

**CERCLA Remediations and the NEPA Process –
Are Environmental Cleanups Forgetting the Socioeconomic Issues?**

Peter T Masson

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Nicholas School of the Environment and Earth Sciences
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The National Environmental Policy Act (NEPA) is a decision making tool for federal agencies contemplating actions that could significantly affect the environment. Although the law does not require that any particular result be attained under NEPA, the objective is to build into the agency decision-making process an appropriate and careful consideration of all environmental aspects of proposed actions. By doing so, the potential long-term affects of such decisions are elucidated for the benefit and review of both those making such decisions and those who could be impacted by them, with the expectation that the least intrusive action will result.

All federal agencies are required to integrate NEPA into their decision-making process. The Environmental Protection Agency (EPA) is charged with protecting the environment and remediating chemical impacts. Both through the EPA's interpretation of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) and through case law it has been established that the CERCLA decision making process is sufficiently protective of the environment and for EPA to also incorporate NEPA would be redundant. When it comes to the remediation of environmental hazards of a chemical nature this position at first seems to be accurate.

But the NEPA process involves more than just the natural environment. Any finding under NEPA of a significant environmental impact requires a consideration of the impact upon the human landscape as well, both cultural and socioeconomic. CERCLA cleanups focus on chemicals released into the environment and the toxicological impact they might have on people and wildlife. The consideration of socioeconomic impacts performed under NEPA is not part of the CERCLA process. Other concerns addressed under NEPA, such as off-site effects and cumulative impacts, are not formally considered in the CERCLA process either. Were NEPA to be included in CERCLA decision making the environment as a whole, including the human element, could perhaps be better served.

Background –

Section 102(2)(C) of the National Environmental Policy Act of 1969, as amended (Pub. L. 91-190, 42 U.S.C. 4321 et seq.) requires that federal agencies prepare detailed environmental impact statements (EISs) on major Federal actions significantly affecting the quality of the human environment. Regulations promulgated in 1978 and amended in 1986 by the Council on Environmental Quality (CEQ) at 40 CFR Parts 1500 through 1508 make available the preparation of Environmental Assessments (EAs) to provide sufficient evidence and analysis for determining whether to prepare an EIS or to prepare a Finding of No Significant Impact.

According to their 1998 Notice of Policy and Procedure, "The [EPA] is legally required to comply with the procedural requirements of NEPA for its research and development activities, facilities construction, wastewater treatment construction grants under Title II of the Clean Water Act (CWA), EPA-issued National Pollutant Discharge Elimination System (NPDES) permits for new sources, and for certain projects funded through EPA annual Appropriations Acts." This policy also notes that there are certain exemptions under different environmental regulations for other specified activities. It then goes on to explain that the "EPA is also exempted from the procedural requirements of environmental laws, including NEPA, for [CERCLA] response actions. Courts also consistently have recognized that EPA procedures or environmental reviews

under enabling legislation are functionally equivalent to the NEPA process and thus exempt from the procedural requirements in NEPA.”

There are two specific exemptions in CERCLA that allow the EPA to adopt a policy of only preparing EISs or EAs on a voluntary basis. One of these is found in Section 121(e) of CERCLA. This section covers Permits and Enforcement and notes that “[n]o Federal, State, or local permit shall be required for the portion of any removal or remedial action conducted entirely onsite....” 40 CFR Part 300.400(e) under the topic of Permit Requirements further defines the term on-site as “the aerial extent of contamination and all suitable areas in very close proximity to the contamination necessary for implementation of the response action.” Part 300 then goes on to say that permits would be obtained for actions conducted off-site. However, by the definition of on-site contained in the law, those areas which would be most likely to be affected and considered under the NEPA process are excluded from any sort of permit requirements.

As the EPA interprets this portion of CERCLA, NEPA is considered essentially a federal permit process. Since CERCLA excludes environmental remediations from requiring any kind of permit, there is no requirement to invoke the NEPA process when making decisions regarding environmental remediation. Section 121(d) of CERCLA does require EPA actions to consider Applicable or Relevant and Appropriate Requirements (ARARs), including state standards, when determining the degree of cleanup for an environmental remediation. However, the consideration of ARARs does not extend beyond toxicological issues.

The second exemption from the NEPA process is found in Section 113(h) of CERCLA. Under the topic of Timing of Review it states “[n]o Federal court shall have jurisdiction under Federal law...or under State law...to review any challenges to removal or remedial action selected..., or to review any order issued....” This bar against pre-enforcement review has been generally held to exempt CERCLA decisions from the NEPA process, since NEPA would require outside review of said actions and potentially provide an avenue for litigation regarding remedial decisions.

Although NEPA itself has no reference to litigation and in fact is subject to litigation only through the Administrative Procedures Act, this position has been supported by case law including Lone Pine Steering Committee vs. USEPA. In this case the EPA undertook a remedial action at the Lone Pine Land Fill in Freehold, New Jersey. The plaintiffs in the case sued the EPA alleging that insufficient review of remedial alternatives including the NEPA process had occurred before the action was taken, thereby forcing unfair costs upon the liable parties who were financially responsible for the action. The court upheld the position that CERCLA barred the requirement for pre-enforcement review so long as at some stage there was an opportunity for a hearing and a judicial determination, in this case during the cost-recovery proceeding. It was also upheld that the NEPA review process was not required.

To a large degree, this exemption of CERCLA remediations from the NEPA process is reasonable. As noted in the EPA Policy, in many ways the “EPA procedures or environmental reviews under enabling legislation are functionally equivalent to the NEPA process....” The

process for selecting a remedy at a site of environmental contamination is outlined in 40 CFR Part 300 and in many ways parallels NEPA.

The first step in remedy selection in §300.430(b) is Scoping, just as is considered following a Notice of Intent for a proposed action under NEPA. The intent of scoping under CERCLA is very similar to that under NEPA, namely “[d]uring scoping, the lead and support agencies shall confer to identify the optimal set and sequence of actions necessary to address site problems.” As is usually performed as part of the NEPA scoping process, CERCLA provides for Community relations in §300.430(c) with “local officials, community residents, public interest groups, or other interested or affected parties,..., to solicit their concerns and information needs....”

After completion of a remedial investigation, the data gathering step of the process, §300.430(e) calls for a Feasibility study, which in many ways resembles the EA or the EIS in the NEPA process. As noted in the rule, “[t]he primary objective of the feasibility study is to insure that appropriate remedial alternatives are developed and evaluated such that relevant information concerning the remedial action options can be presented to a decision-maker and an appropriate remedy selected.... The lead agency shall include an alternatives screening step...to select a reasonable number of alternatives for detailed analysis.” As with NEPA, this list of alternatives always includes the No Action alternative. These alternatives are then analyzed based on criteria such as their overall protection of human health and the environment, compliance with ARARs, Long- and short-term effectiveness, reduction of toxicity, implementability and local acceptance.

As with an EA or EIS, this analysis of alternatives should result in the selection of a final remedy. §300.430(f)(1)(ii) directs that “the lead agency...identifies a preferred alternative and presents it to the public in a proposed plan for review and comment. Second, the lead agency shall review the public comments...to determine if the alternative remains the most appropriate remedial action....” After the public comment period, §300.430(f)(4)(i) requires the lead agency to reconsider the initial remedy selected “factoring in any new information or point of view expressed by the state...and community....” As with a decision under the NEPA process, the final selection of a remedy under CERCLA needs to be documented in a record of decision (ROD) as directed by §300.430(f)(5). The ROD would “support the selection of a remedial action” and document how it is protective of human health and the environment, how it is cost-effective, how it utilizes permanent solutions, and other such matters.

Although there are many similarities between CERCLA and the NEPA process, there are some significant differences. One in particular is that the CEQ in promulgating the rules for the implementation of NEPA noted in §1508.14 the definition of Human Environment, and included it as one of the considerations in preparing an EA or EIS. The human environment includes “the natural and physical environment and the relationship of people with that environment.” The rules then go on to explain that while a socioeconomic impact of itself is not enough to cause the preparation of an EIS, “[w]hen an [EIS] is prepared and economic or social and natural or physical environmental effects are interrelated, then the [EIS] will discuss all of these effects on the human environment.” So a consideration of significant environmental impacts under NEPA will include socioeconomic issues, including environmental justice.

This concept of the human environment is not included in CERCLA. This is not to say that the effect of a CERCLA action on the human population is not considered. On the contrary, this often is what drives the choice of a remedial action. As noted earlier, a CERCLA remedial action is intended to be protective of both the environment and human health. Many of the criteria established by both the federal and state governments that are considered as ARARs during the CERCLA process are based on toxicological effects that chemicals will have on the average human during a lifetime exposure. These types of calculations are generally used to set groundwater and soil cleanup criteria, whereas surface water and sediment remedial criteria may be more likely to be determined by toxic impacts on benthic organisms.

What is missing from this toxicological consideration is the rest of the human experience. Although the choice of a remedial action may be protective of the health of the surrounding population, it does not consider other impacts – off-site, cumulative and especially socioeconomic. This concept of the human environment is missing from CERCLA, and is generally not considered when selecting a final remedy.

As the economic effects of full-scale environmental cleanups have been felt by both private parties performing such actions and governments funding them at orphan sites, environmental remediations have trended more toward the use of restrictions and controls and less actual contaminant removal or destruction. With the proper monitoring and maintenance of such controls, these types of cleanups can be equally as protective of human health as an actual removal action. From a public safety perspective, there is really little difference. But public perception of such a remedy can be vastly different and the cleanup may also lead to questionable future development, both of which could impact surrounding properties in ways CERCLA was not designed to consider. One such case study will now be examined. Although it may be outside the scope of this paper to judge its full impact, socioeconomic and otherwise, it demonstrates that such factors could have been considered in making the remedial decision.

One other note should be made at this time as well. It had been hoped that an EIS could be found that had been prepared voluntarily for a CERCLA action under the EPA Policy in order to determine if the NEPA process had been beneficial in aiding staff to consider all impacts of the agency decision. Unfortunately, after contacting the NEPA coordinator for the Region 5 Office in Chicago, Illinois, it was determined that no EISs have been prepared, and it was unlikely to be different in other regional offices. Thus, the question of whether the NEPA process could prove beneficial to CERCLA decision making cannot be analyzed by actual case study, but will be qualitatively discussed later on.

Case Study -

The settlement reached with liable parties for the Jackson Drop Forge (JDF) Site in Jackson, Michigan well illustrates some of the decisions regarding remediations under the CERCLA process and how they may fail to incorporate socioeconomic and other concerns that would be considered in the NEPA process.

The JDF site is located both north and south of Wellworth Avenue in the City of Jackson, Michigan (Figure 1). The actual Jackson Drop Forge buildings were located on the south side of

Wellworth Avenue. Although the area is zoned for heavy industrial, several parcels have been used for residential purposes for many years. The parcels identified in Figure 1 as 39 & 40 on the north side of Wellworth Avenue are still residential and several homes are located east of the former facility. The Grand River and its floodplain are located north and include portions of the parcels identified as West River Side Parcels and East River Side Parcels as well as Parcels 39 & 40.

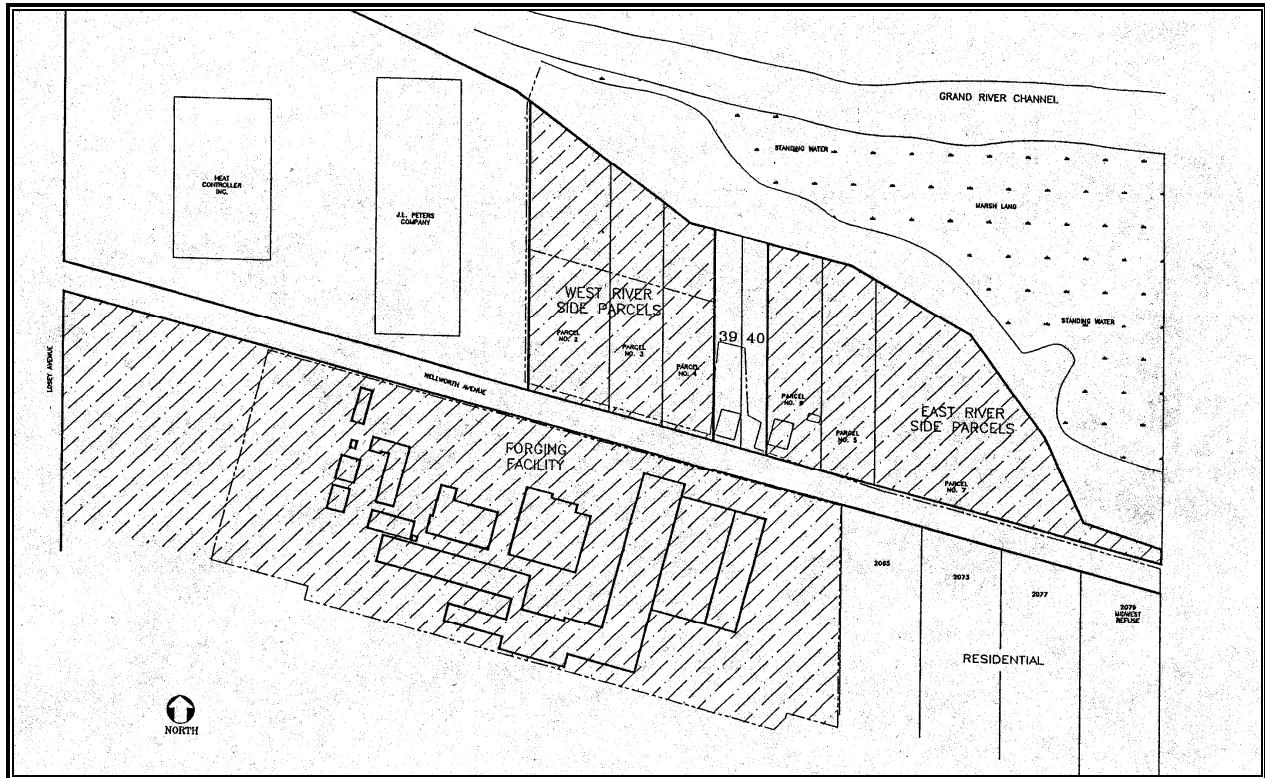


Figure 1: Jackson Drop Forge Area Map, Jackson, Michigan (Smith Env., 1997)

The JDF Site was discovered by the Michigan Department of Natural Resources (now the Michigan Department of Environmental Quality (MDEQ)) as the result of an anonymous tip in April 1991. The caller reported that there were several thousand drums of unknown material located in the floodplain of the Grand River north of Wellworth Avenue. These drums were not visible from the road due to heavy brush and undergrowth. The MDEQ verified the existence of the drums at this location and sampled several of them, confirming the presence of hazardous wastes consisting mainly of the solvents toluene, xylene, ethylbenzene and benzene.

The MDEQ attempted to notify the potentially liable parties under the state equivalent of CERCLA, but as the company was then located outside of Michigan these efforts did not lead to any agreement for site remediation. Due to the difficulties of notifying an out-of-state party and the complexity of the site, the MDEQ asked the EPA to oversee the project in October 1993.

The EPA was able to identify Jackson Innova (JI) and Mercer Forge (MF) as owners of the actual JDF property and some of the lots on the north side of Wellworth Avenue. Wastes from the forge operation had been disposed of on the surface of the ground and buried on many of

these properties. In addition, the EPA discovered that a Mr. Pawlickli had been hauling barrels of waste materials from an industrial caulk manufacturing facility located in Jackson to several of the lots north of Wellworth Avenue – some of which were owned by him and his relatives – and dumping the barrels on the surface of the ground. The chain of corporate ownership led the EPA to identify the liable parties for the generation of this waste as Martin Marietta Corporation (MM) and BASF.

In order to expedite the removal of these barrels the EPA entered into an Administrative Order by Consent (AOC) with JI/MF and another with MM/BASF in 1994. Each pair of liable parties would perform a surface removal of drums and other wastes on assigned portions of the site. The surface removal was implemented as drums that protruded from the ground more than 50%. In the process of performing the removal, it became clear that there were many drums that were mostly or completely buried and much of the hazardous material would be left in place at the end of this action.

To complete the removal, the EPA entered another set of AOCs with JI/MF and MM/BASF in 1995 that would address the buried waste. However, during the negotiation for these AOCs the EPA made a compromise. Normally under a CERCLA action, the liable parties would be expected to complete the site work, as previously discussed. This would involve not only the removal of the waste materials but also the investigation of residual contamination in the soil and groundwater and its impact on the environment, leading finally to a site closure. In this instance, the EPA dropped these additional requirements of CERCLA and settled the AOCs for just removal of the buried waste.

Although this effort did result in the removal of almost 14,000 barrels of waste and over 14,000 cubic yards of non-containerized waste, it was obvious that there were still chemicals remaining in the ground and in the floodplain of the Grand River. As no remedial investigation had been performed, no one was sure what the extent of this contamination was.

Since some of these parcels were and continue to be used for residential purposes, the areas where contamination was thought to remain were fenced off and signs were placed to warn trespassers of the potential for hazardous materials in the ground. An example of these signs can be seen in Figure 2. Figure 3 shows the proximity of these signs and the fences to one of the homes on Wellworth Avenue. In this instance, the fence actually restricts the owner's access to the back portion of his property. As can be seen in Figures 4 and 5, the fences contain a large portion of the land on Wellworth Avenue, and certainly announce the condition of the environment in proximity to these homes to persons traveling down the street.



Figure 2: Warning Sign on Fence



Figure 3: Proximity of Fence & Sign to Home



Figure 4: Wellworth Ave Showing Fences



Figure 5: Wellworth Ave Showing Fences

The removal actions at the site were concluded in December 1996 and February 1997. Since that time the fences and the signs have remained in place. The MDEQ provided funding for the removal of the drop forge buildings and some test-pitting work on the north side of Wellworth Avenue in 2001, but no remedial investigation has been performed to characterize the full extent of the residual contamination in the environment and what its impact may be. The MDEQ will likely send demand letters under the state cleanup law requesting that the liable parties identified by the EPA perform the remaining remedial activities at the site, but as with many environmental actions the actual conclusion of this work could be several years in the offing.

Discussion -

There can be no doubt that the decisions made under CERCLA in the case of the JDF site accomplished much environmental benefit. Many thousands of barrels of hazardous substances that were formerly located in the floodplain of the Grand River have now been removed. In addition, there were thousands of cubic yards of non-containerized waste that would have formerly come into contact with surface water that have also been removed. So without question, the persons living in this area and the wildlife that formerly came into contact with this material are safer than they were before the action was undertaken.

But although this is true, a question remains as to whether there could have been a greater degree of environmental benefit had the CERCLA decisions incorporated the NEPA process. As was mentioned earlier, cleanup criteria under CERCLA do account for human contact from a toxicological perspective. Many cleanups, especially those that focus on soil and groundwater, are driven by the expectation of human use of the property after the cleanup is done. But as was also mentioned, this strategy does not account for the human environment and other impacts that are part of the NEPA process. Had these been considered, it is likely that a greater degree of cleanup would have been achieved at the JDF site.

In his article *Rationality and Logic of the National Environmental Policy Act*, Robert V. Bartlett noted that “implicit in NEPA and underlying its logic as policy legislation is a distinct form of reasoning – an ecological rationality.” In guiding agency decisions, NEPA provides the decision makers an opportunity to look at the action not as an isolated piece of the environment, but as part of the entire ecology of the system, and this system includes the human element. Had the decisions made by the EPA at the JDF site incorporated the NEPA process there would have been a need to include this human element and other impacts, and in the end it would have benefited the environment.

An analysis under NEPA would have undoubtedly determined that there was a significant environmental impact at the JDF site. Thousands of barrels were located in the floodplain of the Grand River and would have to be removed. Apart of the chemical concerns, the mechanical act of removing that volume of debris from a floodplain alone is a significant environmental impact. Under both state and federal law, permits would have to be obtained by private parties undertaking such an action to operate in the floodplain and its associated wetlands. Restoration would be required on the affected areas after the work was done to attempt to restore the natural environment. An EIS in this instance would likely show a significant negative impact from the disturbance caused by the removal and a positive benefit from the restoration work afterward. An EIS would also show a positive environmental benefit from the removal of the chemical wastes. So although it would likely have been determined that there was a significant impact, the positive benefits would outweigh the negative effects and the decision would reasonably have been the same, namely to remove the waste.

The key element to this discussion, though, is not whether the overall impact would be positive or negative, just the fact that there would be a significant impact. If that were determined, there would be a need to generate an EIS under NEPA. And if that occurred, there would also have been the requirement of §1508.14 to examine the socioeconomic impacts of the decisions. This is where the CERCLA process pales compared with the NEPA analysis, both for humans and the environment.

Had a socioeconomic analysis been performed, it is likely to have identified economic impacts on the surrounding properties and possibly environmental justice issues with the residents. A NEPA assessment may have begun by examining the status of this neighborhood versus other neighborhoods in the City of Jackson and how it would be affected by these remedial decisions. As noted earlier the properties on Wellworth Avenue are zoned heavy industrial even though some are currently being used for residential purposes. The zoning of these lots makes it difficult to provide a direct comparison of the value of these properties to other residential

properties within the City. However, there is an area of residential properties nearby that have recently been separated from this industrial area and returned to residential zoning. These properties were used for comparison purposes. There are 34 divisions of residential neighborhoods in the City of Jackson and for tax assessment purposes these are assigned an Economic Condition Factor (ECF). The ECF is a way to relate market conditions into a mass appraisal system. It is created by taking a sale and subtracting the value of the land, thus giving a residual value for the building. The City then looks at what the property costs out at using a cost manual and divides the residual value by the cost value to come up with a “factor” for use in the entire neighborhood; the lower the factor the greater the relative value of the neighborhood. The ECF of properties comparable to those on Wellworth Avenue ranks 16th out of 34 in the City. Because these properties are actually zoned industrial, their value as residential properties may be somewhat lower than this.

As can be seen in Figures 2 & 3, the fences with “Caution” signs warning of hazardous materials are located next to the houses. Clearly, any potential purchasers of houses in this neighborhood are going to be affected by the presence of both the fences and the signs. If any of the homeowners wanted to sell their property, they would have a very difficult, if not impossible, time in doing so. If they were able to sell their property, the presence of the fences and signs would likely affect the value of the homes in a negative way. This area might normally be comparable to properties that were of medium value when compared to other residential areas in the City of Jackson. But the EPA decision to contain the contamination in this manner will undoubtedly affect the ability of these residents to sell, thereby effectively lowering their property value. Yet in the meantime the residents will still pay taxes at a medium level.

This economic impact on the value of these homes and on the residents is the direct result of a decision made by the EPA under CERCLA to address the contamination by containment rather than removal. Had a NEPA analysis been performed, the impact of this containment on the human environment would have been identified. Although this analysis was not privy to income or demographic information for the residents in this neighborhood, it could also be that such an examination would reveal environmental justice issues as well; being an industrial area of town this scenario is very possible. Again, had a socioeconomic analysis been performed under NEPA, such information would have been available for the decision makers.

To be fair to the EPA, the Emergency and Enforcement Response Branch for Region 5 that oversaw this project tends to focus on emergency removal actions that address the very worst aspects of contaminated sites and often does not follow through with complete remediations. In addition, the JDF site was never nominated for the National Priority List, so this site never attracted the attention of other major Superfund sites. Such emergency response actions as the JDF removal are specifically noted in CERCLA as being excluded from the need for permits, including NEPA consideration.

The disturbing result, though, is that had a NEPA analysis been performed, not just the human element, but also the natural environment would have benefited as well. Congress intended that the policies set forth in Section 101 of NEPA be reflected in the decision making of federal agencies. Had EPA decision makers considered the result of a socioeconomic analysis, it could have led to continued negotiations with the liable parties for complete cleanup of the residual contamination at the JDF site rather than containment behind fences and barriers.

In addition to an analysis of the socioeconomic impacts, there are other aspects of the NEPA process that could be beneficially integrated into the CERCLA process as well. NEPA considers off-site impacts as part of the environmental assessment. At 40 CFR Part 300.400(e) CERCLA defines a “site” as encompassing the entire area affected by contamination and does not limit it by property boundaries. This is beneficial, in that the entire area affected should be included in the selected remediation regardless of who owns or operates the property. However, impacts from other properties could affect recovery of the property being remediated. In the case of the JDF site, operations upstream along the Grand River could be polluting surface water and thus recontaminating the remediated area, affecting both recovery of the wetland and effectiveness of the remedy. Although this might happen to get noticed during the cleanup process, there is no requirement in CERCLA that it be considered or discussed.

Another aspect of NEPA that could benefit the CERCLA process is the consideration of cumulative impacts. Often brownfields that are cleaned up become industrial developments due to their proximity to urban centers and previously existing infrastructure. Such development would definitely have socioeconomic impacts beyond those considered here and some may even be beneficial. But once industry occupies one property, it often leads to further industrial development along with supporting businesses. Such development could overload the ability of the community to support an industrial base it has adapted to living without. In addition, such redevelopment has the potential to recontaminate the property. In the case of the JDF site, not only would the type of development likely to occupy a contaminated property cause further socioeconomic stress to the residential neighborhood, it may be more likely to have less concern about its operation’s recontaminating the site. There would also be traffic, noise, and other issues to be addressed under NEPA. Again, CERCLA has no process for considering these cumulative impacts.

Not only did this decision result in the continued presence of chemicals in the environment and their impact on wildlife, it also shifted a burden onto the State of Michigan that might otherwise have been resolved by the liable parties. Even if the MDEQ demands for performance of remedial actions prove successful, much time will have been expended following up on this project that could have been spent on other site work. The worst-case scenario is that these demands will fail, and the responsibility for the complete remediation of this site will fall upon the taxpayers of the State of Michigan. This unique type of cumulative impact would not be considered under CERCLA.

As was noted earlier, the EPA Region 5 office was contacted in an attempt to find a CERCLA action at which an EIS had been voluntarily performed to see whether staff found the NEPA process beneficial to their decision-making. Although the EPA Policy provides for the performance of an EIS when deemed reasonable, not one has been done in Region 5 that staff contacted was aware of. In addition, staff indicated that it was not likely that other regions had generated an EIS either. So although EPA has the option to use NEPA, it does not appear to be doing so. Having considered the JDF site and the benefits NEPA could have had for both the residents and the environment, failure to employ such a valuable tool in the evaluation of these impacts is a glaring omission in the agency’s remediation process. The incorporation of NEPA into the CERCLA process would likely yield benefit for the entire ecological system as it would have at the JDF site.

Conclusion -

Although the EPA may choose to use NEPA, in general it appears that the agency does not access this decision making tool. It seems a safe assumption that the EPA faces the challenges that all state and federal agencies face, namely insufficient staff and lack of funding. Thus, any process that is optional is unlikely to be incorporated. The result is that while the human toxicological issues are being addressed, the human environment is being neglected as socioeconomic issues and other effects are being left out. And in the end, this results in negative impacts on the natural world.

As economic pressures continue to mount, more remedial actions are likely to utilize containment and restriction rather than contaminant removal. From a human safety perspective, so long as the barriers are maintained the people are safe; but the environment remains contaminated and neighborhoods remain impacted and under a veil of environmental suspicion. If CERCLA incorporated NEPA into its decision making process, its “ecological rationality” would likely lead to better cleanup decisions that would benefit the entire scope of the human environment including the natural world.

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