

ILLINOIS POLLUTION CONTROL BOARD  
September 8, 1988

VILLAGE OF SAUGET, )  
 )  
 Petitioner, )  
 )  
 v. ) PCB 88-18  
 )  
 ILLINOIS ENVIRONMENTAL )  
 PROTECTION AGENCY, )  
 )  
 Respondent. )

RICHARD J. KISSEL, SUSAN M. FRANZETTI, AND LEE R. CUNNINGHAM  
APPEARED ON BEHALF OF THE PETITIONER.

RICHARD WARRINGTON APPEARED ON BEHALF OF THE RESPONDENT.

OPINION AND ORDER OF THE BOARD (by J. Marlin):

This matter comes before the Board on a Petition for Variance filed by the Village of Sauget (Sauget) on January 19, 1988. Sauget requests variance from several effluent standards which apply to the discharge from the American Bottoms Regional Treatment Facility (ABRTF). ABRTF is a publicly owned treatment works (POTW) that is owned and operated by Sauget. An objection to Sauget's petition was filed on February 11, 1988.

On March 10, 1988 the Board granted a motion by the Illinois Environmental Protection Agency (Agency) to file its Recommendation instanter. In its Recommendation, the Agency requested that the Board deny Sauget a variance.

Hearing was held in this matter on June 14, 1988 in Sauget; members of the public were present. Two members of the public as well as State Representative Wyvetter Younge testified in opposition to the variance request. At hearing, Sauget modified its variance request. First, Sauget narrowed its request for relief as to the number of effluent parameters. Presently Sauget requests relief from the following effluent standards: biochemical oxygen demand (BOD<sub>5</sub>) and suspended solids (SS) standards imposed by 35 Ill. Adm. Code 304.120; pH standards imposed by 35 Ill. Adm. Code 304.125; iron, zinc, and phenol standards imposed by 35 Ill. Adm. Code 304.124; and the color standard imposed by 35 Ill. Adm. Code 304.106. Sauget states that it would accept interim limitations for BOD<sub>5</sub> and SS, during the variance period, of 30 milligrams per liter (mg/l) monthly average and 45 mg/l weekly average. Also, Sauget would accept pH range limits of 6 to 9. (Pet., p.4)

Secondly, at hearing Sauget requested a four year variance. In its Petition Sauget had only requested a one year

variance to allow Sauget to investigate compliance alternatives. Once it selected an alternative, Sauget would then petition the Board for a variance extension to implement that alternative. In its four-year request, the four year period will be expended by Sauget's investigating, selecting, and implementing a compliance alternative. However, in its July 18, 1988 Brief, Sauget states that a one year variance as contemplated by the Petition would be acceptable. (Sauget Response Brief, p.8)

By its Order of June 30, 1988, the Board allowed the Agency to supplement its Recommendation with further effluent data and a U.S. EPA report on the toxicity of ABRTF's effluent. Pursuant to the June 30th Order, Sauget filed comments upon these items along with its post-hearing brief on July 11, 1988.

### Motions

On July 18, 1988, Sauget filed a Motion for Leave to Supplement its July 11th Response to the Agency's Recommendation Supplement which was accepted by the Board's June 30th Order. Specifically, Sauget seeks to supplement its Response with a letter received by Sauget from its engineering consultants, IRM-North Central. The letter written by Clement Vath and Elsie Millard comments upon the USEPA's toxicity report contained in the Agency's Recommendation Supplement. On July 25, 1988 Clement Vath filed an affidavit attesting to the accuracy of the facts contained in the ERM letter. The Board grants Sauget's motions and accepts the letter as a supplement to Sauget's July 11th Response. As similarly noted in the Board's June 30th Order concerning the Agency's Supplement, Sauget's Supplement has been accepted without the opportunity for the Agency to cross-examine the authors of the ERM letter concerning the letter's contents. Accordingly, the Board has given Sauget's Supplement the proper weight in its deliberations.

On July 11, 1988, the Agency filed a "Brief and Recommendation". The Board construes the Agency filing as a post-hearing brief filed pursuant to the Hearing Officer's Order. (R. 177)

Attached to the July 11th Agency brief are two letters. In its brief, the Agency explains that it had moved for admission of these two letters at hearing but that the Hearing Officer excluded the letters. The letters, one from the Agency to the U.S. EPA and one from the U.S. EPA to Sauget, dated May 6, 1988 and May 11, 1988 respectively, purport to comment upon the specifics of Sauget's compliance plan. Sauget's compliance plan was admitted at hearing as Petitioner's Exhibit #7. (R. 95) The Agency states that "its opinion as well as that of US EPA is necessary to the Compliance Plan ...and would have been submitted in its [the Agency's] original Recommendation if the original Petition had been complete with a Compliance Plan"

On July 18th, Sauget also filed a Motion to Strike the two letters attached to the Agency's July 11th brief. Sauget objects to the letters on several grounds. Sauget states that the Agency could have, but did not, appeal to the Board the Hearing Officer's ruling to exclude the letters. As Sauget points out, the Hearing Officer allowed the Agency to make an offer of proof concerning the letters at hearing. The Agency made no such offer. (R. 139) Instead, the Agency claimed that it could submit the letters as a part of another amended recommendation, apart from the Agency Recommendation Supplement admitted by the Board's June 30th Order. (R. 140)

Sauget asserts that the Agency should not be allowed to amend its Recommendation, subsequent to the hearing. Citing Section 104.180, Sauget claims that the procedural rules do not even contemplate post-hearing Recommendations.

Sauget also states that to the extent the Agency's July 11th filing is a post-hearing brief (rather than Recommendation), the letters should still be stricken because they constitute new information being entered into the record at a point when the parties may only argue from evidence already in the record.

On this issue, the Board generally agrees with Sauget. As stated by the Board's June 30th Order, the intent behind Board procedure is to provide for the filing of the Agency's Recommendation prior to the hearing process. Any information supplied by the Agency in its Recommendation can then be further explored at hearing. Consequently, the Board does not view the Agency's July 11th filing as an amended Recommendation; rather, as stated before the Agency's July 11th filing is construed as a post-hearing brief.

Post-hearing briefs are to argue from facts previously admitted into the record. It is the general rule that post-hearing briefs may not introduce new evidence. By attaching the two letters to its brief the Agency is seeking to present new information to the Board without utilizing the appropriate procedures.

If the Agency desired the admission of the two letters, it could have made an offer of proof at hearing and appealed the Hearing Officer's ruling which denied admission of the two letters. However, the Agency did not take that tack. Instead, the Agency attempted to circumvent the Hearing Officer's Order by attaching the letters to its brief. If the Board allowed evidence to be entered by such a method, the Board would be undercutting the role of the Hearing Officer. It is the Hearing Officer's function to build a record for the Board's review. If any party has a problem with the way the Hearing Officer accomplishes that task, then that party can appeal directly to the Board to reverse the Hearing Officer. Deviation from this orderly process would only result in a chaotic and unfair system.

Sauget's Motion to Strike is granted to the extent that the Board has not considered the two letters attached to the Agency's brief.

After addressing the attachments to the Agency's July 11th brief, as a matter of fairness, the Board can not ignore the attachment to Sauget's July 11th brief. Attached to Sauget's brief is a copy of a two page policy paper signed by William D. Ruckelshaus dated January 2, 1984. Sauget uses this attachment to argue that it may be granted variance past July 1, 1988, the deadline pursuant to Section 301(i) of the Federal Clean Water Act, because its situation constitutes an extraordinary circumstance pursuant to U.S. EPA policy. This document was not previously introduced into the record. Consequently, it is new information that Sauget is attempting to introduce in an attachment to its brief.

While parties can certainly cite legal authorities in briefs, a U.S. EPA policy paper is not the type of authority which may be presented for the first time in a brief. Unlike statutes, regulations, and reported cases, the Board has no readily available method, consistent with ex parte considerations, for determining the viability of such a policy paper. Consequently, such a source should have been introduced prior to the briefing stage. This would have allowed closer examination and evaluation of the source by the Board or other persons on the record. A need for such scrutiny becomes even more obvious when one considers that the policy paper is over four years old and was issued by a person who is not the current U.S. EPA Administrator.

Therefore, as the Board has not considered the two attachments to the Agency's brief, the Board has similarly not considered the attachment to Sauget's brief. Sauget stated in its Motion to Strike the Agency's attachments that a brief "should not contain new evidence or information not before the Board." The Board agrees, and out of fairness, that maxim should apply to Sauget as well as the Agency.

At hearing, Sauget moved to incorporate by reference a number of previous Board cases concerning the wastewater treatment plants which predated ABRTF. Sauget requested that the records of those cases be a part of this proceeding. The Agency did not object. The Hearing Officer, after noting that many of the physical documents which make up the records of those previous cases may not be available, granted Sauget's motion (R. 6-8, 132)

The Board may incorporate parts of a record from a previous case into the record of current case when the Board is presented with a copy of the material to be incorporated. Generally, though, the Board will not incorporate, merely by reference, parts of a previous record. The Board does allow the

incorporation by reference of previous Board Opinions and Orders. However, formal incorporation by reference of Opinions and Orders is not always necessary because the Board may, on its own, turn to its previous decisions as it evaluates Board precedent. Consequently, the Board affirms the Hearing Officer only in so far as the Board allows the incorporation by reference of previous Opinions and Orders. Specifically, as requested by Sauget, relevant previous cases are PCB 71-287<sup>1</sup>, PCB 72-396, PCB 72-407, PCB 77-136, PCB 79-87, PCB 79-88, PCB 80-67, and R76-21. However, the information contained in these opinions and orders was not determinative of the Board's decision today.

On August 17, 1988, the Agency filed a Motion for Leave to File Instantly a Supplemental Brief. In that motion, the Agency states that it had not received Sauget's initial brief in time to allow the filing of a response brief in accordance with the Hearing Officer's briefing schedule. Evidently, the Agency's "Closing Argument" filed on July 18, 1988 was not in response to Sauget's July 11th brief. Sauget has not filed a response to the motion.

The Board notes that the Agency filed its motion on August 17, 1988. The motion states that Sauget had waived its decision deadline until August 18, 1988. Subsequent to the drafting of the motion, Sauget extended the decision deadline until September 8, 1988. However, if Sauget had not extended the decision date, the Board would have had little time to consider the Agency's Supplemental Brief before rendering a decision. The Agency's motion does not state when the Agency did receive Sauget's July 11th brief. Consequently, the Board does not know how reasonable it would have been for the Agency to file its Supplemental Brief before August 17, 1988. Such last-minute filings do not enhance the decision making process and should be discouraged. A more appropriate course of action would have been for the Agency to ask the Board for leave to file a late brief at the time the Agency discovered that it would not be able to comply with the Hearing Officer's briefing schedule. This would have given the Board earlier notice that an additional brief was to be filed. Notwithstanding these concerns, the Board grants the Agency's motion.

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<sup>1</sup> The hearing transcript lists PCB 1-287; however, this is a typographical error since no such case number exists. Also, at hearing Sauget requested that PCB 79-80 be incorporated. (R. 132) The Board notes that that case concerns the City of Spring Valley, not Sauget.

Background Information

In its Petition, Sauget describes ABRTF as follows:

ABRTF is a regional wastewater treatment plant located at #1 American Bottoms Road in Sauget, Illinois, on the east bank of the Mississippi River in St. Clair County. ABRTF was designed to provide primary and secondary treatment to the untreated flows from the City of East St. Louis, the Village of Cahokia, and the Commonfields of Cahokia Public Water District, and secondary treatment to Sauget's flows. The communities which discharge into this new regional system contain several major industrial facilities that are now being served by ABRTF.

Two of the three pre-existing POTWs in treatment region (East St. Louis and Metro East) have been closed and have been replaced by ABRTF. The third, Sauget's own physical-chemical wastewater treatment plant (P/C plant), still provides primary treatment and metal removal for Sauget's wastes which then receive further secondary treatment at the ABRTF. The P/C plant is located on Mobile Avenue between Illinois Route 3 and the Mississippi River levee, in Sauget, Illinois.

The ABRTF treatment consists of grit removal, trash skimming and clarifiers to perform primary treatment on non-Sauget effluent and an activated sludge unit to perform secondary treatment on all effluent. The activated sludge unit consists of both a biological treatment system, which remains operational, and the use of Zimpro's proprietary WAR/PACT process involving the addition of activated carbon to the sludge and its subsequent recovery and regeneration, which is not presently operational and is being bypassed. The design maximum flow is [52] MGD.

"PAC" stands for "powdered activated carbon" and "PACT" stands for "powdered activated carbon treatment."

"WAR" stands for "wet air regeneration."

Implicit in the Zimpro process as designed for ABRTF is the capability of cleansing and then reusing carbon.

(Pet. p.5-6;.50)

The ABRTF discharges its effluent to the Mississippi River. There are two separate outfalls through which ABRTF is able to discharge. However, outfall 002 is the primary one designated in the Natural Pollutant Discharge Elimination System (NPDES) permit for ABRTF.

Sauget's Petition also describes the history behind the construction of ABRTF.

Beginning in the early 1970's, regional planning agencies in the East St. Louis metropolitan area recommended the construction of a regional treatment plant to replace a number of site-specific POTWs. In 1977 certain units of local government (being Sauget, East St. Louis, Cahokia and the Commonfields of Cahokia Public Water District, each of which owned and operated a sewer system within its own corporate boundaries) executed the American Bottoms Regional Wastewater Treatment Agreement. Under the provisions of that Agreement, Sauget was designated the "lead agency" to retain an engineer; to design, construct and operate a new regional plant; and to provide the funding therefor. This Agreement had been preceded by treatability and other engineering studies which were subsequently confirmed as part of the new regional engineer's duties.

The consulting firm of Russell and Axon performed treatability and pilot plant studies and investigated pumping and treatment alternatives. In February 1980, it issued a design report recommending that the regional treatment plant consist of 1) grit removal; 2) primary clarification; 3) powdered activated carbon/activated sludge treatment; 4) secondary clarification; and 5) disinfection. Primary sludge would be gravity thickened, conditioned with lime and ferric chloride, dewatered and ultimately landfilled. Secondary sludge, consisting of a mixture of biomass and carbon, would be gravity thickened prior to undergoing wet air regeneration. The wet air process was designed to reduce the biomass to an ash and the carbon would be reactivated and returned to the process. This process was ultimately selected after approval by IEPA. Sauget issued \$42 million of its own revenue

bonds in December, 1982 to design and construct ABRTF and to establish certain financial reserves. Construction began shortly thereafter and was substantially completed in July of 1986.

(Pet. p.10-11; R.50)

Also in July of 1986, Sauget was informed by Zimpro, the manufacturers of the PACT/WAR system, that the wet air regeneration process would likely not be able to reclaim the carbon as effectively as what was previously estimated. According to George Schillinger, ABRTF's plant manager and a Sauget witness, such operation of the PACT/WAR process would cause "an unacceptable buildup of ash in the treatment system" as well as "deteriorating effluent quality and excessive wastage of carbon, thereby greatly increasing the operating costs of the treatment system". As a result of these concerns, "[t]he Zimpro system was...mothballed while a solution to that problem was sought." (R. 54-55)

Meanwhile, by the end of 1986, ABRTF was providing primary and conventional secondary treatment for the flows from East St. Louis, Cahokia, and the Commonfields of Cahokia. ABRTF was not yet accepting any flow from the Sauget P/C plant. (R. 54-55)

Schillinger further recounted efforts to solve the PACT/WAR problem:

Beginning in January of 1987, plant personnel worked with Zimpro and the Federal and State Environmental Agencies on a pilot plant study of a differential sedimentation and elutriation system, or DSE system, to remove the ash while regenerating the carbon.

Based on the results of that study as reported in July of 1987, Zimpro concluded that the DSE system was an effective and workable solution.

Sauget did not and does not agree. The test data demonstrates that even with the DSE system, the PACT/WAR process will not be able to operate at even double the design rate for



a virgin carbon addition.<sup>2</sup>

At the same time, the DSE system would be a major new capital cost, and greatly raise the operation and maintenance costs for the American Bottoms Plant.

On June 24, 1987, the U.S. EPA, Region V, issued Finding of Violation and Compliance Order against Sauget concerning the operation of ABRTF. As a part of its Findings, the U.S. EPA concluded: "Information available to U.S. EPA indicated that the startup and effective functioning of the ABRTF's ZIMPRO PACT<sup>tm</sup> WAR and sludge handling processes are required if ABRTF is to achieve compliance with the FELS [final effluent limitations] contained in its ABRTF permit." In addition, U.S. EPA held: "Information available to U.S. EPA indicates that implementation of a Pretreatment Program is also required if the ABRTF is to achieve compliance with the FELS in its permit." (Pet. Exh. #1, p. 7-8)

As a result of these findings, the U.S. EPA ordered Sauget to

- 1) initiate startup of the PACT/WAR and ash separation processes, at ABRTF
- 2) begin diversion of the P/C plant effluent to ABRTF
- 3) to submit an approveable pretreatment program and implement the program once it is approved.

(Pet. Exh.#6, p.16, 18-19)

By the end of October, 1987 Sauget began using the PACT/WAR system. On November 4, 1987, Sauget began treating the P/C Plant effluent. (R. 56) On December 2, 1987 a fire or explosion occurred in one of the six heat exchangers, which rendered one of the two WAR units inoperable. There is controversy between Sauget's insurance carriers as to whether the December 2nd incident was a fire or explosion; the Board will refer to it as an accident.

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<sup>2</sup>Even if the PAC/WAR system were to function as designed, a certain amount (2377 pounds/per day) of new, "virgin", carbon would have to be added to the system despite the regeneration of the already used carbon. That is, the system is not designed as a completely closed loop. (R. 78).

Schillinger stated at hearing that the accident in the one WAR unit raised "a significant question as to the safety of operation of the other [WAR] unit." He also explained how ABRTF was run subsequent to the accident.

[A]ll components of the Zimpro process were shut down. Several other steps were then taken to optimize the treatment capabilities of the conventional secondary treatment portion of the plant which was still operational.

This included utilization of two aeration basins which had not previously been in service, reducing the return sludge flows, and increasing the mean cell residence time, or MCRT, all of which enhanced the treatment capabilities of the plant.

We also went to a high wasting rate of carbon and ash to clear those materials from the system, and were able to return to relatively stable operation of the plant as a conventional primary and secondary treatment plant.

(R. 57)

In addition, Sauget began to add polymers to the settling basins to help improve the effluent quality with respect to SS.  
(R. 58)

The Agency has suggested that Sauget could continue to add virgin carbon to the treatment system because only the WAR portion of the Zimpro process has been rendered unusable due to the accident. Since the WAR process would not be available to recover the added carbon, any carbon added would be removed for disposal with the secondary sludge. (Ag. Rec., p.3)

In response, Schillinger states that neither the Agency, the U.S. EPA, nor Sauget know how much carbon would be required to be added. According to Schillinger, ABRTF was designed to receive 2377 pounds of virgin carbon per day. The WAR system was to regenerate, or reclaim, 34,299 pounds per day. If Sauget were required to add carbon on a daily basis equivalent to the designed daily regenerated amount plus the designated daily virgin amount, Schillinger asserts that such a task would be cost prohibitive even assuming that that amount of carbon was available. Schillinger testified that its regular carbon supplier could only provide, on a regular basis, one fifth of that amount of carbon. If Sauget utilized 40,000 pounds of carbon per day, Schillinger estimated Sauget would spend approximately \$6 million per year to purchase the carbon. (R. 79).

Arbitrary or Unreasonable Hardship

Sauget centers its Variance request around the December 2, 1987 accident. Sauget's July 11th Brief states:

Sauget, as lead agency for the design, construction and operation of the AB Plant, proceeded in good faith to build a plant that was represented to meet all then-applicable effluent standards. Little less than one month after the plant became fully operational, a fire and/or explosion occurred which rendered an integral portion of the plant inoperable.

\* \* \*

Sauget is requesting this Board to grant it a variance so that it will not be subject to enforcement while it studies the cause of the fire and/or explosion and carries out an appropriate plan for achieving compliance with the applicable effluent standards.

\* \* \*

Sauget believes it is entitled to protection from enforcement for violations of the effluent standards applicable to the AB [American Bottoms] Plant since it has made a good faith effort to build a plant to achieve such compliance, it has taken all reasonable steps to operate the plant in the most effective manner possible despite the explosion and/or fire, the plant has been producing a good effluent which should have minimal adverse environmental impact, and Sauget is committed to achieving consistent and long-term compliance.

(Sauget Brief, p.1-3)

Sauget reiterated its claim of hardship in its July 18th Brief:

Now, due to an unforeseeable explosion and/or fire and the apparent inability of the plant to fully function as intended, Sauget faces an enforcement action filed by U.S. EPA seeking millions of dollars in penalties. Furthermore, it faces these penalties despite the fact that, since the fire and/or

explosion, it has taken all reasonable actions to operate the AB Plant in the most effective manner possible.

The residents, the remaining industries, and the politicians of this regional area have acted in good faith and should not be further penalized for the explosion and/or fire of the new Zimpro system (which Zimpro designed, built and supervised the operation of at the time of the incident), nor the current inability of the plant to function as originally designed.

(Sauget Response Brief,  
p.5-6)

However, an interesting insight is gained when one views treatment capabilities of the PACT/WAR process in the context of the contaminants which are the subject of Sauget's variance request. Sauget at hearing modified its request to include variance only from state standards for BOD, TSS, pH, iron, zinc, phenols, and color instead of "all of the effluent standards applicable." (R. 9). Each of these will be discussed separately below.

The possible onset of nitrification at the ABRTF has a bearing on several parameters. The plant's influent is high in ammonia nitrogen which is oxidized to nitrates by bacteria when nitrification occurs. The plant was beginning to show signs of nitrification in May and the process was expected to increase during the summer. (R. 70). According to Sauget's consultant, the use of the PACT/WAR process would "actually promote the conditions which favor the onset of nitrification" (R. 98). He also said that nitrification can occur in the absence of PACT and the "PACT/WAR system is not the answer to the nitrification problem, and some other solution must be found." (R. 99 and 100).

The effluent data presented in the record shows that the plant is complying with the BOD standard. Sauget's consultant pointed out that most BOD removal occurs as a result of the biotreatment process, but that the presence of carbon helps remove additional compounds not amenable to biodegradation. The absence of carbon should result in lower BOD removal efficiencies, but the operating conditions for the activated sludge process can be adjusted to offset some of this loss in efficiency (R. 101, 102). Under certain circumstances, BOD could increase if nitrification becomes established (R. 70, 97 and 100). The Agency takes the position that:

There are no unexplained violations of the BOD<sub>5</sub> or TSS monthly standard and hence no need for a variance. The plant is apparently capable of meeting the Board limits for

deoxygenating wastes without carbon addition. Any significant influent variation (slug loads) should be controlled through enforcement by Petitioner under Section 3.2.1.1 of Petitioner's Pretreatment Ordinance....

(Supplement to Ag. Rec., p.2)

It is apparent that the ability of the ABRT to meet the BOD standard is not dependent upon the PACT/WAR system.

The Agency position regarding suspended solids is identical to its position on BOD. The Sauget consultant believes that TSS will increase if nitrification occurs (R. 97). He also said:

The absence of the operation of the PACT system should actually improve effluent suspended solids over what probably would have resulted had the PACT system continued to operate. Thus, once again, PACT is not the answer to this problem. (R. 103).

It is apparent that the ability of the ABRTF to meet the TSS standard is not dependent upon the PACT/WAR system. In fact the system, if operating, is expected to encourage nitrification and increase the amount of TSS in the effluent.

Like TSS and BOD, the standard for pH was met before and after the accident (Supplement to Ag. Rec., p.4; Pet.Exh.#4 & 5) The level of pH can be lowered by nitrification to the point where a violation may occur (R. 71, 97, and 99).

It is apparent that the ability of the ABRTF to meet the pH standard is not dependent upon the PACT/WAR system. In fact, the system, if operating, is expected to encourage nitrification and increase the likelihood of an excursion.

The iron and zinc standards were occasionally exceeded both before and after the accident. According to Sauget's consultant, the PACT process would likely increase the metals concentration of the effluent.

As a consequence, if the PACT process were operating, it is highly likely that, as has been experienced elsewhere, the absorbed metals present on the ash which carry over into the effluent, could cause increased effluent metals concentrations due to suspended metals. (R. 104).

It is apparent that the ability of the ABRTF to meet the iron and zinc standards is not dependent upon the operation of the PACT/WAR system. In fact, the system would probably contribute to excursions.

The phenol standard was occasionally violated before and apparently after the accident. (Supplement to Ag. Rec., p.4; R. 64 and 65; Pet.Exh.#4 & 5). A laboratory testing problem led to high phenol results. During the months since the explosion, the phenol standard was met, except for four excursions in May (R. 63-64). The exact nature of the phenols has not been determined (R. 106). According to Sauget:

The term "phenols" encompasses a wide variety of compounds, some of which are susceptible to conventional secondary treatment, and some of which are not.

It appears that what we are seeing is an influent containing non-biodegradable phenolic compounds which are, therefore, simply passing through our system, and which we cannot treat under present operating conditions.

However, these are precisely the sorts of compounds for which the PACT/WAR process would have provided effective treatment.

The American Bottoms Plant's Pretreatment Coordinator has been directed to investigate what has caused the change in the effluent.

(R. 69)

While the operation of the PACT/WAR system should lower the phenol level of the effluent, the plant met the standard for several months after the explosion. The system does not appear to be the determining factor for this parameter.

Sauget testified that "color has been, and continues to be, a problem." The cause of the color and its source are not known, but it is in the effluent from the P/C Plant. The color becomes indiscernible five feet from where the effluent from the ABRTF enters the Mississippi River. The PACT/WAR process "did significantly reduce the degree of color" according to Sauget (R. 71-72, 105-106). Sauget believes the color standard is ambiguous. The Sauget plant manager stated that, "We are asking for a variance as prudent and cautious managers that our waste would be exempt from that particular regulation." The record does indicate that the PACT/WAR system would help reduce the color.

In short, it does not appear the accident and shutdown of the PACT/WAR system is the determining factor for Sauget's claimed non-compliance for most parameters. Testimony by Clement A. Vath, an engineering consultant and Sauget witness, bears out this conclusion.

From this discussion, it should be clear that the impact of the failure of the PACT/WAR system and its subsequent shutdown decreases the likelihood of excursions for some constituents of concern, has little effect on others, and may actually increase the likelihood of excursions for the remainder.

In turn, it should be clear that while some of the present concerns have been brought on by the failure of the PACT/WAR system, even if it were possible to successfully recommission that system, it would not ensure consistent compliance with applicable effluent standards.

\* \* \*

Many factors have likely changed, and Sauget has become aware of many problems inherent to the PACT/WAR process since the early 1980's when PACT/WAR was selected for treating the American Bottoms Plant's wastewaters.

There have been reductions in wastewater contributors and corresponding flows and loads from those existing at the time of the PACT/WAR process selection.

Plant flows are approximately two-thirds, and loads are approximately one-third to one-half of their design values.

The wastewater treatability characteristics have likely changed as well. These changes call for a re-examination of the premise upon which the original engineering decisions were made, especially since the cost of recommissioning the PACT/WAR process may be quite high due to the explosion and/or fire, and the likelihood that significant changes in design and materials may have to be made.

The Village of Sauget has also learned much about shortcomings in the PACT/WAR system over the intervening eight years.

\* \* \*

Demonstrated reliable and economically reasonable solutions to these problems need to be developed before the PACT/WAR process

can be considered safe, effective, and reliable to operate.

Even then, other changes to the American Bottoms Plant would have to be made to achieve consistent compliance.

While the PACT/WAR process would provide some treatment for some of the constituents of concern, it does not adequately deal with the metals, ammonia, and total suspended solids effluent quality concerns, and, in fact, could exacerbate those concerns.

(R. 107-110)

It appears then that if Sauget is indeed having problems complying with effluent standards it is due to an inadequate design of ABRTF and is not merely the result of the accident and shut-down of the PACT/WAR process. This becomes even more clear when reviewing Vath's testimony concerning Sauget's proposed compliance plan.

Alternative approaches need to be considered. Given the December explosion and/or fire, the resultant likelihood of significant new capital and operating and maintenance costs to remedy the PACT/WAR system, and the near certainty that even if this is an economically reasonable and technically feasible remedy to that system, such remedy would still not result in consistent compliance with standards, it would be foolhardy not to re-examine the options available to effectively deal with all the pollutants of concern.

\* \* \*

For these and other reasons, I developed for Sauget a Compliance Plan which includes and looks beyond the PACT/WAR process.

It is my firm belief that, for the reasons previously stated, as well as others identified through an expensive and painful learning process, other alternative approaches in addition to PACT/WAR need to be reconsidered before further investment is made in the existing facilities.

The Village of Sauget's Compliance Plan does just that, in that it will allow for reconsideration of the required



modifications, and upgrades necessary to successfully reinstate the PACT/WAR process operations, while examining other physical, chemical, and biological pre and post-treatment options, and treatment process modifications.

(R. 110-111)

### Agency Position

The Agency recommends denial of the variance request. The Agency asserts that a variance is not needed because Sauget is in compliance for the majority of the parameters at issue. (Ag. Brief, p.5) The Agency claims that only exceptions to compliance concern the parameters color and phenol. (Ag. Brief, p.2)

Also, the Agency states that Sauget has not shown that no environmental harm will result if Sauget is granted a variance. According to the Agency, the potential environmental impact can only be assessed after studies which define the mixing zone and evaluate the toxicity of Sauget's discharge are completed. (Ag. Brief, p.2)

Clement Vath, a Sauget witness, did admit he has not yet conducted a precise and detailed assessment of the impact of ABRTF's discharge upon the Mississippi. However, he does maintain that the quantitative impact would be insignificant. (R. 114-115)

The Agency also asserts that the Board may not grant a variance as a matter of law. Apparently, it is the Agency's position that Section 301 (i) of the Clean Water Act (33 U.S.C.1311 (i)) prohibits a variance which allows non-compliance with effluent standard for a POTW beyond July 1, 1988. Sauget argues that a variance would be consistent with federal law. This issue is extensively addressed in Sauget's June 11th Brief. The Agency's legal argument is found in its Recommendation and Supplemental Brief. The Agency Recommendation states:

Petitioner has indicated its ability to meet the specific federal limits for secondary treatment (i.e., 40 CFR 133.102 for BOD, TSS and pH) but apparently believes that the July 1, 1988 deadline is limited to these conventional pollutants. As cited by Petitioner, Section 301(b)(1)(C) of the Clean Water Act expands the compliance deadline to more stringent state or federal standards required to meet water quality standards. However, Petitioner does not cite the subsection in full:

(c) not later than July 1, 1977, any

more stringent limitation, including those necessary to meet water quality standards, treatment standards, or schedule of compliance established pursuant to any State law or regulations, (under authority preserved by section 510) or any other Federal law or regulation, or required to implement any applicable water quality standard established pursuant to this Act.

The Agency believes that the federal deadline of July 1, 1988 (extended from July 1, 1977 by CWA Amendment) extends to the treatment standards (i.e., effluent limitations) adopted by the Board and incorporated into the NPDES permit. The Clean Water Act does not allow the USEPA administrator or delegated states to forgive compliance with these more stringent limitations (e.g., freedom from unnatural color, iron, zinc, or mercury) without a judicial order. (See letter dated February 22, 1988 from the Director, Water Division, USEPA attached as Exhibit C)

(Ag. Rec., p.4)

The U.S. EPA letter is attached to the Agency's March 2, 1988 Recommendation. The letter, written by Charles H. Sutfin, who is the Director of U.S. EPA Water Division for Region V, states:

The U.S. EPA will oppose any variance beyond the July 1, 1988 deadline, as inconsistent with the requirements of the CWA, [Clean Water Act] in any NPDES permit issued, reissued or modified by the NPDES delegated States.

Also, the Agency states that if the Board were to grant a variance, Sauget would not be able to enforce its recently adopted pre-treatment program. The program controls discharges tributary to ABRTF which may in turn cause violations of ABRTF's own effluent standards. The Agency claims that if ABRTF's discharge was not subject to enforceable permit limits, Sauget would be unable to control discharges to its sewer system. (Ag. Rec., p. 12). The Board notes, though, that Sauget is proposing interim limits for many of the subject parameters.

The Agency's Supplemental Brief states:

The deadline of July 1, 1988 applies to Petitioner's plant because it required construction, as evidenced in the numerous

variance petitions and Orders incorporated into this record and was a planned publically owned treatment works.

The intent of the 301(i)(1) deadline is for the POTW to timely meet subsection (b)(1)(B) or (b)(1)(C) [of Section 301 of the Clean Water Act] requirements.

\* \* \*

Petitioner's argument that subsection (b)(1)(C) refers to only the secondary treatment parameters of subsection (b)(1)(B), would make (b)(1)(C) surplusage, an effect not warranted by standard rules of statutory construction. Taken on its face, subsection (b)(1)(C) is a broad federal affirmation of State power to establish limitations. Together with Section 301(i) it gives an end to extensions of compliance deadlines and endless variances.

\* \* \*

The only forum for such an extension now is a court.

(Ag. Supp. Brief, p.3- 4)

The Board notes, though, that in City of Highland v. I.E.P.A. (PCB 88-67, slip op. at 2, August 10, 1988) the Agency maintained that:

The Clean Water Act at 301(i) does not prohibit a variance for necessary maintenance at a completed facility. There are no federal laws or regulations that would prohibit the grant of this variance.

In that proceeding the Board granted Highland a short variance from SS and BOD<sub>5</sub> for maintenance and inspection of components of its Wastewater Treatment Plant.

### Findings

Sauget's variance request is in response to the accident of December 2, 1987, after which the PACT/WAR system was rendered inoperative. The requested relief from the BOD, TSS, pH, iron and zinc standards clearly cannot be justified as being needed because of the accident. The PACT/WAR process is not necessary to meet these standards and may contribute to violations of some of them. While the situation regarding phenols would be improved by PACT/WAR operation, the record does not indicate that it is

necessary to achieve compliance. The phenol standard has been met for months at a time without the system.

The flow and to some extent the character of the influent to the ABRTF has changed since it was originally planned and these changes may be contributing to the current perceived problem. Sauget should have been aware of these changes and anticipated their potential impacts. With the exception of color, the record before the Board does not support the requested relief. The ABRTF's effluent consistently meets several of the standards from which relief is sought. Periodic violations of other standards are not clearly related to the accident and should be controlled by Sauget through operation of its facilities or its pretreatment program.

To a large extent, the relief sought is speculative. Whether utilizing its one year plan or its four year plan, Sauget intends to study possible solutions for its claimed non-compliance for one year. That is, Sauget has still not determined what it will do to remedy the conditions for which it requests variance.

Given the circumstances of this case, any hardship relevant for the purposes of a variance determination could only stem from the inability to provide PACT/WAR treatment due to the accident. Changes in ABRTF's influent could have been reasonably anticipated and dealt with by pretreatment or other means. General design deficiencies in the treatment processes employed by ABRTF due to such changes, while perhaps unfortunate, are not a sufficient basis for an "arbitrary or unreasonable" hardship determination.

The record indicates that the only parameter which could be brought into compliance by a functioning PACT/WAR system is color. The influent to ABRTF from the P/C plant is yellow in color. Apparently, ABRTF's effluent is also yellowish. This supports the conclusion that the origin of the color is from flow that is tributary to the P/C plant. However, the record does not indicate whether Sauget knows or has even investigated the origin of the colored wastewater. (R. 71). While the record shows that adding powdered activated carbon (PAC) and washing the carbon may take care of the color problem (R. 118-119), the amount of PAC necessary to accomplish this task has not been clearly presented. It appears that if PAC were added merely at the design rate for the virgin carbon addition, such an amount of carbon would be insufficient to address the color situation (R. 75). The record also suggests that if PAC were added at the design rate for virgin carbon addition plus the design amount of regenerated carbon, enormous expenditures and operational problems would ensue. (R. 119-120). Unfortunately, the record does not clearly indicate whether there is an effective middle ground for PAC addition with respect to color.

The record shows that color could be significantly reduced

by the PACT/WAR system. Granting variance from color is consistent with the position taken by the Board and Agency in City of Highland given the accident and obvious need for repair at the ARBTF. The Board does not distinguish between the need for maintenance at the completed City of Highland facility and the need for repair at the completed Sauget facility.

The Board also notes that the color standard is derived from a Board rule and is not based on a federal standard. The Board will grant Sauget a one year variance from color. During this time Sauget is to investigate the cause of the color violation and achieve compliance.

The implication of the Agency's interpretation of the Clean Water Act as presented in this proceeding is that a State may not grant variances from its own more stringent standards. If this position is accepted, any state with regulations that attempt to protect the environment to a greater degree than federal standards will be at a competitive disadvantage in relation to states which merely adopt federal standards. If the states cannot grant a variance from their own standards with compliance required by a date certain, regardless of the circumstances, the states will have a strong incentive to adopt only the minimum required standards. The Board has difficulty believing that the intent of the Clean Water Act is to penalize states which choose to lead by adopting standards which are more than the federal minimums.

The Board notes that the Agency states in its Brief that a federal enforcement case has already been brought against Sauget relating to the operations of the ABRTF. This statement has had no bearing on the Board's decision today.

Given the reasons articulated in this Opinion, the Board finds that Sauget will not suffer an arbitrary or unreasonable hardship if denied the requested variance for all parameters except color. Consequently, the Board grants Sauget a variance from 35 Ill. Adm. Code 304.106 only as it relates to color. The variance period will begin on the date of the accident, December 2, 1987, and expire one year from today.

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

#### ORDER

The Board hereby grants the Village of Sauget (Sauget) variance from 35 Ill. Adm. Code 304.106, as it relates to color, subject to the following conditions:

- 1) This variance shall begin on December 2, 1987 and shall terminate on September 8, 1989 or when Sauget achieves compliance with the color standard of Section 304.106, whichever occurs first.

- 2) During the term of this variance, Sauget shall do the following:
  - a) Investigate and determine the origin of the color that appears in the ABRTF effluent. Sauget shall investigate methods by which it can achieve compliance with the color standard of Section 304.106. Pre-treatment requirements and controls shall be included in Sauget's investigation;
  - b) Sauget shall select a method by which it can achieve compliance with the color standard of Section 304.106;
  - c) Sauget shall implement the method selected pursuant to paragraph 2(b) so that it achieves compliance by September 8, 1989.

- 3) Within 45 days of the date of the Board's Order, Sauget shall execute a Certificate of Acceptance and send that Certificate to:

Illinois Environmental Protection Agency  
 Division of Water Pollution Control  
 Compliance Assurance Section  
 2200 Churchill Road  
 P.O. Box 19276  
 Springfield, IL 62794-9276

This Variance shall be void if Sauget fails to execute and forward the Certificate within the 45-day period. The 45-day period shall be held in abeyance during any period that this matter is being appealed. The form of the Certificate of Acceptance shall be as follows:

Certificate of Acceptance

The Village of Sauget, having received the September 8, 1988 Order of the Illinois Pollution Control Board in PCB 88-18, hereby accepts that Order and agrees to be bound by all the terms and conditions thereof.

The Village of Sauget

By: \_\_\_\_\_  
 Authorized Agent

\_\_\_\_\_  
 Title

\_\_\_\_\_  
 Date

IT IS SO ORDERED.

B. Forcade dissented.

Section 41 of the Environmental Protection Act, Ill. Rev. Stat. 1985 ch. 111 1/2 par. 1041, provides for appeal of final Orders of the Board within 35 days. The Rules of the Supreme Court of Illinois establish filing requirements.

I, Dorothy M. Gunn, Clerk of the Illinois Pollution Control Board, hereby certify that the above Opinion and Order was adopted on the 8<sup>th</sup> day of September, 1988, by a vote of 6-1.



Dorothy M. Gunn, Clerk  
Illinois Pollution Control Board