

**FINAL EXAM
ENVIRONMENTAL LAW, FALL 2004
CAPITAL UNIVERSITY LAW SCHOOL
PROFESSOR HIRSCH**

Professor's Instructions: Read Carefully

1. At the beginning of this exam you should have the following: (a) this 13-page exam packet; (b) a scantron form sheet for the multiple choice questions; (c) a #2 pencil to mark the scantron sheet and a pen (or computer) for writing the narrative portions of the exam; (d) answer books (unless you are taking the exam on a computer).
2. **Write your exam number on the front of your envelope, the upper right hand corner of your exam packet and on each of your answer books.**
3. **Fill in the identifying information on your scantron sheet.**
4. This is a two hour and forty-five minute (2:45) examination. It consists of a multiple choice section and one essay. I recommend that you spend 75 minutes on the multiple choice section and 90 minutes on the essay. Points will be allocated roughly in proportion to these recommended time allocations. Manage your time wisely. Make sure you reserve sufficient time to answer all parts of the exam fully.
5. Read each multiple choice question carefully, as each may ask you to perform a different task (e.g. one may ask you to choose the "most helpful" argument; the next, the "least helpful.") The multiple choice questions are to be answered only on the multiple choice scantron answer sheet (this goes even for those taking the exam on computer). Mark your answers on the scantron form by filling in the space for the letter that corresponds to the best answer for each question. If you erase, do so thoroughly. Otherwise the computer may grade your response incorrectly. Answers written on the exam packet itself will not be considered.
6. Write all your narrative answers on the colored answer books (unless you are taking the exam on computer). If you write more than one answer book for the essay, number the books sequentially (e.g. Essay, book 1; Essay, book 2; etc.) Answers written on the exam packet itself or on scrap paper will not be considered.
7. At the conclusion of the exam, insert your exam packet, answer books, scantron sheet and scrap paper into the envelope. Then place the envelope in the box at the front of the

examination room. **You may not make a copy of or otherwise reproduce the exam packet.**

MULTIPLE CHOICE

(75 minutes)

1. From 1960-1975, dozens of companies sent thousands of barrels of waste to the Yucky Landfill. In 1975, there was a fire at the site and many of the labels on the drums were burned off. In 1998, the Landfill was designated as a Superfund site. Recently, several PRP's at the Yucky Landfill Superfund site have sued Chemco, a chemical manufacturer, for contribution. At trial, they have proven that Chemco sent hazardous substances to the site in drums, and have identified 57 drums as positively belonging to Chemco although they believe that it sent far more drums than this. The PRP's have also shown that hazardous substances like those sent by Chemco are present at the site. Based on these facts, Chemco has asked the court to assign it liability only for the cost of cleaning up the 57 drums, and to divide its liability off from that of the other PRPs. Based only on these facts, which of the following is the **most likely outcome** of Chemco's motion:
 - a. Chemco will win because the PRPs have only shown that Chemco sent 57 drums to the site and should not be able to hold it liable for anything more than this.
 - b. Chemco will win because it is not jointly and severally liable for the cost of cleaning up the site.
 - c. Chemco will lose because the amount to be divided is the cost of the harm to the environment, not the clean-up cost.
 - d. Chemco will lose because it has not proven that it sent only 57 drums to the site.

2. The Clean Water Act requires the EPA to establish effluent limitations for categories of point sources and to issue National Pollutant Discharge Elimination System (NPDES) permits to each such source. There are hundreds of thousands of point sources and EPA has found it difficult to carry out this task. In response to this problem, EPA is **not authorized to**:
 - a. Issue general permits to all sources in a given category.
 - b. Issue area permits to all sources in a given area.
 - c. Exempt from the NPDES permitting requirement all sources in a given category.

- d. EPA is authorized to take any of the above actions.
3. In reviewing an agency's compliance with NEPA, governing law requires courts to:
 - a. Strictly review the agency's compliance with procedural requirements, but defer to the agency on matters of substance.
 - b. Conduct a searching, substantive review of the agency's consideration of environmental impacts and alternatives.
 - c. Conduct a "hard look" review of the agency's consideration of environmental impacts, but a more lenient review of its consideration of alternatives.
 - d. Make sure that the agency drafts an environmental impact statement for every action that it takes.
 4. Where a state adopts, as part of its SIP, regulations that are neither economically nor technically feasible for facilities in that state to comply with, the U.S. EPA is authorized to:
 - a. Disapprove the SIP on these grounds.
 - b. Require the state to revise the SIP to the point that its requirements are economically feasible to comply with.
 - c. Require the state to revise the SIP to the point that its requirements are economically and technically feasible to comply with.
 - d. Require the state to include in its SIP those specific pollution control measures that U.S. EPA believes will most effectively bring the state into compliance with the NAAQS.
 - e. None of the above accurately describes EPA's authority in this situation.
 5. In the 1970's, Sloppy Co. ran a manufacturing plant at which it produced auto parts. As you might have guessed from the name of the company, the business was very disorganized. Its filing system was a mess. Its books were hard to decipher. And its waste disposal methods were careless. Instead of arranging for proper disposal of hazardous waste, the company took it out back and poured it into a pit that it had dug for that purpose. Over time, the hazardous substances in the waste began to migrate slowly down towards the water table. In 1985, Sloppy Co. sold the property to Smart Speculator Co. ("Speculator"), a company that buys land and holds it for later resale. Speculator performed a superficial inspection of the plant site

prior to the purchase. Speculator held the property but did nothing else with it. In 1995, as the surrounding area became increasingly commercial, Speculator sold the property to Development Co., a company that planned to build a shopping mall there. Development did a more rigorous inspection, but did not find the hazardous waste that was migrating through the soil. When Development began digging the foundation for the new mall, it discovered the waste. The former Sloppy Co. property was declared a Superfund site and Development was forced to clean it up. *Development is now trying to hold Speculator liable for contribution. Based only on the above facts, Speculator's best defense will be that:*

- a. Speculator did not know about the hazardous waste at the time that it purchased the property, and Congress did not intend to hold such innocent purchasers liable.
 - b. Speculator can prove that Sloppy Co. poured the hazardous waste directly onto the ground and did not place it there in barrels or drums.
 - c. Speculator can prove that Sloppy Co. was the one responsible for contributing all the hazardous waste to the site, and the Speculator merely held the property for a period of time. Speculator should not be liable for wrongs committed by others.
 - d. Speculator can prove that the hazardous waste has not yet reached the groundwater and so has not been released to the "environment" at this point.
6. The Hawk Plateau in the Rocky Mountains is a vast, largely inaccessible area. The Red-Winged Hawk, a rare bird that has been listed as an endangered species, lives up on the Plateau. The Plateau has also recently been identified as being the location of one of the nation's largest underground natural gas reserves. Energy companies have approached the federal government about gaining access to the area for exploratory drilling. This drilling, as well as the larger natural gas extraction project that may follow, will require federal permits. As a first step, the companies will need to haul heavy equipment to the Plateau for the exploratory drilling. The lack of roads currently makes this impossible. The undeveloped land surrounding the Plateau is privately owned. Federal officials, who have expressed their interest in the natural gas extraction project, have commenced eminent domain proceedings to take some of this land for public use. If the project goes through, they intend to use this newly-acquired land to build a road to the Plateau. Last week, the first set of these proceedings came to a close and the government paid \$300,000 in compensation to those whose land had been taken. Thus far, the government has taken no other action related to the project. It has not yet issued any permits for the drilling of the Plateau, nor has it issued an Environmental Assessment or an Environmental Impact Statement under NEPA. A bird-watching group, Mad About Birds (MAB), believes that the extraction project on the Plateau will damage the habitat of the Red-Winged Hawk. The group wants to use NEPA to stop the building of the road and the larger extraction project. At the present time, **MAB's strongest argument that the government**

has violated NEPA will be:

- a. That the federal action allowing drilling on the Hawk Plateau will “jeopardize” the Red-Winged Hawk and threaten its future survival.
 - b. That the government has already expressed its interest in the natural gas extraction project, and should have completed an Environmental Assessment or an Environmental Impact Statement for the road and the overall extraction project before doing so.
 - c. That the federal government has failed to consider alternative sources of natural gas, the recovery of which will cause far less environmental damage than drilling on the Hawk Plateau, especially given the presence of an endangered species.
 - d. That the federal government spent \$300,000 on the purchase of private land for the road before completing an Environmental Assessment or an Environmental Impact Statement for the road and overall natural gas extraction project.
 - e. MAB does not have any strong arguments because it is the drilling on the Plateau that is likely to disturb the Hawk, not the building of the road, and the government’s actions thus far relate only to the road, not to the larger natural gas extraction project.
7. The Endangered Species Act (Section 9), as implemented by Department of Interior regulations, prohibits any “person” (private *or* governmental) from taking certain actions with respect to endangered wildlife. Which of the following **best describes** these prohibitions:
- a. The ESA bars the shooting, wounding or capturing of endangered wildlife and the destruction of species habitat in a way that actually kills or injures such wildlife by impairing essential behavioral patterns.
 - b. The ESA bars the shooting, wounding, or capturing of endangered wildlife, the import, export and sale of such wildlife, and the destroying of species habitat in a way that actually kills or injures such wildlife by impairing essential behavioral patterns.
 - c. The ESA bars the shooting, wounding or capturing of any endangered wildlife, as well as the import, export or sale of such wildlife.
 - d. The ESA bars the “harming” of endangered wildlife in any way that will pose “significant” threat to the continued existence of the species.

8. Childco is a wholly-owned subsidiary of Parentco. Childco sent hazardous substances to Smelly Landfill, a Superfund site, and is liable as a responsible party under CERCLA. The other PRP's have brought suit against Parentco, alleging that it is liable as a parent corporation. In prosecuting their lawsuit against Parentco, it would be **least helpful to the PRP's** to be able to prove that:
 - a. Parentco's employees were physically involved in Childco's waste disposal practices.
 - b. Parentco went beyond the corporate norms of parent behavior in supervising the activities of its subsidiary, Childco.
 - c. In establishing Childco as a wholly-owned subsidiary, Parentco used the corporate form for wrongful or fraudulent purposes.
 - d. Parentco closely monitored Childco's activities, hiring practices, budget decisions and overall performance throughout the period that the waste disposal was going on.

9. The City of Purity operates an incinerator for the burning of wooden trash. It mainly burns construction debris. The City collects both "fly ash" from the baghouse (a pollution control device) at the top of the incinerator stack, and the heavier, "bottom ash" that collects at the bottom of the incinerator. The City believes that neither the fly nor the bottom ash are hazardous. It accordingly buries both types of ash in a municipal landfill, and not a permitted hazardous waste landfill. A local environmental group, Citizens for a Purer Purity (CPP), obtains several samples of the bottom ash and tests them for toxicity. It finds that, due to the toxic constituents of the paint that is on much of the wooden construction debris, the bottom ash exhibits the toxicity characteristic and qualifies as hazardous waste under RCRA. Under the RCRA statute and regulations, which of the following actions would best enable CCP to trigger the City's legal obligation to dispose of the bottom ash in a permitted hazardous waste disposal facility:
 - a. Send the City a letter containing the results of the toxicity characteristic tests.
 - b. Hold a protest in front of the mayor's office, invite the media, and demand that the City take responsibility for its hazardous waste.
 - c. Send a letter to the U.S. EPA containing the results of the toxicity characteristic tests.
 - d. Send a letter to the State Department of Environmental Protection containing the results of the toxicity characteristic tests.

10. Jones owned an abandoned mine in the hills near the Raging River. He decided make some extra cash by allowing companies to dump liquid industrial waste into the mine. Company A's production process generated a liquid waste that contained mercury, a highly toxic CERCLA hazardous substance. Company A paid Jones a fee and poured a million gallons of its liquid waste into the old mine. Company B's process generated in a liquid waste that was largely water although it contained traces of a single hazardous substance, cadmium. Company B paid Jones a fee and poured 1000 gallons of its liquid waste into the mine. EPA has become concerned about the liquid waste stored in Jones's old mine. Acting on a tip from some locals, it has discovered a very thin crack that is allowing small amounts of the liquid waste to leak from the mine into the Raging River. It has identified small amounts of mercury in the river. Assuming that the mine is listed as a Superfund site, and based only on the above facts, which of the following **most accurately describes Company B's position** under CERCLA:
- a. Company B will likely be liable under CERCLA.
 - b. Company B will likely be liable under CERCLA if cadmium can be identified at the Superfund site.
 - c. Company B will likely be liable under CERCLA if cadmium can be identified in the Raging River.
 - d. Company B will likely not be liable under CERCLA because Company A contributed far more waste liquid to the mine, and mercury has been found in the Raging River.
11. The major approaches to **setting environmental goals**, as found in the federal environmental statutes we studied, are most accurately listed as:
- a. Technology-based, health- and environment-based, and market-based approaches.
 - b. Technology forcing, command-and-control, market-based, and health- and environment-based approaches.
 - c. Technology forcing, technology-based, balancing, and health- and environment-based approaches.
 - d. Command-and-control, liability, prohibitions, and planning and analysis approaches.

12. Trashco has four different waste streams that it discards from its facility. The first of these is a gas that Trashco seals in air-tight containers before discarding. The second is a liquid waste that Trashco hauls off to a landfill in sealed barrels. The third is a toxic gas that Trashco emits through its smokestack. The fourth is a liquid waste that an individual worker occasionally carries out of the facility in buckets and pours onto the ground behind the facility. Which of these waste streams would not qualify as a RCRA "solid waste"? (For the purposes of this question, assume that none of these waste streams are regulated under a Clean Water Act NPDES permit.)
- a. The gas in the air-tight containers.
 - b. The liquid waste discarded in sealed barrels.
 - c. The toxic gas emitted through the smokestack.
 - d. The liquid waste carried out in buckets and poured onto the ground behind the facility.
 - e. None of the above would qualify as a "solid waste" under RCRA.

ESSAY
(90 minutes)

In 1997, U.S. EPA finalized its revisions to the primary National Ambient Air Quality Standard (NAAQS) for Particulate Matter (PM). The *Whitman v. American Trucking* case that we read this semester involved, in part, a challenge to this rule. The rulemaking established a standard of 50 micrograms (a microgram is a millionth of a gram) of particulate matter per cubic meter of ambient air (note: this is a simplification of the actual standard). For the purposes of this exam, this standard, promulgated in July 1997, will be referred to as the “Existing Primary PM NAAQS.”

Assume that the year is now 2010. The Clean Air Act requires the U.S. EPA to review each NAAQS standard every five years. The agency is to evaluate whether, in light of new studies and evidence, further revision to the standard is warranted. In 2008, the Administrator of the U.S. EPA appointed a seven-member scientific review committee to conduct this analysis, as is required under the statute (this action came a bit past the five-year review deadline, but that is not relevant here). The Committee has recently issued its report to the Administrator. The report reviews post-1997 scientific and medical evidence. It examines whether the primary PM NAAQS should be revised to a new, more stringent standard. (Note: the report does not address the *secondary* PM NAAQS, and you should not either).

You are a senior attorney in the U.S. EPA Office of General Counsel (OGC). The Administrator has forwarded a summary of the Committee’s report to you (see below). The Administrator wants you to write him a memo in which you:

(1) Concisely set out the relevant legal standards that govern the setting of the primary NAAQS for a criteria pollutant such as particulate matter.

(2) Apply these standards to the facts contained in the Committee’s report (which is summarized below). Discuss the legal and the policy issues that the Administrator will face, and advise the Administrator as to whether, based on the committee’s report, he is legally required to make the Existing Primary PM NAAQS more stringent. In this portion of your memo, you should be sure to:

- < Discuss, in light of all the facts, whether the negative effects of PM identified by the Scientific Review Committee are the type of harms that the Clean Air Act NAAQS program was intended to address.*
- < Discuss whether these negative effects of PM injure a broad enough segment of the population to require that they be addressed under the NAAQS program.*
- < Discuss any other relevant points.*

(3) Assuming that the Administrator is required to take action here, advise him as to the form and stringency of the standard. In this portion of your memo, you should be sure to:

- < Discuss whether the Administrator should adopt either the **40 microgram** or the **30 microgram** per cubic meter of air standard (the two standards mentioned in the Committee's report, below).
- < Discuss any legal guidelines that instruct the Administrator as to how to go about choosing the level at which to set a new primary NAAQS for particulate matter.
- < Discuss any recommendations made by the Committee regarding actions that the Administrator should take.
- < Discuss any other relevant points.

In your memo, you may draw on any materials that we read this semester, particularly the Clean Air Act (although you do not need to cite to specific provisions by number) and cases that we read this semester regarding the setting of NAAQS,. You do not need to discuss the non-delegation doctrine discussed in Whitman v. American Trucking, as that case has settled the non-delegation question.

REPORT OF THE SCIENTIFIC COMMITTEE FOR THE REVIEW OF THE PARTICULATE MATTER (PM) NAAQS

SUMMARY OF CENTRAL CONCLUSIONS

- ! Particulate matter (PM) is a generic name for substances that exist in the air as discrete particles. Particulate matter encompasses what many people refer to as “dust” or “soot,” although it also includes even smaller particles that may not be as visible to the naked eye. Particulate matter results mainly from the combustion (burning) of coal and oil, as well as from agriculture and forest fires.

- ! Scientific research has established that breathing particulate matter in the ambient air can cause the following negative health effects: increased chance of suffering respiratory disease such as bronchitis, pneumonia and asthma; greater severity of these diseases when they do occur; increased risk of premature mortality as a result of these diseases (*i.e.* dying earlier than one otherwise would have); and decreases in lung function (*e.g.* reduced air flow rate).

- ! The Committee focused on whether, in light of current evidence, the Existing Primary PM NAAQS for particulate matter constitutes sufficient protection against these harms.

- ! The Committee reviewed medical and scientific studies published since 1997 regarding the effect of PM on various sub-populations. The most important studies were those that examined the effects of PM on elderly people with a history of respiratory illness (4% of all elderly in the United States), and on adult smokers who have smoked a pack or more of cigarettes per day for at least one year (5% of all adults). These studies found that, for these sub-populations, exposure to PM in the outdoor air at the level established in the Existing Primary PM NAAQS will increase by 10% the risk of a serious bronchitis or pneumonia episode requiring hospitalization, as compared to a baseline of only background (*i.e.* naturally occurring) levels of PM. The studies further indicated that elderly individuals who are hospitalized with a respiratory disease have a 10% greater chance of premature mortality (*i.e.* dying earlier than one otherwise would have) than those who are not hospitalized for such a condition.
 - “ In addition, the studies show that both the elderly with a history of respiratory illness, and pack-a-day smokers, can reduce the increased risk from breathing PM to very low levels through preventative action. Elderly people who minimize their time outdoors, and who consistently wear a filter mask over their mouth and nose when they do go outside, experience almost no increased risk of respiratory-related hospitalization. The pack-a-day smokers can avoid the increased risk by taking these same measures, or by reducing their smoking to ten cigarettes a day.

- " In evaluating where to set the standard to protect against these harmful effects on the vulnerable elderly and smokers, the Committee concluded that there is no absolutely safe level of particulate emissions. Any amount greater than zero will increase the risk of respiratory illness to some degree.
- " Studies indicate that a tightening of the primary PM NAAQS from **50 micrograms** per cubic meter of air (the Existing Primary PM NAAQS) to **40 micrograms** per cubic meter of air, would reduce from 10% to 2% the increased risk to these sub-populations of respiratory illness requiring hospitalization, thereby offering substantial protection to the vulnerable elderly and pack-a-day smokers.
- ! Recent studies have further shown that children who breathe air that meets the Existing Primary PM NAAQS experience some degree of decreased lung functioning (*i.e.* reduced air flow rate and strength of lungs). This symptom is generally not noticeable during regular activity. However, it can make children more likely to experience shortness of breath during outdoor exercise, and can impair peak athletic performance. The studies found that reducing PM concentrations to **30 micrograms** per cubic meter of air would substantially lessen this effect.
- ! There is also some evidence that children below the age of seven who have history of serious respiratory problems (about 3% of all children below the age of 7), and who are exposed to PM at the level of the Existing Primary PM NAAQS, can experience inflammation of the bronchial tubes and lungs, leading to a 25% increase in the frequency of bronchitis and pneumonia episodes, and greater severity of these episodes when they do occur. This, in turn, leads to an increase in hospitalization and emergency room visits, and to more missed school days.
 - " These studies have suggested that PM would have to be reduced to **30 micrograms** per cubic meter of air in order to substantially protect against these effects.
 - " The studies that support this particular finding are disputed and controversial. Critics maintain that the designers of these studies failed to account for other important factors, such as stress or low socio-economic status, that may in fact be responsible for the increased susceptibility to and severity of illnesses.
 - " The Committee concludes that while these studies suggest a possible effect on children below the age of 7, they do not establish this effect as a matter of statistical or scientific certainty.
- ! The Committee recognizes that, by far, the greatest source of bronchial problems and pneumonia in vulnerable child and elderly populations is insufficient inoculation against the flu

virus.

- " Studies indicate that if the number of vulnerable children and elderly who were inoculated against flu virus each year were increased by 50%, this would reduce the incidence of respiratory diseases among these populations by a third (*i.e.* 33%). The cost of such a stepped-up inoculation program would be far less than the cost of additional regulation to reduce PM in the ambient air from 50 micrograms per cubic meter of air, to 40 or to 30 micrograms (the two alternative standards discussed above).
 - " The Committee recommends that EPA develop such an inoculation program, perhaps by paying at-risk individuals to take their shots. This would be a more cost-effective way to address respiratory health issues.
- ! The Committee estimates that the implementation of a **30 microgram** per cubic meter of air standard would impose substantially higher compliance costs on businesses than would the implementation of a **40 microgram** per cubic meter of air standard. The **30 microgram** per cubic meter of air standard (but not the **40 microgram** standard) would accordingly cause some businesses to shut down and, in the short term, would increase unemployment to some extent. Loss of a job, and of the income associated with the job, has been associated with an increased risk of health problems among the unemployed workers and their families.