



ROBERT GADINSKI

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Decided June 26, 2009



United States Department of the Interior
Office of Hearings and Appeals
Interior Board of Land Appeals
801 N. Quincy St., Suite 300
Arlington, VA 22203

ROBERT GADINSKI

IBLA 2008-153

Decided June 26, 2009

Appeal from a decision by the Acting Regional Director, Appalachian Region, Office of Surface Mining Reclamation and Enforcement, determining, on informal review, that the Pennsylvania Department of Environmental Protection had taken appropriate action in response to a Ten-Day Notice. TDN No. X07-120-149-001, TV1.

Set aside and remanded.

1. Administrative Procedure: Administrative Record--Surface Mining Control and Reclamation Act of 1977: Appeals--Surface Mining Control and Reclamation Act of 1977: Citizens Complaints--Surface Mining Control and Reclamation Act of 1977: Inspections: 10-Day Notice to State--Surface Mining Control and Reclamation Act of 1977: State Program: 10-Day Notice to State

It is incumbent upon OSM to ensure that its decision is supported by a rational basis which is explained in the written decision and is substantiated by the administrative record accompanying the decision. The recipient of an OSM decision is entitled to a reasoned and factual explanation providing a basis for understanding and accepting the decision or, alternatively, for appealing and disputing it before the Board. An OSM decision that fails to meet this basic requirement is properly set aside and the case remanded.

2. Administrative Procedure: Administrative Record--Surface Mining Control and Reclamation Act of 1977: Appeals--Surface Mining Control and Reclamation Act of 1977: Citizens Complaints--Surface Mining Control and

Reclamation Act of 1977: Inspections: 10-Day Notice to State--Surface Mining Control and Reclamation Act of 1977: State Program: 10-Day Notice to State

When OSM finds that a State had good cause for not causing a violation to be corrected on the basis of a hydrogeologic analysis, and supporting technical reports fail to document the methodologies and protocols the State used to derive the factual and theoretical bases for its conclusions, including the underlying facts and assumptions it used to develop geologic maps and to interpret water quality data accumulated on spreadsheets it relied on in reaching material technical conclusions, it is impossible to determine whether those conclusions are supportable, and the Board will find that the record is without a basis to support OSM's conclusions.

APPEARANCES: Robert Gadinski, Ashland, Pennsylvania, *pro se*; Steven C. Barclay, Esq., Office of the Solicitor, Pittsburgh, Pennsylvania, for the Office of Surface Mining Reclamation and Enforcement.

OPINION BY ADMINISTRATIVE JUDGE ROBERTS

Robert Gadinski¹ has appealed a February 25, 2008, decision by the Regional Director, Appalachian Region, Office of Surface Mining and Reclamation Enforcement (OSM), finding that the Pennsylvania Department of Environmental Protection (PADEP) did not act arbitrarily, capriciously, or abuse its discretion in investigating his citizen complaint, filed with OSM pursuant to section 521(a)(1) of the Surface Mining Reclamation and Control Act of 1977 (SMCRA), 30 U.S.C. § 1271(a)(1) (2006).²

¹ Gadinski avers that he is a former Regional Hydrogeology Supervisor for the Pennsylvania Department of Environmental Resources/Department of Environmental Protection. Gadinski Notice of Appeal and Statement of Reasons (SOR) at 6, 13.

² Section 521(a)(1) of SMCRA, 30 U.S.C. § 1271(a)(1) (2006), permits OSM to accept information from citizens with regard to surface coal mining conditions that may be violative of the requirements of SMCRA. Section 503(a) of SMCRA, 30 U.S.C. § 1253(a) (2006), provides that the primary jurisdiction of states with approved regulatory programs, such as Pennsylvania, is subject to the oversight jurisdiction of OSM under sec. 521(a)(1), which authorizes the Federal inspection of surface coal mining operations if, within 10 days after notice that a violation is

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In this opinion we set aside and remand OSM's decision because we find that there is insufficient basis in the record to support the Regional Director's conclusions; that Gadinski has preponderated on his claim that there is insufficient basis in the record to support the findings and conclusions of the Government hydrologists; and that the record as a whole contains insufficient indicia of reliability to support OSM's findings and conclusions that PADEP properly evaluated relevant criteria. We set forth our reasoning in the opinion below.

I. BACKGROUND

On February 15, 2007, Gadinski filed a citizen complaint with the Harrisburg Field Office (HFO), OSM, regarding coal combustion byproduct (CCB) disposal activities at the WPS Westwood Generating Station (WGS or Westwood), pursuant to section 521(a)(1) of SMCRA, 30 U.S.C. § 1271(a)(1) (2006). Gadinski alleged that the public water supply of the Tremont Borough, owned and managed by the Schuylkill County Municipal Authority (SCMA), in Schuylkill County, Pennsylvania, had been adversely affected by the deposition of "large amounts" of CCBs, or coal ash (also known as "fly ash"), at the Westwood generating plant. Gadinski Complaint at 1. According to the PADEP Technical Report (PADEP Report), Westwood's permit authorizes it to use approximately 441 acres located on the outskirts of Tremont, in the Fraley and Porter Townships. PADEP Report at unpaginated (un.) 2. The coal ash disposal site is located approximately 2½ miles west of Tremont, immediately northwest of the interchange between U.S. Highway 209 and Interstate 81. *Id.* and Ex. 1 (map depicting the location of Westwood coal ash site).

Westwood uses circulating fluidized bed combustion (FBC) technology³ to produce electrical energy for Tremont and surrounding areas by burning culm stored in coal waste refuse piles on land located over abandoned underground

² (...continued)

believed to exist, the state regulatory agency fails to take appropriate action to cause the violation to be corrected or show good cause for such failure. The oversight inspection provisions of sec. 521(a)(1) are implemented by regulations found at 30 C.F.R. § 842.11. *See, e.g., Richard and Cathy Maddox (On Reconsideration)*, 168 IBLA 303, 318 (2006).

³ Fluidization is "a process in which gas passes through loose fine-grained material, mixes with it, and causes it to flow like a liquid." This process produces a "fluidized bed," which provides "an ideal condition for gas-solid reaction because each solid particle is in constant motion and in contact with the moving gas stream on all sides." *A Dictionary of Mining, Mineral, and Related Terms (Dictionary of Mining)*, at 447 (U.S. Department of the Interior, Bureau of Mines 1968).

anthracite mine workings.⁴ According to the Regional Director’s decision, PADEP has authorized Westwood to dispose of coal ash at the site since September 1989, and the coal ash must meet certification standards for the disposal of coal ash pursuant to Pennsylvania statutes and regulations pertaining to the “beneficial uses” of coal ash. Decision at un. 5.⁵

Gadinski’s complaint alleged that pH values detected in water samples from the public wells drilled in 1994 downgradient from the coal ash area but upgradient from the Tremont Water Reservoir had led him to suspect that “leakage relative to the flyash disposal area” was causing changes in Tremont’s water quality. Gadinski Complaint at ¶ 2. Gadinski stated that initial 72-hour pumping tests for Wells 2 and 4 had produced “dramatic changes in pH” relative to background data collected in 1985, and that “high levels of magnesium” and other alkaline compounds were detected. *Id.* at ¶¶ 1, 2. According to the complaint, “the capture analysis” report (which Gadinski attached) “conducted during the pumping test[s]” of the three wells “indicates a zone of influence extending east to west . . . extending in the direction of the flyash landfill.” *Id.* at ¶ 3. The pumping tests, he maintained, suggested that the public water supply could be influenced by drainage from the fly ash area. *Id.* The

⁴ Using FBC technology, WGS generates electricity by burning “culm” in combination with crushed limestone. “Culm” is a vernacular term used to describe various “fissile varieties of anthracite coal” of “indifferent quality,” and historically left behind as waste from underground Pennsylvania anthracite mines. *Dictionary of Mining* at 289. The limestone is used as a sorbent during fluidization to reduce sulfur emissions resulting from the combustion process.

⁵ “*Beneficial use*” is defined, in pertinent part, by the Pennsylvania Solid Waste Management Act, 35 Pa. Cons. Stat. Ann. § 6018.101 (West 2009), as the “[u]se or reuse of residual waste or residual material derived from residual waste for commercial, industrial or governmental purposes, where the use does not harm or threaten public health, safety, welfare or the environment.” That Act authorizes the use of coal combustion ash and boiler slag for, among others, “use as structural fill, soil substitutes or soil additives.” 35 Pa. Stat. § 6018.508(7) (Westlaw, 2009). State regulations governing the beneficial uses of coal ash are found in the Pennsylvania Administrative Code (Pa. Code) at 25 Pa. Code Chapter 287, Subpart H, which includes, *inter alia*, § 287.661 (“*Use of coal ash as structural fill*”), § 287.662 (“*Use of coal ash as a soil substitute or soil additive*”), § 287.663 (“*Beneficial use of coal ash at coal mining activity sites as coal mining activities are defined in § 86.1*” (which, in pertinent part, defines “surface mining activities” as the disturbance of the land surface by an operator who either creates or disturbs “refuse banks, spoil banks, [and] culm banks”)), and § 287.664 (“*Coal ash beneficial use at abandoned coal and abandoned noncoal surface mine sites*”).

complaint further alleged that water quality data supplied by the Susquehanna River Basin Commission (SRBC) pertaining to Tremont's public water supply had been analyzed for "dissolved parameters" rather than "totals,"⁶ and that the presence of "Ortho-Phosphates . . . in the analyses" suggested that the water samples had been "filtered/treated" and thereby represented "finished" water that had not been accurately screened for the presence of trace metals from the ash disposal area. *Id.* at ¶ 4.⁷

The HFO issued Ten-Day Notice (TDN) No. X07-120-149-001 TV1 to PADEP on February 27, 2007, alleging that, based upon "citizen information," OSM had reason to believe that Westwood's "coal ash activities have affected the hydrologic balance and adversely impacted the Tremont Water Company water supply," which, if substantiated, would violate the Pennsylvania Clean Streams Law, 35 Pa. Stat. § 691.315 and the implementing regulations at 25 Pa. Code §§ 88.91⁸

⁶ Water sampled for "total results" has not been filtered prior to analysis. A water analysis for "dissolved parameters" does not take into account sediment or suspended materials.

⁷ With his complaint, Gadinski supplied copies of (1) a map from United States Geological Survey (USGS) Report 83-4274 (Growitz Report) depicting the locations of mine water discharge sites in the Southern Anthracite Field; (2) water sample results taken in April 1975 and reported in the Growitz Report for mine-drainage sites near Tremont and Joliett, Pennsylvania, documenting generally low pH values, low alkalinity, and high iron and sulfate values for the region; (3) a compilation of background data for Tremont water well supplies from 1981-87 and 1994; (4) a location map prepared by engineering firm Gannett Fleming, Inc., for the then-proposed Tremont water facilities; (5) 1994 laboratory analysis reports conducted by Gannett Fleming for water quality samples taken subsequent to pumping tests for three Tremont water wells—Wells 2, 4, and 6; and (6) a capture analysis report prepared by Gannett indicating the "zone of influence," *i.e.*, the groundwater draw area for those three wells. Gadinski claimed that the public water supply for the Tremont Borough was adversely affected, and requested OSM to investigate potential impacts. *Id.*

⁸ Chapter 88 of the Pa. Code provides State regulatory requirements for the mining of anthracite coal. 25 Pa. Code § 88.91 contains provisions for protecting the hydrologic balance "in the permit and adjacent areas."

25 Pa. Code § 88.91(a) provides that "[s]urface mining activities shall be planned and conducted to minimize disturbances to the prevailing hydrologic balance in the permit and adjacent areas and to prevent material damage to the hydrologic balance outside the permit area"; stating that the Department "may require additional

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and 88.107.⁹ HFO informed PADEP that it had 10 days within which to “take appropriate action to cause the violations described . . . to be corrected, or to show cause for its failure to do so.” TDN X07-120-149-001 TV1, at 1.

⁸ (continued...)

preventive, remedial or monitoring measures to assure that material damage to the hydrologic balance outside the permit area is prevented”; and, where operations are conducted on previously mined areas, requiring operators to plan and conduct surface mining activity “to maximize the abatement of water pollution and the reclamation of the land.”

25 Pa. Code § 88.91(b) provides for the preservation of water quality sufficient to sustain post-mining land uses of the permit area.

25 Pa. Code § 88.91(c) requires surface mine operations to adhere to the specific water treatment requirements and effluent standards set forth in § 88.92; and *25 Pa. Code § 88.91(d)* requires that if a permittee cannot conduct its operations in a manner that will prevent water pollution, the permittee “if necessary, will operate and maintain the necessary water treatment facilities until applicable treatment requirements and effluent limitations established under § 88.92 are achieved and maintained.” Further, “[i]f these practices are not adequate, the person who conducts surface mining activities shall provide the necessary water treatment facilities to obtain the applicable water quality standards.”

25 Pa. Code § 88.92 generally provides that, at all times, alkalinity will be greater than acidity, and the pH balance will be greater than 6.0 and less than 9.0. The effluent limitations for iron, manganese, and suspended solids are variable depending on the type of discharge (pit water, surface runoff, etc.) and the type of precipitation event, but, under normal conditions, discharges for these substances are regulated. Certain exceptions to these effluent limitations are set forth at *25 Pa. Code § 88.92(c)*.

⁹ *25 Pa. Code § 88.107* provides, among other things, that an operator of any mine or a person engaged in government-financed reclamation who affects a water supply by contamination, pollution, diminution or interruption shall restore or replace the affected water supply with an alternate source, adequate in water quality and water quantity for the purpose served by the water supply.

That regulation, at § 88.107(b), was amended effective May 9, 1998, to provide a presumption of liability that a surface mine operator is responsible for “all pollution, except bacteriological contamination, and diminution of public or private water supplies within 1,000 linear feet (304.80 meters) of the boundaries of the areas bonded and affected by coal mining operations.”

The Pottsville District Office (PDO), PADEP, initially responded to the TDN by letter dated March 7, 2007, stating that the investigation had been closed subsequent to a discussion with the SCMA, in which SCMA's manager "indicated that their sampling showed no contamination." That letter continued by stating that the manager "also indicated that, if a water quality problem developed, [SCMA] would immediately report the problem to [PADEP's] Water Management Program as required under state water supply regulations," and that "the investigation was terminated based on the fact that no problem could be documented with the water supply." Letter of Michael J. Menghini, PDO, to Eric Brummer, HFO, dated Mar. 6, 2007.

On April 4, 2007, the HFO received a second letter from Menghini stating that PDO, "in accordance with discussions with OSM staff," had agreed "to formalize and complete an investigation of the allegations that served as the basis for the above referenced Ten-Day Notice," stating that "[t]his is being done despite the fact that preliminary discussions with the Schuylkill Municipal Authority indicated that sampling showed no contamination," and requesting until June 1, 2007, to complete the investigation.¹⁰

A. PADEP's Technical Report

PDO geologist Ignacy Nasilowski conducted a field evaluation between March 29 and April 24, 2007, reviewed a number of data banks, and compiled water quality data prior to issuing the PADEP Report on August 7, 2007.¹¹ Nasilowski's stated purpose was "to determine if coal ash utilization for reclamation of abandoned mine lands at WGS has contaminated or could contaminate the Tremont water supply wells." PADEP Report at un. 2. Nasilowski stated that the area where Wells 4 and 15 are located is "one of the most geologically and structurally complicated areas within the anthracite coal fields," and that "[a]s a result of mining activities the area is marked by piles of refuse, strip mine scars, acid mine discharges, and a labyrinth of underground mine workings on most coal veins." *Id.* at un. 4. The geologist stated that local geologic structure consists of a series of "asymmetrical west-southwest/east-northeast striking anticlines and synclines that are modified by numerous faults"; that the hydrogeology of the area has been influenced by over 150 years of underground mining, with "significant influence from

¹⁰ A second request for extension was granted by the Pittsburgh Field Division (PFD) of OSM on June 4, 2007, permitting PADEP until Aug. 8, 2007, to respond. Administrative Record (AR), Tab 4.

¹¹ The report appended two maps, drill logs for Wells 4 and 15, and a number of laboratory analysis data sheets and water sample data spreadsheets. Exs. 1-15.

surface mining”; and that underground workings underneath WGS include the Westwood Mine Pool, the New Lincoln Mine Pool, and the Rausch Creek/East Franklin (RC/EF) Mine Pool.¹² *Id.*

Nasilowski reported that “WGS is located at a higher elevation than the Tremont water supply wells.” PADEP Report at un. 5. He stated that the elevation of WGS is between 1,400 feet Mean Sea Level (MSL) and 1,260 feet MSL; that the elevation of the Westwood Mine Pool is 1,260 feet MSL; that the surface elevation of Well 4 is approximately 1,230 feet MSL; that its bottom elevation is approximately 1,010 feet MSL; that the New Lincoln Mine Pool is 1,171 feet MSL; and that the RC/EF Mine Pool is 972 feet MSL. *Id.* He judged the surface elevation of Well 15 to be is about 820 feet MSL, and its bottom elevation to be approximately 470 feet MSL. *Id.*

Nasilowski stated that surface water from the WGS area drains to Lower Rausch Creek. PADEP Report at un. 5. The surface area around Well 4 is drained by Poplar Creek. *Id.* The surface area around Well 15 is drained by the lower section of Good Spring Creek. *Id.* at un. 3, 6.

Groundwater from the WGS ash area does not flow to the southeast towards Well 4, but is “intercepted to the west” by the underground mines that drain to Lower Rausch Creek, according to Nasilowski, but it first drains into a series of “abandoned underground mine workings” into the Westwood Mine Pool. PADEP Report at un. 3. Nasilowski stated that according to a personal communication from an engineer from the Pennsylvania Bureau of Mine Safety, *id.*, the Westwood Mine Pool’s barrier pillar is breached, permitting groundwater to flow between that pool and three other connected pools—the Lincoln and New Lincoln mine pools, and the RC/EF pool, eventually resurfacing “as numerous mine drainage discharges and seeps located along [Interstate Route] 81 that discharge to Lower Rausch Creek, [a] tributary of Swatara Creek.”¹³ *Id.* Groundwater from Well 15 flows into Good Spring Creek,

¹² The PADEP Report states that as the underground coal industry dug deeper in search of more coal, “the deeper sections of mines filled with water,” creating pools. The mine pools “discharge through airways, entryways, and tunnels” that were “built to drain large section[s] of mines” so that coal could continue to be recovered as the underground mining industry declined. PADEP Report at 4.

¹³ Swatara Creek originates near Tremont and joins Lower Rausch Creek and Lorberry Creek south of Lorberry Junction, then flows southwest through three Pennsylvania counties before its confluence with the Susquehanna River at Middletown.

which is below the local water table and obtains its flow from both surface runoff and groundwater discharges.” *Id.* at un. 4.

Nasilowski rejected Gadinski’s assertion that increased levels of alkaline substances detected during the pumping tests for Wells 2 and 4 indicated a zone of influence between those wells and the ash disposal area:

Well[s] no. 2 and 6 were removed and cannot be the subject of analysis. Well no[.] 4 do[es] not reach the extent of the mine pool as it is shown on the attached exhibit 15 cross-section. The drawing of the cone of depression included with the complaint was completed without respect to local mining and hydrogeologic conditions and runs counter to the long-term water quality data and to the current conceptual model of local groundwater flow.

PADEP Report at un. 6. He agreed that “[it] is obvious that ash leachate may change the chemistry of receiving water,” but stated that “the complainant’s claim of the scale of this event is highly exaggerated.” *Id.* The groundwater has become more alkaline, he opined, because there has been an overall improvement in water quality due to better mining and reclamation techniques and less mining activity. He viewed the concentrations reported at the WGS mine pool monitoring points as “consistent with the results of chemical analysis of typical mine water from the Llewellyn Formation.” *Id.* With regard to trace metals, he referred to the seven appended spreadsheets containing the compiled water quality data, and stated: “A review of recent and historical sampling results do not show increases in levels of tested metals.” He concluded that “the water quality data from the Tremont wells does not indicate any effects that might be linked to ash leachate,” and that “the water used by Tremont wells does not originate from areas that may receive WGS ash leachate.” *Id.*

Nasilowski summarized his findings in four major conclusions regarding water quality: (1) the water quality data does not support the allegation of contamination; (2) “[b]ased on controls imposed by the under-draining effects of [the] underground mine complex, groundwater beneath the WGS site is not recharging the capture zone of the Tremont wells”; (3) “[t]he water supply capture zone delineated from the Tremont well pumping test does not appear to consider the significant hydrologic controls exerted by the local undermining and is therefore of limited value”; and (4) “[m]ine pool monitoring points 2U and 3D show increases in concentrations of calcium and magnesium during the initial ash disposal period,” but they have “leveled off and have been stable over the last 12 years. The concentrations fall within [the] typical range of concentrations for calcium and magnesium that are published in groundwater resource reports” for that area. PADEP Report at un. 7.

B. PFD's Review of PADEP's Response to the TDN

On September 18, 2007, PFD notified Gadinski that it had conducted a technical review of PADEP's report regarding the complaint. That letter stated:

It is PADEP's conclusion that coal ash disposal activities at . . . [WGS] are not contaminating the water supply of Tremont Borough. PADEP contacted the Schuylkill County Municipal Authority, which owns the water supply. They reported no contamination in the two Wells (numbers 4 and 15) currently used as a water source, and advised that if water quality problems were to arise, they would immediately report the problem to PADEP's Water Management Program as required by law. PADEP took raw water samples from well numbers 4 and 15. Their analysis shows no influence from coal ash. PADEP's evaluation of surface drainage, mine pools and groundwater determined that the Westwood facility and associated mine pools and surface drainages are not hydrologically connected with wells 4 and 15.

PFD found PADEP's response to the TDN to be "appropriate' . . . because the report demonstrated that no violation of the Pennsylvania approved regulatory program exists." Sept. 18, 2007, letter of Chief, PFD, OSM, to Gadinski. It informed him that if he did not agree with its findings and conclusions, he could request an informal review of them pursuant to 30 C.F.R. § 842.15(a).

C. Gadinski's Request for Informal Review

Subsequently, Gadinski filed a request for informal review of that decision. See Oct. 17, 2007, Gadinski letter to David Hamilton, HFO, and attached letter to Nasilowski, identifying "deficiencies" and providing a rebuttal technical analysis. He responded to each of the four major conclusions set forth in Nasilowski's report, as described below.

1. Insufficient Data Regarding Water Quality

Gadinski argued that PADEP's "Compilation of Available Analysis Results" for Wells 4 and 15 (PADEP Report, Ex. 10) contained insufficient data upon which to draw a sound conclusion, specifically charging that there was a "paucity of data including Module 25 parameters," and the sampling was too sparse to ascertain a sufficient understanding of "seasonal flux of contaminant level." Oct. 17, 2007, letter at 2. Nonetheless, he asserted, Exhibit 10 (the spreadsheet containing monitoring data at the wells) "does show impacts" to the wells. He charged that Exhibit 10 shows that "pH is anomalous and the levels of Fe [iron] and Mn [manganese] have

increased.” He stated that “[t]his along with the interception of a major recharge boundary suggests impacts from the mine pool,” and that, “because of these factors,” the quality of water from Well 4 “should be carefully monitored.” *Id.*

2. *Obsolete Mine Pool Elevations; Insufficient Number of Wells Considered*

Gadinski asserted that PADEP’s investigator failed to gather and analyze field data that is standard in the practice of hydrogeology for the Anthracite Region. He stated that the only way a sound conclusion that the “groundwater beneath the WGS site is not recharging the capture zone of the Tremont wells” could have been accurately derived was “with the collection of static water levels from all site wells (monitoring and production) and wells placed in the mine pools.” Oct. 17, 2007, letter to PADEP at 3. Since “no contemporary water level data [from the permit area] was . . . collected during the course of the investigation[,]” he asserted, “[PA]DEP’s proposed conceptual model is based entirely on supposition and assumption without any supporting temporal site data.” *Id.*

Additionally, Gadinski stated, “vertical control¹⁴ was never established,” and “USGS maps . . . have an error factor of +/- 20' or more,” rendering the “projections of groundwater gradient” without basis. Oct. 17, 2007, letter at 3. He contended that “[s]ince water levels from at least three wells are needed to triangulate a groundwater gradient, it is incomprehensible how [PADEP] determined groundwater movement” based on elevations for Wells 4 and 15, “since the static water levels were collected only once and that is when the wells were drilled in 1994 and 1999, respectively.” *Id.* He stated that “not one potentiometric surface map of groundwater flow has been presented by [PA]DEP. Therefore, it was impossible for [PA]DEP to determine groundwater movement or potential hydraulic connections between wells and the mine pool with the absence of the most basic of groundwater data.” Oct. 17, 2007, letter at 3.

Further, Gadinski contended that PADEP ignored the drilling log for Well 4 in reaching its conclusion that “there is a lack of hydraulic communication between the water supply wells and the mine pool.” Oct. 17, 2007, letter at 3. He stated:

¹⁴ Vertical controls are used to establish accuracy in deriving elevation. They are derived from bench marks established by the National Geodetic Survey (NGS), an office of the National Ocean Survey, National Oceanic and Atmospheric Administration (NOAA). Bench marks are long lasting points for which elevations have been determined. See *NOAA Manual NGS 1–Geodetic Bench Marks*, http://www.ngs.noaa.gov/PUBS_LIB/GeodeticBMs.pdf. See also *Geographic Information Systems (GIS) and Mapping--Practices and Standards*, A. Ivan Johnson *et al.*, eds., ASTM International, 1992, at 298-99.

An inspection of this log shows a major flow zone at 177' of '200+ gallons/min/surging,' indicating that the intercepted flow zone was under head. . . . This depth, even ignoring the potential error of the surface elevation discussed above, puts the bottom of this well at or near the mine pool and a -20' error in elevation would place the bottom of the well at or below the mine pool projected elevation. Note that on this same log that a flow rate of 500 gallons/min. was estimated based on blown yield. This high volume yield indicates that a major recharge boundary had been intercepted by this well and since it was encountered at a depth within the range of the mine pool elevation suggests that a significant recharge boundary was intercepted which in all likelihood is the adjacent mine pool.

Id.

3. *The Water Supply Capture Zone*

Among other things, Gadinski rejected PADEP's conclusion that the pumping test conducted by the Tremont Water Company was of "limited value" because of "significant hydrologic controls exerted by the local undermining." Oct. 17, 2007, letter at 3. He stated that this conclusion is in error because "the purpose of a pumping test is to measure the drawdown of the static water level in observation wells that is indicative of groundwater movement." Oct. 17, 2007, letter at 3. He further contended that "[t]his geometry, despite [PA]DEP's criticism, delineates a drawdown pattern that extends along strike of bedrock in the direction of the disposal area for the WGS . . . disposal facility and further supports hydraulic communication between the . . . disposal area and Well-4." *Id.* at 4.

4. *PADEP's Assessment of Water Quality Data*

Gadinski maintained that, contrary to PADEP's conclusions, an evaluation of the groundwater data from Exhibits 13a and 13b demonstrates that

- There is an increase of anywhere from 1 to 2 units in pH between the 2U and 3D, the identified upgradient and downgradient wells, respectively.
- There is an order of magnitude increase of Al [aluminum], Fe [iron], Ca [calcium], Mg [magnesium], and Mn manganese between the downgradient and upgradient wells.
- Alkalinity has increased an order of magnitude between the downgradient and upgradient wells[.]

Id. at 4. He stated that “the same confirmatory trends are identified in Exhibit 14a and 14b, MP-1U and MP-4D, that have been identified as an upgradient and downgradient well, respectively.” *Id.* He further asserted that

[i]t appears that sampling for heavy metals was discontinued at [WGS’s] monitoring wells in the early to mid-90’s. The National Academy of Sciences has indicated that leaching of toxic metals from flyash piles can take up to a decade or longer to begin. Consequently, based on the increasing Ca and Mg concentrations the alkaline buffer may be breaking down and the metals held in this matrix may now be in transport. Monitoring for Module 25 metals should be initiated again [on a quarterly schedule] to ensure that the public water supply and the production wells are protected.

Id.

5. *Other Conclusions and Recommendations*

Gadinski further asserted that

[t]he monitoring system at the ash disposal site is inadequate based on areal placement. Nested wells that can measure the vertical gradient are necessary to monitor a site such as this. These monitoring wells are also necessary to evaluate contaminant stratification that can occur in mine pools from a sampling perspective. . . . Monitoring wells are needed in a northerly direction relative to the disposal area to better monitor contaminant movement in this direction.

Oct. 17, 2007, letter at 5. He recommended that “monitoring wells/piezometers should be placed within the CCW disposal area to determine the quality of leachate being generated within the waste,” *id.* at 6, and that PADEP “should refer to [its] own guidance document, *Groundwater Guidance Manual* (2001), to help in the design of a technically effective monitoring system at this site.” *Id.* at 5.

D. *OSM’s Technical Review*

As part of the informal review process, the Regional Director requested a technical review by Jay Hawkins, a hydrologist with the Water and Engineering Services Branch of OSM’s Appalachian Region, who issued a report (OSM Report) on November 16, 2007, concurring with Nasilowski’s conclusions.

Hawkins did find a number of shortcomings in PADEP's documentation. First, he suggested that plotting the water parameters of the two water sources—the wells and the mine waters—on a “Piper diagram” could illustrate whether they were similar in nature. Hawkins provided a Piper diagram in his Report, which we will address *infra*. OSM Report at un. 3-4. Second, he stated that “it would have been beneficial” for PADEP to include in its report “calcium and magnesium concentrations . . . typical for groundwaters in this area[,] and the published references from which they came,” in order to substantiate its conclusions that calcium and magnesium levels in the municipal wells were not higher than would be expected from water not influenced by fly ash disposal. *Id.* at un. 4. Third, in answer to Gadinski's assertion that there was a lack of vertical control for determining mine pool and groundwater levels, he stated: “True, it is not clear if Mr. Nasilowski used elevations from the USGS maps or other sources. However, this does not indicate a lack of vertical control[,] just a lack of documentation.” *Id.* at un. 6. Fourth, he suggested that “in the future a more detailed write up of the data collection and methods and procedures and all the raw data be included.” *Id.* at un. 8. And he admitted that Gadinski's suggestions “to sample the municipal Well 4 for trace elements associated with coal ash on at least an annual or semiannual basis is a good idea”; and to install “a set of piezometers between the ash disposal site and the municipal wells” are “good idea[s].” *Id.* at un. 8.

In spite of these weaknesses, Hawkins stated that he “found little fault with Nasilowski's investigation,” and concluded that PADEP's examination was sufficient, OSM Report at un. 3, and that PADEP's water testing methods, *i.e.*, analyzing for dissolved rather than total solids, were appropriate for evaluating contamination. *Id.* at un. 4-5. He found Gadinski's concern about “the alleged elevated magnesium levels perplexing.” *Id.* at un. 5. He stated that magnesium is not a “primary” or “secondary drinking water parameter . . . listed by the U.S. Environmental Protection Agency” at 40 C.F.R. §§ 141.62 and 143.3. *Id.* He asserted that magnesium concentrations at the levels present “at Wells 4 (9.45 to 12.0 mg/L) and 15 (5.5 to 6.6 mg/L)” are “frequently recorded in the absence of ash disposal in the coalfields of Eastern Pennsylvania,” citing USGS Reports 83-4274 and 95-4243, and that “calcium levels in Well 4 (50 to 80 mg/L) are not unusually high.” *Id.* He stated that “[w]hile Pottsville Formation strata are known for having little calcium carbonate, there are other minerals (e.g., Plagioclase feldspars) that can contribute dissolved calcium to the groundwater.” *Id.*

Hawkins then responded to each of the four major arguments presented in Gadinski's October 17, 2007, informal review request, as follows:

1. Water Quality Data for Wells 4 and 15

Hawkins admitted that “a series of samples collected during differing hydrologic conditions would be of interest.” OSM Report at 5. Then he essentially concluded that because water quality tests showed no contamination, seasonal variability was irrelevant. In Hawkins’ view, “groundwater samples tend to be less sensitive to seasonal variability than mine discharges or stream water.” *Id.* He deemed the samples reviewed by PADEP to be ample. *Id.*

2. Water Level Data

Hawkins addressed Gadinski’s claim that the PADEP investigator failed to verify static water levels by again excusing Nasilowski’s failure to document what he found: “There is no indication that Mr. Nasilowski did not use recent data for water levels within the mines related to this problem. On the contrary, since he was conducting field work in the area in the spring of 2007 it is likely that he recorded those data at that time.” *Id.* at 6. Hawkins went on to say that “[m]ine pool conditions whenever the water levels were recorded after ash disposal began would be indicative of the hydrologic flow system.” *Id.* He continued:

Additionally, there is no indication that the mine pool levels are any different today than they were 5 or 10 years ago. Once a mine floods to the level where it will begin to discharge at natural relief points, the water level tends to vary about a relatively narrow range dependent on the hydraulic characteristics of the discharge outlet and mine recharge rates.

Id.

In response to Gadinski’s assertion that “three wells are needed to yield a 3-dimensional view of the groundwater system,” Hawkins indicated that “[t]his would be true in most circumstances.” *Id.* But, he stated, “[a]n open mine pool will have essentially the same static water level regardless where the reading is recorded.” And, he added, “[t]he surface of the [RC/EF] mine pool (between the ash site and the municipal two wells) is not a single point but is U-shaped and thus along with Well 4 yields the 3-dimensional view one needs to assess the flow system.” *Id.*

With respect to Gadinski’s argument that the high pressure yield (200 gpm) obtained at the 177-foot depth when Well 4 was drilled establishes a connection between the mine water and well water, Hawkins stated that since the “two streams were different in quality, there was no connection,” and that “[t]he elevation of the inflow point is well above the established elevation of the pool” for the RC/EF mine.

Id. He surmised that Well 4 had “intersected a fracture zone at this level, probably one of the many known or unknown faults in this area;” that “aerial photography of the well location shows the presence of at least three . . . photo lineaments . . . that could account for the fracture zone;” and that “[t]he yielding level was in a weathered broken sandstone which also corroborates the intersection of a fractured zone.” *Id.* He acknowledged that the 500 gpm estimated blown yield of Well 4 was unusual for the “Pottsville Formation,” but he did not believe that estimation provided evidence that the water-bearing zone for Well 4 had contacted mine pool water. *Id.* at 6-7.

3. Use of Pumping Tests

Hawkins stated that one purpose of a pumping test is to “delineat[e] the extent of the drawdown influence area for the well.” *Id.* at 7. But he believed that Gadinski had misinterpreted the engineering diagram depicting “drawdown.” *Id.* at 6-7. Hawkins concluded that “we are dealing with fracture flow (secondary porosity and permeability),” which is “anisotropic and heterogenous.” *Id.* at 7. He concluded that the drawdown diagram was predicated upon a homogenous fracture flow, and did not consider substantial changes caused by underground mining. *Id.* at 8.

4. Water Quality Data Influenced by Ash Disposal

Hawkins stated that “[t]he State does not dispute that the mine water has been influenced by water draining through the ash.” *Id.* at 8. He reiterated that he does not view the calcium and magnesium levels in the municipal wells as proof that the mine water is reaching the wells, but stated, as we mentioned *supra*, that sampling Well 4 for trace metals associated with coal ash on at least an annual or semiannual basis, as well as placing piezometers between the ash disposal site and the wells, are good ideas. *Id.*

E. The Regional Director’s Decision

On February 25, 2008, the Regional Director, Appalachian Region, OSM, issued a decision affirming the September 18, 2007, decision by the Pittsburgh Field Division finding that PADEP had not acted arbitrarily, capriciously, or abused its discretion in response to the TDN. In reaching his decision, he concluded that Westwood had not violated the approved Pennsylvania program.

He recognized that coal ash disposal on active or abandoned coal mining sites may be authorized as a “beneficial use” under Pennsylvania law. If it is shown that a water supply is adversely affected by “contamination, pollution, diminution, or

interruption,” the operator must provide a replacement supply under 25 Pa. Code § 88.107. Decision at 5. Contamination is the only factor at issue herein. *Id.* Relying upon PADEP’s hydrological analysis, he concluded that the water supply had not been adversely affected by contamination, since “[a]ll surface and subsurface waters of the Westwood permit utilization area flow through abandoned coal mine lands into a system of underground workings and then discharge into Rausch Creek.” *Id.* at 7. He found no hydrological connection between Tremont’s water supply wells and the coal ash disposal area because the water from the coal ash area flows away from the zone of influence of Well 4, the closest of the municipal wells. *Id.* at 6. Further, he stated that the water level in the closest of the underground mines was lower than the water level in the bottom of Well 4, which “makes it unlikely that mine pool water will enter and impact the municipal well and clearly demonstrates the well is not hydrologically connected to CCB disposal area.” *Id.* He concluded that Well 15 is not hydrologically connected to the disposal area, because it is “approximately 1 mile” from Well 4 and is north of Good Spring Creek, which is north of the CCB disposal area. *Id.* at 7.

The Regional Director stated that the technical review conducted by Hawkins verified PADEP’s conclusions. Among other things, he stated, Hawkins determined that (a) “none of the samples from Wells 4 and 15 showed any indication of contamination and therefore it would not be possible to show seasonal variability of undetected contaminants”; (b) “PADEP’s analysis of the physical hydrologic system was accurate and supported by sampling”; (c) the water had been sampled for trace elements, “which are very important parameters for analyzing domestic water supplies for contamination from CCBs,” and none were detected; and (d) Hawkins “plotted the water quality data on a Piper diagram,” which “clearly shows a lack of water quality similarity between the mine water and the well water.” *Id.*

He asserted that although “changes in water chemistry were documented” from “approved monitoring locations in Rausch Creek and the mine pools associated with the drainage from the CCB disposal area,” indicating an initial “influence from CCB disposal,” those parameters quickly leveled and have remained consistent since 1994.” *Id.* He stated that those impacts “are not adverse impacts to the hydrologic balance because they make the waters less acidic than the water quality prior to the commencement of disposal practices at Westwood’s permit.” *Id.*

He emphasized that the SCMA assistant manager substantiated that no reports of contamination had been made to PADEP’s water management program. *Id.* at 8. He stated that SCMA’s response, combined with “the analysis of the water quality data collected and the establishment of the surface and groundwater drainage paths, clearly show no contamination. . . . Absent such a finding, the operator has not

violated the provisions of 25 Pa. Code 88.91 or 88.107 or 35 P.S. 691.315.” *Id.* at 8. He continued:

Because the operator has not violated these provisions, a violation of the approved Pennsylvania program with respect to the Tremont public water supply does not exist. Therefore, I cannot find that PADEP’s response to the [TDN] was arbitrary, capricious, or an abuse of discretion. As a result, I have no basis for ordering a Federal inspection.

Id.

Gadinski appealed the Regional Director’s decision to this Board, asserting that it was arbitrary and capricious.¹⁵ As discussed below, we conclude that Gadinski has demonstrated that the record does not support the Regional Director’s decision.

III. ARGUMENTS ON APPEAL

Gadinski presents a detailed and compelling analysis of the water quality data and the geology underlying the mine pool and coal ash area, demonstrating a theoretical connection between the disposal area/Westwood mine pool and Tremont Wells 2 and 4; and argues that the conclusions set forth in OSM’s and PADEP’s technical reports are not based upon sound hydrogeological methodology and analysis. Among other things, he argues that PADEP and OSM hydrologists (1) failed to account for large gaps in the longitudinal water quality data for “module 25 metals” both at the mine and the wells (SOR at 2-4, 12); (2) failed to correlate trace metal levels in the groundwater between the mine and the wells, particularly with respect to Wells 2 and 4 (*id.* at 3); (3) failed to sample the water quality of the wells over a period of time sufficient to establish whether there was a “seasonal flux of contaminant levels” (*id.*); (4) failed to confirm whether the well samples had or had not been treated by the municipal treatment plant (*id.* at 3); (5) invalidly interpreted the Piper diagram to conclude that the mine pool area does not influence the capture zone of the wells (*id.* at 10); (6) failed to accurately interpret the existing water quality data, arguing that the data confirms that iron and manganese from the ash area are moving off site (*id.* at 11); (7) failed to conduct an adequate field examination to verify the accuracy of elevation levels, including establishing vertical

¹⁵ In his SOR on appeal, Gadinski addressed Hawkins’ Technical Report and Shope’s decision separately. He also submitted a second letter of the same date, which we will identify as a supplemental SOR (SSOR). Gadinski included nine appendices with the SOR, as well as a compact disk containing copies of all data and sources he refers to in the SORs.

controls (*id.* at 5-7); (8) failed to establish and verify what the static water levels were in the wells and the mine pools, and, consequently, failed to incorporate that information into the overall hydrologic analysis (*id.* at 3-7); and therefore (9) failed to accurately map groundwater potential gradient relative to the coal ash site and the municipal wells (*id.* at 4).

Additionally, Gadinski argues that (1) PADEP and OSM failed to verify whether the WGS monitoring wells accurately measure what they purport to measure (SOR at 3-4); (2) PADEP failed to investigate how WGS's withdrawal of groundwater at "800 gallons per minute" for cooling purposes affects groundwater flow (*id.* at 5, 7, 9); and (3) failed to consider the 1994 well log and water quality report for Well 2, which, he argues, further supports his conclusion that mine water is detrimentally influencing the groundwater in the direction of Wells 2 and 4 (*id.* at 4, 8, 10). Further, he claims that PADEP's cross-sectional map (Ex. 15) erroneously mapped an anticlinal structure between the coal ash area and the municipal wells when, in fact, accepted geological mapping sources confirm that there is a synclinal structure plunging to the east between the mine area and the wells, which further supports his conclusion that the two are hydrogeologically connected (*id.* at 8-9, 17-18).

OSM maintains that Gadinski's alternative analysis does not refute OSM's two conclusions: that there was insufficient evidence of a hydrologic connection between the CCB disposal activities and the municipal water supply, and that there was no evidence of CCB contamination in the municipal water supply. OSM Answer at 12-24.

IV. ANALYSIS

OSM and Gadinski fundamentally differ concerning what this case is about. OSM characterizes the issue in terms of contamination—that is, is the coal ash deposit at Westwood contaminating the Tremont water supply? OSM concludes that there is no hydrologic connection between Westwood's coal ash disposal activities and the Tremont water supply, and that because water quality tests have not demonstrated a clear level of contamination in the municipal water according to Pennsylvania water quality standards, there is no violation of SMCRA, and OSM had no basis upon which to assume Federal enforcement of SMCRA at Westwood's generating plant.

Gadinski, on the other hand, maintains that this case is about impacts of the WGS coal ash deposit upon the hydrologic balance in the groundwater flow between WGS and the Tremont municipal wells. Gadinski contends that this case is about whether PADEP failed to adequately investigate his complaint, and whether OSM

impermissibly excused PADEP's failure to conduct a satisfactory investigation into the potential impacts of the coal ash deposit upon groundwater flow, to the detriment of the public. He asserts that it is about whether PADEP has required WGS to adequately monitor its coal ash disposal site for CCB leachate that could be drawn into groundwater hydrogeologically connected, via groundwater flow, to the municipal water supply. PADEP's investigation was fundamentally flawed, Gadinski claims, because it assumed that, because contamination of the public water supply was not evident, the WGS site is compliant with all State requirements impacting coal ash disposal sites, when, in fact, there is a reasonable probability that the WGS coal ash site and the Tremont water supply are linked through groundwater flow.

[1] The Surface Mining Control and Reclamation Act of 1977 (SMCRA) is comprehensive legislation designed to "establish a nationwide program to protect society and the environment from the adverse effects of surface coal mining operations." 30 U.S.C. § 1202(a) (2006). A State with a regulatory program approved by the Department obtains primary responsibility for regulating surface coal mining and reclamation operations. 30 U.S.C. § 1253 (2006); *In re Permanent Surface Mining Regulation Litigation*, 653 F.2d 514, 519 (D.C. Cir. 1981). Pennsylvania's regulatory program was conditionally approved in 1982 and has been subsequently amended. 30 C.F.R. §§ 938.10, 938.15. Even after a State is granted primary enforcement responsibility, however, the Department retains significant oversight authority to ensure that the State's administration of its program complies with SMCRA, including the authority to conduct inspections. 30 U.S.C. § 1267(a) (2006); see *John L. Stenger*, 175 IBLA 266, 277 (2008), and cases cited; *In re Permanent Surface Mining Regulation Litigation*, 653 F.2d at 521 ("Congress did not withhold powers that the Secretary might require in his efforts to safeguard federal interests"); *Annaco, Inc. v. OSM*, 119 IBLA 158, 162-64 (1991).

Any person may request a Federal inspection by filing with OSM what is known as a "citizen's complaint," which provides information indicating there is a violation, condition, or practice that requires correction and that the State regulatory authority has been notified. 30 U.S.C. § 1267(h) (2006); 30 C.F.R. § 842.12(a). If the facts alleged provide OSM a reason to believe there is a condition, practice, or violation of SMCRA, Departmental regulations, the applicable regulatory program, or any condition of a permit or exploration approval, or that there exists a condition, practice, or violation which creates an imminent danger to the health or safety of the public or is causing or could reasonably be expected to cause a significant, imminent environmental harm to land, air, or water resources, OSM must immediately conduct a Federal inspection, unless there is a State regulatory authority enforcing the State program. 30 U.S.C. § 1271(a)(1) (2006); 30 C.F.R. § 842.11(b)(1), (2). If there is a State-administered regulatory authority, OSM must issue a notice allowing the State 10 days to take appropriate action to cause

the violation to be corrected or show good cause for not doing so. 30 U.S.C. § 1271(a)(1) (2006); 30 C.F.R. § 842.11(b)(1)(ii)(B)(1); *John L. Stenger*, 175 IBLA at 277, and cases cited; *West Virginia Highlands Conservancy*, 152 IBLA 158, 184 (2000) (“[n]either the statute nor an implementing regulation gives OSM discretionary authority to do otherwise; the issuance of a TDN should be automatic”). “Good cause” is defined to include five situations when the State may decline to take action to have a violation corrected, including, of relevance in this appeal, the situation in which, “[u]nder the State program, the possible violation does not exist.” 30 C.F.R. § 842.11(b)(1)(ii)(B)(4); see also *John L. Stenger*, 175 IBLA at 277, and cases cited.

The State must respond within 10 days of receipt of the notice and OSM has a responsibility to evaluate the State’s response and determine that it was not arbitrary, capricious, or an abuse of discretion because the State either took an appropriate action to have the violation corrected or provided OSM a reason for not doing so under the State regulatory program constituting “good cause.” *Mystic Brooke Development, Inc.*, 175 IBLA 209, 211-12 (2008); *Pittsburgh & Midway Coal Mining Co. v. OSM*, 132 IBLA 59, 73-77 (1995); *Powderhorn Coal Co. v. OSM*, 129 IBLA 22, 24 (1994). If the State does not provide a satisfactory response, or does not respond at all, OSM is required to immediately order a Federal inspection. 30 U.S.C. § 1271(a)(1) (2006); 30 C.F.R. § 842.11(b)(1)(ii)(B)(1); see *Central Ohio Coal Co. v. OSM*, 140 IBLA 1, 6-9 (1997). The statute does not allow OSM to delay undertaking an inspection by withholding a determination on the State’s response to the TDN, although an inspection may be deferred pending a State’s informal request for review. *Robert L. Clewell*, 123 IBLA 253, 265-67, 99 I.D. 100, 107-09 (1992) (discussing 30 C.F.R. § 842.11(b)(1)(iii)(B)).

OSM must inform the person who filed the citizen’s complaint of its response to the complaint. 30 C.F.R. § 842.12(d). If OSM decides not to inspect the site or otherwise take appropriate enforcement action with respect to the alleged violation, a person adversely affected by the surface coal exploration, mining, or reclamation operation may seek informal review by the Director of OSM. 30 C.F.R. § 842.15(a). The Director’s decision is subject to appeal to the Board. 30 C.F.R. § 842.15(d). A party challenging a decision finding that the State’s response to a TDN was “acceptable” has the burden of establishing by a preponderance of the evidence that OSM erred; it does so by showing that the State’s regulatory action or response to the TDN was arbitrary, capricious, or an abuse of discretion. *John L. Stenger*, 175 IBLA at 278, and cases cited. When OSM issued its rulemaking adopting the “arbitrary, capricious, or abuse of discretion” standard as the measure for rejecting a state’s response to a TDN, it explained that “[a]n arbitrary or capricious response, or one that is an abuse of discretion under the State program, would be one in which the State regulatory authority has acted irrationally, or without adherence to correct

procedures, or inconsistently with applicable law, or without proper evaluation of relevant criteria.” 53 Fed. Reg. at 26733; *see also* 52 Fed. Reg. 34050, 34051 (Sept. 9, 1987).

Where an appellant has raised objections to a Regional Director’s decision on informal review, our first task is first to determine if there is basis in the record to support OSM’s conclusions, and if so, whether the appellant has established that the Regional Director erred in reaching the conclusion that he reached. *John L. Stenger*, 175 IBLA at 278; *Mystic Brooke Development, Inc.* 175 IBLA at 219-20; *Harvey Catron*, 134 IBLA 244, 265 (1995), *aff’d*, *Catron v. Babbitt*, No. 96-0001-BSG (W.D. Va Mar. 5, 1997), *vacated on other grounds*, No. 97-1449 (4th Cir. Dec. 22, 1997). In cases involving an expert’s interpretation of data, the appellant must demonstrate by a preponderance of the evidence that the expert erred when collecting the underlying data, when interpreting that data, or in reaching the conclusion. *Harvey Catron*, 134 IBLA at 265-66. An administrative decision is properly set aside and remanded if it is not supported by a case record providing the information necessary for an objective, independent review of the basis for the decision. *Shell Offshore, Inc.*, 113 IBLA 226, 233, 97 I.D. 73, 77 (1990); *Fred D. Zerfoss*, 81 IBLA 14 (1984); *The Navajo Nation*, 152 IBLA 227, 234 (2000).

In applying these principles to the instant case, we conclude that the record fails to adequately support the Regional Director’s decision, and that Gadinski has preponderated on his claim that there is insufficient basis in the record to support the findings and conclusions of the Government hydrologists. PADEP’s hydrologist admits that the WGS site is located in one of the most geologically complex coal mining areas of the State; yet, as pointed out by Gadinski, without any explanation of the protocol he used to reach his conclusions, he states that all the water flowing from the coal ash area flows through underground mine tunnels and out into Rausch Creek, much as water flows out the drain of a bathtub and into drainpipes that take the waste water to a treatment plant. Based on these unsupported assumptions, PADEP’s hydrologist concluded that there is no hydrologic connection between Westwood’s coal ash activities and the Tremont water supply. Gadinski convincingly argues that it is just as plausible that the municipal wells in part draw from aquifers that are connected to the underground mine drainage system through fractured and porous synclinal strata, and/or through a breach or breaches of the tunnels themselves. Importantly, as Gadinski points out, PADEP failed to verify the basic data upon which it relies for its conclusions: static water levels across the area which would confirm the position of the water table; verification of the elevations of the relevant points that would establish with a degree of scientific certainty whether water from the mine areas is or is not finding its way to the wells; a thorough analysis of historical water quality data; and sufficient water quality monitoring to

document seasonal changes in static water levels, as well as whether leachate is flowing to the east toward the wells.

OSM's hydrology expert voiced concerns about PADEP's approach, suggesting that it could have benefitted from "a more detailed write up of the data collection and methods and procedures." We could not agree more. PADEP's report, which, in large measure, provides the basis for the Regional Director's decision, lacks basic information that is indispensable to an analysis of a surface coal mining site, beginning with the terms of the permit itself. The Regional Director expounded at some length in his decision concerning PADEP's permitting process for "beneficial uses" of coal ash. Yet there was no documentation in PADEP's report that indicates that WGS's mine was approved by PADEP as a beneficial use site. Under Pennsylvania regulations, coal ash that is not approved for "beneficial use" is characterized as "coal refuse disposal," and is regulated by Title 25, Chapter 88, Subchapter D of the Pennsylvania Code (25 Pa. Code §§ 88.281-347), rather than Title 25 Chapter 287, Subchapter H (25 Pa. Code §§ 287.601, 663-664).

The Regional Director points out that "[t]he permitting process required to allow CCBs to be used at active coal mine sites or used to reclaim abandoned coal mine sites requires a two-step application process":

First the CCB must be certified for beneficial use. The generator of the CCB must submit to the PADEP Part C-Coal Ash Generation and Coal Ash Quality Information and Part D-Coal Ash and Leachate Analyses and attach laboratory results required by the Certification Guidelines for Beneficial Uses of Coal Ash document 563-2112-224. When certification is achieved, the second step is to utilize the certification and 25 Pa. Code 287.663 and/or 287.664 collectively to obtain a permit through the PADEP Bureau of Mining and Reclamation. One of the operating requirements of section 287.664 is that the use of the CCBs as part of the reclamation activity shall be designed to achieve an overall improvement in water quality.

Decision at 5. Yet neither these procedures nor the requirements of the permit itself were documented in the record, leaving us to wonder what exactly is the status of the coal ash site at WGS. Did WGS certify the contents of the coal ash to PADEP? Has that certification been maintained? What are the physical and chemical properties of the coal ash at this site? Did or does WGS have a coal ash sampling plan? If so, what information did or does that sampling yield about the ash disposed of at this site? As the Regional Director points out, these are questions that, if the ash had been certified for beneficial use under Pennsylvania law and regulations, would be provided to PADEP by WGS as part of its "Coal Ash Beneficial Use Certification

Application,” Form 5600-PM-MR0011, 8/98. Consequently, the record fails to support the Regional Director’s conclusion that the WGS coal ash was authorized for beneficial use.¹⁶

There was also a failure on the part of PADEP to provide basic factual information concerning the coal ash site and the permitted area. Although we infer from Gadinski’s pleadings that the ash disposal area is a land fill, PADEP’s report fails to confirm that. In fact, PADEP made no attempt to describe the nature of the site at all in its report other than to say it is 441 acres in area and has 4 monitoring points, 2 upstream and 2 downstream of the area. There is no documentation concerning how the land fill is structured, or what precautions, if any, WGS used in applying the ash, or whether any part of the disposal site is maintained as an impoundment. We are left wondering if the Westwood mine pool is partially or wholly a coal ash impoundment. Is WGS still actively applying coal ash, or has the area been fully reclaimed?

We are not interested in answers to these questions merely as passing curiosity; we are interested in them because they would provide context for the nature of the investigation PADEP undertook. Pointedly, context is sorely lacking in PADEP’s analysis, and OSM’s attempts to fill in the blanks are, for the most part, ill-conceived. The Regional Director’s decision leaves the distinct impression that the site was approved as a beneficial use site, then concludes, on the basis of Hawkins’ report, that all field and research protocols were properly executed by PADEP’s hydrologist, even though the record lacks relevant documentation; and finally, that the coal ash deposit is beneficial because it improves the water quality downstream of the mine,¹⁷ but, in any event, is not hydrologically connected to the water supply. Decision at 5, 8. These conclusions, though apparently provided as support for the Regional Director’s decision, extend far beyond what PADEP’s investigation reported, and are thus not supported by the record.

The fact that SCMA had not reported any contamination in the municipal water supply was emphasized by PADEP, OSM’s District Office, and the Regional Director when each concluded that there was no violation of surface mining

¹⁶ It may well have been, but the record fails to confirm the terms, if any, under which the coal ash was deposited.

¹⁷ PADEP’s investigation did not evaluate the impacts of the coal ash site on the overall water quality of Lower Rausch Creek.

requirements.¹⁸ The Regional Director’s decision stated that “[t]he water supply under discussion was developed as a public water supply . . . *prior to* Westwood’s disposal practices” (Decision at 8, emphasis added), and concluded that no changes to the water supply had ever been reported, leaving the impression that, if there was a hydrological connection between the two, it would have been registered by the SCMA when the ash was deposited. In point of fact, the well logs for Wells 2 and 4 show that they were drilled in 1994, and Well 15, in 1999, and, according to PADEP’s Technical Report, “coal ash has been used for reclamation of abandoned mine land at WGS since September 1989.” Thus, the Regional Director’s implied suggestion that water quality reports from the municipal wells at issue are equivalent to a baseline or background water quality report taken *prior to* CCB disposal is contrary to the record.

¹⁸ As we pointed out in our factual summary *infra*, PDO/PADEP originally responded to OSM’s TDN that there was no violation because SCMA’s manager stated that there was no contamination of the public water supply, and that “the investigation was terminated based on the fact that no problem could be documented with the water supply.” On Apr. 4, 2007, the OSM field office received a letter from PDO stating that “in accordance with discussions with OSM staff,” it had agreed “to formalize and complete an investigation of the allegations that served as the basis for the above referenced Ten-Day Notice,” and noting that “[t]his is being done despite the fact that preliminary discussions with the Schuylkill Municipal Authority indicated that sampling showed no contamination.” Thus, OSM withheld its determination on the State’s response to the TDN, and gave the State a second chance. In *Mystic Brooke Development, Inc.*, 175 IBLA at 212, this Board pointedly stated that

[i]f the State does not provide a satisfactory response, or does not respond at all, OSM is required to immediately order a Federal inspection. 30 U.S.C. § 1271(a)(1) (2000); 30 C.F.R. § 842.11(b)(1)(ii)(B)(1); *see Central Ohio Coal Co. v. OSM*, 140 IBLA 1, 6-9 (1997). *The statute does not allow OSM to delay undertaking an inspection by withholding a determination on the State’s response to the TDN, although an inspection may be deferred pending a State’s informal request for review. Robert L. Clewell*, 123 IBLA 253, 265-67, 99 I.D. 100, 107-09 (1992) (discussing 30 C.F.R. § 842.11(b)(1)(iii)(B)). [Emphasis added.]

Thus, OSM failed in this case to comply with the statutory requirement to make a finding whether the response was satisfactory. PADEP’s letter essentially acknowledged that OSM suggested that it take a second look, a clear indication that OSM considered PADEP’s first response to be unsatisfactory. Under section 521(a) of SMCRA, the proper course of action at that point for OSM was to “immediately order a Federal inspection.”

[2] This brings us to the topics of the Piper diagram, the water quality data, and other geological and geographical data underlying OSM's acceptance of PADEP's findings. The Board has, in other contexts, held that it is incumbent upon technical experts to provide sound and rational explanations for their use and interpretation of raw data reports, including revealing the underlying facts and assumptions they have used in reaching the conclusions reached. *Bookcliff Rattlers Motorcycle Club*, 171 IBLA 6, 20-21 (2006), and cases cited. We hold here that this principle applies equally to hydrogeological analyses conducted under SMCRA. When OSM finds, on the basis of a hydrologic analysis, that a State had good cause for not causing a violation to be corrected, and supporting technical reports fail to document the methodologies and protocols the State used to derive the factual and theoretical bases for its conclusions, including the underlying facts and assumptions it used to develop geologic maps¹⁹ and to interpret water quality data accumulated on spreadsheets²⁰ it relied on in reaching material technical conclusions, it is impossible to determine whether those conclusions are supportable, and the Board will find that there is not basis in the record to support OSM's conclusions. *John L. Stenger*, 175 IBLA at 277-80; *see also Harvey Catron*, 134 IBLA at 265-66.

For example, in the case of the Piper diagram, Gadinski's point that one cannot assume that the well water and the mine water would show identical characteristics on a Piper diagram if they were hydrogeologically related is well-taken: if both water sources are mingling in an aquifer, the non-mine water source would, in effect, dilute the chemistry of the mine water. Also, Gadinski raised a question in his complaint and subsequent pleadings regarding whether the municipal well water is treated prior to water quality monitoring. That question was not satisfactorily addressed in the record, but OSM supplemented the record on appeal with additional information. With its Answer, OSM filed an e-mail communication from David Hamilton, HFO, who confirmed that except for one of the municipal well samples, all had been

¹⁹ PADEP's Report contains no explanation concerning how it verified and plotted static water levels and the underlying geological structure of the cross-sectional area shown on Ex. 15, leaving open the question of whether it is reliable, particularly when viewed in light of Gadinski's rebuttal analysis addressing static water levels, vertical controls, and the underlying geology as mapped by Wood and Trexler. *See, e.g.*, SOR at 10.

²⁰ The dates of all the water quality samples compiled on PADEP's Exs. 14a and 14b were omitted from photocopy entered into OSM's record, rendering the record for monitoring points 1U and 4D meaningless for verifying when monitoring samples were taken. From the blank areas on various portions of the spreadsheet, we are able to confirm that there are gaps in monitoring data for some trace metals, as Gadinski claims. *See* SOR at 3.

taken prior to treatment. E-mail communication from David Hamilton, OSM, to Chester L. Edwards, OSM, dated Apr. 2, 2008. We do not know, however, if the sample that was treated for Ortho-Phosphates was included in Hawkins' Piper diagram analysis. To the extent it was, the Piper diagram would measure profiles of treated and untreated water samples on the same grid.

Additionally, no water quality samples from Well 2 were plotted on the Piper diagram. Gadinski's original complaint alleged that the capture zones of Wells 2, 4, and 6 were adversely affected, but PADEP did not investigate Well 2, which it averred was not operating. OSM's Answer as supplemented by Hamilton's e-mail communication confirms that Well 2 is not used but is still available, and that Wells 2 and 4 draw from the same aquifer. Hamilton e-mail communication dated Apr. 2, 2008. Thus the data for Well 2 is relevant to the question of whether there is a hydrological connection between the municipal water supply and the ash disposal/mine pool area, and should be considered on remand.

We have similar questions about the static water line and the geologic representations drawn on the cross-sectional map (PADEP's Exhibit 15). As Gadinski points out, there is no verification in PADEP's report that protocols for determining reliable elevation levels or static water levels were followed; nor is there any indication of how the underlying rock strata were verified. Thus we have no way of determining whether the static water line and the placement of the wells is an accurate representation, and thus the conclusions drawn from the cross-sectional diagram are simply not supported by the record.

And there is the reality that the municipal water quality data is sparse. In the e-mail communication attached to OSM's Answer, Hamilton commented on the fact that PADEP had taken only one water sample from the municipal wells: "Now, can a conclusion be drawn on one sample? Maybe not, Jay [Hawkins] did note a paucity of data. SRBC apparently only requires raw water well sampling every three years. So there won't be much data anyway." Hamilton e-mail dated Apr. 2, 2008. Hamilton continued: "Do we require PADEP to institute a monthly sampling program to document no contamination over a long term, even when the data available does not indicate a problem?" We are remanding this appeal to OSM because the record as a whole contains insufficient indicia of reliability to support OSM's findings and conclusions that PADEP properly evaluated relevant criteria. *John L. Stenger*, 175 IBLA at 278 (quoting 53 Fed. Reg. 26733-34 (July 14, 1988), reaffirming 52 Fed. Reg. 34050, 34051 (Sept. 9, 1987)). We leave it to OSM and PADEP to determine how best to do that in the future.

While we could continue to address each allegation and response of the parties specifically, as we are setting aside and remanding this case for further consideration,

we find no reason to do so. We think it clear from our analysis thus far that the gravamen of Gadinski's complaint was that the hydrologic balance of the groundwater feeding municipal Wells 2 and 4 was jeopardized by their proximity of the WGS ash disposal area and mine pool. What OSM's TDN charged was that a complaint had been lodged with respect to contamination of the public water supply; consequently, what PADEP investigated was whether the municipal water supply was in violation of water quality standards. They are not the same issue. Proof that the Tremont water supply was not contaminated does not verify that the hydrologic balance of the groundwater between the WGS CCB disposal area and the wells is not adversely affected.

Pennsylvania requires anthracite coal mining permittees to maintain the hydrologic balance of groundwater systems in the permit and affected adjacent areas. 25 Pa. Code § 88.105 provides:

§ 88.105. Hydrologic balance: groundwater monitoring.

(a) Groundwater levels, subsurface flow and the quality of groundwater shall be monitored in a manner approved by the Department to determine the effects of surface mining activities on the reclaimed lands and on the quantity and quality of water in groundwater systems in the permit and adjacent areas.

(b) When surface mining activities may affect the groundwater systems which serve as aquifers which ensure the hydrologic balance of water use on or off the permit area, groundwater levels and groundwater quality shall be monitored. Monitoring shall include measurements from a sufficient number of sources and chemical analyses of water from aquifers that are adequate to reflect changes in groundwater quality and quantity resulting from those activities. Monitoring shall be adequate to plan for modification of coal refuse disposal activities, if necessary, to prevent to the maximum extent possible, disturbance of the prevailing hydrologic balance. At a minimum, total dissolved solids or specific conductance corrected to 25°C, pH, acidity, alkalinity, total iron, total manganese, sulfates and water levels shall be monitored and reported to the Department at least every 3 months for each monitoring location.

(c) The Department may require the operator to conduct additional hydrologic tests, including but not limited to, drilling, infiltration tests, aquifer tests, chemical and mineralogic analyses of overburden and spoil to demonstrate compliance with this section.

(d) The Department may require the operator to conduct monitoring and reporting more frequently than every 3 months, and to

monitor additional parameters beyond the minimum specified in this section. [Emphasis added.]

See also 25 Pa. Code § 88.305. Although, as we noted, Hawkins thought that additional monitoring was a “good idea,” neither PADEP nor OSM considered whether groundwater monitoring of the CCB disposal area is adequate. Gadinski forcefully argues that it is not.²¹

PADEP has recently published draft proposed regulations specifically governing coal ash disposal activities, including specific protocols for water quality monitoring.²² The draft regulations would require the water quality monitoring system to “accurately characterize groundwater flow, groundwater chemistry and flow systems on the site and adjacent areas.” Draft proposed rulemaking 3/9/2009, § 290.302(a) (*see n.22 for citation*). This is essentially what Gadinski has alleged was not done at the WGS site. Upon remand, in addition to other matters we have addressed *infra*, that question should be the focus of inquiry.

As we mentioned above, Gadinski’s SOR augments his initial complaint with maps and other data that neither OSM nor PADEP considered during the course of their investigations. As it concerns the question Gadinski initially raised, he should

²¹ The challenges presented by groundwater monitoring in the Pennsylvania coal fields are discussed in section 4.2 of PADEP’s 2004 publication, *Coal Ash Beneficial Use in Mine Reclamation and Mine Drainage Remediation in Pennsylvania*, at 74-78. The impacts of coal combustion residues on groundwater flow and the need for adequate groundwater monitoring are also discussed at length in the National Academy of Sciences publication, *Managing Coal Combustion Residues in Mines*, National Academies Press (2006), at 50-67 and 138-146. PADEP’s “Draft Proposed Coal Ash Storage and Beneficial Use Regulations” propose to adopt many of the recommendations suggested by the National Academy of Sciences. See <http://www.dep.state.pa.us/dep/subject/advcoun/solidwst/2009/3-19-09/SummaryCHAPTER-290-3-9-09.pdf>.

²² See <http://www.dep.state.pa.us/dep/deputate/minres/bmr/programs/beneficial.htm>; see also <http://www.dep.state.pa.us/dep/subject/advcoun/solidwst/2009/3-19-09/CHAPTER-290Rev3-9-09.doc>, at draft. While these regulations are not yet promulgated, they were drafted by PADEP and as such, represent its current thinking concerning the direction Pennsylvania must take with respect to CCB disposal.

be permitted to append that data to his original complaint, and it should be considered upon remand.

V. CONCLUSION

We set aside and remand OSM's decision because we find that there is insufficient basis in the record to support the Regional Director's conclusions. We further find that Gadinski has preponderated on his claim that there is insufficient basis in the record to support the findings and conclusions of the Government hydrologists, and that the record as a whole contains insufficient indicia of reliability to support OSM's findings and conclusions that PADEP properly evaluated relevant criteria.

Therefore, pursuant to the authority delegated to the Board of Land Appeals by the Secretary of the Interior, 43 C.F.R. § 4.1, the decision appealed from is set aside and this matter is remanded to OSM for action consistent with this opinion.

/s/
James F. Roberts
Administrative Judge

I concur:

/s/
Christina S. Kalavritinos
Administrative Judge