826	74,064	95,917	307,807	146,034	78,549	101,589	326,172
2052	49	30	77	156	55	34	87	176	135,153	72,620	94,092	301,865	143,270	77,030	99,665	319,966

Footnotes:

- (1) - (3) Exhibit 32.2 Col (12), Exhibit 32.2 Col (21), Exhibit 32.2 Col (30), etc.
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1), Col (2), and Col (3) delayed three years
- (8) Col (5) + Col (6) + Col (7)

Footnotes:

- (9) - (11) Running total of Col (1), Col (2), and Col (3) respectively
- (12) Reflecting the compounding effect of the selected 98% attenuation rate after 10 years
- (13) - (15) Col (9) + Col (10) + Col (11)
- (16) Col (9), Col (10), and Col (11) delayed three years
- (16) Col (13) + Col (14) + Col (15)

West Virginia Department of Environmental Protection Office of Special Reclamation

Estimated Reclamation Expenditures
Water Treatment - Other, for Forfeitures Occurring after June 30, 2017
June 30, 2017

Fiscal Year Ending 6/30	Gross Liability				Gross Liability - Three Year Delay				Gross Liability - Unlimited Years Running				Gross Liability - Unlimited Years Running - Three Year Delay			
	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total	Active	Inactive	Phase Released	Total
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	(13)	(14)	(15)	(16)
2017																
2018	\$11,578	\$4,056	\$2,015	\$17,649	\$0	\$0	\$0	\$0	\$11,578	\$4,056	\$2,015	\$17,649	\$0	\$0	\$0	\$0
2019	10,612	3,756	1,500	15,868	0	0	0	0	22,190	7,812	3,515	33,517	0	0	0	0
2020	9,805	3,403	1,215	14,422	0	0	0	0	31,995	11,215	4,730	47,940	0	0	0	0
2021	9,470	3,263	1,067	13,800	5,789	2,028	1,007	8,825	41,465	14,478	5,797	61,740	5,789	2,028	1,007	8,825
2022	8,864	2,918	1,016	12,798	11,095	3,906	1,758	16,759	50,329	17,396	6,813	74,538	16,884	5,934	2,765	25,583
2023	8,210	2,561	941	11,712	10,208	3,579	1,357	15,145	58,539	19,958	7,754	86,250	27,092	9,514	4,122	40,729
2024	7,870	2,325	859	11,054	9,637	3,333	1,141	14,111	66,409	22,283	8,613	97,305	36,730	12,846	5,263	54,840
2025	7,447	2,196	696	10,340	13,599	4,550	1,549	19,698	73,856	24,479	9,310	107,644	71,061	24,635	9,711	105,408
2026	6,828	1,936	676	9,440	8,210	2,561	941	11,712	80,684	26,415	9,986	117,085	58,539	19,958	7,754	86,250
2027	6,068	1,530	584	8,182	7,870	2,325	859	11,054	86,752	27,945	10,569	125,267	66,409	22,283	8,613	97,305
2028	5,514	1,256	526	7,295	7,447	2,196	696	10,340	92,034	29,120	11,055	132,209	73,856	24,479	9,310	107,644
2029	4,972	1,092	512	6,576	6,828	1,936	676	9,440	96,568	30,057	11,497	138,122	80,684	26,415	9,986	117,085
2030	4,562	904	376	5,842	6,068	1,530	584	8,182	100,503	30,742	11,781	143,026	86,752	27,945	10,569	125,267
2031	3,881	806	366	5,053	5,514	1,256	526	7,295	103,581	31,267	12,035	146,883	92,034	29,120	11,055	132,209
2032	3,541	778	297	4,616	4,972	1,092	512	6,576	106,157	31,712	12,202	150,071	96,568	30,057	11,497	138,122
2033	3,377	667	265	4,309	4,562	904	376	5,842	108,425	32,001	12,321	152,747	100,503	30,742	11,781	143,026
2034	3,064	576	202	3,843	3,881	806	366	5,053	110,244	32,161	12,363	154,768	103,581	31,267	12,035	146,883
2035	2,943	514	189	3,646	3,541	778	297	4,616	111,818	32,223	12,381	156,422	106,157	31,712	12,202	150,071
2036	2,734	433	187	3,355	3,377	667	265	4,309	113,075	32,174	12,387	157,636	108,425	32,001	12,321	152,747
2037	2,346	402	185	2,934	3,064	576	202	3,843	113,852	32,073	12,383	158,308	110,244	32,161	12,363	154,768
2038	2,135	391	184	2,709	2,943	514	189	3,646	114,338	31,946	12,371	158,655	111,818	32,223	12,381	156,422
2039	1,899	380	182	2,460	2,734	433	187	3,355	114,522	31,796	12,351	158,668	113,075	32,174	12,387	157,636
2040	1,701	341	180	2,223	2,346	402	185	2,934	114,450	31,601	12,325	158,376	113,852	32,073	12,383	158,308
2041	1,542	284	179	2,004	2,135	391	184	2,709	114,178	31,342	12,295	157,815	114,338	31,946	12,371	158,655
2042	1,323	272	175	1,770	1,899	380	182	2,460	113,652	31,067	12,259	156,978	114,522	31,796	12,351	158,668
2043	1,180	265	160	1,605	1,701	341	180	2,223	112,953	30,782	12,208	155,943	114,450	31,601	12,325	158,376
2044	969	209	144	1,321	1,542	284	179	2,004	112,018	30,441	12,140	154,600	114,178	31,342	12,295	157,815
2045	891	180	144	1,215	1,323	272	175	1,770	110,985	30,072	12,072	153,130	113,652	31,067	12,259	156,978
2046	638	108	140	887	1,180	265	160	1,605	109,684	29,634	12,002	151,319	112,953	30,782	12,208	155,943
2047	389	83	140	611	969	209	144	1,321	108,124	29,172	11,931	149,228	112,018	30,441	12,140	154,600
2048	364	83	140	586	891	180	144	1,215	106,536	28,714	11,861	147,111	110,985	30,072	12,072	153,130
2049	293	82	139	515	638	108	140	887	104,879	28,259	11,791	144,929	109,684	29,634	12,002	151,319
2050	262	82	139	483	389	83	140	611	103,195	27,807	11,722	142,724	108,124	29,172	11,931	149,228
2051	234	82	139	455	364	83	140	586	101,491	27,360	11,653	140,504	106,536	28,714	11,861	147,111
2052	233	82	139	454	293	82	139	515	99,799	26,918	11,584	138,302	104,879	28,259	11,791	144,929

Footnotes:

- (1) - (3) Exhibit 32.3 Col (12), Exhibit 32.3 Col (21), Exhibit 32.3 Col (30), etc.
- (4) Col (1) + Col (2) + Col (3)
- (5) - (7) Col (1), Col (2), and Col (3) delayed three years
- (8) Col (5) + Col (6) + Col (7)

Footnotes:

- (9) - (11) Running total of Col (1), Col (2), and Col (3) respectively
- (12) Reflecting the compounding effect of the selected 98% attenuation rate after 10 years
- (13) - (15) Col (9) + Col (10) + Col (11)
- (16) Col (9), Col (10), and Col (11) delayed three years
- (16) Col (13) + Col (14) + Col (15)

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$140.00	1.00	\$0.00	
1962	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1963	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1964	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1965	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1966	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1967	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1968	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1969	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1970	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1971	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1972	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1973	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1974	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1975	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1976	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1977	Surface	Active	475.23	0.010%	0.25	5.000%	0.01	23.76	140.00	1.00	1.66	
1978	Surface	Active	70.00	0.010%	1.00	5.000%	0.01	3.50	140.00	1.00	0.98	
1979	Surface	Active	180.00	0.010%	1.00	5.000%	0.02	9.00	140.00	1.00	2.52	
1980	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1981	Surface	Active	2.50	0.010%	1.25	5.000%	0.00	0.13	140.00	1.00	0.04	
1982	Surface	Active	1,666.76	0.010%	0.25	5.000%	0.04	83.34	140.00	1.00	5.83	
1983	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1984	Surface	Active	666.47	0.010%	0.47	5.000%	0.03	33.32	140.00	1.00	4.35	
1985	Surface	Active	904.60	1.000%	0.36	5.000%	3.24	45.23	140.00	1.00	453.11	
1986	Surface	Active	1,194.95	1.000%	0.25	5.000%	2.99	59.75	140.00	1.00	418.23	
1987	Surface	Active	299.96	1.000%	1.07	5.000%	3.20	15.00	140.00	1.00	448.63	
1988	Surface	Active	336.46	1.000%	0.25	5.000%	0.84	16.82	140.00	1.00	117.76	
1989	Surface	Active	1,373.36	1.000%	0.58	5.000%	7.95	68.67	140.00	1.00	1,113.17	
1990	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1991	Surface	Active	96.43	1.000%	1.00	5.000%	0.96	4.82	140.00	1.00	135.00	
1992	Surface	Active	726.00	1.000%	0.25	5.000%	1.82	36.30	140.00	1.00	254.10	
1993	Surface	Active	342.25	1.000%	0.25	5.000%	0.86	17.11	140.00	1.00	119.79	
1994	Surface	Active	176.19	1.000%	1.07	5.000%	1.89	8.81	140.00	1.00	264.52	
1995	Surface	Active	0.00	1.100%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1996	Surface	Active	981.28	1.100%	0.25	5.000%	2.70	49.06	140.00	1.00	377.79	
1997	Surface	Active	3,594.61	1.100%	0.36	5.000%	14.24	179.73	140.00	1.00	1,993.48	
1998	Surface	Active	1,204.44	1.100%	0.25	5.000%	3.31	60.22	140.00	1.00	463.71	
1999	Surface	Active	1,868.36	1.100%	0.25	4.000%	5.14	74.73	140.00	1.00	719.32	
2000	Surface	Active	620.83	1.100%	0.25	4.000%	1.71	24.83	140.00	1.00	239.02	
2001	Surface	Active	1,884.74	1.100%	0.35	4.000%	7.24	75.39	140.00	1.00	1,013.58	
2002	Surface	Active	1,137.84	1.100%	0.25	4.000%	3.13	45.51	140.00	1.00	438.07	
2003	Surface	Active	5,838.52	1.100%	0.47	4.000%	30.29	233.54	140.00	1.00	4,240.34	
2004	Surface	Active	1,967.21	1.100%	0.70	4.000%	15.19	78.69	140.00	1.00	2,126.71	
2005	Surface	Active	2,555.92	1.100%	0.43	4.000%	12.09	102.24	140.00	1.00	1,692.52	
2006	Surface	Active	2,705.22	1.100%	0.62	4.000%	18.52	108.21	140.00	1.00	2,592.10	
2007	Surface	Active	2,737.05	1.100%	0.48	4.000%	14.37	109.48	140.00	1.00	2,011.58	
2008	Surface	Active	3,284.20	1.100%	0.69	4.000%	24.85	131.37	140.00	1.00	3,479.15	
2009	Surface	Active	2,376.88	1.100%	0.48	0.500%	12.43	11.88	140.00	1.00	1,740.43	
2010	Surface	Active	523.42	1.100%	1.09	0.500%	6.27	2.62	140.00	1.00	877.50	
2011	Surface	Active	1,617.17	1.100%	0.77	0.500%	13.79	8.09	140.00	1.00	1,930.05	
2012	Surface	Active	4,551.37	1.100%	0.60	0.500%	29.97	22.76	140.00	1.00	4,196.25	
2013	Surface	Active	2,918.41	1.100%	0.71	0.500%	22.78	14.59	140.00	1.00	3,189.73	
2014	Surface	Active	2,617.01	1.100%	0.53	0.500%	15.22	13.09	140.00	1.00	2,130.58	
2015	Surface	Active	1,826.09	0.000%	0.70	0.000%	0.00	0.00	140.00	1.00	0.00	
2016	Surface	Active	788.61	0.000%	0.80	0.000%	0.00	0.00	140.00	1.00	0.00	
2017	Surface	Active	2.00	0.000%	1.25	0.000%	0.00	0.00	140.00	1.00	0.00	
TOTAL			56,112.34				277.08	1,771.59			38,791.61	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	\$0.00	
1962	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1963	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1964	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1965	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1966	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1967	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1968	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1969	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1970	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1971	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1972	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1973	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1974	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1975	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1976	Surface	Inactive	1,561.15	0.010%	0.48	5.000%	0.08	78.06	140.00	1.00	10.55	
1977	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1978	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1979	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1980	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1981	Surface	Inactive	4.47	0.010%	1.00	5.000%	0.00	0.22	140.00	1.00	0.06	
1982	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1983	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1984	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1985	Surface	Inactive	224.46	1.000%	0.25	5.000%	0.56	11.22	140.00	1.00	78.56	
1986	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1987	Surface	Inactive	322.57	1.000%	0.36	5.000%	1.15	16.13	140.00	1.00	161.58	
1988	Surface	Inactive	176.00	1.000%	1.00	5.000%	1.76	8.80	140.00	1.00	246.40	
1989	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1990	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1991	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1992	Surface	Inactive	127.07	1.000%	1.00	5.000%	1.27	6.35	140.00	1.00	177.90	
1993	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1994	Surface	Inactive	1,792.68	1.000%	0.25	5.000%	4.48	89.63	140.00	1.00	627.44	
1995	Surface	Inactive	2,009.28	1.100%	0.25	5.000%	5.53	100.46	140.00	1.00	773.57	
1996	Surface	Inactive	1,055.30	1.100%	0.25	5.000%	2.90	52.77	140.00	1.00	406.29	
1997	Surface	Inactive	1,493.18	1.100%	0.25	5.000%	4.11	74.66	140.00	1.00	574.87	
1998	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00	
1999	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
2000	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
2001	Surface	Inactive	1,161.29	1.100%	0.28	4.000%	3.60	46.45	140.00	1.00	504.04	
2002	Surface	Inactive	715.52	1.100%	0.25	4.000%	1.97	28.62	140.00	1.00	275.48	
2003	Surface	Inactive	1,020.28	1.100%	0.25	4.000%	2.81	40.81	140.00	1.00	392.81	
2004	Surface	Inactive	898.15	1.100%	0.25	4.000%	2.47	35.93	140.00	1.00	345.79	
2005	Surface	Inactive	244.34	1.100%	0.25	4.000%	0.67	9.77	140.00	1.00	94.07	
2006	Surface	Inactive	314.48	1.100%	0.42	4.000%	1.45	12.58	140.00	1.00	202.65	
2007	Surface	Inactive	727.30	1.100%	0.41	4.000%	3.24	29.09	140.00	1.00	454.27	
2008	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
2009	Surface	Inactive	311.89	1.100%	0.25	0.500%	0.86	1.56	140.00	1.00	120.08	
2010	Surface	Inactive	546.43	1.100%	0.25	0.500%	1.50	2.73	140.00	1.00	210.38	
2011	Surface	Inactive	793.78	1.100%	0.54	0.500%	4.68	3.97	140.00	1.00	654.92	
2012	Surface	Inactive	99.70	1.100%	1.02	0.500%	1.11	0.50	140.00	1.00	156.03	
2013	Surface	Inactive	351.00	1.100%	0.25	0.500%	0.97	1.76	140.00	1.00	135.14	
2014	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	140.00	1.00	0.00	
2015	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00	
2016	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00	
2017	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00	
TOTAL			15,950.32				47.16	652.08			6,602.86	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$140.00	1.00	\$0.00	
1962	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1963	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1964	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1965	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1966	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1967	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1968	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1969	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1970	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1971	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00	
1972	Surface	Phased Release	400.00	0.010%	1.25	4.000%	0.05	16.00	140.00	1.00	7.00	
1973	Surface	Phased Release	9.60	0.010%	1.25	4.000%	0.00	0.38	140.00	1.00	0.17	
1974	Surface	Phased Release	180.00	0.010%	1.25	4.000%	0.02	7.20	140.00	1.00	3.15	
1975	Surface	Phased Release	155.30	0.010%	1.25	4.000%	0.02	6.21	140.00	1.00	2.72	
1976	Surface	Phased Release	1,239.23	0.010%	0.93	5.000%	0.12	61.96	140.00	1.00	16.22	
1977	Surface	Phased Release	748.81	0.010%	0.46	5.000%	0.03	37.44	140.00	1.00	4.84	
1978	Surface	Phased Release	2,262.16	0.010%	0.55	5.000%	0.12	113.11	140.00	1.00	17.32	
1979	Surface	Phased Release	925.40	0.010%	0.67	5.000%	0.06	46.27	140.00	1.00	8.70	
1980	Surface	Phased Release	1,910.37	0.010%	0.69	5.000%	0.13	95.52	140.00	1.00	18.39	
1981	Surface	Phased Release	3,119.22	0.010%	0.52	5.000%	0.16	155.96	140.00	1.00	22.89	
1982	Surface	Phased Release	1,607.89	0.010%	0.87	5.000%	0.14	80.39	140.00	1.00	19.55	
1983	Surface	Phased Release	2,074.52	0.010%	0.54	5.000%	0.11	103.73	140.00	1.00	15.74	
1984	Surface	Phased Release	1,413.45	0.010%	0.38	5.000%	0.05	70.67	140.00	1.00	7.59	
1985	Surface	Phased Release	4,476.37	1.000%	0.66	5.000%	29.55	223.82	140.00	1.00	4,136.94	
1986	Surface	Phased Release	2,508.01	1.000%	0.50	5.000%	12.50	125.40	140.00	1.00	1,750.45	
1987	Surface	Phased Release	1,593.69	1.000%	0.78	5.000%	12.44	79.68	140.00	1.00	1,741.67	
1988	Surface	Phased Release	5,471.56	1.000%	0.54	5.000%	29.62	273.58	140.00	1.00	4,146.63	
1989	Surface	Phased Release	4,659.87	1.000%	0.89	5.000%	41.59	232.99	140.00	1.00	5,822.36	
1990	Surface	Phased Release	1,957.79	1.000%	0.75	5.000%	14.64	97.89	140.00	1.00	2,049.75	
1991	Surface	Phased Release	5,668.21	1.000%	0.46	5.000%	26.17	283.41	140.00	1.00	3,664.01	
1992	Surface	Phased Release	5,677.52	1.000%	0.40	5.000%	22.49	283.88	140.00	1.00	3,148.00	
1993	Surface	Phased Release	3,583.11	1.000%	0.39	5.000%	13.93	179.16	140.00	1.00	1,950.39	
1994	Surface	Phased Release	4,244.57	1.000%	0.37	5.000%	15.59	212.23	140.00	1.00	2,183.00	
1995	Surface	Phased Release	5,074.70	1.100%	0.43	5.000%	24.10	253.74	140.00	1.00	3,373.48	
1996	Surface	Phased Release	12,050.18	1.100%	0.29	5.000%	38.92	602.51	140.00	1.00	5,449.09	
1997	Surface	Phased Release	9,485.73	1.100%	0.44	5.000%	45.65	474.29	140.00	1.00	6,391.62	
1998	Surface	Phased Release	5,637.42	1.100%	0.28	5.000%	17.48	281.87	140.00	1.00	2,446.87	
1999	Surface	Phased Release	1,559.47	1.100%	0.52	4.000%	8.90	62.38	140.00	1.00	1,246.18	
2000	Surface	Phased Release	6,526.00	1.100%	0.27	4.000%	19.62	261.04	140.00	1.00	2,746.59	
2001	Surface	Phased Release	8,126.32	1.100%	0.34	4.000%	30.84	325.05	140.00	1.00	4,317.44	
2002	Surface	Phased Release	2,179.48	1.100%	0.53	4.000%	12.79	87.18	140.00	1.00	1,790.22	
2003	Surface	Phased Release	7,397.89	1.100%	0.31	4.000%	24.82	295.92	140.00	1.00	3,475.41	
2004	Surface	Phased Release	7,695.07	1.100%	0.43	4.000%	36.39	307.80	140.00	1.00	5,095.12	
2005	Surface	Phased Release	989.62	1.100%	0.45	4.000%	4.87	39.58	140.00	1.00	681.95	
2006	Surface	Phased Release	5,319.77	1.100%	0.36	4.000%	21.20	212.79	140.00	1.00	2,967.79	
2007	Surface	Phased Release	2,026.81	1.100%	0.49	4.000%	10.85	81.07	140.00	1.00	1,518.83	
2008	Surface	Phased Release	2,478.99	1.100%	0.55	4.000%	15.04	99.16	140.00	1.00	2,105.01	
2009	Surface	Phased Release	1,930.25	1.100%	0.47	0.500%	10.08	9.65	140.00	1.00	1,410.90	
2010	Surface	Phased Release	561.34	1.100%	1.08	0.500%	6.70	2.81	140.00	1.00	937.34	
2011	Surface	Phased Release	1,006.96	1.100%	0.47	0.500%	5.24	5.03	140.00	1.00	733.33	
2012	Surface	Phased Release	571.14	1.100%	0.82	0.500%	5.16	2.86	140.00	1.00	722.16	
2013	Surface	Phased Release	392.33	1.100%	0.39	0.500%	1.69	1.96	140.00	1.00	236.32	
2014	Surface	Phased Release	220.00	1.100%	0.25	0.500%	0.61	1.10	140.00	1.00	84.70	
2015	Surface	Phased Release	107.23	0.000%	1.00	0.000%	0.00	0.00	140.00	1.00	0.00	
2016	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00	
2017	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00	
TOTAL			137,223.35				560.48	6,194.67			78,467.82	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

			As of Fiscal Year End 2019								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Permit Status & Future FY	
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$140.00	1.00	\$0.00
1962	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1963	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1964	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1965	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1966	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1967	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1968	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1969	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1970	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1971	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1972	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1973	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1974	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1975	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1976	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1977	Surface	Active	451.46	0.010%	0.25	5.000%	0.01	22.57	140.00	1.00	1.58
1978	Surface	Active	66.49	0.010%	1.00	5.000%	0.01	3.32	140.00	1.00	0.93
1979	Surface	Active	170.98	0.010%	1.00	5.000%	0.02	8.55	140.00	1.00	2.39
1980	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1981	Surface	Active	2.37	0.010%	1.25	5.000%	0.00	0.12	140.00	1.00	0.04
1982	Surface	Active	1,583.38	0.010%	0.25	5.000%	0.04	79.17	140.00	1.00	5.54
1983	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1984	Surface	Active	633.12	0.010%	0.47	5.000%	0.03	31.66	140.00	1.00	4.13
1985	Surface	Active	856.13	0.010%	0.36	5.000%	0.03	42.81	140.00	1.00	4.29
1986	Surface	Active	1,132.22	1.000%	0.25	5.000%	2.83	56.61	140.00	1.00	396.28
1987	Surface	Active	281.76	1.000%	1.07	5.000%	3.01	14.09	140.00	1.00	421.41
1988	Surface	Active	318.80	1.000%	0.25	5.000%	0.80	15.94	140.00	1.00	111.58
1989	Surface	Active	1,296.74	1.000%	0.58	5.000%	7.51	64.84	140.00	1.00	1,051.07
1990	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1991	Surface	Active	90.64	1.000%	1.00	5.000%	0.91	4.53	140.00	1.00	126.90
1992	Surface	Active	687.89	1.000%	0.25	5.000%	1.72	34.39	140.00	1.00	240.76
1993	Surface	Active	324.28	1.000%	0.25	5.000%	0.81	16.21	140.00	1.00	113.50
1994	Surface	Active	165.49	1.000%	1.07	5.000%	1.77	8.27	140.00	1.00	248.45
1995	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1996	Surface	Active	929.52	1.100%	0.25	5.000%	2.56	46.48	140.00	1.00	357.86
1997	Surface	Active	3,400.64	1.100%	0.36	5.000%	13.47	170.03	140.00	1.00	1,885.90
1998	Surface	Active	1,140.91	1.100%	0.25	5.000%	3.14	57.05	140.00	1.00	439.25
1999	Surface	Active	1,788.49	1.100%	0.25	5.000%	4.92	89.42	140.00	1.00	688.57
2000	Surface	Active	594.29	1.100%	0.25	4.000%	1.63	23.77	140.00	1.00	228.80
2001	Surface	Active	1,802.11	1.100%	0.35	4.000%	6.92	72.08	140.00	1.00	969.14
2002	Surface	Active	1,089.20	1.100%	0.25	4.000%	3.00	43.57	140.00	1.00	419.34
2003	Surface	Active	5,574.69	1.100%	0.47	4.000%	28.92	222.99	140.00	1.00	4,048.72
2004	Surface	Active	1,873.33	1.100%	0.70	4.000%	14.47	74.93	140.00	1.00	2,025.22
2005	Surface	Active	2,441.59	1.100%	0.43	4.000%	11.55	97.66	140.00	1.00	1,616.82
2006	Surface	Active	2,578.50	1.100%	0.62	4.000%	17.65	103.14	140.00	1.00	2,470.68
2007	Surface	Active	2,613.20	1.100%	0.48	4.000%	13.72	104.53	140.00	1.00	1,920.56
2008	Surface	Active	3,127.98	1.100%	0.69	4.000%	23.67	125.12	140.00	1.00	3,313.66
2009	Surface	Active	2,352.56	1.100%	0.48	4.000%	12.30	94.10	140.00	1.00	1,722.63
2010	Surface	Active	514.54	1.100%	1.09	0.500%	6.16	2.57	140.00	1.00	862.60
2011	Surface	Active	1,595.30	1.100%	0.77	0.500%	13.60	7.98	140.00	1.00	1,903.95
2012	Surface	Active	4,498.64	1.100%	0.60	0.500%	29.63	22.49	140.00	1.00	4,147.63
2013	Surface	Active	2,881.03	1.100%	0.71	0.500%	22.49	14.41	140.00	1.00	3,148.88
2014	Surface	Active	2,588.71	1.100%	0.53	0.500%	15.05	12.94	140.00	1.00	2,107.53
2015	Surface	Active	1,826.09	1.100%	0.70	0.500%	14.08	9.13	140.00	1.00	1,971.63
2016	Surface	Active	788.61	0.000%	0.80	0.000%	0.00	0.00	140.00	1.00	0.00
2017	Surface	Active	2.00	0.000%	1.25	0.000%	0.00	0.00	140.00	1.00	0.00
TOTAL			54,063.67				278.42	1,797.48			38,978.23

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2019								
			Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	\$140.00	1.00	\$0.00
1962	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1963	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1964	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1965	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1966	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1967	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1968	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1969	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1970	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1971	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1972	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1973	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1974	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1975	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1976	Surface	Inactive	1,483.02	0.010%	0.48	4.000%	0.07	59.32	140.00	1.00	10.02
1977	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1978	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1979	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1980	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1981	Surface	Inactive	4.25	0.010%	1.00	5.000%	0.00	0.21	140.00	1.00	0.06
1982	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1983	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1984	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1985	Surface	Inactive	212.68	0.010%	0.25	5.000%	0.01	10.63	140.00	1.00	0.74
1986	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1987	Surface	Inactive	305.29	1.000%	0.36	5.000%	1.09	15.26	140.00	1.00	152.92
1988	Surface	Inactive	165.44	1.000%	1.00	5.000%	1.65	8.27	140.00	1.00	231.62
1989	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1990	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1991	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1992	Surface	Inactive	119.45	1.000%	1.00	5.000%	1.19	5.97	140.00	1.00	167.22
1993	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1994	Surface	Inactive	1,698.56	1.000%	0.25	5.000%	4.25	84.93	140.00	1.00	594.50
1995	Surface	Inactive	1,903.29	1.000%	0.25	5.000%	4.76	95.16	140.00	1.00	666.15
1996	Surface	Inactive	999.63	1.100%	0.25	5.000%	2.75	49.98	140.00	1.00	384.86
1997	Surface	Inactive	1,414.41	1.100%	0.25	5.000%	3.89	70.72	140.00	1.00	544.55
1998	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1999	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
2000	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
2001	Surface	Inactive	1,111.24	1.100%	0.28	4.000%	3.45	44.45	140.00	1.00	482.31
2002	Surface	Inactive	684.93	1.100%	0.25	4.000%	1.88	27.40	140.00	1.00	263.70
2003	Surface	Inactive	976.66	1.100%	0.25	4.000%	2.69	39.07	140.00	1.00	376.02
2004	Surface	Inactive	859.75	1.100%	0.25	4.000%	2.36	34.39	140.00	1.00	331.01
2005	Surface	Inactive	233.89	1.100%	0.25	4.000%	0.64	9.36	140.00	1.00	90.05
2006	Surface	Inactive	300.45	1.100%	0.42	4.000%	1.38	12.02	140.00	1.00	193.61
2007	Surface	Inactive	694.96	1.100%	0.41	4.000%	3.10	27.80	140.00	1.00	434.07
2008	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
2009	Surface	Inactive	309.47	1.100%	0.25	4.000%	0.85	12.38	140.00	1.00	119.15
2010	Surface	Inactive	542.20	1.100%	0.25	0.500%	1.49	2.71	140.00	1.00	208.75
2011	Surface	Inactive	785.13	1.100%	0.54	0.500%	4.63	3.93	140.00	1.00	647.79
2012	Surface	Inactive	98.09	1.100%	1.02	0.500%	1.10	0.49	140.00	1.00	153.50
2013	Surface	Inactive	348.28	1.100%	0.25	0.500%	0.96	1.74	140.00	1.00	134.09
2014	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	140.00	1.00	0.00
2015	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	140.00	1.00	0.00
2016	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00
2017	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00
TOTAL			15,251.08				44.19	616.19			6,186.68

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017
 As of Fiscal Year End
 2019

Permit Issue Year	Mine Type	Mine Status	Adjustment						Avg Recl Cost per Acre	Adjustment	
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres		Factor Permit Status & Future FY	Gross Cost
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$140.00	1.00	\$0.00
1962	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1963	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1964	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1965	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1966	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1967	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1968	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1969	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1970	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1971	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1972	Surface	Phased Release	383.95	0.010%	1.25	4.000%	0.05	15.36	140.00	1.00	6.72
1973	Surface	Phased Release	9.21	0.010%	1.25	4.000%	0.00	0.37	140.00	1.00	0.16
1974	Surface	Phased Release	172.78	0.010%	1.25	4.000%	0.02	6.91	140.00	1.00	3.02
1975	Surface	Phased Release	149.07	0.010%	1.25	4.000%	0.02	5.96	140.00	1.00	2.61
1976	Surface	Phased Release	1,177.15	0.010%	0.93	4.000%	0.11	47.09	140.00	1.00	15.40
1977	Surface	Phased Release	711.33	0.010%	0.46	5.000%	0.03	35.57	140.00	1.00	4.60
1978	Surface	Phased Release	2,148.93	0.010%	0.55	5.000%	0.12	107.45	140.00	1.00	16.45
1979	Surface	Phased Release	879.07	0.010%	0.67	5.000%	0.06	43.95	140.00	1.00	8.26
1980	Surface	Phased Release	1,814.72	0.010%	0.69	5.000%	0.12	90.74	140.00	1.00	17.47
1981	Surface	Phased Release	2,963.10	0.010%	0.52	5.000%	0.16	148.15	140.00	1.00	21.75
1982	Surface	Phased Release	1,527.36	0.010%	0.87	5.000%	0.13	76.37	140.00	1.00	18.57
1983	Surface	Phased Release	1,970.68	0.010%	0.54	5.000%	0.11	98.53	140.00	1.00	14.95
1984	Surface	Phased Release	1,342.72	0.010%	0.38	5.000%	0.05	67.14	140.00	1.00	7.21
1985	Surface	Phased Release	4,223.00	0.010%	0.66	5.000%	0.28	211.15	140.00	1.00	39.03
1986	Surface	Phased Release	2,370.11	1.000%	0.50	5.000%	11.82	118.51	140.00	1.00	1,654.20
1987	Surface	Phased Release	1,501.56	1.000%	0.78	5.000%	11.72	75.08	140.00	1.00	1,640.99
1988	Surface	Phased Release	5,168.36	1.000%	0.54	5.000%	27.98	258.42	140.00	1.00	3,916.85
1989	Surface	Phased Release	4,385.29	1.000%	0.89	5.000%	39.14	219.26	140.00	1.00	5,479.28
1990	Surface	Phased Release	1,845.26	1.000%	0.75	5.000%	13.80	92.26	140.00	1.00	1,931.94
1991	Surface	Phased Release	5,358.63	1.000%	0.46	5.000%	24.74	267.93	140.00	1.00	3,463.89
1992	Surface	Phased Release	5,371.16	1.000%	0.40	5.000%	21.27	268.56	140.00	1.00	2,978.13
1993	Surface	Phased Release	3,390.02	1.000%	0.39	5.000%	13.18	169.50	140.00	1.00	1,845.29
1994	Surface	Phased Release	4,016.75	1.000%	0.37	5.000%	14.76	200.84	140.00	1.00	2,065.83
1995	Surface	Phased Release	4,796.87	1.000%	0.43	5.000%	20.71	239.84	140.00	1.00	2,898.90
1996	Surface	Phased Release	11,408.75	1.100%	0.29	5.000%	36.85	570.44	140.00	1.00	5,159.03
1997	Surface	Phased Release	8,965.79	1.100%	0.44	5.000%	43.15	448.29	140.00	1.00	6,041.28
1998	Surface	Phased Release	5,338.07	1.100%	0.28	5.000%	16.55	266.90	140.00	1.00	2,316.94
1999	Surface	Phased Release	1,488.19	1.100%	0.52	5.000%	8.49	74.41	140.00	1.00	1,189.22
2000	Surface	Phased Release	6,245.34	1.100%	0.27	4.000%	18.77	249.81	140.00	1.00	2,628.47
2001	Surface	Phased Release	7,770.43	1.100%	0.34	4.000%	29.49	310.82	140.00	1.00	4,128.36
2002	Surface	Phased Release	2,079.51	1.100%	0.53	4.000%	12.20	83.18	140.00	1.00	1,708.11
2003	Surface	Phased Release	7,077.15	1.100%	0.31	4.000%	23.75	283.09	140.00	1.00	3,324.73
2004	Surface	Phased Release	7,350.87	1.100%	0.43	4.000%	34.77	294.03	140.00	1.00	4,867.22
2005	Surface	Phased Release	945.16	1.100%	0.45	4.000%	4.65	37.81	140.00	1.00	651.32
2006	Surface	Phased Release	5,085.78	1.100%	0.36	4.000%	20.27	203.43	140.00	1.00	2,837.25
2007	Surface	Phased Release	1,934.89	1.100%	0.49	4.000%	10.36	77.40	140.00	1.00	1,449.95
2008	Surface	Phased Release	2,364.79	1.100%	0.55	4.000%	14.34	94.59	140.00	1.00	2,008.04
2009	Surface	Phased Release	1,910.52	1.100%	0.47	4.000%	9.97	76.42	140.00	1.00	1,396.47
2010	Surface	Phased Release	551.84	1.100%	1.08	0.500%	6.58	2.76	140.00	1.00	921.47
2011	Surface	Phased Release	996.69	1.100%	0.47	0.500%	5.18	4.98	140.00	1.00	725.85
2012	Surface	Phased Release	563.13	1.100%	0.82	0.500%	5.09	2.82	140.00	1.00	712.03
2013	Surface	Phased Release	388.68	1.100%	0.39	0.500%	1.67	1.94	140.00	1.00	234.12
2014	Surface	Phased Release	218.30	1.100%	0.25	0.500%	0.60	1.09	140.00	1.00	84.04
2015	Surface	Phased Release	107.23	1.100%	1.00	0.500%	1.18	0.54	140.00	1.00	165.13
2016	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00
2017	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00
TOTAL			130,468.19				504.29	5,949.68			70,600.54

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017
 As of Fiscal Year End
 2020

Permit Issue Year	Mine Type	Mine Status	Adjustment						Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres			
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$140.00	1.00	\$0.00
1962	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1963	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1964	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1965	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1966	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1967	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1968	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1969	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1970	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1971	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1972	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1973	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1974	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1975	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1976	Surface	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1977	Surface	Active	428.87	0.010%	0.25	4.000%	0.01	17.15	140.00	1.00	1.50
1978	Surface	Active	63.16	0.010%	1.00	5.000%	0.01	3.16	140.00	1.00	0.88
1979	Surface	Active	162.42	0.010%	1.00	5.000%	0.02	8.12	140.00	1.00	2.27
1980	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1981	Surface	Active	2.26	0.010%	1.25	5.000%	0.00	0.11	140.00	1.00	0.04
1982	Surface	Active	1,504.17	0.010%	0.25	5.000%	0.04	75.21	140.00	1.00	5.26
1983	Surface	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1984	Surface	Active	601.43	0.010%	0.47	5.000%	0.03	30.07	140.00	1.00	3.92
1985	Surface	Active	813.30	0.010%	0.36	5.000%	0.03	40.66	140.00	1.00	4.07
1986	Surface	Active	1,072.77	0.010%	0.25	5.000%	0.03	53.64	140.00	1.00	3.75
1987	Surface	Active	264.66	1.000%	1.07	5.000%	2.83	13.23	140.00	1.00	395.83
1988	Surface	Active	302.06	1.000%	0.25	5.000%	0.76	15.10	140.00	1.00	105.72
1989	Surface	Active	1,224.40	1.000%	0.58	5.000%	7.09	61.22	140.00	1.00	992.43
1990	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1991	Surface	Active	85.21	1.000%	1.00	5.000%	0.85	4.26	140.00	1.00	119.29
1992	Surface	Active	651.77	1.000%	0.25	5.000%	1.63	32.59	140.00	1.00	228.12
1993	Surface	Active	307.26	1.000%	0.25	5.000%	0.77	15.36	140.00	1.00	107.54
1994	Surface	Active	155.44	1.000%	1.07	5.000%	1.67	7.77	140.00	1.00	233.37
1995	Surface	Active	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1996	Surface	Active	880.49	1.000%	0.25	5.000%	2.20	44.02	140.00	1.00	308.17
1997	Surface	Active	3,217.14	1.100%	0.36	5.000%	12.74	160.86	140.00	1.00	1,784.14
1998	Surface	Active	1,080.72	1.100%	0.25	5.000%	2.97	54.04	140.00	1.00	416.08
1999	Surface	Active	1,694.14	1.100%	0.25	5.000%	4.66	84.71	140.00	1.00	652.25
2000	Surface	Active	568.88	1.100%	0.25	5.000%	1.56	28.44	140.00	1.00	219.02
2001	Surface	Active	1,723.10	1.100%	0.35	4.000%	6.62	68.92	140.00	1.00	926.65
2002	Surface	Active	1,042.63	1.100%	0.25	4.000%	2.87	41.71	140.00	1.00	401.41
2003	Surface	Active	5,322.78	1.100%	0.47	4.000%	27.61	212.91	140.00	1.00	3,865.77
2004	Surface	Active	1,783.93	1.100%	0.70	4.000%	13.78	71.36	140.00	1.00	1,928.57
2005	Surface	Active	2,332.38	1.100%	0.43	4.000%	11.03	93.30	140.00	1.00	1,544.50
2006	Surface	Active	2,457.71	1.100%	0.62	4.000%	16.82	98.31	140.00	1.00	2,354.94
2007	Surface	Active	2,494.95	1.100%	0.48	4.000%	13.10	99.80	140.00	1.00	1,833.65
2008	Surface	Active	2,979.19	1.100%	0.69	4.000%	22.54	119.17	140.00	1.00	3,156.04
2009	Surface	Active	2,246.16	1.100%	0.48	4.000%	11.75	89.85	140.00	1.00	1,644.71
2010	Surface	Active	505.80	1.100%	1.09	4.000%	6.06	20.23	140.00	1.00	847.96
2011	Surface	Active	1,573.72	1.100%	0.77	0.500%	13.42	7.87	140.00	1.00	1,878.20
2012	Surface	Active	4,446.52	1.100%	0.60	0.500%	29.28	22.23	140.00	1.00	4,099.58
2013	Surface	Active	2,844.14	1.100%	0.71	0.500%	22.20	14.22	140.00	1.00	3,108.56
2014	Surface	Active	2,560.71	1.100%	0.53	0.500%	14.89	12.80	140.00	1.00	2,084.74
2015	Surface	Active	1,802.88	1.100%	0.70	0.500%	13.90	9.01	140.00	1.00	1,946.57
2016	Surface	Active	788.61	1.100%	0.80	0.500%	6.94	3.94	140.00	1.00	971.80
2017	Surface	Active	2.00	0.000%	1.25	0.000%	0.00	0.00	140.00	1.00	0.00
TOTAL			51,987.77				272.70	1,735.37			38,177.32

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Surface
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Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2020								
			Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	\$140.00	1.00	\$0.00
1962	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1963	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1964	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1965	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1966	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1967	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1968	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1969	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1970	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1971	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1972	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1973	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1974	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1975	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1976	Surface	Inactive	1,423.62	0.010%	0.48	4.000%	0.07	56.94	140.00	1.00	9.62
1977	Surface	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1978	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1979	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1980	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1981	Surface	Inactive	4.03	0.010%	1.00	5.000%	0.00	0.20	140.00	1.00	0.06
1982	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1983	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1984	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1985	Surface	Inactive	202.04	0.010%	0.25	5.000%	0.01	10.10	140.00	1.00	0.71
1986	Surface	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1987	Surface	Inactive	288.93	1.000%	0.36	5.000%	1.03	14.45	140.00	1.00	144.73
1988	Surface	Inactive	155.51	1.000%	1.00	5.000%	1.56	7.78	140.00	1.00	217.72
1989	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1990	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1991	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1992	Surface	Inactive	112.28	1.000%	1.00	5.000%	1.12	5.61	140.00	1.00	157.19
1993	Surface	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1994	Surface	Inactive	1,609.39	1.000%	0.25	5.000%	4.02	80.47	140.00	1.00	563.29
1995	Surface	Inactive	1,803.37	1.000%	0.25	5.000%	4.51	90.17	140.00	1.00	631.18
1996	Surface	Inactive	946.90	1.000%	0.25	5.000%	2.37	47.35	140.00	1.00	331.42
1997	Surface	Inactive	1,339.80	1.100%	0.25	5.000%	3.68	66.99	140.00	1.00	515.82
1998	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
1999	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
2000	Surface	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	140.00	1.00	0.00
2001	Surface	Inactive	1,063.34	1.100%	0.28	4.000%	3.30	42.53	140.00	1.00	461.53
2002	Surface	Inactive	655.65	1.100%	0.25	4.000%	1.80	26.23	140.00	1.00	252.43
2003	Surface	Inactive	934.91	1.100%	0.25	4.000%	2.57	37.40	140.00	1.00	359.94
2004	Surface	Inactive	823.00	1.100%	0.25	4.000%	2.26	32.92	140.00	1.00	316.85
2005	Surface	Inactive	223.90	1.100%	0.25	4.000%	0.62	8.96	140.00	1.00	86.20
2006	Surface	Inactive	287.05	1.100%	0.42	4.000%	1.32	11.48	140.00	1.00	184.97
2007	Surface	Inactive	664.06	1.100%	0.41	4.000%	2.96	26.56	140.00	1.00	414.77
2008	Surface	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
2009	Surface	Inactive	296.24	1.100%	0.25	4.000%	0.81	11.85	140.00	1.00	114.05
2010	Surface	Inactive	537.99	1.100%	0.25	4.000%	1.48	21.52	140.00	1.00	207.13
2011	Surface	Inactive	776.58	1.100%	0.54	0.500%	4.58	3.88	140.00	1.00	640.73
2012	Surface	Inactive	96.50	1.100%	1.02	0.500%	1.08	0.48	140.00	1.00	151.02
2013	Surface	Inactive	345.58	1.100%	0.25	0.500%	0.95	1.73	140.00	1.00	133.05
2014	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	140.00	1.00	0.00
2015	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	140.00	1.00	0.00
2016	Surface	Inactive	0.00	1.100%	0.00	0.500%	0.00	0.00	140.00	1.00	0.00
2017	Surface	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00
TOTAL			14,590.70				42.10	605.60			5,894.40

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Surface
 June 30, 2017

			As of Fiscal Year End 2020								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Permit Status & Future FY	
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$140.00	1.00	\$0.00
1962	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1963	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1964	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1965	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1966	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1967	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1968	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1969	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1970	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1971	Surface	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	140.00	1.00	0.00
1972	Surface	Phased Release	368.54	0.010%	1.25	4.000%	0.05	14.74	140.00	1.00	6.45
1973	Surface	Phased Release	8.85	0.010%	1.25	4.000%	0.00	0.35	140.00	1.00	0.15
1974	Surface	Phased Release	165.84	0.010%	1.25	4.000%	0.02	6.63	140.00	1.00	2.90
1975	Surface	Phased Release	143.09	0.010%	1.25	4.000%	0.02	5.72	140.00	1.00	2.50
1976	Surface	Phased Release	1,129.96	0.010%	0.93	4.000%	0.11	45.20	140.00	1.00	14.79
1977	Surface	Phased Release	675.74	0.010%	0.46	4.000%	0.03	27.03	140.00	1.00	4.37
1978	Surface	Phased Release	2,041.36	0.010%	0.55	5.000%	0.11	102.07	140.00	1.00	15.63
1979	Surface	Phased Release	835.06	0.010%	0.67	5.000%	0.06	41.75	140.00	1.00	7.85
1980	Surface	Phased Release	1,723.86	0.010%	0.69	5.000%	0.12	86.19	140.00	1.00	16.59
1981	Surface	Phased Release	2,814.79	0.010%	0.52	5.000%	0.15	140.74	140.00	1.00	20.66
1982	Surface	Phased Release	1,450.86	0.010%	0.87	5.000%	0.13	72.54	140.00	1.00	17.64
1983	Surface	Phased Release	1,872.04	0.010%	0.54	5.000%	0.10	93.60	140.00	1.00	14.20
1984	Surface	Phased Release	1,275.54	0.010%	0.38	5.000%	0.05	63.78	140.00	1.00	6.85
1985	Surface	Phased Release	4,011.57	0.010%	0.66	5.000%	0.26	200.58	140.00	1.00	37.07
1986	Surface	Phased Release	2,239.79	0.010%	0.50	5.000%	0.11	111.99	140.00	1.00	15.63
1987	Surface	Phased Release	1,414.77	1.000%	0.78	5.000%	11.04	70.74	140.00	1.00	1,546.13
1988	Surface	Phased Release	4,881.97	1.000%	0.54	5.000%	26.43	244.10	140.00	1.00	3,699.80
1989	Surface	Phased Release	4,126.89	1.000%	0.89	5.000%	36.83	206.34	140.00	1.00	5,156.41
1990	Surface	Phased Release	1,739.20	1.000%	0.75	5.000%	13.01	86.96	140.00	1.00	1,820.89
1991	Surface	Phased Release	5,065.95	1.000%	0.46	5.000%	23.39	253.30	140.00	1.00	3,274.71
1992	Surface	Phased Release	5,081.33	1.000%	0.40	5.000%	20.12	254.07	140.00	1.00	2,817.43
1993	Surface	Phased Release	3,207.34	1.000%	0.39	5.000%	12.47	160.37	140.00	1.00	1,745.85
1994	Surface	Phased Release	3,801.16	1.000%	0.37	5.000%	13.96	190.06	140.00	1.00	1,954.95
1995	Surface	Phased Release	4,536.32	1.000%	0.43	5.000%	19.58	226.82	140.00	1.00	2,741.44
1996	Surface	Phased Release	10,801.46	1.000%	0.29	5.000%	31.72	540.07	140.00	1.00	4,440.38
1997	Surface	Phased Release	8,474.35	1.100%	0.44	5.000%	40.79	423.72	140.00	1.00	5,710.14
1998	Surface	Phased Release	5,054.62	1.100%	0.28	5.000%	15.67	252.73	140.00	1.00	2,193.91
1999	Surface	Phased Release	1,405.29	1.100%	0.52	5.000%	8.02	70.26	140.00	1.00	1,122.97
2000	Surface	Phased Release	5,976.75	1.100%	0.27	5.000%	17.97	298.84	140.00	1.00	2,515.42
2001	Surface	Phased Release	7,430.12	1.100%	0.34	4.000%	28.20	297.20	140.00	1.00	3,947.56
2002	Surface	Phased Release	1,984.13	1.100%	0.53	4.000%	11.64	79.37	140.00	1.00	1,629.76
2003	Surface	Phased Release	6,770.32	1.100%	0.31	4.000%	22.72	270.81	140.00	1.00	3,180.58
2004	Surface	Phased Release	7,022.07	1.100%	0.43	4.000%	33.21	280.88	140.00	1.00	4,649.51
2005	Surface	Phased Release	902.71	1.100%	0.45	4.000%	4.44	36.11	140.00	1.00	622.06
2006	Surface	Phased Release	4,862.08	1.100%	0.36	4.000%	19.37	194.48	140.00	1.00	2,712.46
2007	Surface	Phased Release	1,847.14	1.100%	0.49	4.000%	9.89	73.89	140.00	1.00	1,384.19
2008	Surface	Phased Release	2,255.86	1.100%	0.55	4.000%	13.68	90.23	140.00	1.00	1,915.54
2009	Surface	Phased Release	1,824.13	1.100%	0.47	4.000%	9.52	72.97	140.00	1.00	1,333.32
2010	Surface	Phased Release	542.50	1.100%	1.08	4.000%	6.47	21.70	140.00	1.00	905.87
2011	Surface	Phased Release	986.52	1.100%	0.47	0.500%	5.13	4.93	140.00	1.00	718.44
2012	Surface	Phased Release	555.22	1.100%	0.82	0.500%	5.01	2.78	140.00	1.00	702.04
2013	Surface	Phased Release	385.06	1.100%	0.39	0.500%	1.66	1.93	140.00	1.00	231.94
2014	Surface	Phased Release	216.60	1.100%	0.25	0.500%	0.60	1.08	140.00	1.00	83.39
2015	Surface	Phased Release	105.51	1.100%	1.00	0.500%	1.16	0.53	140.00	1.00	162.49
2016	Surface	Phased Release	0.00	1.100%	0.00	0.500%	0.00	0.00	140.00	1.00	0.00
2017	Surface	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	140.00	1.00	0.00
TOTAL			124,014.22				465.02	5,720.18			65,102.90

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Avg Recl Cost per Acre		Adjustment		Gross Cost	
				Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Permit Status & Future FY			
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$260.00	1.00	\$0.00	
1962	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1963	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1964	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1965	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1966	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1967	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1968	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1969	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1970	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1971	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1972	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1973	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1974	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1975	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1976	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1977	Underground	Active	0.00	0.010%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00	
1978	Underground	Active	123.25	0.010%	1.00	5.000%	0.01	6.16	260.00	1.00	3.20	
1979	Underground	Active	651.83	0.010%	0.48	5.000%	0.03	32.59	260.00	1.00	8.10	
1980	Underground	Active	293.69	0.010%	1.03	5.000%	0.03	14.68	260.00	1.00	7.84	
1981	Underground	Active	198.01	0.010%	0.37	5.000%	0.01	9.90	260.00	1.00	1.91	
1982	Underground	Active	322.08	0.010%	1.12	5.000%	0.04	16.10	260.00	1.00	9.41	
1983	Underground	Active	5,590.35	0.010%	0.27	5.000%	0.15	279.52	260.00	1.00	39.59	
1984	Underground	Active	377.10	0.010%	0.32	5.000%	0.01	18.86	260.00	1.00	3.18	
1985	Underground	Active	21.04	0.010%	1.25	5.000%	0.00	1.05	260.00	1.00	0.68	
1986	Underground	Active	32.30	0.010%	1.25	5.000%	0.00	1.62	260.00	1.00	1.05	
1987	Underground	Active	238.44	0.010%	1.01	5.000%	0.02	11.92	260.00	1.00	6.26	
1988	Underground	Active	5.18	1.000%	1.25	5.000%	0.06	0.26	260.00	1.00	16.84	
1989	Underground	Active	81.30	1.000%	1.04	5.000%	0.84	4.07	260.00	1.00	218.86	
1990	Underground	Active	219.75	1.000%	0.39	5.000%	0.87	10.99	260.00	1.00	225.39	
1991	Underground	Active	647.75	1.000%	0.49	5.000%	3.14	32.39	260.00	1.00	817.46	
1992	Underground	Active	234.86	1.000%	1.05	5.000%	2.46	11.74	260.00	1.00	638.66	
1993	Underground	Active	580.92	1.000%	0.45	5.000%	2.62	29.05	260.00	1.00	681.07	
1994	Underground	Active	103.05	1.000%	1.25	4.000%	1.29	4.12	260.00	1.00	334.91	
1995	Underground	Active	101.24	1.100%	1.03	4.000%	1.15	4.05	260.00	1.00	297.75	
1996	Underground	Active	151.82	1.100%	1.19	4.000%	1.99	6.07	260.00	1.00	517.50	
1997	Underground	Active	378.99	1.100%	0.60	4.000%	2.51	15.16	260.00	1.00	651.42	
1998	Underground	Active	109.68	1.100%	1.03	4.000%	1.24	4.39	260.00	1.00	321.56	
1999	Underground	Active	235.51	1.100%	1.07	4.000%	2.76	9.42	260.00	1.00	718.65	
2000	Underground	Active	126.91	1.100%	1.17	4.000%	1.64	5.08	260.00	1.00	426.29	
2001	Underground	Active	63.96	1.100%	1.10	4.000%	0.77	2.56	260.00	1.00	200.97	
2002	Underground	Active	580.74	1.100%	0.66	4.000%	4.22	23.23	260.00	1.00	1,096.72	
2003	Underground	Active	604.37	1.100%	0.41	4.000%	2.73	24.17	260.00	1.00	710.39	
2004	Underground	Active	953.24	1.100%	0.72	4.000%	7.53	38.13	260.00	1.00	1,957.36	
2005	Underground	Active	227.16	1.100%	1.08	4.000%	2.70	9.09	260.00	1.00	700.77	
2006	Underground	Active	180.61	1.100%	1.06	4.000%	2.11	7.22	260.00	1.00	547.98	
2007	Underground	Active	496.25	1.100%	0.82	5.000%	4.46	24.81	260.00	1.00	1,159.58	
2008	Underground	Active	272.08	1.100%	1.04	5.000%	3.13	13.60	260.00	1.00	813.05	
2009	Underground	Active	57.94	1.100%	1.25	5.000%	0.80	2.90	260.00	1.00	207.14	
2010	Underground	Active	281.96	1.100%	1.11	5.000%	3.44	14.10	260.00	1.00	893.33	
2011	Underground	Active	87.09	1.100%	1.25	5.000%	1.20	4.35	260.00	1.00	311.35	
2012	Underground	Active	227.37	1.100%	1.12	5.000%	2.81	11.37	260.00	1.00	729.32	
2013	Underground	Active	560.02	1.100%	1.04	5.000%	6.43	28.00	260.00	1.00	1,672.86	
2014	Underground	Active	225.76	1.100%	1.14	5.000%	2.84	11.29	260.00	1.00	737.86	
2015	Underground	Active	177.90	0.000%	1.23	0.000%	0.00	0.00	260.00	1.00	0.00	
2016	Underground	Active	33.45	0.000%	1.25	0.000%	0.00	0.00	260.00	1.00	0.00	
2017	Underground	Active	22.30	0.000%	1.25	0.000%	0.00	0.00	260.00	1.00	0.00	
TOTAL			15,877.25				68.02	744.01			17,686.25	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
				Forfeiture Rate	Factor Permit Bond Size	Release Rate				Factor Permit Status & Future FY		
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	\$260.00	1.00	\$0.00	
1962	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1963	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1964	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1965	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1966	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1967	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1968	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1969	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1970	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1971	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1972	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1973	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1974	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1975	Underground	Inactive	103.30	0.010%	1.00	4.000%	0.01	4.13	260.00	1.00	2.69	
1976	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1977	Underground	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00	
1978	Underground	Inactive	23.02	0.010%	1.25	5.000%	0.00	1.15	260.00	1.00	0.75	
1979	Underground	Inactive	80.45	0.010%	1.00	5.000%	0.01	4.02	260.00	1.00	2.09	
1980	Underground	Inactive	45.71	0.010%	1.00	5.000%	0.00	2.29	260.00	1.00	1.19	
1981	Underground	Inactive	69.04	0.010%	1.00	5.000%	0.01	3.45	260.00	1.00	1.80	
1982	Underground	Inactive	415.09	0.010%	1.05	5.000%	0.04	20.75	260.00	1.00	11.32	
1983	Underground	Inactive	1,031.66	0.010%	0.65	5.000%	0.07	51.58	260.00	1.00	17.36	
1984	Underground	Inactive	360.89	0.010%	0.58	5.000%	0.02	18.04	260.00	1.00	5.48	
1985	Underground	Inactive	43.54	0.010%	1.00	5.000%	0.00	2.18	260.00	1.00	1.13	
1986	Underground	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00	
1987	Underground	Inactive	112.03	0.010%	0.99	5.000%	0.01	5.60	260.00	1.00	2.89	
1988	Underground	Inactive	200.53	1.000%	0.75	5.000%	1.51	10.03	260.00	1.00	392.41	
1989	Underground	Inactive	104.66	1.000%	1.01	5.000%	1.06	5.23	260.00	1.00	274.84	
1990	Underground	Inactive	139.00	1.000%	0.25	5.000%	0.35	6.95	260.00	1.00	90.35	
1991	Underground	Inactive	14.02	1.000%	1.25	5.000%	0.18	0.70	260.00	1.00	45.57	
1992	Underground	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00	
1993	Underground	Inactive	296.33	1.000%	1.04	5.000%	3.10	14.82	260.00	1.00	805.04	
1994	Underground	Inactive	345.33	1.000%	0.47	4.000%	1.64	13.81	260.00	1.00	426.21	
1995	Underground	Inactive	307.49	1.100%	1.09	4.000%	3.69	12.30	260.00	1.00	958.47	
1996	Underground	Inactive	92.09	1.100%	1.09	4.000%	1.10	3.68	260.00	1.00	286.03	
1997	Underground	Inactive	342.93	1.100%	1.07	4.000%	4.04	13.72	260.00	1.00	1,049.48	
1998	Underground	Inactive	427.44	1.100%	1.03	4.000%	4.85	17.10	260.00	1.00	1,261.70	
1999	Underground	Inactive	296.54	1.100%	0.45	4.000%	1.45	11.86	260.00	1.00	377.91	
2000	Underground	Inactive	137.62	1.100%	1.09	4.000%	1.65	5.50	260.00	1.00	429.37	
2001	Underground	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
2002	Underground	Inactive	278.87	1.100%	1.09	4.000%	3.33	11.15	260.00	1.00	866.91	
2003	Underground	Inactive	141.54	1.100%	1.06	4.000%	1.65	5.66	260.00	1.00	428.01	
2004	Underground	Inactive	164.25	1.100%	1.06	4.000%	1.92	6.57	260.00	1.00	499.15	
2005	Underground	Inactive	75.89	1.100%	1.25	4.000%	1.04	3.04	260.00	1.00	271.31	
2006	Underground	Inactive	303.26	1.100%	1.03	4.000%	3.43	12.13	260.00	1.00	892.41	
2007	Underground	Inactive	50.83	1.100%	1.25	5.000%	0.70	2.54	260.00	1.00	181.72	
2008	Underground	Inactive	169.62	1.100%	1.19	5.000%	2.23	8.48	260.00	1.00	579.55	
2009	Underground	Inactive	191.95	1.100%	1.11	5.000%	2.35	9.60	260.00	1.00	611.79	
2010	Underground	Inactive	91.49	1.100%	1.25	5.000%	1.26	4.57	260.00	1.00	327.08	
2011	Underground	Inactive	159.70	1.100%	1.16	5.000%	2.05	7.99	260.00	1.00	532.03	
2012	Underground	Inactive	24.05	1.100%	1.25	5.000%	0.33	1.20	260.00	1.00	85.98	
2013	Underground	Inactive	13.74	1.100%	1.25	5.000%	0.19	0.69	260.00	1.00	49.12	
2014	Underground	Inactive	12.00	1.100%	1.25	5.000%	0.17	0.60	260.00	1.00	42.90	
2015	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00	
2016	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00	
2017	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00	
TOTAL			6,665.90				45.43	303.13			11,812.00	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Adjustment			Avg Recl			Adjustment		
				Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Cost per Acre	Factor Permit Status & Future FY	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$260.00	1.00	\$0.00	
1962	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1963	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1964	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1965	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1966	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1967	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1968	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1969	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1970	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1971	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1972	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1973	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1974	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1975	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00	
1976	Underground	Phased Release	22.53	0.010%	1.25	4.000%	0.00	0.90	260.00	1.00	0.73	
1977	Underground	Phased Release	25.13	0.010%	1.25	5.000%	0.00	1.26	260.00	1.00	0.82	
1978	Underground	Phased Release	36.33	0.010%	1.20	5.000%	0.00	1.82	260.00	1.00	1.14	
1979	Underground	Phased Release	128.30	0.010%	1.15	5.000%	0.01	6.42	260.00	1.00	3.85	
1980	Underground	Phased Release	115.31	0.010%	0.95	5.000%	0.01	5.77	260.00	1.00	2.84	
1981	Underground	Phased Release	763.80	0.010%	0.87	5.000%	0.07	38.19	260.00	1.00	17.25	
1982	Underground	Phased Release	137.48	0.010%	1.22	5.000%	0.02	6.87	260.00	1.00	4.36	
1983	Underground	Phased Release	1,766.39	0.010%	0.67	5.000%	0.12	88.32	260.00	1.00	30.57	
1984	Underground	Phased Release	1,132.36	0.010%	0.58	5.000%	0.07	56.62	260.00	1.00	16.95	
1985	Underground	Phased Release	333.26	0.010%	0.70	5.000%	0.02	16.66	260.00	1.00	6.04	
1986	Underground	Phased Release	89.42	0.010%	1.25	5.000%	0.01	4.47	260.00	1.00	2.91	
1987	Underground	Phased Release	355.98	0.010%	1.18	5.000%	0.04	17.80	260.00	1.00	10.93	
1988	Underground	Phased Release	255.05	1.000%	1.24	5.000%	3.16	12.75	260.00	1.00	820.46	
1989	Underground	Phased Release	182.92	1.000%	1.25	5.000%	2.29	9.15	260.00	1.00	594.49	
1990	Underground	Phased Release	35.63	1.000%	1.25	5.000%	0.45	1.78	260.00	1.00	115.80	
1991	Underground	Phased Release	10,293.67	1.000%	0.62	5.000%	63.34	514.68	260.00	1.00	16,468.43	
1992	Underground	Phased Release	84.48	1.000%	1.13	5.000%	0.95	4.22	260.00	1.00	248.08	
1993	Underground	Phased Release	212.90	1.000%	1.14	5.000%	2.43	10.65	260.00	1.00	632.32	
1994	Underground	Phased Release	607.38	1.000%	1.06	4.000%	6.44	24.30	260.00	1.00	1,673.54	
1995	Underground	Phased Release	329.13	1.100%	1.15	4.000%	4.15	13.17	260.00	1.00	1,079.91	
1996	Underground	Phased Release	184.16	1.100%	1.25	4.000%	2.53	7.37	260.00	1.00	658.37	
1997	Underground	Phased Release	306.96	1.100%	1.11	4.000%	3.73	12.28	260.00	1.00	971.07	
1998	Underground	Phased Release	95.91	1.100%	1.11	4.000%	1.17	3.84	260.00	1.00	304.28	
1999	Underground	Phased Release	297.32	1.100%	0.46	4.000%	1.52	11.89	260.00	1.00	394.22	
2000	Underground	Phased Release	456.32	1.100%	1.04	4.000%	5.23	18.25	260.00	1.00	1,358.61	
2001	Underground	Phased Release	149.53	1.100%	1.17	4.000%	1.92	5.98	260.00	1.00	498.58	
2002	Underground	Phased Release	197.14	1.100%	1.07	4.000%	2.31	7.89	260.00	1.00	601.67	
2003	Underground	Phased Release	20.27	1.100%	1.25	4.000%	0.28	0.81	260.00	1.00	72.47	
2004	Underground	Phased Release	57.88	1.100%	1.16	4.000%	0.74	2.32	260.00	1.00	192.69	
2005	Underground	Phased Release	43.30	1.100%	1.25	4.000%	0.60	1.73	260.00	1.00	154.80	
2006	Underground	Phased Release	11.06	1.100%	1.25	4.000%	0.15	0.44	260.00	1.00	39.54	
2007	Underground	Phased Release	77.48	1.100%	1.25	5.000%	1.07	3.87	260.00	1.00	276.99	
2008	Underground	Phased Release	54.60	1.100%	1.25	5.000%	0.75	2.73	260.00	1.00	195.20	
2009	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00	
2010	Underground	Phased Release	25.60	1.100%	1.25	5.000%	0.35	1.28	260.00	1.00	91.52	
2011	Underground	Phased Release	62.76	1.100%	1.25	5.000%	0.86	3.14	260.00	1.00	224.37	
2012	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00	
2013	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00	
2014	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00	
2015	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00	
2016	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00	
2017	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00	
TOTAL			18,947.74				106.79	919.60			27,765.78	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2019								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Permit Status & Future FY	
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$260.00	1.00	\$0.00
1962	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1963	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1964	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1965	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1966	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1967	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1968	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1969	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1970	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1971	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1972	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1973	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1974	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1975	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1976	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1977	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1978	Underground	Active	117.08	0.010%	1.00	5.000%	0.01	5.85	260.00	1.00	3.04
1979	Underground	Active	619.21	0.010%	0.48	5.000%	0.03	30.96	260.00	1.00	7.70
1980	Underground	Active	278.98	0.010%	1.03	5.000%	0.03	13.95	260.00	1.00	7.45
1981	Underground	Active	188.10	0.010%	0.37	5.000%	0.01	9.41	260.00	1.00	1.81
1982	Underground	Active	305.94	0.010%	1.12	5.000%	0.03	15.30	260.00	1.00	8.94
1983	Underground	Active	5,310.68	0.010%	0.27	5.000%	0.14	265.53	260.00	1.00	37.61
1984	Underground	Active	358.23	0.010%	0.32	5.000%	0.01	17.91	260.00	1.00	3.02
1985	Underground	Active	19.99	0.010%	1.25	5.000%	0.00	1.00	260.00	1.00	0.65
1986	Underground	Active	30.68	0.010%	1.25	5.000%	0.00	1.53	260.00	1.00	1.00
1987	Underground	Active	226.49	0.010%	1.01	5.000%	0.02	11.32	260.00	1.00	5.95
1988	Underground	Active	4.86	0.010%	1.25	5.000%	0.00	0.24	260.00	1.00	0.16
1989	Underground	Active	76.39	1.000%	1.04	5.000%	0.79	3.82	260.00	1.00	205.65
1990	Underground	Active	207.90	1.000%	0.39	5.000%	0.82	10.39	260.00	1.00	213.23
1991	Underground	Active	612.22	1.000%	0.49	5.000%	2.97	30.61	260.00	1.00	772.62
1992	Underground	Active	220.66	1.000%	1.05	5.000%	2.31	11.03	260.00	1.00	600.04
1993	Underground	Active	549.25	1.000%	0.45	5.000%	2.48	27.46	260.00	1.00	643.95
1994	Underground	Active	97.64	1.000%	1.25	5.000%	1.22	4.88	260.00	1.00	317.33
1995	Underground	Active	96.05	1.000%	1.03	4.000%	0.99	3.84	260.00	1.00	256.79
1996	Underground	Active	143.76	1.100%	1.19	4.000%	1.88	5.75	260.00	1.00	490.01
1997	Underground	Active	361.32	1.100%	0.60	4.000%	2.39	14.45	260.00	1.00	621.05
1998	Underground	Active	104.06	1.100%	1.03	4.000%	1.17	4.16	260.00	1.00	305.07
1999	Underground	Active	223.33	1.100%	1.07	4.000%	2.62	8.93	260.00	1.00	681.47
2000	Underground	Active	120.19	1.100%	1.17	4.000%	1.55	4.81	260.00	1.00	403.74
2001	Underground	Active	60.63	1.100%	1.10	4.000%	0.73	2.43	260.00	1.00	190.50
2002	Underground	Active	553.29	1.100%	0.66	4.000%	4.02	22.13	260.00	1.00	1,044.89
2003	Underground	Active	577.46	1.100%	0.41	4.000%	2.61	23.10	260.00	1.00	678.76
2004	Underground	Active	907.58	1.100%	0.72	4.000%	7.17	36.30	260.00	1.00	1,863.61
2005	Underground	Active	215.38	1.100%	1.08	4.000%	2.56	8.62	260.00	1.00	664.43
2006	Underground	Active	171.28	1.100%	1.06	4.000%	2.00	6.85	260.00	1.00	519.67
2007	Underground	Active	466.98	1.100%	0.82	4.000%	4.20	18.68	260.00	1.00	1,091.18
2008	Underground	Active	255.35	1.100%	1.04	5.000%	2.93	12.77	260.00	1.00	763.05
2009	Underground	Active	54.25	1.100%	1.25	5.000%	0.75	2.71	260.00	1.00	193.93
2010	Underground	Active	264.43	1.100%	1.11	5.000%	3.22	13.22	260.00	1.00	837.78
2011	Underground	Active	81.54	1.100%	1.25	5.000%	1.12	4.08	260.00	1.00	291.50
2012	Underground	Active	213.20	1.100%	1.12	5.000%	2.63	10.66	260.00	1.00	683.85
2013	Underground	Active	525.58	1.100%	1.04	5.000%	6.04	26.28	260.00	1.00	1,570.00
2014	Underground	Active	211.63	1.100%	1.14	5.000%	2.66	10.58	260.00	1.00	691.69
2015	Underground	Active	177.90	1.100%	1.23	5.000%	2.40	8.90	260.00	1.00	624.02
2016	Underground	Active	33.45	0.000%	1.25	0.000%	0.00	0.00	260.00	1.00	0.00
2017	Underground	Active	22.30	0.000%	1.25	0.000%	0.00	0.00	260.00	1.00	0.00
TOTAL			15,065.22				66.53	710.46			17,297.12

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2019								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Permit Status & Future FY	
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	\$260.00	1.00	\$0.00
1962	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1963	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1964	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1965	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1966	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1967	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1968	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1969	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1970	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1971	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1972	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1973	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1974	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1975	Underground	Inactive	99.16	0.010%	1.00	4.000%	0.01	3.97	260.00	1.00	2.58
1976	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1977	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1978	Underground	Inactive	21.87	0.010%	1.25	5.000%	0.00	1.09	260.00	1.00	0.71
1979	Underground	Inactive	76.42	0.010%	1.00	5.000%	0.01	3.82	260.00	1.00	1.99
1980	Underground	Inactive	43.42	0.010%	1.00	5.000%	0.00	2.17	260.00	1.00	1.13
1981	Underground	Inactive	65.58	0.010%	1.00	5.000%	0.01	3.28	260.00	1.00	1.71
1982	Underground	Inactive	394.29	0.010%	1.05	5.000%	0.04	19.71	260.00	1.00	10.75
1983	Underground	Inactive	980.01	0.010%	0.65	5.000%	0.06	49.00	260.00	1.00	16.49
1984	Underground	Inactive	342.82	0.010%	0.58	5.000%	0.02	17.14	260.00	1.00	5.21
1985	Underground	Inactive	41.36	0.010%	1.00	5.000%	0.00	2.07	260.00	1.00	1.08
1986	Underground	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
1987	Underground	Inactive	106.42	0.010%	0.99	5.000%	0.01	5.32	260.00	1.00	2.74
1988	Underground	Inactive	188.99	0.010%	0.75	5.000%	0.01	9.45	260.00	1.00	3.70
1989	Underground	Inactive	98.37	1.000%	1.01	5.000%	0.99	4.92	260.00	1.00	258.32
1990	Underground	Inactive	131.70	1.000%	0.25	5.000%	0.33	6.59	260.00	1.00	85.61
1991	Underground	Inactive	13.14	1.000%	1.25	5.000%	0.16	0.66	260.00	1.00	42.72
1992	Underground	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
1993	Underground	Inactive	278.42	1.000%	1.04	5.000%	2.91	13.92	260.00	1.00	756.37
1994	Underground	Inactive	329.88	1.000%	0.47	5.000%	1.57	16.49	260.00	1.00	407.14
1995	Underground	Inactive	291.50	1.000%	1.09	4.000%	3.18	11.66	260.00	1.00	826.04
1996	Underground	Inactive	87.31	1.100%	1.09	4.000%	1.04	3.49	260.00	1.00	271.17
1997	Underground	Inactive	325.18	1.100%	1.07	4.000%	3.83	13.01	260.00	1.00	995.15
1998	Underground	Inactive	405.49	1.100%	1.03	4.000%	4.60	16.22	260.00	1.00	1,196.90
1999	Underground	Inactive	283.22	1.100%	0.45	4.000%	1.39	11.33	260.00	1.00	360.94
2000	Underground	Inactive	130.46	1.100%	1.09	4.000%	1.57	5.22	260.00	1.00	407.04
2001	Underground	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
2002	Underground	Inactive	264.38	1.100%	1.09	4.000%	3.16	10.58	260.00	1.00	821.87
2003	Underground	Inactive	134.23	1.100%	1.06	4.000%	1.56	5.37	260.00	1.00	405.91
2004	Underground	Inactive	155.76	1.100%	1.06	4.000%	1.82	6.23	260.00	1.00	473.35
2005	Underground	Inactive	71.81	1.100%	1.25	4.000%	0.99	2.87	260.00	1.00	256.72
2006	Underground	Inactive	287.70	1.100%	1.03	4.000%	3.26	11.51	260.00	1.00	846.61
2007	Underground	Inactive	47.59	1.100%	1.25	4.000%	0.65	1.90	260.00	1.00	170.13
2008	Underground	Inactive	158.91	1.100%	1.19	5.000%	2.09	7.95	260.00	1.00	542.96
2009	Underground	Inactive	180.00	1.100%	1.11	5.000%	2.21	9.00	260.00	1.00	573.70
2010	Underground	Inactive	85.66	1.100%	1.25	5.000%	1.18	4.28	260.00	1.00	306.23
2011	Underground	Inactive	149.67	1.100%	1.16	5.000%	1.92	7.48	260.00	1.00	498.61
2012	Underground	Inactive	22.52	1.100%	1.25	5.000%	0.31	1.13	260.00	1.00	80.50
2013	Underground	Inactive	12.86	1.100%	1.25	5.000%	0.18	0.64	260.00	1.00	45.99
2014	Underground	Inactive	11.24	1.100%	1.25	5.000%	0.15	0.56	260.00	1.00	40.17
2015	Underground	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2016	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00
2017	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00
TOTAL			6,317.34				41.22	290.03			10,718.22

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2019								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Permit Status & Future FY	
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$260.00	1.00	\$0.00
1962	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1963	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1964	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1965	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1966	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1967	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1968	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1969	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1970	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1971	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1972	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1973	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1974	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1975	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1976	Underground	Phased Release	21.63	0.010%	1.25	4.000%	0.00	0.87	260.00	1.00	0.70
1977	Underground	Phased Release	23.87	0.010%	1.25	4.000%	0.00	0.95	260.00	1.00	0.78
1978	Underground	Phased Release	34.51	0.010%	1.20	5.000%	0.00	1.73	260.00	1.00	1.08
1979	Underground	Phased Release	121.87	0.010%	1.15	5.000%	0.01	6.09	260.00	1.00	3.65
1980	Underground	Phased Release	109.53	0.010%	0.95	5.000%	0.01	5.48	260.00	1.00	2.70
1981	Underground	Phased Release	725.54	0.010%	0.87	5.000%	0.06	36.28	260.00	1.00	16.39
1982	Underground	Phased Release	130.59	0.010%	1.22	5.000%	0.02	6.53	260.00	1.00	4.14
1983	Underground	Phased Release	1,677.95	0.010%	0.67	5.000%	0.11	83.90	260.00	1.00	29.04
1984	Underground	Phased Release	1,075.68	0.010%	0.58	5.000%	0.06	53.78	260.00	1.00	16.10
1985	Underground	Phased Release	316.57	0.010%	0.70	5.000%	0.02	15.83	260.00	1.00	5.74
1986	Underground	Phased Release	84.94	0.010%	1.25	5.000%	0.01	4.25	260.00	1.00	2.76
1987	Underground	Phased Release	338.14	0.010%	1.18	5.000%	0.04	16.91	260.00	1.00	10.39
1988	Underground	Phased Release	239.14	0.010%	1.24	5.000%	0.03	11.96	260.00	1.00	7.69
1989	Underground	Phased Release	171.49	1.000%	1.25	5.000%	2.14	8.57	260.00	1.00	557.33
1990	Underground	Phased Release	33.40	1.000%	1.25	5.000%	0.42	1.67	260.00	1.00	108.56
1991	Underground	Phased Release	9,715.65	1.000%	0.62	5.000%	59.78	485.78	260.00	1.00	15,543.67
1992	Underground	Phased Release	79.30	1.000%	1.13	5.000%	0.90	3.97	260.00	1.00	232.87
1993	Underground	Phased Release	199.82	1.000%	1.14	5.000%	2.28	9.99	260.00	1.00	593.48
1994	Underground	Phased Release	576.65	1.000%	1.06	5.000%	6.11	28.83	260.00	1.00	1,588.86
1995	Underground	Phased Release	311.81	1.000%	1.15	4.000%	3.58	12.47	260.00	1.00	930.08
1996	Underground	Phased Release	174.26	1.100%	1.25	4.000%	2.40	6.97	260.00	1.00	622.98
1997	Underground	Phased Release	290.95	1.100%	1.11	4.000%	3.54	11.64	260.00	1.00	920.41
1998	Underground	Phased Release	90.90	1.100%	1.11	4.000%	1.11	3.64	260.00	1.00	288.40
1999	Underground	Phased Release	283.91	1.100%	0.46	4.000%	1.45	11.36	260.00	1.00	376.44
2000	Underground	Phased Release	432.84	1.100%	1.04	4.000%	4.96	17.31	260.00	1.00	1,288.71
2001	Underground	Phased Release	141.63	1.100%	1.17	4.000%	1.82	5.67	260.00	1.00	472.24
2002	Underground	Phased Release	186.94	1.100%	1.07	4.000%	2.19	7.48	260.00	1.00	570.54
2003	Underground	Phased Release	19.18	1.100%	1.25	4.000%	0.26	0.77	260.00	1.00	68.57
2004	Underground	Phased Release	54.82	1.100%	1.16	4.000%	0.70	2.19	260.00	1.00	182.52
2005	Underground	Phased Release	40.97	1.100%	1.25	4.000%	0.56	1.64	260.00	1.00	146.48
2006	Underground	Phased Release	10.47	1.100%	1.25	4.000%	0.14	0.42	260.00	1.00	37.41
2007	Underground	Phased Release	72.54	1.100%	1.25	4.000%	1.00	2.90	260.00	1.00	259.33
2008	Underground	Phased Release	51.12	1.100%	1.25	5.000%	0.70	2.56	260.00	1.00	182.75
2009	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2010	Underground	Phased Release	23.97	1.100%	1.25	5.000%	0.33	1.20	260.00	1.00	85.69
2011	Underground	Phased Release	58.76	1.100%	1.25	5.000%	0.81	2.94	260.00	1.00	210.06
2012	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2013	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2014	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2015	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2016	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00
2017	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00
TOTAL			17,921.35				97.57	874.50			25,368.55

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2020								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Permit Status & Future FY	
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	\$260.00	1.00	\$0.00
1962	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1963	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1964	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1965	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1966	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1967	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1968	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1969	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1970	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1971	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1972	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1973	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1974	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1975	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1976	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1977	Underground	Active	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1978	Underground	Active	111.21	0.010%	1.00	4.000%	0.01	4.45	260.00	1.00	2.89
1979	Underground	Active	588.22	0.010%	0.48	5.000%	0.03	29.41	260.00	1.00	7.31
1980	Underground	Active	265.00	0.010%	1.03	5.000%	0.03	13.25	260.00	1.00	7.07
1981	Underground	Active	178.69	0.010%	0.37	5.000%	0.01	8.93	260.00	1.00	1.72
1982	Underground	Active	290.61	0.010%	1.12	5.000%	0.03	14.53	260.00	1.00	8.49
1983	Underground	Active	5,045.00	0.010%	0.27	5.000%	0.14	252.25	260.00	1.00	35.73
1984	Underground	Active	340.31	0.010%	0.32	5.000%	0.01	17.02	260.00	1.00	2.87
1985	Underground	Active	18.98	0.010%	1.25	5.000%	0.00	0.95	260.00	1.00	0.62
1986	Underground	Active	29.14	0.010%	1.25	5.000%	0.00	1.46	260.00	1.00	0.95
1987	Underground	Active	215.15	0.010%	1.01	5.000%	0.02	10.76	260.00	1.00	5.65
1988	Underground	Active	4.61	0.010%	1.25	5.000%	0.00	0.23	260.00	1.00	0.15
1989	Underground	Active	71.78	0.010%	1.04	5.000%	0.01	3.59	260.00	1.00	1.93
1990	Underground	Active	196.68	1.000%	0.39	5.000%	0.78	9.83	260.00	1.00	201.73
1991	Underground	Active	578.64	1.000%	0.49	5.000%	2.81	28.93	260.00	1.00	730.24
1992	Underground	Active	207.32	1.000%	1.05	5.000%	2.17	10.37	260.00	1.00	563.77
1993	Underground	Active	519.32	1.000%	0.45	5.000%	2.34	25.97	260.00	1.00	608.84
1994	Underground	Active	91.54	1.000%	1.25	5.000%	1.14	4.58	260.00	1.00	297.50
1995	Underground	Active	91.22	1.000%	1.03	5.000%	0.94	4.56	260.00	1.00	243.88
1996	Underground	Active	136.12	1.000%	1.19	4.000%	1.62	5.44	260.00	1.00	421.81
1997	Underground	Active	344.48	1.100%	0.60	4.000%	2.28	13.78	260.00	1.00	592.10
1998	Underground	Active	98.72	1.100%	1.03	4.000%	1.11	3.95	260.00	1.00	289.43
1999	Underground	Active	211.77	1.100%	1.07	4.000%	2.49	8.47	260.00	1.00	646.21
2000	Underground	Active	113.83	1.100%	1.17	4.000%	1.47	4.55	260.00	1.00	382.37
2001	Underground	Active	57.47	1.100%	1.10	4.000%	0.69	2.30	260.00	1.00	180.58
2002	Underground	Active	527.14	1.100%	0.66	4.000%	3.83	21.09	260.00	1.00	995.50
2003	Underground	Active	551.75	1.100%	0.41	4.000%	2.49	22.07	260.00	1.00	648.54
2004	Underground	Active	864.11	1.100%	0.72	4.000%	6.82	34.56	260.00	1.00	1,774.35
2005	Underground	Active	204.21	1.100%	1.08	4.000%	2.42	8.17	260.00	1.00	629.97
2006	Underground	Active	162.43	1.100%	1.06	4.000%	1.90	6.50	260.00	1.00	492.82
2007	Underground	Active	444.10	1.100%	0.82	4.000%	3.99	17.76	260.00	1.00	1,037.72
2008	Underground	Active	239.65	1.100%	1.04	4.000%	2.75	9.59	260.00	1.00	716.13
2009	Underground	Active	50.79	1.100%	1.25	5.000%	0.70	2.54	260.00	1.00	181.57
2010	Underground	Active	247.98	1.100%	1.11	5.000%	3.02	12.40	260.00	1.00	785.68
2011	Underground	Active	76.34	1.100%	1.25	5.000%	1.05	3.82	260.00	1.00	272.92
2012	Underground	Active	199.91	1.100%	1.12	5.000%	2.47	10.00	260.00	1.00	641.23
2013	Underground	Active	493.27	1.100%	1.04	5.000%	5.67	24.66	260.00	1.00	1,473.46
2014	Underground	Active	198.39	1.100%	1.14	5.000%	2.49	9.92	260.00	1.00	648.41
2015	Underground	Active	166.60	1.100%	1.23	5.000%	2.25	8.33	260.00	1.00	584.40
2016	Underground	Active	33.45	1.100%	1.25	5.000%	0.46	1.67	260.00	1.00	119.58
2017	Underground	Active	22.30	0.000%	1.25	0.000%	0.00	0.00	260.00	1.00	0.00
TOTAL			14,288.23				62.45	672.63			16,236.10

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2020								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Permit Status & Future FY	Gross Cost
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	\$260.00	1.00	\$0.00
1962	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1963	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1964	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1965	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1966	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1967	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1968	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1969	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1970	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1971	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1972	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1973	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1974	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1975	Underground	Inactive	95.18	0.010%	1.00	4.000%	0.01	3.81	260.00	1.00	2.47
1976	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1977	Underground	Inactive	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1978	Underground	Inactive	20.77	0.010%	1.25	4.000%	0.00	0.83	260.00	1.00	0.68
1979	Underground	Inactive	72.59	0.010%	1.00	5.000%	0.01	3.63	260.00	1.00	1.89
1980	Underground	Inactive	41.24	0.010%	1.00	5.000%	0.00	2.06	260.00	1.00	1.07
1981	Underground	Inactive	62.30	0.010%	1.00	5.000%	0.01	3.11	260.00	1.00	1.62
1982	Underground	Inactive	374.54	0.010%	1.05	5.000%	0.04	18.73	260.00	1.00	10.21
1983	Underground	Inactive	930.95	0.010%	0.65	5.000%	0.06	46.55	260.00	1.00	15.66
1984	Underground	Inactive	325.66	0.010%	0.58	5.000%	0.02	16.28	260.00	1.00	4.94
1985	Underground	Inactive	39.29	0.010%	1.00	5.000%	0.00	1.96	260.00	1.00	1.02
1986	Underground	Inactive	0.00	0.010%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
1987	Underground	Inactive	101.09	0.010%	0.99	5.000%	0.01	5.05	260.00	1.00	2.61
1988	Underground	Inactive	179.53	0.010%	0.75	5.000%	0.01	8.98	260.00	1.00	3.51
1989	Underground	Inactive	92.46	0.010%	1.01	5.000%	0.01	4.62	260.00	1.00	2.43
1990	Underground	Inactive	124.79	1.000%	0.25	5.000%	0.31	6.24	260.00	1.00	81.11
1991	Underground	Inactive	12.32	1.000%	1.25	5.000%	0.15	0.62	260.00	1.00	40.05
1992	Underground	Inactive	0.00	1.000%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
1993	Underground	Inactive	261.59	1.000%	1.04	5.000%	2.73	13.08	260.00	1.00	710.65
1994	Underground	Inactive	311.82	1.000%	0.47	5.000%	1.48	15.59	260.00	1.00	384.85
1995	Underground	Inactive	276.67	1.000%	1.09	5.000%	3.02	13.83	260.00	1.00	783.71
1996	Underground	Inactive	82.77	1.000%	1.09	4.000%	0.90	3.31	260.00	1.00	233.71
1997	Underground	Inactive	308.34	1.100%	1.07	4.000%	3.63	12.33	260.00	1.00	943.63
1998	Underground	Inactive	384.67	1.100%	1.03	4.000%	4.37	15.39	260.00	1.00	1,135.44
1999	Underground	Inactive	270.51	1.100%	0.45	4.000%	1.33	10.82	260.00	1.00	344.73
2000	Underground	Inactive	123.68	1.100%	1.09	4.000%	1.48	4.95	260.00	1.00	385.88
2001	Underground	Inactive	0.00	1.100%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
2002	Underground	Inactive	250.64	1.100%	1.09	4.000%	3.00	10.03	260.00	1.00	779.17
2003	Underground	Inactive	127.30	1.100%	1.06	4.000%	1.48	5.09	260.00	1.00	384.96
2004	Underground	Inactive	147.71	1.100%	1.06	4.000%	1.73	5.91	260.00	1.00	448.88
2005	Underground	Inactive	67.95	1.100%	1.25	4.000%	0.93	2.72	260.00	1.00	242.93
2006	Underground	Inactive	272.93	1.100%	1.03	4.000%	3.09	10.92	260.00	1.00	803.17
2007	Underground	Inactive	45.03	1.100%	1.25	4.000%	0.62	1.80	260.00	1.00	160.99
2008	Underground	Inactive	148.88	1.100%	1.19	4.000%	1.96	5.96	260.00	1.00	508.68
2009	Underground	Inactive	168.79	1.100%	1.11	5.000%	2.07	8.44	260.00	1.00	537.98
2010	Underground	Inactive	80.20	1.100%	1.25	5.000%	1.10	4.01	260.00	1.00	286.70
2011	Underground	Inactive	140.27	1.100%	1.16	5.000%	1.80	7.01	260.00	1.00	467.29
2012	Underground	Inactive	21.08	1.100%	1.25	5.000%	0.29	1.05	260.00	1.00	75.37
2013	Underground	Inactive	12.04	1.100%	1.25	5.000%	0.17	0.60	260.00	1.00	43.06
2014	Underground	Inactive	10.52	1.100%	1.25	5.000%	0.14	0.53	260.00	1.00	37.60
2015	Underground	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2016	Underground	Inactive	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2017	Underground	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00
TOTAL			5,986.09				37.96	275.84			9,868.93

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Underground
 June 30, 2017

			As of Fiscal Year End 2020								
Permit Issue Year	Mine Type	Mine Status	Adjustment						Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres			
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	\$260.00	1.00	\$0.00
1962	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1963	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1964	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1965	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1966	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1967	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1968	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1969	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1970	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1971	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1972	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1973	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1974	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1975	Underground	Phased Release	0.00	0.010%	0.00	4.000%	0.00	0.00	260.00	1.00	0.00
1976	Underground	Phased Release	20.76	0.010%	1.25	4.000%	0.00	0.83	260.00	1.00	0.67
1977	Underground	Phased Release	22.91	0.010%	1.25	4.000%	0.00	0.92	260.00	1.00	0.74
1978	Underground	Phased Release	32.78	0.010%	1.20	4.000%	0.00	1.31	260.00	1.00	1.03
1979	Underground	Phased Release	115.76	0.010%	1.15	5.000%	0.01	5.79	260.00	1.00	3.47
1980	Underground	Phased Release	104.05	0.010%	0.95	5.000%	0.01	5.20	260.00	1.00	2.56
1981	Underground	Phased Release	689.20	0.010%	0.87	5.000%	0.06	34.46	260.00	1.00	15.57
1982	Underground	Phased Release	124.04	0.010%	1.22	5.000%	0.02	6.20	260.00	1.00	3.93
1983	Underground	Phased Release	1,593.94	0.010%	0.67	5.000%	0.11	79.70	260.00	1.00	27.59
1984	Underground	Phased Release	1,021.83	0.010%	0.58	5.000%	0.06	51.09	260.00	1.00	15.30
1985	Underground	Phased Release	300.72	0.010%	0.70	5.000%	0.02	15.04	260.00	1.00	5.45
1986	Underground	Phased Release	80.68	0.010%	1.25	5.000%	0.01	4.03	260.00	1.00	2.62
1987	Underground	Phased Release	321.19	0.010%	1.18	5.000%	0.04	16.06	260.00	1.00	9.86
1988	Underground	Phased Release	227.16	0.010%	1.24	5.000%	0.03	11.36	260.00	1.00	7.31
1989	Underground	Phased Release	160.77	0.010%	1.25	5.000%	0.02	8.04	260.00	1.00	5.23
1990	Underground	Phased Release	31.32	1.000%	1.25	5.000%	0.39	1.57	260.00	1.00	101.78
1991	Underground	Phased Release	9,170.08	1.000%	0.62	5.000%	56.43	458.50	260.00	1.00	14,670.85
1992	Underground	Phased Release	74.44	1.000%	1.13	5.000%	0.84	3.72	260.00	1.00	218.60
1993	Underground	Phased Release	187.55	1.000%	1.14	5.000%	2.14	9.38	260.00	1.00	557.03
1994	Underground	Phased Release	541.70	1.000%	1.06	5.000%	5.74	27.09	260.00	1.00	1,492.58
1995	Underground	Phased Release	295.76	1.000%	1.15	5.000%	3.39	14.79	260.00	1.00	882.20
1996	Underground	Phased Release	164.89	1.000%	1.25	4.000%	2.06	6.60	260.00	1.00	535.91
1997	Underground	Phased Release	275.77	1.100%	1.11	4.000%	3.36	11.03	260.00	1.00	872.40
1998	Underground	Phased Release	86.16	1.100%	1.11	4.000%	1.05	3.45	260.00	1.00	273.34
1999	Underground	Phased Release	271.11	1.100%	0.46	4.000%	1.38	10.84	260.00	1.00	359.47
2000	Underground	Phased Release	410.57	1.100%	1.04	4.000%	4.70	16.42	260.00	1.00	1,222.40
2001	Underground	Phased Release	134.15	1.100%	1.17	4.000%	1.72	5.37	260.00	1.00	447.29
2002	Underground	Phased Release	177.27	1.100%	1.07	4.000%	2.08	7.09	260.00	1.00	541.02
2003	Underground	Phased Release	18.15	1.100%	1.25	4.000%	0.25	0.73	260.00	1.00	64.88
2004	Underground	Phased Release	51.93	1.100%	1.16	4.000%	0.66	2.08	260.00	1.00	172.88
2005	Underground	Phased Release	38.77	1.100%	1.25	4.000%	0.53	1.55	260.00	1.00	138.60
2006	Underground	Phased Release	9.90	1.100%	1.25	4.000%	0.14	0.40	260.00	1.00	35.40
2007	Underground	Phased Release	68.64	1.100%	1.25	4.000%	0.94	2.75	260.00	1.00	245.39
2008	Underground	Phased Release	47.86	1.100%	1.25	4.000%	0.66	1.91	260.00	1.00	171.10
2009	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2010	Underground	Phased Release	22.44	1.100%	1.25	5.000%	0.31	1.12	260.00	1.00	80.22
2011	Underground	Phased Release	55.01	1.100%	1.25	5.000%	0.76	2.75	260.00	1.00	196.67
2012	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2013	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2014	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2015	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2016	Underground	Phased Release	0.00	1.100%	0.00	5.000%	0.00	0.00	260.00	1.00	0.00
2017	Underground	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	260.00	1.00	0.00
TOTAL			16,949.28					89.93	829.15		23,381.35

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	\$200.00	1.00	\$0.00	
1962	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1963	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1964	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1965	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1966	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1967	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1968	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1969	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1970	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1971	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1972	Other	Active	20.00	0.010%	1.25	0.100%	0.00	0.02	200.00	1.00	0.50	
1973	Other	Active	28.52	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.71	
1974	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1975	Other	Active	34.08	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.85	
1976	Other	Active	125.00	0.010%	1.25	0.100%	0.02	0.13	200.00	1.00	3.13	
1977	Other	Active	65.00	0.010%	1.25	0.100%	0.01	0.07	200.00	1.00	1.63	
1978	Other	Active	12.76	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.32	
1979	Other	Active	139.84	0.010%	1.25	0.100%	0.02	0.14	200.00	1.00	3.50	
1980	Other	Active	550.72	0.010%	1.09	3.000%	0.06	16.52	200.00	1.00	11.99	
1981	Other	Active	3,036.00	0.010%	0.52	3.000%	0.16	91.08	200.00	1.00	31.47	
1982	Other	Active	1,734.38	0.010%	0.57	3.000%	0.10	52.03	200.00	1.00	19.92	
1983	Other	Active	2,870.67	0.010%	0.64	3.000%	0.18	86.12	200.00	1.00	36.93	
1984	Other	Active	1,498.93	0.010%	0.44	3.000%	0.07	44.97	200.00	1.00	13.16	
1985	Other	Active	1,449.90	0.500%	0.56	3.000%	4.09	43.50	200.00	1.00	818.99	
1986	Other	Active	1,114.64	0.500%	0.53	3.000%	2.98	33.44	200.00	1.00	595.37	
1987	Other	Active	105.36	0.500%	1.06	3.000%	0.56	3.16	200.00	1.00	111.77	
1988	Other	Active	312.00	0.500%	1.10	3.000%	1.72	9.36	200.00	1.00	344.31	
1989	Other	Active	351.06	0.500%	1.25	3.000%	2.19	10.53	200.00	1.00	438.83	
1990	Other	Active	56.15	0.500%	1.25	3.000%	0.35	1.68	200.00	1.00	70.19	
1991	Other	Active	164.28	0.500%	1.17	3.000%	0.96	4.93	200.00	1.00	191.71	
1992	Other	Active	883.76	0.500%	0.54	3.000%	2.37	26.51	200.00	1.00	473.48	
1993	Other	Active	1,293.06	0.500%	0.55	3.000%	3.58	38.79	200.00	1.00	716.33	
1994	Other	Active	1,090.23	0.500%	0.45	3.000%	2.45	32.71	200.00	1.00	489.76	
1995	Other	Active	1,634.41	0.500%	0.31	3.000%	2.54	49.03	200.00	1.00	508.02	
1996	Other	Active	1,185.33	0.500%	0.30	3.000%	1.78	35.56	200.00	1.00	356.27	
1997	Other	Active	1,162.12	0.500%	0.73	5.000%	4.24	58.11	200.00	1.00	848.93	
1998	Other	Active	1,151.98	0.500%	0.30	5.000%	1.72	57.60	200.00	1.00	344.00	
1999	Other	Active	58.70	0.500%	1.25	3.000%	0.37	1.76	200.00	1.00	73.38	
2000	Other	Active	438.48	0.500%	0.80	3.000%	1.74	13.15	200.00	1.00	348.99	
2001	Other	Active	24.48	0.500%	1.22	3.000%	0.15	0.73	200.00	1.00	29.96	
2002	Other	Active	694.36	0.500%	0.31	3.000%	1.06	20.83	200.00	1.00	212.55	
2003	Other	Active	1,102.24	0.500%	0.54	3.000%	2.98	33.07	200.00	1.00	596.71	
2004	Other	Active	375.01	0.500%	0.77	3.000%	1.44	11.25	200.00	1.00	288.40	
2005	Other	Active	619.46	0.500%	0.59	4.000%	1.84	24.78	200.00	1.00	367.07	
2006	Other	Active	301.44	0.500%	1.11	4.000%	1.68	12.06	200.00	1.00	336.03	
2007	Other	Active	238.77	0.500%	1.13	3.000%	1.35	7.16	200.00	1.00	269.34	
2008	Other	Active	596.48	0.500%	0.72	3.000%	2.14	17.89	200.00	1.00	427.67	
2009	Other	Active	273.55	0.500%	1.01	3.000%	1.38	8.21	200.00	1.00	276.80	
2010	Other	Active	854.22	0.500%	0.53	2.000%	2.27	17.08	200.00	1.00	454.63	
2011	Other	Active	118.05	0.500%	1.25	1.000%	0.74	1.18	200.00	1.00	147.56	
2012	Other	Active	789.96	0.500%	0.79	1.000%	3.11	7.90	200.00	1.00	621.66	
2013	Other	Active	846.95	0.500%	0.76	0.500%	3.20	4.23	200.00	1.00	639.59	
2014	Other	Active	44.65	0.500%	1.25	0.500%	0.28	0.22	200.00	1.00	55.81	
2015	Other	Active	169.35	0.000%	1.12	0.000%	0.00	0.00	200.00	1.00	0.00	
2016	Other	Active	170.63	0.000%	0.44	0.000%	0.00	0.00	200.00	1.00	0.00	
2017	Other	Active	65.90	0.000%	1.20	0.000%	0.00	0.00	200.00	1.00	0.00	
TOTAL			29,852.86				57.89	877.58			11,578.22	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	\$200.00	1.00	\$0.00	
1962	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1963	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1964	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1965	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1966	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1967	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1968	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1969	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1970	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1971	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1972	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1973	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1974	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1975	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1976	Other	Inactive	281.18	0.010%	1.02	0.100%	0.03	0.28	200.00	1.00	5.74	
1977	Other	Inactive	52.00	0.010%	1.25	0.100%	0.01	0.05	200.00	1.00	1.30	
1978	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1979	Other	Inactive	9.75	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.24	
1980	Other	Inactive	470.23	0.010%	0.54	3.000%	0.03	14.11	200.00	1.00	5.12	
1981	Other	Inactive	1,160.41	0.010%	0.35	3.000%	0.04	34.81	200.00	1.00	8.20	
1982	Other	Inactive	48.25	0.010%	1.25	3.000%	0.01	1.45	200.00	1.00	1.21	
1983	Other	Inactive	1,713.51	0.010%	0.50	3.000%	0.09	51.41	200.00	1.00	17.13	
1984	Other	Inactive	26.00	0.010%	1.25	3.000%	0.00	0.78	200.00	1.00	0.65	
1985	Other	Inactive	394.50	0.500%	0.45	3.000%	0.89	11.84	200.00	1.00	178.13	
1986	Other	Inactive	612.21	0.500%	0.41	3.000%	1.24	18.37	200.00	1.00	248.73	
1987	Other	Inactive	20.21	0.500%	1.25	3.000%	0.13	0.61	200.00	1.00	25.26	
1988	Other	Inactive	491.54	0.500%	0.55	3.000%	1.35	14.75	200.00	1.00	270.39	
1989	Other	Inactive	700.45	0.500%	0.44	3.000%	1.53	21.01	200.00	1.00	305.45	
1990	Other	Inactive	362.69	0.500%	0.50	3.000%	0.91	10.88	200.00	1.00	181.41	
1991	Other	Inactive	50.33	0.500%	1.25	3.000%	0.31	1.51	200.00	1.00	62.91	
1992	Other	Inactive	215.12	0.500%	1.17	3.000%	1.26	6.45	200.00	1.00	251.74	
1993	Other	Inactive	892.07	0.500%	0.52	3.000%	2.34	26.76	200.00	1.00	467.66	
1994	Other	Inactive	770.77	0.500%	0.41	3.000%	1.56	23.12	200.00	1.00	312.59	
1995	Other	Inactive	171.34	0.500%	1.06	3.000%	0.91	5.14	200.00	1.00	181.64	
1996	Other	Inactive	233.39	0.500%	1.02	3.000%	1.19	7.00	200.00	1.00	238.14	
1997	Other	Inactive	90.95	0.500%	1.23	5.000%	0.56	4.55	200.00	1.00	112.20	
1998	Other	Inactive	0.00	0.500%	0.00	5.000%	0.00	0.00	200.00	1.00	0.00	
1999	Other	Inactive	233.33	0.500%	0.63	3.000%	0.73	7.00	200.00	1.00	145.98	
2000	Other	Inactive	472.50	0.500%	0.25	3.000%	0.59	14.18	200.00	1.00	118.13	
2001	Other	Inactive	188.75	0.500%	0.43	3.000%	0.41	5.66	200.00	1.00	81.19	
2002	Other	Inactive	107.86	0.500%	1.25	3.000%	0.67	3.24	200.00	1.00	134.83	
2003	Other	Inactive	30.80	0.500%	1.25	3.000%	0.19	0.92	200.00	1.00	38.50	
2004	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00	
2005	Other	Inactive	0.00	0.500%	0.00	4.000%	0.00	0.00	200.00	1.00	0.00	
2006	Other	Inactive	53.90	0.500%	1.25	4.000%	0.34	2.16	200.00	1.00	67.38	
2007	Other	Inactive	118.83	0.500%	1.00	3.000%	0.59	3.56	200.00	1.00	118.83	
2008	Other	Inactive	9.90	0.500%	1.25	3.000%	0.06	0.30	200.00	1.00	12.38	
2009	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00	
2010	Other	Inactive	133.81	0.500%	1.00	2.000%	0.67	2.68	200.00	1.00	133.81	
2011	Other	Inactive	66.26	0.500%	1.00	1.000%	0.33	0.66	200.00	1.00	66.26	
2012	Other	Inactive	191.70	0.500%	1.00	1.000%	0.96	1.92	200.00	1.00	191.70	
2013	Other	Inactive	57.00	0.500%	1.25	0.500%	0.36	0.29	200.00	1.00	71.25	
2014	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00	
2015	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00	
2016	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00	
2017	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00	
TOTAL			10,431.54				20.28	297.44			4,056.07	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017

Permit Issue Year	Mine Type	Mine Status	Current Bonded Acres	As of Fiscal Year End 2018								
				Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost	
(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)	(10)	(11)	(12)	
1961	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	\$200.00	1.00	\$0.00	
1962	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1963	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1964	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1965	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1966	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1967	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1968	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1969	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1970	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1971	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1972	Other	Phased Release	9.00	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.23	
1973	Other	Phased Release	27.00	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.68	
1974	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1975	Other	Phased Release	34.00	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.85	
1976	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1977	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00	
1978	Other	Phased Release	58.69	0.010%	1.25	0.100%	0.01	0.06	200.00	1.00	1.47	
1979	Other	Phased Release	10.00	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.25	
1980	Other	Phased Release	1,007.91	0.010%	1.25	3.000%	0.13	30.24	200.00	1.00	25.20	
1981	Other	Phased Release	1,892.78	0.010%	1.00	3.000%	0.19	56.78	200.00	1.00	37.69	
1982	Other	Phased Release	457.88	0.010%	1.25	3.000%	0.06	13.74	200.00	1.00	11.45	
1983	Other	Phased Release	3,078.26	0.010%	0.70	3.000%	0.21	92.35	200.00	1.00	42.91	
1984	Other	Phased Release	476.66	0.010%	0.77	3.000%	0.04	14.30	200.00	1.00	7.37	
1985	Other	Phased Release	398.19	0.500%	1.18	3.000%	2.35	11.95	200.00	1.00	469.33	
1986	Other	Phased Release	245.30	0.500%	1.04	3.000%	1.27	7.36	200.00	1.00	254.80	
1987	Other	Phased Release	272.00	0.500%	0.43	3.000%	0.59	8.16	200.00	1.00	118.00	
1988	Other	Phased Release	14.00	0.500%	1.25	3.000%	0.09	0.42	200.00	1.00	17.50	
1989	Other	Phased Release	49.49	0.500%	1.03	3.000%	0.25	1.48	200.00	1.00	50.83	
1990	Other	Phased Release	54.00	0.500%	1.25	3.000%	0.34	1.62	200.00	1.00	67.50	
1991	Other	Phased Release	327.16	0.500%	0.54	3.000%	0.88	9.81	200.00	1.00	176.95	
1992	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00	
1993	Other	Phased Release	102.94	0.500%	1.00	3.000%	0.51	3.09	200.00	1.00	102.94	
1994	Other	Phased Release	61.00	0.500%	1.00	3.000%	0.31	1.83	200.00	1.00	61.00	
1995	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00	
1996	Other	Phased Release	183.32	0.500%	1.04	3.000%	0.96	5.50	200.00	1.00	191.11	
1997	Other	Phased Release	0.00	0.500%	0.00	5.000%	0.00	0.00	200.00	1.00	0.00	
1998	Other	Phased Release	106.00	0.500%	1.00	5.000%	0.53	5.30	200.00	1.00	106.00	
1999	Other	Phased Release	179.00	0.500%	0.25	3.000%	0.22	5.37	200.00	1.00	44.75	
2000	Other	Phased Release	89.00	0.500%	1.25	3.000%	0.56	2.67	200.00	1.00	111.25	
2001	Other	Phased Release	16.66	0.500%	1.25	3.000%	0.10	0.50	200.00	1.00	20.83	
2002	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00	
2003	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00	
2004	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00	
2005	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	200.00	1.00	0.00	
2006	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	200.00	1.00	0.00	
2007	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00	
2008	Other	Phased Release	3.60	0.500%	1.25	3.000%	0.02	0.11	200.00	1.00	4.50	
2009	Other	Phased Release	29.85	0.500%	1.25	3.000%	0.19	0.90	200.00	1.00	37.31	
2010	Other	Phased Release	41.99	0.500%	1.01	2.000%	0.21	0.84	200.00	1.00	42.58	
2011	Other	Phased Release	0.00	0.500%	0.00	1.000%	0.00	0.00	200.00	1.00	0.00	
2012	Other	Phased Release	6.75	0.500%	1.25	1.000%	0.04	0.07	200.00	1.00	8.44	
2013	Other	Phased Release	1.00	0.500%	1.25	0.500%	0.01	0.01	200.00	1.00	1.25	
2014	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00	
2015	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00	
2016	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00	
2017	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00	
TOTAL			9,233.43				10.07	274.52			2,014.94	

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
Other
June 30, 2017

			As of Fiscal Year End 2019								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Permit Status & Future FY	
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	\$200.00	1.00	\$0.00
1962	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1963	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1964	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1965	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1966	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1967	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1968	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1969	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1970	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1971	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1972	Other	Active	19.98	0.010%	1.25	0.100%	0.00	0.02	200.00	1.00	0.50
1973	Other	Active	28.49	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.71
1974	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1975	Other	Active	34.04	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.85
1976	Other	Active	124.86	0.010%	1.25	0.100%	0.02	0.12	200.00	1.00	3.12
1977	Other	Active	64.93	0.010%	1.25	0.100%	0.01	0.06	200.00	1.00	1.62
1978	Other	Active	12.75	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.32
1979	Other	Active	139.68	0.010%	1.25	0.100%	0.02	0.14	200.00	1.00	3.49
1980	Other	Active	534.14	0.010%	1.09	0.100%	0.06	0.53	200.00	1.00	11.63
1981	Other	Active	2,944.76	0.010%	0.52	3.000%	0.15	88.34	200.00	1.00	30.53
1982	Other	Active	1,682.25	0.010%	0.57	3.000%	0.10	50.47	200.00	1.00	19.32
1983	Other	Active	2,784.37	0.010%	0.64	3.000%	0.18	83.53	200.00	1.00	35.82
1984	Other	Active	1,453.90	0.010%	0.44	3.000%	0.06	43.62	200.00	1.00	12.76
1985	Other	Active	1,402.31	0.010%	0.56	3.000%	0.08	42.07	200.00	1.00	15.84
1986	Other	Active	1,078.22	0.500%	0.53	3.000%	2.88	32.35	200.00	1.00	575.92
1987	Other	Active	101.64	0.500%	1.06	3.000%	0.54	3.05	200.00	1.00	107.82
1988	Other	Active	300.92	0.500%	1.10	3.000%	1.66	9.03	200.00	1.00	332.08
1989	Other	Active	338.33	0.500%	1.25	3.000%	2.11	10.15	200.00	1.00	422.92
1990	Other	Active	54.11	0.500%	1.25	3.000%	0.34	1.62	200.00	1.00	67.64
1991	Other	Active	158.39	0.500%	1.17	3.000%	0.92	4.75	200.00	1.00	184.84
1992	Other	Active	854.88	0.500%	0.54	3.000%	2.29	25.65	200.00	1.00	458.01
1993	Other	Active	1,250.69	0.500%	0.55	3.000%	3.46	37.52	200.00	1.00	692.86
1994	Other	Active	1,055.07	0.500%	0.45	3.000%	2.37	31.65	200.00	1.00	473.97
1995	Other	Active	1,582.84	0.500%	0.31	3.000%	2.46	47.49	200.00	1.00	491.99
1996	Other	Active	1,147.99	0.500%	0.30	3.000%	1.73	34.44	200.00	1.00	345.05
1997	Other	Active	1,099.77	0.500%	0.73	3.000%	4.02	32.99	200.00	1.00	803.38
1998	Other	Active	1,092.66	0.500%	0.30	5.000%	1.63	54.63	200.00	1.00	326.29
1999	Other	Active	56.57	0.500%	1.25	5.000%	0.35	2.83	200.00	1.00	70.72
2000	Other	Active	423.58	0.500%	0.80	3.000%	1.69	12.71	200.00	1.00	337.13
2001	Other	Active	23.60	0.500%	1.22	3.000%	0.14	0.71	200.00	1.00	28.88
2002	Other	Active	672.47	0.500%	0.31	3.000%	1.03	20.17	200.00	1.00	205.85
2003	Other	Active	1,066.19	0.500%	0.54	3.000%	2.89	31.99	200.00	1.00	577.19
2004	Other	Active	362.32	0.500%	0.77	3.000%	1.39	10.87	200.00	1.00	278.64
2005	Other	Active	592.85	0.500%	0.59	3.000%	1.76	17.79	200.00	1.00	351.30
2006	Other	Active	287.70	0.500%	1.11	4.000%	1.60	11.51	200.00	1.00	320.72
2007	Other	Active	230.26	0.500%	1.13	4.000%	1.30	9.21	200.00	1.00	259.74
2008	Other	Active	576.45	0.500%	0.72	3.000%	2.07	17.29	200.00	1.00	413.30
2009	Other	Active	263.96	0.500%	1.01	3.000%	1.34	7.92	200.00	1.00	267.10
2010	Other	Active	834.86	0.500%	0.53	3.000%	2.22	25.05	200.00	1.00	444.33
2011	Other	Active	116.13	0.500%	1.25	2.000%	0.73	2.32	200.00	1.00	145.16
2012	Other	Active	778.95	0.500%	0.79	1.000%	3.06	7.79	200.00	1.00	615.00
2013	Other	Active	839.52	0.500%	0.76	1.000%	3.17	8.40	200.00	1.00	633.97
2014	Other	Active	44.15	0.500%	1.25	0.500%	0.28	0.22	200.00	1.00	55.18
2015	Other	Active	169.35	0.500%	1.12	0.500%	0.95	0.85	200.00	1.00	190.33
2016	Other	Active	170.63	0.000%	0.44	0.000%	0.00	0.00	200.00	1.00	0.00
2017	Other	Active	65.90	0.000%	1.20	0.000%	0.00	0.00	200.00	1.00	0.00
TOTAL			28,917.39				53.06	821.92			10,611.84

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
Other
June 30, 2017

			As of Fiscal Year End 2019								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost	
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate					Forfeited Acres
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	\$200.00	1.00	\$0.00
1962	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1963	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1964	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1965	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1966	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1967	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1968	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1969	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1970	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1971	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1972	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1973	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1974	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1975	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1976	Other	Inactive	280.87	0.010%	1.02	0.100%	0.03	0.28	200.00	1.00	5.73
1977	Other	Inactive	51.94	0.010%	1.25	0.100%	0.01	0.05	200.00	1.00	1.30
1978	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1979	Other	Inactive	9.74	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.24
1980	Other	Inactive	456.10	0.010%	0.54	0.100%	0.02	0.46	200.00	1.00	4.97
1981	Other	Inactive	1,125.56	0.010%	0.35	3.000%	0.04	33.77	200.00	1.00	7.95
1982	Other	Inactive	46.80	0.010%	1.25	3.000%	0.01	1.40	200.00	1.00	1.17
1983	Other	Inactive	1,662.02	0.010%	0.50	3.000%	0.08	49.86	200.00	1.00	16.62
1984	Other	Inactive	25.22	0.010%	1.25	3.000%	0.00	0.76	200.00	1.00	0.63
1985	Other	Inactive	381.77	0.010%	0.45	3.000%	0.02	11.45	200.00	1.00	3.45
1986	Other	Inactive	592.60	0.500%	0.41	3.000%	1.20	17.78	200.00	1.00	240.76
1987	Other	Inactive	19.48	0.500%	1.25	3.000%	0.12	0.58	200.00	1.00	24.35
1988	Other	Inactive	475.44	0.500%	0.55	3.000%	1.31	14.26	200.00	1.00	261.53
1989	Other	Inactive	677.91	0.500%	0.44	3.000%	1.48	20.34	200.00	1.00	295.62
1990	Other	Inactive	350.90	0.500%	0.50	3.000%	0.88	10.53	200.00	1.00	175.52
1991	Other	Inactive	48.51	0.500%	1.25	3.000%	0.30	1.46	200.00	1.00	60.63
1992	Other	Inactive	207.41	0.500%	1.17	3.000%	1.21	6.22	200.00	1.00	242.71
1993	Other	Inactive	862.97	0.500%	0.52	3.000%	2.26	25.89	200.00	1.00	452.41
1994	Other	Inactive	746.08	0.500%	0.41	3.000%	1.51	22.38	200.00	1.00	302.58
1995	Other	Inactive	165.29	0.500%	1.06	3.000%	0.88	4.96	200.00	1.00	175.23
1996	Other	Inactive	225.20	0.500%	1.02	3.000%	1.15	6.76	200.00	1.00	229.78
1997	Other	Inactive	85.84	0.500%	1.23	3.000%	0.53	2.58	200.00	1.00	105.90
1998	Other	Inactive	0.00	0.500%	0.00	5.000%	0.00	0.00	200.00	1.00	0.00
1999	Other	Inactive	225.60	0.500%	0.63	5.000%	0.71	11.28	200.00	1.00	141.15
2000	Other	Inactive	457.73	0.500%	0.25	3.000%	0.57	13.73	200.00	1.00	114.43
2001	Other	Inactive	182.68	0.500%	0.43	3.000%	0.39	5.48	200.00	1.00	78.58
2002	Other	Inactive	103.95	0.500%	1.25	3.000%	0.65	3.12	200.00	1.00	129.94
2003	Other	Inactive	29.68	0.500%	1.25	3.000%	0.19	0.89	200.00	1.00	37.10
2004	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2005	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2006	Other	Inactive	51.41	0.500%	1.25	4.000%	0.32	2.06	200.00	1.00	64.26
2007	Other	Inactive	114.67	0.500%	1.00	4.000%	0.57	4.59	200.00	1.00	114.67
2008	Other	Inactive	9.54	0.500%	1.25	3.000%	0.06	0.29	200.00	1.00	11.93
2009	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2010	Other	Inactive	130.46	0.500%	1.00	3.000%	0.65	3.91	200.00	1.00	130.46
2011	Other	Inactive	65.27	0.500%	1.00	2.000%	0.33	1.31	200.00	1.00	65.27
2012	Other	Inactive	188.82	0.500%	1.00	1.000%	0.94	1.89	200.00	1.00	188.82
2013	Other	Inactive	56.36	0.500%	1.25	1.000%	0.35	0.56	200.00	1.00	70.45
2014	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00
2015	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00
2016	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00
2017	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00
TOTAL			10,113.82				18.78	280.87			3,756.14

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017

			As of Fiscal Year End 2019								
Permit Issue Year	Mine Type	Mine Status	Adjustment				Released Acres	Avg Recl Cost per Acre	Adjustment		Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate			Forfeited Acres	Permit Status & Future FY	
(1)	(2)	(3)	(13)	(14)	(15)	(16)	(17)	(18)	(19)	(20)	(21)
1961	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	\$200.00	1.00	\$0.00
1962	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1963	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1964	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1965	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1966	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1967	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1968	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1969	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1970	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1971	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1972	Other	Phased Release	8.99	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.22
1973	Other	Phased Release	26.97	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.67
1974	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1975	Other	Phased Release	33.96	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.85
1976	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1977	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1978	Other	Phased Release	58.62	0.010%	1.25	0.100%	0.01	0.06	200.00	1.00	1.47
1979	Other	Phased Release	9.99	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.25
1980	Other	Phased Release	977.55	0.010%	1.25	0.100%	0.12	0.98	200.00	1.00	24.44
1981	Other	Phased Release	1,835.81	0.010%	1.00	3.000%	0.18	55.07	200.00	1.00	36.55
1982	Other	Phased Release	444.09	0.010%	1.25	3.000%	0.06	13.32	200.00	1.00	11.10
1983	Other	Phased Release	2,985.70	0.010%	0.70	3.000%	0.21	89.57	200.00	1.00	41.62
1984	Other	Phased Release	462.32	0.010%	0.77	3.000%	0.04	13.87	200.00	1.00	7.14
1985	Other	Phased Release	383.90	0.010%	1.18	3.000%	0.05	11.52	200.00	1.00	9.05
1986	Other	Phased Release	236.67	0.500%	1.04	3.000%	1.23	7.10	200.00	1.00	245.83
1987	Other	Phased Release	263.25	0.500%	0.43	3.000%	0.57	7.90	200.00	1.00	114.20
1988	Other	Phased Release	13.49	0.500%	1.25	3.000%	0.08	0.40	200.00	1.00	16.87
1989	Other	Phased Release	47.75	0.500%	1.03	3.000%	0.25	1.43	200.00	1.00	49.04
1990	Other	Phased Release	52.04	0.500%	1.25	3.000%	0.33	1.56	200.00	1.00	65.05
1991	Other	Phased Release	316.46	0.500%	0.54	3.000%	0.86	9.49	200.00	1.00	171.16
1992	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
1993	Other	Phased Release	99.34	0.500%	1.00	3.000%	0.50	2.98	200.00	1.00	99.34
1994	Other	Phased Release	58.87	0.500%	1.00	3.000%	0.29	1.77	200.00	1.00	58.87
1995	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
1996	Other	Phased Release	176.86	0.500%	1.04	3.000%	0.92	5.31	200.00	1.00	184.38
1997	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
1998	Other	Phased Release	100.17	0.500%	1.00	5.000%	0.50	5.01	200.00	1.00	100.17
1999	Other	Phased Release	173.41	0.500%	0.25	5.000%	0.22	8.67	200.00	1.00	43.35
2000	Other	Phased Release	85.77	0.500%	1.25	3.000%	0.54	2.57	200.00	1.00	107.22
2001	Other	Phased Release	16.06	0.500%	1.25	3.000%	0.10	0.48	200.00	1.00	20.07
2002	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2003	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2004	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2005	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2006	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	200.00	1.00	0.00
2007	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	200.00	1.00	0.00
2008	Other	Phased Release	3.47	0.500%	1.25	3.000%	0.02	0.10	200.00	1.00	4.34
2009	Other	Phased Release	28.77	0.500%	1.25	3.000%	0.18	0.86	200.00	1.00	35.96
2010	Other	Phased Release	40.94	0.500%	1.01	3.000%	0.21	1.23	200.00	1.00	41.51
2011	Other	Phased Release	0.00	0.500%	0.00	2.000%	0.00	0.00	200.00	1.00	0.00
2012	Other	Phased Release	6.64	0.500%	1.25	1.000%	0.04	0.07	200.00	1.00	8.30
2013	Other	Phased Release	0.99	0.500%	1.25	1.000%	0.01	0.01	200.00	1.00	1.24
2014	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00
2015	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00
2016	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00
2017	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00
TOTAL			8,948.83				7.50	241.42			1,500.27

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017
 As of Fiscal Year End
 2020

Permit Issue Year	Mine Type	Mine Status	Adjustment						Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres			
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	\$200.00	1.00	\$0.00
1962	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1963	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1964	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1965	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1966	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1967	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1968	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1969	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1970	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1971	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1972	Other	Active	19.96	0.010%	1.25	0.100%	0.00	0.02	200.00	1.00	0.50
1973	Other	Active	28.46	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.71
1974	Other	Active	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1975	Other	Active	34.00	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.85
1976	Other	Active	124.72	0.010%	1.25	0.100%	0.02	0.12	200.00	1.00	3.12
1977	Other	Active	64.85	0.010%	1.25	0.100%	0.01	0.06	200.00	1.00	1.62
1978	Other	Active	12.73	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.32
1979	Other	Active	139.53	0.010%	1.25	0.100%	0.02	0.14	200.00	1.00	3.49
1980	Other	Active	533.55	0.010%	1.09	0.100%	0.06	0.53	200.00	1.00	11.62
1981	Other	Active	2,856.27	0.010%	0.52	0.100%	0.15	2.86	200.00	1.00	29.61
1982	Other	Active	1,631.68	0.010%	0.57	3.000%	0.09	48.95	200.00	1.00	18.74
1983	Other	Active	2,700.66	0.010%	0.64	3.000%	0.17	81.02	200.00	1.00	34.75
1984	Other	Active	1,410.22	0.010%	0.44	3.000%	0.06	42.31	200.00	1.00	12.38
1985	Other	Active	1,360.16	0.010%	0.56	3.000%	0.08	40.80	200.00	1.00	15.37
1986	Other	Active	1,043.00	0.010%	0.53	3.000%	0.06	31.29	200.00	1.00	11.14
1987	Other	Active	98.05	0.500%	1.06	3.000%	0.52	2.94	200.00	1.00	104.01
1988	Other	Active	290.23	0.500%	1.10	3.000%	1.60	8.71	200.00	1.00	320.29
1989	Other	Active	326.07	0.500%	1.25	3.000%	2.04	9.78	200.00	1.00	407.59
1990	Other	Active	52.15	0.500%	1.25	3.000%	0.33	1.56	200.00	1.00	65.19
1991	Other	Active	152.72	0.500%	1.17	3.000%	0.89	4.58	200.00	1.00	178.22
1992	Other	Active	826.94	0.500%	0.54	3.000%	2.22	24.81	200.00	1.00	443.04
1993	Other	Active	1,209.70	0.500%	0.55	3.000%	3.35	36.29	200.00	1.00	670.15
1994	Other	Active	1,021.05	0.500%	0.45	3.000%	2.29	30.63	200.00	1.00	458.69
1995	Other	Active	1,532.89	0.500%	0.31	3.000%	2.38	45.99	200.00	1.00	476.47
1996	Other	Active	1,111.82	0.500%	0.30	3.000%	1.67	33.35	200.00	1.00	334.18
1997	Other	Active	1,062.76	0.500%	0.73	3.000%	3.88	31.88	200.00	1.00	776.35
1998	Other	Active	1,036.40	0.500%	0.30	3.000%	1.55	31.09	200.00	1.00	309.48
1999	Other	Active	53.39	0.500%	1.25	5.000%	0.33	2.67	200.00	1.00	66.74
2000	Other	Active	409.19	0.500%	0.80	5.000%	1.63	20.46	200.00	1.00	325.67
2001	Other	Active	22.74	0.500%	1.22	3.000%	0.14	0.68	200.00	1.00	27.84
2002	Other	Active	651.26	0.500%	0.31	3.000%	1.00	19.54	200.00	1.00	199.36
2003	Other	Active	1,031.32	0.500%	0.54	3.000%	2.79	30.94	200.00	1.00	558.31
2004	Other	Active	350.05	0.500%	0.77	3.000%	1.35	10.50	200.00	1.00	269.21
2005	Other	Active	573.30	0.500%	0.59	3.000%	1.70	17.20	200.00	1.00	339.72
2006	Other	Active	274.59	0.500%	1.11	3.000%	1.53	8.24	200.00	1.00	306.10
2007	Other	Active	219.75	0.500%	1.13	4.000%	1.24	8.79	200.00	1.00	247.89
2008	Other	Active	557.09	0.500%	0.72	4.000%	2.00	22.28	200.00	1.00	399.42
2009	Other	Active	254.71	0.500%	1.01	3.000%	1.29	7.64	200.00	1.00	257.73
2010	Other	Active	807.59	0.500%	0.53	3.000%	2.15	24.23	200.00	1.00	429.82
2011	Other	Active	113.08	0.500%	1.25	3.000%	0.71	3.39	200.00	1.00	141.35
2012	Other	Active	768.10	0.500%	0.79	2.000%	3.02	15.36	200.00	1.00	604.45
2013	Other	Active	827.95	0.500%	0.76	1.000%	3.13	8.28	200.00	1.00	625.24
2014	Other	Active	43.65	0.500%	1.25	1.000%	0.27	0.44	200.00	1.00	54.56
2015	Other	Active	167.55	0.500%	1.12	0.500%	0.94	0.84	200.00	1.00	188.30
2016	Other	Active	170.63	0.500%	0.44	0.500%	0.38	0.85	200.00	1.00	75.29
2017	Other	Active	65.90	0.000%	1.20	0.000%	0.00	0.00	200.00	1.00	0.00
TOTAL			28,042.42				49.02	712.14			9,804.88

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017
 As of Fiscal Year End
 2020

Permit Issue Year	Mine Type	Mine Status	Adjustment						Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	Gross Cost
			Adjusted Acres	Forfeiture Rate	Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres			
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	\$200.00	1.00	\$0.00
1962	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1963	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1964	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1965	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1966	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1967	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1968	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1969	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1970	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1971	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1972	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1973	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1974	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1975	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1976	Other	Inactive	280.56	0.010%	1.02	0.100%	0.03	0.28	200.00	1.00	5.73
1977	Other	Inactive	51.88	0.010%	1.25	0.100%	0.01	0.05	200.00	1.00	1.30
1978	Other	Inactive	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1979	Other	Inactive	9.73	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.24
1980	Other	Inactive	455.62	0.010%	0.54	0.100%	0.02	0.46	200.00	1.00	4.96
1981	Other	Inactive	1,091.75	0.010%	0.35	0.100%	0.04	1.09	200.00	1.00	7.71
1982	Other	Inactive	45.39	0.010%	1.25	3.000%	0.01	1.36	200.00	1.00	1.13
1983	Other	Inactive	1,612.08	0.010%	0.50	3.000%	0.08	48.36	200.00	1.00	16.12
1984	Other	Inactive	24.46	0.010%	1.25	3.000%	0.00	0.73	200.00	1.00	0.61
1985	Other	Inactive	370.30	0.010%	0.45	3.000%	0.02	11.11	200.00	1.00	3.34
1986	Other	Inactive	573.62	0.010%	0.41	3.000%	0.02	17.21	200.00	1.00	4.66
1987	Other	Inactive	18.77	0.500%	1.25	3.000%	0.12	0.56	200.00	1.00	23.46
1988	Other	Inactive	459.87	0.500%	0.55	3.000%	1.26	13.80	200.00	1.00	252.97
1989	Other	Inactive	656.09	0.500%	0.44	3.000%	1.43	19.68	200.00	1.00	286.11
1990	Other	Inactive	339.50	0.500%	0.50	3.000%	0.85	10.18	200.00	1.00	169.81
1991	Other	Inactive	46.75	0.500%	1.25	3.000%	0.29	1.40	200.00	1.00	58.43
1992	Other	Inactive	199.97	0.500%	1.17	3.000%	1.17	6.00	200.00	1.00	234.01
1993	Other	Inactive	834.82	0.500%	0.52	3.000%	2.19	25.04	200.00	1.00	437.65
1994	Other	Inactive	722.19	0.500%	0.41	3.000%	1.46	21.67	200.00	1.00	292.89
1995	Other	Inactive	159.46	0.500%	1.06	3.000%	0.85	4.78	200.00	1.00	169.04
1996	Other	Inactive	217.29	0.500%	1.02	3.000%	1.11	6.52	200.00	1.00	221.72
1997	Other	Inactive	82.74	0.500%	1.23	3.000%	0.51	2.48	200.00	1.00	102.07
1998	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
1999	Other	Inactive	213.61	0.500%	0.63	5.000%	0.67	10.68	200.00	1.00	133.65
2000	Other	Inactive	443.43	0.500%	0.25	5.000%	0.55	22.17	200.00	1.00	110.86
2001	Other	Inactive	176.81	0.500%	0.43	3.000%	0.38	5.30	200.00	1.00	76.05
2002	Other	Inactive	100.18	0.500%	1.25	3.000%	0.63	3.01	200.00	1.00	125.23
2003	Other	Inactive	28.61	0.500%	1.25	3.000%	0.18	0.86	200.00	1.00	35.76
2004	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2005	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2006	Other	Inactive	49.03	0.500%	1.25	3.000%	0.31	1.47	200.00	1.00	61.29
2007	Other	Inactive	109.51	0.500%	1.00	4.000%	0.55	4.38	200.00	1.00	109.51
2008	Other	Inactive	9.20	0.500%	1.25	4.000%	0.06	0.37	200.00	1.00	11.49
2009	Other	Inactive	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2010	Other	Inactive	125.90	0.500%	1.00	3.000%	0.63	3.78	200.00	1.00	125.90
2011	Other	Inactive	63.63	0.500%	1.00	3.000%	0.32	1.91	200.00	1.00	63.63
2012	Other	Inactive	185.99	0.500%	1.00	2.000%	0.93	3.72	200.00	1.00	185.99
2013	Other	Inactive	55.44	0.500%	1.25	1.000%	0.35	0.55	200.00	1.00	69.30
2014	Other	Inactive	0.00	0.500%	0.00	1.000%	0.00	0.00	200.00	1.00	0.00
2015	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00
2016	Other	Inactive	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00
2017	Other	Inactive	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00
TOTAL			9,814.17				17.01	250.99			3,402.64

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
 Water Treatment Costs, for Forfeitures Occurring after June 30, 2017
 Other
 June 30, 2017
 As of Fiscal Year End
 2020

Permit Issue Year	Mine Type	Mine Status	As of Fiscal Year End 2020								Gross Cost
			Adjusted Acres	Forfeiture Rate	Adjustment Factor Permit Bond Size	Release Rate	Forfeited Acres	Released Acres	Avg Recl Cost per Acre	Adjustment Factor Permit Status & Future FY	
(1)	(2)	(3)	(22)	(23)	(24)	(25)	(26)	(27)	(28)	(29)	(30)
1961	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	\$200.00	1.00	\$0.00
1962	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1963	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1964	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1965	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1966	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1967	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1968	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1969	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1970	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1971	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1972	Other	Phased Release	8.98	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.22
1973	Other	Phased Release	26.94	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.67
1974	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1975	Other	Phased Release	33.92	0.010%	1.25	0.100%	0.00	0.03	200.00	1.00	0.85
1976	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1977	Other	Phased Release	0.00	0.010%	0.00	0.100%	0.00	0.00	200.00	1.00	0.00
1978	Other	Phased Release	58.56	0.010%	1.25	0.100%	0.01	0.06	200.00	1.00	1.46
1979	Other	Phased Release	9.98	0.010%	1.25	0.100%	0.00	0.01	200.00	1.00	0.25
1980	Other	Phased Release	976.45	0.010%	1.25	0.100%	0.12	0.98	200.00	1.00	24.41
1981	Other	Phased Release	1,780.55	0.010%	1.00	0.100%	0.18	1.78	200.00	1.00	35.45
1982	Other	Phased Release	430.71	0.010%	1.25	3.000%	0.05	12.92	200.00	1.00	10.77
1983	Other	Phased Release	2,895.92	0.010%	0.70	3.000%	0.20	86.88	200.00	1.00	40.37
1984	Other	Phased Release	448.42	0.010%	0.77	3.000%	0.03	13.45	200.00	1.00	6.93
1985	Other	Phased Release	372.34	0.010%	1.18	3.000%	0.04	11.17	200.00	1.00	8.78
1986	Other	Phased Release	228.34	0.010%	1.04	3.000%	0.02	6.85	200.00	1.00	4.74
1987	Other	Phased Release	254.78	0.500%	0.43	3.000%	0.55	7.64	200.00	1.00	110.53
1988	Other	Phased Release	13.00	0.500%	1.25	3.000%	0.08	0.39	200.00	1.00	16.25
1989	Other	Phased Release	46.07	0.500%	1.03	3.000%	0.24	1.38	200.00	1.00	47.32
1990	Other	Phased Release	50.16	0.500%	1.25	3.000%	0.31	1.50	200.00	1.00	62.69
1991	Other	Phased Release	306.11	0.500%	0.54	3.000%	0.83	9.18	200.00	1.00	165.57
1992	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
1993	Other	Phased Release	95.86	0.500%	1.00	3.000%	0.48	2.88	200.00	1.00	95.86
1994	Other	Phased Release	56.80	0.500%	1.00	3.000%	0.28	1.70	200.00	1.00	56.80
1995	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
1996	Other	Phased Release	170.64	0.500%	1.04	3.000%	0.89	5.12	200.00	1.00	177.89
1997	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
1998	Other	Phased Release	94.66	0.500%	1.00	3.000%	0.47	2.84	200.00	1.00	94.66
1999	Other	Phased Release	164.52	0.500%	0.25	5.000%	0.21	8.23	200.00	1.00	41.13
2000	Other	Phased Release	82.66	0.500%	1.25	5.000%	0.52	4.13	200.00	1.00	103.33
2001	Other	Phased Release	15.47	0.500%	1.25	3.000%	0.10	0.46	200.00	1.00	19.34
2002	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2003	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2004	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2005	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2006	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2007	Other	Phased Release	0.00	0.500%	0.00	4.000%	0.00	0.00	200.00	1.00	0.00
2008	Other	Phased Release	3.34	0.500%	1.25	4.000%	0.02	0.13	200.00	1.00	4.18
2009	Other	Phased Release	27.73	0.500%	1.25	3.000%	0.17	0.83	200.00	1.00	34.66
2010	Other	Phased Release	39.50	0.500%	1.01	3.000%	0.20	1.19	200.00	1.00	40.06
2011	Other	Phased Release	0.00	0.500%	0.00	3.000%	0.00	0.00	200.00	1.00	0.00
2012	Other	Phased Release	6.53	0.500%	1.25	2.000%	0.04	0.13	200.00	1.00	8.17
2013	Other	Phased Release	0.97	0.500%	1.25	1.000%	0.01	0.01	200.00	1.00	1.22
2014	Other	Phased Release	0.00	0.500%	0.00	1.000%	0.00	0.00	200.00	1.00	0.00
2015	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00
2016	Other	Phased Release	0.00	0.500%	0.00	0.500%	0.00	0.00	200.00	1.00	0.00
2017	Other	Phased Release	0.00	0.000%	0.00	0.000%	0.00	0.00	200.00	1.00	0.00
TOTAL			8,699.92				6.07	181.92			1,214.56

West Virginia Department of Environmental Protection Office of Special Reclamation

Reclamation Expenditures Calculation
Water Treatment Costs, for Forfeitures Occurring after June 30, 2017

June 30, 2017

Footnotes for Exhibits 32.1 through 32.3:

- (1) - (4) Client data
- (5) Exhibit 23.1 Cols (1), (3), and (5)
- (6) Exhibit 22.2 Col (1) adjusted for current acreage distribution by year
- (7) Exhibit 23.1 Cols (2), (4), and (6)
- (8) Col (4) x Col (5) x Col (6)
- (9) Col (4) x Col (7)
- (10) Exhibit 13.1 Col (3)
- (11) Exhibit 22.1 Col (3) x Exhibit 22.3 Col (1)
- (12) Col (8) x Col (10) x Col (11)
- (13) Col (4) - [Col (8) + Col (9)]
- (14) Exhibit 23.1 Cols (1), (3), and (5)
- (15) Col (6)
- (16) Exhibit 23.1 Cols (2), (4), and (6)
- (17) Col (13) x Col (14) x Col (15)
- (18) Col (13) x Col (16)
- (19) Col (10)
- (20) Exhibit 22.1 Col (3) x Exhibit 22.3 Col (1)
- (21) Col (17) x Col (19) x Col (20)
- (22) Col (13) - [Col (17) + Col (18)]
- (23) Exhibit 23.1 Cols (1), (3), and (5)
- (24) Col (15)
- (25) Exhibit 23.1 Cols (2), (4), and (6)
- (26) Col (22) x Col (23) x Col (24)
- (27) Col (22) x Col (25)
- (28) Col (10)
- (29) Exhibit 22.1 Col (3) x Exhibit 22.3 Col (1)
- (30) Col (26) x Col (28) x Col (29)

Same calculations continue for fiscal years 2021 through 2052

Consensus Coal Production Forecast for West Virginia: 2017

FINAL REPORT

Prepared for:

**Special Reclamation Fund Advisory Council,
West Virginia Department of Environmental Protection**

Date:

September 5, 2017



CBER
CENTER FOR BUSINESS
AND ECONOMIC RESEARCH

Consensus Coal Production Forecast for West Virginia: 2017

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Disclaimer:

The contents of this report reflect the views of the authors who are responsible for the accuracy of the data presented herein. The views expressed in this report are those of the authors and do not reflect the official policy or position of Marshall University or its governing bodies. The use of trade names, if applicable, does not signify endorsement.

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Consensus Coal Production Forecast for West Virginia: 2017

Introduction

The West Virginia Consensus Coal Production Forecast is a combined production forecast comprised of four component forecasts. A consensus approach to forecasting seeks the wisdom of the crowd in producing an expectation for output from the coal industry. The Consensus Forecast is used to provide the best expectation of tax revenues to be collected for mandatory reclamation activities conducted through the Special Reclamation Fund and the Special Reclamation Water Trust Fund.

This report describes recent historical coal production trends for the State of West Virginia including the individual industries that comprise the major segments of demand for coal produced in West Virginia. Each of the component forecasts used to form the Consensus Forecast is described, with information about assumptions and resulting projected levels of production for West Virginia. The process used to produce the Consensus is also described, including the weightings applied to each of the component forecasts. The West Virginia Consensus Coal Production Forecast is calculated for the years 2017 through 2040.

Overview

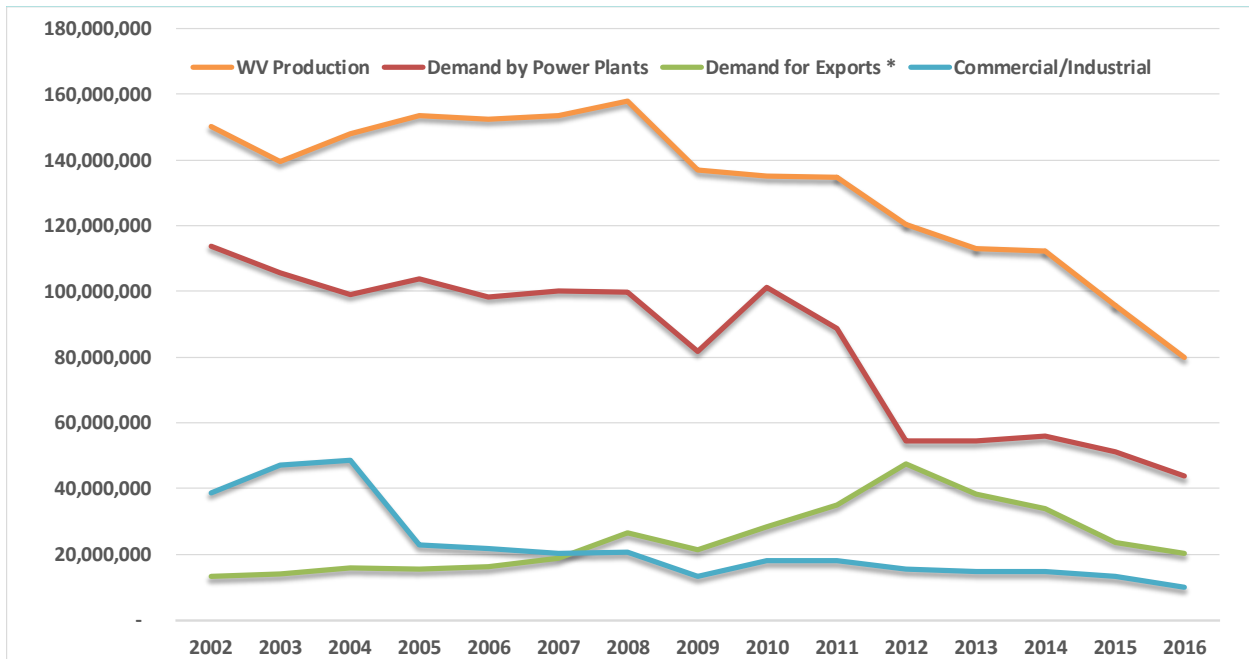
West Virginia coal production for 2016 was 80.1 million tons (EIA 2017),¹ a decline of about 16 percent from the 95.5 million tons produced in 2015. This decline reflects various trends and events within the coal industry's primary markets: power generation, exports and industrial demand as well as expectations regarding environmental policy. Demand for West Virginia coal fell by about 16 percent from 2015 levels, led by a decline in demand from coal-fired power plants.

Future demand for West Virginia coal depends on several variables. These include the capacity of gas-fired electrical generators in the region and the price paid for gas by those generators, the lifespan and generation levels of the coal-fired power plants that will continue to burn coal from the State, exchange rates and the rate of economic growth of countries that import West Virginia coal, and the nature of compliance with environmental regulations.

Recent demand trends with preliminary and estimated sector-level data for 2016 are shown in Figure 1.

¹ 80.1 million tons is the Energy Information Administration's revised 2016 production value based on the final 2016 value published by MSHA (clean coal production reported on MSHA Form 7000-2). The West Virginia Office of Miner's Health, Safety and Training reports 2016 production of 88,424,255 tons, but this is not exclusively clean coal which is the final production volume.

Figure 1: Historical West Virginia Coal Production and Components of Demand



Source: EIA, 2017. Asterisk (*) 2016 volumes estimated by MU CBER. Other 2016 figures are preliminary by EIA.

The Electricity Sector

Preliminary coal distribution data for 2016 published by the U.S. Energy Information Administration (EIA) indicate that demand for West Virginia-produced coal by the electricity sector fell in 2016, to about 43.8 million tons, compared to about 51.1 million tons in 2015 (EIA 2017). This was a decline of 14 percent, between 2015 and 2016, while total electric power industry coal demand fell by about 11 percent during the same time (EIA 2017).

Natural Gas Prices

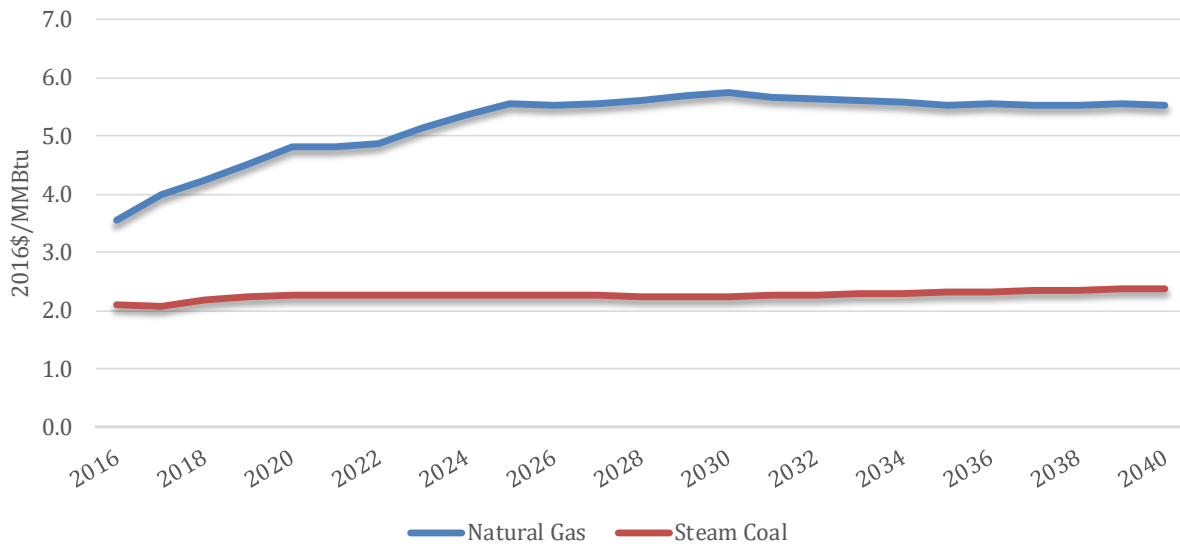
A large contributor to reduced coal demand is the price of natural gas, which fell again in 2016, with the average U.S. price for the electric power sector declining to \$2.99/mcf (2016 dollars) from \$3.37/mcf in 2015 (EIA 2017). Coal was even more competitive in 2014, when delivered gas prices averaged \$5.19/mcf.

Abundant gas production from the Marcellus play continues to result in particularly low gas prices in a primary region in which West Virginia coal competes. In 2016, Marcellus-area prices continued to trade at a discount to the Henry Hub price, the national benchmark for natural gas. To date in 2017, prices at the Zone 4 Marcellus and Dominion South hubs have been in the range of 80% to 90% of the Henry Hub price. This is a

reduction from the 2016 differentials, which were often in the range of 50 to 75% of the Henry Hub price.

In its AEO 2017 Reference Case analysis the EIA continues to project gas prices delivered to the power generation sector to increase at a faster rate than coal prices, which will moderate declining coal demand (EIA 2017). These prices are shown below.

Figure 2: Forecasted Natural Gas & Coal Prices to Electricity Sector



Coal-Fired Power Plant Retirements

Since 2015 no additional units at coal-fired power plants in West Virginia have closed. However, several other plants that have utilized West Virginia coal retired in 2016. These include the Colbert plant in Alabama and the Cedar Bay and Lansing Smith plants in Florida (EIA 2017).

Environmental Regulation

Several changes to regulations that would have impacted the cost of mining coal or generating electricity fueled by coal have occurred in the past few months. These changes will most likely increase the amount of coal produced in West Virginia and the nation.

The Stream Protection Rule, issued by the U.S. Interior Department in 2016, was nullified in February 2017 (Office of Surface Mining Reclamation and Enforcement 2017). This rule would have increased the cost of mining coal by limiting the distance from a stream that coal mining can occur. The U.S. Environmental Protection Agency (EPA) and the Department of the Army also announced an intention to review and rescind or revise the Waters of the United States (WOTUS) rule (Federal Register 2017). The review may seek to change the definition of “navigable waters” as defined in the Clean Water Act in a manner that may loosen restrictions on mining operations by excluding “occasional,”

"intermittent," or "ephemeral" flows from the definition of WOTUS (Chicago-Kent College of Law at Illinois Tech n.d.).

The stay of the Clean Power Plan (CPP) in 2016 is still in effect. EPA Administrator Pruitt sent a letter to governors informing them “that EPA does not expect the states to dedicate resources to complying with a rule that has been stayed by the Supreme Court of the United States (U.S. Environmental Protection Agency 2017).” Despite the stay, the potential impact of the EPA’s Clean Power Plan (CPP) rule is still included in the EIA’s Reference Case forecast. None of the other three of the four forecasts simulate the impact of the rule.

The Industrial Sector

As shown previously in Figure 1 demand for West Virginia coal by the industrial sector (coke plants and self-generating manufacturers, including coal-fired combined heat and power plants) continues a slow and steady decline driven by a decline in demand for metallurgical coal. EIA’s national-level projections forecast a decline in demand for coking coal at an annualized rate of 2.8 percent through 2050, as well as a decline in other industrial demand at a rate of 0.3 percent per year.

U.S. imports of steel products have increased in recent months in 2017 after declining in the second half of 2016. In May 2017, the steel trade deficit narrowed to -2.2 million metric tons from -2.3 million metric tons in April 2017, a 1.3% decrease while imports increased 3.5% by volume to 3.1 million metric tons. May 2017 imports were up 20.5% from one year ago, and down 14% from three years ago (International Trade Administration 2017). This trend may correlate with reduced domestic demand for coking coal from West Virginia but the net effect is uncertain due to recent upticks in exports of coking coal.

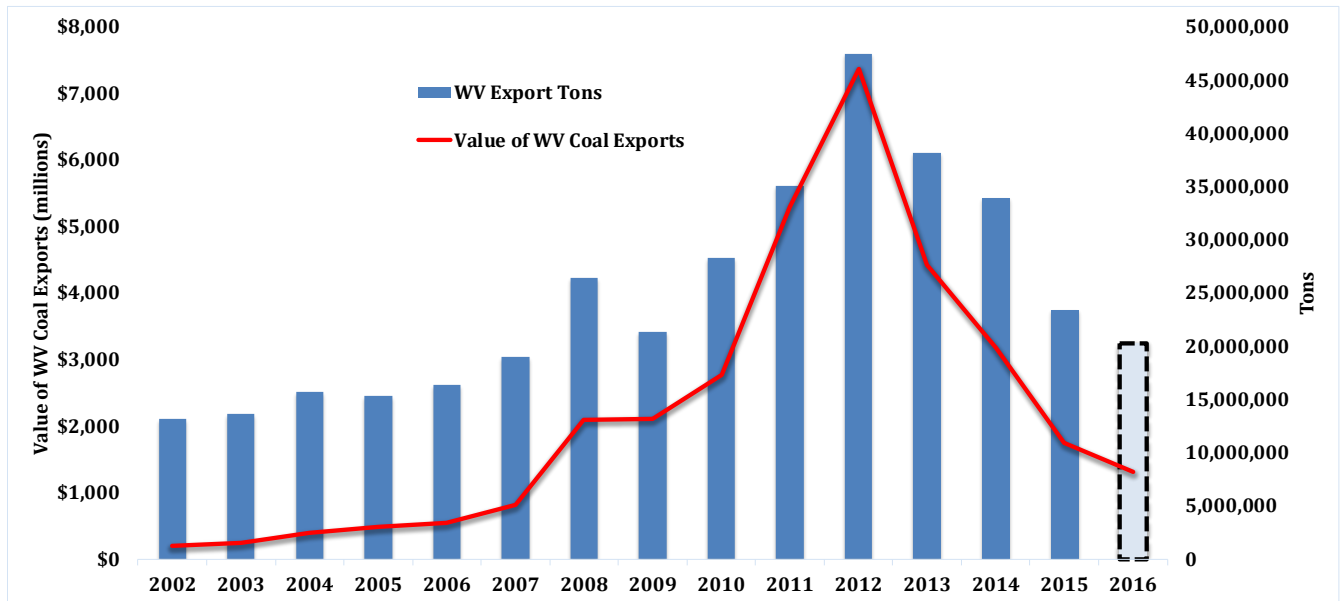
Exports

The nation’s coal exports fell again in 2016, to 60 million short tons, down from about 74 million short tons in 2015.² The EIA AEO 2017 Reference Case projects total U.S. coal exports to rise after 2017.

The value of coal exports from West Virginia fell to \$1.3 billion in 2016, from \$1.7 billion in 2015. Despite another year of declining coal exports, both in value and tonnage, the state maintained exports to many countries in North America, Europe, South America, Africa and Asia. The top five importing countries by value were India, Canada, Brazil, the Netherlands and Ukraine (ITA 2017). The following figure shows the value of West Virginia-based coal exports and associated tonnage from 2002 to 2016.

² 2016 data for coal export tonnage by U.S. state of origin has not yet been released. CBER estimates West Virginia’s exports based on historical shares of total exports and the value of coal exports from the state.

Figure 3: Value and Tonnage of West Virginia Coal Exports, 2002 to 2016



Source: (EIA 2017) (ITA 2017); 2016 Export tonnage estimated by CBER.

Component Forecasts

Energy Information Administration (EIA)

Publication: Annual Energy Outlook 2017

Date: January 2017

Forecast Horizon: 2017-2050

Region(s): Northern Appalachia, Central Appalachia

The EIA provides a forecast of coal production by region in its 2017 Annual Energy Outlook, projecting through 2050 (EIA 2017). This projection is generated using the National Energy Modeling System (NEMS). NEMS uses a market-based approach that balances energy supply and demand while considering regulations and industry standards.

The EIA's forecasts for Northern and Central Appalachia are used to forecast West Virginia coal production. The Northern Appalachia region includes Pennsylvania, Maryland, Ohio, and Northern West Virginia while Central Appalachia includes Virginia, Eastern Kentucky, Northern Tennessee, and Southern West Virginia. To forecast West Virginia coal production through 2040, the annual growth rate for Northern Appalachia is applied to historical production figures for Northern West Virginia and the annual growth rate for Central Appalachia is applied to Southern West Virginia figures.³ Only the EIA Reference Case figures are used, which assumes a continuation of current technological and demographic trends.⁴

Key Assumptions:

Macroeconomic Issues: Real GDP growth averages 2.2% per year from 2016 to 2040.

Coal Prices: EIA expects Northern Appalachian coal prices to be relatively flat through 2025 and to increase thereafter, from \$56.91 in 2016 to \$65.76 by 2040. Central Appalachian prices are projected to decline and return to current levels by 2026 and then to both increase and decrease slightly through 2040, from \$66.48 in 2016 to \$67.46 in 2040.

³ For more information on the adaptation of the EIA's forecasts, see Appendix A.

⁴ The EIA's 2017 Annual Energy Outlook includes several cases: Reference Case, No Clean Power Plan Case, High and Low Economic Growth Cases, High and Low World Oil Price Cases, and High and Low Oil and Gas Resource and Technology Cases.

Natural Gas Prices: Henry Hub⁵ spot prices for natural gas averaged \$2.63 per million Btu in 2015 and \$2.52 per million Btu in 2016 in real \$2016.⁶ Prices are expected to be about \$3.00 in 2016 and rise thereafter at an annual rate of 2.5 percent, resulting in an average expected price of \$5.83 per million Btu in 2040.

Electricity: U.S. use of coal for production of electricity is expected to decline by 1.1% annually from 2016 to 2050. Coal-fired generating capacity is expected to decrease at a rate of 1.5 percent per year through 2050. By comparison, combined-cycle (natural gas) capacity is projected to increase by 1.5 percent per year and renewable capacity by 2.4 percent per year.

Industrial/Commercial: The industrial sector is expected to see gradual declines in coal consumption of 1.1 percent per year through 2050. Metallurgical coal use is projected to decrease faster than other industrial use. The commercial sector is expected to maintain flat coal consumption throughout the forecast period.

Exports: U.S. coal exports are projected to reach a low of 52 million tons in 2017 and then rise throughout the forecast period to 85 million tons in 2050.

Environmental: The AEO2017 Reference case includes the Clean Power Plan (CPP) and assumes that states select the mass-based limits on CO₂ emissions. The CPP, which is currently stayed pending judicial review, requires states to develop plans to reduce CO₂ emissions from existing generating units that use fossil fuels.

⁵ The Henry Hub in Louisiana is the delivery point for the natural gas futures contract on the New York Mercantile Exchange.

⁶ Henry Hub spot prices are listed in real dollars in 2016. Nominal prices from previous years are inflation-adjusted to the equivalent dollar value in the year 2016.

Energy Ventures Analysis (EVA)

Publication: EVA Long-Term Forecast

Date: July 2017

Forecast Horizon: 2017-2040

Region(s): West Virginia

EVA utilizes the AURORAxmp 24/7 dispatch model (which EVA licenses) to calculate electricity generation by fuel type. The forecast reflects the least cost dispatch solution consistent with the operating parameters of individual units. Existing generation, planned generation which is deemed to be likely to be constructed, and announced retirements are reflected. In addition, the model adds and retires capacity in an economic manner and as required by law.

Key Assumptions:

Macroeconomic Issues: GDP growth is expected to average 2.1 % per year through 2040.

Coal Prices: Coal prices for both Northern and Central Appalachia are expected to recover from the very low prices in 2015/2016 although the recovery will take some time. By 2040, prices from both regions are expected to be in the \$50-57 per ton range in real 2017 dollars and \$79-90 per ton range in nominal dollars.

Natural Gas Prices: Gas prices are expected to increase through 2040 resulting in a price of \$4.65 per MMBtu (2017\$) in 2040.

Electricity: Growth in electricity demand is expected to average 0.5% per year through 2040. Demand for Appalachian coal by the electricity sector is projected to fall 11% between 2016 and 2040. With the retrofit of technologies, coal supply has become fungible meaning demand can switch between coal supply regions (e.g., Northern Appalachia and Illinois Basin) based upon the relative competitiveness of each. Future demand which is based upon an equilibrium analysis may shift between supply regions.

Industrial/Commercial: Non-coke industrial demand for Appalachian coal is projected to fall by about 44% between 2016 and 2040. Demand for metallurgical coal from Northern and Central (primarily) Appalachia during this same period is projected to fall by about 3%.

Exports: The level of exports is affected by the relative strength of the U.S. dollar particularly with respect to the Australian dollar as global coal trade is U.S. dollar denominated and Australia is the largest exporter of bituminous coals. Steam coal exports

from Northern and Central Appalachia which had a recent peak in 2012 (when the U.S. dollar was relatively weak) are projected to decline by about 36% between 2016 and 2040. The decline reflects the relative lack of competitiveness of Central Appalachia steam coals in the global market. Steam coal exports overall could increase if one or more announced export terminals are built in the Pacific Northwest allowing competitive delivery of Powder River Basin coals into the Pacific market. Met coal exports from Northern Appalachia and Central and Southern Appalachia peaked in 2011 and are projected to decline by about 20% between 2016 and 2040. Two market events in the last 12 months caused global prices to increase and spurred significant metallurgical coal mine investment in West Virginia.

Environmental: Phase I of the Cross-State Air Pollution Rule (CSAPR) went into effect January 1, 2015; Phase II went into effect January 1, 2017. The Mercury and Air Toxics Standards (MATS) went into effect April 2015 with a liberal one year extension. Section 316(b) of the Clean Water Act goes into effect with 2019 compliance for minor intake modifications and 2022 compliance for those requiring cooling towers. Coal Combustion Residuals (CCR) goes into effect by 2020. Conversion to dry ash handling is assumed by 2022 and use of lined landfills is assumed for subsequent ash disposal. National Ambient Air Quality Standards (NAAQS) revisions will include fine particulate and ozone standards. SCR's will be required on all units for NOx. Regional haze compliance using Best Available Retrofit Technology will go into effect in 2020 excepting any announced settlements. Greenhouse Gas New Source Performance Standard is assumed to limit ability to add new coal-fired generation absent partial carbon capture and sequestration or co-firing with gas. The modeling does not assume either the Clean Power Plan (CPP) or Effluent Limitation Guidelines (ELGs) going into effect due to actions the new administration in Washington have taken to eliminate/revise these rules. Regional CO2 programs (i.e., RGGI and AB32) are assumed to continue.

Marshall University Center for Business and Economic Research (CBER)

Publication: CBER West Virginia Coal Production Forecast 2017

Date: July 2017

Forecast Horizon: 2016-2040

Region(s): West Virginia

The CBER forecast of West Virginia total coal production is an econometric model based on quarterly coal production from 1984 through 2016. The CBER forecast uses an averaging approach based on two separate long-term forecasts (through 2040). Both models incorporate a mid/short-term forecast (through 2027) based largely on the market for thermal coal produced in the State. One short-term model treats 2009 as a structural break in the market⁷ while the other uses the differential between natural gas and coal prices delivered to the power generation sector to explain changes in production⁸. To create the initial short-term forecasts, quarterly changes in total coal production were modeled with a vector autoregression (VAR) approach based on historical demand for West Virginia-sourced coal in regional power generation. For years beyond 2027, the forecast utilizes an autoregressive approach, which estimates future changes in total coal production based on historical patterns.

Key Assumptions:

Macroeconomic Issues: Although not explicitly modeled, moderate average annual GDP growth rates of about 2 to 2.5% per year are expected, consistent with other macroeconomic forecasts.

Natural Gas Prices: CBER uses the EIA's price forecasts to represent future expectations of the coal-gas price differential for this model. This differential has been very small, or even negative, in recent years but is expected to widen through 2040.

Electricity: Demand for West Virginia coal by the electricity sector is not forecasted explicitly in this model, although demand is expected to be steady for the next few years.

Exports: Exports are also not explicitly modeled in either forecast. However, in the mid to long-term moderate recovery in export markets for West Virginia coal is expected to mitigate some of the decline in demand from the regional power generation sector.

⁷ Dummy variables were included in the model to identify 2009 and later years as being fundamentally different than prior years in terms of underlying factors affecting coal production in West Virginia.

⁸ Dummy variables were assigned to quarters where natural gas prices were relatively low compared to coal prices.

Environmental: Expectations regarding the Clean Power Plan and other environmental legislation affect the demand for West Virginia coal. While environmental policy is not an explicit factor in the CBER forecast, changes in behavior due to the actual and expected impacts of legislation are present in the historical production data utilized in the model.

West Virginia University Bureau for Business and Economic Research (BBER)

Publication: WVU BBER Coal Production Forecast 2017

Date: June 2017

Forecast Horizon: 2017-2040

Region: Northern West Virginia and Southern West Virginia

The WVU Bureau of Business and Economic Research Coal Production Forecast is an econometric model based upon changes in factors that affect the demand and price for coal sourced from mines in Northern and Southern West Virginia between 1985 and 2016. Historical data on coal prices, production and other energy-related data are obtained from a variety of Energy Information Administration reports. Forecasts for the model's US-specific explanatory variables were taken from the IHS May 2017 Long-Term Forecast and the 2017 Annual Energy Outlook from the Energy Information Administration. (West Virginia University 2017)

Key Assumptions:

Macroeconomic Issues: Expected annual real GDP growth is 2.0% through 2040.

Coal Prices: Inflation-adjusted coal prices are expected to increase in both regions, reaching \$71 per short ton (in 2016 dollars) in Northern West Virginia and \$70 per short ton in Southern West Virginia - averaged for metallurgical and thermal coal. The US average price is expected to rise to \$42 by 2040.

Natural Gas Prices: National real natural gas prices (2016 dollars) paid by utilities are expected to increase at an average annual rate of 1.2% per year between 2017 and 2040, reaching an inflation-adjusted amount of just over \$4.70/MMBtu by 2040.

Electricity: Total U.S. electricity generation is expected to increase 0.7 percent per year between 2017 and 2040. Coal-fired plants will account for a generally declining share of capacity during the outlook period as no new coal plants are constructed and additional capacity is retired. Coal will account for an average of 27 percent of electricity generated in states that source coal from West Virginia by the late-2030s.

Industrial/Commercial: Total commercial/industrial demand for West Virginia coal is expected to decline 0.9 percent per year over the forecast horizon. Most of this decline will be driven by non-coke coal C&I use due to energy efficiency programs and natural gas conversion.

Exports: The baseline forecast assumes 2012 was the all-time peak for West Virginia coal export activity, and both metallurgical and steam coal exports from the state will remain

below these levels throughout the outlook period. Total exports are expected to increase 43 percent cumulatively between 2017 and 2040. Southern West Virginia will continue to account for most the State's coal exports

Environmental: The baseline forecast incorporates only laws that are in place and not currently subject to legal challenges or under delayed implementation by the Trump Administration. Coal-fired generation that was retired between the 2012-2016 MATS rule implementation and compliance period is expected to remain off line. The Clean Power Plan, Stream Protection Rule, New Source Performance Standards rules and any other finalized rules are not incorporated into the baseline.

Consensus Forecast

The four long-term forecasts produced by EIA, EVA, CBER, and WVU are combined to create the Consensus Forecast for West Virginia Coal Production. A weighted average is used to combine the four projections as follows:

$$\begin{aligned}
 WV\ Coal\ Production_t & \\
 &= w_{EIA} * EIA\ Production_t + w_{EVA} * EVA\ Production_t + w_{CBER} \\
 &\quad * CBER\ Production_t + w_{WVU} * WVU\ Production_t
 \end{aligned}$$

For the 2017 forecast, equal weights (w_i) of .25 are assigned to each forecast. This weight was selected due to variation in the timing of forecasts produced by each of the forecasting groups. Some forecasts are produced in the beginning of the year while others are produced mid-year, which can affect the accuracy of a forecast.

The Consensus Forecast for West Virginia Coal Production shows production levels increasing in 2017, followed by several years of moderate rises and falls in production. Production is expected to return to 2016 levels around 2026 and then decline slowly thereafter. Between 2030 and 2040, production is expected to be stable, at around 76 million tons. The results are shown below in table and figure format.

Figure 4: Consensus and Component Forecasts 2017 (million tons)

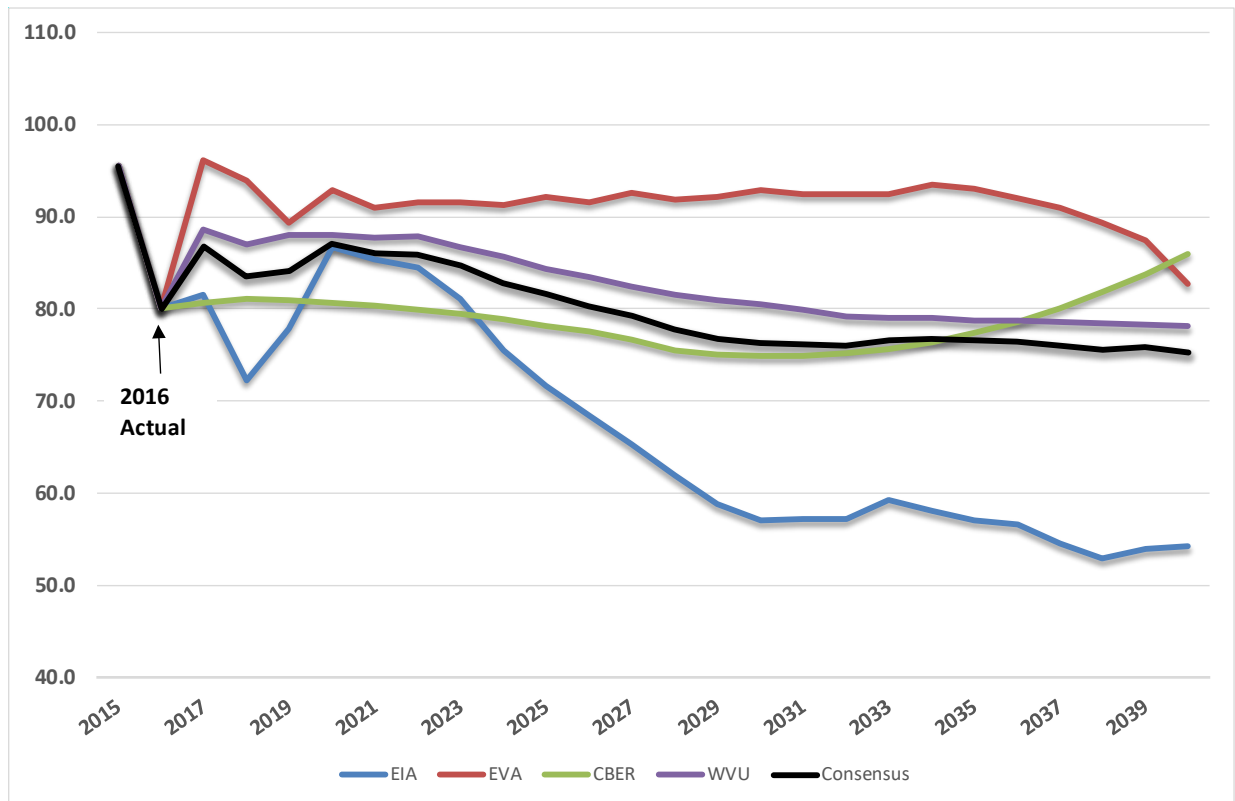


Table 1: Consensus Forecast for West Virginia Coal Production 2017

Year	Historical	2017 Forecasting Group				2017 Consensus	2016 Consensus	2015 Consensus	2014 Consensus	2013 Consensus	2012 Consensus
		EIA	EVA	CBER	WVU						
2011	134.7										
2012	120.1										130.5
2013	112.8									117.4	123.1
2014	111.9							112.4	117.8		118.1
2015	95.5						107.2	106.9	113.9		113.1
2016	80.1						79.5	103.4	101.4	112.2	110.1
2017		81.6	96.1	80.7	88.6	86.8	76.9	101.7	103.0	113.5	105.8
2018		72.3	93.9	81.1	87.0	83.6	74.7	102.7	103.3	108.7	102.6
2019		77.9	89.4	81.0	88.0	84.1	76.7	104.8	102.4	105.6	100.4
2020		86.7	92.9	80.7	88.0	87.1	80.1	104.9	101.5	105.4	96
2021		85.3	91.0	80.3	87.7	86.1	78.6	104.4	100.9	104.8	96.73
2022		84.5	91.6	79.9	87.8	85.9	75.7	103.4	100.7	106.6	96.9
2023		81.0	91.5	79.4	86.7	84.7	73.1	102.8	100.0	107.6	95.1
2024		75.4	91.2	78.8	85.7	82.8	70.3	102.8	99.9	107.2	95
2025		71.6	92.1	78.2	84.3	81.5	69.1	102.4	99.2	106.3	94.9
2026		68.5	91.6	77.5	83.4	80.2	67.9	102.2	98.2	106.3	95.6
2027		65.3	92.7	76.7	82.5	79.3	66.2	101.7	98.1	106.1	98.1
2028		61.9	91.9	75.5	81.6	77.7	64.5	101.2	97.1	105.4	97
2029		58.8	92.2	75.1	81.0	76.8	63.0	100.9	97.1	105.0	97.3
2030		57.0	92.9	74.8	80.5	76.3	61.7	100.9	96.5	104.4	99.2
2031		57.3	92.5	74.9	79.9	76.1	62.1	100.5	96.3	103.5	
2032		57.2	92.4	75.2	79.2	76.0	62.9	100.9	95.1	101.9	
2033		59.3	92.5	75.7	79.1	76.6	63.3	99.8	94.2	99.6	
2034		58.1	93.5	76.4	79.0	76.7	63.1	98.3	93.7	99.0	
2035		57.1	93.0	77.4	78.7	76.6	62.5	97.3	91.6	97.3	
2036		56.6	92.0	78.7	78.8	76.5	62.3				
2037		54.6	91.0	80.1	78.6	76.1	60.4				
2038		52.9	89.3	81.8	78.4	75.6	59.7				
2039		53.9	87.4	83.8	78.3	75.8	58.6				
2040		54.2	82.8	86.0	78.1	75.3	57.1				

Summary

The 2017 West Virginia Consensus Coal Forecast figures are higher than the 2016 Consensus. The four component models incorporate a range of possible levels of West Virginia coal production over the next 24 years, with varying forecasts that illustrate the impact of various supply and demand variables and uncertainty over the continuation of recent trends. The consensus reduces uncertainty by combining the forecasts into one aggregate projection where West Virginia coal production increases to 87 million tons in 2017, remains above 2016 levels through 2025, and then declines slowly through 2040.

Of the four projections, the EIA's is the only one that is lower than the 2016 forecast. The other three models project higher production of West Virginia coal compared to the 2016 forecasts. The primary reason for the higher projections is likely the assumed suspension of implementation of the Clean Power Plan (except by EIA) rule for regulating carbon dioxide emissions from power plants and recent upticks in output.

The EIA projects total coal consumption in the U.S. electric power sector to be lower than in its AEO2016 analysis due to the impact of the Clean Power Plan and to projected natural gas prices that are slightly lower than its AEO 2016 assumptions, particularly during the 2020s. EIA projects a decline in consumption of coal for power generation at a rate of 1.0 percent per year through 2050. Coal production is projected to decline faster in Central Appalachia than in Northern and Southern Appalachia, at a rate of 1.8 percent per year through 2040. Northern production is projected to decline by 1.5 percent per year.

The EVA model projects a return to 2015 production levels in 2017 due to short-term variables that are favorable to West Virginia production. These include higher demand and higher prices for met coal in the global market and rising domestic natural gas prices. Production is projected to fall after 2017 but to remain about 2016 levels through 2040.

WVU's short-term forecast projects improved global conditions for metallurgical coal will boost Southern West Virginia production while demand for thermal coal from Northern West Virginia will be stable. Domestic industrial use of coal is expected to increase through 2018, due in large part to an uptick in steel production. WVU's long-term forecast projects total coal production to be stable through the early 2020s and then fall through 2040.

The CBER model is influenced by inclusion of 2016 coal production and demand data which added another year of decline to already declining historical trends. However, the trend is tempered by refinement of model specification that accounts for quarterly coal and gas price differentials since 2002 and an expectation of larger differentials throughout the forecast.

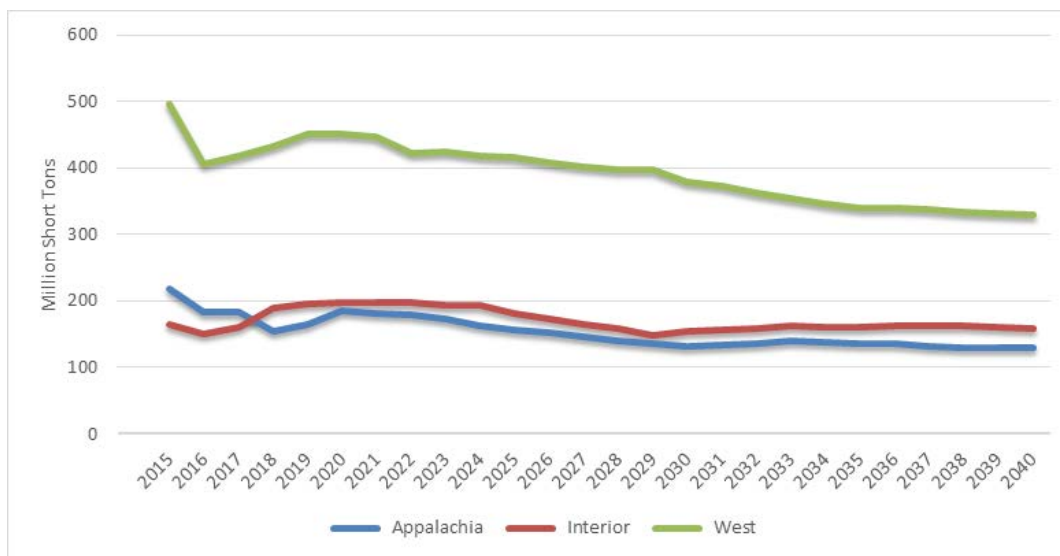
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Appendix A: Forecasts for Northern and Southern West Virginia

The EIA's 2017 AEO forecasts Appalachian coal production to decline steadily through 2040, with some stability in the 2017 to 2021 and 2028 to 2032 time periods. As shown below, Interior⁹ production is projected to surpass Appalachian production in 2017.

Figure 5: EIA Forecasted Coal Production, by Region



Appalachia is split into Northern, Central, and Southern regions. Northern Appalachia includes Pennsylvania, Maryland, Ohio, and Northern West Virginia. Central Appalachia includes Virginia, Eastern Kentucky, Northern Tennessee, and Southern West Virginia.

Table 2: EIA Growth Rates for Coal Production in Northern and Central Appalachia

	2016	2017	2018	2019	2020
Northern Appalachia	0.6%	5.0%	-29.8%	6.1%	16.3%
Central Appalachia	-17.2%	-9.4%	12.1%	9.1%	7.5%
	2021	2022	2023	2024	2025
Northern Appalachia	-4.7%	-1.1%	-4.6%	-3.7%	-2.6%
Central Appalachia	1.0%	-0.9%	-3.6%	-9.5%	-7.1%
	2026	2027	2028	2029	2030
Northern Appalachia	-2.1%	-3.0%	-3.2%	-3.6%	-2.6%
Central Appalachia	-6.4%	-5.9%	-7.2%	-6.4%	-3.7%
	2031	2032	2033	2034	2035
Northern Appalachia	3.0%	2.2%	3.1%	-1.2%	-1.6%
Central Appalachia	-2.1%	-2.4%	4.3%	-3.3%	-1.9%
	2036	2037	2038	2039	2040
Northern Appalachia	-1.8%	-1.6%	-1.5%	4.1%	1.4%
Central Appalachia	0.5%	-5.9%	-4.9%	-0.9%	-0.7%

⁹ Arkansas, Illinois, Indiana, Iowa, Kansas, W. Kentucky, Louisiana, Mississippi, Missouri, Oklahoma, and Texas.

EIA's forecasts for these regions are applied to Northern and Southern West Virginia production to obtain EIA's forecast for West Virginia. Growth rates for Northern Appalachia are used to project Northern West Virginia coal production, and rates for Central Appalachia are applied to Southern West Virginia. 2016 figures are actual production.

Table 3: EIA Forecast Applied to West Virginia Coal Production by Region (million short tons)

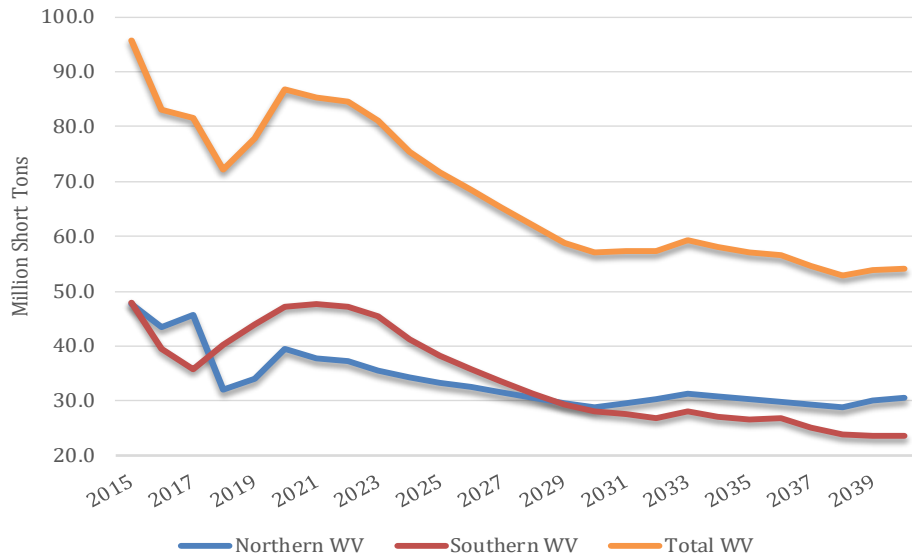
	<u>2016</u>	<u>2017</u>	<u>2018</u>	<u>2019</u>	<u>2020</u>
Northern WV	43.5	45.7	32.0	34.0	39.5
Southern WV	<u>36.6</u>	<u>35.9</u>	<u>40.2</u>	<u>43.9</u>	<u>47.2</u>
Total WV	80.1	81.6	72.3	77.9	86.7
	<u>2021</u>	<u>2022</u>	<u>2023</u>	<u>2024</u>	<u>2025</u>
Northern WV	37.7	37.3	35.6	34.3	33.4
Southern WV	<u>47.6</u>	<u>47.2</u>	<u>45.5</u>	<u>41.2</u>	<u>38.2</u>
Total WV	85.3	84.5	81.0	75.4	71.6
	<u>2026</u>	<u>2027</u>	<u>2028</u>	<u>2029</u>	<u>2030</u>
Northern WV	32.7	31.7	30.7	29.6	28.8
Southern WV	<u>35.8</u>	<u>33.7</u>	<u>31.3</u>	<u>29.3</u>	<u>28.2</u>
Total WV	68.5	65.3	61.9	58.8	57.0
	<u>2031</u>	<u>2032</u>	<u>2033</u>	<u>2034</u>	<u>2035</u>
Northern WV	29.7	30.3	31.2	30.9	30.4
Southern WV	<u>27.6</u>	<u>26.9</u>	<u>28.1</u>	<u>27.2</u>	<u>26.7</u>
Total WV	57.3	57.2	59.3	58.1	57.1
	<u>2036</u>	<u>2037</u>	<u>2038</u>	<u>2039</u>	<u>2040</u>
Northern WV	29.8	29.4	28.9	30.1	30.6
Southern WV	<u>26.8</u>	<u>25.2</u>	<u>24.0</u>	<u>23.8</u>	<u>23.6</u>
Total WV	56.6	54.6	52.9	53.9	54.2

EIA projects coal mining productivity (short tons per miner hour) to decline for both Northern and Central Appalachian supply through 2040. Central Appalachian productivity is projected to fall from 2.2 tons per miner hour in 2014 to around one ton per miner hour by 2040. Northern Appalachian productivity is projected to fall from around 3.4 tons to 2.6 tons per miner hour during the same period.

Correspondence with EIA indicates a likelihood that its forecast for Northern Appalachian production for the year 2018 will likely be higher in the AEO2018. In the AEO2017, a short-term benchmark window covers the years 2015, 2016, and 2017 but not 2018. In its next forecast, a more immediate recovery in production will be reflected in 2018, whereas the AEO2017 projects in a recovery in 2019-2020 based on an assumption for increases in gas prices in the 2019-2021 period. Inclusion of 2018 in the short-run forecast will cause higher projections that incorporate trends from 2017.¹⁰

¹⁰ Personal correspondence with the EIA Office of Electricity, Coal, Nuclear, and Renewables Analysis on 8/29/17.

Figure 6: EIA’s Appalachian Forecasts Applied to West Virginia Coal Production by Region



WVU’s regional forecasts for Northern and Southern West Virginia Coal Production expect Northern output to be quite flat from 2017 through 2040 at around 46 million tons. Southern output is projected to be flat from 2017 through 2022, at around 40 million tons, and then fall to around 32 million tons by 2040 (West Virginia University 2017).

As noted by WVU, Southern West Virginia mines accounted for more than two-thirds of total state coal production in 2011, but that share fell to 46 percent in 2016. By contrast, 2016 output at Northern West Virginia remained 8 percent above 2008 levels even with a decline in production during 2016 (West Virginia University 2017).

Appendix C

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
3-D COAL CO.	52-72	6/1/77	Mingo
SLAB FORK COAL CO.	U-10-83	3/1/84	Raleigh
SLAB FORK COAL COMPANY	UO-556	4/1/84	Raleigh
LOW ASH COAL CO.	UO-389	2/1/85	Wyoming
LOBO CAPITOL, INC.	UO-204	8/7/85	Preston
DLM COAL CO.	138-74	9/3/85	Upshur
DLM COAL CO.	2-80	9/13/85	Upshur
DLM COAL CO.	I-239	9/16/85	Upshur
DLM COAL CO.	P-426	9/16/85	Upshur
DLM COAL CO.	I-739	9/16/85	Upshur
DLM COAL CO.	187-77	9/16/85	Upshur
DLM COAL CO.	164-77	9/16/85	Upshur
DLM COAL CO.	UO-231	9/16/85	Upshur
DLM COAL CO.	135-78	9/16/85	Upshur
DLM COAL CO.	R-423	9/16/85	Upshur
DLM COAL CO.	1-78	9/16/85	Upshur
DLM COAL CO.	12-78	9/16/85	Upshur
DLM COAL CO.	58-77	9/16/85	Upshur
DLM COAL CO.	H-232	10/1/85	Upshur
DLM COAL CO.	23-76	10/1/85	Upshur
DLM COAL CO.	71-75	10/1/85	Upshur
RALEIGH COMMERCIAL DEVEVELOPMENT	S-23-77	1/16/87	Fayette
RALEIGH COMMERCIAL DEVEVELOPMENT	187-74	1/16/87	Fayette
RALEIGH COMMERCIAL DEVEVELOPMENT	149-79	1/21/87	Fayette
RALEIGH COMMERCIAL DEVEVELOPMENT	P-61-83	4/1/87	Fayette
PRINCESS CINDY MINING, INC.	30-79	5/26/87	Fayette
STAR INDUSTRIES, INC.	R-3-81	5/27/87	Raleigh
DUSTY COALS, INC.	S-119-85	8/10/87	Nicholas
SAN SUE COAL CO.	19-75	1/13/89	Nicholas
GREENDALE COALS, INC.	U-63-84	2/10/89	Clay
BLACK DIAMOND MINING CO.	13-79	4/1/89	Nicholas
X W CORP.	S-6013-87	4/20/89	Clay
F.G.M. ENERGY, INC.	S-5023-88	10/1/89	Logan
MCALPIN PROCESSING, INC.	S-3013-89	11/1/89	Raleigh
MCALPIN PROCESSING, INC.	R-3050-87	11/1/89	Raleigh
CATHERINE ENTERPRISES, INC.	I-544	11/14/89	Nicholas
AMERICAN MINERALS CORP.	S-6005-87	11/20/89	Kanawha
ROYAL COAL CO.	P-688	1/1/90	Fayette
BENHAM GROUP, LTD.	120-79	1/1/90	Boone
DAUGHERTY COAL COMPANY, INC.	40-73	3/9/90	Preston
E. J. & L. CO., INC.	P-3051-88	5/1/90	Raleigh
EAGLE ENERGY, INC.	U-200-83	5/1/90	Mingo
E. J. & L. CO., INC.	S-3041-87	5/9/90	Raleigh
METCO MINING CO.	P-730	5/23/90	Logan
METCO MINING CO.	UO-581	5/23/90	Logan
METCO MINING CO.	UO-463	5/23/90	Logan

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
LILLYBROOK COAL CO.	S-86-85	6/1/90	Raleigh
CANION COAL CO.	U-2-85	8/3/90	Clay
CAPPELLARI, INC.	S-78-78	2/21/91	Nicholas
ERLON COAL CO.	D-5-82	4/16/91	Fayette
JERICO CONSTR. AUGERING	S-4026-88	7/17/91	McDowell
GREAT MTN. COAL CO.	160-77	7/19/91	Fayette
GREAT MTN. COAL CO.	114-79	7/19/91	Fayette
JOHN GALT	O-40-82	8/29/91	Logan
JOHN GALT	O-45-82	8/29/91	Logan
JOHN GALT	D-76-82	8/29/91	Logan
KESSLER COALS, INC.	S-131-82	8/30/91	Boone
HARVEY ENERGY CORP.	S-3025-88	9/5/91	Fayette
HARVEY ENERGY CORP.	S-33-81	9/16/91	Fayette
HARVEY ENERGY CORP.	S-35-81	9/16/91	Fayette
HARVEY ENERGY CORP.	S-3030-89	9/16/91	Fayette
HARVEY ENERGY CORP.	S-3081-87	9/16/91	Fayette
HARVEY ENERGY CORP.	S-54-84	9/25/91	Fayette
ARARAT COAL CO.	U-4005-90	10/1/91	McDowell
G & L COAL CO.	S-86-83	10/1/91	Raleigh
C & D TRUCKING CO.	U-4017-89	11/1/91	McDowell
KESSLER COALS, INC.	U-36-85	11/1/91	Boone
KAYDEE CONSTRUCTION CO.	S-3019-87	11/11/91	Fayette
ZY COAL CO.	70-79	12/12/91	Clay
ZY COAL CO.	91-79	12/12/91	Clay
ZY COAL CO.	S-30-80	12/12/91	Clay
CRANE COAL CO., INC.	S-27-83	1/3/92	Preston
KESS COALS, INC.	O-39-85	2/1/92	Boone
MERIDAN OF VIRGINIA, INC.	S-4034-89	2/28/92	McDowell
MERIDAN OF VIRGINIA, INC.	S-4002-90	2/28/92	McDowell
MERIDAN OF VIRGINIA, INC.	S-4015-89	3/4/92	McDowell
NELLIS CORP.	U-5008-90	4/7/92	Boone
NELLIS CORP.	U-5009-90	4/7/92	Boone
F & M COAL CO.	S-1026-87	4/30/92	Preston
DAUGHERTY COAL COMPANY, INC.	188-75	5/19/92	Preston
KODIAK LAND CO., INC.	S-3052-87	5/19/92	Fayette
K-STEELE CORP.	S-6-83	5/19/92	Fayette
BULL RUN MINING COMPANY, INC.	EM-66	6/9/92	Preston
AMANDA NICOLE FUELS, INC.	S-1018-88	6/12/92	Preston
VALLEY MINING CO., INC.	S-64-83	6/12/92	Monongalia
INTERLAND RESOURCES, INC.	S-4009-91	7/8/92	McDowell
LAWSON ENTERPRISES	U-4011-90	7/10/92	McDowell
FIRST BIG MTN. MINING CO.	U-6017-88	7/27/92	Kanawha
K-STEELE CORP.	S-121-82	9/8/92	Fayette
MERIDAN OF VIRGINIA, INC.	S-4005-89	9/14/92	McDowell
MERIDAN OF VIRGINIA, INC.	S-4010-88	9/14/92	McDowell
HARVEY ENERGY CORP.	S-3070-86	9/16/92	Fayette

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
F & M COAL CO.	46-79	9/24/92	Preston
F & M COAL CO.	S-1006-88	9/24/92	Preston
CRADDOCK & SON COAL CO.	S-68-83	10/1/92	Nicholas
USE COAL, INC.	S-2016-86	10/2/92	Lewis
KELLEY COAL CO.	S-68-82	10/21/92	Harrison
INTERLAND RESOURCES, INC.	S-4016-90	10/26/92	McDowell
BEECH GROVE COAL CO.	U-85-83	10/28/92	McDowell
BEECH GROVE COAL CO.	UO-439	10/28/92	McDowell
ED-E DEVELOPMENT CO., INC.	S-10-81	1/23/93	Monongalia
ED-E DEVELOPMENT CO., INC.	S-1032-86	3/29/93	Preston
H & D COAL CO.	S-3033-87	4/28/93	Greenbrier
PROSPERITY ENERGY, INC.	S-6001-88	5/26/93	Clay
TERRA CONTRACTORS	P-1022-88	6/3/93	Marion
CRADDOCK & SON COAL CO.	S-3020-88	6/14/93	Fayette
GRINDSTONE MINING CORP.	U-3078-87	6/30/93	Fayette
51 SYSTEMS	O-22-83	6/30/93	Marion
H & D COAL COMPANY	U-69-85	7/2/93	Greenbrier
EASTERN ENERGY INVEST.	U-6030-86	7/29/93	Kanawha
BARRENSHE COAL CO.	UO-694	8/17/93	McDowell
LOGAN COAL & EXP.	D-122-82	8/18/93	Kanawha
ALGOMA A & S, INC.	S-4015-90	9/2/93	McDowell
CAPITOL FUELS, INC.	O-122-83	9/7/93	Kanawha
K & B COAL CO.	U-3054-86	11/15/93	Nicholas
HAWKS NEST MINING CO.	O-1-81	12/7/93	Kanawha
PRINCESS SUSAN COAL CO.	S-6-85	12/7/93	Kanawha
WINCHESTER COALS, INC.	O-52-83	12/7/93	Logan
WINCHESTER COALS, INC.	O-10-81	12/7/93	Lincoln
WINCHESTER COALS, INC.	D-23-81	12/7/93	Logan
PRINCESS SUSAN COAL CO.	S-32-83	12/7/93	Kanawha
PRINCESS SUSAN COAL CO.	S-6002-87	12/7/93	Kanawha
PRINCESS SUSAN COAL CO.	S-6033-86	12/7/93	Kanawha
CENTURY ENTERPRISES	S-58-82	1/6/94	Preston
ROCKVILLE MINING CO.	S-65-82	1/12/94	Preston
ROCKVILLE MINING CO.	65-78	1/12/94	Preston
MOUNTAIN LAUREL RES.	R-734	1/19/94	Summers
WILLIAMS CONSTRUCTION CO.	S-3079-86	1/21/94	Fayette
HARVEY ENERGY CORP.	P-3029-89	1/27/94	Fayette
HARVEY ENERGY CORP.	P-3053-88	1/27/94	Fayette
K-STEELE CORP.	P-47-83	1/27/94	Fayette
EASTERN ENERGY INVEST.	U-6012-88	1/28/94	Boone
M & T MINING CO.	S-3026-89	2/9/94	Nicholas
PRESTON ENERGY, INC.	UO-235	3/18/94	Preston
VMS, LTD.	S-1045-87	4/4/94	Monongalia
EASTERN ENERGY INVEST.	S-6029-86	5/2/94	Kanawha
PRESTON ENERGY, INC.	UO-429	5/5/94	Preston
VALLEY CARBON, INC.	S-3030-90	5/6/94	Kanawha

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
DVR MINING INC.	U-4009-88	5/24/94	McDowell
ROCKVILLE MINING CO.	S-105-82	5/24/94	Preston
PRESTON ENERGY, INC.	O-86-82	5/25/94	Preston
KEENCO COAL CO.	U-106-83	6/28/94	Mingo
REGENCY FINANCIAL SERVICES	P-723	7/7/94	McDowell
DREAMLAND LTD.	I-650	7/29/94	Fayette
MARTIN SALES & PROCESSING	U-5024-90	8/1/94	Mingo
ELK RIVER SEWELL COAL CO.	S-1021-90	8/3/94	Webster
DOUBLE N MINING CO.	S-3055-88	8/9/94	Greenbrier
OAK HILL EXCAVATING	S-3059-88	8/9/94	Nicholas
OAK HILL EXCAVATING	S-3011-87	8/9/94	Nicholas
ELK RIVER SEWELL COAL CO.	O-127-83	8/12/94	Webster
L & R EQUIPMENT CO.	S-3058-86	8/19/94	Nicholas
BRADY CLINE COAL CO.	EM-97	8/23/94	Nicholas
GAULEY COAL SALES CO.	O-43-84	8/23/94	Nicholas
WILLIAMS CONSTRUCTION CO.	P-3015-91	8/29/94	Fayette
GARY COAL SALES, INC.	U-58-84	8/30/94	McDowell
GARY COAL SALES, INC.	S-4030-89	8/30/94	McDowell
MOUNTAIN LAUREL RES.	P-751	9/8/94	Summers
PINNACLE MINING COMPANY OF NORTHERN WV	S-62-85	9/12/94	Monongalia
PINNACLE MINING COMPANY OF NORTHERN WV	S-1028-86	9/12/94	Monongalia
PRESTON ENERGY, INC.	U-103-83	9/29/94	Preston
PRESTON ENERGY, INC.	U-43-84	9/29/94	Preston
PRINCESS SUSAN COAL CO.	S-76-82	10/4/94	Kanawha
OMEGA MINING CO. INC.	D-79-82	10/7/94	Monongalia
SUMMERSVILLE FIVE BLOCK	S-3051-88	11/1/94	Nicholas
SUMMERSVILLE FIVE BLOCK	O-100-83	11/1/94	Clay
REGENCY FINANCIAL SERVICES	U-93-84	11/17/94	Wyoming
MOUNTAIN LAUREL RES.	D-60-82	12/1/94	Fayette
MOUNTAIN LAUREL RESOURCES	D-54-82	12/1/94	Fayette
PINNACLE CREEK MINING CORP.	69-81	12/7/94	Wyoming
PINNACLE CREEK MINING CORP.	R-721	12/7/94	Wyoming
KMADER ENTERPRISES, INC.	U-3020-90	1/9/95	Clay
VICKIE ENERGY, INC.	U-53-85	1/11/95	Pocahontas
VICKIE ENERGY, INC.	S-3038-86	1/11/95	Nicholas
R & C LEASING, INC.	U-59-84	2/1/95	McDowell
SUMMERSVILLE FIVE BLOCK	O-66-82	2/15/95	Clay
B & S CONTRACTING, INC.	S-3031-87	3/9/95	Raleigh
COMFORT RUN COAL CO.	S-3028-89	3/10/95	Fayette
CUB BRANCH DEVELOPMENT	U-5035-87	4/4/95	Mingo
E & A COAL CO.	D-10-81	4/13/95	Raleigh
B & S CONTRACTING, INC.	O-3086-87	4/24/95	Nicholas
B & S CONTRACTING, INC.	U-3055-87	4/24/95	Nicholas
B & S CONTRACTING, INC.	P-645	4/24/95	Nicholas
B & S CONTRACTING, INC.	U-3016-86	4/25/95	Nicholas
VIRGIN COAL SALES, INC.	U-4028-92	5/2/95	McDowell

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
PHOENIX RESOURCES, INC.	S-462	5/12/95	Randolph
WILLIAMS CONSTRUCTION CO.	S-3028-90	5/22/95	Nicholas
WILLIAMS CONSTRUCTION CO.	S-3003-92	5/22/95	Nicholas
CHAFIN COAL CO.	U-70-85	7/11/95	Logan
CHAFIN COAL CO.	UO-21	7/11/95	Logan
CHAFIN COAL CO.	U-140-82	7/11/95	Logan
CHAFIN COAL CO.	D-13-82	7/11/95	Logan
CHAFIN COAL CO.	O-69-82	7/11/95	Logan
CHAFIN COAL CO.	D-18-82	7/11/95	Logan
CHAFIN COAL CO.	U-5027-86	7/11/95	Logan
B & S CONTRACTING, INC.	R-668	7/12/95	Nicholas
M & H COAL CO.	UO-406	7/13/95	Logan
M & H COAL CO.	U-144-83	7/13/95	Logan
POWELLTON CO.	P-5005-88	7/13/95	Mingo
RIDGEWAY DEV.	U-3037-89	10/12/95	Raleigh
WEST VIRGINIA ENERGY, INC.	O-32-83	10/25/95	Brooke
WEST VIRGINIA ENERGY, INC.	S-41-84	10/25/95	Brooke
T & T FUELS, INC.	EM-113	10/31/95	Preston
T & T FUELS, INC.	U-125-83	12/4/95	Preston
M & T MINING CO.	P-3032-90	1/31/96	Nicholas
JIM DANDY COALS INC.	U-77-85	2/27/96	Lewis
COAL ENTERPRISES, INC.	D-108-82	3/6/96	McDowell
IAEGER ENERGY CORP.	UO-155	3/8/96	McDowell
BARRETT FUEL CORP.	EM-133	3/15/96	Raleigh
BARRETT FUEL CORP.	P-731	3/15/96	Raleigh
BARRETT FUEL CORP.	R-737	3/15/96	Raleigh
RALPH KNICELEY CONSTRUCTION	S-2006-93	4/3/96	Randolph
RESOURCES DEVELOPMENT CORPORATION	R-4030-86	4/19/96	McDowell
SLATE CREEK ENERGY, INC.	U-4018-86	4/24/96	McDowell
G & L COAL CO.	S-3035-87	5/21/96	Fayette
G & L COAL CO.	U-3036-87	5/21/96	Fayette
MOUNTAIN TOP FUEL CO., INC.	Z-87-81	6/26/96	Lewis
COAL STRIPPING, INC.	S-1034-90	6/28/96	Monongalia
PAULEY LEASING CO., INC.	U-4029-89	7/3/96	McDowell
FITZPATRICK INDUSTRIES	S-3018-89	7/18/96	Fayette
GREEN MOUNTAIN ENERGY	O-3032-91	8/8/96	Raleigh
STONE COAL COMPANY	D-109-82	8/8/96	Wyoming
STONE COAL COMPANY	U-3024-88	8/26/96	Wyoming
STONE COAL COMPANY	U-3028-86	8/26/96	Raleigh
MERIT COAL COMPANY	U-4008-94	9/23/96	Mingo
AMIGO SMOKELESS COAL CO.	UO-623	10/16/96	Raleigh
AMIGO SMOKELESS COAL CO.	EM-71	10/16/96	Raleigh
WEST VIRGINIA ENERGY, INC.	S-20-83	10/17/96	Ohio
WEST VIRGINIA ENERGY, INC.	S-69-82	10/17/96	Ohio
SOUTHEAST LEASING, INC.	U-3003-89	10/24/96	Raleigh
SOUTHEAST LEASING, INC.	U-3023-87	10/24/96	Raleigh

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
SOUTHEAST LEASING, INC.	S-3024-87	10/24/96	Raleigh
ENERGY LEASING, INC.	I-750	10/24/96	Fayette
GREEN MOUNTAIN ENERGY	U-154-83	10/29/96	Raleigh
STONE COAL COMPANY	U-42-85	11/15/96	Raleigh
STONE COAL COMPANY	R-3025-87	11/15/96	Raleigh
GREEN MOUNTAIN ENERGY	U-4012-90	11/15/96	Wyoming
GREEN MOUNTAIN ENERGY, INC.	U-4007-91	11/15/96	Wyoming
WEST VIRGINIA ENERGY, INC.	S-1012-87	12/4/96	Ohio
KIDD'S ENERGY SALES	UO-383	12/10/96	McDowell
MOUNTAIN CARBON, INC.	O-137-83	12/10/96	Fayette
GREEN MOUNTAIN ENERGY	U-3053-88	1/10/97	Raleigh
MABEN ENERGY CORPORATION	UO-727	1/10/97	Wyoming
STONE COAL COMPANY	UO-252	1/10/97	Wyoming
ATLAS COAL LEASING, INC.	S-3021-89	1/10/97	Wyoming
WEST VIRGINIA ENERGY, INC.	S-29-80	1/23/97	Ohio
WEST VIRGINIA ENERGY, INC.	S-1071-86	1/23/97	Brooke
WEST VIRGINIA ENERGY, INC.	S-72-84	1/23/97	Ohio
WEST VIRGINIA ENERGY, INC.	S-55-85	1/23/97	Brooke
IAEGER ENERGY CORP.	U-231-83	2/3/97	McDowell
BICKFORD MINING INC.	U-44-83	2/5/97	Raleigh
MOUNTAIN MINERALS, INC.	U-225-83	2/19/97	Fayette
MOUNTAIN MINERALS, INC.	O-169-83	2/19/97	Fayette
BICKFORD MINING	U-78-85	3/12/97	Raleigh
J & D COAL CO.	S-44-84	3/12/97	Monongalia
J.A.L. COAL CO., INC.	S-23-82	3/12/97	Monongalia
GREEN MOUNTAIN ENERGY	U-4013-91	3/19/97	Wyoming
BARRETT FUEL CORPORATION	U-82-84	4/10/97	Boone
BARRETT FUEL CORPORATION	U-1-85	4/22/97	Boone
CUB BRANCH DEVELOPMENT	S-5034-87	9/10/97	Mingo
SPRING RIDGE COAL CO.	U-138-83	9/12/97	Webster
SPRING RIDGE COAL CO.	O-68-82	9/12/97	Webster
SPRING RIDGE COAL CO.	R-722	9/12/97	Webster
SPRING RIDGE COAL CO.	S-2034-88	9/12/97	Webster
SPRING RIDGE COAL COMPANY	U-2016-88	9/12/97	Webster
JO-LEE COAL COMPANY	UO-380	9/17/97	Harrison
HILO ENERGY CORP.	U-4019-92	10/20/97	McDowell
SHELL ENERGY COMPANY, INC.	U-1007-90	10/28/97	Harrison
MOUNTAINEER FUELS, INC.	U-3083-87	1/30/98	Nicholas
KEYSTONE COAL, INC.	U-5058-87	3/17/98	Mingo
KEYSTONE COAL, INC.	S-101-85	3/17/98	Mingo
KEYSTONE COAL, INC.	S-84-83	3/17/98	Mingo
KEYSTONE COAL, INC.	U-5045-87	3/17/98	Mingo
KEYSTONE COAL, INC.	U-5057-87	3/17/98	Mingo
KEYSTONE COAL, INC.	U-186-83	3/17/98	Mingo
KEYSTONE COAL, INC.	S-5059-87	3/17/98	Mingo
KEYSTONE COAL, INC.	O-56-85	3/17/98	Mingo

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
WESTSIDE RIVER TERMINAL, INC.	O-46-85	3/23/98	Monongalia
OKEMO CORP.	U-5016-87	4/3/98	Logan
OKEMO CORP.	U-5078-86	4/3/98	Logan
OKEMO CORP.	O-16-85	4/3/98	Logan
OKEMO CORP.	O-16-82	4/3/98	Logan
OKEMO CORP.	D-20-82	4/3/98	Logan
G.L.X. DEVELOPMENT CORP.	UO-675	4/6/98	Kanawha
WILLIAMS CONSTRUCTION	S-3061-88	4/6/98	Nicholas
WAR EAGLE CONSTRUCTION CO.	S-5046-88	5/28/98	Logan
KEYSTONE COAL, INC.	U-5044-87	7/17/98	Mingo
KIDD'S ENERGY SALES, INC.	U-4011-88	10/13/98	McDowell
UPCO COAL, INC.	S-1059-91	11/18/98	Upshur
TRIPLE A COALS, INC.	S-96-85	12/17/98	Nicholas
TRIPLE A COALS, INC.	U-3046-87	12/17/98	Nicholas
TRIPLE A COALS, INC.	S-3028-87	12/17/98	Nicholas
LOGAN COALS, INC.	UO-353	1/26/99	Logan
ILLUSION COAL COMPANY	U-61-83	2/1/99	Wyoming
WHITE HORSE MINING INC.	U-4020-87	2/1/99	Wyoming
COAL VALLEY MINING, INC.	O-3062-89	4/12/99	Raleigh
COAL VALLEY MINING, INC.	S-3047-91	4/12/99	Raleigh
COAL VALLEY MINING, INC.	UO-342	4/12/99	Raleigh
COAL VALLEY MINING, INC.	U-26-83	4/12/99	Raleigh
ROYAL SCOT MINERALS, INC.	31-72	4/28/99	Greenbrier
BLONDY MINING, INC.	EM-118	5/4/99	Barbour
LITWAR ENERGY, INC.	U-4002-94	6/22/99	McDowell
WESTSIDE RIVER TERMINAL, INC.	O-46-84	8/5/99	Monongalia
ACME LEASING, INC.	U-4013-88	9/28/99	McDowell
MARSON COAL COMPANY, INC.	S-2052-86	10/12/99	Randolph
MARSON COAL COMPANY, INC.	U-2005-88	10/12/99	Randolph
MARSON COAL COMPANY, INC.	U-2029-87	10/12/99	Webster
MARK A. SOUTHERN GENERAL CONTRACTOR	S-1006-92	10/20/99	Harrison
MORGANTOWN ENERGY EXPORT COMPANY	S-8-84	11/2/99	Monongalia
SANDRIDGE COAL CO.	S-1084-86	11/2/99	Monongalia
PUPS CREEK COALS, INC.	S-3006-94	12/6/99	Raleigh
QUINTAIN DEVELOPMENT, LLC	S-5033-96	1/24/00	Mingo
TRIPLE A COALS, INC.	U-22-85	1/24/00	Nicholas
EASTERN LEASING & EQUIPMENT COMPANY	U-2037-86	2/9/00	Webster
BOLINGREEN MINING COMPANY	S-1024-88	2/10/00	Preston
JINKS MINING COMPANY	S-113-85	2/24/00	Nicholas
JINKS MINING COMPANY	U-3031-93	2/24/00	Nicholas
TRIPLE A COALS, INC.	U-3006-87	2/24/00	Nicholas
TRIPLE A COALS, INC.	O-3077-87	2/24/00	Nicholas
K. C. & M. COAL COMPANY, INC.	S-1023-88	3/8/00	Preston
FLAGGY MEADOW COAL COMPANY	U-1012-93	3/16/00	Monongalia
MARSON COAL COMPANY, INC.	O-2044-88	4/13/00	Randolph
STARCO ENERGY, INC.	R-7-81	4/25/00	McDowell

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
STARCO ENERGY, INC.	O-36-84	4/25/00	McDowell
ROYAL SCOT MINERALS, INC.	S-3050-86	4/26/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-3076-86	4/26/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-65-85	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-682	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	U-3017-87	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	U-3046-88	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	D-125-82	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	O-103-83	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	O-104-83	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	56-81	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	U-40-85	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	D-32-81	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	U-3074-87	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	32-81	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	U-107-83	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	U-3062-87	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	U-3020-86	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-90-82	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-99-83	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	O-1-82	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	U-3066-88	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	O-71-83	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-176-75	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-3012-93	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	O-67-82	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-3070-88	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-3011-88	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-47-83	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-3009-89	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	UO-571	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	R-3078-86	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-65-76	4/27/00	Greenbrier
ROYAL SCOT MINERALS, INC.	S-60-83	4/27/00	Greenbrier
PUPS CREEK COALS, INC.	S-3002-92	7/18/00	Raleigh
BELVA COAL COMPANY	S-5029-93	8/16/00	Logan
MARSON COAL COMPANY, INC.	S-2021-87	9/11/00	Randolph
EPLING COAL ENTERPRISES, INC.	S-67-85	10/25/00	Nicholas
C. C. CONLEY & SONS, INC.	S-3046-91	12/7/00	Nicholas
MID-ATLANTIC RESOURCE CORPORATION	U-3040-87	1/2/01	Raleigh
MID-ATLANTIC RESOURCE CORPORATION	U-3044-91	1/2/01	Raleigh
MID-ATLANTIC RESOURCE CORPORATION	U-3045-86	1/2/01	Raleigh
MID-ATLANTIC RESOURCE CORPORATION	U-3067-86	1/2/01	Raleigh
MID-ATLANTIC RESOURCE CORPORATION	D-73-82	1/2/01	Raleigh
MID-ATLANTIC RESOURCE CORPORATION	O-23-85	1/2/01	Raleigh
ELMINA COAL COMPANY	U-4012-86	1/8/01	McDowell

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
VIKING COAL COMPANY	UO-519	1/18/01	Preston
BELVA COAL COMPANY	P-654	1/26/01	Logan
BELVA COAL COMPANY	R-591	1/26/01	Logan
BELVA COAL COMPANY	S-41-80	1/26/01	Logan
BELVA COAL COMPANY	S-94-82	1/26/01	Logan
DELTA TERMINALS, INC.	S-42-80	1/30/01	Boone
DELTA TERMINALS, INC.	Z-54-81	1/30/01	Boone
LANDMARK CORPORATION	S-5047-89	1/30/01	Boone
LANDMARK CORPORATION	S-34-82	1/30/01	Boone
LANDMARK CORPORATION	S-5069-88	1/30/01	Boone
MARSON COAL COMPANY, INC.	EM-44	2/8/01	Webster
MARSON COAL COMPANY, INC.	EM-91	2/8/01	Randolph
MARSON COAL COMPANY, INC.	I-608	2/8/01	Randolph
MARSON COAL COMPANY, INC.	U-90-84	2/8/01	Webster
RHINO COAL, LLC	U-4027-88	3/6/01	McDowell
RALEIGH APPALACHIAN REMINING, INC.	P-3038-97	3/29/01	Raleigh
TYPICAL ENTERPRISES	U-5006-95	4/5/01	Lincoln
UPCO COAL, INC.	S-197-75	4/17/01	Upshur
UPCO COAL, INC.	S-2009-89	4/17/01	Upshur
UPCO COAL, INC.	S-2010-87	4/17/01	Upshur
MID-ATLANTIC RESOURCE CORPORATION	U-3036-92	4/23/01	Raleigh
DEAN FUELS, INC.	S-24-83	6/11/01	Monongalia
J & N PROCESSING COMPANY, LLC	O-58-83	6/29/01	Raleigh
MATE CREEK LOADING, INC.	O-5059-86	7/14/01	Mingo
DEAN FUELS, INC.	U-160-82	8/7/01	Monongalia
BALDWIN MINING COMPANY	D-75-82	8/22/01	Gilmer
C. C. CONLEY & SONS, INC.	S-2002-92	9/10/01	Webster
C. C. CONLEY & SONS, INC.	U-1041-91	9/10/01	Webster
ALAN BLOSSER	S-1010-87	1/2/02	Monongalia
D & A RESOURCES, INC.	U-3042-89	1/30/02	Fayette
ATWELL HOLDING, INC.	U-4019-88	3/4/02	McDowell
COUGAR COAL CO.	P-1029-97	5/1/02	Taylor
A & B THOMAS, INC.	U-50-85	7/12/02	Nicholas
A & B THOMAS, INC.	U-171-83	7/12/02	Nicholas
LO-MING COAL CORPORATION	U-5036-88	9/17/02	Logan
LO-MING COAL CORPORATION	O-5092-87	9/17/02	Logan
LO-MING COAL CORPORATION	U-5049-87	9/17/02	Logan
LO-MING COAL CORPORATION	O-5035-88	9/17/02	Logan
AUTHOR ENTERPRISES, INC.	U-4012-94	10/4/02	McDowell
BELL HOLDING, INC.	EM-116	10/4/02	McDowell
AUTHOR ENTERPRISES, INC.	U-4017-91	10/4/02	McDowell
BELL HOLDING, INC.	H-290	10/4/02	McDowell
GOLDEN FALCON RESOURCES, INC.	U-61-84	10/4/02	McDowell
BARBOUR ENTERPRISES, INC.	S-2003-97	10/24/02	Lewis
PREMIUM ROCK COAL COMPANY, INC.	P-3027-99	10/24/02	Raleigh
INDUSTRIAL ENERGY, INC.	U-101-83	11/21/02	Nicholas

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
J. C. B. MINING, INC.	U-2006-88	12/30/02	Lewis
A & B THOMAS, INC.	UO-131	1/28/03	Nicholas
LO-MING COAL CORPORATION	U-5018-98	1/28/03	Logan
LO-MING COAL CORPORATION	U-5023-97	1/28/03	Logan
LO-MING COAL CORPORATION	U-5084-88	1/28/03	Logan
LO-MING COAL CORPORATION	U-5085-88	1/28/03	Logan
CHICOPEE COAL COMPANY, INC.	O-6013-88	1/31/03	Clay
CHICOPEE COAL COMPANY, INC.	O-6021-89	1/31/03	Clay
CHICOPEE COAL COMPANY, INC.	S-73-85	1/31/03	Clay
CHICOPEE COAL COMPANY, INC.	U-6018-86	1/31/03	Clay
ANTAEUS GARY PROJECT, INC.	O-20-84	3/25/03	McDowell
LINN MINING COMPANY	U-1008-92	6/30/03	Harrison
FREEMPORT MINING CORPORATION	S-1005-95	7/8/03	Preston
FREEMPORT MINING CORPORATION	S-1004-88	7/8/03	Preston
FREEMPORT MINING CORPORATION	S-1019-87	8/18/03	Preston
QUINTAIN DEVELOPMENT, INC.	P-5013-96	11/3/03	Wayne
QUINTAIN DEVELOPMENT, INC.	P-5036-98	11/3/03	Wayne
QUINTAIN DEVELOPMENT, INC.	P-5007-98	11/3/03	Wayne
QUINTAIN DEVELOPMENT, INC.	P-5038-97	11/3/03	Wayne
PLUM TREE MINERALS LLC.	S-3010-98	12/2/03	Raleigh
THE MASTELLER COAL COMPANY	S-10-85	12/10/03	Mineral
LODESTAR ENERGY, INC.	S-3016-92	1/13/04	Raleigh
LODESTAR ENERGY, INC.	S-3006-89	1/21/04	Nicholas
LODESTAR ENERGY, INC.	S-3083-86	1/21/04	Nicholas
LODESTAR ENERGY, INC.	S-19-85	1/21/04	Nicholas
PEACHTREE RIDGE MINING, INC.	U-18-83	1/29/04	Raleigh
PLUM TREE MINERALS LLC.	P-3035-01	1/30/04	Raleigh
LODESTAR ENERGY, INC.	O-172-83	1/30/04	Fayette
GRACE ENTERPRISES, INC.	S-2007-01	3/15/04	Harrison
GRACE ENTERPRISES, INC.	S-1008-97	3/15/04	Marion
ANDERSON COAL COMPANY	U-3049-86	3/30/04	Nicholas
THE MASTELLER COAL COMPANY	S-125-82	5/3/04	Mineral
LODESTAR ENERGY, INC.	R-5-84	5/24/04	Wyoming
GLADY FORK MINING, INC.	D-35-82	6/7/04	Upshur
THE MASTELLER COAL COMPANY	P-741	6/7/04	Mineral
REGENCY LAND COMPANY	U-5069-87	9/7/04	Logan
MAURICE JENNINGS	S-61-83	11/30/04	Preston
MAURICE JENNINGS	53-78	12/10/04	Preston
FLEX DEVELOPMENT CORPORATION	S-1013-91	1/11/05	Harrison
FALCON LAND COMPANY, INC.	P-656	4/5/05	Nicholas
C & M COAL CONTRACTING, INC.	S-1001-99	4/19/05	Harrison
FALCON LAND COMPANY, INC.	P-664	5/9/05	Nicholas
GLADY FORK MINING, INC.	U-60-83	5/23/05	Upshur
GLADY FORK MINING, INC.	U-2001-01	5/23/05	Upshur
GLADY FORK MINING, INC.	O-4-84-1	5/23/05	Upshur
GLADY FORK MINING, INC.	P-2012-00	6/21/05	Upshur

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
PINE CREEK MINING INC	U-51-84	2/27/06	Logan
PINE CREEK MINING INC	U-5056-88	2/27/06	Logan
LITTLE HOPE MINING INC.	U-63-85	3/21/06	Mingo
CHICOPEE COAL COMPANY, INC.	U-3010-87	3/28/06	Nicholas
CHICOPEE COAL COMPANY, INC.	UO-223	3/28/06	Nicholas
CHICOPEE COAL COMPANY, INC.	U-3003-86	3/28/06	Nicholas
CHICOPEE COAL COMPANY, INC.	U-55-85	3/28/06	Nicholas
CHICOPEE COAL COMPANY, INC.	S-3036-86	3/28/06	Nicholas
CHICOPEE COAL COMPANY, INC.	S-3006-99	3/28/06	Nicholas
MARK POWELL CONSTRUCTION COMPANY	P-1018-00	4/24/06	Monongalia
MARK POWELL CONSTRUCTION COMPANY	P-1013-00	4/24/06	Monongalia
CHICOPEE COAL COMPANY, INC.	U-10-85	6/23/06	Nicholas
LOYAL G. FORMAN & SON	S-2009-01	6/23/06	Preston
CHICOPEE COAL COMPANY, INC.	S-3002-98	6/23/06	Nicholas
LOYAL G. FORMAN & SON	S-1002-99	6/23/06	Preston
LAYLAND COAL COMPANY	O-20-85	7/28/06	Fayette
BUFFALO COAL COMPANY, INC.	S-53-80	9/29/06	Grant
BUFFALO COAL COMPANY, INC.	S-52-80	9/29/06	Grant
BUFFALO COAL COMPANY, INC.	S-122-80	9/29/06	Tucker
BUFFALO COAL COMPANY, INC.	O-96-83	9/29/06	Grant
BUFFALO COAL COMPANY, INC.	O-97-83	9/29/06	Tucker
BUFFALO COAL COMPANY, INC.	S-2001-86	9/29/06	Grant
BUFFALO COAL COMPANY, INC.	O-40-84	10/24/06	Grant
BUFFALO COAL COMPANY, INC.	H-499	10/24/06	Grant
BUFFALO COAL COMPANY, INC.	U-2001-02	10/26/06	Grant
BUFFALO COAL COMPANY, INC.	S-2005-95	10/26/06	Tucker
BUFFALO COAL COMPANY, INC.	U-38-85	10/26/06	Tucker
BUFFALO COAL COMPANY, INC.	U-2013-00	10/26/06	Grant
LEVEL LAND MINING CORPORATION	S-3031-90	11/8/06	Fayette
LID ENTERPRISES, INC.	P-4008-04	11/16/06	McDowell
LAKE ENERGY, INC	U-133-83	2/15/07	Logan
TYGART VALLEY MINING, INC.	U-2002-95	2/28/07	Barbour
FOSSIL FUELS, INC.	P-3020-02	3/14/07	Nicholas
LEVEL LAND CONSTRUCTION COMPANY, INC.	S-3026-88	8/8/07	Nicholas
LEVEL LAND CONSTRUCTION COMPANY, INC.	S-3007-89	8/8/07	Nicholas
LEVEL LAND CONSTRUCTION COMPANY, INC.	S-3027-90	8/8/07	Nicholas
POCAHONTAS RESOURCES, INC.	S-3012-92	9/6/07	Nicholas
ALTEC ENERGY, INC	P-3010-99	10/22/07	Kanawha
MANGUS COAL, INC.	S-1036-91	3/14/08	Preston
TYPICAL ENTERPRISES	P-5009-91	5/28/08	Lincoln
TYPICAL ENTERPRISES	P-5013-91	5/28/08	Lincoln
CLEARWATER CONSTRUCTION	S-3016-99	5/28/08	Fayette
POLARIS COAL JOINT VENTURE	P-2007-00	5/28/08	Clay
BLACKHEART MINING INC	P-5034-90	5/28/08	Boone
SANDRIDGE COAL, LLC	UO-401	7/1/08	Barbour
BUFFALO COAL COMPANY, INC.	146-77	7/10/08	Tucker

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
BUFFALO COAL COMPANY, INC.	S-1048-91	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-74-76	7/10/08	Tucker
BUFFALO COAL CO., INC.	U-2004-03	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-100-84	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-32-84	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-2023-92	7/10/08	Tucker
BUFFALO COAL COMPANY, INC.	S-7-80	7/10/08	Tucker
BUFFALO COAL COMPANY, INC.	S-61-85	7/10/08	Tucker
BUFFALO COAL COMPANY, INC.	S-2003-03	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-2018-88	7/10/08	Tucker
BUFFALO COAL COMPANY, INC.	S-2008-02	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-2007-96	7/10/08	Tucker
BUFFALO COAL COMPANY, INC.	S-2018-00	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-2011-92	7/10/08	Preston
BUFFALO COAL COMPANY, INC.	O-2006-95	7/10/08	Tucker
BUFFALO COAL COMPANY, INC.	S-2004-02	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-2006-86	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-2011-87	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-2011-95	7/10/08	Grant
BUFFALO COAL COMPANY, INC.	S-2003-88	8/20/08	Tucker
BUFFALO COAL COMPANY, INC.	U-2010-94	10/6/08	Grant
GRACE ENTERPRISES, INC.	P-2016-02	10/6/08	Harrison
BURN COAL, INC.	U-2005-97	11/25/08	Upshur
LAROSA FUEL CO., INC.	S-39-84	11/25/08	Upshur
DECONDOR COAL CO.	U-1080-86	11/25/08	Preston
DECONDOR COAL CO.	U-147-82	11/25/08	Preston
RODNEY RIDDLE	P-3041-05	12/12/08	Nicholas
BUFFALO COAL COMPANY, INC.	I-542	12/12/08	Grant
RIFFE ENTERPRISES, INC.	O-3012-07	2/3/09	Raleigh
FALCON LAND COMPANY, INC.	P-5023-01	7/2/09	Logan
CHEYENNE SALES COMPANY, INC.	O-11-83	7/9/09	Upshur
LAROSA FUEL CO., INC.	S-1051-86	7/24/09	Marion
CHEYENNE SALES CO., INC.	S-2009-96	9/22/09	Upshur
CHEYENNE SALES CO., INC.	O-2025-86	9/22/09	Upshur
ROBLEE COAL COMPANY	O-1009-93	11/9/09	Upshur
ROBLEE COAL COMPANY	U-1001-91	1/11/10	Upshur
ROBLEE COAL COMPANY	U-2026-87	3/16/10	Barbour
ROBLEE COAL COMPANY	D-49-82	3/16/10	Barbour
ROBLEE COAL COMPANY	U-2001-00	4/22/10	Upshur
ENERGY MARKETING COMPANY INC	U-24-84	5/24/10	Barbour
ENERGY MARKETING COMPANY INC	O-44-83	6/7/10	Barbour
CARSON ONE MINING, LLC	O-4-84	10/1/10	Upshur
BOOMERANG COAL, INC.	S-2015-06	3/8/11	Randolph
PRIMROSE COAL, INC.	7-81	3/23/11	Preston
SHARON COAL CO.	S-1028-87	3/23/11	Preston
HAROLD KITZMILLER	O-2008-07	3/30/11	Grant

Bond Forfeiture Inventory

COMPANY	PERMIT	DATE REVOKED	COUNTY
APPALACHIAN FUELS, LLC	S-3041-88	7/25/11	Clay
APPALACHIAN FUELS, LLC.	P-3055-06	10/23/12	Fayette
APPALACHIAN FUELS, LLC.	P-3019-08	10/23/12	Fayette
APPALACHIAN FUELS, LLC.	P-3005-09	10/23/12	Fayette
KANAWHA DEVELOPMENT CORPORATION	H-631	11/29/12	Fayette
KANAWHA DEVELOPMENT CORPORATION	O-14-81	1/17/13	Fayette
KANAWHA DEVELOPMENT CORPORATION	O-38-84	1/17/13	Fayette
MARY RUTH CORPORATION	S-1015-88	1/17/13	Preston
CHICOPEE COAL COMPANY, INC.	P-3015-99	2/13/13	Nicholas
ENERGY MARKETING CO. INC.	UO-885	2/27/13	Barbour
ENERGY MARKETING CO. INC.	UO-520	2/27/13	Barbour
ENERGY MARKETING CO., INC.	U-16-83	2/27/13	Barbour
ENERGY MARKETING CO. INC.	U-72-83	2/27/13	Barbour
ENERGY MARKETING CO. INC	O-26-84	2/27/13	Barbour
ENERGY MARKETING CO. INC.	U-74-83	3/4/13	Barbour
ROARING RIVER HOLDING COMPANY	P-3006-07	8/20/13	Fayette
HIDDEN VALLEY ESTATES GOLF COURSE, INC.	S-1003-98	8/20/13	Marion
DOUBLE H MINING CO. INC.	U-1004-94	12/5/13	Preston
MARROWBONE DEVELOPMENT CO.	P-5035-99	12/5/13	Mingo
ASSET MINING, LLC.	S-5030-95	12/6/13	Boone
ASSET MINING, LLC.	S-5024-96	12/6/13	Boone
RAVEN HOCKING COAL CORP	O-6003-87	7/14/14	Mason
UNITED COALS, INC.	U-2015-87	9/8/14	Barbour
UNITED COALS, INC.	S-2008-00	9/8/14	Barbour
GOLD RESOURCES, LLC	S-1003-97	9/8/14	Harrison
HAROLD KITZMILLER	P-2031-08	11/14/14	Grant
ENVIROSERVE, INC. dba BETCON, INC.	P-4001-02	3/19/15	Mercer
T.S. MINING, LLC	P-2038-11	3/20/15	Webster
T.S. MINING, LLC	P-2043-11	3/20/15	Webster
SHAFER BROTHER CONSTRUCTION, INC.	S-2002-12	5/11/15	Monongalia
SHAFER BROTHER CONSTRUCTION, INC.	S-2006-02	5/11/15	Monongalia
SHAFER BROTHER CONSTRUCTION, INC,	S-2008-09	5/11/15	Monongalia
SHAFER BROTHER CONSTRUCTION, INC.	S-2011-10	5/11/15	Monongalia
SHAFER BROTHER CONSTRUCTION, INC.	S-2004-04	5/11/15	Monongalia
SHAFER BROTHER CONSTRUCTION, INC.	S-2012-06	5/11/15	Monongalia
DEEPGREEN WV, INC.	O-164-83	10/5/15	McDowell
ANGEL COAL COMPANY, INC.	U-1012-92	10/13/15	Marion
EAGLE RIDGE DEVELOPMENT GROUP, LLC	S-3018-93	6/22/16	Fayette
EAGLE RIDGE DEVELOPMENT GROUP, LLC	S-3027-05	6/22/16	Fayette
EAGLE RIDGE DEVELOPMENT GROUP, LLC	S-3003-06	6/22/16	Fayette
EAGLE RIDGE DEVELOPMENT GROUP, LLC	S-3016-08	6/22/16	Fayette
EAGLE RIDGE DEVELOPMENT GROUP, LLC	S-3035-07	6/22/16	Nicholas

Acid Mine Drainage Inventory With Estimated Operating/Maintenance Costs

OFFICE	COMPANY	PERMIT	DATE REVOKED	ESTIMATED OP/MAIN COSTS**
C	ALPHAINE CORP.	S-6032-86	04/27/89	\$3,694.86
C	APPALACHIAN FUELS, LLC	S-3041-88	07/25/11	\$6,010.00
C	ASSET MINING, LLC.	S-5030-95	12/06/13	\$26,967.00
C	BELLE CONTRACTING, INC.	S-6020-87	11/14/89	\$11,719.14
C	BENHAM GROUP, LTD.	120-79	01/01/90	\$6,021.06
C	CHAFIN COAL CO.	O-69-82	07/11/95	\$3,815.16
C	CHICOPEE COAL COMPANY, INC.	O-6013-88	01/31/03	\$5,299.00
C	COAL X, INC.	UO-396	01/01/86	\$3,657.21
C	COWACO, INC.	R-3022-87	01/22/92	\$2,997.49
C	EAGLE RIDGE DEVELOPMENT GROUP, LLC	S-3016-08	06/22/16	\$29,000.00
C	EASTERN ENERGY INVEST.	U-6012-88	01/28/94	\$3,357.00
C	EASTERN ENERGY INVEST.	S-6029-86	05/02/94	\$12,972.71
C	GOLD STAR MINING CORP.	S-121-85	07/15/87	\$862.13
C	GREENDALE COALS, INC.	S-75-83	04/01/87	\$273,976.00
C	HAWKS NEST MINING CO.	O-1-81	12/07/93	\$5,928.97
C	HUNT COAL, INC.	U-5071-86	06/14/89	\$10,651.64
C	JOHN GALT	D-76-82	08/29/91	\$3,245.26
C	KEYSTONE COAL, INC.	S-84-83	03/17/98	\$6,158.09
C	KEYSTONE COAL, INC.	U-186-83	03/17/98	\$11,593.00
C	LANDMARK CORPORATION	S-5069-88	01/30/01	\$24,657.00
C	LANDMARK CORPORATION	S-34-82	01/30/01	\$8,917.00
C	LO-MING COAL CORPORATION	U-5049-87	09/17/02	\$11,000.00
C	PRINCESS SUSAN COAL CO.	S-6033-86	12/07/93	\$6,844.48
C	PRINCESS SUSAN COAL CO.	S-6-85	12/07/93	\$6,492.64
C	PRINCESS SUSAN COAL CO.	S-76-82	10/04/94	\$246.32
C	SALYERS LEASING CORP.	U-5066-87	08/01/89	\$2,673.57
C	TEMPLEMAN CONST. CO., INC.	151-75	06/01/88	\$3,240.93
C	WINCHESTER COALS, INC.	O-52-83	12/07/93	\$51.37
C	X W CORP.	S-6013-87	04/20/89	\$3,589.26
C	ZY COAL CO	S-6028-88	12/12/91	\$7,526.00
C	ZY COAL CO.	91-79	12/12/91	\$3,890.28
C	ZY COAL CO.	S-30-80	12/12/91	\$1,152.00
N	A S & K, INC.	S-1011-89	08/23/91	\$31,463.00
N	ALAN BLOSSER	S-1010-87	01/02/02	
N	AMANDA NICOLE FUELS, INC.	S-1018-88	06/12/92	\$48,465.00
N	BALDWIN MINING COMPANY	D-75-82	08/22/01	\$29,398.00
N	BJORKMAN MINING CO.	S-37-81	09/23/92	\$3,634.99
N	BOLINGREEN MINING COMPANY	S-1024-88	02/10/00	\$12,216.40
N	BOOMERANG COAL, INC.	S-2015-06	03/08/11	\$27,349.00
N	BORGMAN COAL CO.	EM-32	10/01/91	\$15,370.39
N	BUFFALO COAL COMPANY, INC.	S-122-80	09/29/06	\$9,808.26
N	BUFFALO COAL COMPANY, INC.	S-52-80	09/29/06	\$107,233.00
N	BUFFALO COAL COMPANY, INC.	S-2001-86	09/29/06	\$66,769.00
N	BUFFALO COAL COMPANY, INC.	S-2011-92	07/10/08	
N	BUFFALO COAL COMPANY, INC.	S-53-80	09/29/06	\$122,443.00
N	BUFFALO COAL COMPANY, INC.	S-2006-86	07/10/08	\$57,400.00

Acid Mine Drainage Inventory With Estimated Operating/Maintenance Costs

OFFICE	COMPANY	PERMIT	DATE REVOKED	ESTIMATED OP/MAIN COSTS**
N	BUFFALO COAL COMPANY, INC.	S-2003-03	07/10/08	\$30,748.00
N	BUFFALO COAL COMPANY, INC.	S-2003-88	08/20/08	\$544,218.09
N	CARSON ONE MINING, LLC	O-4-84	10/01/10	\$49,046.00
N	CHESTNUT RIDGE COAL CORP.	S-28-83	11/15/93	\$64,517.26
N	CHEYENNE SALES CO., INC.	S-2009-96	09/22/09	\$67,181.00
N	CHEYENNE SALES COMPANY, INC.	O-11-83	07/09/09	\$77,579.00
N	CRANE COAL CO., INC.	S-27-83	01/03/92	\$3,309.59
N	DAUGHERTY COAL COMPANY, INC.	246-74	08/01/89	NA
N	DAUGHERTY COAL COMPANY, INC.	192-77	07/01/89	\$134.20
N	DAUGHERTY COAL COMPANY, INC.	65-77	07/12/89	\$75,622.00
N	DAUGHERTY COAL COMPANY, INC.	17-81	04/01/89	NA
N	DAUGHERTY COAL COMPANY, INC.	S-73-83	07/17/89	NA
N	DAUGHERTY COAL COMPANY, INC.	S-1009-86	07/17/89	\$22,961.51
N	DAUGHERTY COAL COMPANY, INC.	124-79	08/18/89	NA
N	DECONDOR COAL CO.	U-147-82	11/25/08	\$35,521.00
N	DELTA MINING, INC.	U-2024-87	03/18/93	\$6,297.00
N	ED-E DEVELOPMENT CO., INC.	S-10-81	01/23/93	\$99,949.21
N	ED-E DEVELOPMENT CO., INC.	S-1032-86	03/29/93	\$17,714.28
N	EDWARD E. THOMPSON	S-1041-89	02/15/94	\$61,140.00
N	ENERGY MARKETING CO. INC.	U-72-83	02/27/13	\$29,398.00
N	ENERGY MARKETING COMPANY INC	O-44-83	06/07/10	\$46,217.00
N	F & M COAL CO.	S-1073-86	03/13/92	NA
N	F & M COAL CO.	S-1026-87	04/30/92	\$3,077.22
N	F & M COAL CO.	46-79	09/24/92	\$3,608.85
N	F & M COAL CO.	S-57-84	03/13/92	\$105,816.55
N	F & M COAL CO.	S-1044-87	04/30/92	\$200,749.45
N	FARKAS COAL CO.	34-81	07/01/88	\$23,673.13
N	FREEMPORT MINING CORPORATION	S-1005-95	07/08/03	\$135,042.00
N	FRUSH ENTERPRISES, INC.	S-1008-89	11/10/92	\$23,702.00
N	GLADE RUN MINING CO.	3-72	10/03/83	\$3,115.53
N	GLADY FORK MINING, INC.	D-35-82	06/07/04	\$24,312.00
N	GLORY COAL CO., INC.	UO-744	12/01/85	\$3,128.60
N	GOLDEN PRODUCTS CO.	S-1009-88	03/01/91	\$4,156.94
N	HALLELUJAH MINING	40-81	09/24/92	\$18,932.49
N	HIDDEN VALLEY COAL CO.	S-60-84	08/29/89	\$12,392.98
N	INTER-STATE LUMBER COMPANY, INC.	S-96-82	07/31/95	\$2,539.39
N	INTER-STATE LUMBER COMPANY, INC.	176-77	07/31/95	\$20,480.75
N	INTER-STATE LUMBER COMPANY, INC.	S-112-80	07/31/95	\$25,536.74
N	INTER-STATE LUMBER COMPANY, INC.	S-39-82	07/31/95	\$43,254.00
N	INTER-STATE LUMBER COMPANY, INC.	S-52-83	07/31/95	\$3,772.83
N	J. C. B. MINING, INC.	U-2006-88	12/30/02	\$11,441.00
N	J. E. B., INC.	S-1063-86	11/01/91	\$9,795.78
N	J. E. B., INC.	S-61-82	11/01/91	\$8,881.06
N	J.A.L. COAL CO., INC.	S-23-82	03/12/97	\$29,311.54
N	JONES COAL INC	S-1030-86	07/24/92	\$3,817.65
N	JONES COAL INC	S-9-83	11/17/92	\$13,422.00

Acid Mine Drainage Inventory With Estimated Operating/Maintenance Costs

OFFICE	COMPANY	PERMIT	DATE REVOKED	ESTIMATED OP/MAIN COSTS**
N	KEISTER COAL COMPANY, INC.	184-77	09/01/83	\$10,354.93
N	LAKEVIEW COAL COMPANY	S-55-84	01/23/97	\$6,065.44
N	LAROSA FUEL CO., INC.	S-1051-86	07/24/09	\$106,717.00
N	LOBO CAPITOL, INC.	UO-204	08/07/85	\$47,631.00
N	MANGUS COAL, INC.	S-1036-91	03/14/08	\$54,102.00
N	MARY RUTH CORPORATION	S-1015-88	01/17/13	\$35,015.00
N	MAURICE JENNINGS	S-61-83	11/30/04	\$32,337.00
N	MAURICE JENNINGS	53-78	12/10/04	\$37,295.00
N	MOHIGAN MINING CO.	U-109-83	06/30/92	\$35,676.70
N	MORGANTOWN ENERGY EXPORT COMPANY	U-8-83	06/14/94	\$5,332.33
N	NATIONAL CONSTRUCTION COMPANY, INC.	S-2004-86	12/07/98	\$8,515.60
N	OMEGA MINING CO. INC.	D-79-82	10/07/94	\$395,162.20
N	PIERCE COAL & CONSTRUCTION, INC.	71-80	12/01/82	\$3,171.88
N	PIERCE COAL & CONSTRUCTION, INC.	252-76	12/01/82	NA
N	PRESTON ENERGY, INC.	UO-235	03/18/94	NA
N	PRESTON ENERGY, INC.	O-86-82	05/25/94	\$2,788.47
N	PRESTON ENERGY, INC.	O-1035-87	05/05/94	\$51,997.59
N	PRESTON ENERGY, INC.	O-43-85	05/24/94	\$9,896.40
N	PRIMROSE COAL, INC.	7-81	03/23/11	\$59,628.00
N	ROBLEE COAL COMPANY	U-2026-87	03/16/10	
N	ROBLEE COAL COMPANY	U-1001-91	01/11/10	
N	ROBLEE COAL COMPANY	O-1009-93	11/09/09	\$23,341.00
N	ROBLEE COAL COMPANY	U-2001-00	04/22/10	\$16,975.00
N	ROCKVILLE MINING CO.	S-65-82	01/12/94	\$52,736.00
N	ROCKVILLE MINING CO.	237-76	01/12/94	\$18,192.14
N	ROCKVILLE MINING CO.	65-78	01/12/94	\$49,418.92
N	ROCKVILLE MINING CO.	S-1035-86	01/12/94	\$13,902.35
N	ROCKVILLE MINING CO.	S-91-85	01/12/94	NA
N	S. KELLY INDUSTRIES	51-78	06/13/85	\$76,093.09
N	SHAFER BROTHER CONSTRUCTION, INC.	S-2002-12	05/11/15	
N	SHARON COAL CO.	S-1028-87	03/23/11	\$56,257.00
N	SOLITAIRE COAL CORPORATION, INC.	S-87-85	06/23/89	\$31,907.00
N	SOUTHERN EAGLE MINING CORPORATION	U-32-84	02/06/85	\$3,066.30
N	STEWARTOWN COAL CORP.	67-78	06/28/88	\$5,016.55
N	T & J COAL, INC.	P-177-85	05/29/87	\$41,315.00
N	T & T FUELS, INC.	U-125-83	12/04/95	\$25,101.32
N	T & T FUELS, INC.	EM-113	10/31/95	\$348,097.64
N	THE MASTELLER COAL COMPANY	S-125-82	05/03/04	\$36,861.00
N	THE MASTELLER COAL COMPANY	S-10-85	12/10/03	\$9,374.00
N	VALLEY MINING CO., INC.	S-64-83	06/12/92	\$32,145.05
N	VALLEY MINING CO., INC.	S-17-82	09/24/92	\$9,061.44
N	VIKING COAL COMPANY	UO-519	01/18/01	\$73,463.27
N	VMS, LTD.	S-1045-87	04/04/94	\$11,075.07
N	WERNER MINING CO., INC.	S-2003-86	05/20/92	\$3,410.85
N	WETER CO.	S-71-79	07/10/95	\$2,844.21
N	WOCAP ENERGY RESOURCES, INC.	S-26-85	12/14/93	\$27,753.86

Acid Mine Drainage Inventory With Estimated Operating/Maintenance Costs

OFFICE	COMPANY	PERMIT	DATE REVOKED	ESTIMATED OP/MAIN COSTS**
N	Z & F DEVELOPMENT CO.	S-21-84	11/06/85	\$61,096.40
N	ZINN COAL CO.	60-79	04/16/91	\$4,106.44
S	B & S CONTRACTING, INC.	U-3055-87	04/24/95	\$7,912.08
S	B & S CONTRACTING, INC.	R-668	07/12/95	\$5,648.76
S	B & S CONTRACTING, INC.	O-3086-87	04/24/95	NA
S	BARRENSHE COAL CO.	UO-694	08/17/93	\$10,084.58
S	BARRETT FUEL CORP.	R-737	03/15/96	\$3,901.07
S	BLACK DIAMOND MINING CO.	13-79	04/01/89	\$3,673.12
S	BRADY CLINE COAL CO.	EM-97	08/23/94	\$33,525.12
S	BRENKEE COAL CO.	UO-435	11/12/86	NA
S	C. C. CONLEY & SONS, INC.	S-3046-91	12/07/00	\$45,586.42
S	CHICOPEE COAL COMPANY, INC.	S-3006-99	03/28/06	\$95,442.00
S	CHICOPEE COAL COMPANY, INC.	S-3002-98	06/23/06	\$14,206.00
S	CLASSIC RES., INC.	S-55-81	05/12/86	\$8,266.00
S	CRADDOCK & SON COAL CO.	S-68-83	10/01/92	\$3,079.83
S	DLM COAL CO.	164-77	09/16/85	\$14,357.91
S	DLM COAL CO.	2-80	09/13/85	\$58,156.58
S	DLM COAL CO.	R-423	09/16/85	
S	DLM COAL CO.	1-78	09/16/85	\$36,312.94
S	DLM COAL CO.	138-74	09/03/85	\$82,104.64
S	DLM COAL CO.	71-75	10/01/85	\$28,633.13
S	DLM COAL CO.	12-78	09/16/85	\$33,771.76
S	DLM COAL CO.	23-76	10/01/85	\$109,173.72
S	DLM COAL CO.	P-426	09/16/85	
S	DLM COAL CO.	58-77	09/16/85	\$44,174.23
S	DLM COAL CO.	135-78	09/16/85	\$45,498.70
S	DUSTY COALS, INC.	S-119-85	08/10/87	\$44,882.10
S	E. J. & L. CO., INC.	S-3041-87	05/09/90	\$8,418.12
S	FALCON LAND COMPANY, INC.	P-656	04/05/05	\$62,483.77
S	GAULEY COAL SALES CO.	O-43-84	08/23/94	\$4,502.48
S	GOLDEN FALCON RESOURCES, INC.	U-61-84	10/04/02	
S	GREEN MOUNTAIN ENERGY	U-4013-91	03/19/97	\$3,422.94
S	HARVEY ENERGY CORP.	S-3030-89	09/16/91	\$7,082.01
S	HARVEY ENERGY CORP.	S-35-81	09/16/91	\$15,008.67
S	HARVEY ENERGY CORP.	S-11-82	09/16/91	\$7,174.52
S	J & N PROCESSING COMPANY, LLC	O-58-83	06/29/01	\$37,223.62
S	JINKS MINING COMPANY	U-3031-93	02/24/00	\$5,579.41
S	KANAWHA DEVELOPMENT CORPORATION	O-38-84	01/17/13	\$10,333.20
S	KODIAK LAND CO., INC.	S-3052-87	05/19/92	\$9,313.24
S	LEVEL LAND MINING CORPORATION	S-3031-90	11/08/06	\$5,582.73
S	LILLYBROOK COAL CO.	S-86-85	06/01/90	\$20,732.50
S	LODESTAR ENERGY, INC.	S-19-85	01/21/04	\$4,968.06
S	LODESTAR ENERGY, INC.	R-5-84	05/24/04	\$16,987.01
S	LODESTAR ENERGY, INC.	S-3006-89	01/21/04	\$46,794.00
S	LODESTAR ENERGY, INC.	S-3083-86	01/21/04	\$10,088.00
S	LOW ASH COAL CO.	UO-389	02/01/85	\$5,666.99

Acid Mine Drainage Inventory With Estimated Operating/Maintenance Costs

OFFICE	COMPANY	PERMIT	DATE REVOKED	ESTIMATED OP/MAIN COSTS**
S	M & T MINING CO.	S-3026-89	02/09/94	\$18,577.06
S	MERIDAN OF VIRGINIA, INC.	S-4005-89	09/14/92	\$5,904.00
S	MOUNTAINEER FUELS, INC.	U-3083-87	01/30/98	\$6,723.61
S	PEACHTREE RIDGE MINING, INC.	U-18-83	01/29/04	NA
S	PINNACLE CREEK MINING CORP.	R-721	12/07/94	\$6,054.25
S	PRINCESS CINDY MINING, INC.	30-79	05/26/87	\$4,668.63
S	PUPS CREEK COALS, INC.	S-3006-94	12/06/99	\$11,120.00
S	RALEIGH COMMERCIAL DEVEVELOPMENT	149-79	01/21/87	\$3,218.49
S	ROYAL COAL CO.	R-676	11/01/89	\$61,971.00
S	ROYAL COAL CO.	P-688	01/01/90	
S	ROYAL SCOT MINERALS, INC.	S-65-76	04/27/00	\$2,795.42
S	ROYAL SCOT MINERALS, INC.	S-90-82	04/27/00	\$4,311.14
S	ROYAL SCOT MINERALS, INC.	U-3046-88	04/27/00	\$8,202.00
S	ROYAL SCOT MINERALS, INC.	U-40-85	04/27/00	\$7,413.96
S	ROYAL SCOT MINERALS, INC.	D-32-81	04/27/00	\$11,360.00
S	ROYAL SCOT MINERALS, INC.	R-3078-86	04/27/00	\$31,031.99
S	ROYAL SCOT MINERALS, INC.	31-72	04/28/99	\$433,754.17
S	ROYAL SCOT MINERALS, INC.	S-99-83	04/27/00	\$5,041.88
S	ROYAL SCOT MINERALS, INC.	56-81	04/27/00	\$7,430.46
S	SAN SUE COAL CO.	19-75	01/13/89	\$6,007.63
S	SMITH & STOVER	EM-29	05/17/84	\$31,970.00
S	STAR INDUSTRIES, INC.	R-3-81	05/27/87	\$43,999.65
S	SUMMERSVILLE FIVE BLOCK	S-3051-88	11/01/94	\$230,853.00
S	TRIPLE A COALS, INC.	U-3046-87	12/17/98	\$4,234.82
S	TRIPLE A COALS, INC.	S-96-85	12/17/98	\$12,685.06
S	TRIPLE A COALS, INC.	S-3028-87	12/17/98	\$9,771.52
S	VICKIE ENERGY, INC.	U-53-85	01/11/95	\$6,567.13
S	W & E LOGGING & COAL	S-20-82	05/05/86	\$4,044.34

Note: Acid mine drainage forfeiture site means sites which are producing mine drainage which violates effluent limitations or applicable water quality standards.

** Sites indicated as NA estimated OP/MAIN costs are those where the water is treated on another site. Sites without an estimated OP/MAIN cost are still being evaluated.

Mine Drainage Treatment Prioritization

PRIORITY	COMPANY	PERMIT	PROJECT	AcidLoad(tpy)
1	ROYAL COAL CO.	P-688	L/W	755.68
2	LAROSA FUEL CO., INC.	S-1051-86	Water	110.81
3	GREENDALE COALS, INC.	S-75-83	Water	56.93
4	CHEYENNE SALES CO., INC.	S-2009-96	Water	54.22
5	ASSET MINING, LLC.	S-5030-95	Water	44.11
6	LOBO CAPITOL, INC.	UO-204	Water	38.00
7	MAURICE JENNINGS	S-61-83	Water	26.68
8	KEYSTONE COAL, INC.	U-186-83	L/W	21.98
9	CARSON ONE MINING, LLC	O-4-84	Water	17.53
10	INTER-STATE LUMBER COMPANY, INC.	S-39-82	Water	17.30
11	MANGUS COAL, INC.	S-1036-91	Water	16.41
12	CHEYENNE SALES COMPANY, INC.	O-11-83	Water	16.20
13	CHICOPEE COAL COMPANY, INC.	S-3006-99	L/W	14.69
14	ROBLEE COAL COMPANY	U-2001-00	Water	12.21
15	SMITH & STOVER	EM-29	Water	11.44
16	BUFFALO COAL COMPANY, INC.	S-53-80	L/W	8.47
17	MARY RUTH CORPORATION	S-1015-88	Water	7.14
18	LODESTAR ENERGY, INC.	S-3006-89	Water	6.21
19	BUFFALO COAL COMPANY, INC.	S-2001-86	Water	4.96
20	BALDWIN MINING COMPANY	D-75-82	Water	4.824
21	MAURICE JENNINGS	53-78	Water	4.55
22	APPALACHIAN FUELS, LLC	S-3041-88	Water	4.31
23	SUMMERSVILLE FIVE BLOCK	S-3051-88	Water	3.81
24	SHAFFER BROTHER CONSTRUCTION, INC.	S-2002-12	Water	2.97
25	ROYAL SCOT MINERALS, INC.	U-3046-88	Water	2.63
26	A S & K, INC.	S-1011-89	Water	2.36
27	LODESTAR ENERGY, INC.	S-3083-86	Water	1.73
28	ALAN BLOSSER	S-1010-87	Water	1.64
29	CHICOPEE COAL COMPANY, INC.	S-3002-98	Water	1.50
30	BUFFALO COAL COMPANY, INC.	S-2003-03	Water	1.34
31	ZY COAL CO	S-6028-88	Water	1.29
32	ENERGY MARKETING COMPANY INC	O-44-83	Water	1.11
33	J. C. B. MINING, INC.	U-2006-88	L/W	0.7527
34	ENERGY MARKETING CO. INC.	U-72-83	L/W	0.6347
35	ROBLEE COAL COMPANY	U-2026-87	Water	0.5731
36	MERIDAN OF VIRGINIA, INC.	S-4005-89	Water	0.2840
37	SHARON COAL CO.	S-1028-87	Water	0.2086
38	CLASSIC RES., INC.	S-55-81	Water	0.1836
39	EAGLE RIDGE DEVELOPMENT GROUP, LLC	S-3016-08	Water	0.1550
40	KEYSTONE COAL, INC.	S-84-83	L/W	0.0800
41	ROBLEE COAL COMPANY	U-1001-91	Water	0.0768
42	ROBLEE COAL COMPANY	O-1009-93	Water	0.0640
43	BOOMERANG COAL, INC.	S-2015-06	Water	0.0463
44	ROYAL COAL CO.	R-676	Water	0.0189

Mine Drainage Treatment Prioritization

PRIORITY	COMPANY	PERMIT	PROJECT	AcidLoad(tpy)
45	LANDMARK CORPORATION	S-5069-88	Water	0.0030
46	ROYAL SCOT MINERALS, INC.	S-65-76	Water	0.0022
47	BUFFALO COAL COMPANY, INC.	S-2011-92	Water	TBD
48	KANAWHA DEVELOPMENT CORPORATION	O-38-84	L/W	*
49	GOLDEN FALCON RESOURCES, INC.	U-61-84	Water	*

* Alkaline discharge

TBD-To be determined