

ILLINOIS POLLUTION CONTROL BOARD

June 6, 2002

IN THE MATTER OF: )  
 )  
MATERIAL SERVICE CORPORATION ) AS 02-1  
PETITION FOR AN ADJUSTED ) (Adjusted Standard - Water)  
STANDARD FROM 35 ILL. ADM. )  
CODE 302.208, 406.202 and 304.105 )

OPINION AND ORDER OF THE BOARD (by R.C. Flemal):

This matter comes before the Board upon a "Petition for Adjusted Standard" (Pet.) filed on November 29, 2001, by the petitioner, Material Service Corporation (Material Service). Material Service requests an adjusted standard that would allow it to have increased levels of sulfate and total dissolved solids (TDS) in the discharge in the McCook Drainage Ditch from Material Service's Federal Quarry located in Cook County.

The Board's responsibility in this matter arises from the Environmental Protection Act (Act) (415 ILCS 5/1 *et seq.* (2000)). The Board is charged to "determine, define and implement the environmental control standards applicable in the State of Illinois" (415 ILCS 5/5(b) (2000)), and to "grant . . . an adjusted standard for persons who can justify such an adjustment" (415 ILCS 5/28/1(a) (2000)). More generally, the Board's responsibility in this matter is based on the checks and balances integral to Illinois environmental governance: the Board is charged with the rulemaking and principal adjudicatory functions, and the Illinois Environmental Protection Agency (Agency) is responsible for carrying out the principal administrative duties.

The Act also provides that "the Agency shall participate in [adjusted standard] proceedings." 415 ILCS 5/28.1(d)(3) (2000). On April 16, 2002, the Agency filed a motion for leave to file the recommendation *instanter* and the recommendation. The Agency supports grant of an adjusted standard. The motion is granted. On April 17, 2002, Material Service filed a letter with the Board indicating it did not wish to file a response to the recommendation, and waiving its right to a hearing.

Based upon the pleadings before it and upon review of the factors involved in the consideration of adjusted standards, for the reasons outlined below, the Board finds that Material Service has met the requirements for an adjusted standard and grants relief from Section 304.105 and 406.202 of the Board's regulations. The Board denies Material Service's request for relief from Section 302.208 of the Board's regulations as unnecessary.

**PROCEDURAL HISTORY**

On November 29, 2001, Material Service filed a petition for adjusted standard for the McCook Drainage Ditch from the water quality standards at 35 Ill. Adm. Code 302.208, 304.105, and the mine waste effluent and water quality standards at 35 Ill. Adm. Code 406.202 as they apply to its quarry operation. Pet. at 2.

On April 16, 2002, the Agency filed its recommendation. The Agency recommends grant of an adjusted standard for 35 Ill. Adm. Code 302.208 from the TDS and sulfate requirements. However, the Agency recommends the adjusted standard not be granted for 35 Ill. Adm. Code 304.105 and 406.202.

On April 17, 2002, upon receipt of the Agency's recommendation, Material Service filed a letter indicating it did not intend to file a response to the recommendation. Material Service waives hearing in this matter. No hearing has been held.

### NATURE OF THE SITE

Material Service operates a quarry (Federal Quarry) in the Village of McCook, Cook County. Pet. at 3. Material Service quarries the dolomite bedrock to produce crushed stone products. Pet. at 1. Material Service has operated the quarry for over 60 years and employs approximately 60 people. Pet. at 4.

Material Service discharges its wastewater from the quarry pursuant to a National Pollutant Discharge Elimination System (NPDES) permit. Pet. at 2. The permit sets effluent limits of 1,000 mg/L of TDS and 500 mg/L for sulfate. Pet. at 6. The water is discharged into the McCook Drainage Ditch (ditch), which collects and transports wastewater from the Village of Brookfield's storm sewer system and several other industrial dischargers downstream from the quarry, and directs the waters to the Summit Conduit. Pet. at 1. The Summit Conduit takes those waters into the Sanitary and Ship Canal approximately 500 yards west of Harlem Avenue. Pet. at 2. The Agency believes that waters of the ditch are general use waters, subject to the water quality standards for general use waters of the state as described in 35 Ill. Adm. Code 302.208. Pet. at 2.

The quarry floor is below the local water table and groundwater seeps from the quarry face. Pet. at 4. The groundwater seepage, along with accumulated storm water, is drained to a pair of settling ponds on the quarry floor. The water is then pumped up to another pond on an intermediate grade from then to a tank at grade from which it is led through culverts to the ditch. Pet. at 4. The estimated average volume of the discharge from the quarry into the ditch is 3,600,000 gallons per day. Pet. at 4. After a storm event, the volume approaches 6,000,000 gallons per day. Pet. at 4.

The groundwater that seeps into the quarry was sampled at points on the quarry floor near the base of the wall. Pet. at 4. The samples indicate an average TDS level of 1,345 mg/L, with TDS levels regularly exceeding 1,400 mg/L. Pet. at 5. The sulfate level averages are 425 mg/L and occasionally are over 500 mg/L. Pet. at 5.

Material Service explains that the source of the groundwater seeping into the quarry is a shallow aquifer flowing through dolomite formations of the Silurian Age. Pet. at 5. Material Service's consultant, DAI Environmental, explained the sampled results. Pet. at 5, DAI Report.<sup>1</sup> Several independent studies of the groundwater quality in the aquifer in the west and southwest portions of Cook County and the collar counties show that the levels of TDS and sulfate exceed the levels set for TDS and sulfate in 35 Ill. Adm. Code 302.208 for general water quality standards. Pet. at 5, DAI Report at 7-8. The TDS levels in the shallow dolomite aquifer near the quarry range from 1,200 mg/L to 1,600 mg/L. Pet. at 5, DAI Report at Figure 2. Sulfate levels are in a range from 500 mg/L to 700 mg/L. Pet. at 5, DAI Report at Figure 3.

### **STATUTORY AND REGULATORY FRAMEWORK**

In determining whether to grant an adjusted standard, Section 28.1 of the Act (415 ILCS 5/28.1 (2000)) requires the Board to determine whether a petitioner has presented adequate proof that: factors relating to the petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulations applicable to that petition; the existence of these factors justifies an adjusted standard; the requested standard will not result in environmental or health effects substantially more adverse than the effects considered by the Board in adopting the rule of general applicability; and the adjusted standard is consistent with federal law. 415 ILCS 5/28.1(c) (2000). In granting an adjusted standard, the Board may impose such conditions as may be necessary to accomplish the purposes of the Act. 415 ILCS 5/28.1(a) (2000).

Material Service seeks an adjusted standard that provides that:

1. The concentrations of sulfates (STORET No. 00945) shall not exceed 850 mg/L in the waters of the McCook Drainage Ditch for its entire length from the 47th Street culvert to the Summit Conduit. The water quality standards for sulfate as set out in 35 Ill. Adm. Code 302.208(g) shall not apply to the waters of the McCook Drainage Ditch.
2. The concentrations of TDS (STORET No. 70300) shall not exceed 1,900 mg/L in the waters of the McCook Drainage Ditch for its entire length from the 47th Street culvert to the Summit Conduit. The water quality standards for TDS as set out in 35 Ill. Adm. Code 302.208(g) shall not apply to the waters of the McCook Drainage Ditch.
3. The requirements of 35 Ill. Adm. Code 406.202 and 35 Ill. Adm. Code 304.105, to the extent those requirements address mine

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<sup>1</sup> DAI's report is attached to the petition as Exhibit 3.

discharges or effluent discharges into the waters of the McCook Drainage Ditch, shall not be applicable to the water quality standards for sulfates or TDS set out in 35 Ill. Adm. Code 302.208(g), but rather shall be applicable to the adjusted water standards for sulfate and TDS set out in this Order.

Pet. at 9-10.

Section 302.208(g) states that:

- g) Concentrations of the following chemical constituents shall not be exceeded except in waters for which mixing is allowed pursuant to Section 302.102.

Constituent	Unit	STORET Number	Standard
Barium (total)	mg/L	01007	5.0
Boron (total)	mg/L	01022	1.0
Chloride (total)	mg/L	00940	500.
Fluoride	mg/L	00951	1.4
Iron (dissolved)	mg/L	01046	1.0
Manganese (total)	mg/L	01055	1.0
Nickel (total)	mg/L	01067	1.0
Phenols	mg/L	32730	0.1
Selenium (total)	mg/L	01147	1.0
Silver (total)	ug/L	01077	5.0
Sulfate	mg/L	00945	500.
Total Dissolved Solids	mg/L	70300	1000.
Zinc (total)	mg/L	01092	1.0

where: mg/L = milligram per liter and  
ug/L = microgram per liter

Material Service also seeks an adjusted standard from Section 304.105 and Section 406.202 of the Board's regulations (35 Ill. Adm. Code 304.105 and 406.202).

Section 304.105 provides:

In addition to the other requirements of this Part, no effluent shall, alone or in combination with other sources, cause a violation of any applicable water quality standard. When the Agency finds that a discharge which would comply with effluent standards contained in this Part would cause or is causing a violation of water quality standards, the Agency shall take appropriate action under Section 31 or Section 39 of the Act to require the discharge to meet whatever effluent limits are necessary to ensure compliance with the water quality standards. When such a violation is caused by the cumulative effect of more than one source, several sources may be joined in an enforcement or variance proceeding, and measures for necessary effluent reductions will be determined on the basis of technical feasibility, economic reasonableness and fairness to all dischargers. 35 Ill. Adm. Code 304.105.

Section 406.202 provides:

In addition to the other requirements of this Part, no mine discharge or non-point source mine discharge shall, alone or in combination with other sources, cause a violation of any water quality standards of 35 Ill. Adm. Code 302 or 303. When the Agency finds that a discharge which would comply with effluent standards contained in this Part would cause or is causing a violation of water quality standards, the Agency shall take appropriate action under Section 31 or 39 of the Environmental Protection Act to require the discharge to meet whatever effluent limits are necessary to ensure compliance with the water quality standards. When such a violation is caused by the cumulative effect of more than one source, several sources may be joined in an enforcement or variance proceeding and measures for necessary effluent reductions will be determined on the basis of technical feasibility, economic reasonableness and fairness to all dischargers. 35 Ill. Adm. Code 406.202

### **ADJUSTED STANDARD PROCEDURE**

In both a general rulemaking and a site-specific rulemaking, the Board is required to take the following factors into consideration: the existing physical conditions, the character of the area involved, including the character of the surrounding land uses, zoning classifications, the nature of the receiving body of water, and the technical reasonability and economic reasonableness of measuring or reducing a particular type of pollution. 415 ILCS 5/27(a) (2000). The general procedures that govern an adjusted standard proceeding are found at Section 28.1 of the Act and the Board's procedural rules at 35 Ill. Adm. Code 104. Section 28.1 also requires that the adjusted standard procedure be consistent with Section 27(a).

Material Service seeks an adjusted standard from rules of general applicability. In determining whether an adjusted standard should be granted from a rule of general applicability,

the Board must consider, and Material Service has the burden to prove, the factors at Section 28.1(c) of the Act (415 ILCS 5/28.1(c) (2000)):

- 1) factors relating to that petitioner are substantially and significantly different from the factors relied upon by the Board in adopting the general regulation applicable to the petitioner;
- 2) the existence of those factors justifies an adjusted standard;
- 3) the requested standard will not result in environmental or health effects substantially and significantly more adverse than the effects considered by the Board in adopting the rule of general applicability; and
- 4) the adjusted standard is consistent with any applicable federal law. 35 Ill. Adm. Code 104.426(a) and 415 ILCS 5/28.1.

### **ARGUMENT**

#### **Substantially Different Factors**

Material Service believes that the factors relating to it are substantially and significantly different from those factors relied upon by the Board in adopting the water quality standards. Pet. at 13. Material Service argues that the 500 mg/L water quality standard for sulfate was based on levels desirable to protect stock watering, fish and the public water supply. Pet. at 13. Material Service contends that the land that the ditch runs through is zoned “heavy manufacturing,” there is no stock watering in the ditch’s vicinity, and no stock watering is permitted under the McCook zoning ordinance. Pet. at 13.

Material Service further contends that the water in the ditch, which flows into the Sanitary and Ship Canal, does not have an obvious impact on any public water supply. Pet. at 13. Material Service also argues that the 1,000 mg/L limit for TDS was based on the protections of aquatic life. Pet. at 14. Material Service does not believe that the standard was intended to address aquatic life in this particular kind of ditch. Pet. at 14.

The Agency agrees that the factors present in this matter are different than the factors the Board considered in developing the rule of general applicability. Rec. at 13. The Agency agrees that the groundwater itself is the source of the contamination, and its discharge will have no known impact on a public water supply. Rec. at 13. Additionally, the Agency believes an adjusted standard will not harm any existing aquatic life. Rec. at 13.

#### **Justification**

Material Service considered four alternatives to lower TDS and sulfate levels, and found all of them unacceptable. First, Material Service considered diluting the quarry

discharge using 2,000,000 gallons of water from Lake Michigan. Pet. at 7. Material Service concluded that assuming they could get the water and the Summit Conduit could contain the additional flow, the impact of such a large additional flow on both the ditch and the several bridge structures over the ditch make this option unacceptable, regardless of cost. Pet. at 7.

Second, Material Service considered injecting the groundwater seeping from the aquifer into a deeper stratum. Pet. at 7. DAI estimates that the capital costs of such a project would be from \$19,000,000 to \$26,000,000 with annual operating costs as high as \$16,000,000 to \$20,000,000. Pet. at 7.

Third, Material Service considered reverse osmosis and de-ionization. Pet. at 8. The costs of those alternatives were also prohibitively expensive. Pet. at 8. DAI estimates that 20-year operating costs using reverse osmosis, the least expensive option, would be from \$81,000,000 to \$113,000,000. Pet. at 8.

The Agency agrees that the lack of technically feasible and economically reasonable alternatives justifies granting the adjusted standard. Rec. at 8-9.

### **Environmental Effect**

Material Service argues that DAI determined that the TDS and sulfate concentration in the quarry discharge do not have any significant deleterious effect on existing aquatic life in the ditch. Pet. at 11. DAI also determined that the proposed adjusted standard limits of 1,900 mg/L TDS and 850 mg/L sulfate are less than the standards shown to be protective of aquatic life. Pet. at 11; DAI Report at 25-26. Material Service states that DAI reviewed the Huff and Huff study used in *In re* Petition of Rhodia, Inc., Thorn Creek Basin Sanitary District, Takasago Corporation (U.S.A) and Consumers Illinois Water Company for an Adjusted Standard from 35 Ill. Adm. Code 302.208 and 304.105, AS 01-9 (Jan. 10, 2002). Pet. at 11. Material Service argues the study reported on chronic toxicity tests for TDS and sulfate on a species of water flea and on the flathead minnow. Pet. at 11. The study concluded that the “no observed effect concentration” was 2,790 mg/L for TDS and 1,388 mg/L for sodium sulfate. Pet. at 11.

The Agency concurs with Material Service’s contention that the levels of TDS and sulfate discharged are not likely to have any adverse effects on the aquatic life that resides in the ditch, if the adjusted standard is granted. Rec. at 9. The Agency states that it agreed with the conclusions in the Huff and Huff study, when it recommended the Board grant the adjusted standard in Rhodia. Rec. at 10. The Agency also agrees with DAI that the current discharge is not having a detrimental effect on existing aquatic life in the ditch. Rec. at 10. The Agency also agrees that the proposed adjusted standard limits are lower than necessary to protect the aquatic life. Rec. at 10. The Agency states that the TDS and sulfate standards were established primarily to protect domesticated livestock watering, which the ditch does not support as a use. Rec. at 11.

### Consistency with Federal Law

Material Service argues the proposed adjusted standard is consistent with the Clean Water Act. 33 U.S.C. 1313(c)(2)(A), 40 C.F.R. 131.2(a), Pet. at 15. The Agency agrees. Rec. at 13.

### FINDINGS

Based on its review of the record in this matter, and the showings requisite for grant of an adjusted standard, the Board finds that grant of an adjusted standard in the instant case is warranted. The question remains as to how to effectuate the relief.

Material Service requests relief from Sections 302.208, 304.105 and 406.202 of the Board's regulations. The Agency recommended that the Board grant an adjusted standard from Section 302.208, but deny an adjusted standard from Section 304.105 and 406.202. The Agency states that providing petitioners relief from Section 304.105 and 406.202 is unnecessary if the Board provides relief from Section 302.208. Rec. at 1, 13. For the reasons outlined below, the Board finds that, consistent with Board precedent, the Board will to grant petitioners relief from Section 304.105 and 406.202 as opposed to Section 302.208.

#### Adjusted Standard from Section 304.105 and 406.202 as Opposed to Section 302.208

Both Sections 304.105 and 406.202 apply the requirements from Section 302.208 to dischargers such as the Material Service unless an adjusted standard or some other relief is granted. The Board has previously granted relief from Section 304.105. See In re Rhône-Poulenc Basic Chemicals Company, Thorn Creek Basin Sanitary District, AS 94-7 (June 23, 1994), slip op. at 18-19 and In re City of Springfield, Office of Public Utilities, AS 94-9 (Dec. 1, 1994), slip op. at 10-11. The Board held that "the relief that is being asked of the Board [from Section 302.208] could have the effect of giving other dischargers located on these streams the same relief given to Rhône-Poulenc and TCBSD, even though other dischargers have not made (and may well not be able to make) the same demonstrations." Rhône-Poulenc, slip op. at 19. While the Board has deviated from the holding in Rhône-Poulenc in more recent cases based on site-specific factors (see below In re Abbot Laboratories, AS 99-5 (May 6, 1999 and July 8, 1999)), the Board will apply the rationale from Rhône-Poulenc in this case, because there are other dischargers to the ditch who have not requested or justified the granting of any relief to them.

If Material Service meets the requirements of Section 28.1(c) of the Act, the adjusted standard will be granted from Sections 304.105 and 406.202. The Board declines, in this case, to grant petitioners an adjusted standard from Section 302.208 since such relief is unnecessary. See In re Petition of Rhodia, Inc., Thorn Creek Basin Sanitary District, Takasago Corporation (U.S.A.) and Consumers Illinois Water Company for an Adjusted Standard from 35 Ill. Adm. Code 302.208 and 304.105, AS 01-9, (Jan 10, 2002).

There are no practical consequences to petitioners of the Board's grant of an adjusted standard from Section 304.105 and 406.202 as opposed to Section 302.208. The Board distinguishes the relief provided in this docket from the relief that it provided in *In re Abbott Laboratories*, AS 99-5 (May 6, 1999 and July 8 1999). Originally the Board followed its rationale from *Rhône-Poulenc* and granted Abbott Laboratories (Abbott) an adjusted standard from Section 304.105 and not Section 302.208. However, upon reviewing a motion for reconsideration from the Agency, the Board reversed itself and granted Abbott an adjusted standard from Section 302.208 and not 304.105. The Board explained its reversal, noting that Abbott was the only NPDES-permitted discharger along the river at issue there. It followed that no other discharger would be entitled to the relief that the Board was providing Abbott. *In re Abbott Laboratories*, AS 99-5 (May 6, 1999 and July 8, 1999).

In this case, Material Service acknowledges that it is not the sole-discharger into the ditch. Pet. at 1-2. Therefore, consistent with prior Board precedent, the Board will grant Material Service an adjusted standard from the effluent regulations in Section 304.105 and 406.202.

### **Substantially Different Factors**

The Board first finds that Material Service has shown that the factors relating to the site are substantially and significantly different from those factors relied upon by the Board in adopting the general use water quality standards.

### **Justification**

The Board finds that Material Service has sufficiently shown that there are no economically reasonable treatment technologies that would allow Material Service to comply with the TDS and sulfate levels.

### **Environmental Effect**

The Board finds that Material Service has adequately shown that an adjusted standard from 35 Ill. Adm. Code 304.105 and 406.202 would not adversely impact the aquatic community or public water supplies.

### **Consistency with Federal Law**

The Board agrees with Material Service that granting an adjusted standard from Sections 304.105 and 406.202 is consistent with federal law.

### **Scope of Relief**

The specific relief the Board will grant is not that which the Agency recommends in its recommendation. The relief the Board will grant is from 35 Ill. Adm. Code 304.105 and

406.202 which focuses on the effluent. Because Material Service is not the sole-discharger to the ditch, granting relief from the general use water quality standard would be too expansive and unsupported by this record.

### SUMMARY

For the reasons detailed above, the Board grants Material Service an adjusted standard from 35 Ill. Adm. Code 304.105 and 406.202 for the McCook Drainage Ditch from the 47th Street Culvert to the Summit Conduit.

This opinion constitutes the Board's findings of fact and conclusions of law.

### ORDER

The Board grants an adjusted standard to Material Service Corporation from 35 Ill. Adm. Code 304.105 and 406.202. Pursuant to this order, the requirements of 35 Ill. Adm. Code 304.105 and 406.202 will not apply to discharges of total dissolved solids (TDS) and sulfate from Material Service Corporation into McCook Drainage Ditch subject to the following conditions:

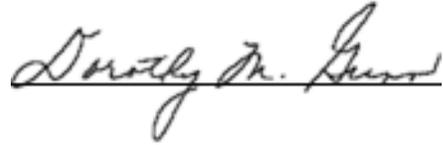
1. The in-stream concentration of TDS in the McCook Drainage Ditch between the 47th Street Culvert and the Summit Conduit is less than or equal to 1900 mg/L.
2. The in-stream concentration of sulfate in the McCook Drainage Ditch between the 47th Street Culvert and the Summit Conduit is less than or equal to 850 mg/L.

IT IS SO ORDERED.

Board Member N.J. Melas abstained.

Section 41(a) of the Environmental Protection Act provides that final Board orders may be appealed directly to the Illinois Appellate Court within 35 days after the Board serves the order. 415 ILCS 5/41(a) (2000); *see also* 35 Ill. Adm. Code 101.300(d)(2), 101.906, 102.706. Illinois Supreme Court Rule 335 establishes filing requirements that apply when the Illinois Appellate Court, by statute, directly reviews administrative orders. 172 Ill. 2d R. 335. The Board's procedural rules provide that motions for the Board to reconsider or modify its final orders may be filed with the Board within 35 days after the order is received. 35 Ill. Adm. Code 101.520; *see also* 35 Ill. Adm. Code 101.902, 102.700, 102.702.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the Board adopted the above opinion and order on June 6, 2002, by a vote of 6-0.

A handwritten signature in cursive script that reads "Dorothy M. Gunn". The signature is written in black ink and is positioned above a horizontal line.

Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board