

March 31, 2023

By E-mail

Raymond Kempa, Environmental Group Manager
Air Quality Program
Northeast Regional Office
2 Public Square
Wilkes-Barre, PA 18701-1915

Re: Notice of Intent to Issue Plan Approval No. 13-00003A
Panther Creek Power Operating LLC

Dear Mr. Kempa:

PennFuture, Clean Air Council, and Earthjustice hereby submit comments on the proposed Plan Approval for the Panther Creek Power Operating LLC (Panther Creek) for a plantwide applicability limit at its waste coal-combusting plant in Nesquehoning, Carbon County.

Panther Creek is a waste coal-fired power plant that now engages in proof-of-work cryptocurrency “mining”, an energy-intensive process for creating virtual currency.¹ In fact, the cryptocurrency mining industry uses as much energy as is needed in many entire countries.² To meet these high energy demands, some miners place operations at locations with direct access to energy sources, such as power plants.

Fossil-based crypto mining operations pose the same environmental and public health threats as their underlying methods of energy generation—for waste coal combustion, this includes emissions of sulfur dioxide, oxides of nitrogen, and hazardous air pollutants. In fact, emissions of both sulfur dioxide and oxides of nitrogen at Panther Creek skyrocketed in 2022 following the change to cryptocurrency. Waste coal plants such as Panther Creek are also important sources of carbon dioxide, a principal greenhouse gas. By expanding fossil generation,

¹ See, e.g., Sierra Club and Earthjustice, *The Energy Bomb: How Proof-of-Work Cryptocurrency Mining Worsens the Climate Crisis and Harms Communities Now* (Sept. 2022) (“Energy Bomb”) at 3, 10, 14; available at <https://earthjustice.org/documents/report/the-energy-bomb-how-proof-of-work-cryptocurrency-mining-worsens-the-climate-crisis-and-harms-communities-now> ; PennFuture, *Environmental Impacts of Bitcoin Mining*, <https://www.pennfuture.org/bitcoin>; Clean Air Council, *Pollution Concerns Around Cryptocurrency*, <https://cleanair.org/pollution-concerns-around-cryptocurrency/>; Allegheny Front, *How waste coal is fueling Bitcoin in Pennsylvania*, <https://www.wesa.fm/environment-energy/2022-01-31/how-waste-coal-is-fueling-bitcoin-in-pennsylvania>.

² Cambridge Bitcoin Electricity Consumption Index, <https://ccaf.io/cbeci/index/comparisons>.

cryptocurrency mining at Panther Creek threatens to undermine Pennsylvania’s efforts to reduce local air pollution and emissions of greenhouse gases such as carbon dioxide and methane.³

Panther Creek submitted an application for a plantwide applicability limit, or PAL, in October 2016 (“Application”, Attachment A). The Department found this application complete on November 30, 2016 (“Completeness Letter”, Attachment B). The Department prepared a Title V Facility Plantwide Applicability Memo (“Review Memo”, Attachment C), and a draft Title V permit modification (“Draft Modification”, Attachment D).

Because the application is obsolete—predating the plant’s increased operations from cryptocurrency mining—and fails for the additional reasons set forth herein, the Department’s proposed approval is neither reasonable nor appropriate.⁴ Instead, the Department must deny or withdraw the proposed Plan Approval.

I. The Department’s proposal is obsolete and must be withdrawn.

Panther Creek submitted its Application in October 2016. From the Department’s date stamp on some pages, it appears that Panther Creek later submitted additional information to the Department, including regarding its failure to report emissions of particulate matter (Application at 3-18). Regardless, the Application is obsolete, and the Department must withdraw its proposed approval.

A. Since 2016, Panther Creek has changed its method of operation.

Since the 2016 Application, Panther Creek has been sold, and has fundamentally changed its method of operation to include mining cryptocurrency.⁵ Stronghold Digital Mining, “a vertically integrated crypto asset mining company currently focused on mining Bitcoin,” purchased the plant in November of 2021. Stronghold 10-Q at 51. Bitcoin uses the energy-intensive “proof-of-work” cryptocurrency mining method. Energy Bomb at 6. Stronghold reports thousands of Bitcoin miners at the Panther Creek plant. *Id.* at 48, 51. The plant even imported power from the grid to maintain its cryptocurrency mining operations during a planned maintenance outage. *Id.* at 55.

³ Pennsylvania Climate Action Plan 2021, available at <https://www.dep.pa.gov/Citizens/climate/Pages/PA-Climate-Action-Plan.aspx> (last visited Mar. 27, 2023).

⁴ If the Department issues a final Plan Approval to Panther Creek, and this matter is appealed to the Environmental Hearing Board, the Board will make “a determination, based on the evidence we hear, whether the findings upon which DEP based its actions are correct and whether DEP’s action is reasonable and appropriate and otherwise in conformance with the law.” *Smedley v. DEP*, Docket No. EHB Docket No. 97-253-K (Feb. 8, 2001), citing 35 P.S. § 7514(c) (additional citations omitted); see also *Clancey v. DEP*, 2013 WL 5676896 (Oct. 11, 2013).

⁵ Stronghold Digital Mining, Form 10-Q at 48 (Nov. 10, 2022), available at <https://www.sec.gov/Archives/edgar/data/1856028/000162828022029524/sdig-20220930.htm> (“Stronghold 10-Q”); see also “How waste from old coal mine is powering a Bitcoin mine in a Pennsylvania town” (Oct. 1, 2022), available at <https://6abc.com/bitcoin-mining-cryptocurrency-panther-creek-plant-stronghold-digital/12324696/> (last visited March 25, 2023).

Waste coal combustion to create energy for cryptocurrency mining has transformed air emissions at the Panther Creek plant. From 2021 to 2022, heat input at Unit 2 increased from 869,479 mmBtu to 4,034,846 mmBtu (U.S. EPA, Clean Air Market Division, <https://campd.epa.gov/>, Attachment E). During the same time period, at Unit 1, sulfur dioxide emissions were up 221%, and nitrogen oxide emissions were up 244%. *Id.* At Unit 2, sulfur dioxide emissions were up 352% and NOx emission were up 231%. *Id.*

Yet, neither the Application nor the Department’s permitting documents (see Attachments C and D) address this change in the method of the plant’s operation. So that the Department may account for current operations and emissions at the plant, and so that the Department may reasonably apply regulatory criteria, the Department must require a new application that reflects current operating conditions and emissions.

B. The baseline emissions in the Application are obsolete.

According to the Review Memo (at 4, unnumbered), the baseline period for the development of the PAL for “PM, PM10, PM2.5, SOx, NOx and CO2e pollutants” is 2011-12. This baseline is no longer valid for Panther Creek, and the Department must withdraw the proposed Plan Approval.

According to the Review Memo, “PAL levels [are] established by summing the baseline actual emissions (as defined in 40 C.F.R. 52.21(b)(48)) for each emissions unit at the facility and then adding the significance level for the PAL pollutant.” Under the regulation cited by the Department:

For any existing electric utility steam generating unit, baseline actual emissions means the average rate, in tons per year, at which the unit actually emitted the pollutant during any consecutive 24-month period selected by the owner or operator within the 5-year period immediately preceding when the owner or operator begins actual construction of the project.

40 C.F.R. § 52.21(b)(48)(i) (emphasis added). Per the Application (pdf 29 of 70) and Permit Review Memo (at 10, unnumbered), Panther Creek is an electric utility steam generating unit under New Source Performance Standards (NSPS). Since the Prevention of Significant Deterioration (PSD) program defines “electric utility steam generating unit” identically to NSPS, Panther Creek is also an electric utility for PSD. 40 C.F.R. § 52.21(b)(31), 40 C.F.R. § 60.41Da.

Under applicable regulations, “begin actual construction” refers to activities that happen once an owner or operator has its permit. 40 C.F.R. § 52.21(b)(9-11). Although the Application was submitted in 2016, as of 2023, the Department has not issued a plan approval, and Panther Creek has not “begun actual construction” of the PAL. Even if Panther Creek were not an electric utility steam generating unit, and were subject to a longer baseline period of ten years under 40 C.F.R. § 52.21(b)(48)(i), EPA rules would prohibit the Department from using baseline data from 2011-12, since that would be more than ten years before the project will begin actual construction after any future issuance of a PAL.

Moreover, fluctuations in Panther Creek’s levels operation mean that an accurate, recent baseline is critically important. According to the updated particulate matter disclosures in the Application (pdf 12 of 70), heat input levels fell from 8,877,787 mmBtu in the proposed baseline year of 2011 to 589,164 mmBtu in 2020, a drop of 93%. A more recent baseline than 2011-12 is required to comply with EPA rules, and to more accurately reflect actual baseline conditions, to develop any PAL for Panther Creek.

C. The Department must update its findings on New Source Review.

The Review Memo states (at 10, unnumbered): “Neither PSD nor NNSR [nonattainment New Source Review] will be triggered by this action as no modification of an existing emissions unit, change in the method of operation, or installation of a new emissions unit is proposed.”⁶

However, this Memo does not account for the change in the method of operations that occurred in 2021 with the change to cryptocurrency at Panther Creek; the possible applicability of PSD/NNSR; and any effect on the proposed PAL. It does not address the steep emission increases in sulfur dioxide, oxides of nitrogen, and possibly other pollutants that have occurred since this change, in amounts that would be significant for purposes of PSD or NNSR. See, e.g., 40 C.F.R. § 52.21(b)(23)(i). The Memo also fails to address issues involving baseline emissions for purposes of PSD or NNSR (see, e.g., 40 C.F.R. § 52.21(b)(48)) or how the Department evaluated emissions before and after the change to cryptocurrency (see, e.g., 40 C.F.R. § 52.21(b)(3)), all fundamental to understanding PSD/NNSR applicability and the PAL.

The Department has acted unreasonably by developing no meaningful record regarding PSD and NNSR. Therefore, the Department must withdraw its proposed Plan Approval, and evaluate these issues in light of the change to cryptocurrency at the Panther Creek plant and the Department’s regulatory criteria.

D. Additional permit materials are obsolete.

Under 25 Pa. Code § 127.12d, “an application is administratively complete if it contains the necessary information.” The Department issued its letter accepting the application as complete on November 30, 2016. The Department cannot possibly now find that “necessary information” has been submitted for an application that is over six years old, for a plant that has undergone a change in the method of operation by transforming itself into a cryptocurrency mine. Similarly, the General Information Form submitted with the Application (pdf 33-39 of 70), Compliance Review Form (pdf 56-60 of 70), and notices to public officials (pdf 62-63 of 70) are all dated from 2016 and are also obsolete. The Department must require updated information from Panther Creek as part of any action on the proposed Plan Approval.

II. The Department must not waive existing permit requirements.

Regarding PALs, Department regulations provide:

⁶ For Prevention of Significant Deterioration, DEP has adopted EPA’s regulations. 25 Pa. Code §§ 127.81, 127.83.

(4) An owner or operator of a major facility shall continue to comply with applicable Federal or State requirements, emissions limitations and work practice requirements that were established prior to the PAL effective date.

25 Pa. Code 127.218(a)(4). Thus, while a PAL addresses applicability of the New Source Review and Prevention of Significant Deterioration programs,⁷ it does not waive the applicability of the other requirements and emission limits that apply to the plant. In its review of the Panther Creek Application, the Department affirms this principle:

PC will continue to comply with all applicable Federal or State requirements, emissions limitations, and work practice requirements that were established prior to the effective date of the PAL. . .

Review Memo at 2 (unnumbered).

The Panther Creek Title V Permit effective November 27, 2018 (“2018 Permit”, Attachment F) contains many substantive provisions that are not reflected in the proposed Plan Approval. For example, the 2018 Permit (at 53-96) contains extensive requirements in “Section E, Source Group Restrictions”. By contrast, the Draft Modification section titled “Section E. Source Group Plan Approval Restrictions” (at 51) is blank. If this matter moves forward, the Department should confirm that the provisions of the existing 2018 Title V permit not directly modified by the Draft Permit remain in effect.

III. The proposal unreasonably ignores important sources of particulate matter air pollution at Panther Creek.

As part of its disclosure of unreported particulate matter emissions, the Application (pdf 3 of 70) identifies emissions from roadways and cooling towers. In fact, in its inventory of baseline emissions (Application, pdf 5 of 70), these are the highest sources of particulate matter (as “FPM”) after PyroPower Units 1 and 2. The “Revised PAL Limits” proposed (Application, pdf 18 of 70) reference cooling tower emissions for 2011-12 averaging over 28 tons per year PM, and over 14 tons per year for PM10, in each case over half of the total emissions presented in this table.⁸

In the Review Memo (at 7, unnumbered), the Department lists “Table 6: Panther Creek Boiler Emission Factors” and “Table 7: Other Minor Facility Emission Factors.” However, these tables do not mention roadways and cooling towers. The Department then states:

These emissions are all estimated using EPA FIRE factors or AP-42 factors. Apart from the insignificant emissions from the fire pump (less than 0.1 TPY

⁷ Wooley and Morss, Clean Air Act Handbook § 4:17 (2022) (Regarding PAL, “EPA adopted provisions that allow source owners to make changes to their facilities without obtaining a major NSR permit provided their emissions do not exceed a plantwide cap”).

⁸ Application at 3: “These cooling tower emissions account for over 50% of the changes to the particulate matter baseline change.”

for any pollutant), the other emissions sources only emit particulate and are de minimis sources with each source emitting less than 0.6 TPY and all sources combined emitting under 3.0 TPY of total particulate.

By the Application's own admission (pdf 3, 5, 18), cooling towers and roadways emit well above these "insignificant" and "de minimis" levels. The proposed Plan Approval should be withdrawn so that the Department can address these sources of particulate matter.

IV. The Department unreasonably proposes to waive emission fees.

The Air Pollution Control Act provides for funding the Department's Title V operating permit program emission fees paid by Title V facilities. 35 P.S. § 4006.3. Under applicable Department regulations:

(a) The owner or operator of a Title V facility . . . shall pay an annual Title V emission fee of \$85 per ton for each ton of a regulated pollutant actually emitted from the facility.

25 Pa. Code § 127.70(a).⁹

Panther Creek has confessed to violations regarding unreported particulate matter emissions. Application (pdf 3 of 70). These violations mean that the company could be subject to sanctions under Department rules, including:

An air contamination source that fails to pay the fees within the time frame established by this act or by regulation shall pay a penalty of fifty per centum (50%) of the fee amount, plus interest . . . from the date the fee was required to be paid. In addition, such source may have its permit terminated or suspended.

35 P.S. 3005.6(h)(2).¹⁰ Panther Creek claims it has paid penalties and interest for its violations. Application (pdf 3 of 70).

⁹ See also 25 Pa. Code § 127.70(c) ("As used in this section, the term "regulated pollutant" means a VOC, each pollutant regulated under sections 111 and 112 of the Clean Air Act. . . and each pollutant for which a National ambient air quality standard has been promulgated, except that carbon monoxide shall be excluded from this reference").

¹⁰ Under some circumstances involving noncompliance, the APCA authorizes the Department to refuse to issue a plan approval. 35 P.S. § 4007.1. The APCA also authorizes civil penalties for failure to comply. 35 P.S. § 4009.1.

Panther Creek measures particulate matter in three forms: total particulate (PM), particulate less than ten microns (PM10), and particulate matter less than 2.5 microns (PM2.5). Its failure to report emissions stemmed from requirements applicable to each of these types. Panther Creek summarizes its unreported emissions as follows:

Revised PAL Limits	PM10/PM Ratio	PM2.5/PM Ratio	Tons						
			PM 2011	PM 2012	PM10 2011	PM10 2012	PM2.5 2011	PM2.5 2012	
Unreported Emissions									
Diesel Fire Pump	1.00	1.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00
Ash Loading System	1.00	0.50	2.33	2.04	2.33	2.04	1.16	1.02	
Ash Silo	1.00	0.50	1.37	1.35	1.37	1.35	0.69	0.67	
Bottom Ash Conveyor	0.38	0.04	1.78	1.75	0.67	0.66	0.07	0.03	
Culm Crusher (% of fuel)	0.40	0.02	0.03	0.03	0.01	0.01	0.00	0.00	
Flyash Filter Separator #1	1.00	0.50	2.50	2.45	2.50	2.45	1.25	1.22	
Flyash Filter Separator #2	1.00	0.50	2.48	2.38	2.48	2.38	1.24	1.19	
Fuel Silo/Reversing Conveyor	0.33	0.10	0.00	0.00	0.00	0.00	0.00	0.00	
Fuel Truck Dump/Reclaim Hopper	0.56	0.05	3.17	2.92	1.79	1.65	0.15	0.08	
Fuel Truck Unloading	0.47	0.07	0.62	0.57	0.29	0.27	0.04	0.02	
Lime Bin	1.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	
Limestone Bin	1.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	
Roadways	0.22	0.04	10.12	9.20	2.20	2.00	0.44	0.09	
Cooling tower	0.50	0.01	28.63	28.07	14.31	14.03	0.15	0.08	
Soda Ash Bin	1.00	0.50	0.00	0.00	0.00	0.00	0.00	0.00	
			53.03	50.75	27.96	26.84	5.21	4.40	
		Average	51.89		27.40		4.81		
Current PAL Limits			61.90		58.72		30.48		
		Revised PAL Limits	113.79		86.12		35.29		
			PM (TPY)		PM10 (TPY)		PM2.5 (TPY)		

Application (pdf 18 of 70). Thus, the failure to report implicates each of these pollutants: PM, PM10, and PM2.5. The Permit Review Memo addresses this issue as follows:

PC realized certain auxiliary source emissions were not reported during the baseline years. PC recalculated those emissions, paid emissions fees on them, including a 50% penalty for late reporting, and accumulated interest. These emissions were included in the final baseline and the sources have been added to the permit to ensure they are reported in the future for comparison to the PALs.

The Department fails to describe for what fraction of PM fees have been paid. However, according to information provided by Panther Creek, it appears that the fees were calculated on terms inappropriately favorable to Panther Creek:

While we are seeking to amend the baseline for all three particulate parameters, fees are only due and payable for PM2.5. DEP has not assessed penalties for PM and since PM2.5 is a subset of PM 10, fees for PM10 will also cover the PM2.5 emissions.

Application (pdf 6 of 70). Panther Creek then calculates fees based on PM10 emissions. Application (pdf 17). However, Panther Creek's claim that "fees are only due and payable for PM2.5" is belied by Applicant's table set forth above, in which emission reporting shortfalls are identified for PM, PM10, and PM2.5. Moreover, the Applicant is seeking a PAL for PM, as well as PM10 and PM2.5 *Id.*; see also Application (pdf 23 of 70).

As demonstrated by the table above, emission reporting shortfalls are much smaller for PM10 than for PM. For example, in 2012, the unreported emissions for PM10 were 26.84 tons, while the unreported emissions for PM were 50.75 tons. Where a permittee has failed to report emissions, and the Department is taking no other enforcement action, it is unreasonable to for the Department to waive a portion of the unpaid fee.

V. The Department unreasonably failed to consider environmental justice.

Environmental justice should be an integral part of Department actions. Pennsylvania regulations define environmental justice as:

The fair treatment and meaningful involvement of all people regardless of race, color, National origin or income, with respect to the Commonwealth's development, implementation and enforcement of environmental laws, regulations and policies.

4 Pa. Code § 5.1031. In 2021, Governor Wolf issued an executive order finding, in part:

WHEREAS, historically and currently, low-income communities and communities of color bear a disproportionate share of adverse climate and environmental impacts with accompanying adverse health impacts; and

WHEREAS, all Pennsylvanians are entitled to fair and equitable treatment and meaningful involvement in decision-making that affects their environment, communities, homes, livelihoods, and health. . .

Executive Order 2021-07 at 1. The Executive Order addresses the Office of Environmental Justice and an Environmental Justice Advisory Board, both at the Department, and an Interagency Environmental Justice Council. *Id.* at 2-5. The Department has made the following statement about environmental justice:

Environmental justice embodies the principles that communities and populations should not be disproportionately exposed to adverse environmental impacts. Historically, minority and low-income Pennsylvanians have been forced to bear a disproportionate share of adverse environmental impacts. It is our duty to ensure that all Pennsylvanians, especially those that have typically been disenfranchised, are meaningfully involved in the decisions that affect their environment and that all communities are not unjustly and/or disproportionately burden with adverse

environmental impacts. Simply put, environmental justice ensures that everyone has an equal seat at the table.¹¹

We support these principles.

To implement environmental justice goals, the Department has created an online, interactive map of environmental justice areas in the Commonwealth, the Environmental Justice Areas Viewer (“EJ Viewer”).¹² The Panther Creek plant is in Nesquehoning, Carbon County. According to Google Maps, the plant is located less than two miles from an environmental justice area that includes Coaldale, Schuylkill County. According to the EJ Viewer, 30% of residents in Census Tract 28, Coaldale, Schuylkill live in poverty. This environmental justice area should benefit from the environmental justice protections provided to communities by the Department.

Nevertheless, the Application, the Permit Review Memo, and the draft Permit make no mention of environmental justice issues. Although the permit proposes to address air pollution, it presents no modeling to determine the impact of air quality emissions, before or after the PAL, on this environmental justice area. The Department’s failure to address environmental justice areas, and even to determine pollution impacts, is unreasonable in light of its statements regarding environmental protection and its finding of an environmental justice area in Coaldale. The Department must consider environmental justice impacts from Panther Creek.

VI. The Department unreasonably refused to allow more than one day of additional time for comments.

As noted, Panther Creek applied for this Plan Approval in October of 2016. After finding the application complete on November 30, 2016, the Department did not take action on this application for over six years, until February 25, 2023, when it proposed approval in the Pennsylvania Bulletin (53 Pa.B. 1068). On March 10, 2023, Earthjustice requested an extension of the comment period of 30 days, noting that the application raises complex legal and technical issues. Earthjustice renewed its request during a phone call with Department counsel on March 14 and again by e-mail on March 23. On March 24, the Department informed Earthjustice that it would grant an extension of one day, to March 28. Then, on March 27, the Department informed Earthjustice that it would grant an additional extension of three days, to March 31.

¹¹ <https://www.dep.pa.gov/PublicParticipation/OfficeofEnvironmentalJustice/pages/default.aspx> (last visited Mar. 25, 2023).

¹² Environmental Justice Areas Viewer, available at <https://padep-1.maps.arcgis.com/apps/webappviewer/index.html?id=f31a188de122467691cae93c3339469c> (last visited Mar. 25, 2023).

The Department's denial of the timely request for an extension was unreasonable. The piecemeal extensions, granted close to the deadline, did not cure this failure where the Department itself took over six years to act on the same application.¹³

VII. Conclusion

For these reasons, the Department's proposal to issue the Plan Approval is unreasonable, and must be withdrawn.

Sincerely,

Rob Altenburg
PennFuture
610 North Third Street
Harrisburg, PA 17101
(717) 574-2392
altenburg@pennfuture.org

Robert Routh
Policy and Regulatory Attorney
Clean Air Council
135 South 19th Street, Suite 300
Philadelphia, PA 19103
(215) 567-4004
rrouth@cleanair.org

Charles McPhedran
Earthjustice
1617 JFK Boulevard, Suite 2020
Philadelphia, PA 19103
(215) 206-0352
cmcphebran@earthjustice.org

¹³ The Environmental Hearing Board noted a similar dynamic in an Adjudication in which it ruled against the Department on the merits:

“143. Solebury School requested an extension from the May 20, 2011 deadline to provide substantive comments to the reports. (S. Ex. 181.)

144. The Department denied the School's request for a one-week extension, despite the fact that New Hope's application had been under consideration for more than 30 months. (T. 367-70; S. Ex. 181.)”

Solebury School v. DEP, 2014 WL 4087592, *9.